



DEPARTMENT OF RESOURCE MANAGEMENT

Building Division

1855 Placer Street, Suite 102

Redding, California 96001

Phone: (530) 225-5761 Fax: (530) 245-6468

Inspection Request Line: (530) 244-5068

Web: building.co.shasta.ca.us Email: resourcemanagement@co.shasta.ca.us

PLOT PLAN INSTRUCTIONS ROOF MOUNT SOLAR

(Rev: 08-10-21)

AN ACCURATE PLOT PLAN IS NECESSARY TO PROCESS YOUR PERMIT

A plot plan is necessary to establish a clear record of the permitted development and use(s) on the property prior to the installation of your solar project. You may start with an Assessor's plat map (copies available at the Assessor's office) for an accurate outline of your property. On 8-1/2" x 11" paper or larger you will need to include the elements noted below and keep the size proportionate based on parcel size, location of equipment, and structures.

The following elements will need to be illustrated and identified on the Ground Mount Solar plot plan:

- Property owner's name
- Assessor's Parcel Number for the property
- Address of property
- North arrow and scale
- Identify the primary residence with square footage(s)
 - a. Include all attached structures to the residence (carport, awnings, garage) labeled with square footage
- Identify accessory buildings and attachments with square footages only if served by or housing the solar equipment including, but not limited to, solar panels, inverters, disconnects, rapid shutdown, batteries, sub-panel, and main service panel.
 - a. This element is not required if no solar equipment is located on or within the accessory structure
- Dimension setbacks of the ground mount solar equipment to property lines and other structures
- Identify access roads, driveways, temporary access, easements, all drainages and waterways; including seasonal or dry creek beds
- Identify all utilities including existing electrical utility locations, new utility locations, sewage disposal system tank, leach lines, and domestic well locations. (verify trenching for the project)
- If your project involves grading (cuts, fills, etc.), indicate the areas of cut and fill, and provide a slope Show and identify all Roads and driveways only

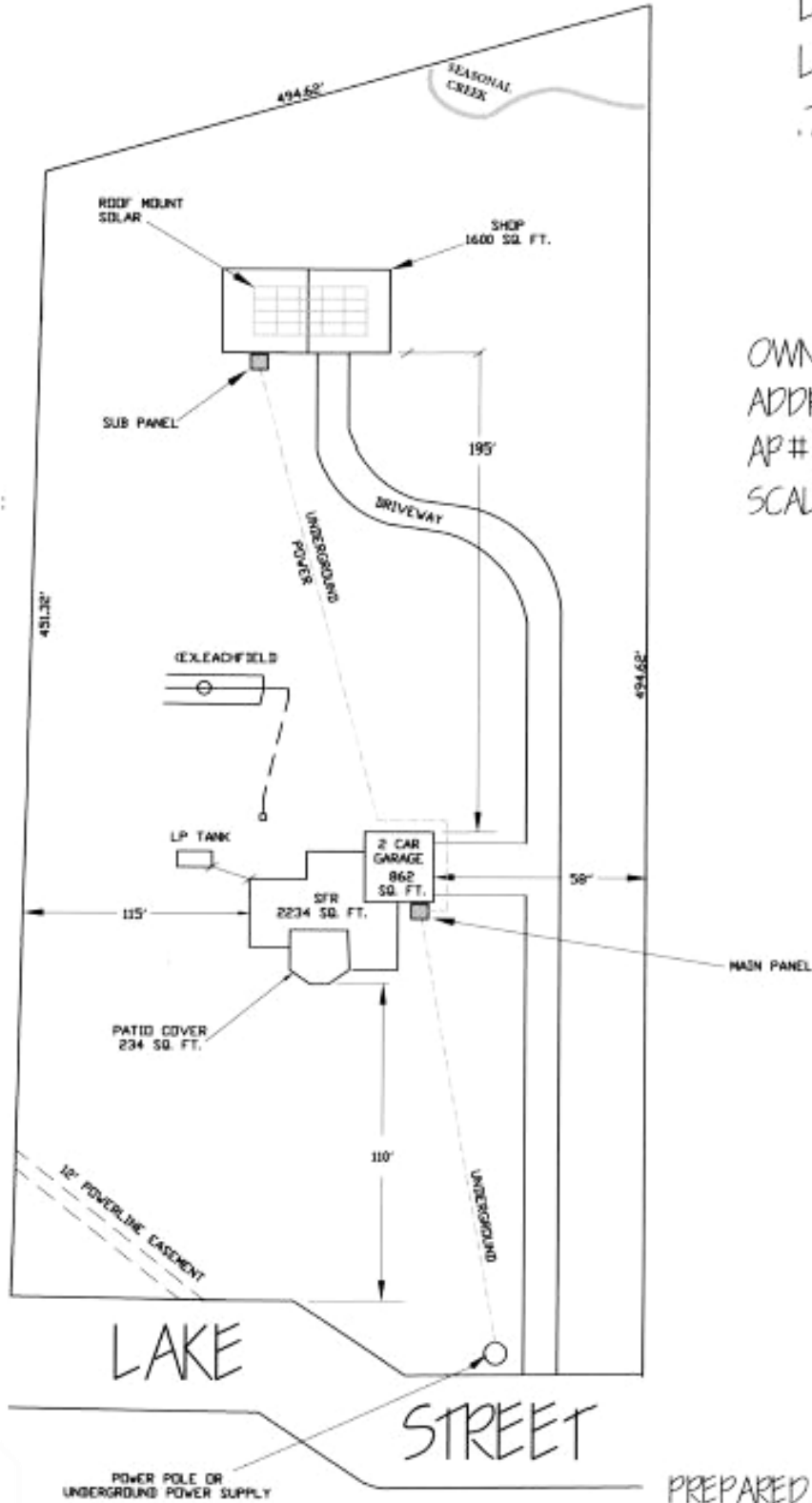
**** Note:** an example is provided on the back of this page for guidance

ROOF MOUNT SOLAR PLOT PLAN EXAMPLE

LAKE SUBD.
LOT #12
.75 ACRES

OWNER: TOM SMITH
ADDRESS
AP# 000-000-000
SCALE:

INCLUDE LOCATION OF:
INVERTORS,
DISCONNECTS,
BATTERIES, ETC.



PREPARED BY: _____

DATE PREPARED: _____



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ROOF MOUNT SOLAR PV SOLAR SUBMITTAL CHECKLIST

(Rev: 08-10-21)

As the applicant, you are acknowledging all of the checklist information is included and understand an incomplete submittal may not be accepted or processed. Please initial next to each line item below to confirm the roof mount solar submittal is complete.

- ___ 1. 2 copies of the complete and accurate plot plan (see roof mount plot plan); **and**
 - A. 2 signed copies by the Fire District office (if other than Shasta County Fire)
- ___ 2. A complete building permit application with the Qualified Personnel identified (CEC 690.4 c) that will perform the work with an approved State of California Contractor's License.
- ___ 3. 2 complete sets of the following permit documents stapled together using a min. 12 pt. font.
 - A. Manufacturer cut sheets and manufacturer's installation manual for all equipment to be used for the project. These documents can be separate from the plans, but the equipment submittal will be specific to this project, easily identified, and highlighted with all of the required Class 'A' fire rating, UL Listing, and engineering for all solar and solar racking systems including 2703 certification for grounding/bonding of the module/racking assembly and connectors.
 - B. Complete and accurate PV Solar System Summary sheet (attached)
 - C. Cost breakdown of solar equipment, labor, and structural costs for PV Solar systems.
 - D. Roof Plan showing arrangement of panels setbacks, combiner box, inverter, disconnect, main service, show approx. distance from panel to all components and required Fire Code clearances.
 - E. Electrical one-line diagram of system (module wiring (series/parallel), disconnects, grounding/bonding, wire, conduit size, and number of conductors in each section of conduit). When batteries are to be installed, include them in the diagram, the location, cabinet, listing, required venting, and show working clearances.
 - F. All current engineering documents for the mounting/racking system. Design criteria will need to reflect the 2019 California Model Codes, including 110mph wind speed, and the accurate snow load based on Shasta County's requirement for non-reducible loading, including manufactures site specific design.
 - G. Size and location of the service panel side connection per CEC article 705
 - H. Load calculations are provided for the proposed or required de-rated service panel.
 - I. UL (1-800-595-9844) will re-certify the service panel prior to final, if a tap is made.
 - J. Design criteria with the 2019 California Model Codes, including 95mph wind speed (<https://asce7hazardtool.online/>), and the accurate snow load based on Shasta County's non-reducible loading is provided.
 - K. A complete signage plan is included. (See example)
- ___ 4. The solar system will be installed on pre-engineered plant manufactured trusses with a maximum spacing of roof attachments not to exceed 4' o.c. I also understand Shasta County reserves the right to require engineering for any roof system regardless of the configuration
- ___ 5. The solar system is proposed to be installed on hand cut rafters and the span chart is supplied and highlighted from the building code; or the required engineering is included with this submittal.
- ___ 6. Conductors that penetrate the building will be installed in a metallic raceway or enclosure that will be attached to the first readily accessible disconnect at the exterior of the building.
- ___ 7. Conductors will be PV specific, approved for outdoor - wet condition(s), and UV protected.
- ___ 8. This solar system is proposed to be installed on an Agricultural exempt structure and the required engineering for the structure is included with this submittal.
- ___ 9. This system is greater than 30KW and has PG&E approval with electrical engineered plans.
- ___ 10. I understand that field changes or any deviation from the approved plans will incur additional fees

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ROOF MOUNT PV SOLAR SYSTEM SUMMARY

KW _____ [] Off-Grid [] Grid Tie [] Backup Generator [] Batteries

ROOF MOUNTED SYSTEMS PROVIDE

Roof Material: [] Comp [] Metal or [] Other _____

Existing Roof type: [] Truss or [] Stick Frame Roof Pitch: / 12

If the roof is stick-frame, provide the following: Rafter size _____ Rafter Spacing _____ Rafter Span _____

INVERTER(S)

Number of Inverter(s): _____ Model Number: _____

DC Input Voltage Range: _____ Listed for Utility Interconnection: [] Yes [] No

Inverter Continuous AC output current rating: _____ CEC Section 690.8 (3) and 690.8 (B)(1)

Inverter output conductor sizing: _____ (Inverter Continuous AC output current rating x 1.25)

MODULES

Array Tilt/Slope Degree _____ Model Number _____

Total number of modules per inverter _____

From the module listing:

Maximum system voltage _____ Open-circuit voltage (Voc) _____

Short-circuit current (Isc) _____ Voltage at Pmax _____

Maximum series fuse rating _____ Current at Pmax _____

Calculated system voltage _____ (Voc x # of modules in series x 1.13) CEC 690.7

*Calculated system voltage must be less than or equal to the *Maximum system voltage.

ARRAY INFORMATION

Total number of modules _____ Number of modules in each series _____

Number of parallel source circuits _____

Operating voltage _____ volts (Voltage at Pmax x number of modules in series)

Operating current _____ amps (Current at Pmax x number of strings in parallel)

Minimum PV source circuit ampacity for conductor sizing _____ x 1.25 x 1.25 = _____

(Isc x number of parallel circuits x 1.25 x 1.25) CEC 690.8A-1, 690.8B-1 and NOTE 2.

Explanation: To determine wire sizing and over current protection you must determine the minimum source circuit

conductor ampacity which is 125% of the maximum PV source circuit current ampacity (CEC 690.8.A-1). The maximum PV source circuit current ampacity is 125% of the source circuit ampacity or Isc (CEC 690.8B-1).

NOTE 1: All wiring to be rated at 90 degrees (see table 310.15 (B) (16)). Equipment on array side of the inverter must be DC rated.

NOTE 2: It must be specified whether copper or aluminum wiring is being used throughout entire plans.

NOTE 3: Further ampacity adjustments are necessary when more than 3 current carrying conductors are installed in the conduit. See CEC Table 310.15(B)(3)(a)

FOR COUNTY USE

REQUIRED WARNING LABELS

Include diagrams of warning labels on the plans per Article 690 of the California Electrical Code. Examples and required locations are shown below.

CAUTION: SOLAR CIRCUIT

Conduit raceways, enclosures, cable assemblies, and junction boxes shall be marked with this label.

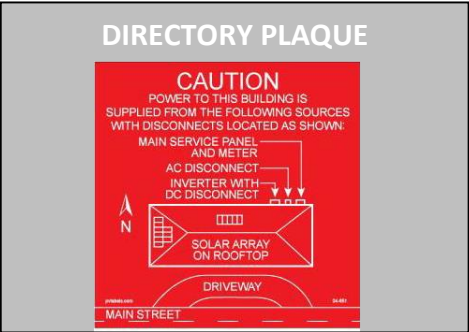
CAUTION: SOLAR ELECTRIC SYSTEM

The electrical main service disconnect shall be marked with this label.

WARNING:
ELECTRIC SHOCK HAZARD
DO NOT TOUCH THE TERMINAL

TERMINALS ON BOTH THE LINE
AND LOAD SIDES MAY BE
ENERGIZED IN THE OPEN POSITION

The inverter shall be marked with this label



When service disconnecting means and PV system disconnecting means are NOT located at the same location, install a directory plaque at the service and PV system disconnecting means. *Art. 690.56(B)*

PHOTOVOLTAIC SYSTEM
EQUIPPED WITH RAPID
SHUTDOWN

The electrical main service panel shall be marked with this label. *Art. 690.56(C)*