



## **CITY OF AUBURN**

Building Inspection Division

Community Development and Public Works Department

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### **City of Auburn Solar Photovoltaic Submittal Guidelines**

The City of Auburn encourages the installation of solar photovoltaic systems through low permit fees for solar photovoltaic (PV) installations and standardized solar permitting guidelines. All solar PV installations need an electrical permit. Building permits are needed only if structural work is necessary to support the solar PV system (such as the addition of new struts and purlins or new framing members between existing framing to reduce spacing). 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 2016 California Building Standards Code, including the 2016 California Residential Code (CRC) and 2016 California Electric Code (CEC), as appropriate.

#### **Note: The City of Auburn has a 20lb, non-reducible snow load**

#### **Requirements for Permit Submittal**

Before approval and issuance of permit(s) for solar PV systems, applicant shall submit a supplemental permit application and three (3) sets of plans (minimum size 11"x17"), which are drawn to scale (or at the very minimum are fully dimensioned), readable, legible, and include the following information:

- 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 building footprint location of the solar PV systems, location of the main service and the exterior and interior locations of all equipment and disconnects. For ground mount systems, show the locations of property lines and distances from the array to property lines and any structures on the property. For multi-story buildings, indicate the roofline at each floor level on the site plan.
- 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 or load calculations for the entire structure if the main breaker is de-rated;

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 runs, 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 any existing PV systems (if applicable);

d. Site specific signage information required for the solar PV installation suitable for the environment.

#### **4. Roof Plan** including:

a. Description of size, spacing, span and direction of existing rafters, ceiling joists, and framing support members. **Note:** If the roof framing exceeds the allowable spacing or span limits, provide stamped and signed engineered plans and calculations justifying the adequacy of the existing roof framing, OR provide stamped and signed engineered plans and calculations for framing modifications necessary to accommodate the solar panel installation, OR provide roof framing plan and details for modifications to meet conventional framing requirements of 2016 CRC.

Allow 5 working days for review of framing plans with calculations;

b. Include location of load bearing walls on the framing cross-section;

c. Section or detail showing that the solar PV panels are flush mounted

**Note:** Panels that are not flush mounted (10" or less) require a licensed engineer to provide structural design calculations and details for wind uplift and all connections.

Allow 5 working days for review of plans with structural calculations;

d. Attachment details showing the type, diameter, and length of embedment of bolts and their spacing; the number of bolts per solar PV panel (or alternatively, the square footage of panel per bolt).

**5. 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.

#### **6. Fire Safety Requirements** as shown on plans must include:

a. Notes indicating **markings** on interior and exterior DC conduit, enclosures, raceways,

i. Material: Reflective, weather resistant and suitable for the environment. All letters capitalized with a minimum height of 3/8" white on red background.

ii. Content: Contain the words "WARNING: PHOTOVOLTAIC POWER SOURCE."

iii. Main service disconnect: Marking placed adjacent to main service disconnect in a location clearly visible from the location where the disconnect is operated.

iv. Location: Markings at every 10 feet, within 1 foot of turns or bends and within 1 foot above and below penetrations of roof/ceiling assemblies, walls or barriers.

b. Locations of DC conductors to meet the criteria of 2016 CRC.

- i. Conduit, wiring systems, and raceways shall be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities;
  - ii. Conduit runs between sub arrays and to DC combiner boxes shall be installed in a manner that minimizes the total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box.
  - iii. DC wiring shall be installed in metallic conduit or raceways when located within enclosed spaces in a building.
- c. Locations of clear access paths as required by 2016 CRC.

**Note:** Regardless of roof design, PV panels shall be no closer than 3' to a ridge. Access to residential photovoltaic system shall be in accordance with:

- i. 2016 CRC Section R331.4.2.1 for structures with hip roofs,
- ii. 2016 CRC Section R331.4.2.2 for structures with a single ridge,
- iii. 2016 CRC Section R331.4.2.3 for structures with roof hips and valleys.
- iv. Exception: Roofs with slopes of 2:12 or less.

### **7. Signage:**

- a. All system identification/signage required by the currently adopted California Building Code and California Electrical code as applicable.

### **8. Inspection requirements:**

- a. Grounding method of solar panels must follow manufacturer's specific listing.
- b. The systems shall be ready for inspection with all boxes open.
- c. Inspector shall have access to all parts of the system.
- d. The permit, approved plans, and specifications shall be readily available on site at the time of inspection.
- e. Any changes to approved plans must be reviewed and approved by the Building Department prior to scheduling the inspection.