

## PERMIT REQUIREMENTS FOR RESIDENTIAL SOLAR THERMAL AND PHOTOVOLTAIC SYSTEM(S)

The following information and requirements are necessary before the issuance of permits for residential solar thermal and photovoltaic system(s). Two (2) sets is required for all information

A. **Structural Information:** the building division will require two (2) sets of the following:

### 1. Building Requirements

Ground mounted system shall include:

- i. Site plan
- ii. Footing detail
- iii. Elevation drawings max height allowed twelve (12) feet
- iv. Framing detail showing all supporting members
- v. Provide engineering calculations certified by a State of New Mexico licensed engineer or architect if the total height of the structure exceeds six (6) feet from finished grade to the top of the panel.

Roof mounted systems shall include:

- i. The weight of the complete system that is being added to the roof including the weight of all the working fluid inside the panel(s)
- ii. Elevation drawings for panel installations that will not be flush with the roof, a simple building elevation will be required to show the height of the installation. The elevation must show the height of the building, and the height of the solar installation, but does not have to show other building details. maximum height allowed ten (10) feet above roof
- iii. The location of the roof penetrations (along with proposed method and type of weatherproofing) resulting from the installation of the solar thermal and/or photovoltaic system(s).
- iv. The type and number of fastener(s) used to attach racking/panel system to the roof-framing members shall include: size, and length, along with pullout strength.
- v. Provide existing roof framing plan indicating slope and location of the proposed solar thermal and/or photovoltaic system(s) to insure proper loading of roof framing members. (do not impede roof drainage)

**Note:** For firefighter access, a minimum three (3) foot buffer

zone is required from the ridge and one (1) edge of the roof or parapet.

- vi. Provide engineering calculations certified by a State of New Mexico licensed engineer or architect, verifying adequacy of the roof construction for the increased loads.

**EXCEPTION:**

Engineering is not required if **all** of the following criteria are met:

- a. **Roof Structure:** the supporting roof framing shall be of typical residential construction with multiple parallel wood rafters or trusses. Minimum rafter or truss chord size is two (2) inch by four (4) inch and maximum spacing is two (2) foot on center spacing.
- b. **Roof Materials:** Roofing material can be only one (1) layer of any material described in section 905 of the New Mexico Residential Building Code except for sections R905.3, Clay and Concrete Tile, or R905.6, Slate and Slate-type Shingles.
- c. **Loading:** Solar panels are either directly attached to the roof framing or will be mounted to continuous rails that are directly attached to the roof framing. Attachments will be to roof framing at spacing no greater than four (4) foot on center. Solar panel(s) and all mounting hardware (rails, frame, ect.) weight shall not exceed five (5) lbs per square foot (psf) or forty-five (45) lbs concentrated load at each point of support, with a maximum of two hundred (200) lbs per framing member. Solar panel weight shall include the weight of all the working fluid inside the panel(s).
- d. **Height:** Maximum panel height above roof shall be eighteen (18) inches from the top of the panel to the roof surface.

**B. Electrical Information:** the building division will require two (2) sets of drawings containing the following:

1. **A one-line diagram** showing:
  - i. The number of photovoltaic panels proposed with voltage and kilowatt output ratings of each panel and total ratings with all panels, all conductor sizes, conduit sizes, ampacity of all over current devices, and ampacity of any disconnecting means.
  - ii. Max ampacity of main electrical panel and any sub panel that is to be used.(unless line side tap is indicated as per NMEC Artcal690.64(A) and 230.82(6))
2. Provide the manufacture's installation instructions and specifications for the inverter, the photovoltaic module(s), and mounting system.
3. If storage batteries are proposed, show number, size, and location of all storage batteries. (Additional requirements from the building department may be necessary).

4. All installations, markings, signage, and warning labels shall comply with current NEC, state codes, and the Uniform Solar Energy Code.

**Note:** Obtain approval from PNM prior to submittal if system is to be connected to, or participating in, PNM's solar photovoltaic program <http://www.pnm.com/customers/pv/apply.htm>

**C. Plumbing Information:**

Clearly show compliance with the latest adopted edition of the New Mexico Solar Energy Code (NMSEC).