

SHEATHING FOR CABLE HOLES AND SLOTS
AND FLOOR OPENINGS IN CABLE DUCTS

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ASSOCIATED HANDBOOK INFORMATION REFERENCE CHART

Subject	Handbook	Section
Cable Holes, Slots and Sleeves - Common Information	30	15A
Caulking Compound, Finish of	30	70
Grouting, Cement		
Finish of	30	70
Preparation of	30	29

1. GENERAL

1.1 Scope

1.11 This section covers the specific requirements and methods for the installation of sheathing for cable holes, slots and floor openings in cable ducts.

NOTE: The sheathing referred to in this section consists of the channels or angles used to form a skeleton framework around the outside, and in some cases the inside, of cable holes or slots. While the figures of this section illustrate how the covers are secured to the sheathing, the requirements and methods for closing cable holes and slots are covered in Section 15D.

1.2 Associated Information

1.21 Refer to the chart above for the location of information to which reference may be necessary when performing operations covered by this section.

1.22 Reference should also be made to the job specifications and floor plans and to the cable hole and slot sheathing drawing furnished to the job which are indicated on the figures associated with this section.

2. INSTALLING EQUIPMENT

2.1 In addition to tools supplied in the general kits, the tools and materials listed below will be required for the operations covered by this section:

2.11 Kits

No. 4 Ironworkers Kit

2.12 Additional Tools

R-3032 Drill, Electric, 1/2"
Obtain Tap, 3/8"-16 Bottoming, for
Locally tapping holes in untapped fascia
angles and for cleaning concrete
from tapped holes. (See Para-
graph 4.23).
Where a bottoming tap cannot be
obtained locally, the end of a
standard R-1750 3/8"-16 tap can
be ground off as required.

2.13 Supplies

RM-641598 Compound, Caulking
R-3050 Compound, Sealing, Cable Hole,
Non-Hardening
RM-644424 Lubricant - Grease, Cup
RM-585920 Oakum, Rope
RM-531817 Solder, Strip
RM-646793 Solvent, Shellac

2.13 Supplies (Cont'd)

Obtain Lumber, 2 in. (See Par. 4.22)
 locally
 Obtain (Zinc Chloride, 4-1/4 oz.)
 locally (Ammonia Chloride, 1/2 oz.)
 (See Par. 4.12) (Water, Ordinary Tap, 1 pt.)
 See Note

NOTE: Thoroughly mix these ingredients together and use as a flux when soldering galvanized iron.

3. SHEATHING OF CABLE HOLES AND SLOTS IN FIRE-RESISTIVE-TYPE FLOORS

3.1 Channel-Type Sheathing

3.11 Channel-type sheathing, as shown in Figure 1, shall be installed over cable holes in fire-resistive-type floors in accordance with ED-92116-71.

3.111 Where cable holes have not been equipped with fascia angles, the channel-type sheathing shall be fastened to the floor with angles as shown on ED-92116-71.

3.12 Cable holes intended for sheathing of a previous design are larger in size than the present standard sheathing by approximately 1" on each side and are not provided with fascia angles at the ceiling for supporting the bottom cover. In such cases, the bottom cover should be supported as shown in Figure 1 and ED-92116-71. This method of support provides sufficient surface for drilling the expansion bolt holes without the possibility of breaking out the concrete at the edges of the cable hole.

3.13 In cable holes constructed previous to the introduction of the present standards, the installer may have to drill and tap holes in the fascia angles. Where temporary screws were inadvertently omitted from tapped holes during construction and the holes were filled with concrete, as much of the concrete as possible can be removed using a center punch and hammer or a similar method. The threads can then be cleaned by retapping as deep as possible with a standard tap and finishing with a bottoming tap. Tapping will be facilitated and breakage reduced if the holes to be tapped are filled with grease or a lubricant such as RM-644424 or a similar type.

NOTE: Where temporary screws are installed by the telephone company in the tapped holes of ceiling fascia angles, they should be removed before the cable racks are installed in cases where the cable racks tend to block access to the screws.

3.14 Drilling sheathing angles or channels to match the tapped holes in the fascia angles is done by the installer. The use of a 1/2" drill will give ample clearance for the 3/8" screws. Figure 1A shows convenient methods of accurately locating the centers of the holes to be drilled.

NOTE: Where the telephone company has provided more holes in the fascia angles than are indicated on the controlling drawings, the installer shall select a number of holes in agreement with the amount of material provided in the stocklist and space them to approximate the locations called for on the standard drawing.

3.15 The P-432539 sheet metal partition used for closing the unused portion of cable slots is secured to the ceiling plates by hexagon head cap screws (P-108511). Due to their inaccessibility, the screws securing the partition to the ceiling plate in the unused portion of the cable slot may be omitted (see Figures 3 and 6).

3.16 Where a pipe type guard railing is to be installed around a cable hole, drill and tap the sheathing angles for the screws specified on the drawing before the angles are bolted to the floor. Two screws are used at each corner of the cable hole for securing the flanges to the sheathing angles.

3.2 Angle Type Sheathing

3.21 For detail information on angle type sheathing in fire-resistive-type floors (A & M Only) see ED-90980-30.

3.3 Cables Holes in Cable-Turning Sections

3.31 Channel-type sheathing, as shown in Figure 2, shall be installed over cable holes in cable-turning sections for No. 3CL and similar-type switchboards so that the switchboard framework floor channels will not overlap the fascia angles in accordance with ED-92116-71.

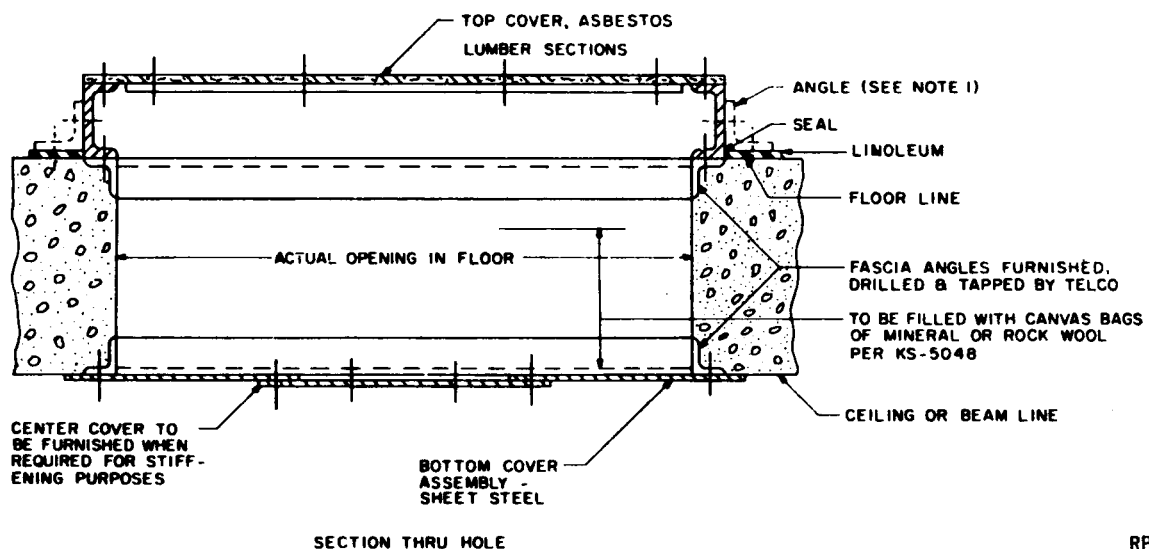
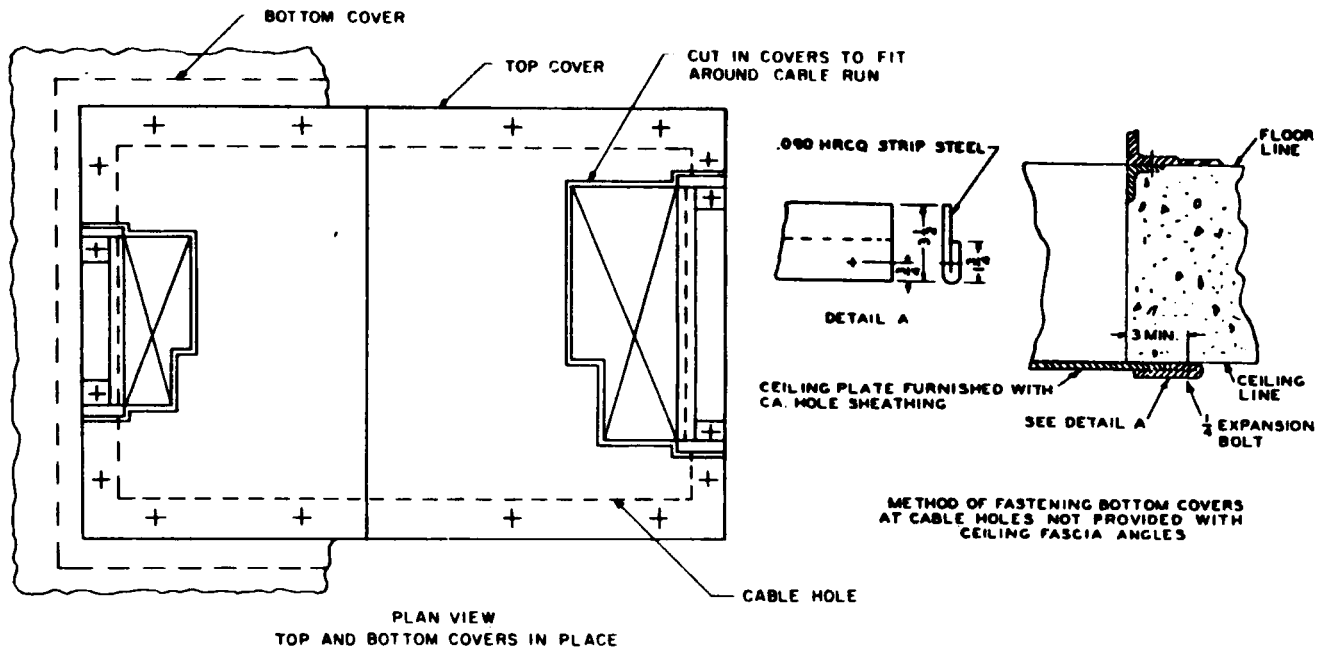
3.311 For existing cable holes where the switchboard framework floor members overlap the cable hole fascia angles, combination channel-and angle-type sheathing shall be installed as shown on ED-92117-70 (A & M Only).

3.4 Cable Slot Under IDF

3.41 Channel-type sheathing, as shown in Figure 3 shall be installed at cable slot under the IDF in accordance with ED-90979-30.

3.411 Where angle-type sheathing has been used at existing cable slots, the sheathing shall be extended with sheathing of the same type in accordance with ED-90007-32 (A & M Only).

3.42 At cross beams and girders, the sheathing and top cover shall be installed in a continuous line without interruptions. The bottom cover shall be terminated at each side of a beam or girder crossing the slot and extending below the level of the bottom cover.



RP-19980-A

NOTES:

1. ANGLES SHALL BE USED TO FASTEN SHEATHING TO FLOOR WHEN FASCIA ANGLES HAVE NOT BEEN PROVIDED.
2. FOR DETAIL INFORMATION ON CHANNEL-TYPE SHEATHING SEE ED-92116-71. FOR ANGLE TYPE SHEATHING (ABM ONLY) SEE ED-90980-30.

FIG. 1 CHANNEL-TYPE SHEATHING FOR CABLE HOLES IN FIRE-RESISTIVE-TYPE FLOORS (PAR. 3.11) (BSP 800-614-153 Fig. 1)

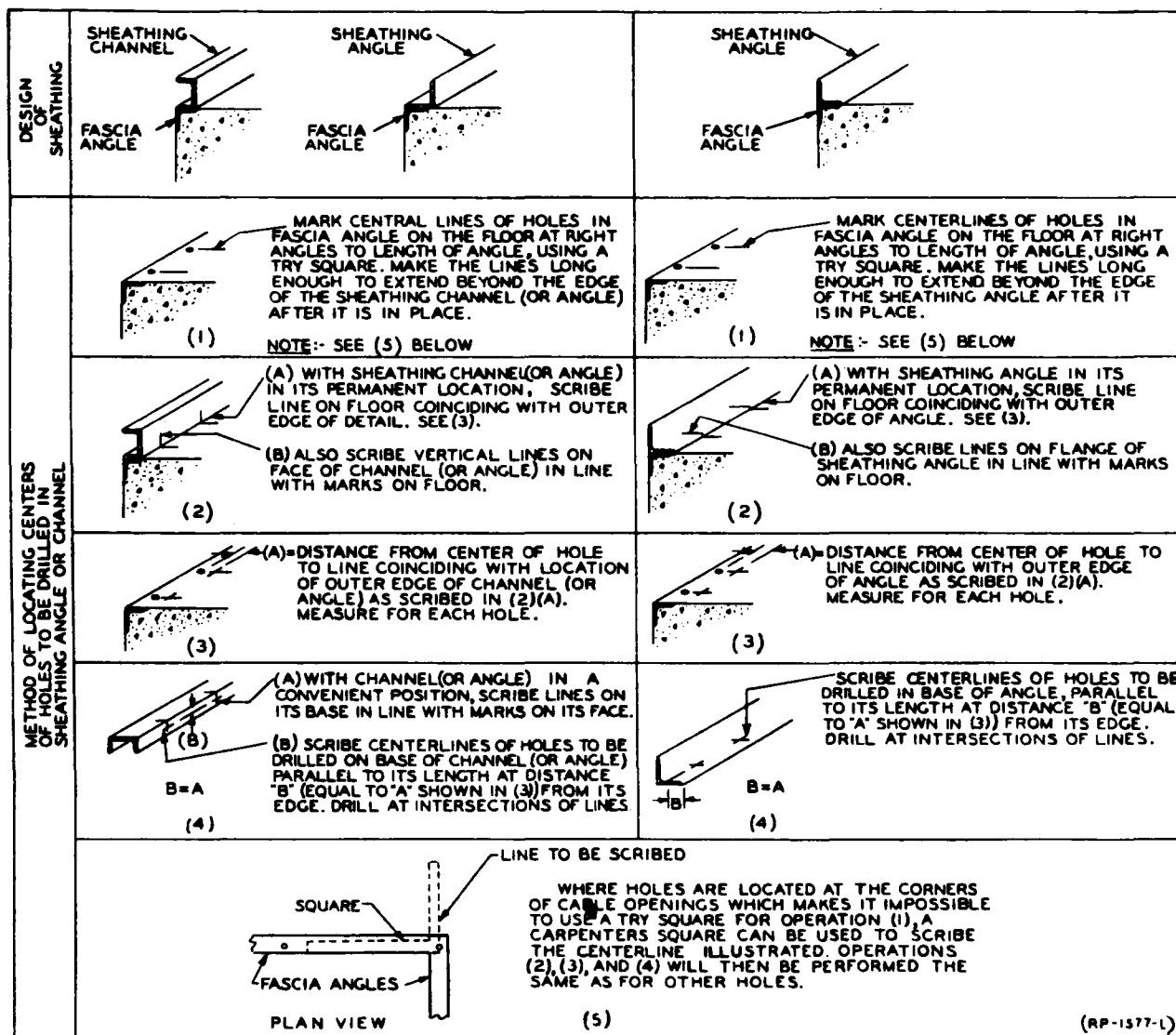


FIG. 1A LOCATING HOLES TO BE DRILLED IN CABLE HOLE SHEATHING ANGLE OR CHANNEL (PAR. 3.14)

3.43 When making additions, the temporary sheathing end shall be moved as required. Where practicable, the top and bottom covers shall be moved with the sheathing end. Additional lengths of sheathing structure together with top and bottom cover sections shall be installed to complete the sheathing of the slot.

3.5 Cable Slots Under MDF and Double-Sided Protector Frame

3.51 Top covers for cable slots under the MDF and double-sided protector frame, as shown in Figures 4 and 5, shall be installed in accordance with ED-90627-31 and ED-90274-71, respectively. The MDF floor angle serves as part of the closing framework and is fastened to the fascia angle of that side of the slot. At the double-sided protector frame, the frame floor angles serve as a means of supporting the cover for the slot under the frame. On additions and where cross beams interfere, the procedure outlined in 3.42 and 3.43 shall be followed.

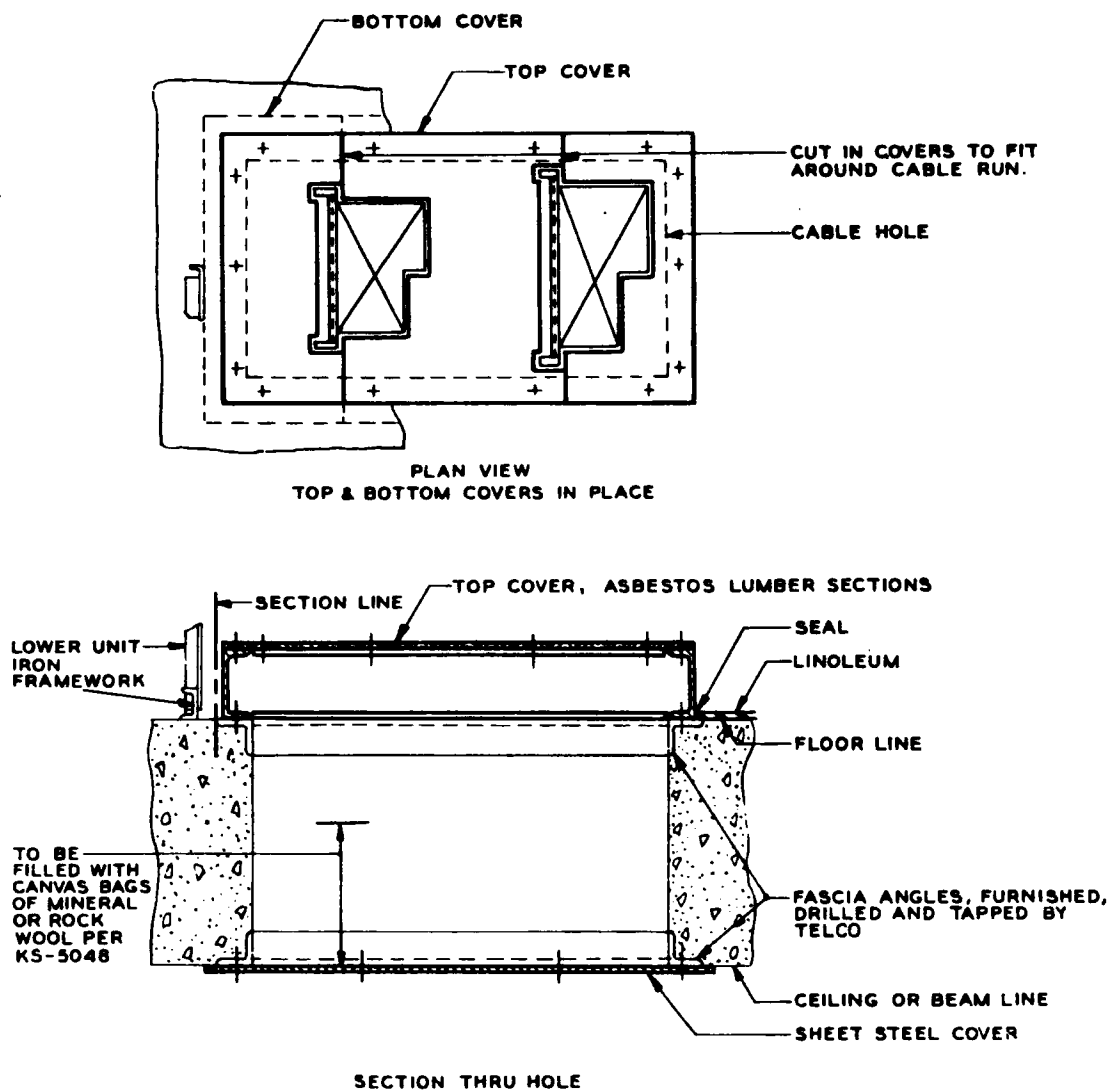
3.6 Cable Slot Between Columns

3.61 Channel-type sheathing, as shown in Figure 6, shall be installed in cable slots between columns in accordance with ED-92116-71. Continuous slots are used in buildings of steel construction and noncontinuous type or a series of cable holes are used in buildings of concrete construction.

3.62 The floor cover and supporting angle for a continuous slot are generally furnished in sections 2'-9" in length, making it unnecessary ordinarily to remove more than one section of cover and supporting angles for each cable run installed.

3.7 Cement Grout Fills

3.71 Where cable holes or slots are located under the IDF, the space between the sheathing framework and the frame floor angle shall be filled with cement grout, as shown in Figure 3 to avoid dust pockets.



NOTE:
FOR DETAIL INFORMATION SEE ED-92116-71.

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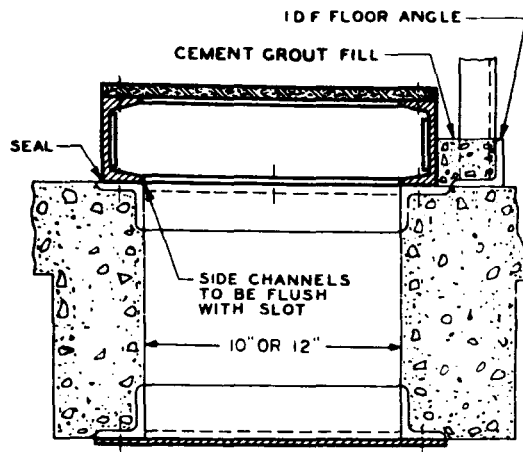
FIG. 2 CHANNEL-TYPE SHEATHING FOR CABLE HOLES IN SWITCHBOARD
CABLE TURNING SECTIONS IN FIRE-RESISTIVE-TYPE FLOORS
(PAR. 3.31)(BSP 800-614-153 Fig. 2)

3.72 Cement grout fill shall be used between the backs of sheathing channels of adjacent slots located 9 inches or less apart and between the face of a column or wall and the channel of the first slot located 9 inches or less from the column or wall as shown in Figure 6.

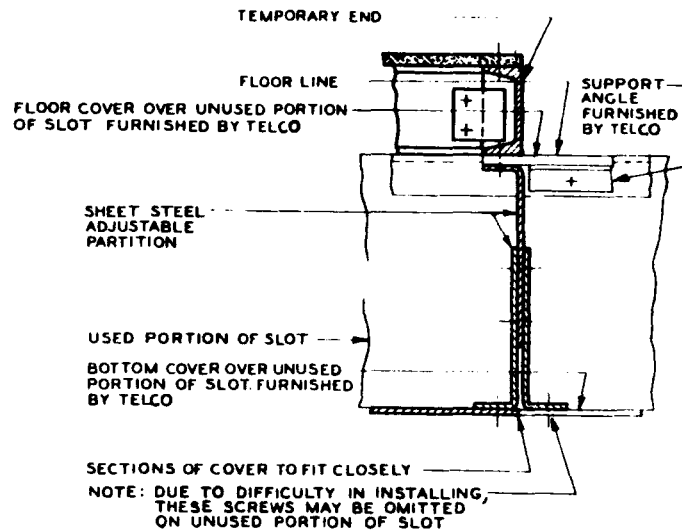
3.73 Cement grout fills between sheathing angles and adjacent distributing frame floor angles, walls, columns or other cable holes should have a finish applied. For type of finish and method of applying, see Section 70.

3.8 Sealing of Joints (Waterproofing)

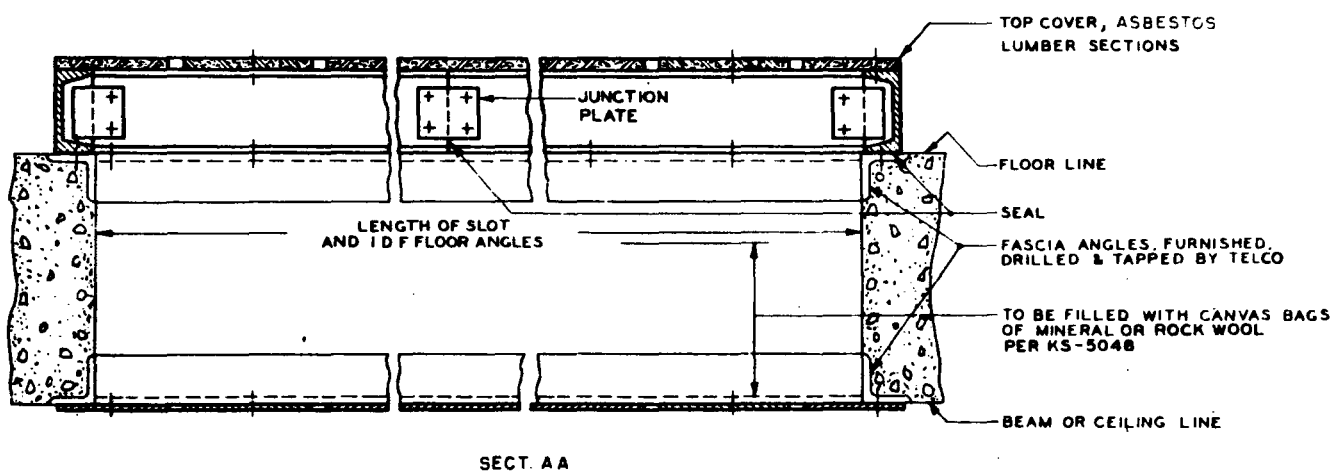
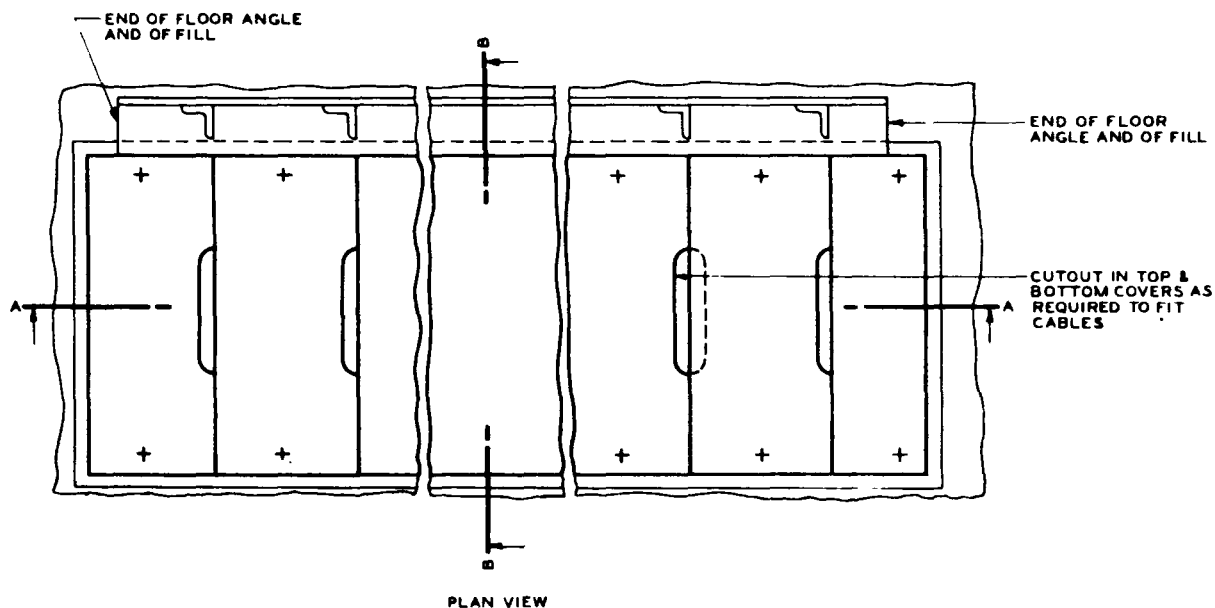
3.81 The joints between sheathing framework and the fascia angles at the floor and all joints in sheathing framework not welded shall be made mechanically tight and waterproofed by the use of R-3050 Nonhardening Cable Hole Sealing Compound applied to the surfaces of the details. Sufficient compound should be used so that the sealer will squeeze out around the edges when the fastening bolts are tightened. Where the sealing compound would tend to run through large openings, the openings should be closed with RM-585920 Rope Oakum. Waterproofing is not required for slots under MDF per Figure 4, or double-sided protector frames per Figure 5.



SECT. BB



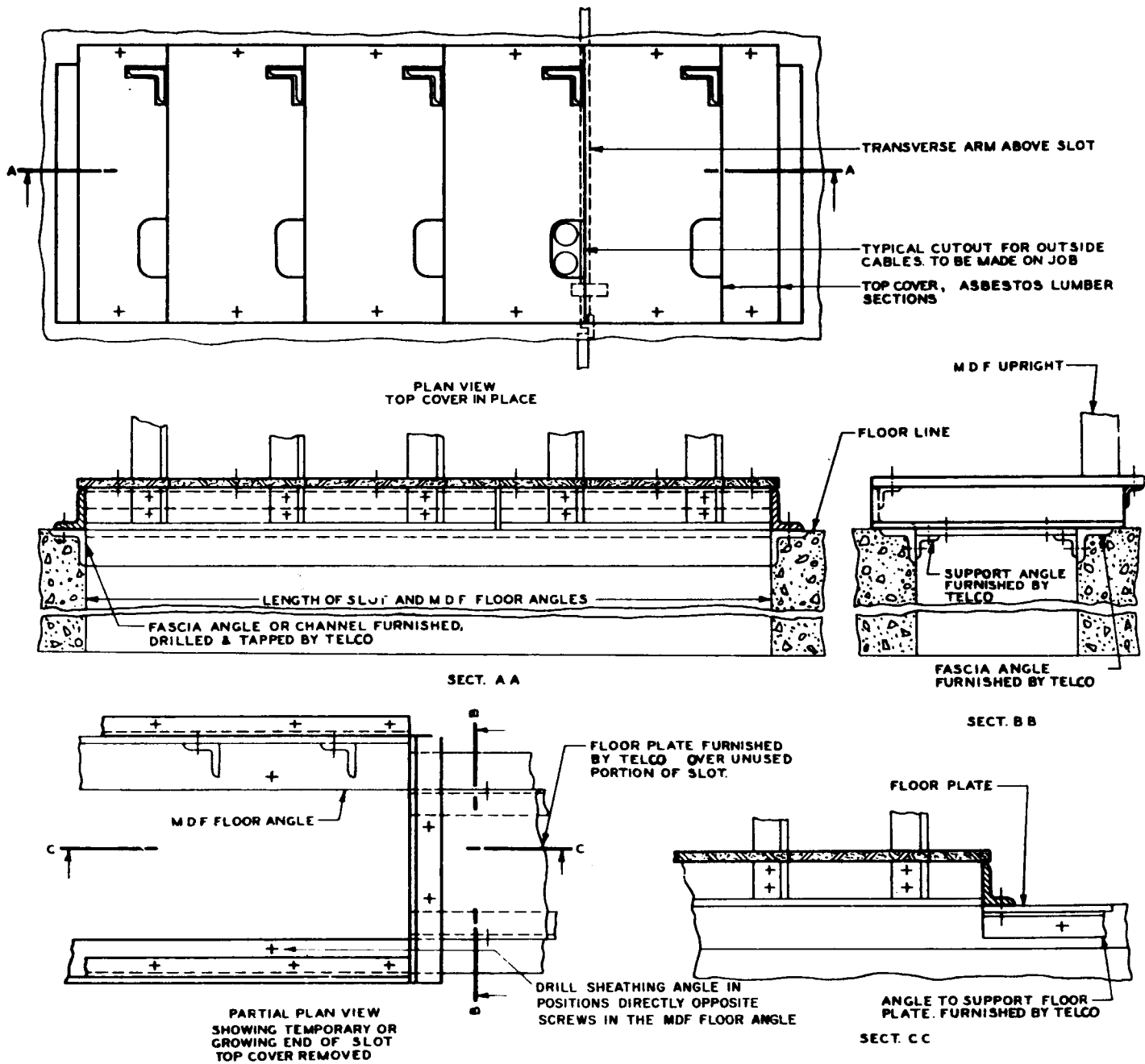
SECTIONAL VIEW OF TEMPORARY END OF SLOT



NOTE:
FOR DETAIL INFORMATION SEE ED-90979-(30)

RP-19980-G

FIG. 3 CHANNEL-TYPE SHEATHING FOR CABLE SLOT UNDER IDF IN FIRE-RESISTIVE-TYPE FLOORS (PARS. 3.15, 3.41 AND 3.71) (BSP 800-614-153 Fig. 3)



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NOTE:
FOR DETAIL INFORMATION SEE ED-90627-31.

FIG. 4 CLOSING FRAMEWORK AND COVER FOR SLOT UNDER MDF
(PARS. 3.51 AND 3.81)
(BSP 800-614-153 Fig. 4)

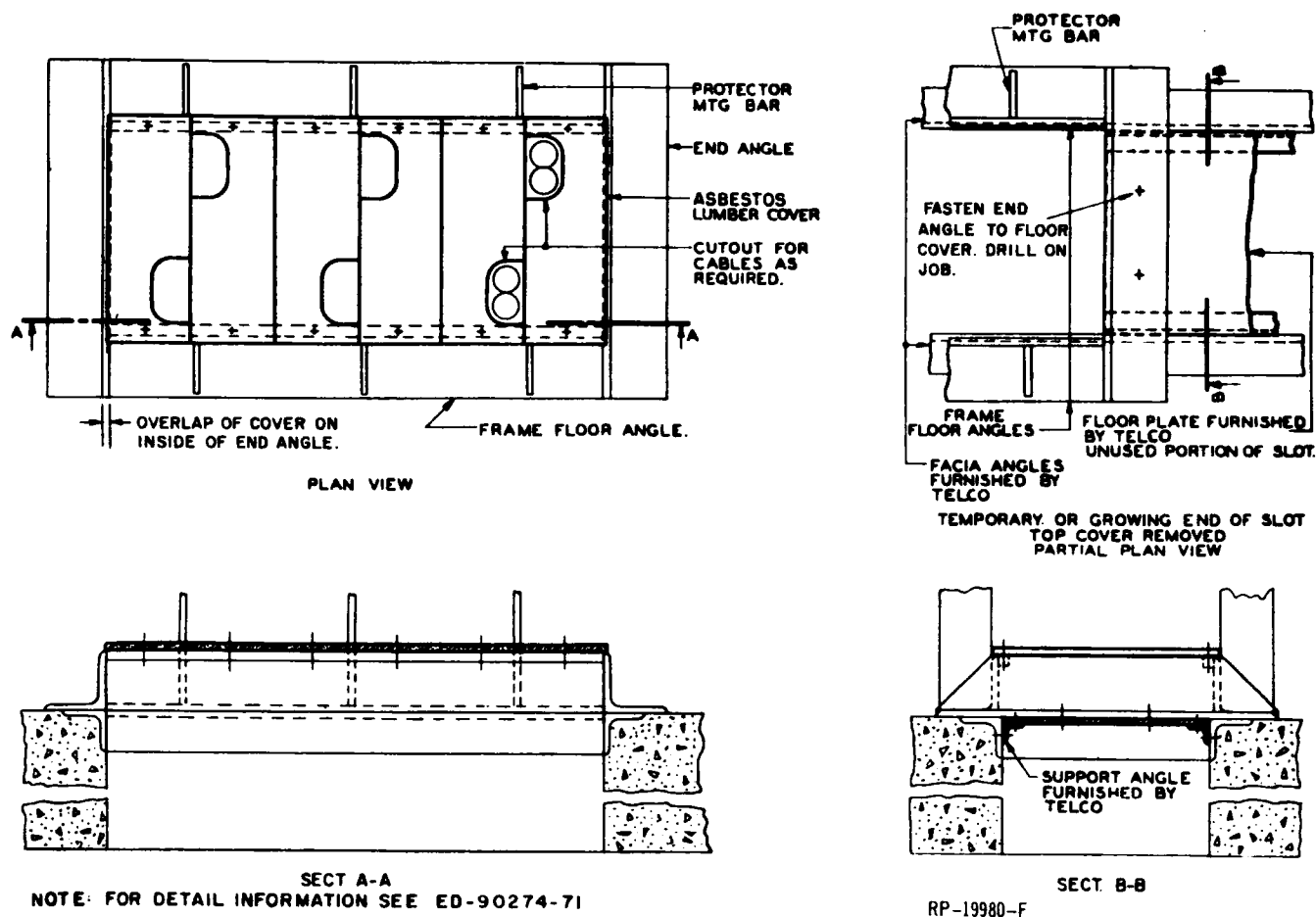


FIG. 5 COVER FOR SLOT UNDER DOUBLE SIDED PROTECTOR FRAME
(PARS. 3.51 AND 3.81)(BSP 800-614-153 Fig. 5)

3.82 Before applying the sealing compound, remove any dust or dirt from the surfaces to be sealed. Apply the R-3050 Sealing Compound to both surfaces of the parts to be sealed directly from the metal tube container. Use a putty knife to spread the compound over the entire abutting surfaces. Place additional compound at any low spots noted in the surfaces so as to completely fill any gaps between the parts being sealed as might otherwise exist. To insure a water tight seal, sufficient compound should be used so that it will squeeze out around the edges when the fastening bolts are tightened. Place the compound covered surfaces together and slightly move one part with respect to the other so as to evenly distribute the compound; then assemble the fastening bolts.

3.83 Excess sealing compound adhering to the surfaces of the frameworks after completing the sealing operation may be removed with a cloth moistened with RM-646793 Shellac Solvent.

4. SHEATHING OF CABLE HOLES IN MILL-TYPE AND WOOD-JOIST FLOORS

4.1 Sheet-Metal-Type Sheathing

4.11 Sheet-metal-type sheathing, as shown in Figure 7, shall be installed in cable holes in mill-type and wood-joist floors in accordance with ED-90004-31.

4.111 The corners of the vertical flange and under floor shall be waterproofed as covered in Paragraph 3.8.

4.12 The soldering of joints or laps in galvanized sheet metal sheathings should be done by fitting the sheathings to the cable hole and temporarily securing the joints with solder at the top and bottom and completing the soldering on the bench. Apply a small quantity of the flux (see Paragraph 2.13) and solder an inch or two at a time until the entire joint is soldered. Remove excess flux with a moistened cloth.

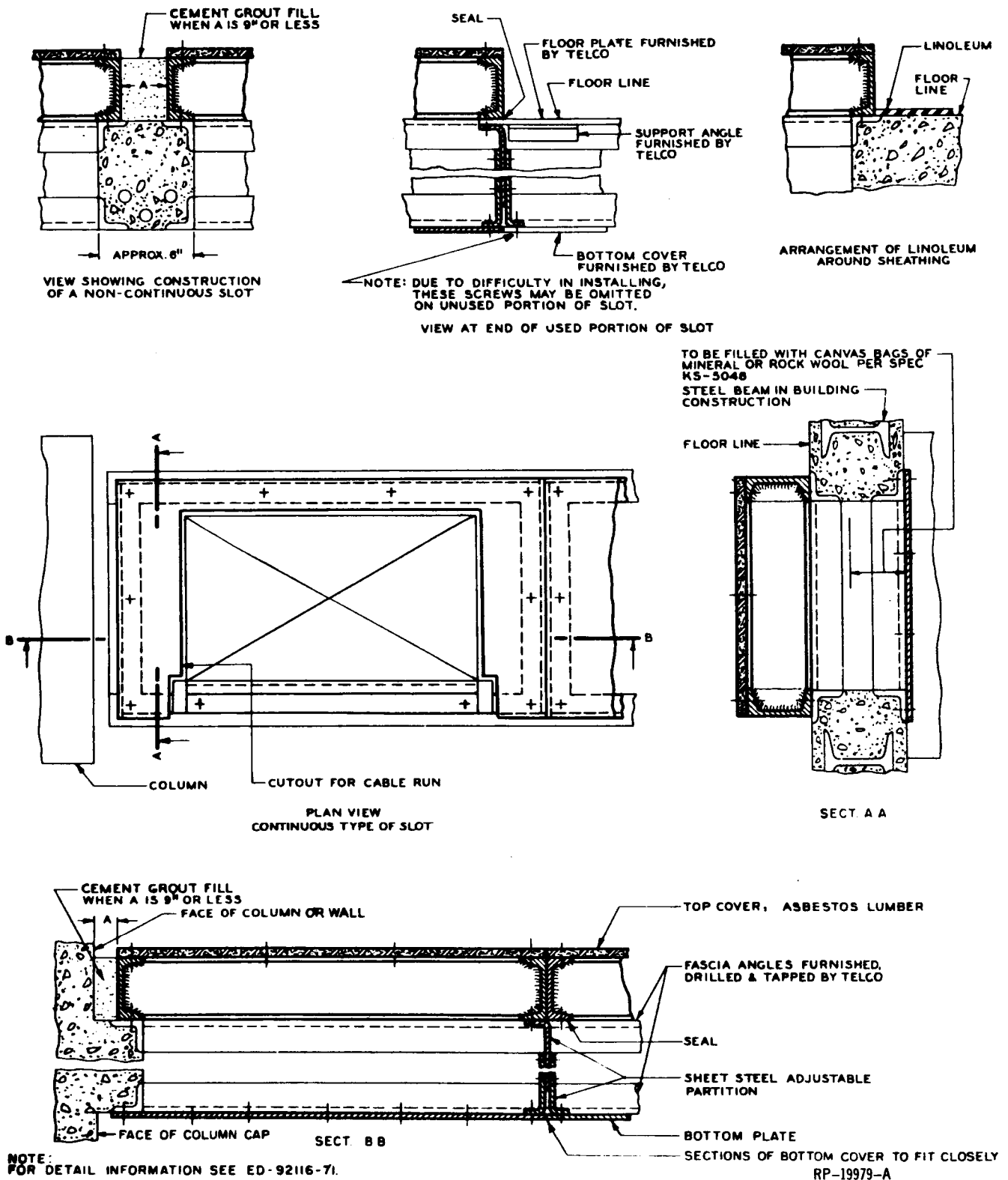


FIG. 6 CHANNEL-TYPE SHEATHING FOR CONTINUOUS OR NONCONTINUOUS CABLE SLOTS BETWEEN COLUMNS (PARS. 3.15, 3.61 AND 3.72) (BSP 800-614-153 Fig. 6)

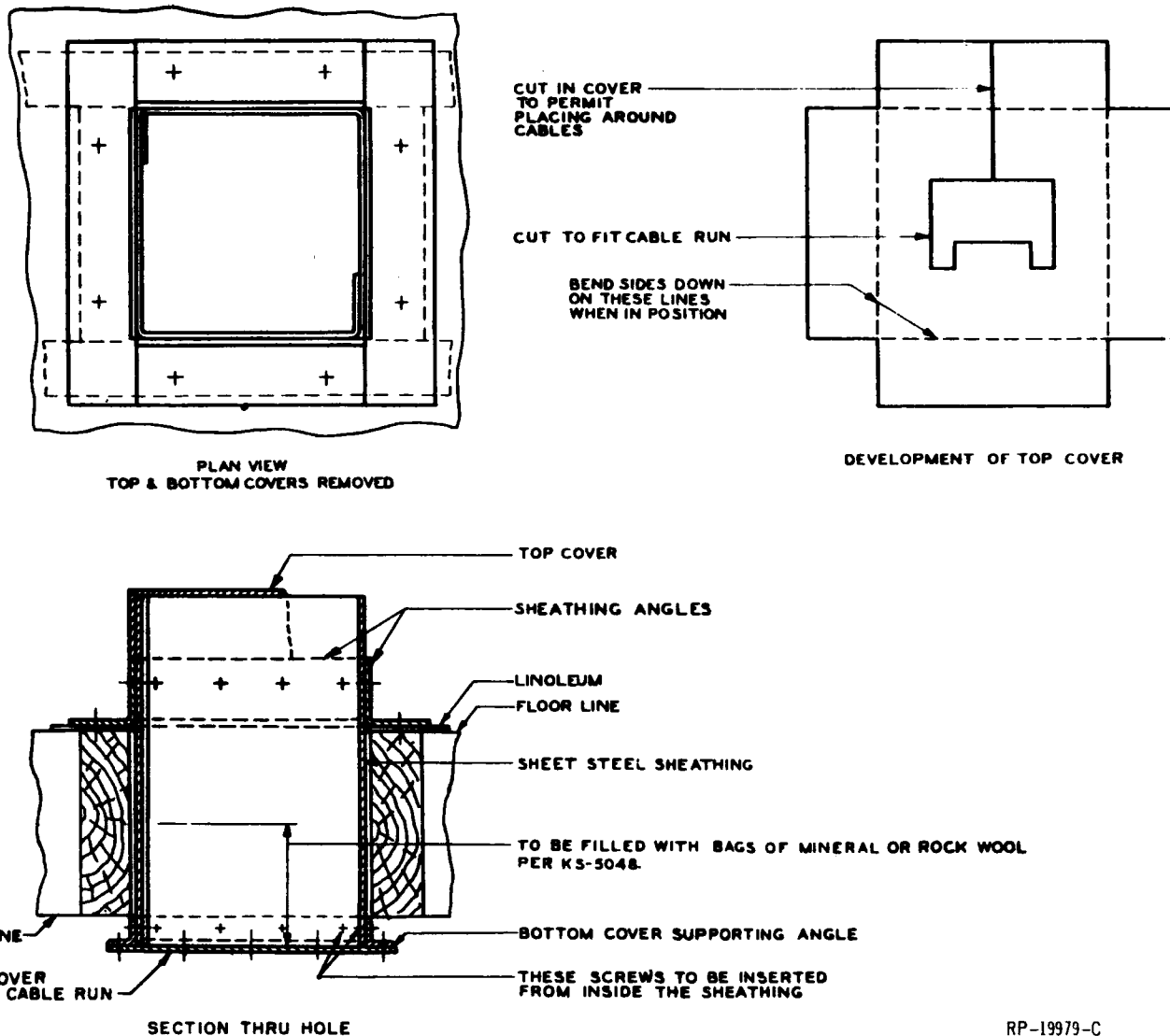


FIG. 7 SHEET-METAL-TYPE SHEATHING FOR CABLE HOLES IN MILL-TYPE AND WOOD-JOIST FLOORS (PAR. 4.11) (BSP 800-614-153 Fig. 7)

4.2 Angle-Type Sheathing

4.21 Angle-type sheathing, as shown in Figure 8, shall be installed in cable holes in mill-type and wood-joist floors in accordance with ED-90005-31.

4.22 Wooden Sheathing associated with angles for cable holes in mill-type and wood-joist floors should be constructed of 2" lumber purchased locally (unless frame is furnished by the telephone company) and installed as shown in Figure 8 and ED-90005-31.

5. SHEATHING FOR FLOOR OPENINGS IN CABLE DUCTS

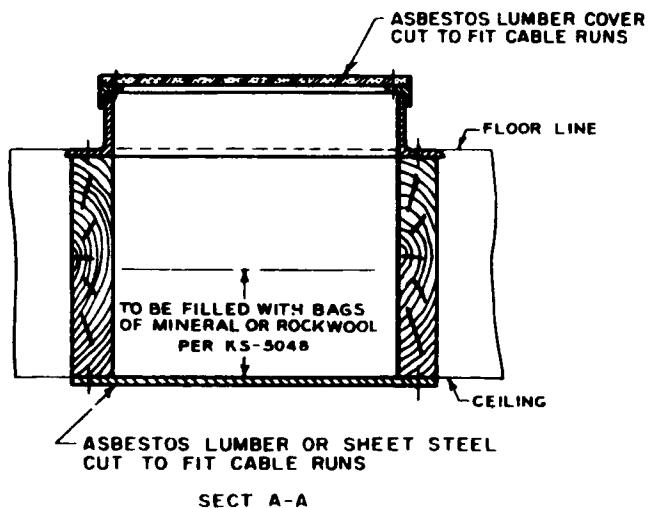
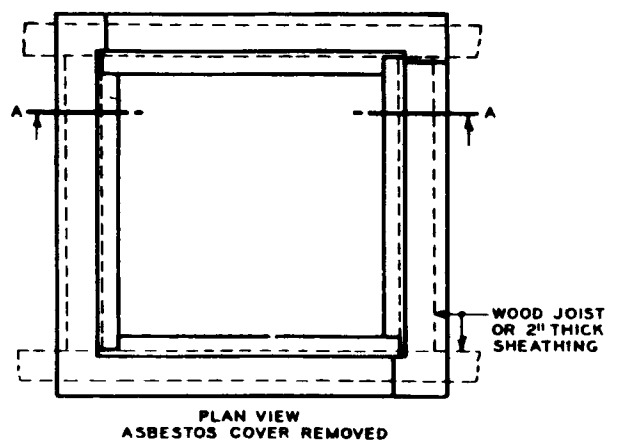
5.1 Sheathing, as shown in Figure 9 shall be installed for floor openings in cable ducts in accordance with ED-90006-30.

5.11 Closing details for floor openings in cable ducts are not required unless specified by the telephone company.

6. SHEATHING FOR CABLE HOLES IN WALLS AND PARTITIONS

6.1 Cable hole sheathing, as shown in Figure 10, shall be installed in walls and partitions in accordance with ED-90006-30.

6.11 Methods of installing sheathing in walls and partitions of special construction such as glass, metal, etc, shall be discussed with the telephone company.



RP-19979-E
NOTE: FOR DETAIL INFORMATION SEE ED-90005-31

FIG. 8 ANGLE-TYPE SHEATHING FOR CABLE HOLES
IN MILL-TYPE AND WOOD-JOIST FLOORS
(PARS. 4.21 AND 4.22)
(BSP 800-614-153 Fig. 8)

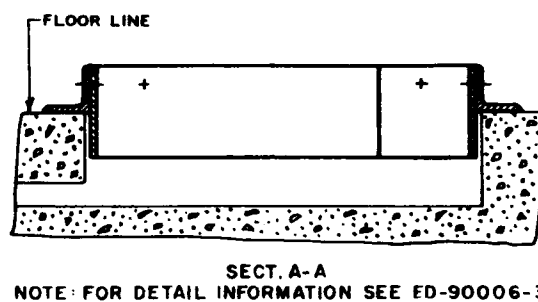
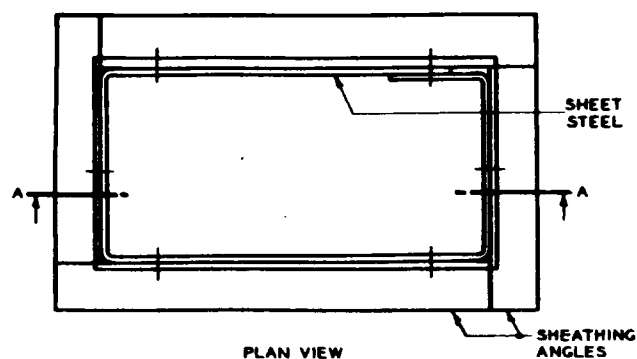
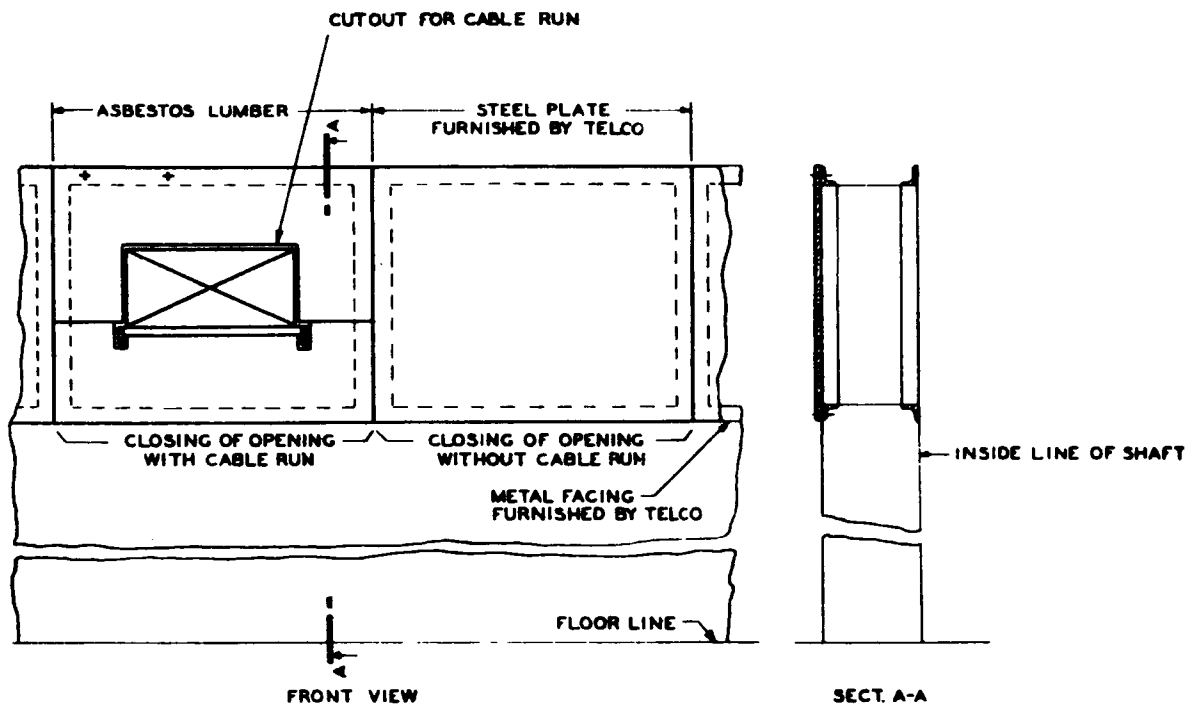


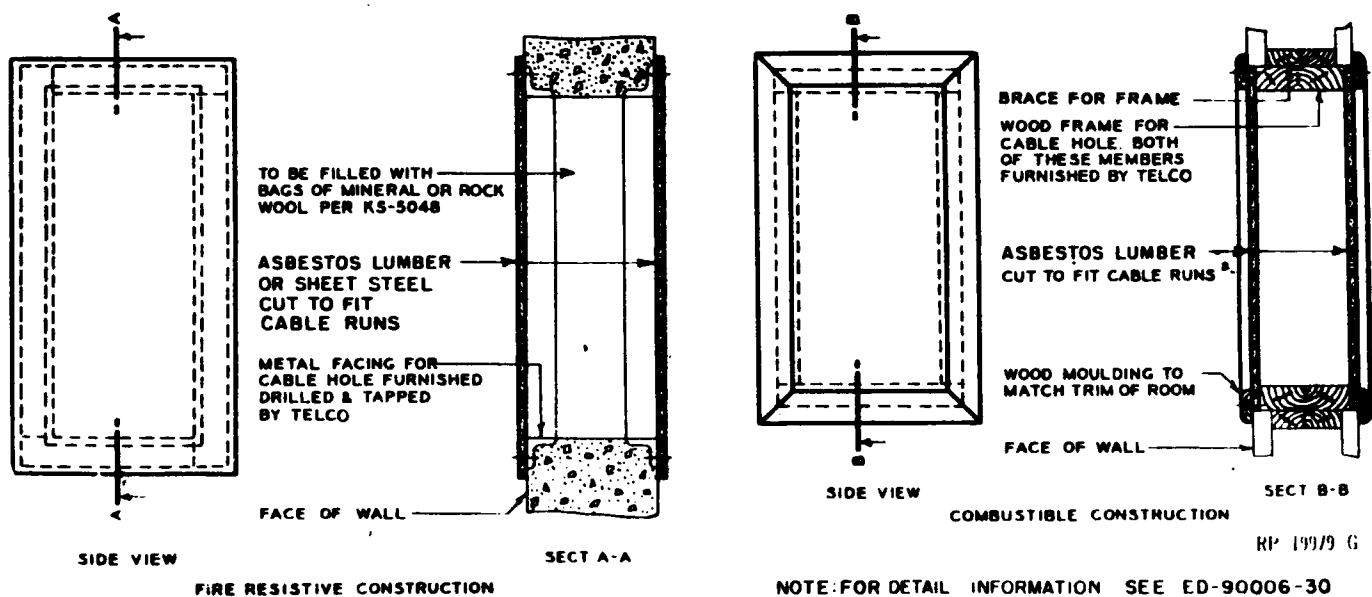
FIG. 9 SHEATHING FOR FLOOR OPENING
IN CABLE DUCTS
(PAR. 5.1)
(BSP 800-614-153 Fig. 9)

RP-19979-F



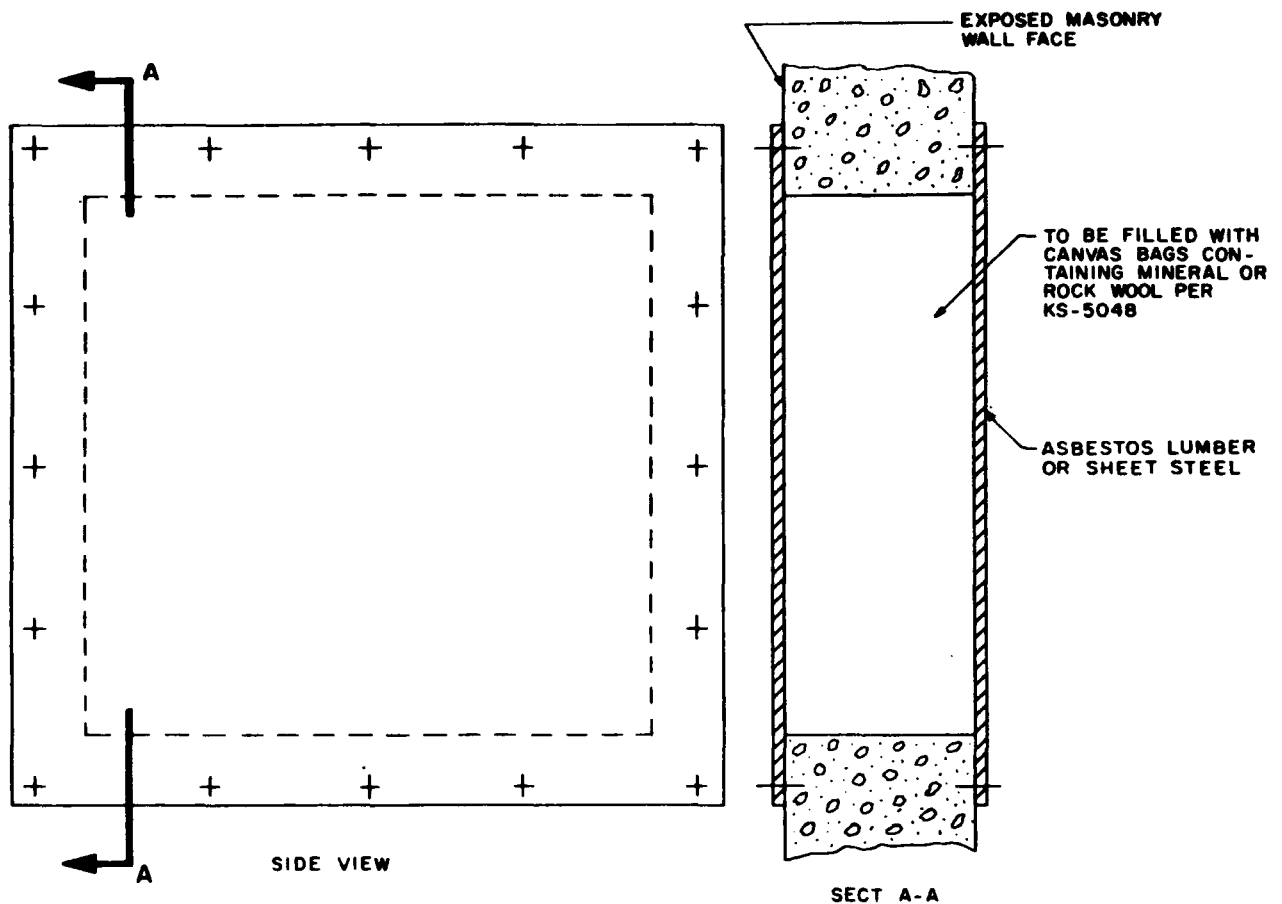
NOTE: FOR DETAIL INFORMATION SEE ED-90578-01

LOCATION AND CLOSING ARRANGEMENT FOR OPENINGS
IN SHAFT WALL FOR CABLE RUNS



NOTE: FOR DETAIL INFORMATION SEE ED-90006-30

FIG. 10 SHEATHING FOR CABLE HOLES IN WALLS AND PARTITIONS
(PARS. 6.1 AND 6.12)
(BSP 800-614-153 Fig. 10)



NOTE:
FOR DETAIL INFORMATION SEE ED-90006-30.

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FIG. 11 SHEATHING FOR CABLE HOLES IN EXPOSED MASONRY WALLS
(PAR. 6.12) (BSP 800-614-153 Fig. 11)

6.12 Where walls are of exposed masonry, the sheathing may be attached directly to the wall without the use of an angle iron frame as shown in Figure 11.

6.2 Closing arrangement for openings in shaft wall for cable runs, as shown in Figure 10, shall be installed in accordance with ED-90578-01.

7. VERIFICATION ITEMS,

7.1 The numbers in parentheses refer to the associated requirement paragraphs in this section unless otherwise indicated.

7.11 Types of sheathing and arrangement in accordance with drawing and specification information furnished the job (Paragraph 1.22 and Section 15A).

7.12 Bolts, nuts and screws withing following requirements (General Section).

- (a) Kind and size as specified and installed in all places requiring them.
- (b) Free from stripped threads and defaced heads.
- (c) Not burred.
- (d) Sufficient thread engagement and properly tightened.

7.13 Cement grouting used where specified (3.71 and 3.72).

7.14 Joints between sheathing framework and Fascia angles at the floor and all joints in sheathing framework not welded (except cover framework) made waterproof (3.81).

7.15 Sheathing of cable holes in wood joist floors made from proper size lumber (4.22).

7.16 Surfaces of metal parts and of cement grouting, where used, properly finished (Section 70).

→ Arrowed lines indicate new or changed information.

[Vertical line at side of paragraphs indicate requirements.

Assistant Manager
Common Installation Engineering

Reason for Reissue:

- (1) To change the Fig. numbers so that they correspond to the BSP Fig. numbers.