

PREWIRING
HIGH RISE APARTMENT BUILDINGS
INSTALLATION

1.00 GENERAL

1.01 This section describes the various types of telephone wiring and outlet installations for high rise apartment buildings. It covers the selection and placing of cable, types of hardware, and the application and installation of each item.

2.00 SELECTING AND PLACING CABLE

2.01 Type D inside wiring cable is used for this type of building. The size, either 6 or 12 pair, will be determined by the potential services that may be provided.

2.02 Select the outlet locations from the building plans. These should include both combined (electrical and telephone) and individual (telephone only, see 2.06). Determine the amount of cable needed for each apartment. Cable will be run continuously from the primary entrance to each outlet location and return to the entrance point. See Fig. 1A and 1B of section entitled Prewiring, High Rise Apartment Buildings, Identification.

2.03 The cable is usually ordered for the complete building. It is usually delivered to the job location on reels. It is then cut into lengths sufficient for each apartment. These lengths are then made up into hand coils and stored on the job until ready for use.

2.04 The cable is run after the electrical conduit has been installed and before the second layer of reinforcing rods has been placed. The cable is laid over the first layer of reinforcing rods. If only one layer of reinforcing material is used it will be necessary to secure the cable at frequent intervals to prevent it from floating to the surface during the pouring of concrete. One end of the cable is secured at the primary apartment entrance and played out over the general route and back to the entrance point. Starting at the out-

let nearest to the entrance, the cable is secured as described in 2.06 and 2.07. Continue from outlet to outlet, in sequence, back to the entrance location. Secure cable ends, 36 inches long where entrance is in closet, or 10 inches where entrance is a wall outlet box (see Fig. 1.)

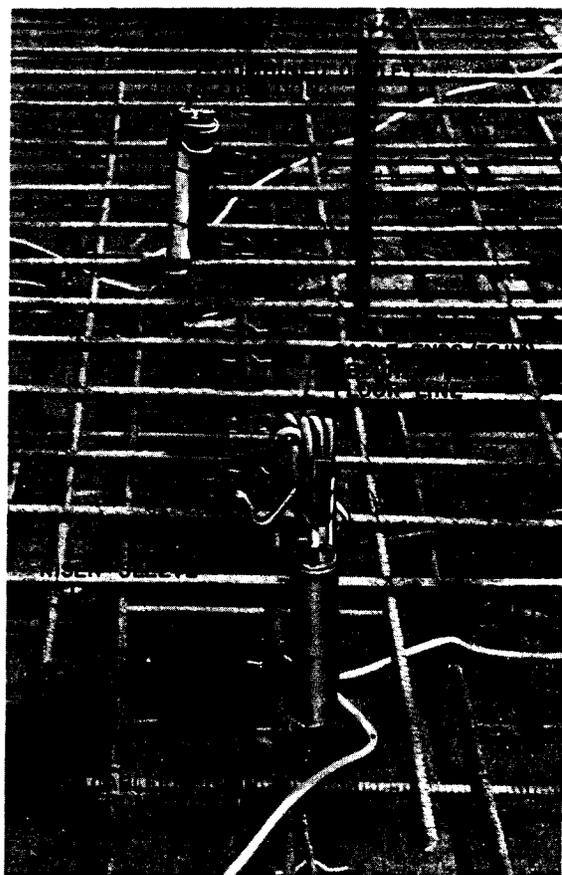


Fig. 1 - Typical Layout with Main Riser in Apartment

2.05 When securing the cable at each outlet, allow sufficient slack for making proper terminations (8 to 12 inches). At combined outlets, lay the cable against the conduit directly under the proposed telephone outlet. Place a guard over the cable and position it

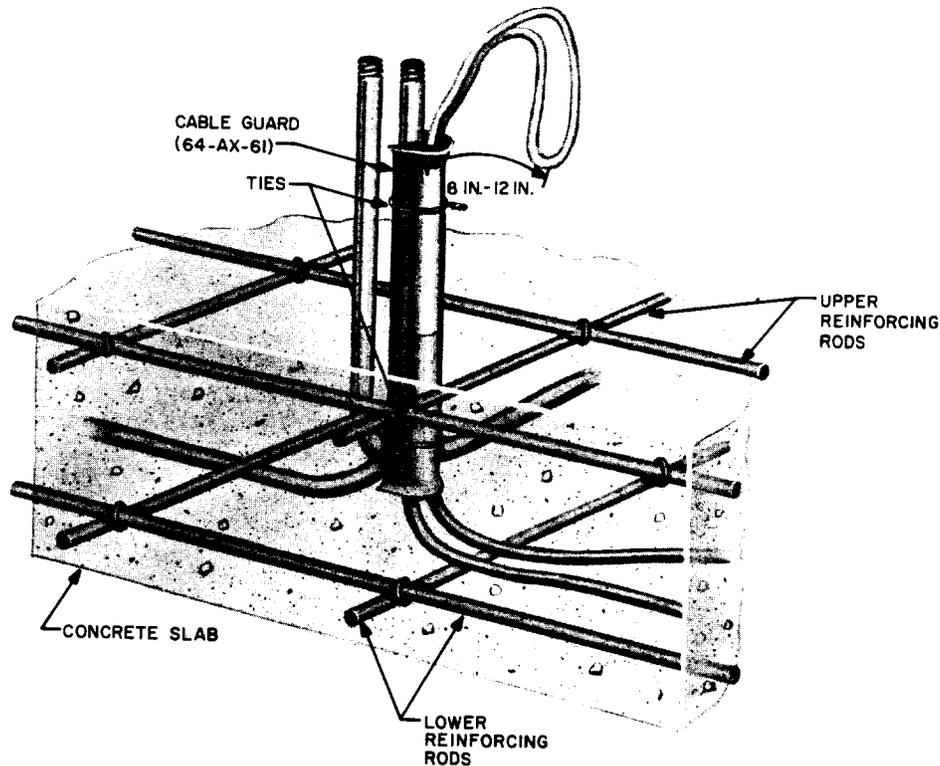


Fig. 2 - Proper Position of Cable Guard

so that it will protect the cable at the proposed floor line. Fasten the guard to the conduit in two places, one near the top and one near the bottom. Generally a single wrap of lashing wire is used and is sufficient for securing the guard at these two points. Tie or tape the slack cable so that it will not be damaged during further construction. (See Fig. 2.)

2.06 Individual (telephone only) outlets require a support to secure the cable at proper height during wall construction. For other than baseboard outlets, sufficient cable and support material must be considered during the original job layout. Typical installations of this type would be a kitchen counter outlet or a wall outlet. Extend the support to the desired height for the outlet and attach an outlet box (backbox or 4-inch by 4-inch No. 1900). Fasten the cable to the support at 8- to 10-inch intervals with tape or lashing wire. Attach a cable guard as covered in 2.05 and secure the slack cable so that it will not be damaged during further construction. (See Fig. 3.)

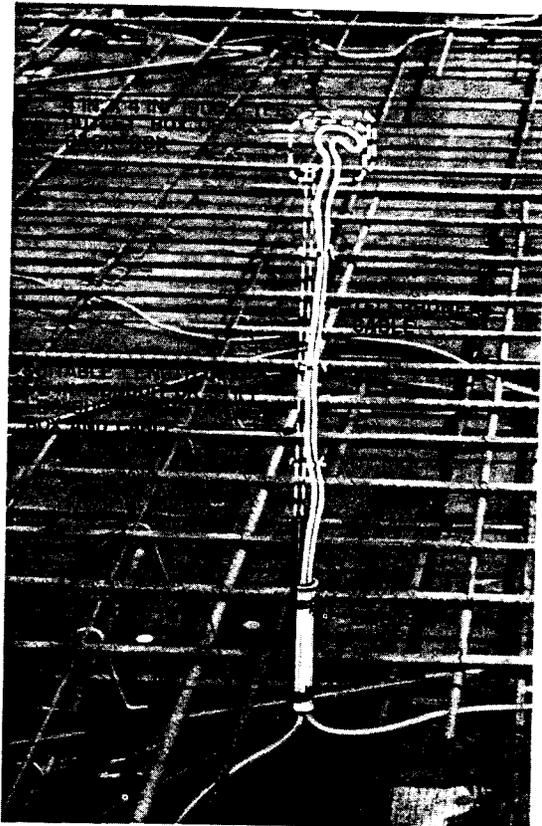


Fig. 3 - Telephone Outlet, Wall Type

2.07 Inspect each apartment after the cable has been placed and before floor is poured. Check for the following conditions:

- All planned locations are wired.
- Cable is properly secured at each outlet.
- No loose or dangling ends are left unprotected.
- The cable is not pinched or caught on the reinforcing rods.
- All guards are properly positioned so that they protect the cable at and above the floor line.

3.00 COMBINED OUTLETS

3.01 The type of hardware selected is dependent upon the type of wall con-

struction, building codes, and facilities to be provided.

3.02 Single 4-inch electrical box: This type of installation is used for hollow wall construction when no outlet box is required for telephone facilities. A plaster ring, without extension, of the proper thickness is mounted to the electrical outlet box. (See Fig. 4.)

3.03 Two 4-inch outlet boxes: This type of installation is used for both hollow and poured concrete wall construction. In both cases two 4-inch No. 1900 outlet boxes are fastened together and the electrical box is secured to the conduit. For hollow wall construction, a plaster ring with extension, of the proper thickness, is attached to the assembly. The cable is inserted into the telephone box through a bottom knock-out and secured with a standard romex connector. (See Fig. 5.)

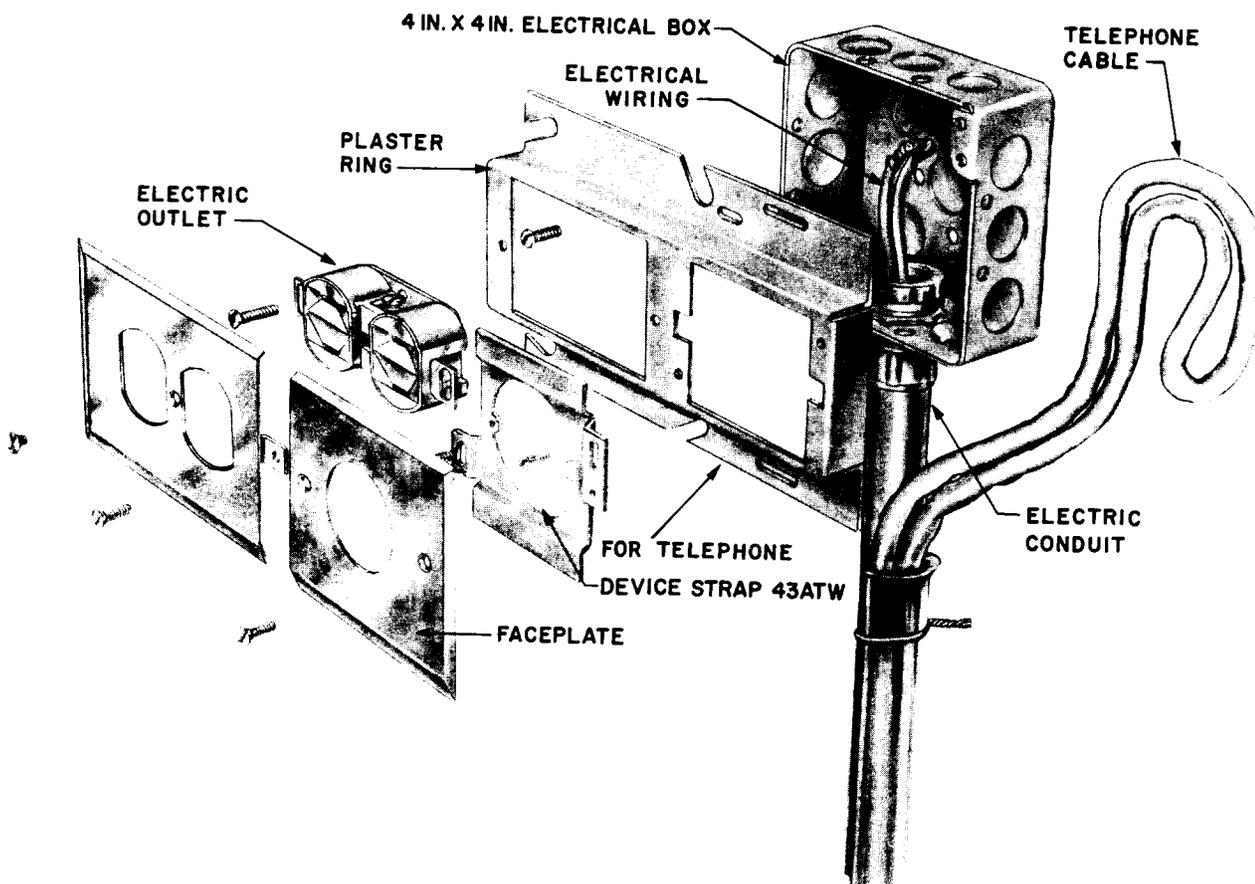


Fig. 4 - Combined Outlet, Single 4-inch Electrical Outlet Box

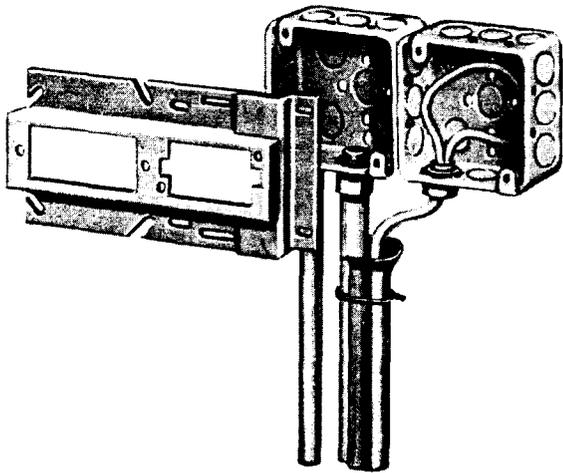
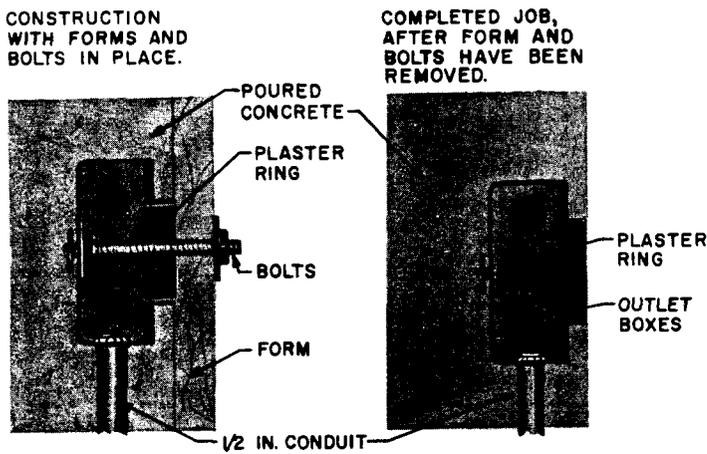


Fig. 5 - Combined Outlet, Two 4-inch Electrical Outlet Boxes

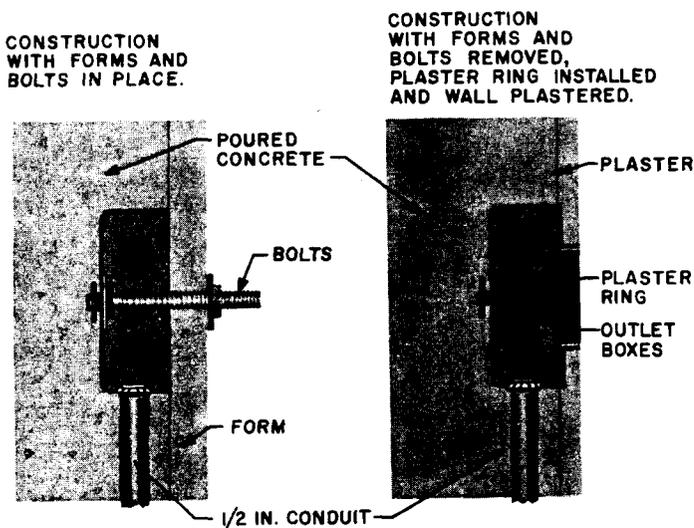
3.04 If the assembly in 3.03 is used for poured concrete walls, it will have to be secured to the forms. Fig. 6 and 7 show the methods of attaching the assembly. Note that if a plaster finish is to be applied to the concrete, the plaster ring is not installed until the forms have been removed.

3.05 In some cases, a backbox will be used instead of the 4-inch electrical box for the telephone service. The installation of this unit is the same as 3.03 and 3.04. (See Fig. 8 and 9.)

3.06 A divided outlet is also available for combined outlets. Special plaster rings are available for this type. These units are installed in the same manner as the other combined outlets covered in 3.03 and 3.04. (See Fig. 10.)



◀ Fig. 6 - Assembly for Poured Concrete Wall Construction, Not Plastered



◀ Fig. 7 - Assembly for Poured Concrete Wall Construction, Plastered

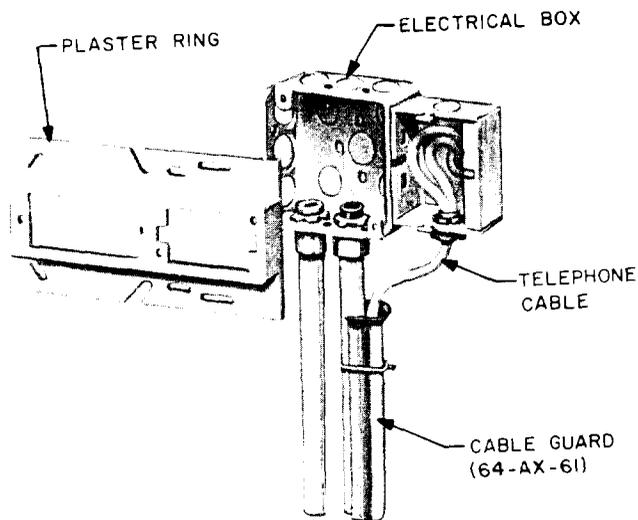


Fig. 8 - Combined Outlet, Backbox Assembly

3.07 If PANEL PHONE is to be provided, a 113-type apparatus box is installed. See section entitled Telephone Sets 750A and 750B.

4.00 TESTING CABLE

4.01 A continuity check of the cable is made for each apartment. The cable ends are cleared at the primary apartment entrance.

4.02 Place a buzzer (81A test set) on any given pair. If the buzzer tone can be heard with a headset at the other end of the loop continuity is assured.

4.03 If the buzzer tone cannot be heard, then a short, open, or ground is present in the cable. Isolate the trouble by cutting the bad pair at the outlet nearest to the center of the run. Test each section and continue halving until the trouble is isolated between two adjacent outlets.

4.04 Cut the bad pair or pairs at the outlets adjacent to the trouble so that they are not lost for telephone service. Place a tag in each of the outlets indicating the bad pair or pairs.

5.00 PLACING FACEPLATES

5.01 Outlets may be finished by placing a combination faceplate, equipped with a blank, over the outlet. In some cases, the service unit (connecting blocks on jacks) may be placed in all outlets as part of the cable job. If this is the case refer to section entitled Prewiring, High Rise Apartment Buildings, Connecting Services.

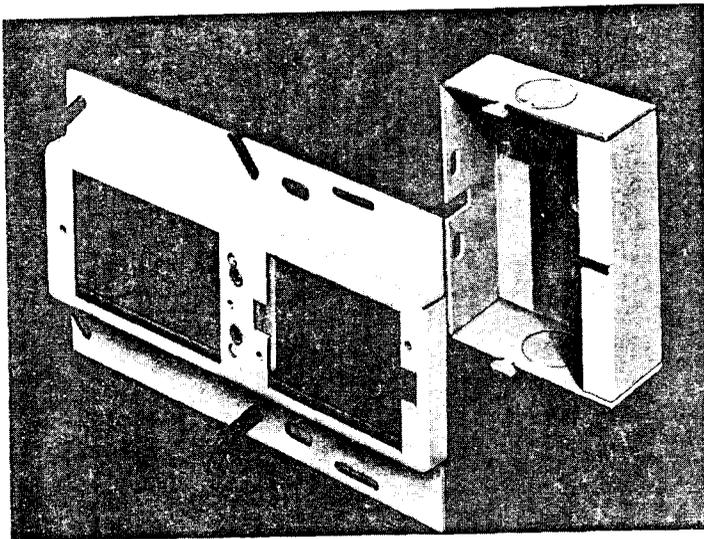


Fig. 9A ▲

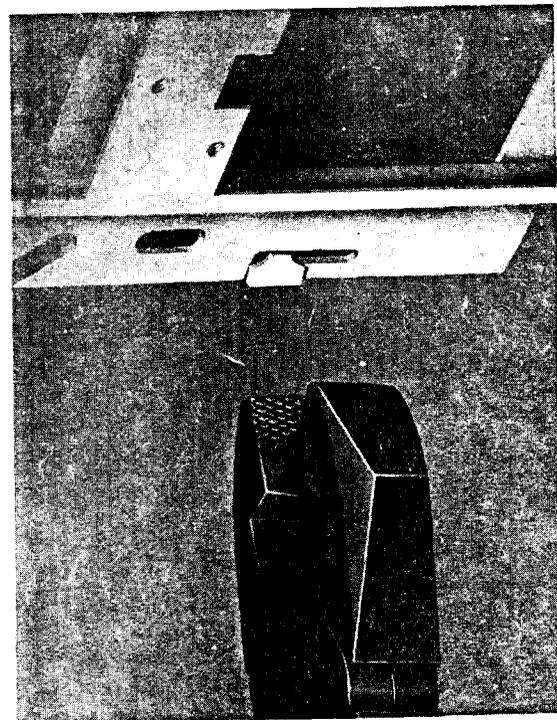


Fig. 9B ▶

Fig. 9 - Method of Attaching Backbox to Plaster Ring

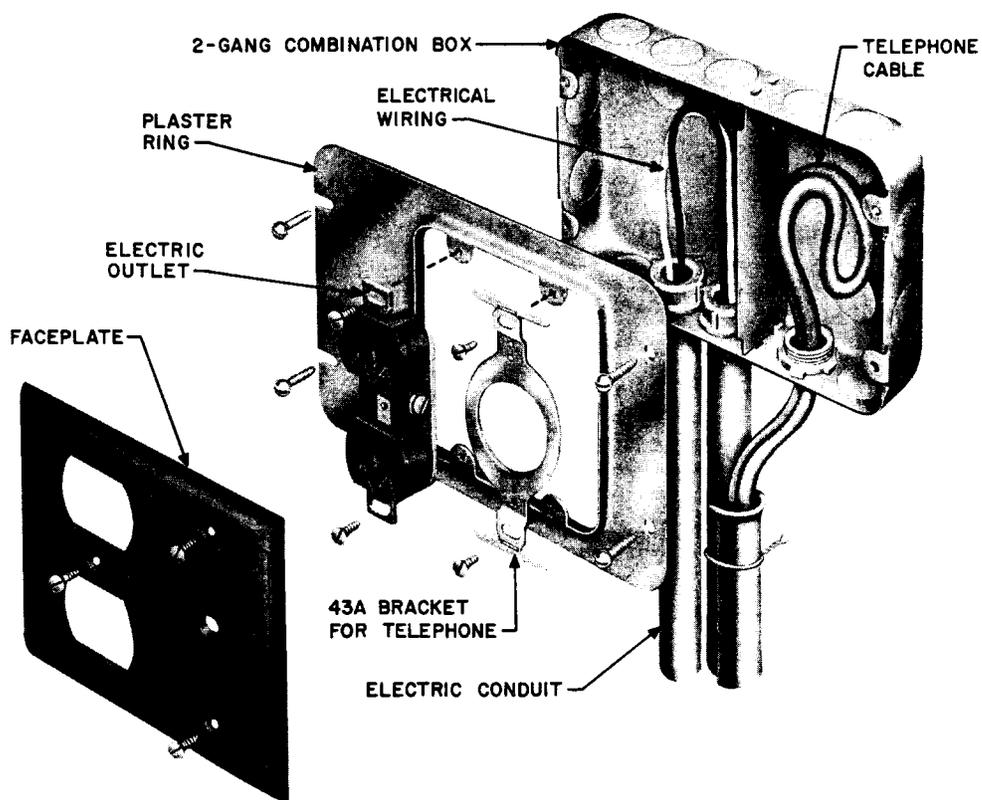


Fig. 10 - Combined Outlet, Divided Box