MOBILE HOME WIRING

PERMANENT TYPE

1. GENERAL

1.01 This section contains wiring information for use in providing telephone service to mobile homes. A mobile home is a full-time residential structure, seldom moved, usually set on supports such as jacks or concrete blocks and with decorative skirting. Sizes range from 8 feet or more wide (most often 12 feet) by 35 feet or more long. Mobile homes are sometimes used as business or field offices and may be equipped with key telephone systems. (Refer to Section 461-220-101 for telephone wiring information for recreational vehicles, which are smaller than mobile homes and designed to be frequently moved.)

1.02 Information in this section was formerly contained in Section 460-100-209 which is here by canceled.

1.03 Refer to Section 460-100-201 for additional information on station protection and grounding.

1.04 Prior to proceeding with installation, a preliminary survery of the area should be made. Makeshift pole lines, insufficient clearances, etc, should definitely be avoided. Necessary arrangements should be made by the outside plant engineer. If arrangements have not been made, or conditions are found to be unsatisfactory, check with the supervisor before proceeding with installation.

1.05 Where attachments are made on joint-use poles and posts, the standard separations between power and telephone wires must be provided as for permanent residences.

THINK

Defects in electrical equipment or wiring in a mobile home may energize the unit and present an electrical hazard to persons in or near it. If a hazardous condition is found to exist, the craftsman must proceed no further until the supervisor has been informed and the condition corrected. The craftsman should inform the occupant or trailer park manager, if available, of any hazardous condition found.

2. TESTING MOBILE HOME

Caution: Before making body contact with any metal portion of the mobile home, verify the presence or absence of hazardous voltage on the mobile home body and chassis, using the B voltage tester. Refer to Section 460-300-109 for use of B voltage tester.

2.01 Use the best available ground (water pipe, ground rod, etc) when testing.

2.02 To verify the presence or absence of hazardous voltage on a mobile home body or chassis, use the B Voltage Tester in the same manner as when verifying the presence of voltage on ground leads on joint-use poles. Select test points where paint will not act as an insulator (screw heads, chassis, unpainted areas). Avoid cutting through paint; select an inconspicuous location to avoid marring the appearance of the mobile home. ***Use rubber gloves and avoid bodily contact with the mobile home during this operation.***

THINK

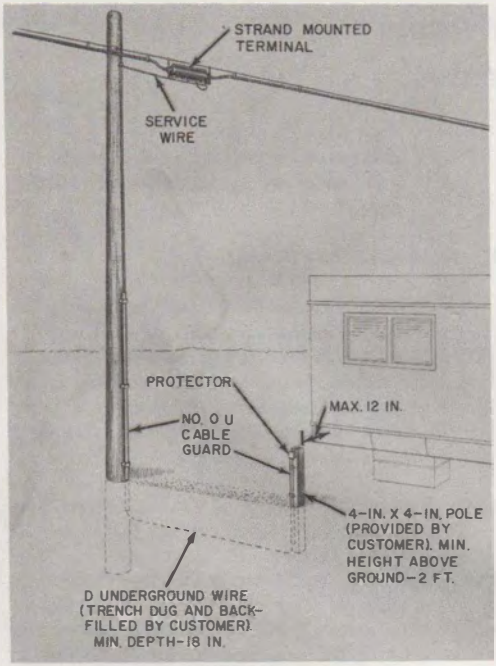
If the B Voltage Tester indicates that any part of the mobile home is energized, do not proceed until the supervisor is notified and the condition corrected.

3. INSTALLING SERVICE WIRE

3.01 Service to a mobile home may be by a buried service wire or an aerial drop wire. Typical service connections to trailers are shown in Fig. 1 and 2.

4. INSTALLING STATION PROTECTOR

4.01 The protector should be located as near as posible to the mobile home on a pole or post located within 12-inches of the trailer (Fig.



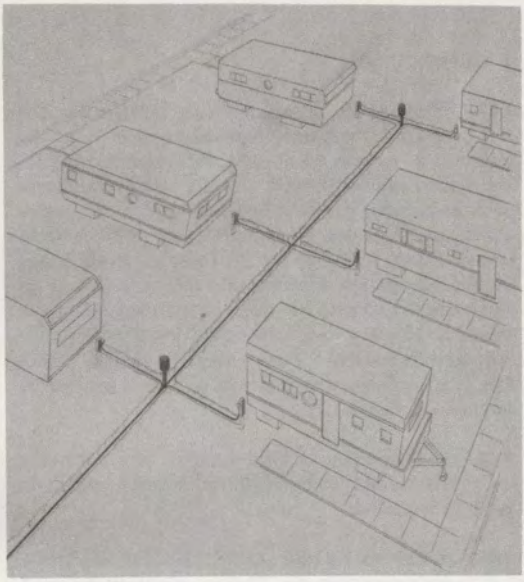


Fig. 1—Typical Buried Service Distribution

3, 4, 5, and 6). Do not attach to, or mount anything on, the outside surface of a mobile home as it may be easily damaged. It is necessary to locate the post as close as possible to the mobile home to protect personnel from injury on the post and to prevent damage to the D station wire. When the protector mounting post cannot be located 12-inches or closer to the mobile home, bury a B service wire run from the protector and extend it to the 42A connecting block inside the mobile home.

4.02 The telephone protector may also be mounted on the following:

(a) Power cabinet pedestal support (Fig. 7A).

(b) Metal power service conduit (Fig. 7B).

(c) Customer-provided post (Fig. 7C) or metal Telephone Company provided post.

(d) Metallic water pipe (at least 10 feet in moist soil).

GROUNDING

4.03 Refer to Table A for selection and installation of protector grounds. For a mobile home the best ground is usually the power ground system, since an acceptable water pipe ground usually does not exist. Connect the protector to a water pipe if it is serving as the power ground, to the power ground rod, power ground wire, or power service conduit. If the power is not multiground neutral (MGN), and is grounded to a ground rod, install a telephone ground rod and bond the two separate rods as described in 4.04. A typical installation of this type is shown in Fig. 3 and 4. If the power ground is not present or available, ground the protector to a driven ground rod or a metallic water pipe of which at least 10 feet is buried as shown in Fig. 5 and 6. Typical installations using the power ground are shown in Fig. 7. If power

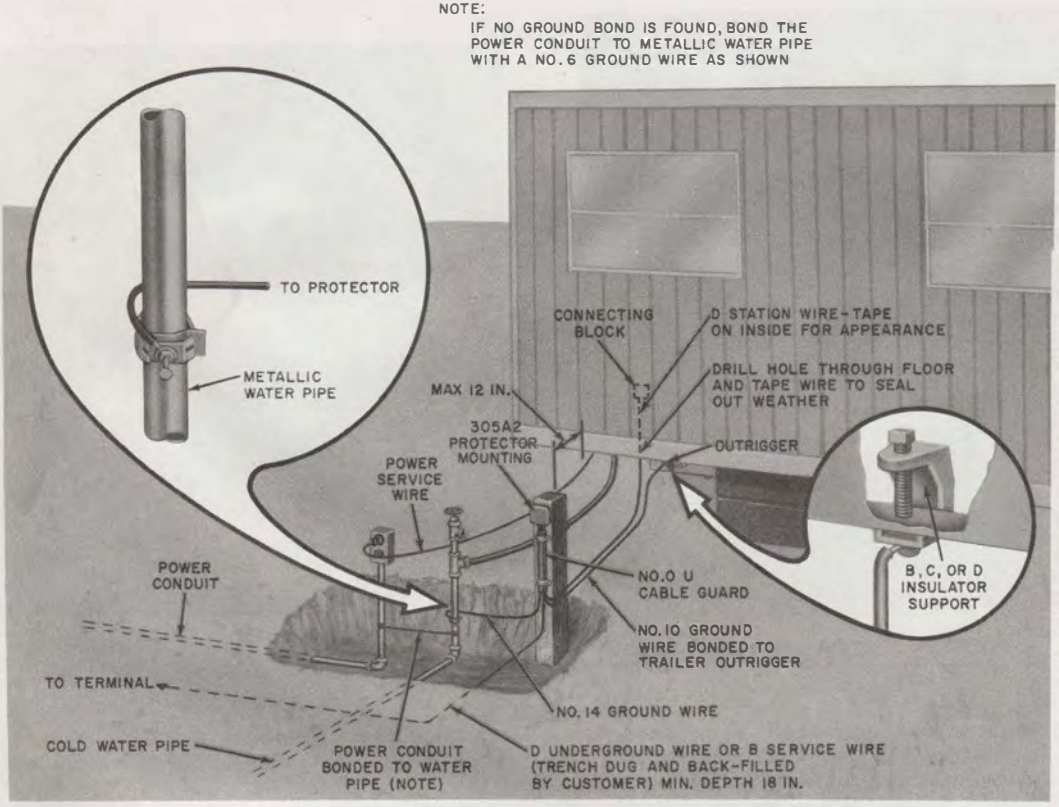


Fig. 3—Buried Service Protector Grounded To Water Pipe

4.07 Check near the front door of the mobile home, for a seal that shows the mobile home is wired to meet requirements of American National Standards Institute A119.1 and the National Electric Code C1. If this seal is present and the mobile home is permanently wired using conduit (not cord and plug connected) it will not be necessary to bond the mobile home chassis to ground as it is already bonded through the conduit or power ground conductor. In this case it will only be necessary to bond the power ground rod and telephone ground rod together. When power to the mobile home is cord and plug connected, always bond the chassis to protector ground terminal or to station ground electrode.

4.08 Bonding should be completed before any installation work is started when the power is non-permanent (plug and cord). Use a suitable size B, C, or D insulator support to bond the mobile home chassis to the protector ground terminal post using No. 10 bare copper wire. Attach the insulator support to an outrigger on the structural member of the mobile home chassis (Fig. 3 through 6).

WIRING AND CABLING

4.09 Construction of a typical mobile home is shown in Fig. 8. It is similar to a frame building construction except it is mounted on a metal chassis. Telephone prewiring is not necessary,

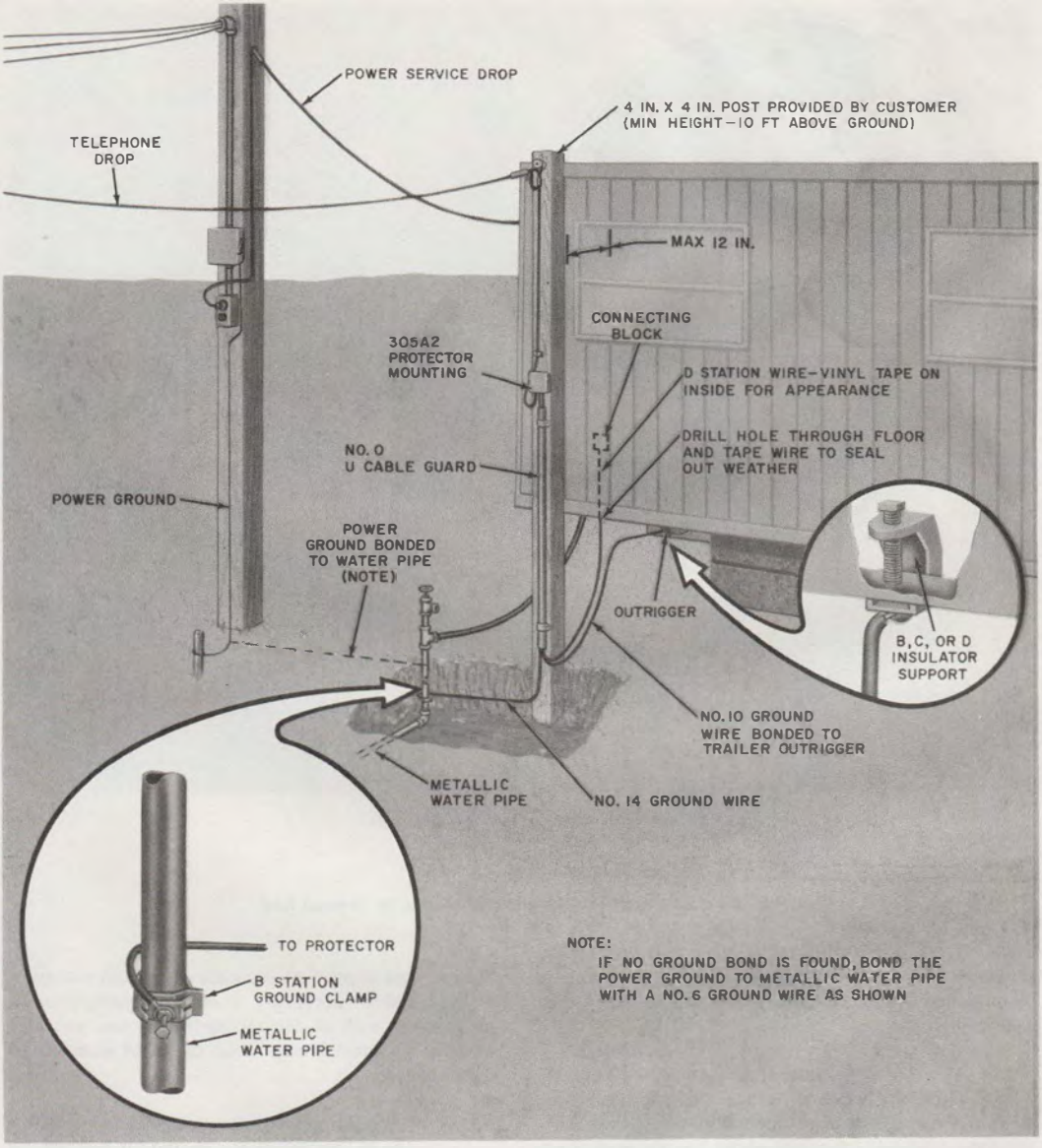
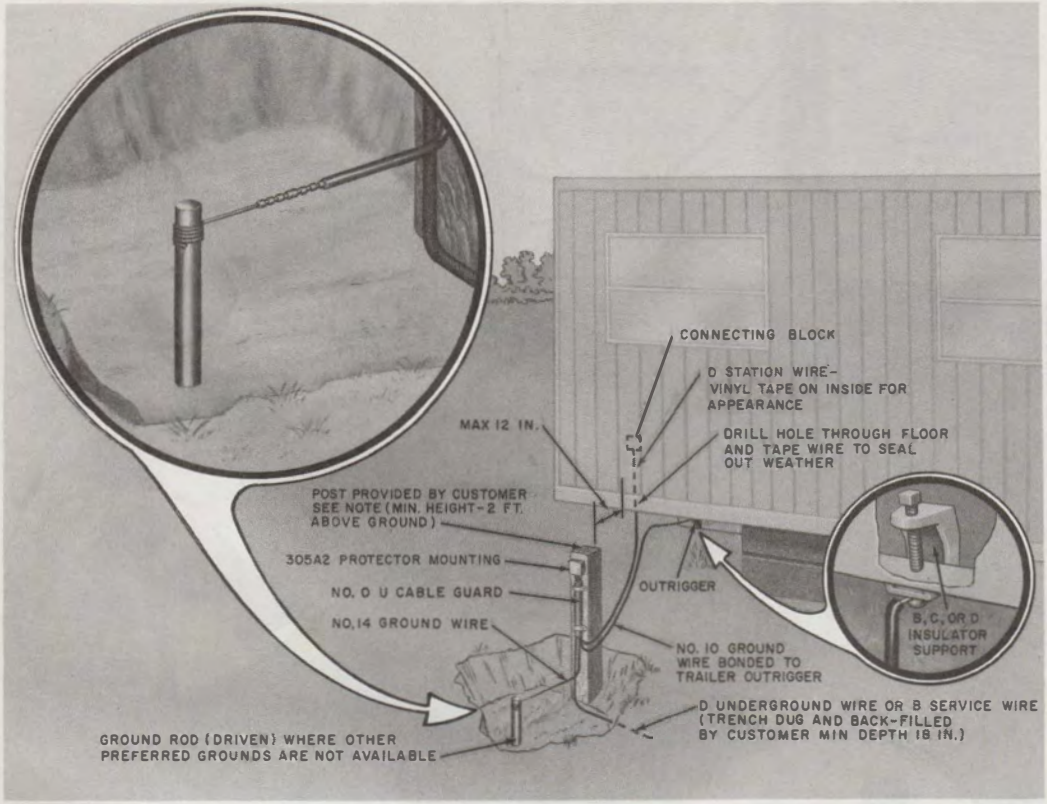


Fig. 4—Aerial Service Protector Grounded to Water Pipe



NOTE:
4 IN. X 4 IN. WOOD POST OR A COMMERCIALLY AVAILABLE METAL POST THAT PROVIDES MOUNTING FACILITIES FOR PROTECTOR, WIRE AND U CABLE GUARD.

Fig. 5—Buried Service Protector Grounded to Ground Rod

and the same wiring methods used for single family dwellings, built on site, can be used for mobile homes.

4.10 The heating, plumbing, sewer, and water pipes run down the center. Electrical wiring is in the outside walls of the mobile home (see Fig. 8), approximately 16-inches above the finished floor level or in the ceiling, leaving the floor area along the outside walls free for drilling for station wire entry. Drill straight down through plywood floor avoiding outriggers. Use care when drilling the soft insulating board covering the bottom of the mobile home as it tears easily. Seal holes around station wire to prevent entrance of air and moisture. If it should be necessary to install a telephone on an interior wall of the mobile home, use extreme caution in penetrating floor to avoid damage to other equipment.

4.11 Wiring runs should be attached to the outer edge of the outrigger so that it will not be necessary to crawl under the mobile home. Fasten B insulator supports equipped with K bridle rings (or equivalent) to outer edge of outriggers. Attach wire to mobile home by running through bridle ring, folding back and taping, or clamping to insulator support with a B ground wire clamp or

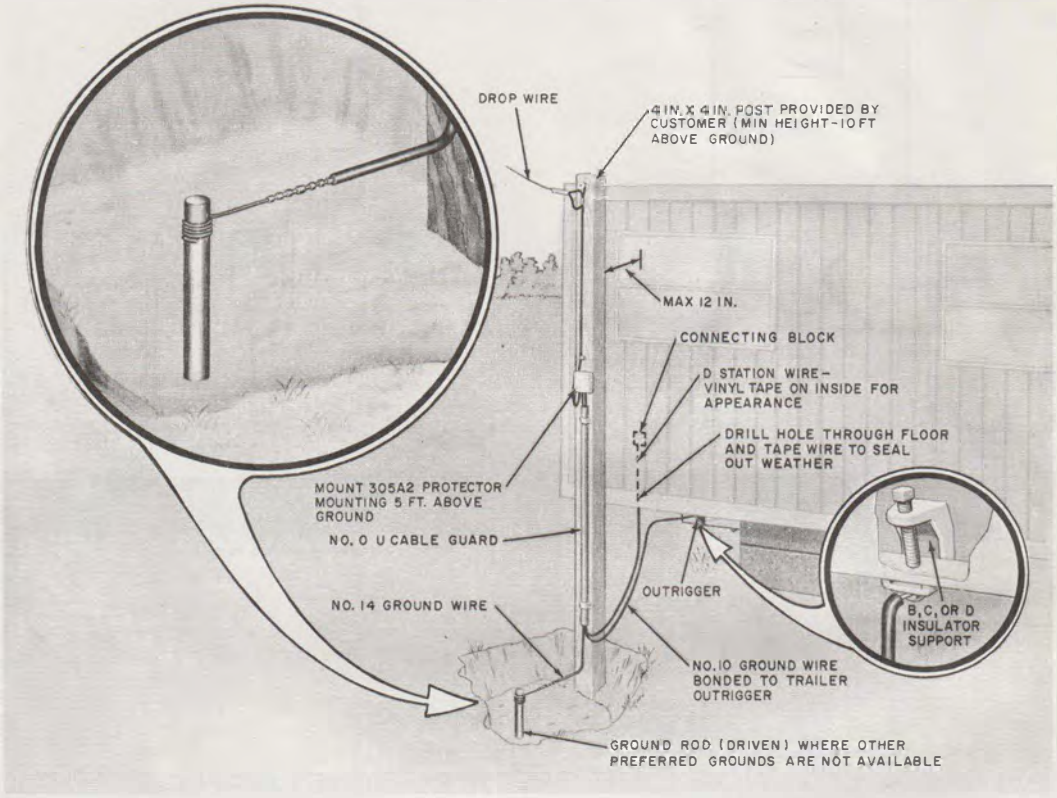


Fig. 6—Aerial Service Protector Grounded to Ground Rod

E drop wire clamp. At the protector use the E drop wire clamp to attach B service wire, or use the B ground clamp to attach D station wire and the bonding wire, if required.

Caution: If mobile home skirting or decorator block has to be removed, it should be taken off and replaced by the customer.

4.12 When a telephone installation is made, the connecting block should be mounted on the baseboard. Use the connecting block as a bridging point for any extensions.

Caution: Do not mount connecting blocks under the mobile home.

Always mount the block on a stud, if possible, as the thin materials used for trailer walls may not hold. Wall sets should also be mounted on a stud. Do not attempt to fish D station wire through the mobile home walls as side rails and insulation will cause interference.

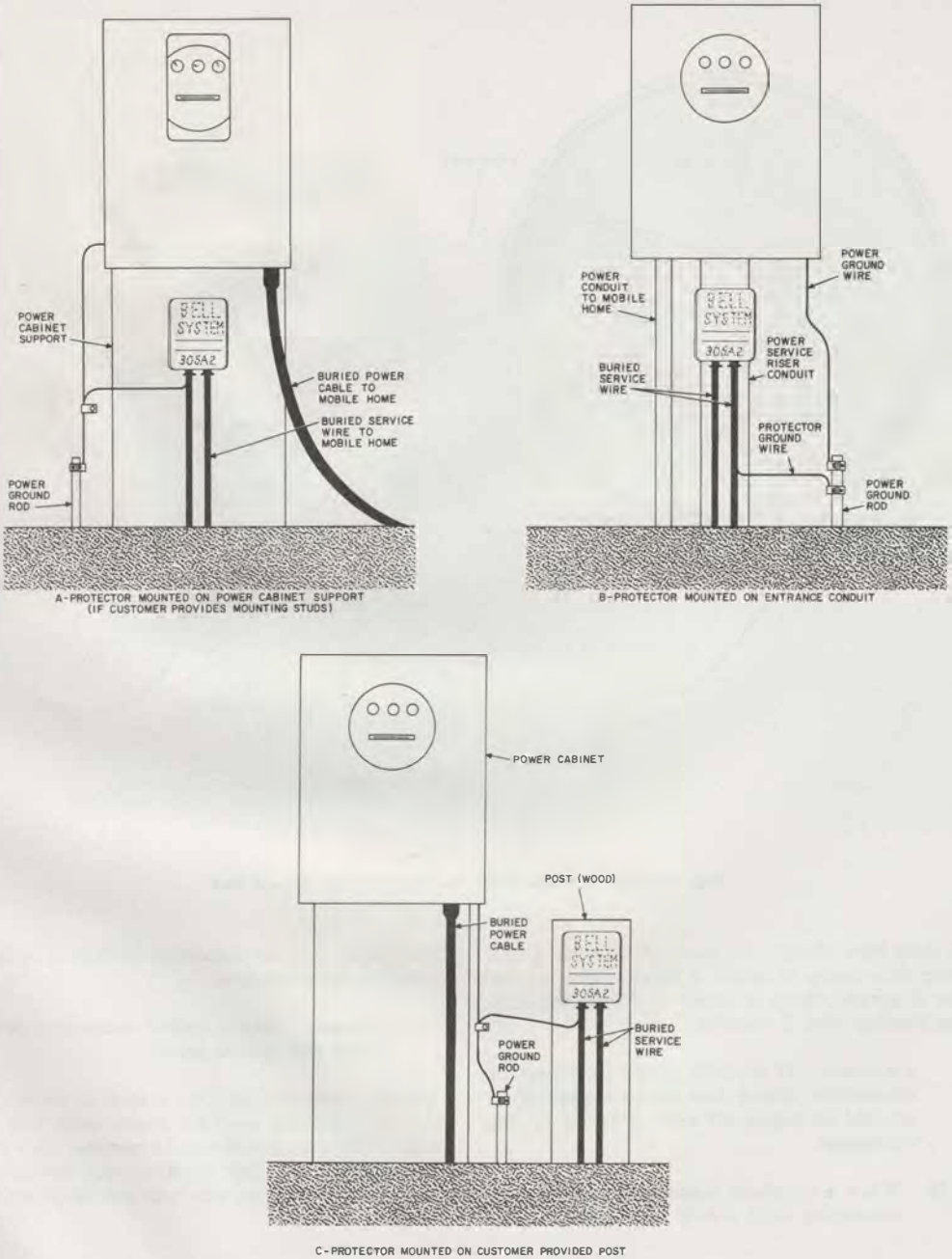


Fig. 7—Typical Protector Mounting Installations

TABLE A

PROTECTOR GROUNDING

POWER CONDITIONS		
A1 — MGN System on acceptable metallic water pipe A2 — MGN System on ground rod (concrete encased electrode, metal structure) B1 — Non-MGN System on acceptable metallic water pipe B2 Non-MGN System on ground rod (concrete encased electrode, metal structure) C — Power not grounded at premises D — No power		
WATER PIPE	**POWER CONDITION**	**WHAT TO DO FOR PROPER PROTECTOR GROUNDING**
Acceptable metallic water pipe (at least 10 feet in moist soil)	A1 or B1	Ground protector to metallic water pipe or to power service conduit or ground wire.
	A2 or B2	Ground protector to metallic water pipe and bond power to water pipe.
	C or D	Ground protector to metallic water pipe (if C, refer to 4.06)
Unacceptable metallic water pipe or no metallic water pipe or not possible to connect to metallic water pipe	A2	Ground protector to MGN power ground rod, power service conduit, or ground wire.
	B2	Ground protector to telephone ground rod and bond with No. 6 station ground wire to power ground rod, power service conduit, or ground wire.
	C or D	Ground protector to best available ground (if C, refer to 4.06)

Note: Verify existing power and telephone bonding and grounding. If they meet these requirements no further action is required. The mobile home chassis must always be bonded to the protector ground terminal or to the protector ground electrode, unless both of the following conditions exist:

1. The certification seal is on the mobile home, and
2. The power is connected by permanent wiring means (not cord & plug).

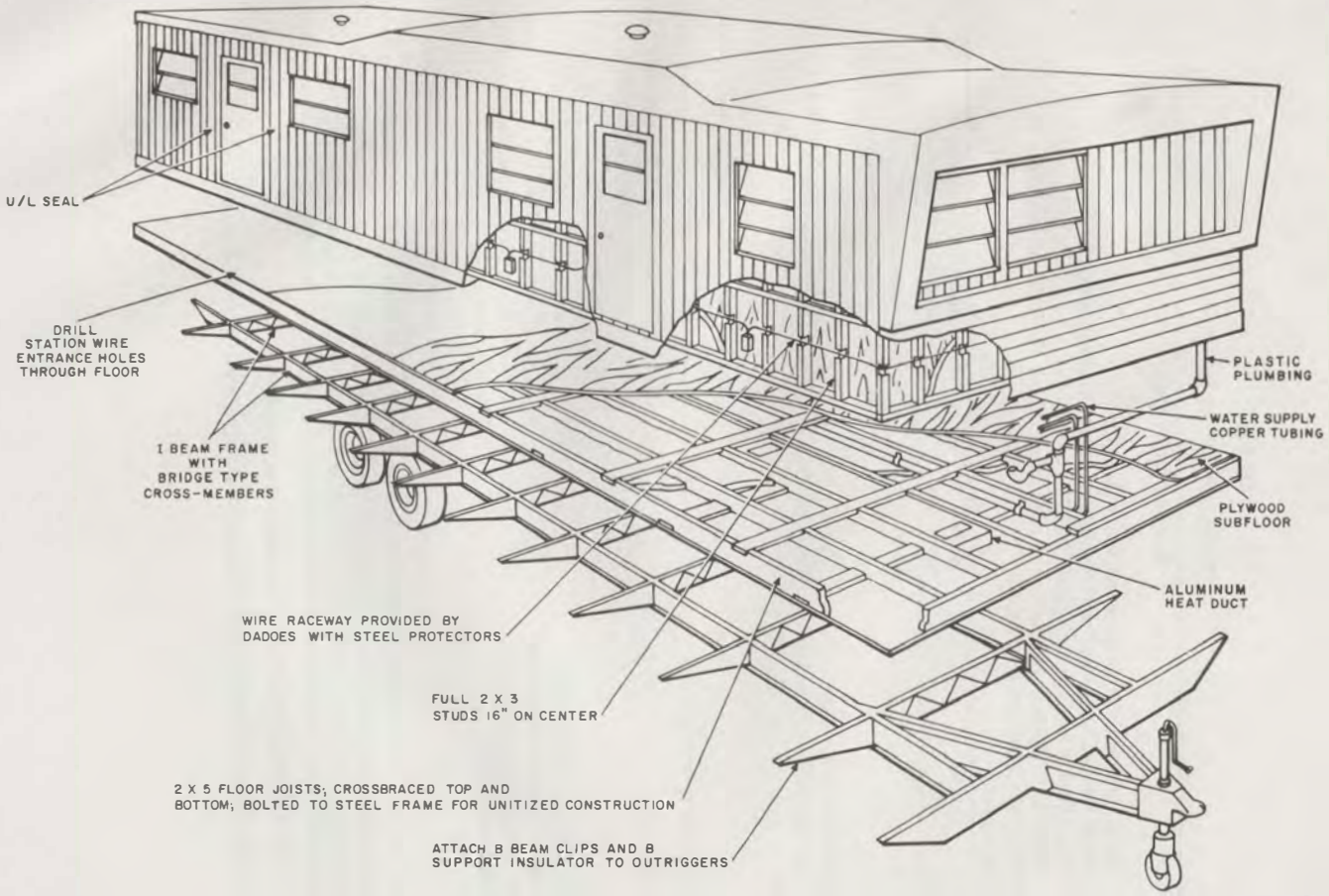


Fig. 8—Typical Mobile Home Construction