



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 GROUND 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

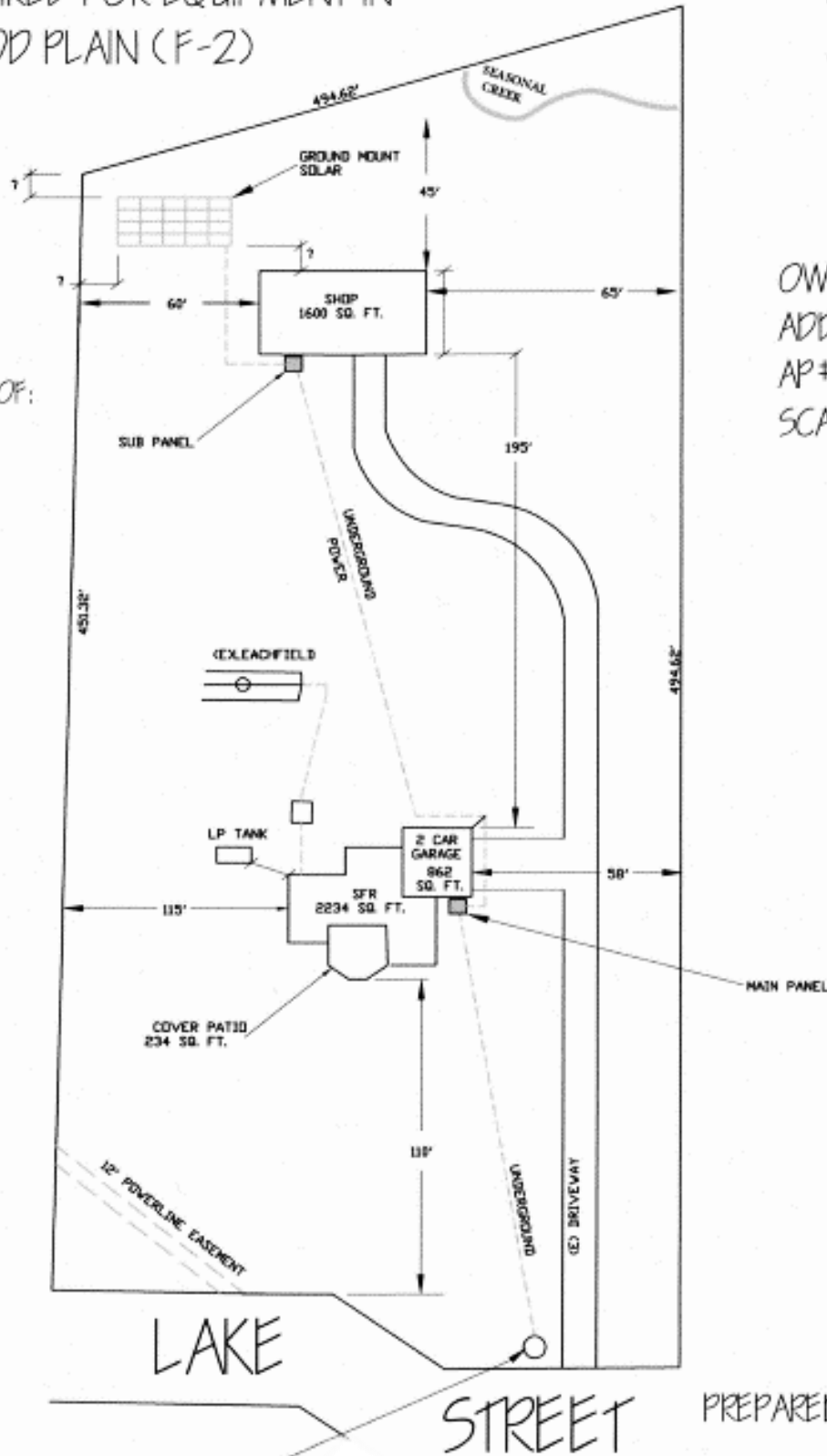
GROUND MOUNT SOLAR PLOT PLAN EXAMPLE

FLOOD ELEVATION CERTIFICATE
REQUIRED FOR EQUIPMENT IN
FLOOD PLAIN (F-2)

LAKE SUBD.
LOT #12
.75 ACRES



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



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

PREPARED BY: _____

DATE PREPARED: _____



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GROUND 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 ground mount solar submittal is complete.

- ___ 1. 2 copies of the complete and accurate plot plan (see ground mount plot plan); **and**
 - A. 2 signed copies by the Fire District office (if other than Shasta County Fire)
- ___ 2. A complete application with the Qualified Personnel identified (CEC 690.4 c) that will perform work per the Contractor's State License Board. Class A-General Engineering; Class B-General Building C-4, C-10, Electrical (for photo voltaic only) C-36. Plumbing (solar thermal systems) C-46, all solar water, space heating, pool and PV systems C-53 and Swimming Pool (for solar pool heating).
- ___ 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 UL Listing 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. 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.
 - E. All current engineering documents for the mounting/racking system. Design criteria will need to reflect the 2019 California Model Codes, including 95mph wind speed (<https://asce7hazardtool.online/>), and the accurate snow load based on Shasta County's requirement for non-reducible loading, including manufactures site specific design.
 - F. Size and location of the service panel side connection per CEC article 705
 - G. Load calculations are provided for the proposed or required de-rated service panel.
 - H. UL (1-800-595-9844) will re-certify the service panel prior to final, if a tap is made.
 - I. Design criteria with the 2019 California Model Codes, including 95mph wind speed, and the accurate snow load based on Shasta County's non-reducible loading is provided.
 - J. A complete signage plan is included. (See example)
- ___ 4. This structure is greater than 6' from the ground to the top of the array and the complete site specific structural engineering by a CA Licensed Professional is included in the submittal with details for all attachments, anchors, brackets, photovoltaic panels, and hardware.
- ___ 5. This system is greater than 30KW and approval from PG&E with plans shall be stamped by an electrical engineer is included

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GROUND MOUNT PV SOLAR SYSTEM SUMMARY

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

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 a 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.

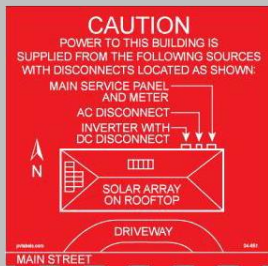
CAUTION: SOLAR ELECTRIC SYSTEM

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

DIRECTORY PLAQUE



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)*