

Herriman City

Residential Solar Photovoltaic (PV) System Plan Submittal Checklist

*This checklist is only a basic list of items needed for a solar PV system plan review and is **not** all inclusive. Having all the items listed on this checklist does **not** guarantee a permit will be issued and additional plans, information, and/or requirements may be requested or required by Herriman City at any time.*

1. **Site plan:** Provide a detailed site plan showing location of the home and all PV system components on the property. If the panels are on the roof, show a roof diagram with panel layout, include dimensions of walkway around panels (3 feet minimum). Include details of how many panels will be installed. Also show location of new equipment being installed on this particular project. Include pictures of max amps on busses, picture of all live parts, also conductors.
2. **Line Diagram Page:** **Line detail must be specific to this job only – do not send a generic one-line diagram.** Start with the existing cabinets on the house, provide a detailed line diagram showing or listing the following:
 - a. the manufacturer's name of the existing and all new equipment being used on this project only,
 - b. the number of subpanels per circuit,
 - c. the size of conductors and disconnects per circuit,
 - d. solid copper (minimum #8) conductor for your bonding and grounding,
 - e. the rail system and the type of grounding lug for that rail system as needed
 - f. switches,
 - g. max disconnects,
 - h. max size of busses at main disconnect and location, also main breaker cabinet if used,
 - i. show whether this projects is load side or line side at disconnect with calculations and sizing,
 - j. inverters and locations of inverters,
 - k. include a note that modules cannot be placed over plumbing and mechanical vents,
 - l. if batteries are used, provide all equipment used, conductors, conduit sized for system and container for storage of batteries with all warning labels shown.
3. **Calculations Page:** Starting from the existing equipment specific to this job, show the total amount of watts, amps, volts, open circuit voltage (Voc at the coldest possible outside temperature – see NEC 690.7), and short circuit current that the array can produce (*this is not required for systems with micro-inverters*). Then size the bonding and grounding to the equipment. If using batteries, also provide calculations for all equipment used. This must be job specific.
4. **Specifications Sheets:** Provide manufacturer details for the parts used for only the system being installed on this project (not the whole catalog):
 - a. **Manufacturer's spec sheets:** Provide spec sheets on racking supporting modules, hardware used for bonding at rails, conductor and bonding lugs, detail on flashing at roof for the racking system to keep water out of building,
 - b. **Module spec sheets:** Provide the module manufacture specification sheets showing the modules' rated watts (Pmp), volts (Vmp), amps (Imp), open circuit voltage (Voc),

- and short circuit current (Isc) and their UL listing. Only provide pages of modules actually being used.
- c. **Inverter spec sheets:** Provide the inverter manufacture spec sheets showing the amount of watts and volts the inverter can safely handle, and also noting what the inverter's max rated AC output amps and voltage is. Utility tied inverters must be listed as "utility interactive" meeting UL 1741, and have ground fault protection.
 - d. **Micro-inverters:** Show manufacturer and listing of multi-cables with connections for micro-inverters meeting UL 1741.
 - e. Show manufacturer and listing of solar deck or junction box, also stress connectors and flashings for roof.
5. **Warning Labels Page:** Show all warning labels to be used at panels, conduits and disconnects.
 6. **Installation Detail Page:** Show a detail of racking with manufacturer's name and how it is fastened to the building and flashed to keep water to the finish side of the building.
 7. **Letter from Structural Engineer:** Provide a letter from an engineer that roof will support solar panels and that the loading will be equal on all trusses or roof framing.

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