



**SUBMITTAL REQUIREMENTS FOR RESIDENTIAL GRID-TIED
PHOTOVOLTAIC SYSTEMS NOT INSTALLED BY
AN ARIZONA-LICENSED CONTRACTOR
(DOES NOT APPLY TO COMMERCIAL APPLICATIONS)**

FOR RESIDENTIAL GRID-TIED PHOTOVOLTAIC SYSTEMS NOT INSTALLED BY AN ARIZONA-LICENSED CONTRACTOR, THE FOLLOWING ARE REQUIRED:

General:

- All plans and supporting documentation to be submitted electronically in PDF Format.
- Systems greater than 10kW shall be designed by an Arizona-licensed engineer.
- One (1) set of plans, minimum sheet size 11" x 17" that are site specific for the project.
- Include panel schedules for all associated panels
- Include load calculations, including provision for future or proposed electric vehicle supply equipment per 2024 IRC E3704.
- Provide an itemized list of components with cost break down including a separate line item for total labor/installation cost.
- Ground-mount solar panels **must** meet zoning district building height limitations and principal setback requirements.
- All foundations and footers **must** maintain a 10-foot setback to all portions of the onsite wastewater system
- Plans shall be legible and clearly indicate the entire scope of proposed work.
- Contact the local fire district having authority for additional requirements.
- The project must receive approval from the local electric service provider prior to Yavapai County final inspection.
- Additional information, and/or engineering may be required.

Site Plan:

- Single sheet site plan, minimum sheet size 11" x 17" clearly indicating the location(s) of all equipment.
- The site plan shall indicate the following:
 - Location of the photovoltaic array, batteries, and or the generator.
 - The distance of the equipment to all structures.
 - The type of fuel storage, the distance of the fuel storage to all structures, and the location of the fuel storage.
 - If LPG, indicate the size (gallons) of the fuel storage tank. A gas isometric diagram for LPG or natural gas lines shall be included.
- The type/use of each structure on which the system is to be mounted or contained within: dwelling, garage, storage building, etc. Mounting of equipment on manufactured homes, mobile homes, park model units, or factory-built buildings will require an engineered design and supporting calculations provided by a licensed Arizona registrant, and/or specific approval from the home manufacturer.
- Indicate the length of all underground runs of conduit. If the run is one hundred feet (100') or more, provide voltage drop calculations.





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System Components:

- Provide the manufacturer's installation instructions and specifications for ALL system components: solar panels, inverters, energy storage system batteries, controllers, disconnects, junction boxes, panel boards, etc.
- The manufacturer's specifications shall clearly indicate the specific model to be used.
- The manufacturer's specifications shall include the testing laboratory or agency listing.
NOTE: ONLY RECOGNIZED LISTED AND LABELED COMPONENTS WILL BE ALLOWED.
- Provide the manufacturer's specifications and the installation manual for the generator. The specifications shall include the generator output rating and the specific built-in over current protection.
- Provide directory placard per the requirements of Article 710.10 of the 2023 NEC.

Array Drawing:

- Drawings shall specify the number of modules in series or in parallel for each array and total number of arrays.
- Include the operating voltage, operating current, maximum system voltage, and short-circuit current.
- Indicate the specific make and model of modules(s). These shall correspond with the provided manufacturer's specifications.
- Indicate wire size (AWG), type, insulation type, number of wires, conduit size, type and burial depth.

Three (3) – Line Electrical Diagram:

- Three (3) Line Electrical Diagram must be prepared by a Licensed Arizona Electrical Engineer.
- The wiring diagram shall include all wire sizes (AWG), type, insulation type, numbers of wires along with conduit sizes and types if applicable.
- All equipment/components shown, identifying specific make and model, shall correspond with the provided manufacturer's specifications.
- Provide a detail list of labeling for all components, including breakers, transfer switches, conduit, disconnects, inverters, etc.
- The specific equipment grounding and bonding of the generator shall be based on the manufacturer's specifications and Article 250 of the 2023 NEC.

Systems with Back-up Energy Storage System Batteries and/or Generator:

- Provide the manufacturer's specifications for the specific type, brand and model of batteries and/or generator.
- The plans shall include the number of batteries to be used and the allowable energy ratings per 2024 IRC Section 330.
- Provide a floor plan to include the following:
 - battery storage location, including impact protection, if applicable
 - type of storage racks
 - ventilation (amount, location, and method)
 - working space clearances to the equipment, illumination, and location of required service outlet per 2024 IRC Section 3901.9 and 3903.4.
 - identify fire separation, and heat detector or smoke detector, if installed in an allowed area within a dwelling unit





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Systems with Back-up Energy Storage System Batteries and/or Generator, cont:

- The electrical wiring, disconnect types and related wiring connections to the system shall be included on the one- and three- line diagrams, to include electrical wiring, disconnect types and related wiring connections to the systems, and the transfer switch on the one- and three- line diagrams.

Roof Framing Details: (Required for ANY/ALL roof mounted equipment):

- An Arizona-licensed registrant shall provide sealed calculations, design, and details verifying that the roof system is able to sustain the added load and wind uplift/resistance of the proposed equipment. Include details for all module/array support or tilt systems and attachments.
- Provide manufacturer's specifications and installation instructions for mounting systems and attachment hardware for the system to be used.
 - If not using a pre-engineered mounting/rack system, provide an engineered design, stamped by a licensed Arizona engineer, for the system.
- Roof-mounted systems on Manufactured Mobile Homes, Park Model Units and Factory Built Buildings will require the design to be provided by a licensed Arizona engineer/architect, and/or specific approval from the home manufacturer. Engineering shall include additional loading of inverters if attached to units.
- Show location of all roof vent systems, plumbing or mechanical, in the array area. Vents shall not be covered by arrays.
- Show the location of any skylights or HVAC units, including evaporative coolers.

Ground Set Systems:

- Provide a separate foundation plan, fully dimensioned.
- Indicate the weight of array and all other components. Include all support members and equipment being supported by the foundation/footing.
- Provide manufacturer's specifications of attachment hardware for mounting of system to the support members.
- If not using a pre-engineered mounting/rack system, provide an engineered design by an Arizona Registrant for the foundation/footing system. The design shall include attachment to foundation (anchor bolts, size [diameter]), and number of bolts, embedment depth, size and amount of reinforcement steel, depth and size of foundation/footing.
- An independent photovoltaic (PV) panel support structure designed with usable space underneath with a clear height of not less than 7 feet 6 inches intended for secondary use, such as providing shade or parking of motor vehicles, will require a separate permit.

