

## DROP AND BLOCK WIRING

### PLACING DROP WIRE

### VOLTAGES OF 300 TO 750 INVOLVED

#### 1. GENERAL

**1.01** This information was formerly covered in Section 625-400-206CA (G32.137.2) which is canceled.

**1.02** This section covers the method of placing drop wire under the conditions usually encountered where the drop wire will cross over trolley or trolley-bus contact wires or over power wires or power cables operating at 300 to 750 volts. The basic principles presented in this section should also be observed in those cases where conditions necessitate a departure from the usual procedure.

*Note:* Under no condition shall a drop wire be placed over power wires or power cables operating at more than 750 volts. Such cases shall be referred through the lines of organization to the plant engineer for disposition.

**1.03** The method outlined herein is such that the drop wire is first attached to the building and is then placed over the trolley contact or power wires or power cables by means of a handline while the employees remain on the ground and so perform the work that the drop wire does not come in contact with the power circuits during the entire placing operation. This method is also intended to avoid the possibility of accidents caused by tensioning the wire from a ladder at the building or vehicles striking the wire or the handline as it is being raised from the ground.

**1.04** Drop wire shall not be placed over trolley or trolley-bus contact wires, or over power cables operating at 300 to 750 volts, if other means of installing the wire are practicable.

**1.05** Drop wire shall not be attached to a span clamp under the conditions covered by this section unless the span clamp is accessible from the pole.

**1.06** Refer to Section 462-400-205CA for the methods of placing a drop wire where no trolley or trolley-bus contact wires or power wires or power cables operating at 300 volts or more are involved. The methods of lowering a drop wire, raising a lowered drop wire, and replacing a drop wire by pulling the new wire into the span as the old wire is pulled out of the span are covered in Sections 462-800-311CA and 462-800-312CA.

#### 2. PRECAUTIONS

**2.01** In general, two men shall be employed when raising a drop wire over trolley or trolley-bus contact wires, or over power wires or power cables operating at 300 to 750 volts. Obtain additional assistance before raising a drop wire over streets, highways, or elsewhere if traffic, tree, or other conditions are such that two men cannot do the work safely.

**2.02** Insulating gloves shall be worn when placing a drop wire over trolley or trolley-bus contact wires, or over power wires or power cables and until the drop wire has been attached at both ends of the crossing span in a standard manner.

**2.03** The handline used for raising a drop wire under the conditions outlined in this section shall be free from metallic strands and shall be dry. A wet handline must not be used in the vicinity of power circuits operating at 300 volts or more, except as indicated in the following note.

*Note:* When it is necessary to maintain service or establish emergency service during rainstorms, a wet handline may be used over trolley or trolley-bus contact wires and other power circuits operating at 300 to 750 volts, provided that insulating gloves, rubber boots, and rubber raincoats are worn.

**2.04** When it is necessary to carry a handline up a pole or ladder, double the end of the handline back on itself for a distance of approximately 1 foot and place this loop under the right or left side or back of the body belt or in such other position that the handline will be released readily if it is placed under tension while the employee is climbing the pole or ladder. The same procedure shall be followed when carrying a wire up a ladder.

**2.05** Never release the drop wire supports from a wire span while working inside the angle formed by the wire.

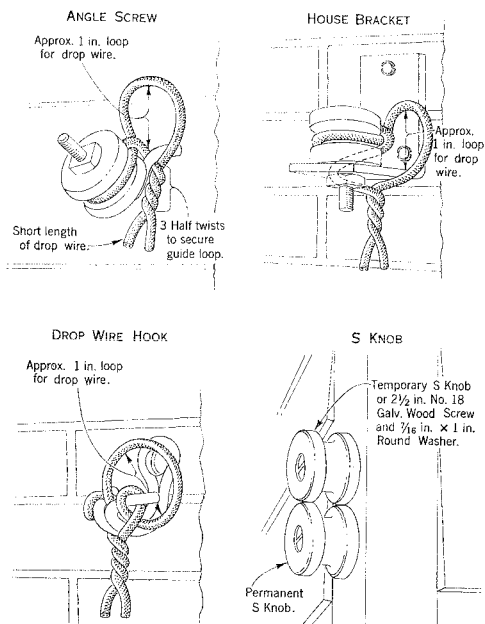
**2.06** Avoid working from a ladder placed against a building with the side rails crossing a wire run or in any other position where movement of the wire, due to loosening of the attachments, would cause an accident.

**2.07** If conditions are such that the handline, or the drop wire to which it is attached, may become disengaged from a drive hook or crossarm or may slide along the strand or guard arm while doing the work outlined in this section, the handline or drop wire shall be enclosed with a temporary guide loop. This loop shall consist of a short length of wire or houseline placed over the handline or drop wire with the ends of the guide securely tied as follows:

- Drive Hooks: Tie one end to the vertical portion of the drive hook and lash the other end to the pole.
- Crossarm: Tie the ends to adjacent pins or insulators.
- Guard Arm: Tie the ends to the guard arm on each side of the handline or drop wire.
- Strand: Tie the ends to the strand or the strand and lashed cable on each side of the handline or drop wire, or place the handline or drop wire through the hook of a B span clamp.

### 3. PLACING WIRE OVER TROLLEY CONTACT OR POWER WIRES OR POWER CABLES

**Caution:** When it is necessary to place a drop wire over trolley or trolley-bus contact wires or over power wires or power cables, the crossing span shall be placed independently of any additional spans of wire that may be required to establish service.



**Fig. 1 — Temporary Guide Loop**

**Note:** Where Z Multiple Drop Wire is being installed on a drop wire hook, a snatch block may be used to support the wire instead of the method shown above. The snatch block may be attached to the drop wire hook by means of a 15/16 in. construction chain, using the links or one of the rings on either end of the chain. Care should be taken to assure that the chain link, chain ring or equivalent ring, is looped securely around the drop wire hook.

**3.01** Place the drop wire over trolley or trolley-bus contact wires or over power wires or power cables as outlined below:

#### Man No. 1

- (1) Install the first building attachment or, if the drop wire is to be attached to a pole on the building side of the trolley contact or power wires or power cables, the pole attachment.

- (2) Attach a temporary guide loop to the first building attachment such as shown in Fig. 1, to prevent the drop wire from becoming accidentally disengaged from the building attachment during the placing operations.

**Note:** If the drop wire is to be attached to a pole between the trolley contact or power wires or power cables and the building, place the temporary guide loop on the pole attachment instead of at the building.

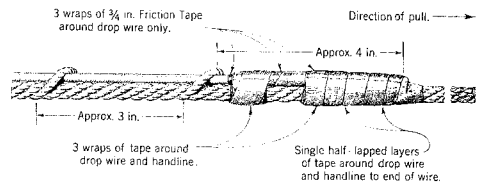
- (3) Place the drop wire reel, equipped with a coil of new wire, near the foot of the ladder on the side away from the wire span and in a stable position.

**Caution:** Fasten the inner end of the coil of drop wire securely to one of the spokes of the drop wire reel.

- (4) Set the brake of the drop wire reel so that when the wire is pulled by the handline there will be sufficient tension in the wire to prevent it from sagging onto the trolley contact or power wires or power cables.
- (5) With the wire paying off from the bottom of the reel, pass the wire over the first building attachment and through the temporary guide loop at this attachment until the end of the wire reaches the ground.
- (6) Man No. 2 lashes one end of the handline to the base of the pole. The handline shall be of a sufficient length to extend vertically from the ground to the strand or pole attachment and then horizontally at least 25 feet beyond the trolley contact or power wires or power cables.
- (7) Man No. 1 goes into the street or highway to control traffic, assisted by the police if necessary.
- (8) Man No. 2 places the free end of the handline over the strand, guard arm, drive hook, or crossarm. If practicable, the handline may be formed into a coil at one end and thrown over the strand.
- (9) Standing on the ground, Man No. 2 now throws the free end of the handline over the trolley contact or power wires or power cables and ties this end of the handline to the

end of the drop wire by means of a square knot, serving the end of the wire around itself without sharp bends. If the handline has been placed over a drive hook or other support on which the square knot would snag, fasten the handline to the wire as shown in Fig. 2.

**Note:** If a tree is involved, place the handline among the branches of the tree in the desired location for the drop wire. A wire raising tool may be used to facilitate this operation.



**Fig. 2 — Alternate Tie to Prevent Snagging**

- (10) Man No. 2 next reels up all slack in the handline and drop wire onto the drop wire reel, thereby raising the handline clear of the trolley contact or power wires or power cables. If the end of the drop wire attached to the handline would be pulled back through the temporary guide loop at the first building attachment in this operation, Man No. 2 shall stop reeling up slack, make sure that the drop wire reel is in a stable position and that its brake is properly set, return to the pole end of handline, and pull the remaining slack out of the handline and wire span so that the handline is clear of the power circuits. He then reties the handline to the pole and returns to the drop wire reel.
- (11) Man No. 1 who has been in the street or highway directing traffic during operations (8) to (10), inclusive, goes to the pole and pulls the handline, observing carefully to see that there is sufficient tension in the wire paying off the drop wire reel to prevent the wire from sagging onto the power circuits. Man No. 2 controls the action of the drop wire reel to ensure that there is adequate tension in the wire as it is pulled from the reel.
- (12) After Man No. 1 has pulled a sufficient length of drop wire over the strand, guard

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arm, drive hook, or crossarm for terminating or splicing purposes, he shall lash the handline to the base of the pole.

**Note:** If the handline or drop wire catches while it is being pulled over the strand, guard arm, drive hook, or crossarm, Man No. 2 remains at the drop wire reel and keeps the wire under sufficient tension to prevent it from sagging onto the power circuits. Man No. 1 lashes the handline to the base of the pole and proceeds to free the handline or drop wire.

- (13) Man No. 1 crosses the highway to building and, while Man No. 2 maintains tension in the wire span, Man No. 1 fastens the drop wire to the first building attachment with a drop wire clamp and then removes the temporary guide loop.

**Note:** While Man No. 1 is fastening the drop wire to the first building attachment, Man No. 2 shall not attempt to maintain any more tension in the wire than is necessary to prevent it from sagging onto the trolley contact or power wires or power cables. The proper tensioning of the drop wire shall be done from the pole attachment side of the power circuits.

- (14) Both men now go to the pole and, while Man No. 1 maintains the proper tension in the handline, Man No. 2 climbs the pole, fastens the drop wire in a standard manner and then removes the handline.