SOLAR PV SYSTEM SUBMITTAL CHECKLIST

DEPARTMENT OF PLANNING AND BUILDING SERVICES
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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. 3 copies of the complete and accurate plot plan (see Plot Plan Instructions for Solar PV System)
___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.

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. [ ] Design criteria with the 2022 Building Standards Code, including 85 mph basic wind speed and applicable design snow load based on Lassen County adopted snow load map. It is understood that the Lassen County Building Department reserves the right to require site-specific engineering for any mounting/racking system and support structure.
J. [ ] A complete signage plan is included per CEC 690 (see example).

SOLAR PV SYSTEM SUBMITTAL CHECKLIST CONTINUED

___4. 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: ***A**

A. [ ] Rafters on a legally constructed single-family dwelling, garage, or accessory structure. ***B**
B. [ ] Pre-engineered plant manufactured trusses on a legally constructed single-family dwelling, garage, or accessory structure.

___5. 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.

___6. The system is greater than 30kW and plans prepared by California licensed design professional are included.

___7. 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.

___8. 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 Building Department for review and approval.

*A - Engineering with load calculations will be required for any Solar Array to be installed over a roof with more than 1 layer of roofing.

*B- Rafter spans of more than 2 feet, or where the rafters are not supported with collar ties, rafter ties or perlins will require engineering to verify the roof can handle the additional load of the Solar PV System.

SOLAR PV SYSTEM SUMMARY

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 Table310.15(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

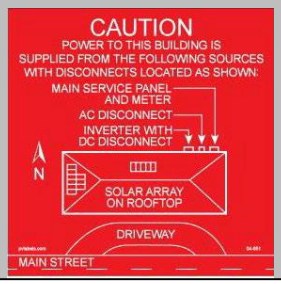
The electrical main service disconnect shall be marked with this label.

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)

PLOT PLAN INSTRUCTIONS FOR SOLAR PV SYSTEMS

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. 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.

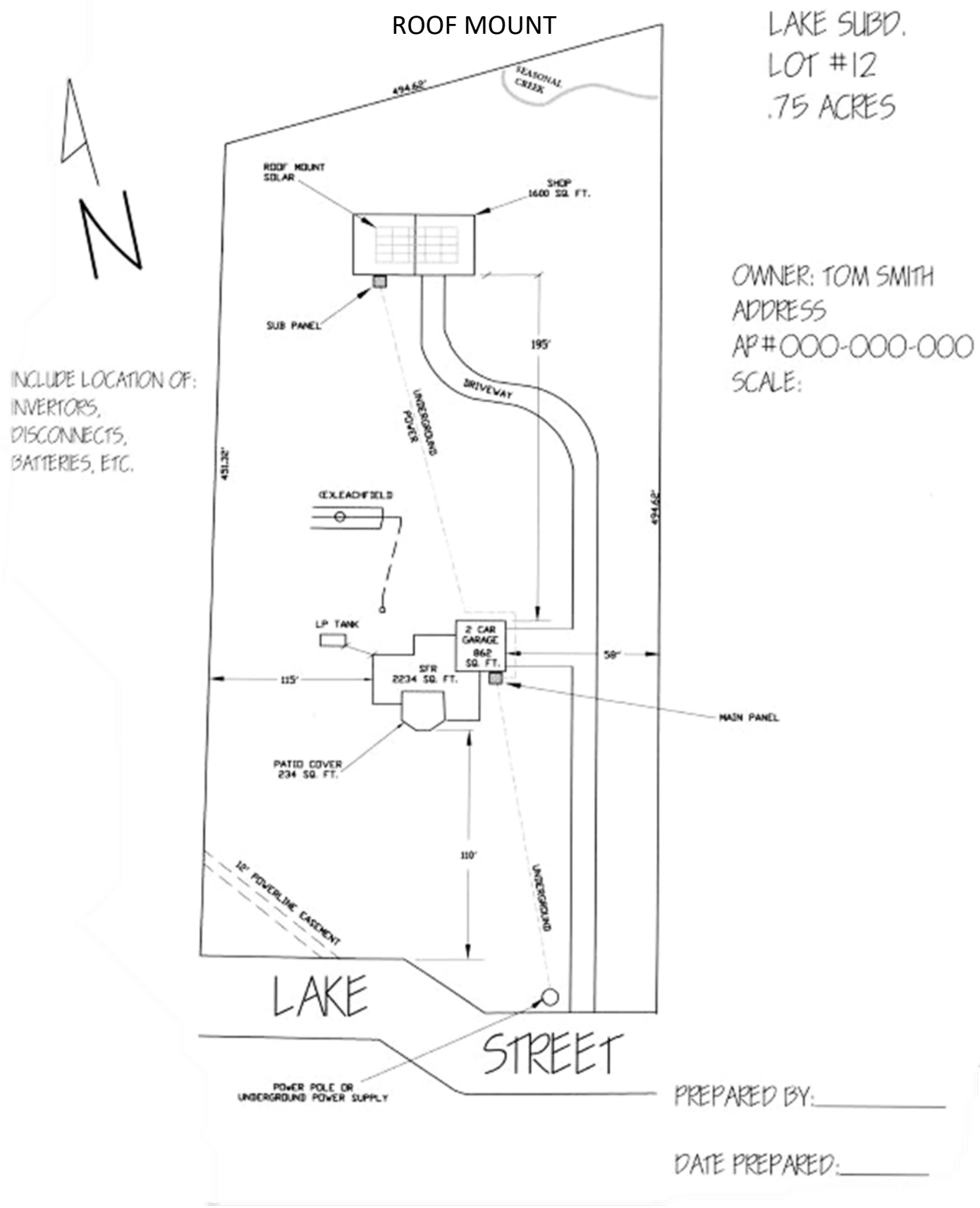
<u>The following elements will need to be illustrated and identified on the Solar PV System plot plan:</u>

- ○ 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)
    - o Include all attached structures to the residence (carport, awnings, garage)
- ○ 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.
    - 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
- ○ 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

ROOF MOUNT



SOLAR PV SYSTEM PLOT PLAN EXAMPLE

GROUND MOUNT