



**Boulder
County**

**Boulder County
Land Use Department
Publications**

Solar Photovoltaic Systems Checklist

Land Use Department
Courthouse Annex Building
2045 13th Street
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Boulder, CO 80302

**Building Safety & Inspection
Services Division:**
t: 303-441-3925
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e: building_official@bouldercounty.org
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Office Hours:
Monday – Friday 8:00 AM to 4:30 PM

Building Permits can be applied for
and issued until 4:00 PM

Solar Photovoltaic Systems Checklist

Per 2008 NEC (National Energy Code).

Solar Photovoltaic applications are reviewed by the county electrical inspectors. **The following checklist shall be submitted with your plans. Each item on the list shall be marked to verify it is part of the submittal.** Incomplete information may result in plan rejection or delay in the approval of your project.

As of June 30, 2009, all ground-mounted solar arrays will require Site Plan Review Waiver (SPRW) approval. This cost is \$100.00 for residential applications. Schedule a **Pre-application Conference** today.

Plan Submittal Requirements

Provide the following information:

1. A completed application form. Include the proposed PV System capacity in Watts, and whether system is a stand-alone, grid-tied, or hybrid system.
2. A deposit (the balance of fees is due at the time of permit issuance).
3. Three sets of plans (four sets of plans are required if your project is in the town of Jamestown).

Site Plan - Equipment Outside a Building

- Show the location of all disconnects.
- Show the location of all modules.
- Show the location of all batteries.
- Show the location of inverters.
- Show the location and connection of all grounding electrode conductors.
- Show the clearances around all equipment.
- Show dimensions between equipment and structures.
- Show dimensions between equipment and property lines.

Note: See the **Pole or Ground Mounted Panels** section for additional site plan requirements.

Floor Plan - Equipment Within a Building

- Show the location of all disconnects.
- Show the location of all batteries.
- Show the location of inverters.
- Show the location and connection of all grounding electrode conductors.
- Show location of all equipment within structures.
- Label the use of the room in which the equipment is placed.
- Show clearances of the equipment.

Wiring Requirements

Provide a one-line diagram that includes the following information:

- Label whether the system is stand-alone, grid-tied, or hybrid.
- Conductor sizes.
- Conductor insulation types (i.e., THHN, THWN, direct burial cable, etc.).
- Conductor material (i.e., copper/aluminum).
- Conduit sizes.
- Conduit material (i.e., non-metallic, EMT, etc.).
- Over current device ratings.
- Existing and new panel amperage ratings (buss ratings).
- Series and parallel configuration of the module connections.

Equipment Requirements

Provide the following general information.

- Module short circuit current ratings.
- Module open circuit voltage ratings.
- Module series fuse ratings.
- Inverter output circuit current rating.
- Inverter UL listings.
- All associated documentation (i.e., batteries, inverters, disconnects, modules, charge controllers, over-current devices etc.).
- Method of grounding for modules and array.

Note: Voltage correction factor is based on 125% (2008 NEC Table 690.7).

Panels

Roof Mounted Panels

Provide the Following Information:

- An Engineer's evaluation regarding the dead-load capability of the existing roof structure and its ability to support the added weight of the PV panels.
- For flat roof installations provide method of repair for roof penetrations.

Pole or Ground Mounted Panels

Provide The Following Information:

- Site Plan Review Waiver approval (as of June 30, 2009).
- Site Plan to include the following:
 - Location of panel(s) on property.
 - Dimensions from panel(s) to property lines.
 - Dimensions from panel(s) to other structures on the property and property easements.
- Engineered footing design.

Rough Solar PV Inspections

- Beginning Feb 1, 2011 unincorporated Boulder County will begin doing rough solar PV inspections. This inspection should be scheduled after the installation of the solar PV racking system, grounding, and no more than 50% of the PV modules. Roof mounted junction boxes or DC combiner boxes shall also be installed and wires terminated. In addition to the rough inspection, at the completion of the work, the Building Division will conduct a final inspection.
- If you have any questions, feel free to contact the Boulder County Building Division at the following phone numbers:

- Plan Review Staff: 720.564.2640
- Brian Nye, Electrical Inspector: 720.564.2615
- Jeff Dwight, Inspection Supervisor: 720.564.2607

