All Project Applications must contain the following:

**Submittal Requirements:**
1. Permit information sheet
2. 8 ½” X 11” Plot Plan drawn to scale
3. Directions to Site Map
4. Plans as defined below

All submittals shall be site specific and designed to the provisions of the 2011 National Electrical Code (Electrical design), the 2012 International Residential Code and 2012 International Building Code (Structural design).

**MINIMUM CONTENT REQUIREMENTS FOR PLAN SUBMITTAL:**

**General:**
- Any system over 12Kw requires an Arizona electrical Engineer’s design and approval from APS prior to issuance/final
- Two (2) sets of plans, minimum sheet size 11” x 17” that are site specific for the project
- Plans shall be legible and clearly indicate the entire scope of proposed work
- Provide an itemized list of components with cost break down including a separate line item for total labor/installation cost
- In certain situations, additional information, and/or engineering may be required

**Site Plan: (SEE SAMPLE SITE PLAN)**
- Single sheet site plan, minimum sheet size 11” x 17” clearly indicating the location(s) of all equipment
- The type/use of each structure on which the system is to be mounted or contained within: dwelling, garage, storage building, manufactured home, etc.
- Indicate the distance between structures and to solar system(Voltage drop)

**System Components:**
- Provide manufacturer’s specifications for ALL system components: solar panels, inverters, controllers, disconnects, junction boxes, panel boards, etc. (Manufacturers Installation instructions shall be on site at time of inspection)
- The manufacturer’s specifications shall clearly indicate the specific model to be used
- The manufacturer’s specifications shall include the approved testing laboratory listing: Underwriters Laboratories (UL), ELT Testing Laboratories, Inc. (ETL), or Canadian Standards Association (CSA) and listing number for each component. NOTE: ONLY listed/labeled components will be permitted
- Provide a detail list of labeling for all components including breakers, transfer switches, conduit, disconnects, inverters, etc.

**Array Drawing: (SEE SAMPLE ARRAY DRAWING)**
- Drawing 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: (SEE SAMPLE THREE (3) – LINE DIAGRAM)**
- Three (3) Line Electrical Diagram must be prepared by a Licensed Electrical Contractor or Arizona Engineer
**Systems with Batteries and/or Generator Power Backup:**

- Provide the manufacturer’s specifications for the specific type, brand and model of batteries.
- The plans shall include the number of batteries to be used and a floor plan of the battery storage location. Include the type of storage racks and show the working space access to the batteries and ventilation (amount and how being vented).
- The electrical wiring, disconnect types and related wiring connections to the system shall be included on the one (1) – and three (3) – line diagrams (See sample one (1) – and three (3) – line diagrams with a battery system).
- Provide the manufacturer’s specifications for the generator. The site plan shall indicate where the generator will be located, the type of fuel storage, and location of fuel storage. Pipe size for LPG or natural gas lines and LPG storage tank size (water gallon capacity) shall also be included on the site plan.
- Include electrical wiring, disconnect types and related wiring connections to the systems, and the transfer switch on the one (1) – and three (3) – line diagrams.

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

- Provide details indicating the type of roof structure system: manufactured trusses, conventional framed system, manufactured roof joist system, metal frame system, etc. Include the sheathing size/type, roof slopes, and type of roof covering materials (shingles/tile, etc.) Low slope roof trusses shall be engineered by an Arizona registrant.
- Indicate the size of support members, spacing of members, age of structure (or year built), and span between walls/beams supporting the roof. Systems cannot be mounted on the overhangs of any roof system.
- 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 swamp coolers.
- Indicate the weight of array and all other components (pounds per square foot, load to roof supports). Include all module/array support or tilt systems.
- Provide manufacturer’s specifications and installation instructions for mounting systems and attachment hardware for the system to be used. NOTE: Engineering shall be required to verify resistance of wind uplift on low slope roof with tilt systems and of systems designed to be attached to the roof covering only and not direct to the roof frame members.
- Roof mounted systems on Manufactured Mobile Homes, Park Model Units and Factory Built Buildings will require an engineered design and/or specific approval from the manufacturer. Engineering shall include additional loading of inverters if attached to units.
- If not using a pre-engineered mounting/rack system, provide an engineered design for the system.

**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 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.

This list is not all inclusive. Additional information and engineering as determined by the Building Official during plan review may be required.

Applicable to Solar Water Systems.

Solar panel placement may be subject to additional requirements by the local fire district.
INSTRUCTIONS FOR DRAWING A PLOT/SITE PLAN

Plot Plans must be drawn in Black Ink to scale on the form provided and must include all of the following information: (8 ½” X 11” form will be provided to you)

Site Plans must contain the following information and be drawn on the same size sheet as your construction drawings. (Minimum Paper Size is 18” X 24” with maximum of 36” X 48”)

1. Property Dimensions
2. Indicate scale used (Engineer’s Scale ONLY – Not Smaller than 1” = 60’)
3. Indicate “North” with directional arrow
4. Proposed structure(s) with all dimensions, including POOLS, fences, walls, etc.
5. Existing structure(s) with all dimensions, including POOLS, fences, walls, etc.
6. Distance(s) between structures
7. Distances all structure(s) to all property lines
8. Description of each structure’s use
9. Adjacent streets/roads
10. Location of driveway(s) and material used (i.e., gravel, concrete…)
11. Location, size, dimensions of septic system with leach area (show perc test holes, 100% expansion area [minimum distance from septic & leach], length & slope of outlet lines [5’ minimum], distribution box/diversion valve, inspection pipe(s) length & number of leach lines [distance between trenches], degree of slope in leaching area, length & slope of building sewer lines, setbacks from property lines, buildings, wells, dry washes, other sewage systems, water lines) {Note: If individual wells provide water, maintain minimum septic setbacks of 50' from property lines and 100' from all wells including neighboring wells.}
12. Locations of all utility poles, meters, and lines
13. All easements regardless of purpose must be displayed
14. Slope information: slope information may be given in feet or percentage of slope
   a. Indicate high and low point of lot if lot slopes
   b. Indicate by arrows the direction of slope
   c. Indicate how much difference there is in elevation (in feet) between high and low point.
15. Any watercourse(s) on the parcel or within 200 feet of existing or proposed structure(s); wells within 100 feet of the parcel; and road-cuts within 50 feet of the parcel (A watercourse is defined as any topographic feature that carries water periodically. Other appropriate terms might be wash, creek, river arroyo, slew or drainage way.)
16. Location of existing roadside ditches and road culverts with size
17. Layout of parking spaces, including handicapped, per use requirements (pertains to all except single family dwelling permits)
18. Signage must be identified but requires a separate permit
19. Location and type of exterior lighting
20. Location where orange card will be posted.
21. Full size SITE PLAN must also include existing and proposed grades, building pad elevations, drainage, and, cut and fill amounts.

Drainage Report/Plans must be in accordance with the Yavapai County Drainage Criteria Manual. (See the Flood Control District with any questions.)