

## **SOLAR PHOTO-VOLTAIC SYSTEM OVER SINGLE FAMILY**

### **DWELLING SUBMITTAL REQUIREMENTS**

#### **ADMINISTRATIVE**

1. Provide two (2) sets of plans minimum sheet size 11" x 17", attach all manufacturer specification sheets, installation instructions and U.L. listings to the plans
2. Plans are to be signed by State of California licensed contractor with any of the following classifications: "A", "B", "C-46", "C-10", or licensed electrical engineer. Provide signature and contractor license number on each sheet

#### **ROOF PLAN**

1. Provide a roof plan projected on a site plan. Show the location and dimensions of all solar voltaic equipment and PV arrays. Show minimum three foot wide clearance space between all PV arrays and the roof ridges and gable end eaves for fire department access.

2. Provide a partial roof framing plan. Show new and existing supporting rafters, beams and headers include rafter size, span, and spacing. Identify roof sheathing and roofing materials

ALTERNATE: Framing information is not required if arrays are supported at a maximum spacing of 4 ft.

3. Detail equipment support connections to roof. Provide a detail for flashing and water proofing at system supports

4. Provide calculations by a licensed professional engineer or architect to verify supporting members are adequate for existing and proposed loads

ALTERNATE: Calculations not required if arrays are supported at a maximum spacing of 4 ft.

5. Provide lateral calculations by a licensed professional engineer or architect per 2019 C.B.C. showing that affected existing lateral resisting elements are no more than 10% overstressed according to the 2019 CBC.

ALTERNATE: Lateral analysis is not required if total area of arrays is less than 250 sq. ft. over a second story roof or 350 sq. ft. over a first story Roof.

#### **ELECTRICAL**

1. Provide Electrical drawings to show compliance with the applicable provisions of the 2019 California Electrical Code

# **SOLAR PHOTO-VOLTAIC SYSTEM OVER SINGLE-FAMILY DWELLING**

## **GUIDELINES TO ELECTRICAL SUBMITTAL REQUIREMENTS:**

1. Show the location and size of the main electrical service, AC/DC disconnects, all solar voltaic equipment and PV arrays on the roof plan.
2. Single Line Diagram: show array configuration, conduit and conductors sizes with de-rating calculations.
3. Inverter Information: show model number, specification cut sheets and maximum DC input.
4. PV Module Information: show open circuit voltage (VOC) and short-circuit current (ISC) max series fuse.
5. Array Information: show number of modules in series and number of parallel source circuits.
6. Wiring and Over Current Protection: show conductor ampacities, adjusted with all de-rating factors, show rating and location of all Over Current Devices (OCD).
7. Include Rapid Shut-down per 2019 California Electric Code 690.12
8. System Labels and Warnings: show required signage on the plans per 2019 CEC-Article 690.
9. Grounding Details: show equipment ground conductor and ground electrode Conductor, from inverter to ground rod or uffer ground
10. Disconnects: show AC/DC disconnects at inverter. DC disconnect required prior to DC array conductors penetrating the surface of the roof or entering the building.
11. System Calculations: show (VOC) calculated 1.13 (ISC) calculated x 1.25%(NEC 690) x 1.25% (UL 1703).
12. All PV equipment shall be listed by a recognized test lab.
13. Notify serving utility before activation of PV system.