

of terminations necessary for the installation. If aluminum busbars are used, the installation shall also be in accordance with 250.64(A).

(3) The exothermic welding process.

Tap conductors shall be connected to the common grounding electrode conductor in such a manner that the common grounding electrode conductor remains without a splice or joint.

(7) **Installation.** The installation of all grounding electrode conductors shall comply with 250.64(A), (B), (C), and (E).

(8) **Bonding.** Structural steel and metal piping shall be connected to the grounded conductor of a separately derived system in accordance with 250.104(D).

(B) **Ungrounded Systems.** The equipment of an ungrounded separately derived system shall be grounded and bonded as specified in 250.30(B)(1) through (B)(3).

(1) **Grounding Electrode Conductor.** A grounding electrode conductor, sized in accordance with 250.66 for the largest derived ungrounded conductor(s) or set of derived ungrounded conductors, shall be used to connect the metal enclosures of the derived system to the grounding electrode as specified in 250.30(A)(5) or (A)(6), as applicable. This connection shall be made at any point on the separately derived system from the source to the first system disconnecting means. If the source is located outside the building or structure supplied, a grounding electrode connection shall be made in compliance with 250.30(C).

For ungrounded separately derived systems, a GEC is required to be connected to the metal enclosure of the system disconnecting means. The GEC is sized from Table 250.66 based on the largest ungrounded supply conductor. This connection establishes a reference to ground for all exposed non-current-carrying metal equipment supplied from the ungrounded system. The EGCs of circuits supplied from the ungrounded system are connected to ground via the GEC connection.

(2) **Grounding Electrode.** Except as permitted by 250.34 for portable and vehicle-mounted generators, the grounding electrode shall comply with 250.30(A)(4).

(3) **Bonding Path and Conductor.** A supply-side bonding jumper shall be installed from the source of a separately derived system to the first disconnecting means in compliance with 250.30(A)(2).

Δ (C) **Outdoor Source.** If the source of the separately derived system is located outside the building or structure supplied, a grounding electrode connection shall be made at the source location to one or more grounding electrodes in accordance with 250.50. In addition, the installation shall be in accordance with 250.30(A) for grounded systems or with 250.30(B) for ungrounded systems.

Exception: The grounding electrode conductor connection for impedance grounded systems shall be in accordance with 250.36 or 250.187, as applicable.

This exception is similar in function to the requirement of 250.24(A)(2) in that it allows an outdoor grounding connection at the source of a separately derived system. This connection provides a first line of defense against the effects of overvoltages due to lightning, transients, or accidental contact between conductors of systems operating at different voltages.

250.32 Buildings or Structures Supplied by a Feeder(s) or Branch Circuit(s).

Δ (A) **Grounding Electrode System and Grounding Electrode Conductor.** A building(s) or structure(s) supplied by a feeder(s) or branch circuit(s) shall have a grounding electrode system and grounding electrode conductor installed in accordance with Part III of Article 250.

The equipment grounding bus must be bonded to the grounding electrode system as is shown for Buildings 2 and 3 in Exhibit 250.17. Building 1 is supplied by a service and is grounded in accordance with 250.24(A) through (D), and the disconnecting means enclosure, building steel, and interior metal water piping are also required to be bonded to the grounding electrode system. All exposed non-current-carrying metal parts of electrical equipment are required to be grounded through EGC connections to the equipment grounding bus at the building disconnecting means. The grounded conductor of the feeder supplying Building 2 is permitted to be re-grounded per 250.32(B)(1), Exception No. 1. An EGC is run with the feeder to Building 3 as specified in the general requirement of 250.32(B).

Exception: A grounding electrode system and grounding electrode conductor shall not be required if only a single branch circuit, including a multiwire branch circuit, supplies the building or structure and the branch circuit includes an equipment grounding conductor for grounding the normally non-current-carrying metal parts of equipment.

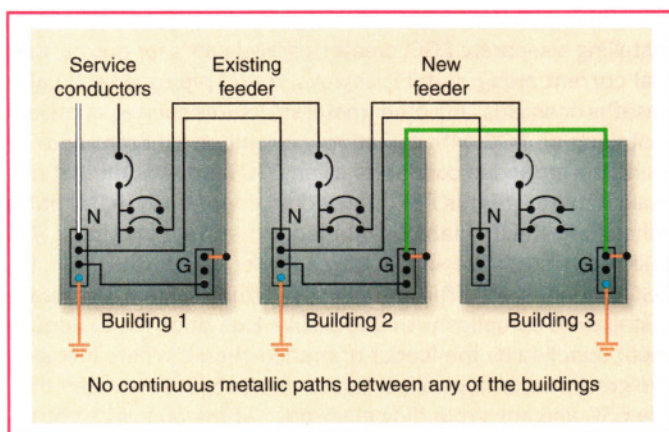


EXHIBIT 250.17 Example of grounding electrode systems required at feeder-supplied Building 2 and Building 3.