STATION PROTECTION AND WIRING
MOBILE HOMES

1. GENERAL

1.01 In many areas of the Continental Telephone System, the electrical hookup to mobile homes is not state regulated. This practice provides information on installation, grounding and bonding procedures for mobile home telephone service.

1.02 For the purpose of this practice, the term **mobile home** includes camp cars, trailer coaches, and travel trailers.

1.03 This practice replaces in its entirety CTSP 475-300-413, Attachments, Trailer Courts and Auto Trailers. All copies of CTSP 475-300-413 should be removed from the file and destroyed.

1.04 Before installation is started, all necessary arrangements should be made with the customer and mobile home park manager or owner. The arrangements may include such facilities as private poles, opening and closing trenches for buried underground wire, and permission to attach wire to mobile homes for proper installation. Where such arrangements have not been made, the installer should refer the Contact Memo to the supervisor.

1.05 Where attachments are made on jointly used poles or posts, standard separations between power and telephone wires shall be provided. All clearance requirements over driveways and/or streets shall be met.

CAUTION: Defects in electrical equipment or wiring in a mobile home could energize the unit and become an electrical hazard to persons in or near it. If it is found that a hazardous condition exists, the installer shall inform the supervisor of the condition and cease all work operations until the condition has been corrected. The occupant or mobile home park manager should also be informed of the hazardous condition.

1.06 Ground wire warning tags should be placed at (or as close as possible to) **all** ground and bond wire terminations including the protector.

2. TEST EQUIPMENT AND MATERIAL

2.01 This paragraph lists the test equipment and material covered in this practice. For convenience, CTS catalog numbers are listed when available.

a. Test equipment

(1) B. Voltage Tester, CTS #74-94-310-3.

b. Material

(1) Ground Wire Warning Tag, CTS #51-77-016-4.

(2) Rubber Gloves; see Gloves, Rubber, Lineman's.

(3) Beam Clamp, CTS #68-11-058-8.

(4) Round Head Machine Screw, 1/4-20 x 3/8 inch.

(5) Station Ground Clamp, CTS #68-11-014-6.

(6) L Ground Clamp, CTS #60-17-041-7.

(7) Ground Rod Clamp, GC166S0, CTS #68-11-061-8.

(8) 201 Grounding Lug and Crimping Collar, CTS #68-11-018-9.

(9) Flat Washer, Zinc or Cadmium Plated, 3/4 inch.

(10) Mobile Home Connecting Block, CTS #70-10-040-3.

3. TESTING FOR HAZARDOUS VOLTAGE

3.01 Before making bodily contact with any metal portion of the mobile home, test for the presence of hazardous voltage on the mobile home body or chassis.

3.02 Use the B Voltage Tester and follow the instructions in CTSP 490-050-106 for verifying the presence of voltage on ground leads on joint use poles. If it is necessary to cut through paint to ensure good contact between the mobile home and the B Voltage Tester, select an inconspicuous location to avoid marring the appearance of the mobile home. **Wear rubber gloves and avoid bodily contact with the mobile home during this operation.**

CAUTION: If the B Voltage Tester indicates that

any part of the mobile home is energized, do not proceed until the supervisor is notified and the condition corrected.

4. INSTALLING SERVICE DROPS

4.01 The distribution plant serving a mobile home park may be any of the following types, depending on the number of lines required:

a. Drop wire, multiple or single.

b. Distribution wire.

c. Aerial cable.

d. Buried cable.

4.02 Service to individual mobile homes may be either an aerial drop wire or a buried wire.

a. For **aerial installations,** the pole should be 4 inches by 4 inches, and extend a minimum of 10 feet above the ground. See Figure 1. The base of the pole (or post) should be set into the ground a minimum of 3 feet, as shown in Figure 1. Do not attach drop wire spans which cross over public thoroughfares to a customer's pole. For instructions on clearances, refer to the CTS 490-060 series of practices.

NOTE: Under no circumstances should two posts, 2 inches by 4 inches, be nailed or wired together in lieu of one post, 4 inches by 4 inches.

b. For **buried installations,** the pole should be 4 inches by 4 inches and extend a minimum of 2 feet above the ground. See Figure 2. The base of the pole (or post) should be set into the ground a minimum of 18 inches, as shown in Figure 2.

NOTE: Under no circumstances should two posts, 2 inches by 4 inches, be nailed or wired together in lieu of one pole, 4 inches by 4 inches.

5. GROUNDING MOBILE HOMES

5.01 See CTSP 475-500-410 for grounding and bonding procedures and preferred ground choice. After installing the protector, connect a No. 14 ground wire from the protector to the grounding medium. See Figures 1 through 4. **It is particularly important to have the power and telephone grounds bonded together. If separate ground rods are used for any reason, bond them together.**

5.02 Place a ground wire warning tag at (or close as possible to) **all** ground wire terminations including the protector.

6. BONDING MOBILE HOMES

CAUTION: The mobile home chassis must be bonded directly to either the power ground or the telephone ground, both of which are bonded together. No additional external bond is necessary where this condition is fulfilled. After making the test for hazardous voltage as instructed in paragraph 3., verify that electrical continuity exists from the mobile home chassis to ground. This bond shall not be removed once installed. If it becomes necessary to temporarily open the bond, a temporary bond should be provided across the location before it is opened.

6.01 Use a suitable size beam clamp to bond the mobile home chassis to the station ground. Attach the clamp to a flange on the structural member of the mobile home chassis (see Figures 1 through 4). Attach the No. 10 ground wire to the beam clamp with a 1/4-20 x 3/8 inch round head machine screw (zinc or cadmium plated) and a suitable size zinc or cadmium plated flat washer. The ground wire should be installed in a manner to provide the best possible mechanical protection.

6.02 Bonding should be completed before any installation work is started on the mobile home.

6.03 Place a ground wire warning tag at (or as close as possible to) **all** bond wire terminations.

7. INSTALLING STATION PROTECTORS AND WIRING

7.01 Mobile home installations vary, depending on the type of facilities provided by the customer.

7.02 The protector should be located on a private post, as near as possible to the mobile home. **Protectors and attachments shall not be mounted on mobile home siding.** See CTSP 475-500-402 for selection of protectors to be used.

7.03 The inside wiring and cabling of mobile homes should be done in the same manner as for permanent structures. In some cases, short lengths of conduit for telephone wiring are provided between the bottom of the mobile home and outlet locations. Where such facilities are not provided, entrance holes should be drilled in the floor, the wire pulled through, taped to protect from the weather, and terminated on a connecting block on the inside wall.

7.04 In all cases, use buried service wire from the service post to the mobile home. Secure the buried service wire, remove the outer jacket; then proceed to wire the mobile home with the buried service wire (outer jacket and shield removed). When the mobile

home is located more than 12 inches from the service post, the buried service wire (along with any other wires) must be placed at least 18 inches in the ground. Be careful not to expose the buried service wire to buried power in the ground. See Figures 5 and 6.

7.05 The metallic shield should be grounded at both ends to keep all conducting material at ground potential. See CTSP 475-500-405, paragraph 6. Attach buried service wire to mobile home chassis using a beam clamp as shown in Figure 7.

7.06 It is not necessary to run all buried service wires directly to the protector. The following method can be used for terminating wires under the mobile home to eliminate the need for running more than one buried service drop to the mobile home from the protector:

a. Attach a mobile home connecting block to the mobile home steel understructure at a convenient location. See Figure 8.

CAUTION: Be sure the securing bolt of the clamp and the undernut of the ground post are tight; together they serve as the bond wire termination when the chassis must be bonded to ground.

b. Use the strain relief clamp to hold all wires terminating on the connecting block.

c. Terminate on the mobile home connecting block:

(1) The No. 10 bond wire on the ground post, if a bond of the chassis to ground is necessary.

(2) The shield of the buried service drop using the 201 grounding lug and crimping collar on the ground post. See Figures 8 and 9 and CTSP 475-500-405, paragraph 6.

(3) The buried service wire and all other station wires on the appropriate wire terminals. See Figures 8 and 9.

(4) Snap cover into place.

7.07 The method used for running inside wire on the underside of the mobile home depends on its construction. In some cases, the wire can be attached to exposed wood. Clamps, rings or staples can be used in such cases. If no wood is found, beam clamps, utility clips and rings, or adhesive inside wire clips should be used to support the wire. **Under no circumstances should any attachment be made to the composition material on the underside of the mobile home.**

NOTE: In areas of high humidity where corrosion is a problem, it may not be desirable to use a mobile home connecting block. In these cases, all of the wires (buried service wires) should terminate at the protector. Be sure to ground both ends of the shield of all buried service wires.

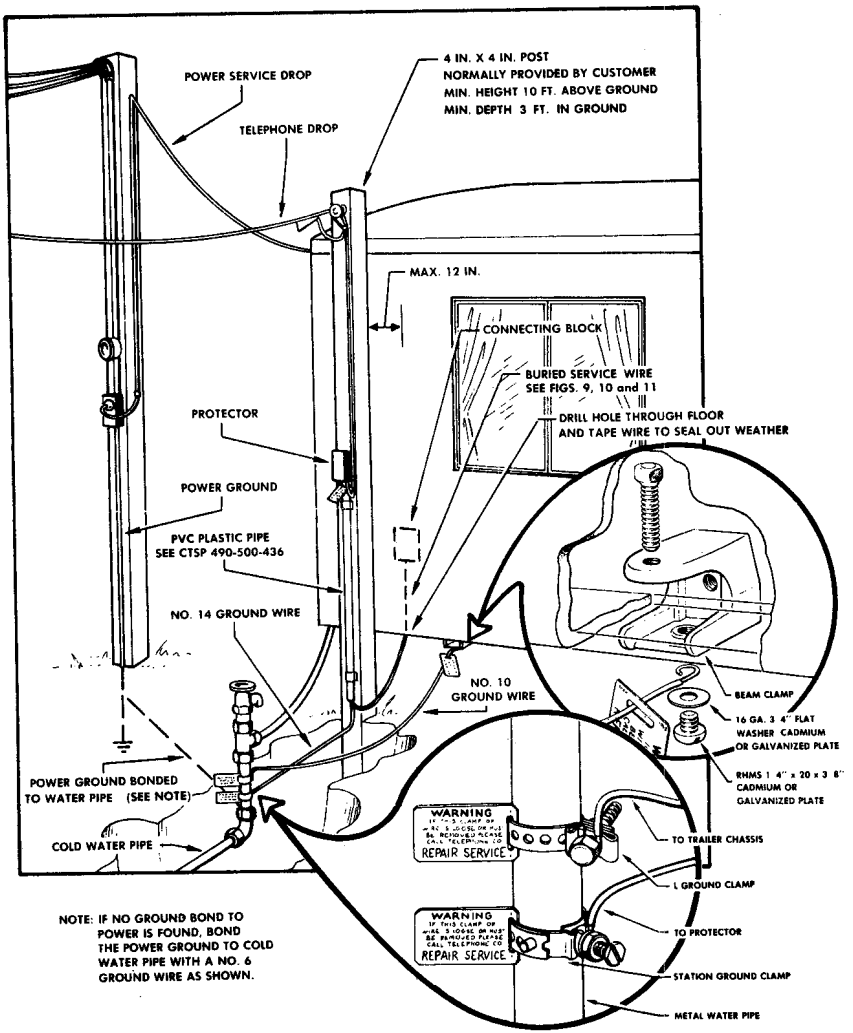


FIGURE 1. Typical Installation—Aerial Distribution Water Pipe Ground

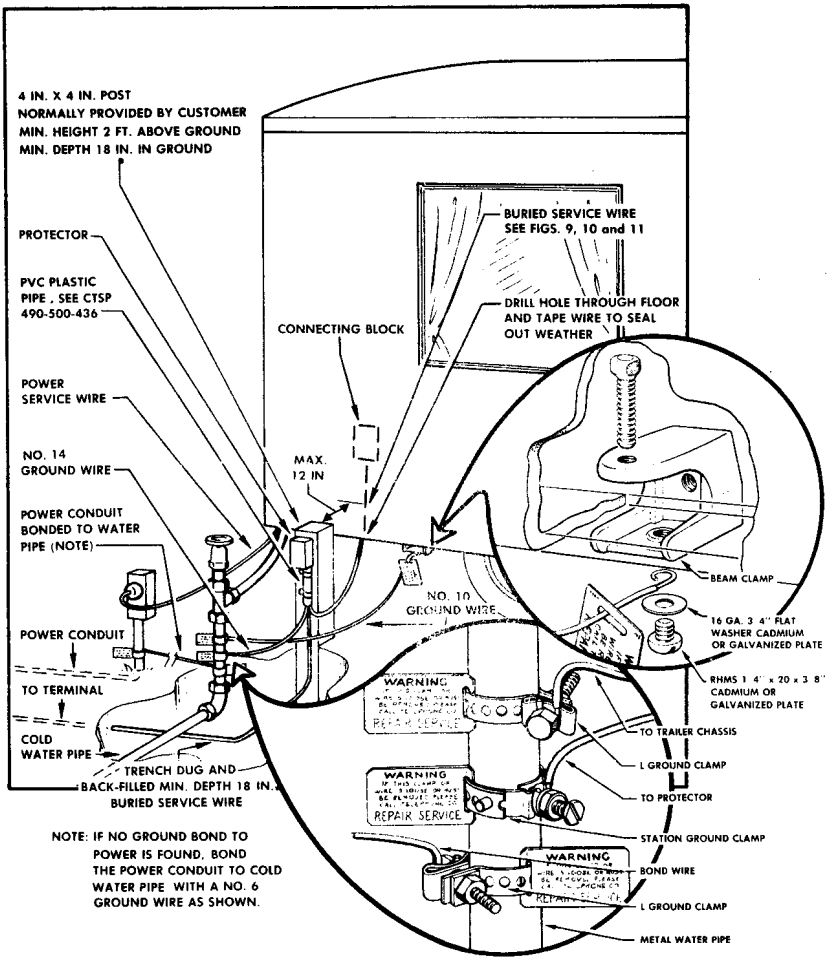


FIGURE 2. Typical Installation – Buried Distribution Water Pipe Ground

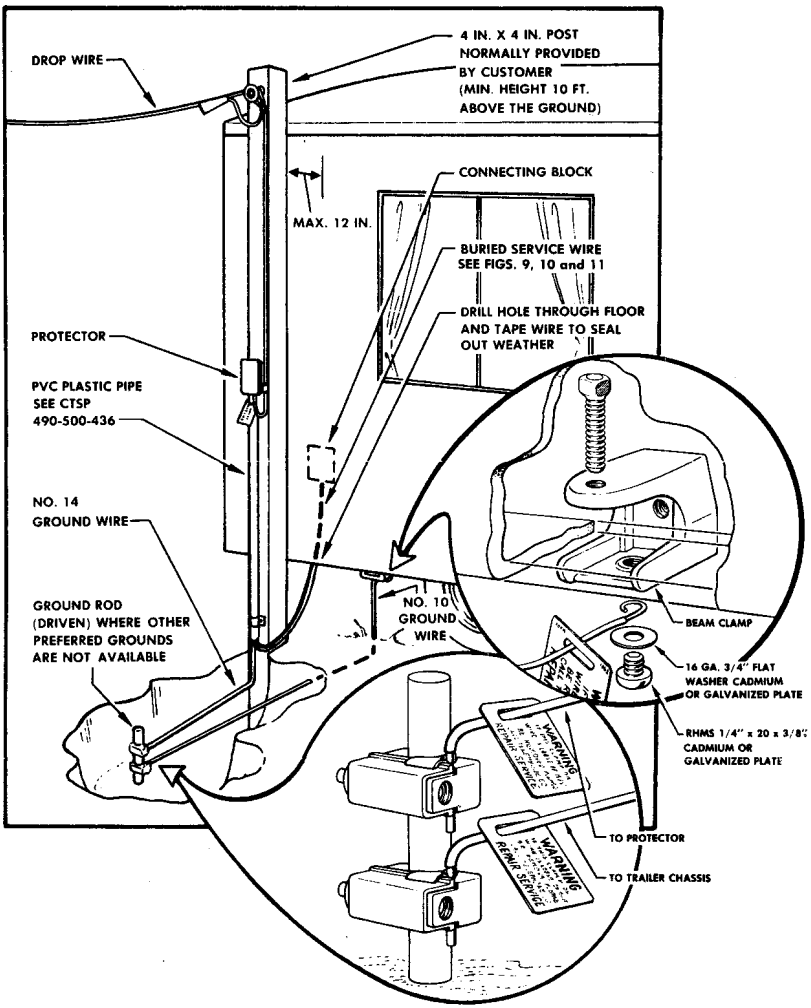


FIGURE 3. Typical Installation—Aerial Distribution, Ground Rod Ground

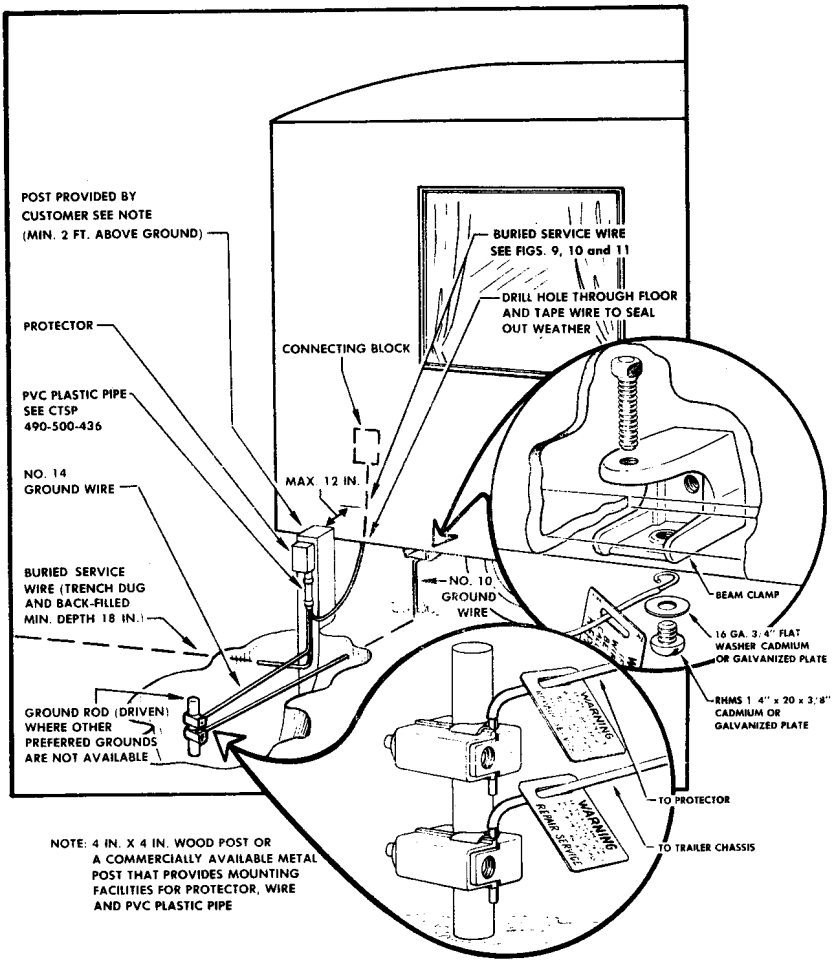
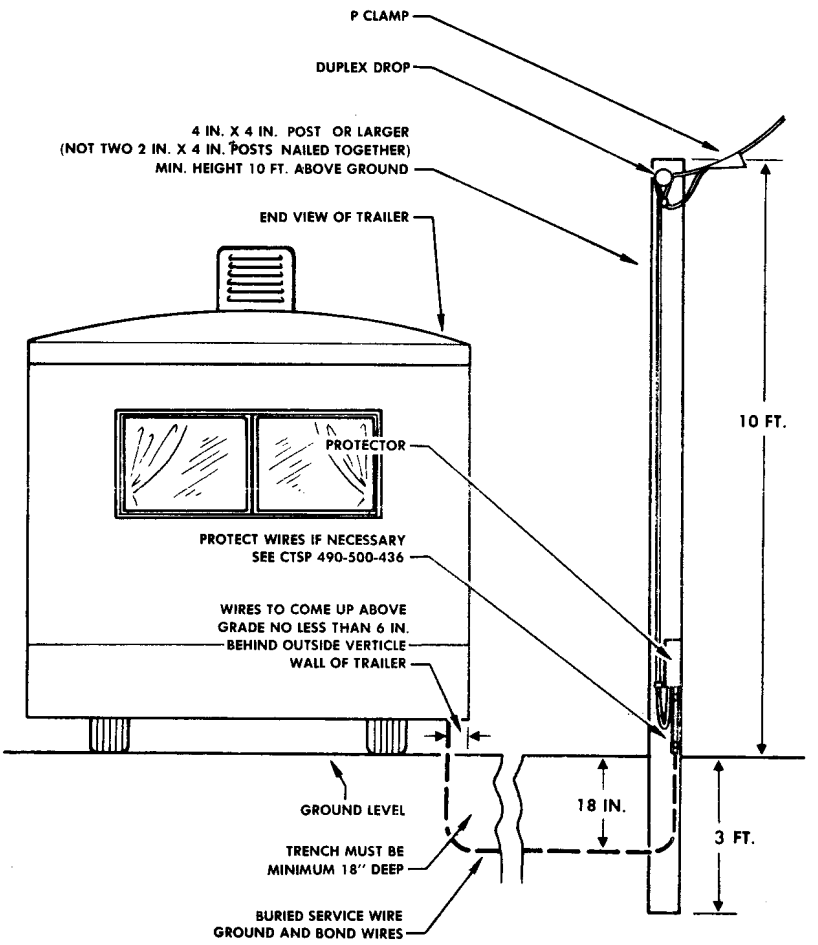


FIGURE 4 Typical Installation—Buried Distribution, Ground Rod Ground



NOTE: POST MAY BE PLACED IN ANY CONVENIENT LOCATION
AROUND TRAILER PROVIDING ABOVE CONDITIONS ARE MET

FIGURE 5. Mobile Home Installation When Service Post Is Not Within 12 Inches - Aerial

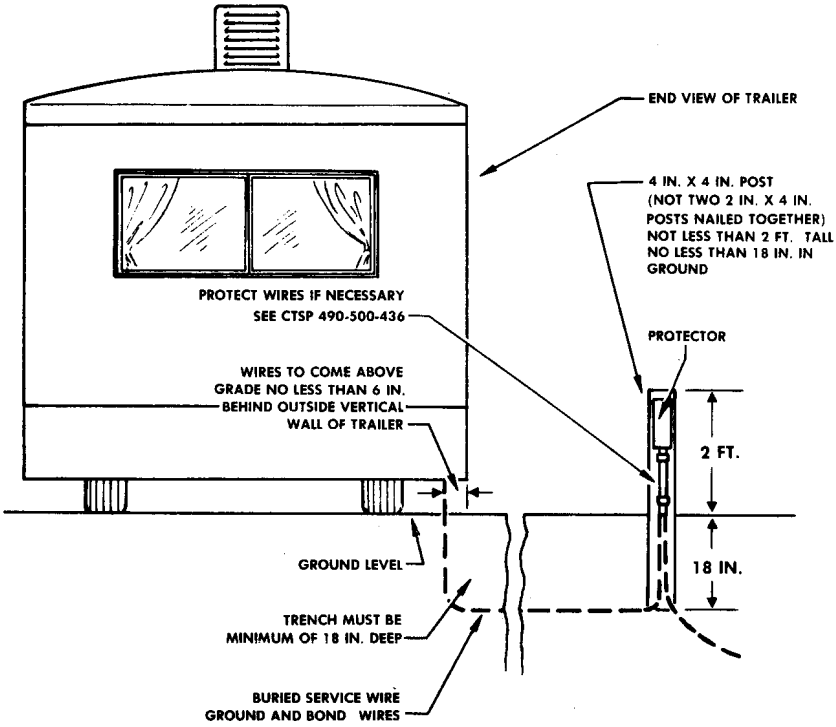


FIGURE 6. Mobile Home Installation When Service Post Is Not Within 12 Inches - Buried

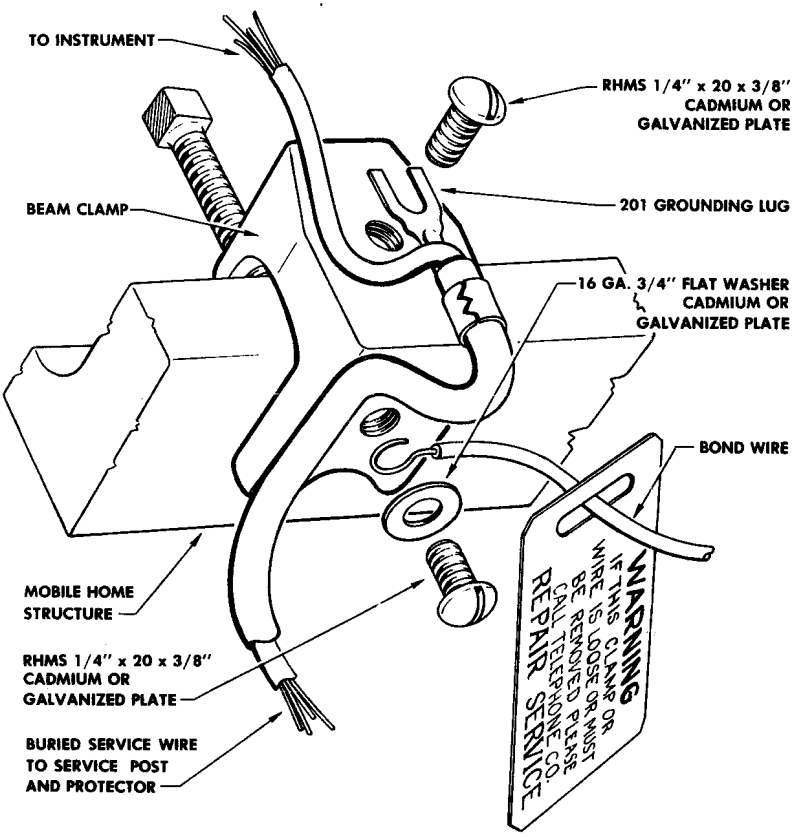


FIGURE 7. Grounding Shield of Buried Service Wire Using Beam Clamp

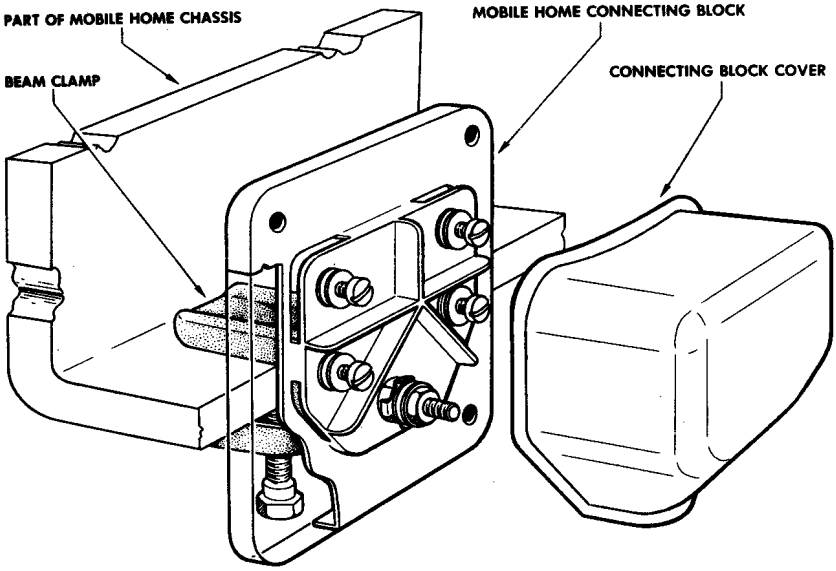


FIGURE 8. Mobile Home Connecting Block

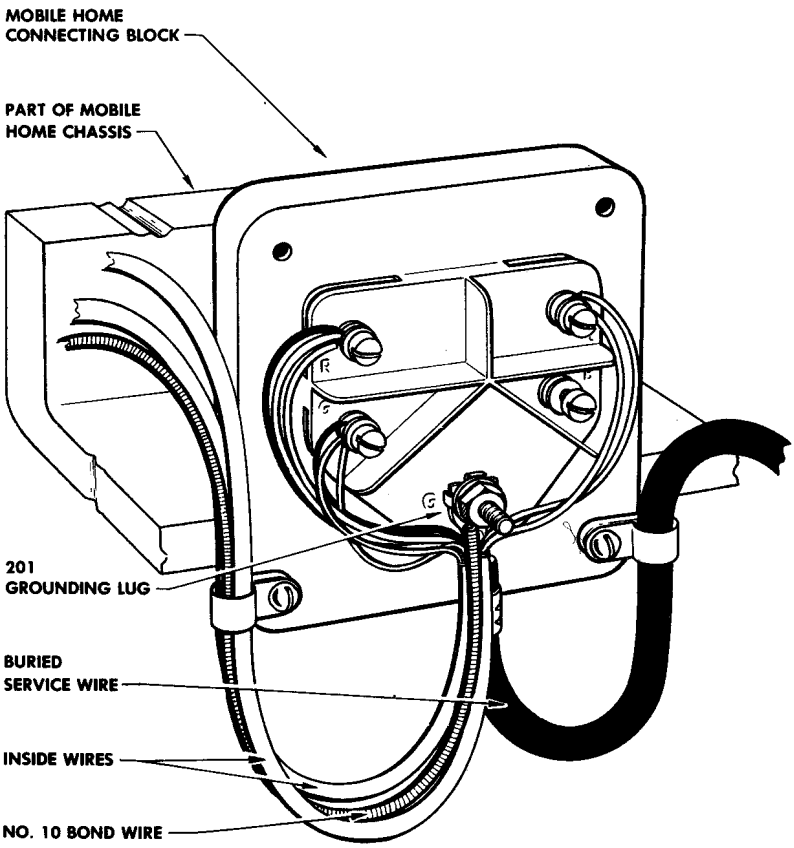


FIGURE 9. Using Mobile Home Connecting Block Under Mobile Home As A Junction Point For Inside Wires And Bond Wire.