

The City of Menifee encourages the installation of renewable systems through low permit fees for solar photovoltaic (PV) installations and standardized solar permitting guidelines. All solar PV installations need an electrical permit. The required elements for permit applications for solar PV installations are detailed below.

All plans submitted for solar PV systems must comply with, and reference, the 2019 California Building Standards Code that became effective on January 1, 2020, including the 2019 California Residential Code (CRC), 2019 California Electric Code (CEC), 2019 California Plumbing Code (CPC), and 2019 California Mechanical Code (CMC) as appropriate including any amendments and/or errata.

Effective September 8, 2017; all inverters installed after this date must be a listed “smart inverter”.

The City of Menifee Building and Safety Department has a plan check wait time of up to 7 business days.

The City of Menifee does not currently perform any over-the-counter plan reviews for solar systems due staffing levels.

Requirements for Permit Submittal

Before approval and issuance of permit(s) for solar PV systems, the applicant shall submit three (3) sets of plans (minimum size 11”x17”), which are drawn to scale (or at the very minimum are fully dimensioned), readable, and legible with a minimum of #12 font for text. Electronic plans that are designed to be printed at a minimum of 11”x17” in size and meeting the requirements listed above (one set of plans shall be required for electronic plans). Electronic plans may be submitted to solar@cityofmenifee.us

All plans shall include the following information:

(Plan information listed in the items below could be combined if clarity is maintained.)

1. **Cover Sheet** showing the following information: (a) project address; (b) owner’s name, address, and phone number; (c) name, address, and phone number of the person preparing the plans; (d) scope of work statement; (e) number of stories and number of dwelling units; (f) sheet index indicating each sheet title and number; (g) legend for symbols, abbreviations, and notations used in the drawings.
2. **Schematic Site Plan** showing the location of the ground mounted PV system; all building footprints with locations of property lines, distances of building walls to property lines, location of the main service and the exterior and any interior locations of all equipment and disconnects with working space clearances, and locations of other structures (if any) on the property, and the proposed conduit path-of-travel underground and above ground.
3. **Electrical Plan** showing:
 - a. The kW rating of the solar PV system and whether it is a utility interactive, stand-alone, or ground mount system;
 - b. Complete electrical calculations for the proposed solar PV system;
 - c. Single line diagram of the electrical installation which includes the solar PV panel layout, PV power



source short circuit current rating, conductor size and type, conduit size and type, location and lengths of conduit runs(indicate that the underground conduit shall be buried at 18” inches minimum from the top of the conduit to grade), junction boxes, wiring methods, inverter location, disconnect locations, battery locations (if applicable), point of connection to the existing electrical system (with the existing service and disconnect size and the number of meters) and existing PV system (if applicable);

- d. Site specific signage information required for the solar PV installation suitable for the environment per 2016 CEC 690.51-690.56; 705.10

4. **Battery Storage Systems** (if provided) shall comply with Article 690 of the 2019 California Electrical Code. Some basic information to comply with is listed below:

- a. Indicate that the battery is to be installed per the manufacturer’s clearance requirements.
- b. Energy storage system conforms to and is listed under UL 9540.
- c. Energy storage system live parts are not accessible during routine maintenance. System voltage in accordance with CEC 690.7 and exception 1 CEC 690.71(b)(1).
- d. Additional disconnecting means shall be installed where the energy storage device input and output terminals are more than 5 ft. from connected equipment, or where the circuits from these terminals pass through a wall or partition per CEC 690.71(h) or 706.7(e).

5. **Engineered Calculations** shall be provided for the footing and structural design of the ground mounted racking support structure. Two (2) sets of calculations shall be provided.

6. **Manufacturer’s Specification Sheets** with make, model, listing, size, and weight for all components including, but not limited to, inverters, panels, racks, and combiner boxes. Provide two (2) complete copies of the Solar Panel Installation Manual as well as the specifications for the grounding method to be used. Grounding method used must comply with installation manual requirements.

7. **Placard Requirements** as shown on plans must include:

- a. A placard detail sheet shall be provided on the plans indicating markings on the interior and exterior DC conduit, enclosures, raceways, cable assemblies, junction boxes, combiner boxes, inverters, service panels, load centers, and disconnects per 2019 California Fire Code (CFC) Section 605.11.1., Article 690, and 705.10 of the 2019 California Electric Code, and the City of Meniffee adopted PV placard requirement handout as follows:
 - i. Material: Hard plastic or metal engraved or etched weather resistant and suitable for the environment. Interior labels and any label that is required to be reflective or installed on a conduit can be a sticker. Exterior stickers shall be able to withstand the environmental conditions.



- ii. Content: Placards that require values to be completed per site are provided on the placard.
- iii. Location: Provide the exact location of all placards that are to be installed on the equipment.

8. **Protection of conductors** shall be provided for any exposed PV wiring that is less than 6'7" from any standing surface underneath the solar array. The protection of the conductors may be achieved in many different ways, please see the attached guideline for barriers for ground mount solar systems on the last page of this guide. The method of protection and screening shall be clearly indicated on the submitted plans. CEC 690.31(a)

9. **Inspection** requirements:

- a. Grounding method of solar panels must follow manufacturer's specific listing. Documentation must be provided to field inspector at time of inspection;
- b. The systems shall be ready for inspection and all boxes, panel fronts, access panels, and similar devices shall be open and an OSHA approved (contractor provided) ladder(s) shall be set-up and tied-off prior to the inspection (if required);
- c. The permit and approved plans and specifications shall be readily accessible at the time of inspection;
- d. A qualified individual from the solar company shall be present to accompany the inspector during the inspection;
- e. Adding a photovoltaic (PV) solar system is classified as a separately derived electric system, all grounding and bonding of the existing electrical system for the building shall be upgraded or installed if the electrical grounding and bonding system is not in compliance with the current electrical code. The grounding and bonding system for the building shall comply with all of the requirements of Article 250 of the CEC:
 - i. A properly sized grounding electrode (ground rod, ufer, etc...) shall be installed. The grounding electrode shall be visually verified by the city inspector. 250.52(A)(1) through (A)(8)
 - ii. A properly sized and properly installed grounding electrode conductor (ground wire) shall be installed. The grounding electrode conductor shall be visually verified by the city inspector. 250.64(A) through (F), Table 250.66, 250.66 (A) through (C)
 - iii. An approved ground clamp for attachment of the grounding electrode conductor to the grounding electrode shall be accessible and shall be visually verified by the city inspector. 250.68(A) through (C)
 - iv. If a grounding electrode is not available for inspection or, there is not a compliant grounding electrode that is installed, two (2) 8' long x 5/8" diameter copper ground rods shall be installed at a minimum distance of 6' apart and connected to the main electrical service panel ground bus. Other code approved grounding electrodes may be installed. Exception: Only one grounding electrode may be installed if a (third party) passing grounding electrode resistance test is provided to the inspector or a grounding electrode resistance test is conducted in the presence of a city inspector showing a passing result of 25 ohms or less. 250.53(A)(2), 250.53(A)(3), 250.53(C), 250.53(G), 250.53
 - v. A properly sized bonding wire shall be installed from the main electrical service panel grounding bus bar to the cold water service line on the customer side of the water system with an approved clamp. The connection of the bond wire to the water pipe shall be accessible and



shall be visually verified by the city inspector. Exception: A bond wire shall not be required to be connected to any PEX or similar plastic water piping. 250.104(A)(1) through (A)(3), 250.104(D), 250.104(D)(1)

- vi. A properly sized bonding wire shall be installed from the main electrical service panel grounding bus bar to any metallic fuel gas/propane piping system on the customer side of the fuel gas/propane system with an approved clamp. The connection of the bond wire to the metallic fuel gas/propane piping shall be accessible and shall be visually verified by the city inspector. 250.104(B)
- f. Any changes to the photovoltaic (PV) solar system installation that do not match the approved plans shall require the plans to be amended and submitted to the City of Menifee Building & Safety Department for review and approval prior to scheduling the inspection. No inspection shall be scheduled if the approved plans do not match the actual installation on site.

Work that is not ready for inspection when the inspector arrives on the site and work that has been performed that does not match the approved plans will result in a re-inspection fee of \$152.60

Any PV installation that begins prior to the issuance of a building permit shall result in an investigation fee of \$152.60 and the permit shall fee be doubled. CBC 1.8.4.2, 109.4, 109.5, CRC 108.4, R108.6

Any comments/objections concerning the PC review or inspection should be noted on the revised documents.

Free to use code books are available from the State of California Building Standards commission at:

<https://www.dgs.ca.gov/BSC/Codes>