

RESIDENTIAL SOLAR PV STANDARD

*PLAN GUIDELINES

A Residential Standard Solar PV System Plan should include clear documentation including, but not limited to the following:

1. Page/Sheet 1: Cover Sheet – A proper cover sheet should include general information about the project:
 - A location map and aerial image of project site
 - Owner name and address
 - Installer Name and contact information
 - Design Professional(s) to include Engineer(s) and/or Master Electrician (*Required – see Technical Bulletin)
 - Code analysis (Designed in accordance with latest adopted code)
 - Drawing index
2. Page/Sheet 2: Site and Roof Plan: A proper site plan should (at minimum) include:
 - Roof plan showing modules placement on roof, disconnect locations and setbacks
 - Location of all existing structures and proposed PV system equipment (including modules, disconnects, inverters, panel boards, combiner boxes, storage batteries, utility meters, etc.)
 - Location of Existing plumbing vent terminations: Vent termination shall meet the minimum requirements of the IPC and/or IRC. (Ref. 2021 IRC, Sec. P3103)
3. Page/Sheet 3: System Drawings: System drawings should show, (at minimum - additional sheets may be needed):
 - AC and/or DC circuit arc fault protection as required by the NEC
 - Rapid Shutdown information shown in accordance with NEC
 - Inverter listed to the UL 62109 or UL 1741 Safety Standard; photovoltaic module(s) listed to the UL 1703 safety standard and appropriate listings for “all” associated equipment as conducted by a Nationally Recognized Testing Laboratory
 - Inverter AC output disconnect location, utility disconnect location, and AC output over-current protection device rating.
 - Combiner box(es), disconnect switch, size of source circuit overcurrent protection, if required
 - Main service entry panelboard bus rating and main circuit breaker/fuse ampere rating
 - Circuit diagram with conduit, wire type and sizes, and/or cable type and wire sizes
 - Equipment grounding and bonding conductors and grounding electrode conductors, if applicable
 - Battery disconnect and overcurrent protection, if applicable to include but not limited to mounting requirements, smoke detection, protection, etc.
 - Appropriate calculations as referenced in the Solar America Board for Codes and Standards (Solar ABCs) to include but not limited to, calculations used to: determine wire sizes; fuse and breaker type and sizing; temperature deration factors; PV system voltage not exceeding the maximum rated DC inverter input voltage or that of the connected equipment; and size equipment grounding conductor per NEC
 - A 3-line diagram shall be provided that meets the requirements of NEC
 - Electrical Design shall be provided by Texas Professional Engineer, Master Electrician, and/or Manufacturer’s Engineered line diagram
4. Page/Sheet 4: Attachment Detail
 - Framing plans showing supporting structure for arrays
 - Details of attachment of the panels
 - Manufacturer’s installation specifications (if using manufactured racking system)
 - Make, model, and quantity of major components with required listing in accordance with NRTL
5. Page/Sheet 5: Label Standards
 - List of all appropriate labels and marking and their locations per the NEC and IFC requirements