Rule(s):
10-004 and 10-116 6)

Description of Change:
Delete Ontario Amendment (OA) special terminology for “Effectively grounded metal structural frame of a building” in Rule 10-004 and delete OA to Rule 10-116 6) and associated Appendix B note.

Submitted by:
Electrical Safety Authority

Background & Rationale:
The definitions of “solidly grounded systems” and “system bonding jumper” in Rule 10-004 have been revised for the 2024 Canadian Electrical Code (CEC) to include all methods of achieving a grounding connection for solidly grounded systems, such as using a non-current-carrying conductive body (e.g., a steel beam) to extend the grounding connection.

From the 2024 CEC Rule 10-004:

- **Solidly grounded systems** – an electrical system in which a point of that system is connected, without inserting an impedance grounding device,
  a) to a system bonding jumper; and
  b) ~~by a grounding conductor~~ to a grounding electrode or to a conductive body that extends the ground connection.

- **System bonding jumper** – a connection between the ~~system grounded~~ point of an electrical system to be solidly grounded and the non-current-carrying conductive parts of ~~an~~ that electrical system ~~to be established a solidly grounded system~~.

This revision encompasses the intent of the OA special terminology that defined an “effectively grounded metal structural frame of a building” as a metal structural frame of a building with members (including columns and beams) that are permanently bonded to each other and to the main service grounding conductor or electrode; and therefore, the intent of Subrule 6) in the OA for Rule 10-116. Although the current OA to Rule 10-116 is applicable to separately derived systems only, there are no safety concerns for allowing consumer service to be grounded to a metal structural frame as an extension of a grounding connection.

Proposed Change:

Delete the current Ontario Amendment to Rule 10-004 and Rule 10-116 6) and associated Appendix B note.

10-004 Special terminology (see Appendix B)
In this Section, the following definitions shall apply:
~~***Add the following definition:***~~
~~***Effectively grounded metal structural frame of a building —*** *a metal structural frame of a building with members (including columns and beams) that are permanently bonded to each other and to the main service grounding conductor or electrode.*~~

10-116 Installation of grounding conductors (see Appendix B)
1) The grounding conductor shall be electrically continuous throughout its length.
2) Where necessary, devices to control the effects of stray earth current shall be permitted to be connected in series with the grounding conductor.
3) A grounding conductor shall be protected from damage
a) mechanically; or
b) by location.
4) Raceways or sleeves constructed of magnetic materials used to enclose grounding conductors shall be connected to the grounding conductor at both ends.
5) A grounding conductor installed in the same raceway with service conductors shall be insulated, except that an uninsulated grounding conductor shall be permitted where the length of the raceway
a) does not exceed 15 m between pull points; and
b) does not contain more than the equivalent of two 90° bends between pull points.
~~***Add Rule 10-116 6) as follows:***~~
~~*6) For separately derived systems, the grounding conductor connection shall be permitted to be made to the effectively grounded metal structural frame of a building as defined in Rule 10-004.*~~

~~***Add Appendix B Note to Rule 10-116 6) as follows:***~~
~~***Rule 10-116 6)***~~
~~*The effectively grounded metal structural frame of a building as defined in Rule 10-004 is permitted to be used as a common grounding conductor to a grounding electrode, but is not considered as part of a grounding electrode.*~~