URGENT INSTRUCTION SUPPLEMENT
OPTIMUM FIRE PROTECTION FOR
CABLE SLOTS UNDER PROTECTOR FRAMES
CABLE SLOTS UNDER DISTRIBUTING FRAMES
CONTINUOUS CABLE SLOTS BETWEEN COLUMNS
CABLE HOLES IN WALLS AND PARTITIONS
CABLE SLEEVES

1. GENERAL

1.1 It is the purpose of this UIS to inform Installation of a requirement change in closing cable slots under protector, distributing frames, continuous slots between columns, wall and partition openings and cable sleeves.

NOTE: This UIS does not authorize any job extensions for the purpose of closing slots, sleeves and wall openings per the "Cable Opening Fire Protection for Central Office Requirement" outlined in EL4699 dated 8-16-77

1.2 As a result of extensive fire testing conducted by BTL-Whippany, it has been determined that the most effective means of fire protection can be realized when continuous cable slots and cable slots under distributing and protector frames are filled with vermiculite concrete or U.S. Gypsum Thermafiber Safing, and cable sleeves are filled with "Kaowool" Cermic Fiber and sealed with caulking compound on both ends. Since fire resistive wall and partition openings have not been tested, existing methods outlined in BSP 800-614-153 and Handbook 30 Section 15B apply.

1.21 Under the old method, the cable slots were required to have a floor plate only.

1.3 The responsibility to upgrade cable slots is as follows:

1.31 New Cable Slots

Cable slots opened for the installation of protector or distributing frames are the responsibility of Western Electric. They shall be closed to meet the Optimum Fire Protection Requirement described in this UIS.

NOTE: All necessary material shall be procured by the Installer locally. For ordering information, see Par. 2.7 of this UIS.

NOTICE - NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT

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1.32 Existing Cable Slots

The existing cable slots under the protector or distributing frames are the responsibility of the Operating Company. The Installer shall notify the Operating Company if the respective cable slots do not meet the Optimum Fire Protection. At the Operating Company's request, the Installer will perform the upgrading operations as outlined in this UIS. For ordering the required materials, see Par. 2.7 of this UIS.

2. INSTRUCTIONS

2.1 Continuous Slots and Slots Under Distributing and Protector Frames

2.11 Normally, the WECO Installer's responsibilities toward new cable slots under the distributing or the protector frames are:

(a) Remove the steel floor plates.

(b) Install the sheathing around the slots.

(c) Install the floor cover plates between the uprights.

(d) Closing the cable slots per conditions No. 1.

2.12 Condition No. 1 (No cables in slots) - After the normal operations are performed as indicated in Pars. 2.11 and NO CABLES pass through the slot, it is the Installer's responsibility to close those slots using Method No. 1, Par. 2.31.

CAUTION: SLOTS WITHOUT CABLES REQUIRE ONLY 6" OF MINERAL WOOL BATTING.

2.13 Condition No. 2 (Cable in slots)- If the Operating Company places a special request on WECO to install cables, it is the Installer's responsibility to close those slots using the applicable Method 1, 2 or 3 as outlined in Pars. 2.2.

2.2 Existing Cable Slots

2.21 Existing cable slots under protector or distributing frames for which the Operating Company has specifically authorized the upgrading to meet the Optimum Fire Protection Requirement shall be closed as outlined in Pars. 2.3, 2.4, 2.5, and 2.6. (For reference, see FIGS. 1 and 2.)

2.22 Examine the premises and determine which of the following methods is applicable:

2.23 Guideline to determine which method to use:

(a) If cover plates are in place, Method No. 1 is recommended.

(b) If cover plates are missing and the slot is not congested with cables, Method No. 2 is recommended.

(c) If covers are missing and the slot is congested, Method No. 3 is recommended.

2.3 Method No. 1 (See FIG. 1)

(a) Spread vertical stub cables and pack between cables with R-4661 Caulking Compound at the point they pass through the top cover plate. The caulking compound should extend at least 2" deep into the closure below the plate. The cables should then be tied together with the R-4659 Nylon Tie to compress the compound and eliminate any voids. If the vertical stubs are not bundled but are in a row where they pass through the cover, R-4661 Caulking Compound shall be used to seal the joint between the top plate and the cables. Cable ties shall not be cut to pack R-4661 Caulking Compound between cable stubs.

(b) Cut mineral wool batting 2" wider than the width of the slot and 2" longer than the distance between the center to center dimension of vertical stub cables. With the top covers in place and working from below, force the mineral wool batts into the slot and ram it up against the top plate. Continue to add mineral wool until a depth of 12" is reached.

NOTE: Care must be taken to see that the mineral wool forms itself tightly around the vertical stub cables and that no voids are formed. The batts must be forced into position with the thickness in an up-and-down orientation so that there are no vertical joints except at the stub cables. Some trimming may be needed for a tight fit in all cases; however, trials have demonstrated that, with practice, little or no refitting is needed.

(c) As a modification to filling the entire space with mineral wool batts, KS-5048 Bags may be used to fill the space above the concrete slab and under the cover plate. This approach is useful for protector frames and similar frames with large base enclosures which are wider than the slot in the concrete. The mineral wool batts are used to pack the slot only and the KS-5048 Bags are used to tightly pack the base enclosure. In all cases, a depth of 12" total packing material is needed.

NOTE: Plain mineral wool batting can be used in slots over CEF's (vaults). Where this method is used over telephone equipment, single foil face batting must be used. The foil shall be on the bottom side to limit any chance of dusting from the batts.

CAUTION: EYE PROTECTION, DUST MASKS, GLOVES AND PROTECTIVE CLOTHING ARE RECOMMENDED FOR THIS OPERATION. ALSO TEMPORARY DUST PROTECTION SHALL BE PROVIDED DURING INSTALLATION TO PROTECT TELEPHONE EQUIPMENT.

2.31 Where no cables pass through the slot or hole (e.g., future cable slots or holes), 6" of mineral wool batting with staggered joints is adequate.

2.32 It is recommended to cut mineral wool batts with R-2761 Knife Skinning. Also, to aid the Installer in forcing the mineral wool batts from below, on the job fabricated ram is recommended.

2.4 Method No. 2 (See FIG. 2)

2.41 When Method No. 2 is used, the following sequence of operations is recommended:

(a) Stirrups - Stirrups are required for the support of wire mesh and support material. 16GA steel strips 1-1/4"-2 wide are recommended for the fabrication of stirrups: The stirrups should be formed to accommodate 6" of vermiculite concrete on top of a layer of KS-5048 Bags or approximately 2" of mineral wool batting.

NOTE: If stirrups are made of lighter gauge, steel spreaders are recommended.

(b) Wire Mesh - 1/4" x 22GA Hardware Cloth (wire mesh) is recommended for the fabrication of a basket. The basket must be fitted closely around the cabling and against the slot walls. If cable stubs permit, place only a strip of the wire mesh as wide as the slot on the stirrups in place of baskets. A maximum 1/2" wire mesh is recommended.

(c) Support Material - When the (a) and (b) operations of this paragraph are completed, place a layer of KS-5048 Bags or approximately 2" of mineral wool batting on the wire mesh. Care shall be exercised to place the support material around the cable stubs.

(d) Lightweight Concrete - Field mix four parts by volume of vermiculite or perlite to one part of Portland Cement with sufficient water to obtain a consistent concrete mix.

CAUTION: EXCESSIVELY WET CONCRETE MIX HAS THE TENDENCY TO DRIP THROUGH THE OPENING IN THE SUPPORT MATERIAL.

(e) Recommendations:

(1) To avoid excessive cleanup operations, the mixing of concrete should be done outside the telephone building.

(2) To avoid damaging the vertical protectors or terminal strips, a 2" DIA plastic tubing 3-4' long is recommended for pouring concrete into the slot.

(3) Use a wood stick to level the concrete within the slot.

(4) Concrete Mixing Facility - If job is large enough, a portable concrete mixer should be rented. For small jobs, plastic tubs are sufficient.

(f) Finishing Concrete Work - Where the fill is level with the adjacent floor, top cover plates are required to be placed on top to protect the concrete from absorbing the water from floor cleaning. Where standard slot framing is provided above the finished floor, the plates may be eliminated.

2.5 Rework of Closed Cable Slot - To rework the slot, chip or drill holes in the concrete at the appropriate locations. Using a pair of wire cutters, cut the KS-5048 Bags or mineral wool batting and the wire mesh. Seal the opening with high temperature, fast setting grout.

2.6 Method No. 3

2.61 Where slots or cored holes under the distributing frames are highly congested with cables and inaccessible from below, stuff mineral wool batting from above to an approximate depth of 12" and apply a seal 1" thick to the top and around the cable stubs of R-4661 Caulking Compound or lightweight concrete. R-4659 Nylon Strap should be applied where possible.

2.7 Cable Sleeves (See FIG. 3)

2.71 The recommended fire stopping method for cables passing through sleeves is as follows:

(a) If more than one cable passes through the sleeve, separate cables to permit placement of R-4661 Caulking Compound; then, apply an R-4659 Nylon Strap to compact the cables.

(b) On the underside of the slab, pack tightly around the cable and into the sleeve with (approximately 2") R-4661 Caulking Compound.

(c) Pack Kaowool Ceramic Fiber (R-4779) in the sleeve.

(d) Apply R-4661 Caulking Compound (approximately 2") to seal the top sleeve.

2.8 Cable Holes in Walls and Partitions

2.81 Fire Resistive Walls

2.811 Fill cable hole completely with KS-5048 Bags and close with the existing covers. If a cover is missing, a steel cover shall be installed.

2.82 Combustible Walls

2.821 Existing covers shall be utilized to close openings. If covers are missing, steel covers shall be installed.

NOTE: Under no circumstances shall transite covers be cut or shaped.

2.9 Material Ordering

2.91 The Installer and/or the Operating Company can procure the following material:

(a) R-4661 Caulking Compound can be ordered from Regional Stockkeeping Locations Order Number 23466100 or from MMC-COMCODE #401925300.

(b) Mineral Wool Batting - The batting material, a non-asbestos compound, may be procured from distributors of the U.S. Gypsum Corporation under the trade name of "Thermafiber Safing - 4 lbs/cubic foot". On the east coast, the material is provided with a maximum size of 2' x 5' x 3". On the west coast, the maximum size is 2' x 44-1/2" x 3".

Note that various thickness of batting up to 4" are commonly produced and may be used when the 3" thickness is not available. In all cases, a total of 12" is needed to assure adequate fire-stopping in slots with cable and 6" in empty slots for future use.

The batting is available plain or with fire retardant foil facing (FSK). Cost for 4" thick per 1000 square feet is $350 plain and $375 for foil one side. These prices are approximate and will vary by amount ordered and geographic region and are only provided for estimating purposes.

Batting with single foil facing is recommended for all cases since the foil face assists in handling and reduces possible dusting as the material ages. Over telephone equipment, the foil facing must be used so that dusting will be eliminated. Over CEF's (vaults) and in cable holes with bottom plates, plain batting may be used if foil faced batting is not available since dusting is not a problem in these areas.

For further information on these products contact: U.S.G. CONSTRUCTION PRODUCTS DIVISION OFFICES - Tarrytown, N.Y. (914) 332-0800; Atlanta, Ga. (404) 393-0770; Chicago, Ill. (312) 321-4100; Los Angeles, Calif. (213) 388-1171; U.S.G. MINERAL FIBER DIVISION OFFICES - Birmingham, Ala. (205) 252-6432; Wabash, Ind. (219) 563-2111; S. Plainfield, N. J. (201) 756-6776; Corsicana, Tex. (214) 874-4781; Tacoma, Wash. (206) 922-8756.

(c) KS-5048 Bags - These bags are made of fire retardant material with loose mineral wool as a filler and are available from WECO standard supplies. Procure from MMC-COMCODE #996-295-564.

(d) Lightweight Concrete - The Vermiculite or perlite mix and Portland Cement can be obtained at local Building Supply Stores.

(e) High Temperature Grout - High temperature, fast setting grout is available as Hallemite Por-Rok in 60 pound bags, ready mixed. It has a 60 minute setting time and is available from Hallemite, Toledo, Ohio 43612, or local building supply store.

(f) R-4659 Nylon Strap - The R-4659 Nylon Strap can be ordered from Regional Stockkeeping Locations Order Number 23465900 or MMC-COMCODE #400898318.

(g) R-4779 Kaowool Ceramic Fiber can be ordered from Regional Stockkeeping Locations Order Number 23477900 or from MMC-COMCODE #401981816.

2.92 All material affiliated with the cable hole upgrading program is billable to the Operating Company.

2.921 R-coded material shall be ordered by the Installer as outlined per Attachment "A" to this UIS.

2.922 The non-coded material shall be procured by the Installer locally or by the Customer Service Organization. The Installer shall originate a route "A" JIM to obtain authorization by the Operating Company based on GL 76-08-084 dated August 16, 1977

2.93 The Installer shall originate a Supplier's Voucher SD-23-321 Code 46-43A for material charges.

Engineering Planning Manager
Common Installation and Services

→ Indicates new or changed information

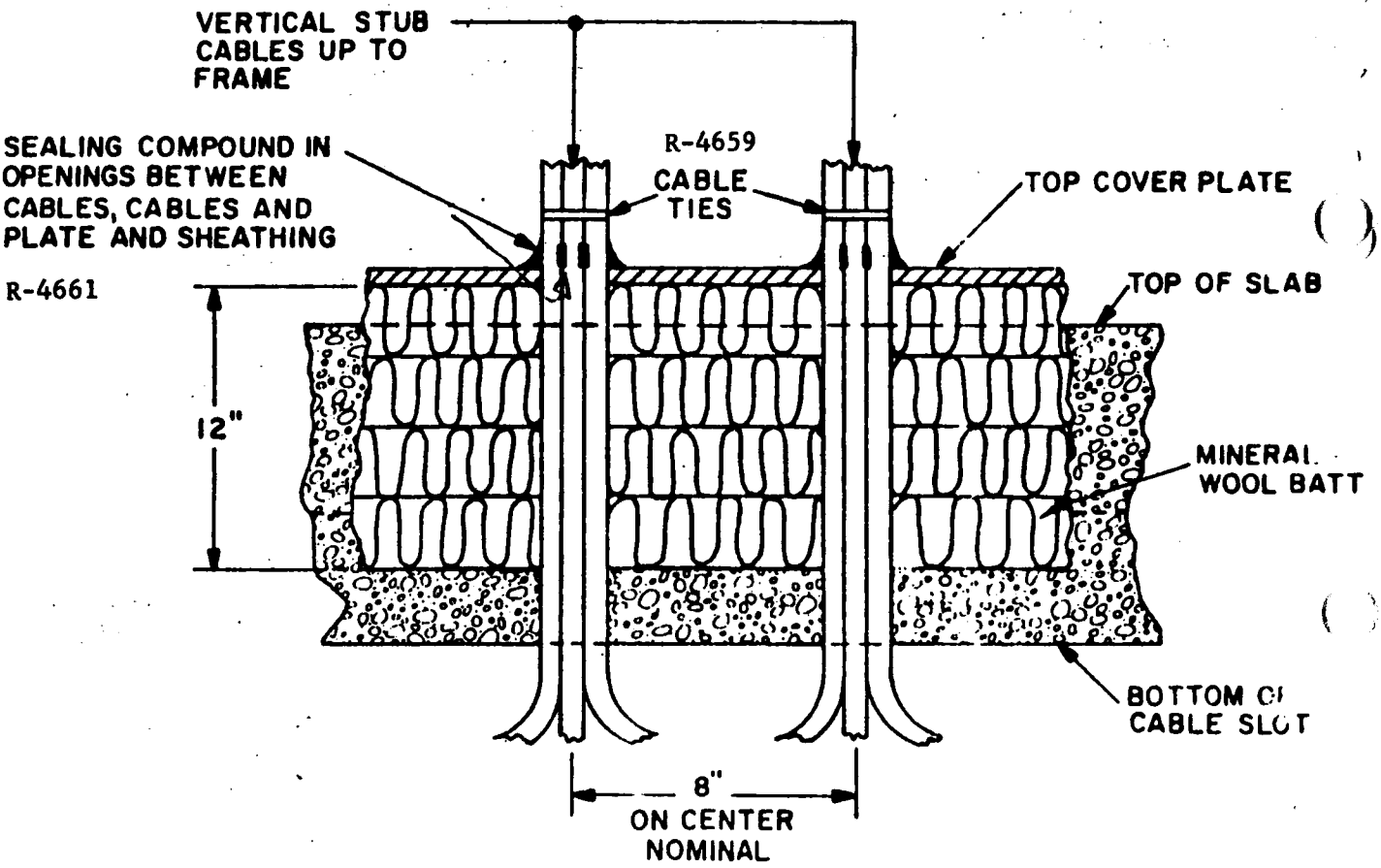
Reason for Reissue:

1) Add information to upgrade cable sleeves.

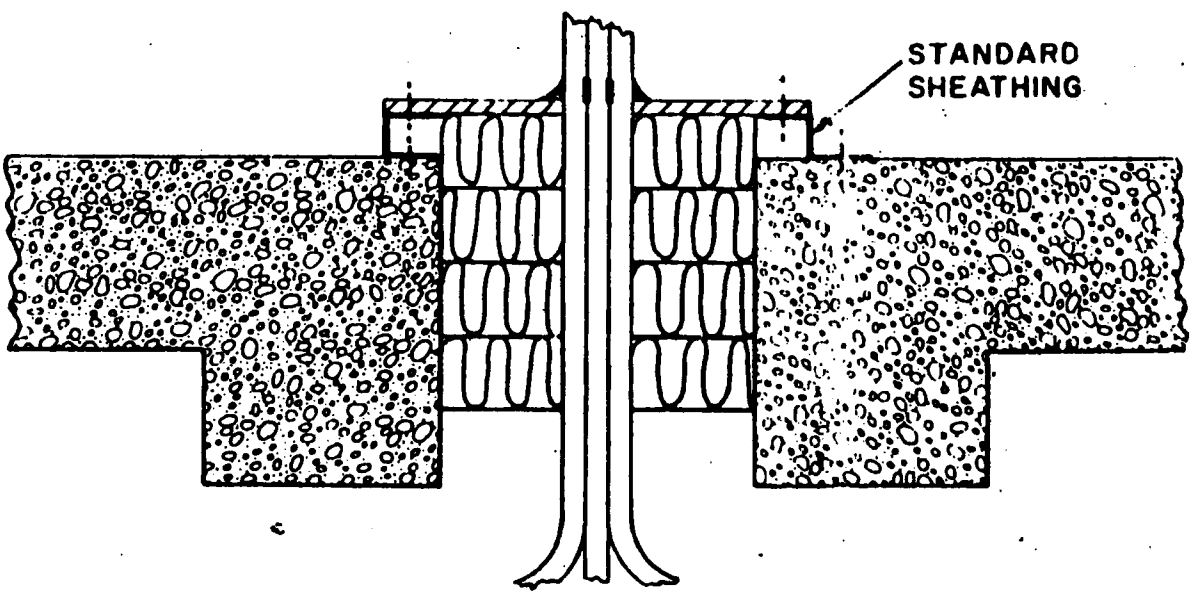
2) Add information to upgrade cable openings in walls and partitions.

3) Add attachment "A" outlining procedures to order R-coded material from Stockkeeping.

FIGURE 1

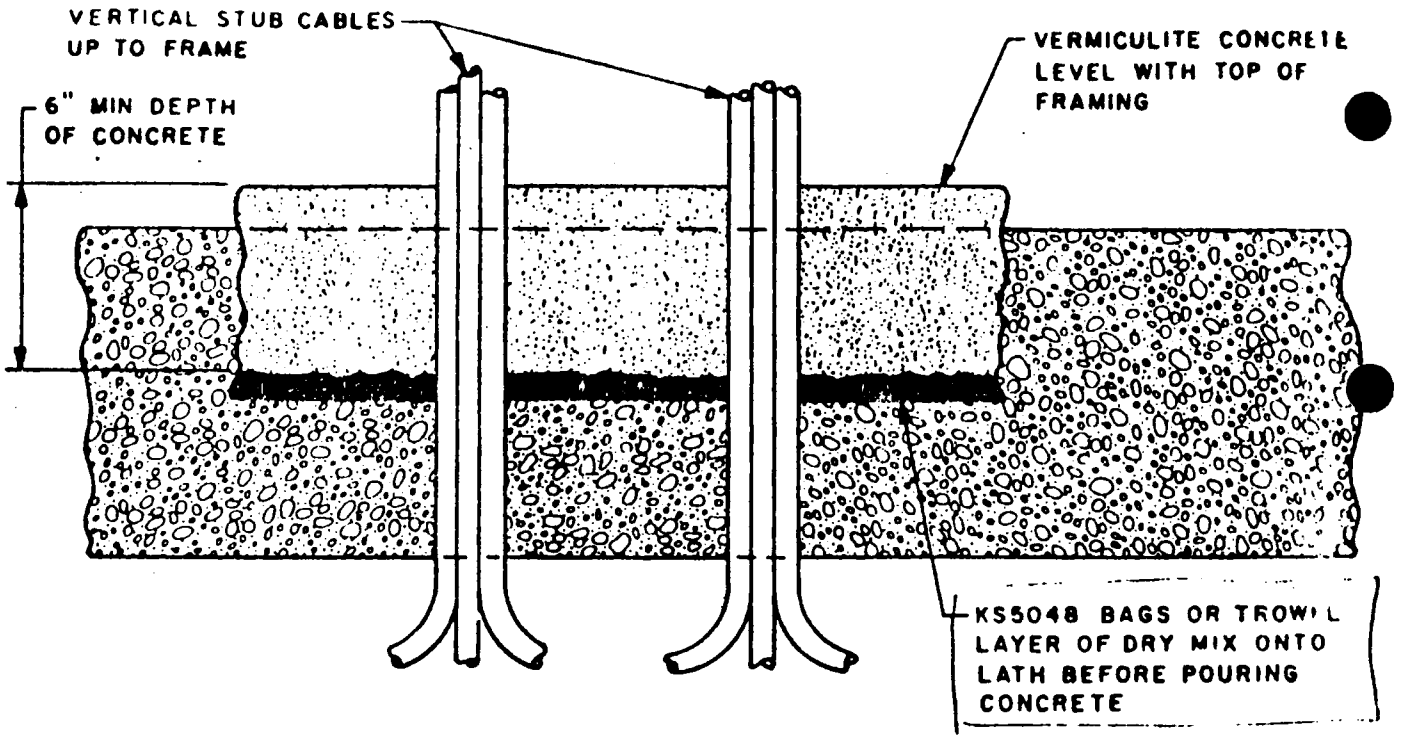


LONGITUDINAL SLOT SECTION

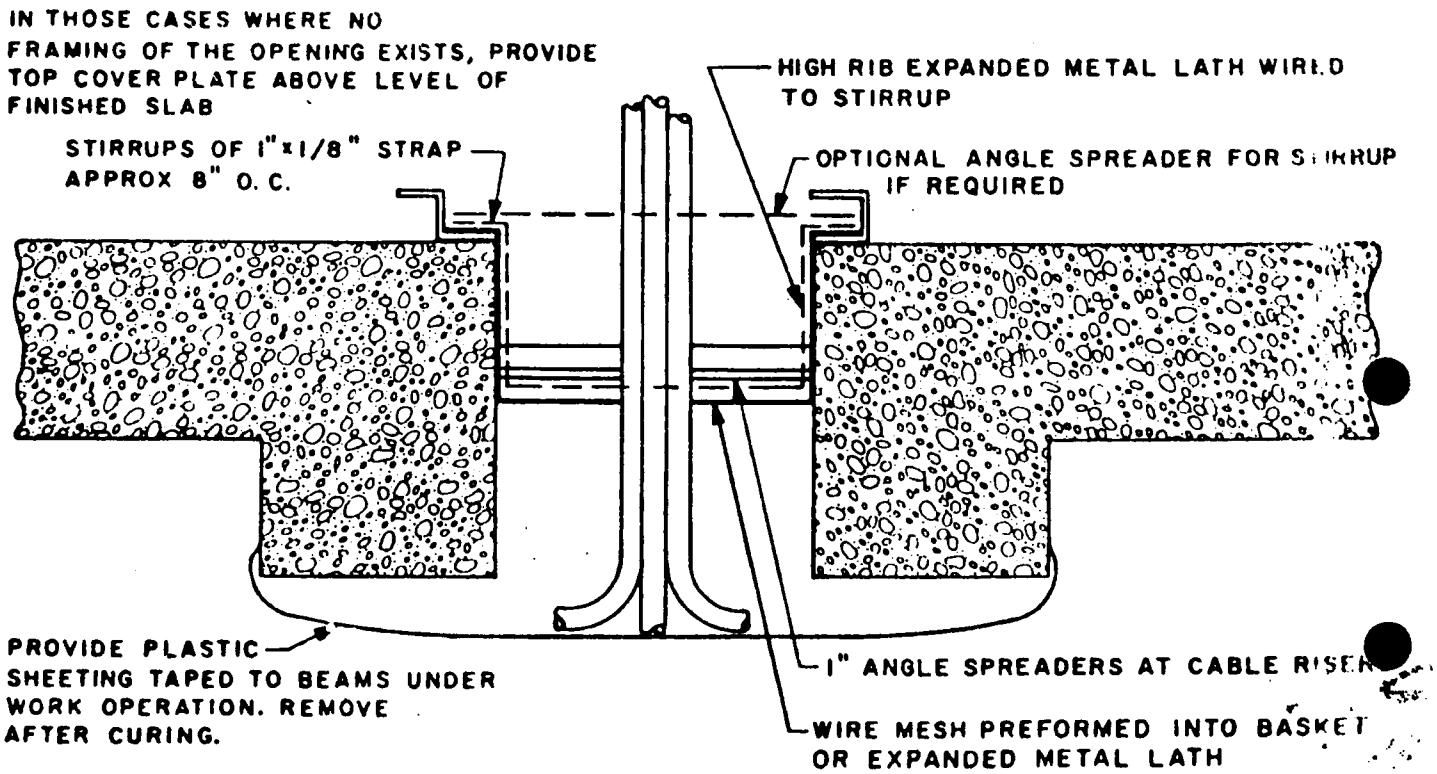


CROSS SECTION OF SLOT

FIGURE 2



LONGITUDINAL SLOT SECTION SHOWING CONCRETE



CROSS SECTION SHOWING SUPPORT FOR CONCRETE

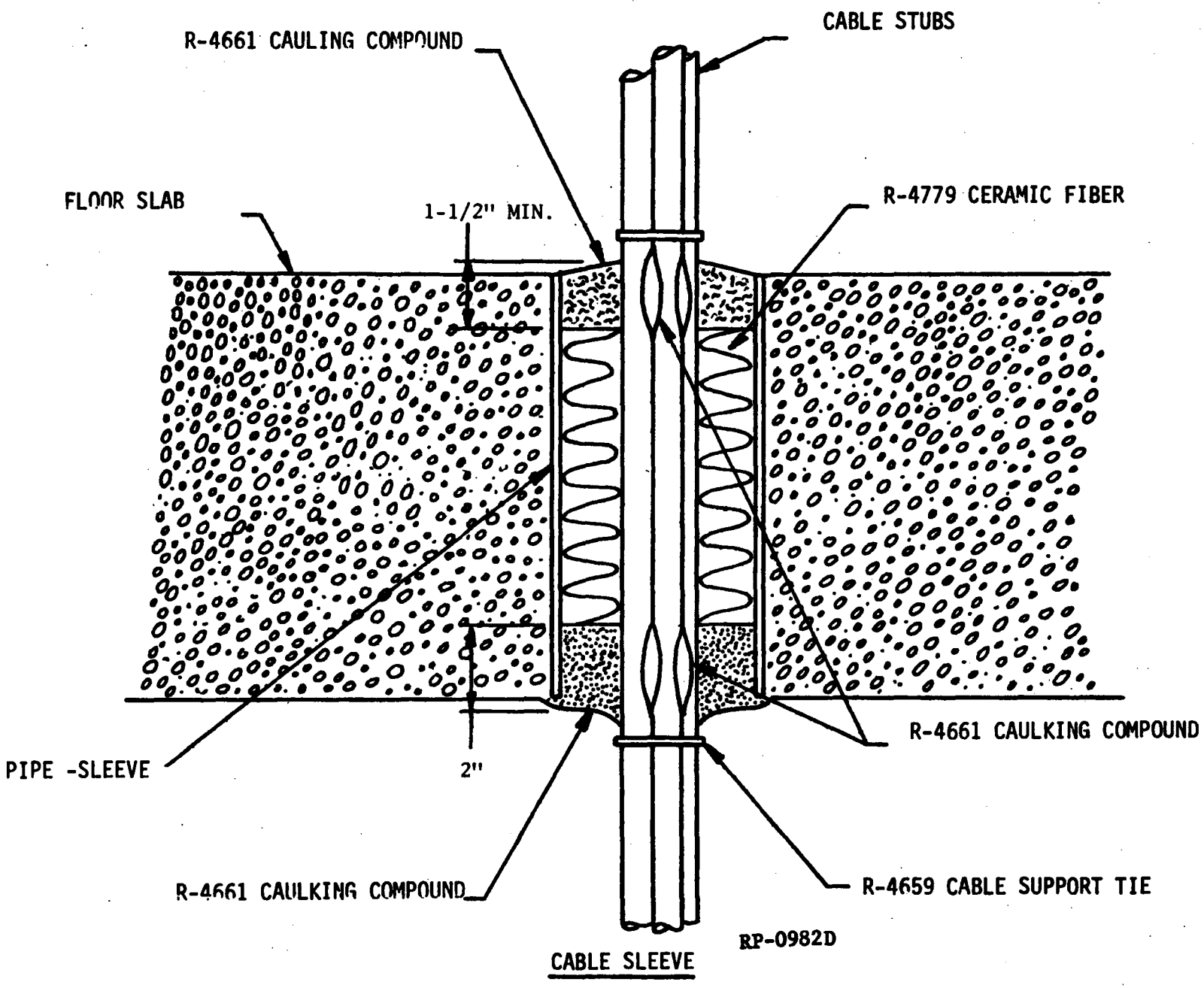

R-4661 CAULING COMPOUND
CABLE STUBS
FLOOR SLAB
1-1/2" MIN.
R-4779 CERAMIC FIBER
R-4661 CAULKING COMPOUND
PIPE -SLEEVE
2"
R-4661 CAULKING COMPOUND
R-4659 CABLE SUPPORT TIE
RP-0982D
CABLE SLEEVE

FIGURE 3