- (4) Fiber optic cable bond connections. (i) The cable shield and metallic strength members shall be bonded at each splice location. Only RUS accepted fiber optic cable shield bond connectors shall be used to provide bonding connections to the metallic cable shields. The shield bond connector manufacturer's instructions shall be followed concerning installation and use.
- (ii) Shield bonding conductors shall be either stranded or braided tinned copper wire equivalent to a minimum No. 6 American Wire Gauge (AWG) and shall be RUS accepted. The conductor connections shall be tinned or of a compatible bimetallic design to avoid corrosion problems associated with dissimilar metals.
- (5) Grounding. (i) Grounding is electrically connecting metallic telephone hardware to a National Electrical Safety Code (NESC) acceptable grounding electrode. Acceptable grounding electrodes are defined in the Rule 99A of the NESC.
- (ii) The conductor used for grounding metallic telephone hardware shall be a minimum No. 6 AWG solid, bare, copper conductor.

- (iii) For copper and fiber optic cable plant, all cable shields, all metallic strength members, and all metallic hardware shall be:
- (A) Grounded at each splice location to a driven grounding electrode (ground rod) of:
- (1) At least 1.5 meters (5 feet) in length where the local frost level is normally less than 0.30 meters (1 foot) deep; or
- (2) At least 2.44 meters (8 feet) in length where the local frost level is normally 0.30 meters (1 foot) or deeper; and
- (B) Bonded to a multi-grounded power system neutral when the splice is within 1.8 meters (6 feet) of access to the grounding system of the multi-grounded neutral system. Bonding to the multi-grounded neutral of a parallel power line may help to minimize telephone interference on long exposures with copper cable plant. Consideration, thus, should be given to completing such bonds, at least four (4) times each mile, when splices are greater than 1.8 meters (6 feet) but less than 4.6 meters (15 feet) from access to the multi-grounded neutral.
- (6) Bonding and grounding splice cases. (i) Splice cases are equipped with

- bonding and grounding devices to ensure that cable shields and metallic strength members maintain electrical continuity during and after cable splicing operations. The splice case manufacturer's recommendations shall be followed concerning the bonding and grounding procedures. Conductors used for bonding shall be either stranded or braided tinned copper wire equivalent to 6 AWG. Conductors used for grounding shall be a solid, bare, copper wire equivalent to minimum No. 6 AWG.
- (ii) Buried splice cases installed in either handholes or pedestals shall be grounded such that the cable shield grounds are attached to a common ground connection that will allow the lifting of a ground on the cable shield in either direction to permit efficient cable locating procedures. As a first choice, buried grounding conductor(s) shall be bare. However, if two or more grounding conductors are buried in the same trench, they shall be insulated to avoid shorts when a locating tone is applied.

(iii) A typical bonding and grounding method for fiber optic splices is shown in Figure 19:

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