

## DROP WIRING

### PLACING DROP WIRE POWER EXPOSURE UP TO 750 VOLTS

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#### 1. GENERAL

**1.01** This practice provides procedures for the two-man method of placing drop wire over power wires or power cables operating at 300 to 750 volts. It also provides the procedures for placing drop wire over power wire or power cables where the exposure is up to 750 volts and where a street or highway is crossed.

*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 to your supervisor for disposition.*

**1.02** Drop wire shall not be placed over power cables operating up to 750 volts if other means of installing the wire are practicable.

**1.03** This method provides for the drop wire to be attached first to the building and then placed over the power wires or power cables by means of a handline. During this operation, employees remain on the ground and perform the work so 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 attached to a span clamp under the conditions covered in this practice unless the span clamp is accessible from the pole.

**1.05** Refer to CTSP 475-301-405 for the methods of placing a drop wire over power wires or power cables where the exposure is **300 volts or less** or where there is no exposure to power. The methods of lowering a drop wire, raising a lowered drop wire, and replacing a drop wire are covered in CTSP 475-301-605 and CTSP 475-301-610.

**1.06** Drop wire should be twisted one complete turn for each ten feet of span length at the time of installation to reduce vibration and dancing.

**1.07** See CTSP 490-060-001 for measuring clearances and separations in outside plant; CTSP 475-300-403 for stringing sags and span limits.

#### 2. PRECAUTIONS

*NOTE: All precautions in CTSPs 490-050-104, 490-050-105, and 490-050-106 must be taken before climbing.*

**2.01** Two employees shall perform the work when raising a drop wire 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, trees, or other conditions create a safety hazard.

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

**2.03** The handline used for raising a drop wire under the conditions described in this practice 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.

*NOTE: When it is necessary to maintain service or establish emergency service during rainstorms, a wet handline may be used over 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, use a handline carrier (CTS #74-56-031-0), or double the end of the handline back on itself for a distance of approximately 1 foot. 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.

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

**2.06** Do not work 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 could cause the handline, or the drop wire to which it is attached, to become

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disengaged from a drive hook or crossarm, or to slide along the strand or guard arm while work is being done, the handline or drop wire shall be enclosed with a temporary guide loop. This loop shall consist of a short length of wire or rope placed over the handline or drop wire, with the ends of the guide securely tied as follows (Figure 1):

- a. **Guard Arm:** Tie the ends to the guard arm on each side of the handline or drop wire.
- b. **Drive Hooks:** Tie one end to the vertical portion of the drive hook and lash the other end to the pole.
- c. **Crossarm:** Tie the ends to adjacent pins or insulators.
- d. **Strand:** Tie the ends across 2 span clamps.

**3. PLACING WIRE OVER POWER WIRES OR POWER CABLES CROSSING A STREET OR HIGHWAY**

**CAUTION:** When it is necessary to place a drop wire 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. Place one drop at a time.

3.01 Place drop wire over power wires or power cables as follows:

- a. **Employee No. 1** installs the first building attachment; or the pole attachment if the drop

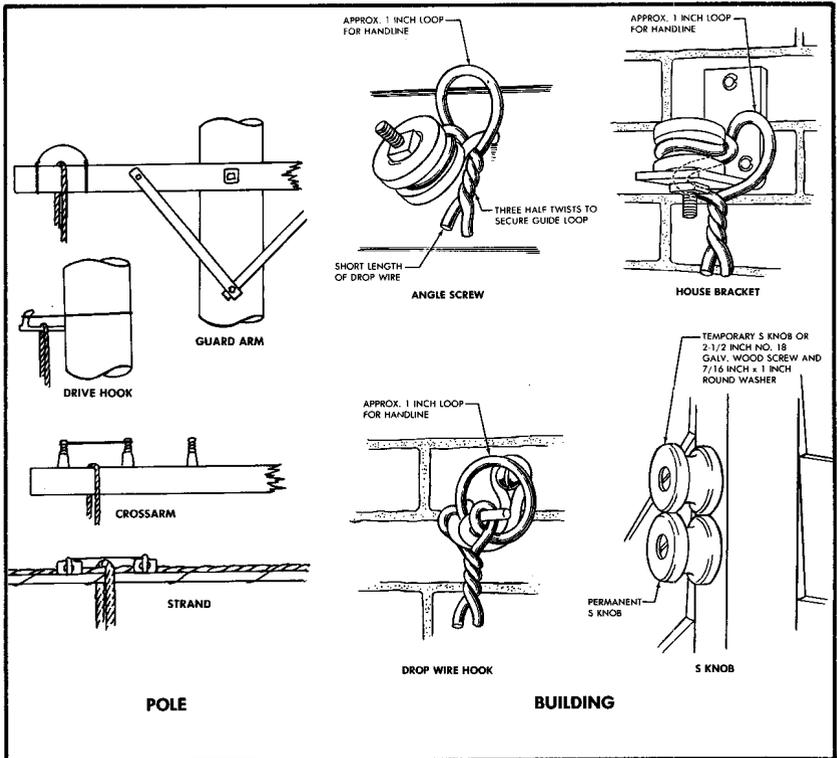


FIGURE 1. Temporary Guide Loops

wire is to be attached to a pole on the building side of the power wires or power cables.

**b. Employee No. 1** attaches a temporary guide loop to the first building attachment (Figure 1) to prevent the drop wire from becoming accidentally disengaged from the building attachment during the placing operation.

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

**c. Employee No. 1** places the drop wire reel, equipped with a coil of new wire, in a stable position near the foot of the ladder on the side away from the wire span.

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

**d. Employee No. 1** sets 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 power wires or power cables.

**e.** 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 until the end of the wire reaches the ground.

**f. Employee No. 2** lashes one end of a 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 horizontally at least 25 feet beyond the power wires or power cables.

**g. Employee No. 1** goes into the street or highway to control traffic. (He may require the assistance of the police.)

**h. Employee 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.

**i.** Standing on the ground, **Employee No. 2** now throws the free end of the handline over the power wires or power cables. Tie 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 Figure 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.*

**j. Employee No. 2** reels up all slack in the handline and drop wire onto the drop wire reel, thereby raising the handline clear of the 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 during this operation, stop reeling up slack; make sure the drop wire reel is in a stable position and that its brake is properly set. The employee returns to the pole end of the handline, and pulls the remaining slack out of the handline and wire span so that the handline is clear of the power circuits. The handline is then retied to the pole and the employee returns to the drop wire reel.

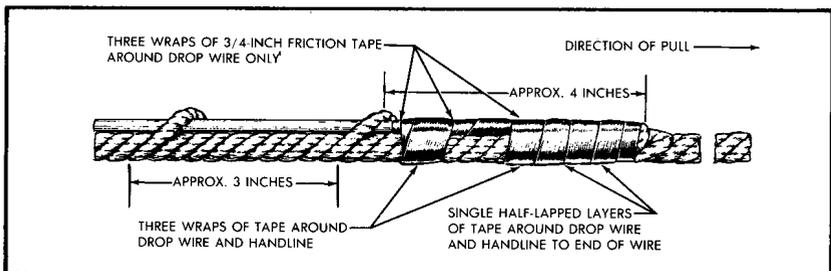


FIGURE 2. Alternate Tie to Prevent Snagging

k. **Employee No. 1** who has been in the street or highway directing traffic during operations (steps h. through j.), goes to the pole and pulls the handline, observing carefully that there is sufficient tension in the wire paying off the drop wire reel to prevent the wire from sagging onto the power circuits. **Employee 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.

l. After **Employee No. 1** has pulled a sufficient length of drop wire over the strand, guard arm, drive hook, or crossarm for terminating or splicing purposes, the handline shall be lashed 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, Employee No. 2 remains at the drop wire reel and keeps the wire under sufficient tension to prevent it from sagging onto the power circuits. Employee No. 1 lashes the handline to the base of the pole*

*and proceeds to free the handline or drop wire.*

m. **Employee No. 1** crosses the highway to the building and, while **Employee No. 2** maintains tension in the wire span, **Employee 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 Employee No. 1 is fastening the drop wire to the first building attachment, Employee No. 2 shall not attempt to maintain any more tension in the wire than is necessary to prevent it from sagging onto the power wires or power cables. The proper tensioning of the drop wire shall be done from the pole attachment side of the power circuits.*

n. Both employees now go to the pole and, while **Employee No. 1** maintains the proper tension in the handline, **Employee No. 2** climbs the pole, fastens the drop wire, and removes the handline.