PLACING OR REMOVING POLES NEAR ELECTRIC POWER WIRES

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1. GENERAL

1.01 This section covers the methods and precautions to be taken in placing or removing poles jointly used with power companies and nonjoint use poles where the required approach distances cannot be maintained during placing and removing operations.

1.02 This section is reissued to:

- Raise the limiting voltage of power wires from 15,000 volts to ground to 20,000 volts to ground where poles are to be set by telco personnel.
- Include the B pole cover (AT-8811) for temporarily insulating poles.
- Require the use of D insulating gloves with leather protectors for work on poles being set near power wires exceeding 8.7 kV to ground or 15 kV phase-to-phase.
- Authorize removal of poles cut off above telephone space and near the ground line, without insulation.
- Revise information on position of derrick operator.
- Delete information on B pole guard (rated manufacture discontinued).

Since this reissue covers a general revision the arrows ordinarily used to indicate changes have been omitted.

1.03 Work prints should indicate the voltage of power conductors and whether approach distances can or cannot be maintained during the placing or removing operation. Where approach distances ***cannot*** be met, the requirements of this section apply.

1.04 Where a pole may contact any overhead power conductors (bare or covered) and the voltage to ground of such circuits is not definitely known, this information shall be obtained from the supervisor or the power company before the work is begun.

1.05 Where the power voltage exceeds 20,000 volts to ground the power company must be notified and perform one of the following actions before telephone personnel place, remove, or replace any poles:

- temporarily move the power wires out of the way
- install temporary insulation on conductors
- de-energize the power line.

The power company may also elect to perform the pole work themselves.

1.06 In an emergency situation contact the power company to determine the voltage of the power wires. If the voltage is 34.5 kV (20 kV to ground) or less, the pole may be placed in accordance

with Table A. If over 34.5 kV but less than 150 kV (86 kV to ground) and pole clearance is 15 feet or more, proceed with placing or removing operation. If the 15 feet clearance does not exist, the power company must perform one of the actions described in 1.05.

Note: Telephone company engineering forces may make a determination based on lesser clearances if given the details of voltage and pole size.

1.07 When joint use poles are replaced by the telephone company every effort should be made to have the power company transfer its facilities as soon as possible.

1.08 Section 620-210-012 outlines the required clearance for nonjoint use poles.

2. PRECAUTIONS

GENERAL

2.01 Insulate poles that have been lying in water, wet snow, or mud before placing.

2.02 Do not place or remove poles near power wires carrying over 5000 volts to ground during substantial rain, sleet, or wet snowfall.

2.03 Poles being placed or removed where power voltages are over 5000 volts but not over 20,000 volts to ground must be insulated. See Parts 4, 5, and 6.

2.04 Before beginning pole work, make sure each employee is aware of the individual assignment,

TABLE A

OUTLINE OF WORK PROCEDURES

PROCEDURES	POLE WORK NEAR POWER WIRES			
	750 volts or less to ground. Metallic sheath power cable, nonmetallic sheath power cable on grounded messenger — any voltage	Over 750 volts but less than 5,000 volts to ground	Over 5,000 volts but less than 15,000 volts to ground	Over 15,000 volts to ground but not over 20,000 volts to ground (Note 1)
1. Observe precautions	Part 2	Part 2	Part 2 (Note 2)	Part 2
2. Insulate pole	Not necessary	If required in 2.01	Part 4 or 5	Part 4
3. Position pole	Part 7	Part 7	Part 7	Part 2 and 7
4. Remove pole			Part 6	(Note 3)

Note 1: Pole work near power voltages exceeding 20,000 volts to ground shall be done by the power company.

Note 2: D insulating gloves are required if power voltage exceeds 8.7Kv to ground (15Kv phase to phase.

Note 3: Removal shall be done by the power company unless the pole is cut off no more than two feet above the highest telephone attachment and near the ground line, in which case no temporary insulation is required, or if temporary insulation (B pole cover or equivalent) is placed by the power company.

the general nature of the work, and the precautions to be observed.

2.05 When doing pole work, take care to keep pedestrians and children at a safe distance. Place warning signs and flags in the approved manner.

2.06 All employees handling the pole, either with their hands, pike poles, or other tools, shall wear the appropriate insulating gloves (with protectors) as outlined in Table A throughout the time that there is a possibility that the pole may contact the power conductors. All parts of the body, other than the insulating glove-protected hands, shall be kept free from contact with the pole or with tools used in handling the pole (including pole derrick and truck) during the period that the pole may contact the power conductors.

2.07 ***When a pole is being placed, moved, or removed, every effort shall be made to keep it from touching electric power conductors. Such contact may introduce hazards to personnel, cause service interruptions, or otherwise damage the electric system.***

2.08 If truck-mounted equipment is used in handling a pole:

(a) Before starting pole work, remove from the truck all tools and materials that will be needed throughout the work operation.

(b) Before starting pole work, place a pair of the appropriate insulating gloves with protectors (Table A) and an insulating blanket in the cab of the truck or in another location where they will be quickly available in the event of an emergency requiring the operator or other employee to leave the truck as covered in 2.09.

(c) No one shall be permitted to make physical contact with the truck, and anyone in the truck shall remain there while there is any possibility of a contact between the pole or the derrick and an electric power conductor, except as noted in 2.09.

(d) At no time during pole placing or removing shall the derrick head come closer than 3 feet to any power conductors other than vertical runs.

EXCEPTION: When placing or removing poles and it is impossible to obtain the 3-foot clearance from conductors of less than 750 volts to ground this distance can be reduced to 1 foot with the ***approval of your supervisor.*** Before approving, the supervisor should be sure that the conductors are 750 volts to ground or less.

Note: Attach the winch line to the pole close to the balance point so the pole is butt heavy. This allows the derrick head to be as low as possible.

Warning: The derrick head may rise when the pole is lowered into the pole hole and its weight is released.

2.09 In the event of an emergency and it is necessary to leave the truck during the time a contact may be made between the pole and an electric conductor, proceed as follows:

(a) ***Leaving Truck:*** Put on insulating gloves and throw an insulating blanket on the ground [see 2.08(b)]. Step off the truck onto the blanket. Avoid contact with grounded objects such as tree limbs, shrubbery, personnel standing on ground, etc, until free and clear of contact with the truck.

(b) ***Reentering Truck:*** While wearing appropriate insulating gloves, step onto the insulating blanket. Break all contact with grounded objects [see (a)] before touching the truck.

2.10 While the operator stands ***on the truck platform*** or step to operate the derrick or winch controls, he need not wear insulating gloves or stand on an insulating blanket but ***must have these protective devices within easy reach for emergency use*** (see 2.09). ***Avoid contact with grounded objects such as tree limbs, shrubbery, guys, metal signs, etc, while standing on the truck. Do not stand on the ground to operate winch or derrick controls.***

2.11 If a ground wire is to be installed on a pole, the ground wire may be installed on the butt of the pole, but shall not be extended more than 6 feet above the groundline until the pole-placing

operation has been completed. The extra length of wire should be coiled and fastened temporarily to the pole at this point. No other vertical wire runs shall be installed higher on the pole until the pole is in place. Before a pole is removed, all attachments, including guys and vertical conductors, must be removed. Electric company attachments shall, in all cases, be removed by the electric company.

2.12 Telephone plant shall not be attached to the pole nor shall work be done aloft on the pole until after the power circuit attachments have been made:

(a) When an intermediate pole is added between existing poles in a joint line to shorten the span or for other reasons, or

(b) When a pole is added between existing power poles for the purpose of making a joint pole crossing.

If there is any possibility of power conductors coming in contact with the pole after it has been placed, the work must be coordinated with the power company so that the power attachments are made immediately after the pole has been placed, except as provided in Part 7.

2.13 When a jointly used pole is placed, telephone attachments may be transferred to the new pole:

(a) If pole attachments other than secondary conductors remain securely attached to the old pole and cannot come in contact with the new pole, or

(b) If they have been transferred to the new pole. If the power wires are not secured to either pole, the telephone attachments shall not be made until the power attachments to the new pole have been completed.

POLE WORK AT HIGH VOLTAGE AREAS

2.14 Poles may be placed in lines carrying 20 kV to ground (34.5 kV phase to phase) provided the following additional precautions are observed.

- All personnel shall wear D insulating gloves bearing retest date of December 1976, or later.
- The pole shall be insulated with a B pole cover(s) (See Part 4).
- The B pole cover and its rope handles and any associated lines must be clean and dry.
- Pole work shall not be performed during periods of rain or snow.

3. OUTLINE OF WORK PROCEDURE

3.01 Table A outlines the work procedure to be followed in doing pole work near power wires. The table lists the order in which the work is done and refers to the parts of this section containing the detailed procedure.

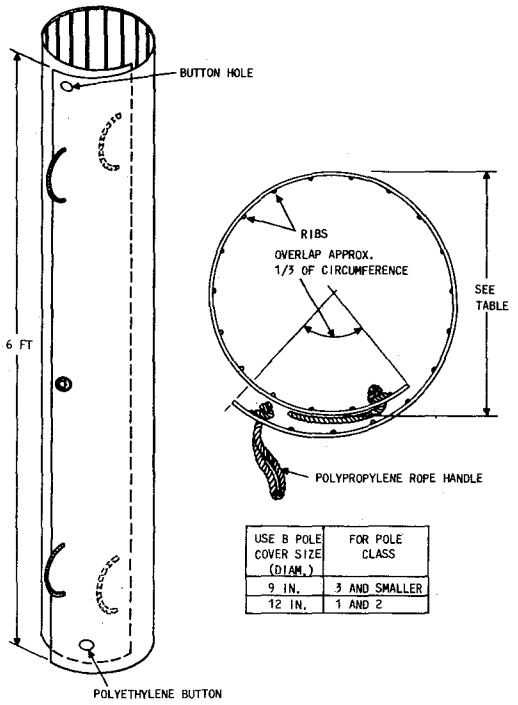
3.02 Power company spacer cable shall be treated in the same way as open power wires of the same voltage.

4. INSULATING POLE—B POLE COVER METHOD

4.01 Observe the precautions outlined in Part 2 when using the B pole cover (AT-8811).

4.02 The B pole cover (Fig. 1) insulates the pole against direct contact with uninsulated power wires.

4.03 Visually inspect the B pole cover before each use for perforating cuts, tears, rips, and holes. ***Do not use covers which are damaged.***



USE B POLE COVER SIZE (DIAM.)	FOR POLE CLASS
9 IN.	3 AND SMALLER
12 IN.	1 AND 2

Fig. 1—B Pole Cover

INSTALLING B POLE COVER

4.04 Install the B pole cover on a pole to be placed, as follows:

(1) Raise the top of the pole approximately 1 to 2 feet off the ground.

(2) Place appropriate size pole cover (Fig. 1) around the pole and position to cover below the lowest point where contact with power conductors is possible.

(3) The top of the cover should extend approximately 6 inches above the pole. If this cannot be accomplished with one pole cover, additional covers may be placed and joined together by the button and hole at the opposite ends of the cover.

(4) The cover should grip the pole securely and overlap itself by approximately 1/3 of the circumference to avoid alignment of the rope handle holes. If the cover does not grip the pole tightly, use hand pressure to force a tighter fit and tie with rayon twine as described for the rubber blanket (Part 5).

(5) If the cover(s) are to be removed by telephone company personnel, a suitable length of houseline should be attached to each of the rope handles to aid in pulling the cover(s) down the pole.

(6) Set the pole in the standard manner. (See Fig. 2.)

Caution: The B pole cover(s) shall not be left in contact with primary power conductors.

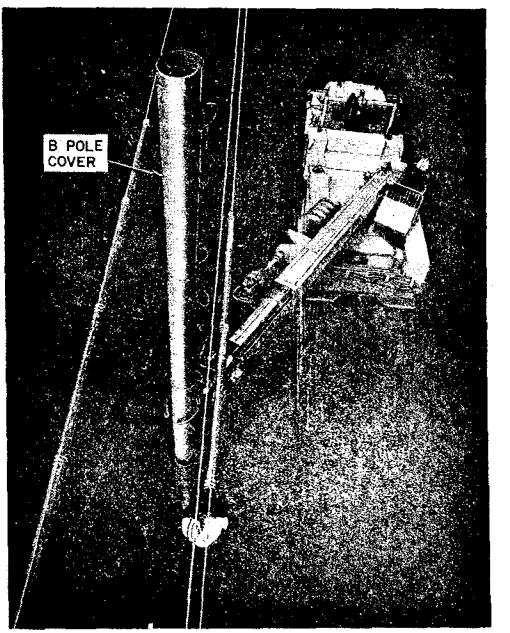


Fig. 2—Pole Insulated With B Pole Cover

REMOVING B POLE COVERS

4.05 After the pole has been positioned and tamped in place, the pole cover(s) may be removed.

4.06 Pull down on the lines attached to the rope handles to bring the cover within reach. If the cover becomes caught above the telephone space, it should be left in place and arrangements made with the power company for removal.

Note: If more than one cover was used, pull all the lines simultaneously.

5. INSULATING POLE—BLANKET METHOD

5.01 Raise the top of the pole 3 to 4 feet off the ground and place insulating blankets as described in the following paragraphs.

5.02 Wrap an insulating blanket at the top end of the pole and secure it with No. 12 twine, using ties as shown in Fig. 3. Only one turn of the twine should be passed through the noose in the rope. (Since No. 12 twine is not usually carried on a construction truck, it is suggested that a 1/2-pound spool of this twine be carried in the blanket canister used for storing insulating blankets.)

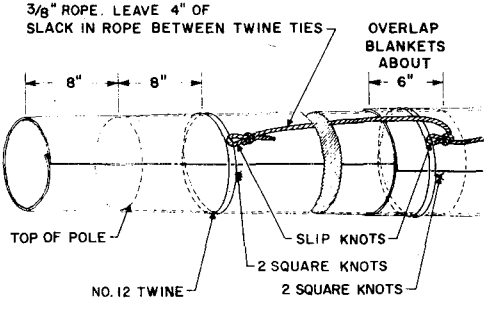


Fig. 3—Placing Insulating Blankets

5.03 Place additional blankets so each succeeding blanket overlaps the one above by 6 inches and secure with a tie as shown. Place a sufficient number of blankets so the pole will be covered below the lowest point where contact with higher voltage power conductors during the work operations is possible. (Usually from four to six blankets are needed.)

5.04 Secure the bottom of the lowest blanket with a twine tie similar to that shown in Fig. 3.

5.05 Make a loop in the rope about 2 feet below the lowest twine tie so this loop may be reached from the ground with a wire-raising tool after the pole has been placed. Excess rope may be taped to the pole.

5.06 After the pole has been positioned and tamping has been completed, from the ground observe whether high voltage wires are touching the blankets. ***Blankets must not be left in contact with primary conductors.*** If there is any subsequent possibility of contact, leave the blankets in place and arrange to have the blankets removed by the power company. If there is no contact or likelihood of contact, engage the hook of the wire-raising tool in the overhand loop of the trip rope and break the ties, one at a time, allowing the blankets to fall to the ground. If the blankets catch above the telephone space, leave them for the power company to remove.

6. INSULATING WHEN REMOVING POLE

6.01 When a pole is to be removed from a location where it may come in contact with power conductors, arrangements should be made with the power company to remove the pole or to place B pole cover(s) in the required area.

7. POSITIONING POLE

7.01 Raise the pole slowly, taking care to avoid unnecessary contacts with the power wires. Position the pole so as to obtain a separation of at least a pole diameter between the pole and the nearest primary conductor; get greater separation if practical. Rake the pole if necessary to accomplish this. The pole may be left in contact with secondary conductors or service drops if this is absolutely necessary to obtain the required separation from the primary conductors. ***Do not leave the pole in contact with primary conductors.***

7.02 Backfill and firmly tamp the earth without disturbing the location of the pole.

7.03 Unless power company employees are on hand to transfer their facilities the same day or power facilities consist of either grounded metallic sheath or nonmetallic sheath cable lashed to or

spiraled around an effectively grounded messenger, follow the procedures of 7.04 through 7.10, as appropriate.

7.04 If neither of the provisions of 7.03 is met, it will be necessary to connect the new pole to the old pole before placing any other attachments. The connection shall be placed as high on the pole as possible, but at least 4 feet below the lowest power facilities other than street light facilities or vertical runs. The purpose of the connection is to prevent or at least minimize the movement of one pole with respect to the other. Any of the following methods may be used.

7.05 Where the new pole is being set in line but a few feet away from the old pole and aerial cable is present, use the suspension strand to tie the poles together as shown in Fig. 4. The cable strand may be left attached to the old pole by its suspension clamp and through bolt if it is mutually agreed that the power company may remove these attachments when they remove the pole or if the pole will be removed later by the telephone company. Lashing with rope will not be necessary if poles are left bolted to the strand. Where

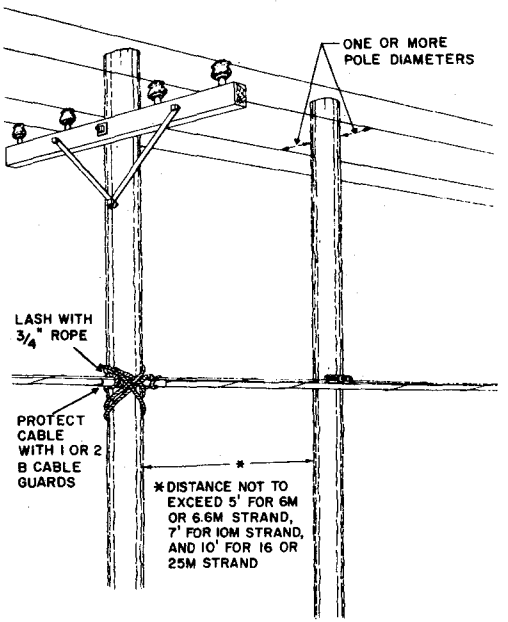


Fig. 4—Tying Poles Together with Suspension Strand

listances will exceed those shown in Fig. 4, notify your supervisor.

7.06 Eliminate any unguyed corner pull on the new pole where possible by fastening a tree guard or other piece of timber to shim the cable away from the old pole. If this does not eliminate the corner pull, place a temporary strand guy, or ground brace the new pole with a large rock if available. Poles left without guying or bracing may be forced against power wires by the strand if the electric wires are not attached promptly, and a pole fire may result.

7.07 Where the new pole is to be located laterally within 7 or 8 feet of the old pole, a crosstie consisting of an old crossarm, or a piece of 2- by 4-inch lumber may be used. Attach as shown in Fig. 5.

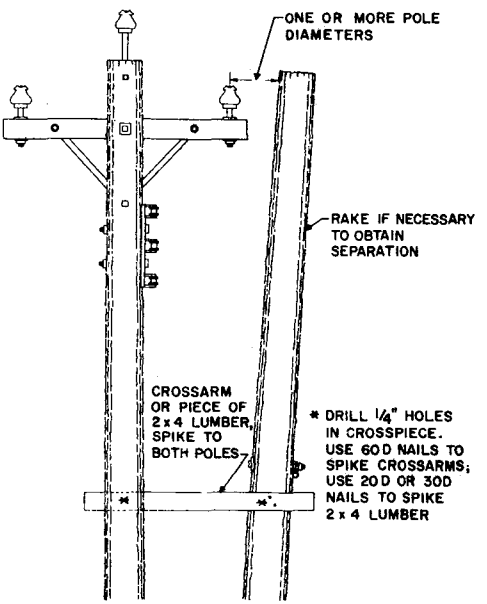


Fig. 5—Tying Together with Crossarm

7.08 Where the new pole is within 2 or 3 feet of the old pole, cut a block or length of wood from an old guard arm, crossarm, or 2- by 4-inch lumber, and wedge and lash the poles as shown in Fig. 6.

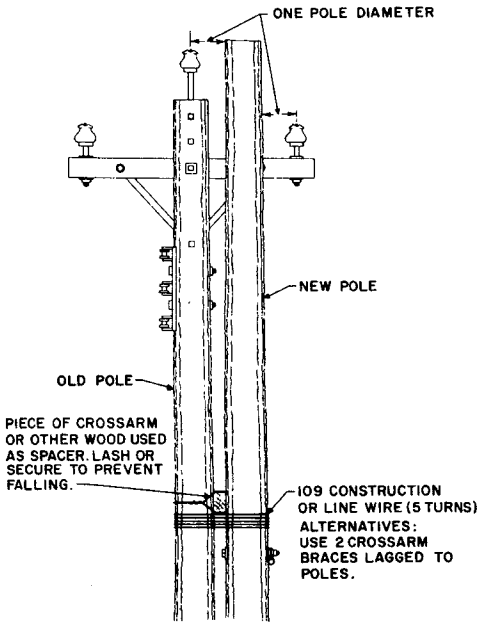


Fig. 6—Lashing Poles Together

7.09 If the standard vertical brace (a 2- by 2-1/2 inch angle iron) is available, it should be used in lieu of the lashing and wedging method just described. The vertical brace is installed with a single 4-1/2 by 1/2-inch lag screw at each end as shown in Fig. 7.

7.10 If the new pole will be within 3 feet of the nearest electric primary wire and a temporary connection between the new and the old poles cannot be placed, notify your supervisor.

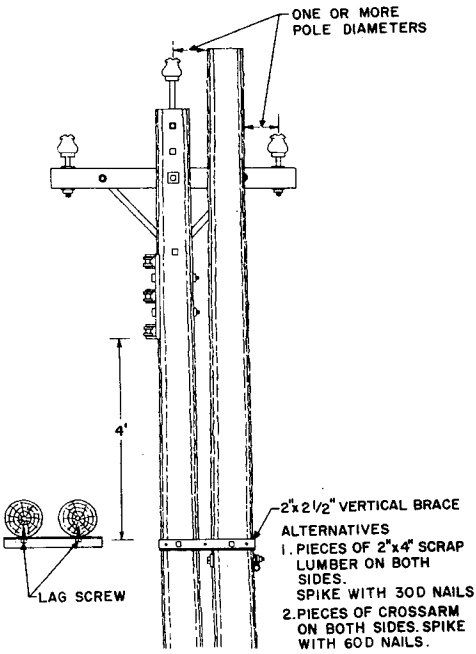


Fig. 7—Tying Poles Together with Angle Iron

8. CARE OF EQUIPMENT

8.01 Insulating gloves that have been used shall be cleaned, if necessary, and stored as outlined in Section 081-710-200 relating to the care of insulating gloves.

8.02 Insulating blankets that have been used shall be cleaned, if necessary, and stored as outlined in Section 081-710-100.

8.03 The B pole cover should be wiped clean with a mild soap and water solution. Store the covers in an upright position away from excessive heat such as radiators, steam pipes, etc.