

City of Loveland Building Division

410 E 5th Street
Loveland, CO 80537
(970) 962-2505



Solar Photovoltaic Systems Checklist

Solar Photovoltaic applications are reviewed by the City of Loveland.

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 review & issuance of your project.

Plan Submittal Requirements

Please provide the following information:

1. A completed application form. Include the proposed PV System capacity in DC watts, and whether the system is a stand-alone, grid-tied, or hybrid system.
2. A plan review fee deposit (the balance of fees are due at the time of permit issuance).
3. Two sets of plans.
4. Shall meet all applicable conditions of Request for Electrical Service.
5. Size of system cannot exceed 120% of previous year's usage. If no history exists, then proper sizing justification must be provided with calculations shown.

Site Plan - Equipment Outside Building

- ___ Show the location of the existing service disconnect.
- ___ Type of isolation device- Request for Electrical Service: 9.4.a.vi- Isolation Device- will be in accordance with the requirements set forth by the City of Loveland Building Department.
- ___ Show the detailed location of all modules, including ridgeline and edge setbacks.
- ___ Show the location of all batteries (if applicable).
- ___ Show the location of inverters, including ridgeline and edge setbacks.
- ___ Show the location and connection of all grounding electrode conductors.
- ___ Show the clearances around all equipment.
- ___ Show the dimensions between equipment and structures.
- ___ Show the dimensions between equipment and property lines.
- ___ The PV system must have an AC disconnect in close proximity to the meter that shows a visible open.
- ___ Clear signage must be located at the meter and on the PV system itself – Both High Voltage Danger and Emergency Shut-Off. This signage must be shown in plans.

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

Floor Plan – Equipment within the Structure

- ___ Show the location of all disconnects and isolation device.
- ___ Type of isolation device- Request for Electrical Service: 9.4.a.vi- Isolation Device- will be in accordance with the requirements set forth by the City of Loveland Building Department.
- ___ Show the location of all batteries (if applicable).
- ___ 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 materials (i.e., copper/aluminum).
- ___ Conduit sizes.
- ___ Conduit materials (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 must be IEEE 1547 and UL 1741 certified.
- ___ 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 Colorado licensed design professional'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 January 1, 2011).
- ___ 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.
- ___ Colorado licensed design professional footing design.

Rough Solar PV Inspections

Rough solar PV inspections are required. 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 City of Loveland Building Division at (970) 962-2505.

