



# 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

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### SOLAR PV SYSTEM SUBMITTAL CHECKLIST

(Rev: 11-27-23)

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/ground mount solar submittal is complete.

- \_\_\_ 1. 2 copies of the complete and accurate plot plan (see Plot Plan Instructions for Solar PV System); 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 Persons identified on the Installation Certification of Electrical Equipment form.
- \_\_\_ 3. 2 complete sets of the following permit documents stapled together using a min. 12 pt. font.
  - A.  Manufacturer cut sheets and installation manuals for all equipment to be used for the project. These documents can be separate from the plans, but the equipment submittal shall be specific to this project, identified by the applicant and highlighted with all ratings required by the current CEC.
  - B.  Complete and accurate Solar PV System Summary sheet (attached).
  - C.  Cost breakdown of solar equipment, labor, and structural costs for Solar PV 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 clearances.
  - E.  Project specific electrical one-line diagram of system (module wiring (series/parallel), disconnects, grounding/bonding, wire and conduit type/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 installation and data sheets for the mounting/racking system.
  - G.  Size and location of the service panel side connection per CEC article 705 with busbar rating and main OCPD rating noted.
  - H.  Electrical load calculations are provided for the proposed or required de-rated service panel.
  - I.  UL (1-800-595-9844) shall field-certify the service panel prior to final if a tap is made to manufacturer-installed components or if a panel is modified.
  - J.  Design criteria with the 2022 Building Standards Code, including 95 mph basic wind speed and applicable design snow load based on Shasta County's adopted snow load map. A manufacturer's site-specific design is required. It is understood that the Shasta County Building Department reserves the right to require site-specific engineering for any mounting/racking system and support structure.
  - K.  A complete signage plan is included per CEC 690 (see example).
- \_\_\_ 4. Provide photos of panel(s) to be used for solar interconnection. Photos must be taken with door open and dead front removed.

## SOLAR PV SYSTEM SUBMITTAL CHECKLIST CONTINUED

- \_\_\_ 5. The solar system will be installed with roof attachments **not to exceed** 4'-0" o.c. and will be staggered. It is understood that the County may require engineering for any roof system regardless of the type of construction. The structure is as follows: (project specific photo of framing is provided)
- A.  Rafters on a legally constructed single-family dwelling, garage, or accessory structure. A rafter span chart from CRC Chapter 8 or CBC Chapter 23 is supplied and highlighted, or engineering is included.
  - B.  Pre-engineered plant manufactured trusses on a legally constructed single-family dwelling, garage, or accessory structure.
  - C.  Commercial or other structure that deviates from substantial compliance with conventional framing requirements for wood frame construction found in the CRC or CBC Chapter 23. Engineering for the support structure and attachment to is included.
  - D.  Attachment directly to metal roof without attachment to framing members. Supporting calculations are provided for the clip and the fastener attachment to the metal roof. Where attachment is not specified to occur over framing members, supporting calculation for the point load on the metal roof will be provided.
- \_\_\_ 6. If the system is to be located in the safety zones adopted for the Redding Regional Airport, a glint & glare analysis is to be provided for the system upon submittal (references to reflectivity on the spec sheets is not sufficient analysis). The safety zones (Inner Approach Zone, Outer Approach Zone, Traffic Pattern Zone, Horizontal Zone, and Conical Zone) can be viewed by clicking [HERE](#) and opening up Figure 5 on page 32 of the Redding Airport Specific Plan and Airport Comprehensive Land Use Plan digital document.
- \_\_\_ 7. The solar system is a ground mount system. Where the structure is greater than 7' from the ground to the top of the array, a complete site-specific engineered design will be provided. The site-specific design will be prepared by a California licensed design professional and will include details for all attachments, anchors, brackets, hardware, framing, and foundations.
- \_\_\_ 8. The system is greater than 30kW and approval from PG&E and plans prepared by California licensed design professional are included.
- \_\_\_ 9. Unaltered, originally bound permit set must be retained onsite at all times. Duplicates and/or loose-leaf construction documents will not be accepted at the time of inspection.
- \_\_\_ 10. I understand that field changes or any deviation from the approved plans will require revisions to be submitted along with the original permit packet at the Permit Center for review and approval.

# SOLAR PV SYSTEM SUMMARY

(Rev: 04-21-23)

kW \_\_\_\_\_  Off-Grid  Grid Tie  Backup Generator  
 Batteries  Main Panel Upgrade

## ROOF MOUNTED SYSTEMS PROVIDE

Roof Material:  Comp  Metal (\_\_\_\_ ga.) 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: \_\_\_\_\_  
Inverter Continuous AC output current rating: \_\_\_\_\_ CEC Section 690.8  
Listed for Utility Interconnection:  Yes  No Inverter type:  String  Micro

## MODULES

Array Tilt/Slope Degree \_\_\_\_\_ Model Number \_\_\_\_\_  
Total number of modules per inverter \_\_\_\_\_

## ARRAY INFORMATION

Total number of modules \_\_\_\_\_ Number of modules in each series \_\_\_\_\_  
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 source circuit conductor ampacity \_\_\_\_\_

## BATTERY INFORMATION

Total number of batteries \_\_\_\_\_ Model Number \_\_\_\_\_  
Operating voltage \_\_\_\_\_ volts  
Operating current \_\_\_\_\_ amps

*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).

Minimum circuit conductor ampacity \_\_\_\_\_

**NOTE 1:** All wiring to be rated at 90 degrees (see table 310.16). 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(C)(1)

FOR COUNTY USE

## EXAMPLE - WARNING LABELS

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

CAUTION: SOLAR CIRCUIT

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

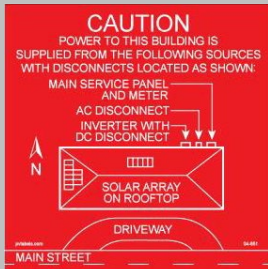
CAUTION: SOLAR ELECTRIC SYSTEM

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)*



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### PLOT PLAN INSTRUCTIONS FOR SOLAR PV SYSTEMS

(Rev: 04-21-23)

#### 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 Solar PV System 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 structures to property lines.
- 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.

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

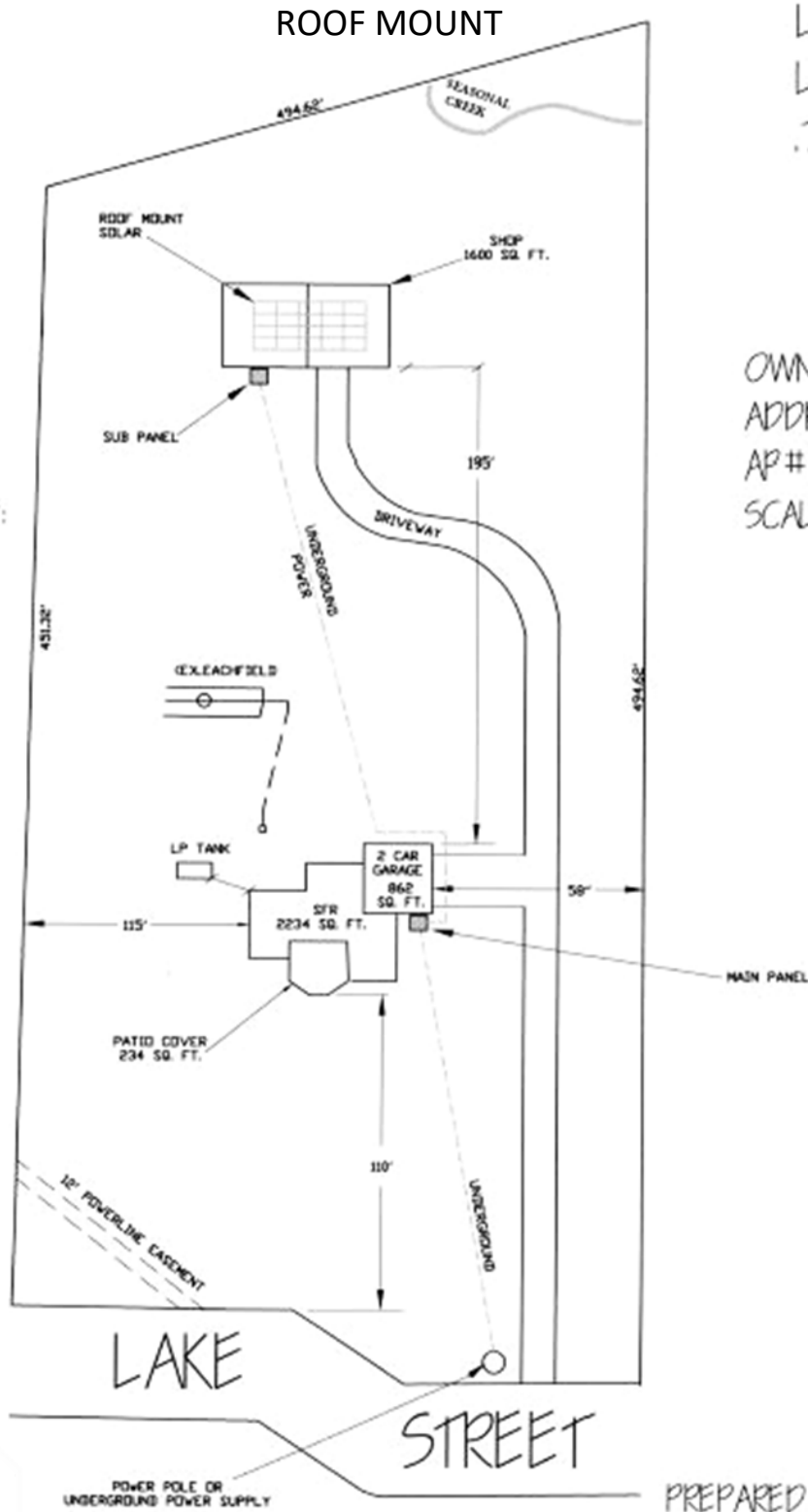
# SOLAR PV SYSTEM PLOT PLAN EXAMPLE

(Rev: 04-21-23)

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: \_\_\_\_\_

# SOLAR PV SYSTEM PLOT PLAN EXAMPLE

(Rev: 04-21-23)

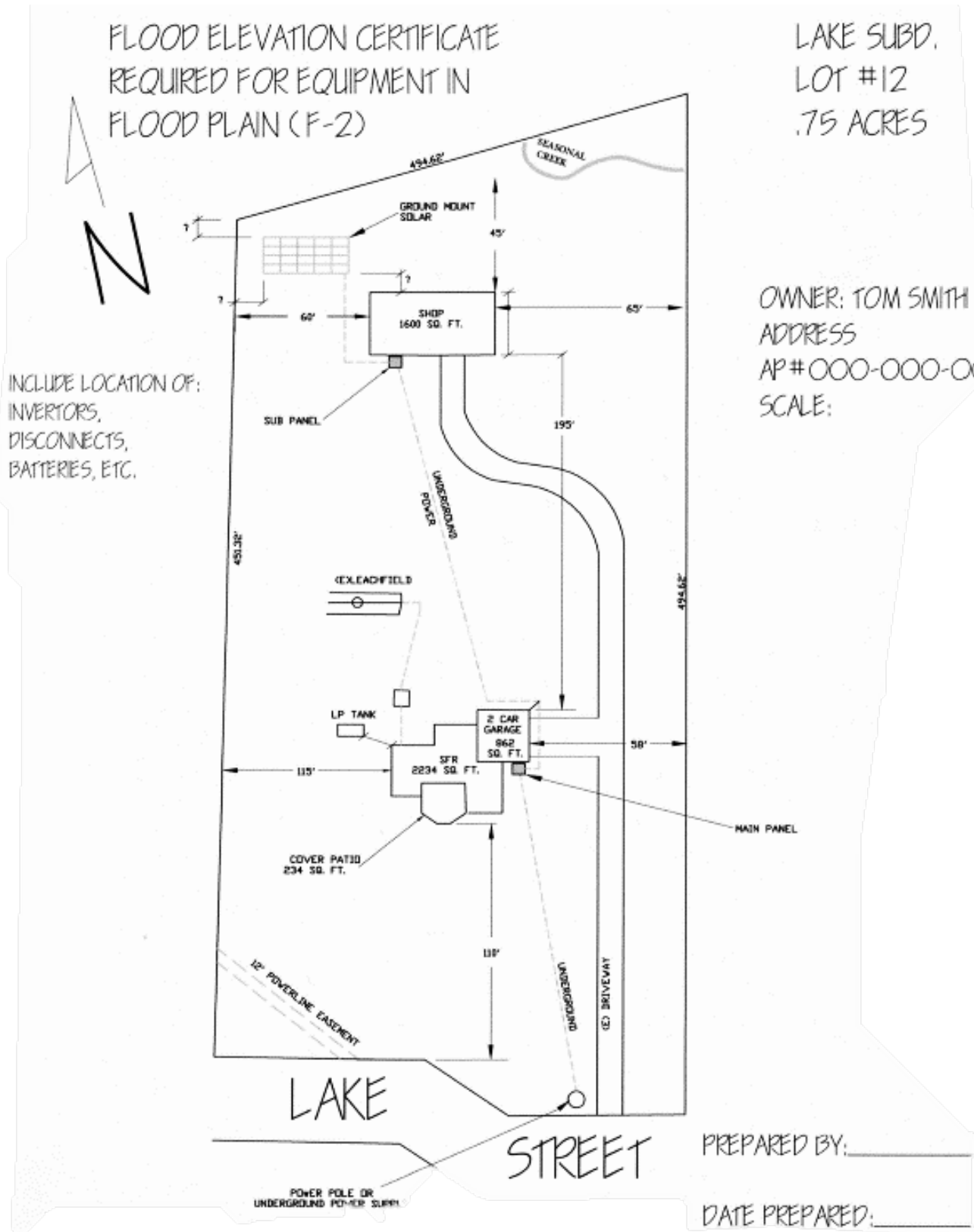
## GROUND MOUNT

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: \_\_\_\_\_