



Building Inspections Department Requirements for Residential Solar Photovoltaic Systems

Applicable Building Codes:

- IRC 2018 International Residential Code
- NEC 2017 National Electric Code
- IFC 2018 International Fire Code, Section 604.11
- De Soto Zoning Regulations, Article 5.15 Solar Energy Systems

Plan submittals shall include:

- Stamped Plans by Registered Design Professional
- Approval letter from Westar Energy
- Site diagram showing the arrangement of panels on the roof or ground, lot dimensions, and distance from property lines to adjacent buildings/structures.
- Location of main service or utility disconnect.
- Location of PV equipment on the building.
- Total number of modules, number of modules per string and the total number of strings.
- Make and model of inverter(s) and/or combiner box if used.
- One-Line Diagram of system.
- AC and/or DC circuit arc fault protection as required by the NEC.
- Circuit diagram with conduit, wire type and sizes, and/or cable type and wire sizes.
- Specify grounding/bonding, conductor type and size, conduit type and size and number of conductors in each section of conduit.
- If batteries are to be installed include them in diagram and show their locations and venting.
- Equipment cut sheets including inverters, modules, AC and DC disconnects and combiners.
- List all appropriate labels and marking per NEC Sections 690 and 705. and IFC.
- Plans shall include provisions for "Rapid Shutdown of PV systems on buildings per NEC 2014 Article 690.12

Structural Analysis including: (and stamp by licensed professional engineer)

___ Description of the type of roof covering and the number of roofing layers installed.

___ Type of roof framing, size of members and spacing.

___ Weight of panels, support locations and method of attachment. (maximum point load exerted on a roof rafter from the panel/module must not exceed 200#)

___ Framing plan and details for any work necessary to strengthen the existing roof structures.

___ Roof Plan with marked location of all adjacent openings such that roof access points are located in areas that do not require the placement of ladders over openings such as windows or doors and located at strong points of building construction in locations where access point does not conflict with overhead obstructions such as tree limbs or wires.

___ Smoke Ventilation Requirements: PV panels/modules shall not be less than 3 feet wide clearance space from ridge, gable ends and 18" from eaves for access to allow for Fire Department smoke ventilation operations.

___ Roofs with hips and valleys: PV panels/modules shall not be closer than 18" of hips or valleys where panels/modules are located on both sides of a hip or valley. No restriction when panels/modules are placed on only one side of the hip or valley.

**All work associated with the installation of the electrical system, connection of the plug-ins, components, equipment. Etc. shall be performed by individuals who possess an appropriate Johnson County Contractor Electrical License. Such work shall include but not be limited to: installation and connection of bonding and grounding components, conductors, and electrical equipment.*