

March 20, 2019

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Temporarily Approved Solar Photovoltaic System Electrical Schematics

This document is intended as a temporary interpretation of approved solar photovoltaic electrical schematics in accordance with the State Electrical Code, specifically Articles 690 and 705. As the result of an urgent need to provide the State with acceptable designs for the installation of solar photovoltaic systems that interconnect with a utility service, the State Electrical Division has created four (4) methods that shall be accepted by the local electrical inspector having jurisdiction. These four (4) designs are not intended to be exhaustive methods of compliance, instead these methods are installations in which an approval can be assured.

Currently, the State Electrical Division is in the process of creating a permanent interpretation with designs that meet the provisions of Articles 690 and 705. After the permanent interpretation is released, this document will be null and void. Such formal interpretation will be found at the following link once finalized.

[http://www.ncdoi.com/OSFM/State Electrical Division//Default.aspx?field1=State Electrical Code and Interpretations](http://www.ncdoi.com/OSFM/State_Electrical_Division//Default.aspx?field1=State_Electrical_Code_and_Interpretations)

The following schematics are current approved designs by the State Electrical Division:



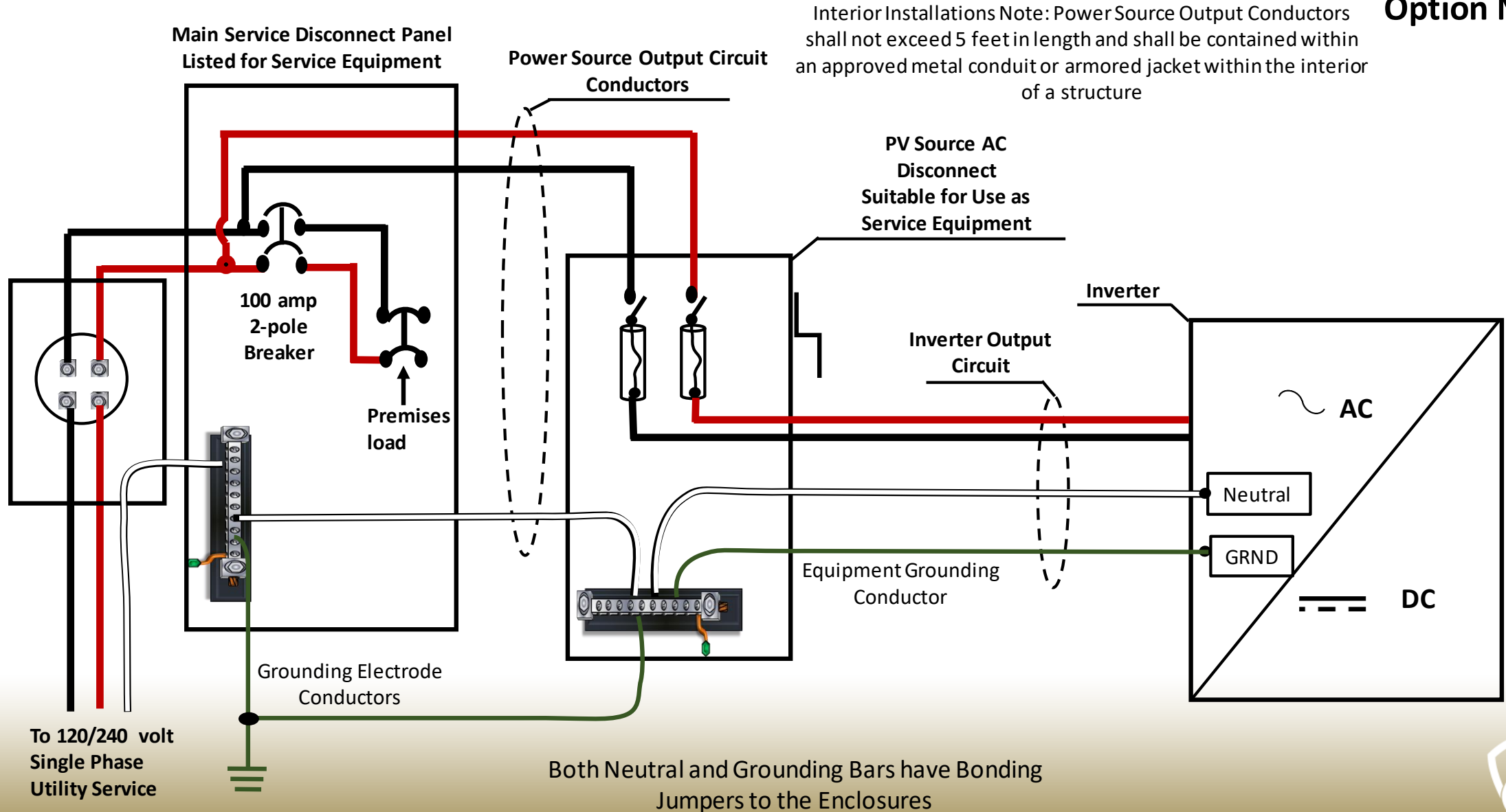
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Chief State Electrical Engineer & Inspector
Chief Electrical Code Consultant



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Separate Meter Base & Service Disconnect

Example Drawing Option No. 1

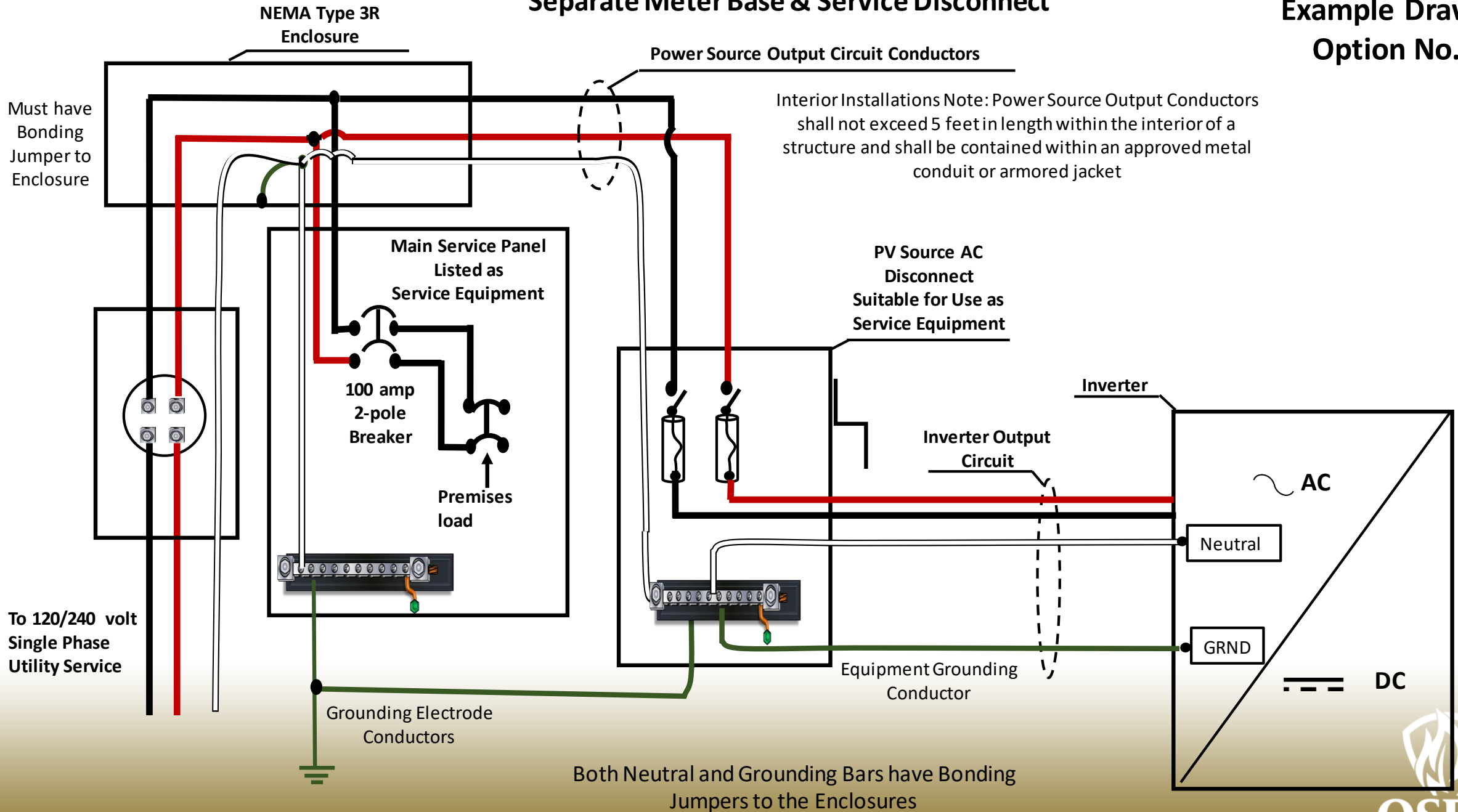


Interior Installations Note: Power Source Output Conductors shall not exceed 5 feet in length and shall be contained within an approved metal conduit or armored jacket within the interior of a structure



Separate Meter Base & Service Disconnect

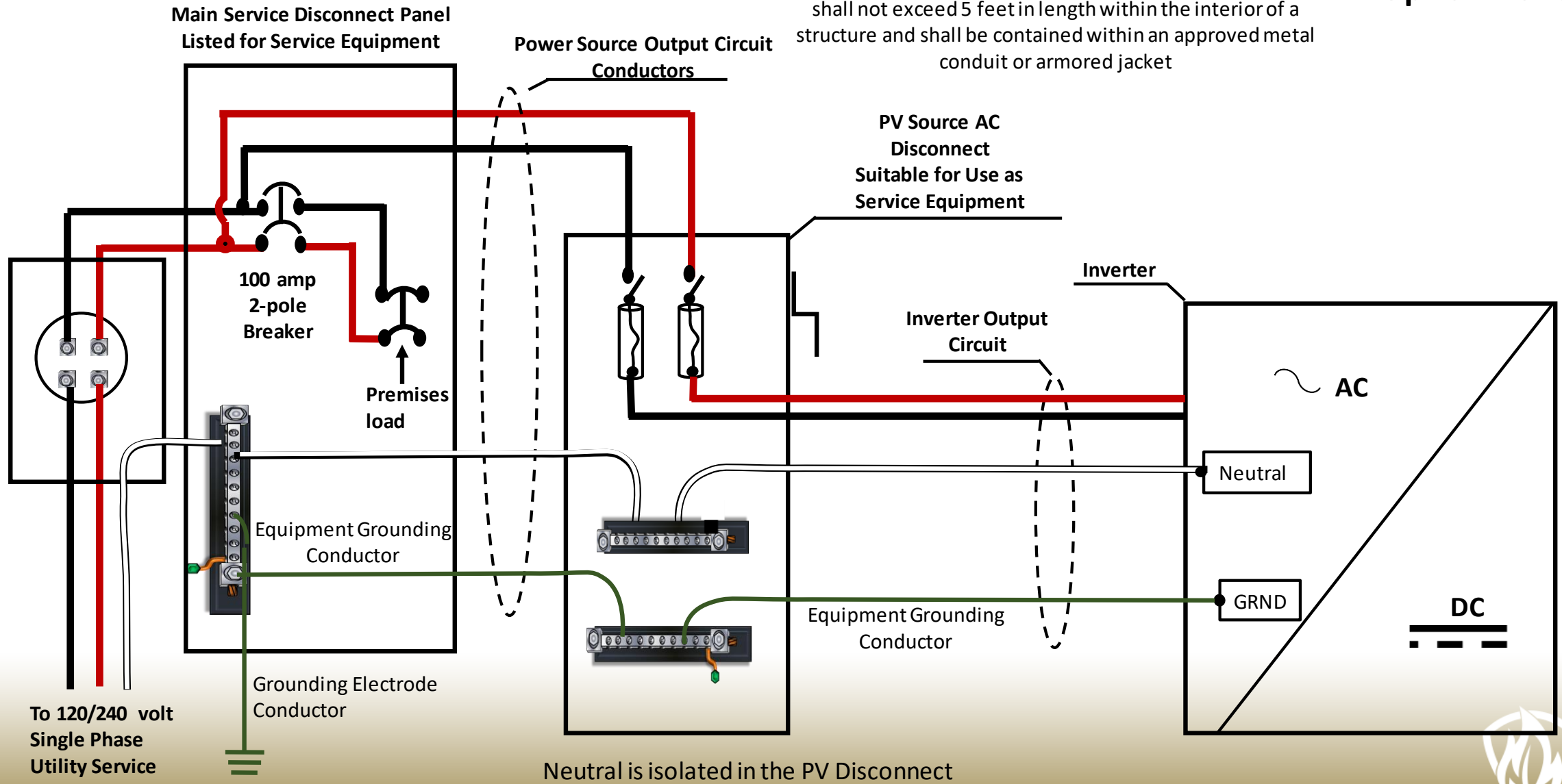
Example Drawing Option No. 2



Separate Meter Base & Service Disconnect

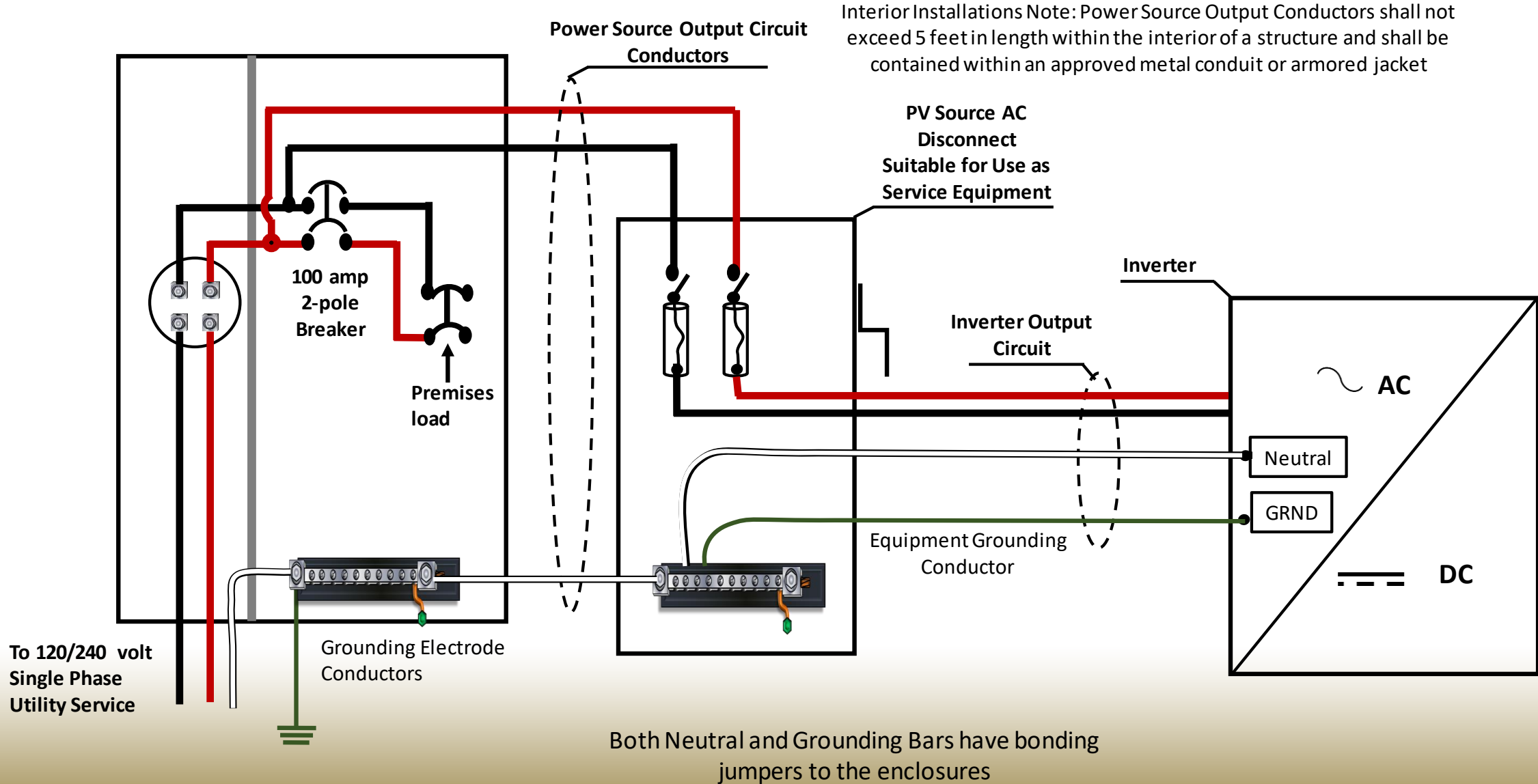
Example Drawing Option No. 3

Interior Installations Note: Power Source Output Conductors shall not exceed 5 feet in length within the interior of a structure and shall be contained within an approved metal conduit or armored jacket



Meter Base / Service Equipment Combo with Factory Wire Type Conductors being Tapped with Listed Splicing Terminals (See Pages 6 – 9)

Example Drawing Option No. 4





Example of Listed Splicing Terminal Tap devices that could be used for connection to service conductors on PV systems.



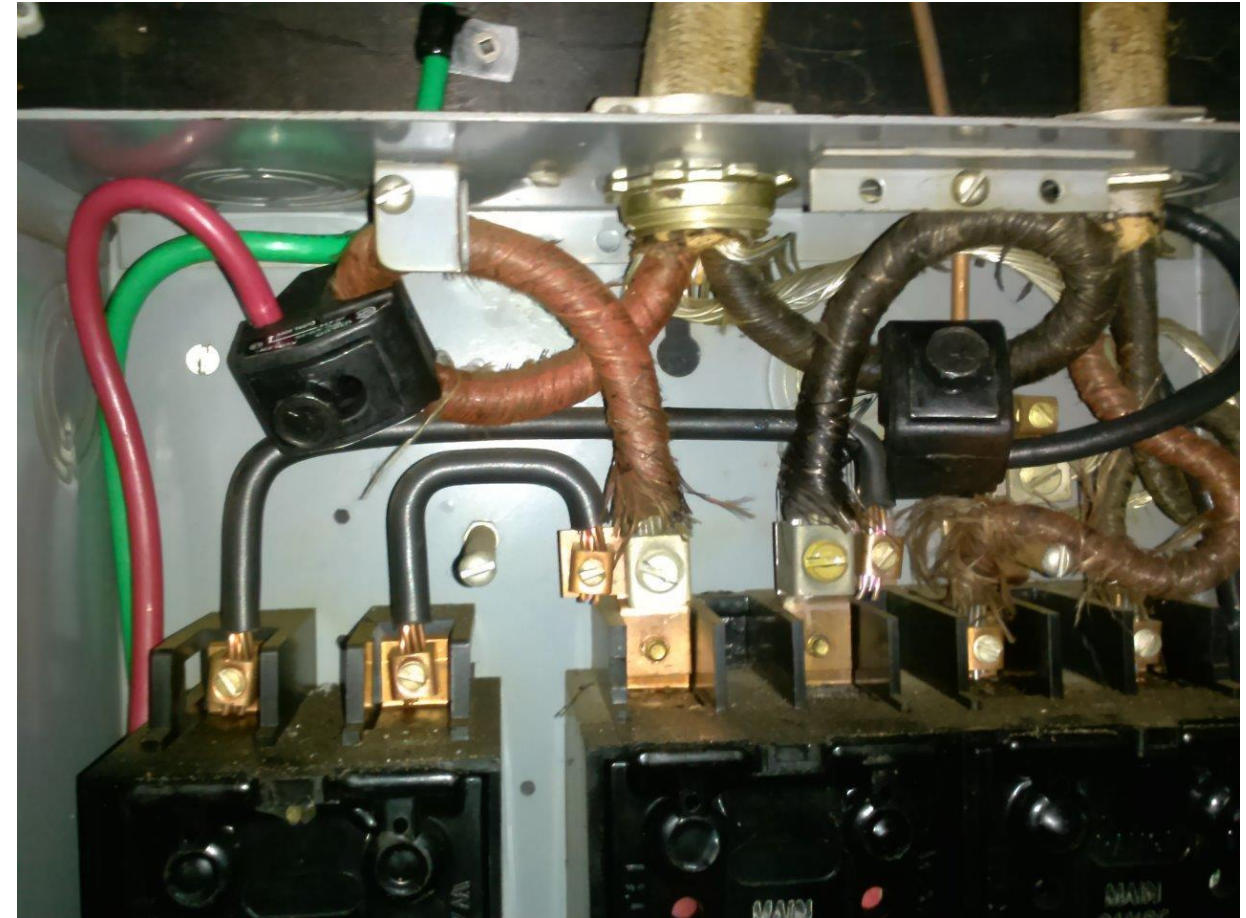


**Meter Base /
Panel
Combination**



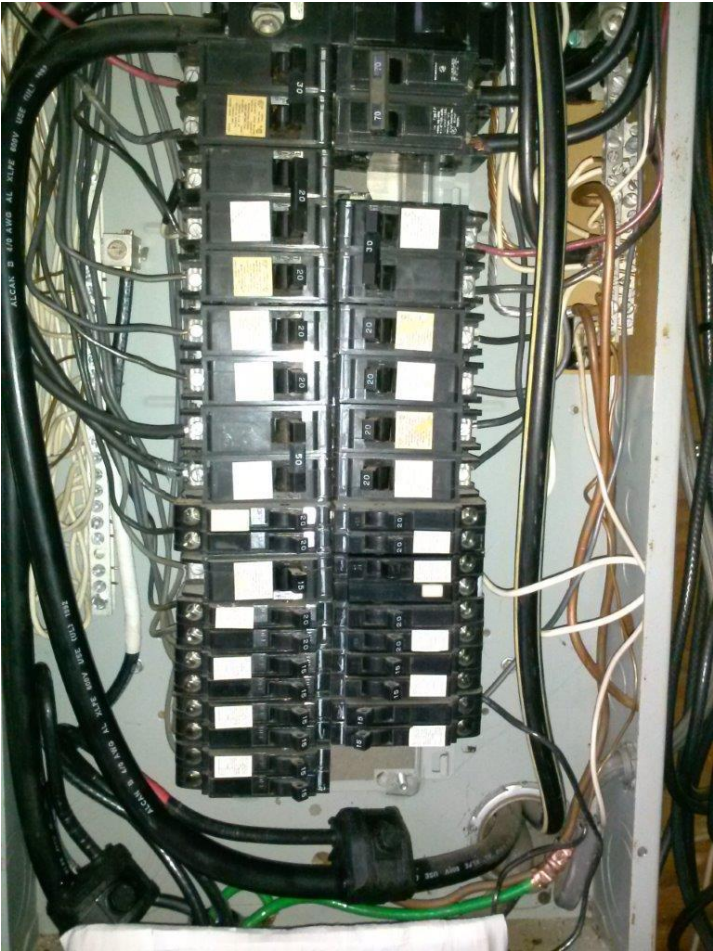
**May not be able to install
devices. Very little room for
connectors and would have to
be staggered**

Violations Example



Cannot install the tap devices on curved sections of a conductor, per installation instructions.

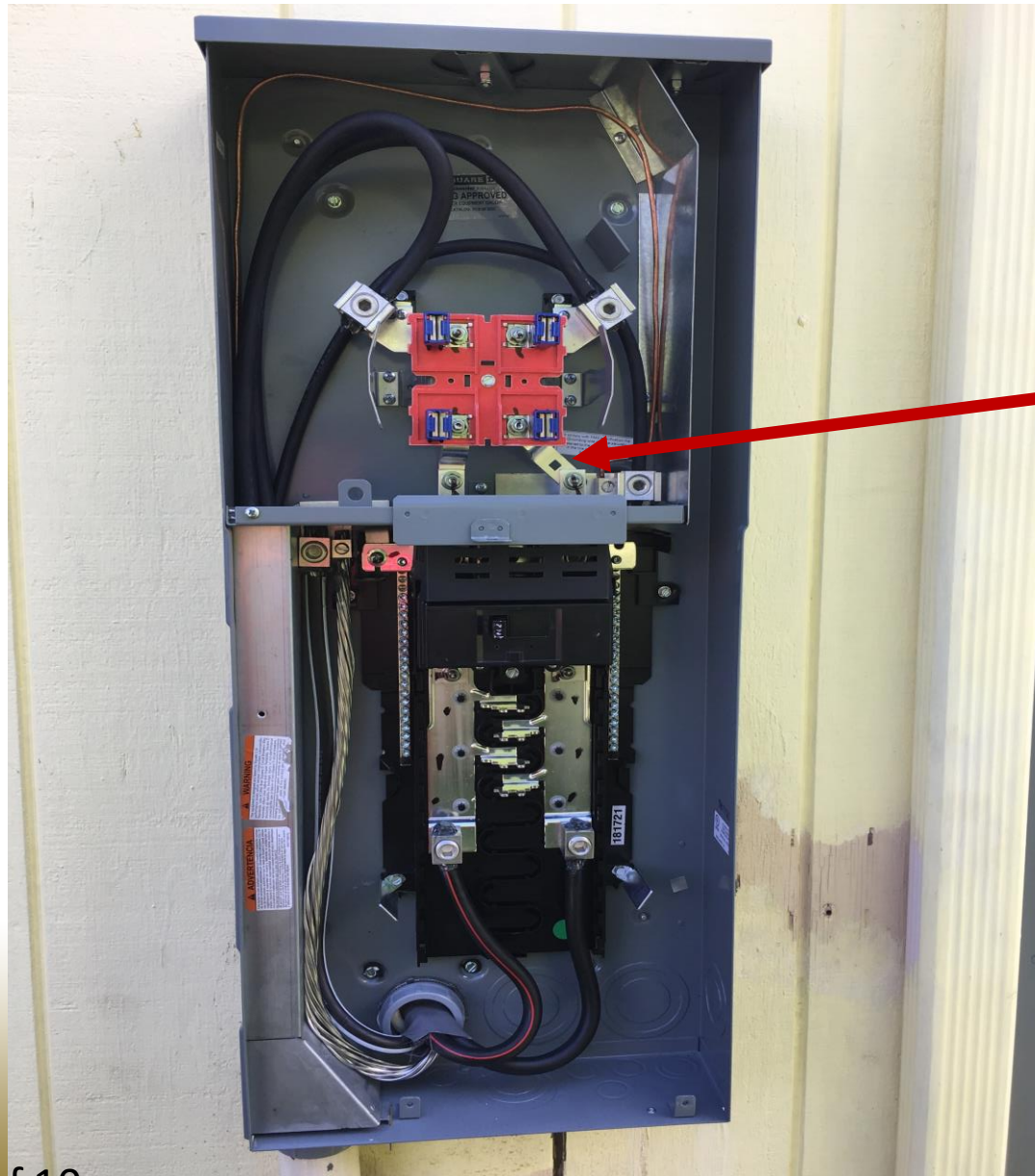
Would also have to comply with section 312.8.



Installations instructions would not allow the tap device to be installed on any part of conductor that is curved. Must be on a straight run of conductor.

Meter Base / Service Equipment Combo with Factory Busbars Between Meter Jaws and Main Breaker

Example Drawing
Option No. 5



These factory installed bars cannot be altered without being re-evaluated by the listing laboratory