

CABLE HOLES

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1. GENERAL

1.1 Scope

1.1.1 This section covers the specific requirements and methods for closing cable holes. It also contains information relative to the use of packing and closing material.

1.1.2 It is assumed that the cable hole sheathing has been installed before the operations of this section are started.

1.2 Associated Information

1.2.1 Reference should be made to job specification and drawings furnished to the job.

1.2.2 In addition to Paragraph 6 of this section, temporary closing of cable holes during cabling operations is contained in Handbook 8, Section 130.

2. INSTALLING EQUIPMENT

2.1 Tools

2.1.1 In addition to tools supplied in the general kits, the tools and materials listed below may be required for the operations covered in this section.

R-1672	Blade Hacksaw (14 teeth)
R-2281	Sawframe, Hack
R-4922	Drill Electric 3/8"
R-2922	Punch Perforating 7/16"
R-4355 A, B or C	Nibbler Electric
R-3055	Plastic Safety Goggles
R-3080	Respirator
Obtain Locally	Cardboard
Obtain Locally	Gloves, Leather Palmed
Obtain Locally	Canvas Flameproof

3. PRECAUTIONS

3.1 General safety precautions against personal injury and equipment damage are outlined in the "GENERAL" section of this handbook.

3.2 Adequate protection should be provided for personnel and equipment where there is danger of material falling to the floor below.

3.3 Precautions applying to specific operations are listed with the associated methods paragraphs.

4. CABLE HOLE COVERS, CEILING, FLOOR AND WALL

4.1 Ceiling Cable Hole Covers

4.1.1 Four types of ceiling cable hole covers are available to installation. The types and their recommended application is listed in Paragraphs 4.12, 4.13, 4.14, and 4.15.

4.1.2 Adjustable Ceiling cover (See Figures 1 and 1A).

4.1.2.1 The adjustable ceiling is designed for new 1' x 2' cable openings between columns and 2' x 2' cable openings in cable shaftways. This ceiling cover is accessed from the floor above; it eliminates the removal, scribing, cutting, and remounting operations. By loosening four thumb screws from above, the louvers can be moved to permit the running of cables. The adjustable cover permits closing the cable hole on a temporary basis, thus eliminating the need for the wire basket Paragraph 6.1). Design details are covered in ED 92116-72.

4.1.3 Sliding Ceiling Cover (See Figures 2 and 2A.)

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4.1.3.1 The sliding ceiling cover is designed for the existing cable holes. After the initial modification, the cover is accessed from the floor above, thus eliminating the removal, scribing, cutting, and remounting operations. The sliding cover permits closing the cable hole on a temporary basis, thus eliminating the need of a wire basket. The procedure to modify the present ceiling cover into a sliding type is described in Paragraph 4.2 of this section.

4.1.4 Drop-In Ceiling Cover (See Figures 3 and 3A.)

4.1.4.1 Where the ceiling is inaccessible from below or the building construction does not permit installing a sliding cover, the drop-in ceiling plate shall be used. This design incorporates a series of steel hangers that are attached to the inner portion of the sheathing and drop-in plate. This type of ceiling cover also eliminates the need for a wire basket and is accessed from the floor above. The fabrication procedure for a drop-in ceiling cover is covered in Paragraph 4.4.3 of this section.

4.1.5 Solid Steel Ceiling cover (See Figure 4.)

4.1.5.1 Where the adjustable, sliding, or drop-in cable hole ceiling covers cannot be installed, the solid steel cover shall be used per Ed 92116-71. The wire basket shall be used for temporary closing during cabling operations.

4.2 Floor Cable Hole Cover

4.2.1 All floor covers shall be of .112" (HRPOCQ) thick steel. Cable hole covers over large openings need not consist of one piece.

4.3 Wall and Partition Cable Hole Covers

4.3.1 All wall and partition cable hole covers shall be of .112" (HRPOCQ) thick steel.

NOTE: When existing floor, wall and partition cable holes are opened to run additional cable and the present covers are of transite material, the installer shall replace them with steel covers.

If the replacement steel covers have not been ordered in the job specification, the installer shall issue a "JIM" to SEE or order the steel cover from a local machine shop.

NOTE: The replaced transite wall and floor covers are not to be cut-up or in any way reduced in size prior to disposal. All transite covers shall be placed into dust impermeable bags and disposed of via local scavenger service. All bags shall have the following label:

CAUTION:

CONTAINS ASBESTOS AVOID CREATING
DUST BREATHING ASBESTOS MAY
CAUSE SERIOUS BODILY HARM.

4.4 Fabricating Cable Hole Covers

4.4.1 Adjustable Ceiling Cover

4.4.1.1 The adjustable cable hole ceiling cover is shipped to job site preassembled. There is no material to be cut or loose parts to fall out.

NOTE: If mounting holes do not match the hole location in sheathing, use the R-2922 Perforating Punch or drill 7/16" clear holes with an electric drill.

4.4.2 Sliding Ceiling cover

4.4.2.1 The recommended procedure for modifying existing steel ceiling covers to obtain a sliding cover concept is as follows:

4.4.2.2 The provided material will consist of three bars, two thumb screws, two screws, and two nuts. See Figure 2 and Figure 2A for piece part identification and perspective view of modified cover.

4.4.2.3 With the existing ceiling cover in place mark the existing cover (from above) for cutting and drilling. Draw two lines from the outside of each cable rack stringer across the cover to the opposite side. When the cover is cut, this portion will indicate the size of the sliding cover.

Use the bars provided as a template for marking holes to be drilled. When marking holes for the support bar (COMCODE No. 842041246), it is recommended that the bar be placed 1/2" away from the inside wall of the cable hole (furthest side from the cable rack).

4.4.2.4 Remove the ceiling plate, transport it to the work area, cut and drill as required. Use the R-4355 A, B, or C Nibbler for cutting and R-2922 Punch for perforating.

NOTE: This is important that the cut be straight in order to allow the plate to slide freely.

4.4.2.5 Reinstall the right and left portions of the ceiling plate from below. Install the support bar, clamp bars, and sliding panel and secure as shown on ED 92116-73 and Figure 2A.

NOTE: Stake the thumb screws to prevent removal.

4.4.3 Drop-In Ceiling Plate

4.4.3.1 Cut a steel plate confined by the inner cable hole dimensions and the cable bundle configuration.

4.4.3.2 Place the stirrups (Figure 3A) COMCODE No. 842042780 as indicated in Figure 3 and attach to the cable hole sheathing with 1/4-20x7/8" H.H. cap screws from below using the existing cable hole cover threaded hole in the sheathing.

NOTE: The cable hole floor cover will be retained with the protruded bolt and a 1/4-20 hex nut.

4.4.3.3 The location of the cable hole stirrups is governed by the cable bundle size and shape. Stirrups shall be strategically located from best possible support of the drop-in plate.

4.4.3.4 If the existing hole locations in the sheathing do not suit the stirrup positioning, thru-drill the vertical side of the sheathing using 11/32" diameter drill and attach with 1/4-20x7/8" H.H. cap screw and 1/4-20 hex nut.

4.4.3.5 The location of the cable hole stirrups is governed by the cable bundle size and shape. stirrups shall be strategically located for best possible support of the drop-in plate.

4.4.3.6 If the existing hole locations in the sheathing do not suit the stirrup positioning, thru-drill the vertical side of the sheathing using 11/32" diameter drill and attach with 1/4-20x7/8" H.H. cap screw and 1/4-20 hex nut.

4.4.3.7 Where the drop-in plate is small and/or narrow, thru-drill the plate and attach to the stirrup with self-tapping screw or a R-4265 Nylon Cable Tie.

4.4.4 Floor, Wall and Partition Covers

4.4.4.1 The floor, wall and partition covers are to be cut to fit as closely as practical around the cable bundle. Care should be taken not to fit these covers so tight that the cables will be damaged.

4.4.4.2 The fitting of the cover around cable bundles can be made more readily by making cardboard or using the R-4549 Contour Template.

4.4.4.3 Cutting of steel covers should be done using the R-4355A, B. or C Nibbler, because close tolerances and curvatures can be maintained.

4.4.4.4 Use the R-2922 Perforating Punch to punch 7/16" diameter clear holes. When a punch is not available the R-4393 3/8" Electric Drill is recommended.

4.5 Fastening Covers

4.5.1 Floor covers are secured to the sheathing and ceiling covers to the fascia angles with screws.

4.5.2 Where no fascia angles have been provided at the ceiling, the cover shall be fastened directly to the ceiling surface with self-drill anchors (1/4-20).

NOTE: Unoccupied cable slot covers shall be treated in a manner similar to cable, wall or partition covers.

5. PACKING CABLE HOLES

5.1 Securing of Cable

5.1.1 Cable bundles passing through cable holes must be as compact as possible. apply the R-4659 Nylon Strap (COMCODE 400898318) around the cable bundle and the cable rack above the floor cover and below the ceiling cover. Draw up the nylon straps as tight as possible using hands only. (Refer to Figure 4 for approximate location.)

5.1.2 If separate cable pileups appear on the same cable rack, strapping shall be applied on individual bundles and the cable rack.

5.1.3 The R-4659 Nylon Straps may be linked together to accommodate cable racks and pileups of varying sizes.

NOTE: Strapping is not required for:

- A. Power Cables
- B. Fabric Covered Cables
- C. ABAM
- D. Flexible and armored cable
- E. Secured cable on cable racks passing through cable holes.

5.1.4 Where it is obvious that pressure from the nylon strap will cause damage to cables or wires, such as 90 degree bend directly below the cable hole, the straps shall be omitted.

5.1.5 Restrict the working of cable runs to provide a gap of 3" between the cabling surfaces and the front and side walls of the cable hole.

NOTE: When the limitations are reached, that hole shall be considered filled and a final marked drawing shall be forwarded to the SEE organization.

5.2 Packing and Sealing

5.2.1 Before packing the cable hole, inspect all bags and replace any that are damaged. The (KS 5048, Issue 3) bags are of blue color and have "FR" letters stamped in black. They weigh approximately 26 ounces.

NOTE: 1' x 2' cable hole requires 30 bags
 1' x 3' cable hole requires 45 bags
 2' x 2' cable hole requires 60 bags.

The above guidelines do not include the space occupied by the cable bundle.

5.2.2 Cable holes shall be completely filled with either undamaged old white bags and/or blue bags stamped "FR". When the older bags are reused, they shall be confined to the center area of the cable hole with new bags forming the top and bottom layers. These bags shall be placed to lap the joints between bags in each layer and packed in place with pressure obtained by the full thrust of the installer's hand and upper torso. All spaces between the sides of the hole, the cable rack and hardware, must be carefully stuffed with bags. Finally, the hole shall be overfilled by one layer of bags and the top cover forced down and fastened.

5.2.3 Apply a 1" bead of caulking compound (COMCODE 401925300) see Figure 4, between the cable bundle and the cover plate. The caulking compound should cover the upper nylon strap where it comes in contact with the cable surfaces. The caulking compound is to be applied all around the cable bundle.

5.2.3.1 Caulking compound AT 8832 (COMCODE 401925300) will be ordered by SEE in job specifications. Caulking compound is packaged in (five pounds) package which should be sufficient for two cable hold applications.

5.2.4 KAOWOOL (COMCODE 401981816) may be used to fill areas where the KS 5048 bags cannot be inserted.

5.2.5 After the cable hole has been packed and sealed per requirements outlined in this section, the installer shall apply a KS 22228 L1 Label indicating the job order number and the date the cable hole was firestopped using ball point or felt tip pen..

5.2.5.1 Labels (KS 22228 L1) (COMCODE 402219463) will be ordered by SEE in job specifications. Labels are packaged in quantity of 25 labels/package.

5.2.5.2 The label shall be applied in a manner that it will span the cable hole edge covering the joint of the cover plate and the sheathing. The removal of the cover plate will result in the label being damaged. Wherever possible, the side of the cable hole should be utilized to apply the label. (See Figure 4.)

5.2.5.3 The KS 22228 L1 Labels are not to be applied to MDF Covers or other similar type covers. The label is to be applied on floor cables holes only.

5.2.5.4 Fire wall or partitions cable holes do not require the application of At 8832 (COMCODE 401925300) caulking compound or KS 22228 L1 (COMCODE 402219463) fire stop labels.

6. TEMPORARILY CLOSING CABLE HOLES

6.1 Non-Removable Ceiling Covers

6.1.1 The cable hole shall be temporarily closed at the end of each working day or wherever it is anticipated that no additional cable will be run that same day.

6.1.2 The modified holes will be temporarily closed in the following manner.

6.1.3 Slide the movable portion of the ceiling cover against the cable pileup.

NOTE: When the drop-in ceiling cover concept is used, the plate must be cut and dropped in for temporary closing of that cable hole.

6.1.4 Tighten the thumb screws to hold the plate in position.

6.1.5 Fill the cable hole completely full with KS 5048 Bags. Take care to distribute the bags in such a manner as to prevent drafts through the opening.

6.1.6 After the bags have been packed, place the top cover over the hole and secure with one or two screws to prevent accidental removal of that cover.

6.2 Removable Ceiling Covers

6.2.1 Where the ceiling cover consists of a solid steel plate and must be removed from below, the temporary wire basket must be used.

6.2.2 The installation and fabrication of the wire basket is outlined in Handbook 8, Section 130.

7. VERIFICATION

7.1 The number in parenthesis refers to the associated paragraphs in this section.

7.1.1 Replace transite covers with steel plates (4.2 and 4.3).

7.1.2 Disposition of transite material (4.3.1 NOTE 2).

7.1.3 Packing Cable Holes (5.0).

7.1.4 Apply Cable Hole Label (5.2.5).

Engineering Planning Manager
(Installation)

Attachment:
Figures 1-4

Reason for Reissue:
Add Paragraph 5.2.5.4
In Paragraph 2.1.1 change
R-4393 to R-4922.

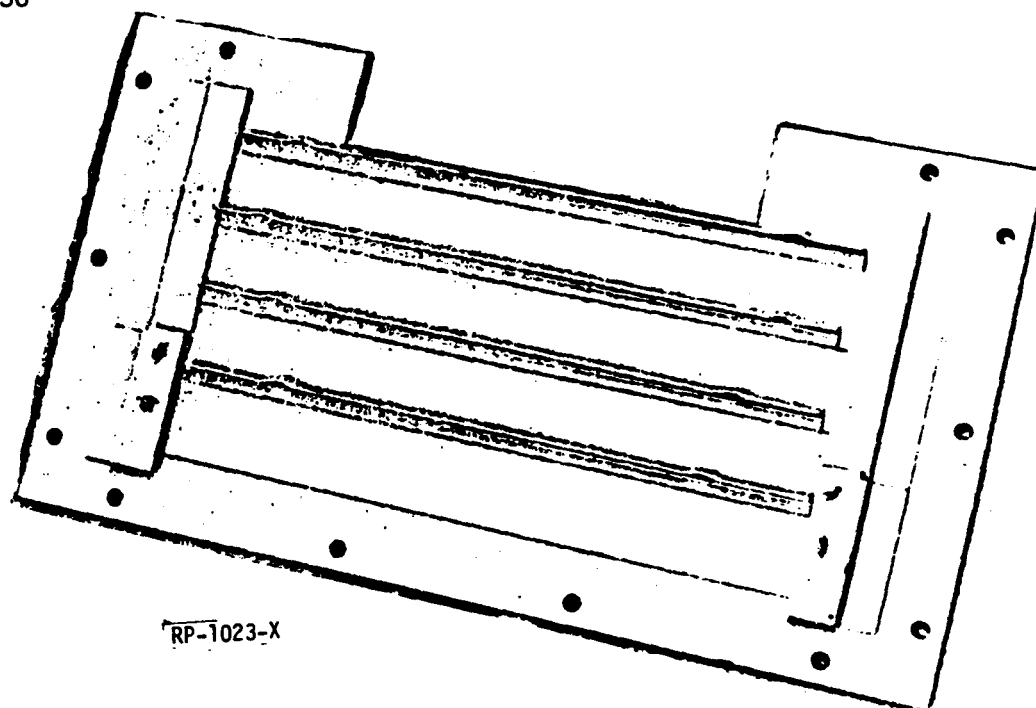


FIG. 1 - NEW STANDARD ADJUSTMENT CABLE HOLE CEILING COVER
FOR 1' X 2' AND 2' X 2' STANDARD CABLE OPENINGS.
(TOP VIEW)

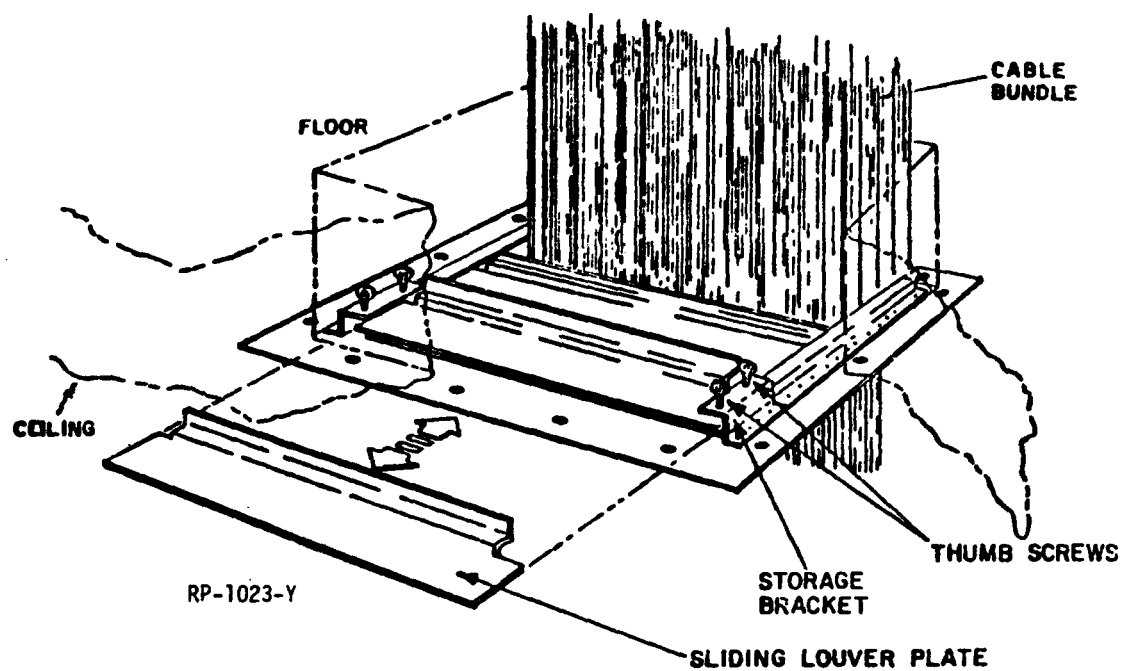
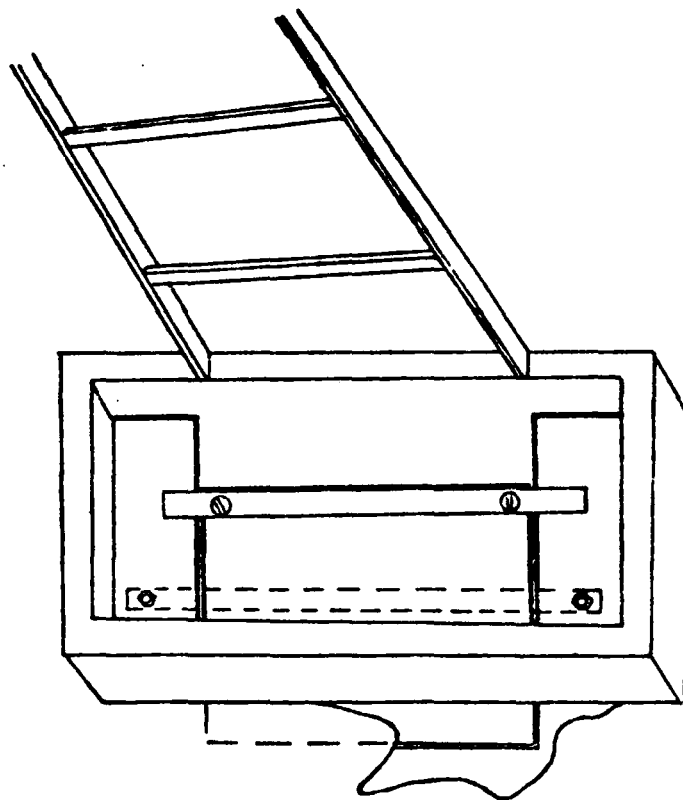
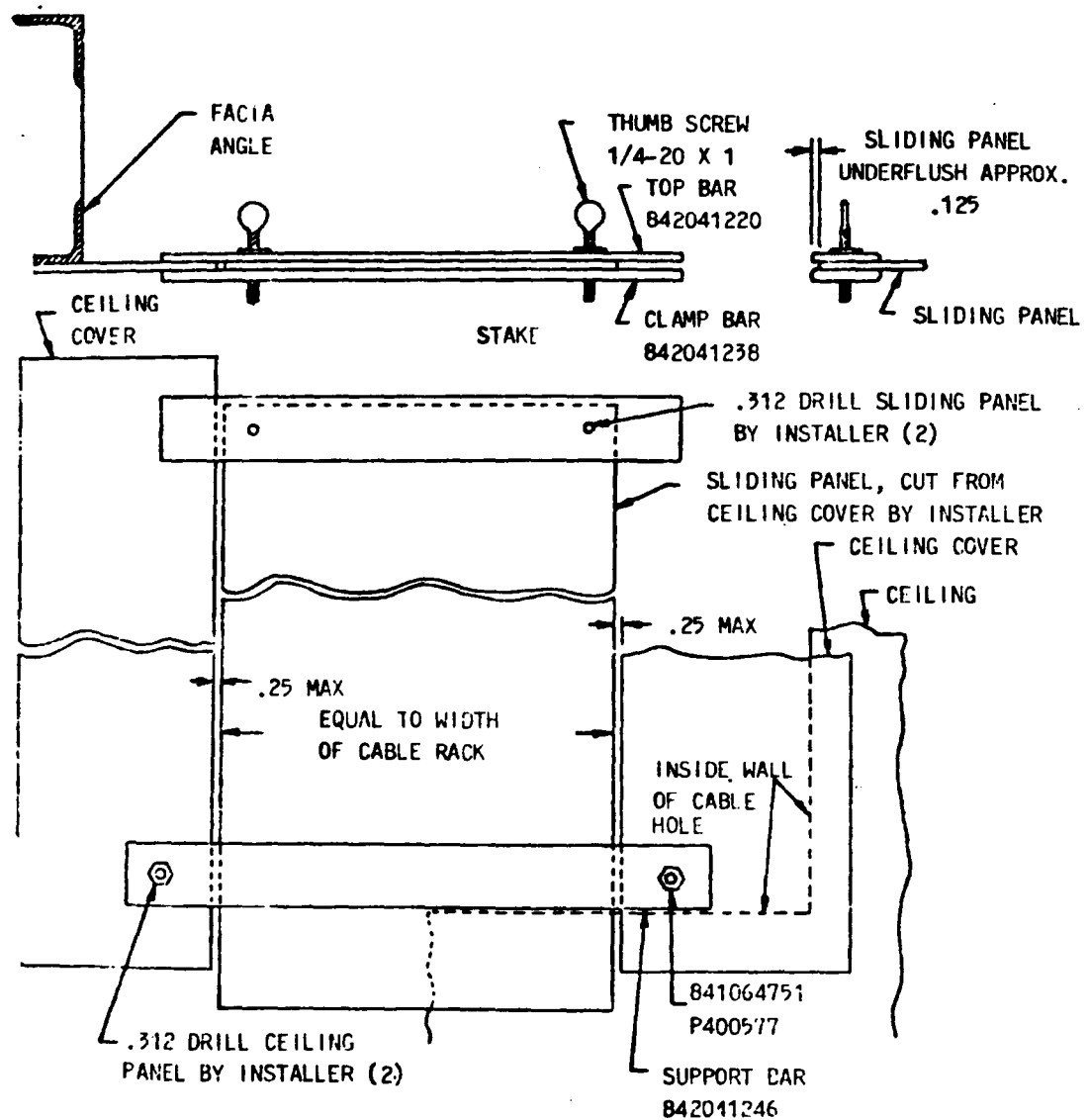


FIG. 1A ADJUSTABLE CABLE HOLE CEILING PLATE
(SEE ED - 92116-72)



RP-0974P

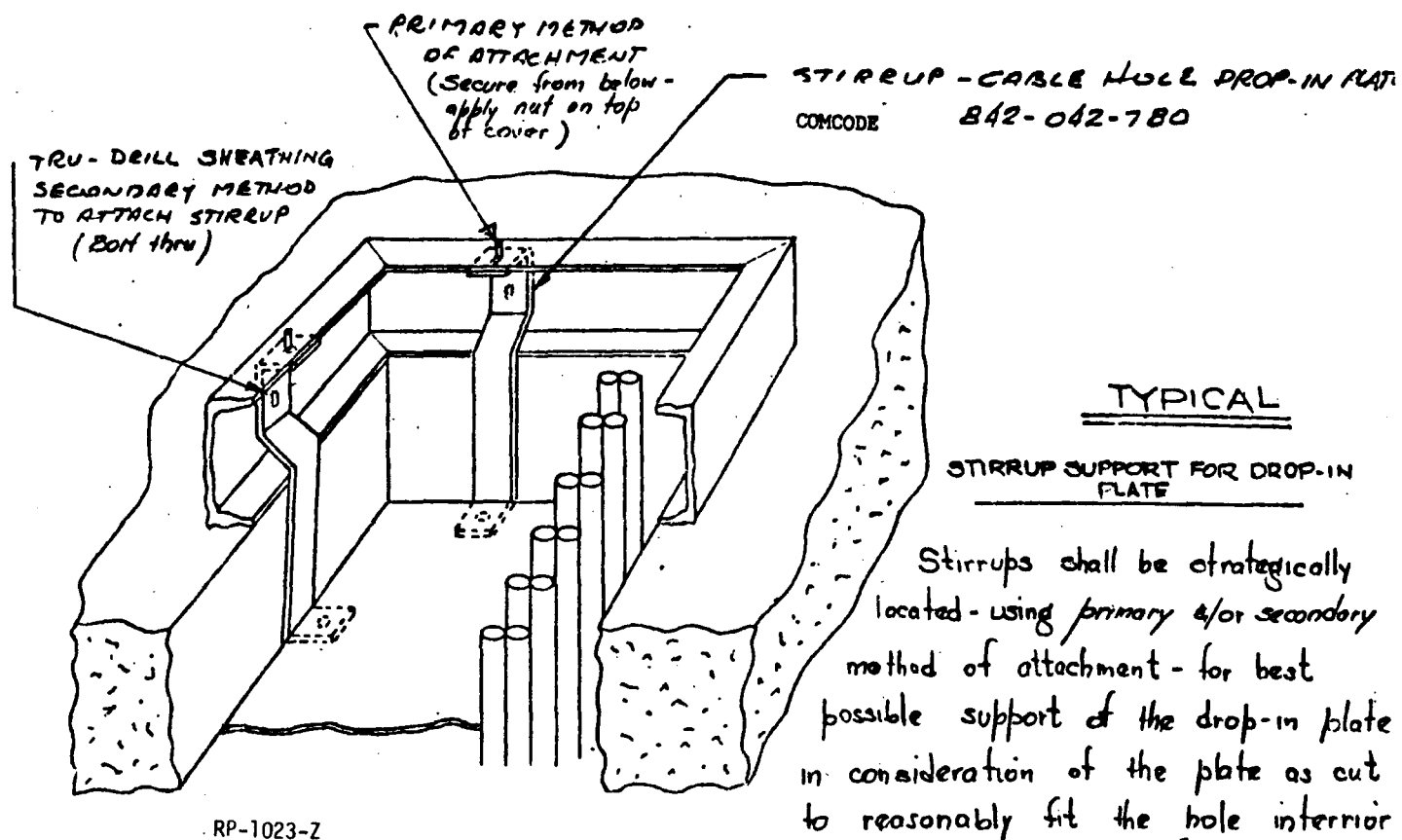
FIG. 2



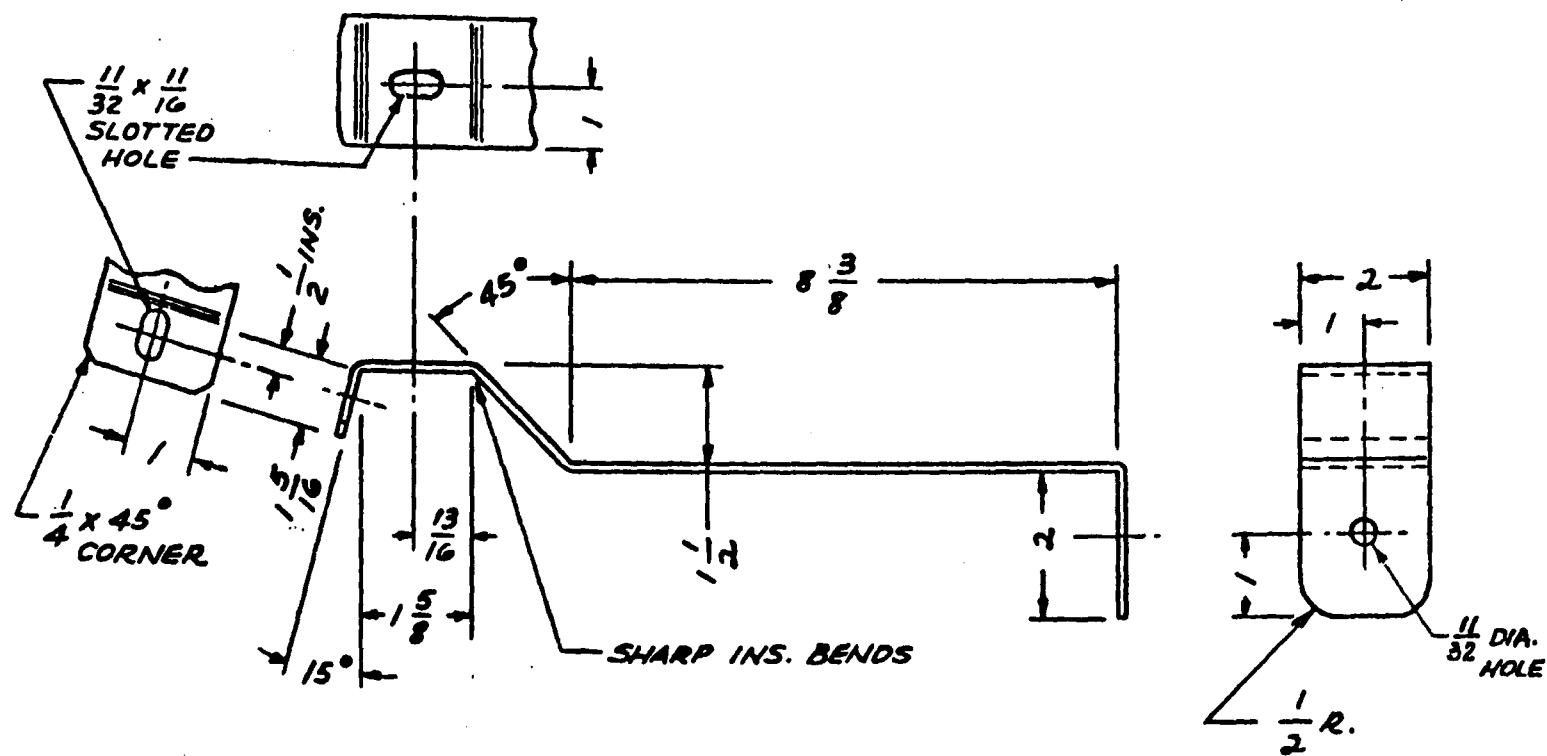
RP-0974G

FIG. 2A MODIFICATION OF CABLE HOLE CEILING PLATES

FIG. 3



Stirrups shall be strategically located - using primary &/or secondary method of attachment - for best possible support of the drop-in plate in consideration of the plate as cut to reasonably fit the hole interior and cable bundle configuration.



RP-1024-A

1/8 X 2 C. R. STEEL
525A FINISH GRAY
(5301 GRAY BRUSHING ENAMEL)

STIRRUP - CABLE HOLE DROP-IN PLATE
COMCODE 842-042-780

FIG. 3A

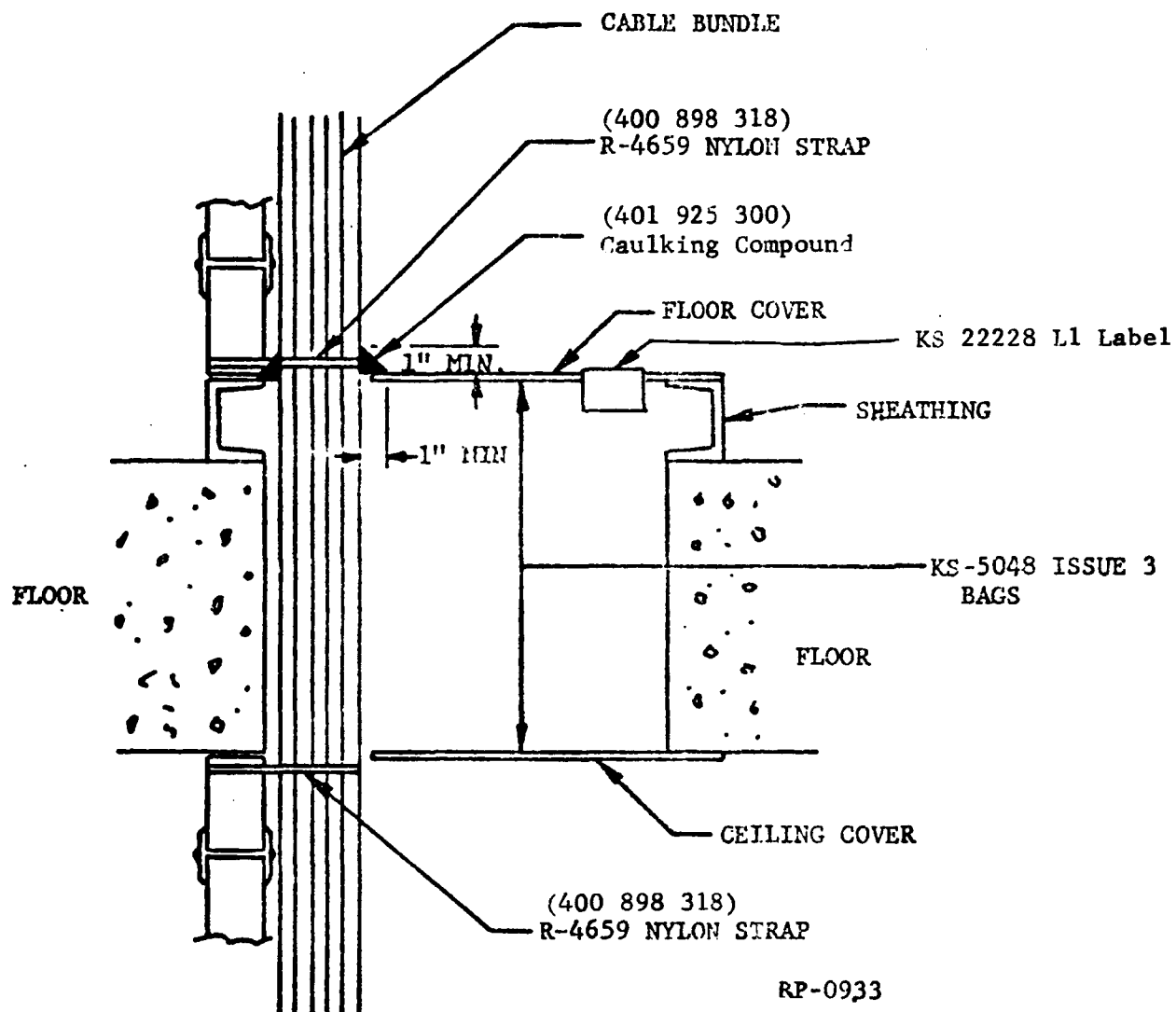


FIG. 4