



City of Lompoc
Building & Safety Services Section
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Solar Photovoltaic Submittal Requirements & Installation Guidelines (Commercial and Residential)

ADMINISTRATIVE

All plans submitted for solar PV systems must comply with, and reference, the 2016 California Building Standards Code that became effective on January 1, 2017, including the 2016 California Residential Code (CRC) and 2016 California Electric Code (CEC), as appropriate.

The following clearances or approvals are required before a building permit can be issued:

- a. Building Division
- b. Planning Division
- c. Fire Department
- d. Electrical Department

Applicant shall submit three (3) sets of plans (minimum size 11"x17"), which are drawn to scale (or at the very minimum are fully dimensioned), readable, legible, and include the following information: *(Plan information listed in the items below could be combined if clarity is maintained.)*

1. **COVER SHEET** showing the following information: (a) project address; (b) owner's name, address, and phone number; (c) name, address, and phone number of the person preparing the plans; (d) scope of work statement; (e) number of stories and number of dwelling units; (f) sheet index indicating each sheet title and number; (g) legend for symbols, abbreviations, and notations used in the drawings.
2. **SCHEMATIC SITE PLAN** showing building footprint with locations of property lines, distances of building walls to property lines, lot size, street, alley, easements, parking spaces, location, size and use of all structures on the lot, location of the solar PV systems, location of the main service and the exterior and interior locations of all equipment and disconnects with working space clearances, and locations of other structures (if any) on the property. For multi-story buildings, indicate the roofline at each floor level on the site plan.
3. showing full dimension and including. Identify property lines, lot dimensions, and distance to property line. Show size and location of the service meter, location of all solar photovoltaic system.

LINE DIAGRAMS

1. Provide a minimum of a single line diagram showing:
 - a. Array configuration
 - b. Array wiring identified
 - c. Combiner/junction box identified
 - g. Inverter specified
 - h. Conduit/wiring from inverter to Utility point of connection identified

- d. Conduit/wiring from array to inverter identified
- e. DC grounding system specified
- f. Disconnecting means specified
- i. AC grounding and system grounding specified
- j. Point of connection attachment method identified

INVERTER/PV MODULE/ARRAY INFORMATION

1. Provide inverter manufacturer specification sheet.
2. Provide module manufacturer specification sheet.
3. Show the following on the plan:
 - a. Number of module in series
 - b. Number of parallel source circuits
 - c. Total number of modules
 - d. Operating voltage
 - e. Operating current
 - f. Maximum system voltage
 - g. Short-circuit current

WIRING AND OVERCURRENT PROTECTION

1. Show the overcurrent protection on inverter output circuit and verify it is sufficient.

ROOF INFORMATION (ROOF TOP SYSTEM)

1. Show the following information on plan:
 - a. Weight of the arrays (pounds per square foot including mounting hardware).
 - b. Describe and show the roof structural elements and roof type.
 - c. Provide detail of photovoltaic panel mounting hardware attachment to the roof framing members and mounting hardware manufacturer specification.
 - d. Provide engineering calculations and details demonstrating adequacy of supporting members, including wind uplift effects.

REQUIRED PHOTOVOLTAIC SIGNAGE/MARKING

Signage/Marking Format:

- Red background
- White lettering
- Minimum 3/8” letter height
- All capital letters
- Arial or similar font
- Reflective, weather resistant material (approved adhesive material may be used)

Locations:

1. Direct Current Conduit, Raceways, Enclosures, Cable Assemblies, and Junction Boxes
 - a. Marking should be placed on all interior and exterior DC conduit, raceways, enclosures, and cable assemblies, every 10 feet, at turns and above and/or below penetrations and all DC combiner and junction boxes.
 - b. Marking should read - “CAUTION: SOLAR CIRCUIT”
2. DC Disconnect
 - a. Signage should read - “PV SYSTEM - DC DISCONNECT”
3. INVERTER:



- a. Signage should read - "PV SYSTEM - INVERTER - WARNING. ELECTRICAL SHOCK HAZARD"

4. AC DISCONNECT:

- a. Signage should read - "PV SYSTEM - AC DISCONNECT"

5. Permanent directory or plaque providing location of service disconnecting means and photovoltaic system disconnecting means, if not located at the same location.

EMERGENCY ACCESS PATHWAYS

1. Residential Systems:

- a. Residential Buildings with hip roof layouts: Modules should be located in a manner that provides 1' - 3' wide clear access pathway from the eave to the ridge on each roof slope where modules are located. The access pathway should be located at a structurally strong location on the building (such as a bearing wall).
- b. Residential Buildings with a single ridge: Modules should be located in a manner that provides 2' - 3' wide access pathways from the eave to the ridge on each roof slope where modules are located.
- c. Hips and valleys: Modules should be located no closer than one and 1.5' to a hip or a valley if modules are to be placed on both sides of a hip or valley. If the modules are to be located on only one side of a hip or valley that is of equal length then the modules may be placed directly adjacent to the hip or valley.
- d. The modules should be located no higher than 3' below the ridge.

2. Commercial Systems:

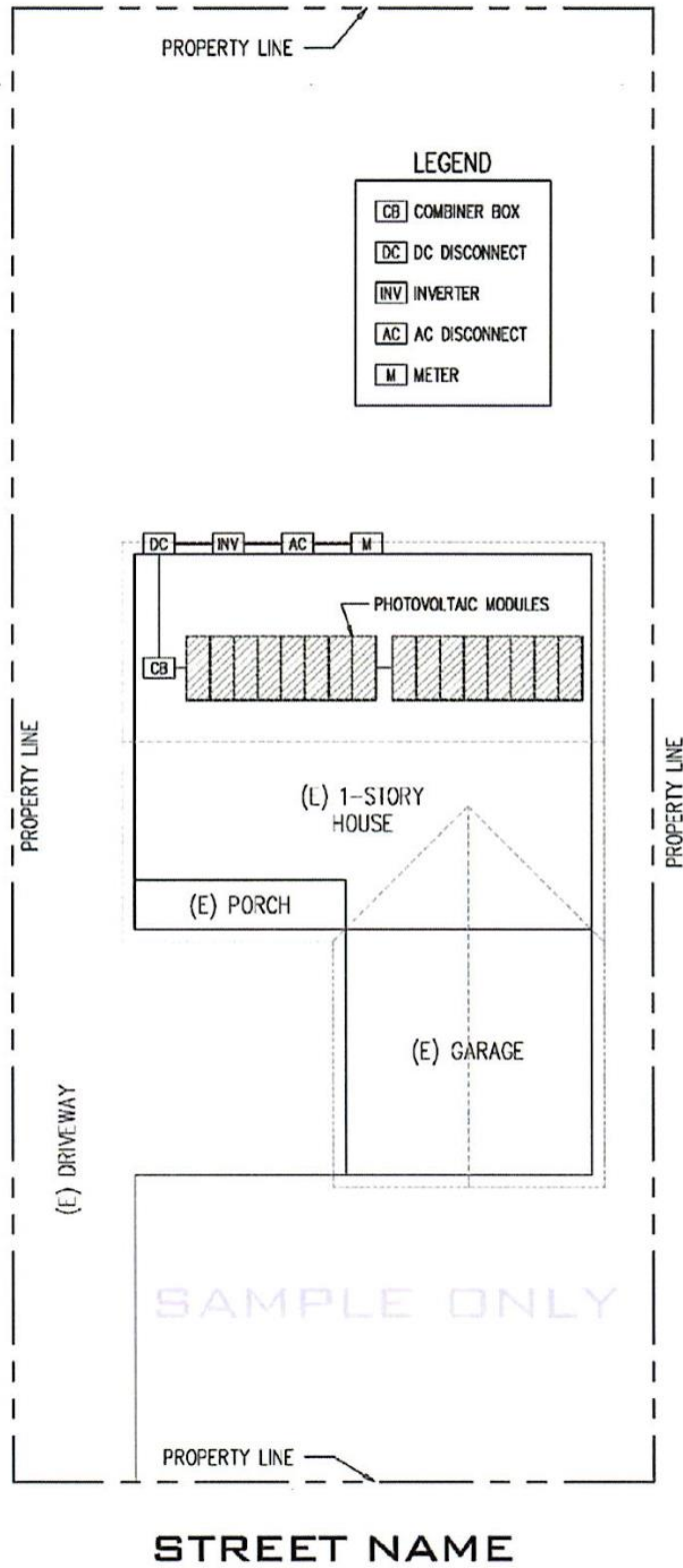
- a. Should be over structural members.
- b. Centerline axis pathways should be provided in both axis of the roof. Centerline axis pathways should run on structural members or over the next closest structural member nearest to the center lines of the roof.
- c. Should be straight line not less than 4' clear to skylights and/or ventilation hatches.
- d. Should be straight line not less than 3' clear to roof standpipes.
- e. Should provide not less than 3' clear around roof access hatch with at least one not less than 4' clear pathway to parapet or roof edge.
- f. Arrays should be no greater than 150 by 150 feet in distance in either axis.
- g. Pathway options between array sections should be either:
 - i) A pathway 8 feet (8') or greater in width.
 - ii) A pathway 4' or greater in width pathway and bordering on existing roof skylights or ventilation hatches.
 - iii) A pathway 4' or greater in width pathway and bordering four feet 4' x 8' "venting cutouts" every 20' on alternating sides of the pathway.

3. Ground Mounted Arrays:

- a. A clear brush area of 10' is required for ground mounted photovoltaic arrays.

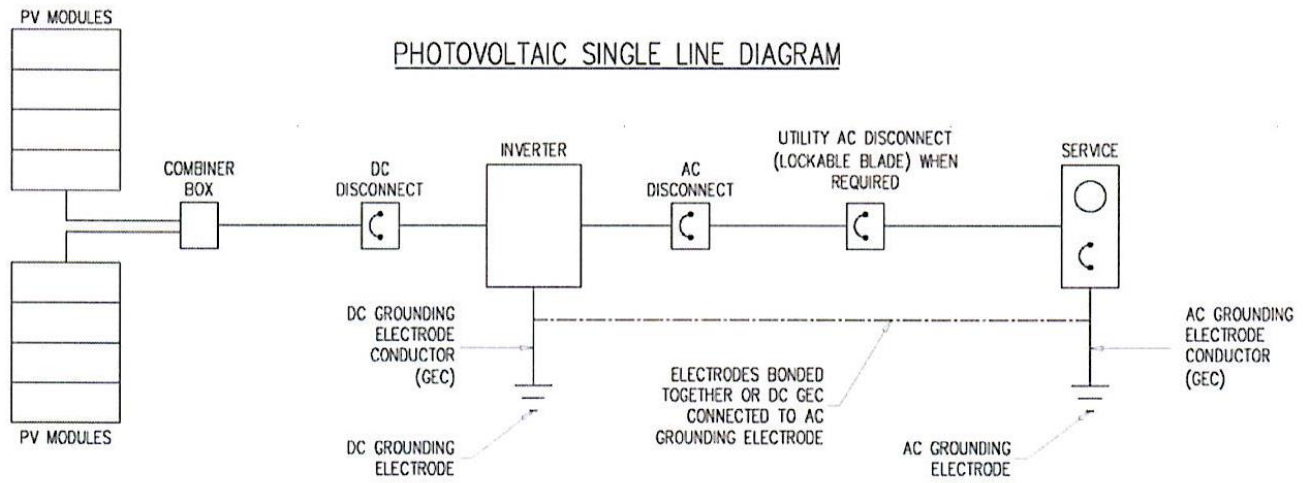
SAMPLE SITE PLAN

Site plan shown is to illustrate the necessary information required for full plan review. Complete and accurate site plan is required for review and approval.

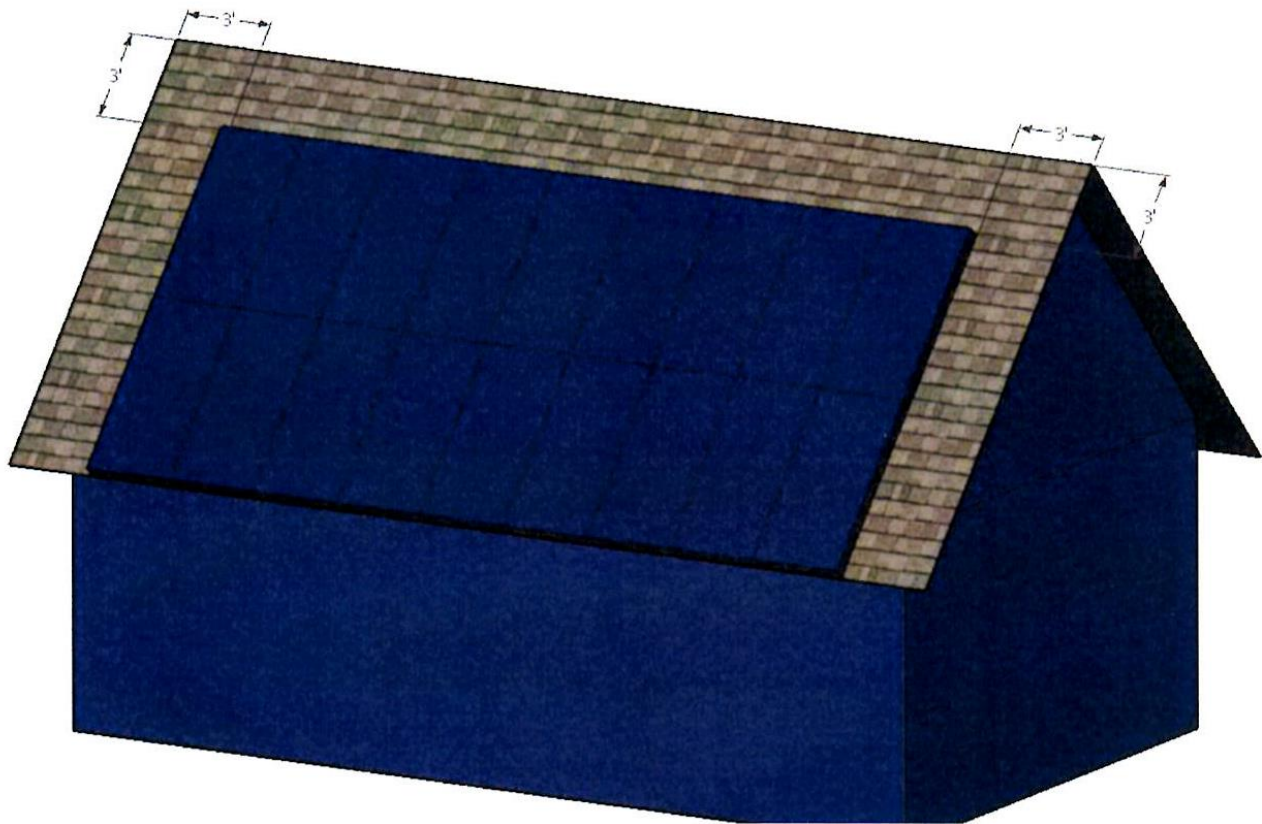


SAMPLE LINE DIAGRAM

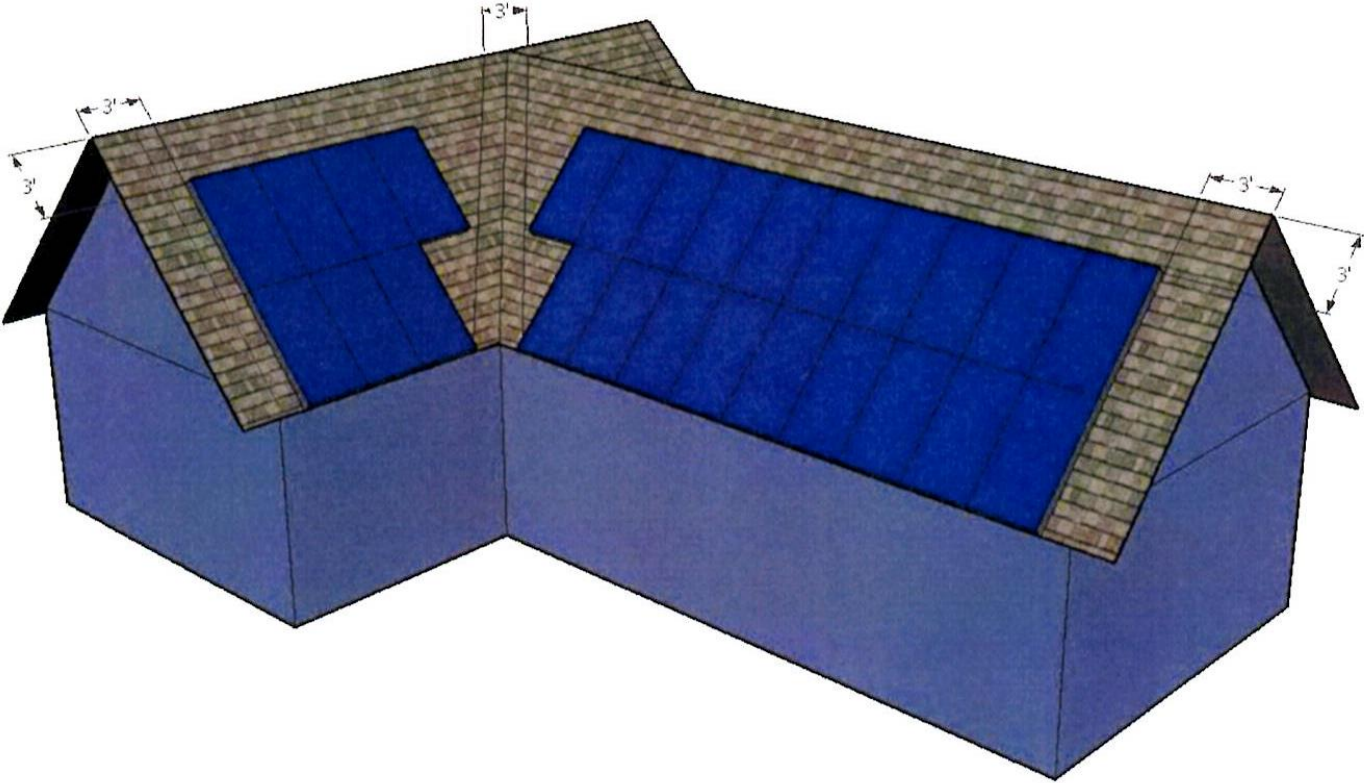
For informational purposes only



SAMPLE RESIDENTIAL SYSTEM LAYOUT (1)



SAMPLE RESIDENTIAL SYSTEM LAYOUT (2)



SAMPLE COMMERCIAL SYSTEM LAYOUT

STRUCTURAL

STRUCTURAL

