See also

310.15(D) for the allowable ampacity of bare and covered conductors

310.12(D) for further information on sizing the grounded conductor for dwelling services

230.32 Protection Against Damage. Underground service conductors shall be protected against damage in accordance with 300.5. Service conductors entering a building or other structure shall be installed in accordance with 230.6 or protected by a raceway wiring method identified in 230.43.

230.33 Spliced Conductors. Service conductors shall be permitted to be spliced or tapped in accordance with 110.14, 230.46, 300.5(E), 300.13, and 300.15.

Part IV. Service-Entrance Conductors

230.40 Number of Service-Entrance Conductor Sets. Each service drop, set of overhead service conductors, set of underground service conductors, or service lateral shall supply only one set of service-entrance conductors.

Exception No. 1: A building with more than one occupancy shall be permitted to have one set of service-entrance conductors for each service, as permitted in 230.2, run to each occupancy or group of occupancies. If the number of service disconnect locations for any given classification of service does not exceed six, the requirements of 230.2(E) shall apply at each location. If the number of service disconnect locations exceeds six for any given supply classification, the following conditions shall apply:

(1) All service disconnect locations for all supply characteristics, together with any branch circuit or feeder supply sources, shall be clearly described using graphics or text, or both, on one or more plaques

(2) The plaques shall be located in an approved, readily accessible location(s) on the building or structure served and as near as practicable to the point(s) of attachment or entry(ies) for each service drop or service lateral and for each set of overhead or underground service conductors.

If a building has more than one occupancy — such as multifamily dwellings, strip malls, and office buildings — each service drop, set of overhead service conductors, set of underground service conductors, or service lateral is allowed to supply more than one set of service-entrance conductors, provided they are run to each occupancy or group of occupancies. This requirement allows for multiple service disconnecting means locations for each service that supplies the building or structure. Based on this exception, one service can be arranged similarly to a building or structure that is supplied by multiple services. The exception does not limit the number of disconnecting means locations supplied by each service.

Because this exception permits more than one service equipment location on a single building or structure, a plaque or directory with information about the multiple equipment locations is required to be provided at each location.

If the number of service equipment locations for any class of service exceeds six, a master plaque(s) or directory(s) is required near the point where service conductors attach to or enter a building or structure. The information must describe the multiple service equipment locations using text, a graphic, or a combination. At the individual service equipment locations, the general marking required in 230.70(B) must be provided.

For example, if a mercantile building has eight storefronts and the building is supplied by a single 208Y/120-volt service, eight sets of service-entrance conductors can be installed with one set run to each occupancy. The service equipment at each occupancy can have up to six service disconnecting means in accordance with 230.71. Because the number of service disconnecting means locations for this service exceeds six, a permanent plaque(s) identifying the multiple supply equipment locations is required. The location of the plaque must be acceptable to the AHJ.

Exception No. 2: Where two to six service disconnecting means in separate enclosures are grouped at one location and supply separate loads from one service drop, set of overhead service conductors, set of underground service conductors, or service lateral, one set of service-entrance conductors shall be permitted to supply each or several such service equipment enclosures.

Exception No. 3: A one-family dwelling unit and its accessory structures shall be permitted to have one set of service-entrance conductors run to each from a single service drop, set of overhead service conductors, set of underground service conductors, or service lateral.

A second set of service-entrance conductors supplied by a single service drop or lateral at a single-family dwelling unit is permitted to supply another building on the premises, such as a garage or storage shed. The utility meters may be grouped at one location, but in this application, the service disconnecting means are not required to be grouped at one location.

Exception No. 4: Two-family dwellings, multifamily dwellings, and multiple occupancy buildings shall be permitted to have one set of service-entrance conductors installed to supply the circuits covered in 210.25.

Exception No. 5: One set of service-entrance conductors connected to the supply side of the normal service disconnecting means shall be permitted to supply each or several systems covered by 230.82(5) or 230.82(6).

230.41 Insulation of Service-Entrance Conductors. Service-entrance conductors entering or on the exterior of buildings or other structures shall be insulated.