

# City of Mt. Washington Solar Panel Plan Review Checklist

A permit is needed to install solar panels. Electrical installation shall be performed by a Kentucky licensed electrician or the homeowner. Solar panel installations must meet current building and electrical codes

Installation of solar systems on the roof of a structure adds weight to the structure commonly referred to as “dead load.” This additional weight must be accounted for to ensure that the building can safely bear the weight of the solar installation. Solar panels also may impose loads generated by seismic forces, and in some areas, by snow accumulation. Solar panels must also resist wind forces. Structural Analysis from Ky licensed engineer for rooftop-mounted systems required.

## Plan Submittal & Permit Process

Plans should be submitted to the City at the address above and will be routed to the appropriate City departments for review. Plan review may take up to 10 business days. Plans will not be reviewed until fees are paid and accompanied with a City of Mt. Washington Electric permit application. Plans may be submitted for review the following ways:

- **Electronically** - Electronic plan submission is preferred and allows for a faster plan review. Please combine all sheets into one .pdf file and add bookmarks listing the sheet number to each page. Once plans are approved a paper copy will be requested. Submit plans to [permitting@mtwky.org](mailto:permitting@mtwky.org) and pay by phone at 502-538-0515
- **Paper** - Plans may be mailed along with permit fee to City of Mt. Washington P.O. Box 285 Mt. Washington Ky 40047 attn: permitting; or hand delivered to City Hall located at 311 Snapp st. Mt. Washington Ky 40047

### Submit the following forms or information:

- Construction Plans and Electrical Plan. To speed plan review and assist field installations, show wire and over-current sizing from modules to meter
  - Site Plan or Elevation Drawings
  - Equipment Specifications and Cut Sheets
  - Structural Analysis from Ky licensed engineer for rooftop-mounted systems required
  - Electrical Permit application – this form should be completed by the licensed contractor
  - Homeowners insurance/ liability insurance
  - HOA approval letter, if applicable
- Specifications and cut sheets for solar panels and all components including module, inverter, racking and mounts, disconnects and other major electrical components. Wire size/type and over-current protection needs to be listed on cut sheet from module to meter

Structural analysis - A structure specific structural analysis must be submitted by a Ky licensed engineer with an evaluation of the structural components for the additional loads and rooftop-mounted photovoltaic systems need to resist components and cladding wind loads.

Must comply with the International Fire Code sections for Fire department access for venting.

Must comply with current adopted versions of the Kentucky Building Code and the Kentucky Residential Code respectfully.

- **2018 KRC R324.3 Photovoltaic systems.** Photovoltaic systems shall be designed and installed in accordance with Sections R324.3.1 through R324.6.1 and NFPA 70. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverters listed for utility interaction.
  - **R324.3.1 Equipment listings.** Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703.
  - **R324.4 Rooftop-mounted photovoltaic systems.** Rooftop mounted photovoltaic panel systems installed on or above the roof covering shall be designed and installed in accordance with Section R907 and R909.
  - **R324.4.1 Roof live load.** Roof structures that provide support for photovoltaic panel systems shall be designed for applicable roof live load. The design of roof structures need not include roof live load in the areas covered by photovoltaic panel systems. Portions of roof structures not covered by photovoltaic panels shall be designed for roof live load. Roof structures that provide support for photovoltaic panel systems shall be designed for live load, LR, for the load case where the photovoltaic panel system is not present.
- **KRC SECTION R907 - ROOFTOP-MOUNTED PHOTOVOLTAIC SYSTEMS**
  - **R907.1 Rooftop-mounted photovoltaic systems.** Rooftop mounted photovoltaic panels or modules shall be installed in accordance with this section, Section R324 and NFPA 70.
  - **R907.2 Wind resistance.** Rooftop-mounted photovoltaic panel or modules systems shall be installed to resist the component and cladding loads specified in Table R301.2(2), adjusted for height and exposure in accordance with Table R301.2(3).

- **R907.3 Fire classification.** Rooftop-mounted photovoltaic panels or modules shall have the same fire classification as the roof assembly required in Section R902.
  - **R907.4 Installation.** Rooftop-mounted photovoltaic panels or modules shall be installed in accordance with the manufacturer's instructions.
  - **R907.5 Photovoltaic panels and modules.** Rooftop-mounted photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703 and shall be installed in accordance with the manufacturer's printed instructions
- Power riser diagram and panel schedules. Show location and size of electrical service, meter, disconnects, panels, transformer, etc. in accordance with NEC Article 690.5. The diagram must show the meter base separate from the panel. The meter should be shown schematically as self-contained with the service passing through meter. The PV connection cannot be made inside the utility meter base. Inverters should be equipped with integrated ARC-fault and rapid shutdown per NEC 690.5.
    - Add the following notes on the plans:
    - Add note, "A lockable disconnect shall be located within 6' of the utility meter on an exterior wall and accessible to utility personnel at all times."
    - Power riser must state "In the event of a Utility power outage the PV system will automatically disconnect from the utility." Maximum Voltage per NEC 690.7 (A-E) and circuit sizing NEC 690.8.

#### **Electrical Plan**

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#### **Building Elevation Drawings for Roof Mounted Systems**

- List the specific UL and IEEE certifications (UL 1741 & IEEE 1547) that apply for systems interconnecting with an electric utility provider on the one-line diagram.
- 690.12 Rapid Shutdown of PV Systems on Buildings PV system circuits installed on or in buildings shall include a rapid shutdown function to reduce shock hazard for emergency responders in accordance with 690.12(A) through (D).
- Show grounding system in detail.
- Bidirectional meter will not be installed until all necessary Net metering Documentation has been submitted and approved.

Provide an overhead elevation drawing or site plan drawing of the building showing the location of the panels on the roof with the street shown for reference and property lines. Include North arrow. Include the location of any utility lines.

#### **Site Plan for Ground Mounted Systems**

Site Plan showing the arrangement of the panels on the ground, north arrow, property lines and dimensions and distance from property lines, street name and location, existing home location with front and rear labeled. In instances where roof-mounting of solar panels or solar thermal collectors is not practicable due to efficiency or aesthetic considerations, ground-mounting may be necessary. Due to differences in scale between residential and commercial/institutional/industrial solar systems, separate standards apply as follows: (a) Residential

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##### **(a) Residential**

1. Must be located to the rear of the principal structure and screened from view from public streets.
2. Must be as close to the ground as practicable and in no case higher than the principal structure.
3. The mounting framework must be neutral in color or screened from view from surrounding residential properties.

##### **(b) Commercial/Institutional/Industrial**

1. Every effort must be made to completely screen the devices from view from public streets. In instances where complete screening is not possible, the devices must be screened and/or located as to have a minimal visual impact as seen from public streets.
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## Electrical Plan

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