

## Directions:

Please check to make sure that your submittal meets all of the design, submittal, and building code requirements.

1. All plans and specifications shall be designed under the applicable provisions of the 2013 edition of the California Building, Electrical and Energy Codes.
  - ▶ **Plans & Calculations must be wet signed/originals.**
2. There will be a minimum of 36" of clearance at the ridgeline where Solar Arrays are installed on roofs. Arrays are allowed to be installed down to the eave if there remains (3) access points from the ground to the ridge. If there is less than (3) access points to the roof ridge then there shall remain a 36" perimeter walking area around the array.
  - ▶ **Please show and dimension all clearances on your plans.**
3. All solar photovoltaic plans will be required to have the following items:
  - a. Submit (3) sets of plans for the photovoltaic module array.
  - b. (3) copies of a plot plan showing the location on the property of the photovoltaic array in relationship to the lot property lines with required setback dimensions and locations of all disconnects, inverters and existing electrical meter(s).
  - c. **(2) copies of structural engineering calculations showing the panel loads imposed on the roof.**
  - d. Provide plans and specifications for the photovoltaic modules, panels, arrays and framing supports.
  - e. Specify conduit size, location (inside and outside of the building) and wire sizes.
  - f. Details for roof-mounted solar panel support and attachment, or for ground-mounted solar panel supporting structure and attachment. Specify roof dead load and wind uplift values.
  - g. For a roof-mounted array, please provide:
    - i. Provide the array per square foot weight
    - ii. Provide the per square foot dead load of the existing roof (roof covering material + underlayment + sheathing weight). Total dead load, existing per square foot roof dead load plus per square foot array weight, in excess of ten (10) pounds per square foot requires a structural analysis to be included with plan submittal.
    - iii. Show the array supports, the roof penetrations and the connection to the roof-framing members.
    - iv. Identify the method of flashing and sealing of the roof penetrations.
  - h. An electrical one-line diagram showing the number of photovoltaic panels with voltage and kilowatt output ratings, the size of the main electrical panel bussing in amperes, and the size of the photovoltaic circuit breaker in amperes.
    - i. Must comply with TMC. Chap 15.04 Sec 15.04.040 (F)
    - j. Show the locations of the main building electrical disconnect as requires by NEC Articles 690.14.

- k. Show and specify the building directory signage required by NEC Article 225.37 and 690.56.
- l. Provide calculations that verify the sum of the ratings of the over current devices supplying power to the bus bar/ conductor so that the panel rating does not exceed 120 percent. Where the panel boards are connected in a series the rating of the first over current device shall be used in the calculations. NEC Article 690.6 (B).2
- m. Provide the manufacturer's information brochures for the inverter, the photovoltaic modules and mounting system.
- n. **Please provide Disconnecting Means that meets the City of Temecula Ordinance-** *The current carrying conductors of all sources of energy\* shall be designed to de-energize, and remain de-energized, from their respective source of energy generation when the utility-supplied service's main breaker is opened (set to the "off" position) on the electrical system being energized by the aforementioned sources of energy.*  
**\*For purposes of this section, "sources of energy" includes alternating current, solar, wind and fuel cell sources of energy.**

The point where the current carrying conductors are to be de-energized and remain de-energized shall be immediately adjacent to the point of energy generation or immediately adjacent to a combiner box, if so equipped. This shall apply to all electrical systems installations, regardless of location of conductors inside or outside of any structures.

A DC contactor is required so in the event firefighters or anyone else needs to disconnect the power at the main electrical panel, ALL of the conductors inside or outside the structure are disconnected, both the alternating current conductors AND the direct current conductors. Without this contactor, the direct current conductors, with more than 50 volts, would remain energized from the array or combiner box down to the inverter.

See the following links (for reference only):

[http://state-electric.com/files/catalogs/siemens\\_industrial\\_controls/02\\_202-203.pdf](http://state-electric.com/files/catalogs/siemens_industrial_controls/02_202-203.pdf)

- 4. Ground mounted solar arrays shall be erected in areas clear of combustible vegetation. A minimum vegetation clearance or mowed perimeter of 10' shall be maintained. **Planning Department approval of the site plan may be required for ground mounted installations.**