City of San Dimas

Building and Safety Division

Residential Photovoltaic System Requirements

PROJECT INFORMATION			
Project Address:		**Permit Number:**	
Work Description:			

1) The Governing Codes For the project are listed below and are required to be noted on the plans prior to submittal:
   - **a.** **2022 California Residential Code**
   - **b.** **2022 California Mechanical Code**
   - **c.** **2022 California Electrical Code**
   - **d.** **2022 California Plumbing Code**
   - **e.** **2022 California Energy Code**
   - **f.** **2022 California Green Code**
   - **g.** **City of San Dimas Municipal Code**

2) A site plan of the subject property is required.
   - **a.** The site plan is to show all structures on the property (including swimming pools, spas, and patio covers).

3) A photovoltaic array layout plan is required.
   - **a.** The photovoltaic array layout plan is to show the location and orientation of the arrays on the roof.
   - **b.** The photovoltaic array layout plan is to show the correct quantity of arrays proposed.
   - **c.** The photovoltaic array layout plan is to show the required Los Angeles County Fire Department and California Residential Code set back clearances on the roof.
     - **i.** **LA County Fire Department Approval is required for Energy Storage Systems.**

4) A wind uplift calculation is required for the submittal.
   - **a.** The wind uplift calculation is to be stamped and signed by a California Licensed Architect, Civil Engineer or Structural Engineer.
   - **b.** The design parameters for the calculations are:
     - **i.** 110 MPH Exposure C

5) A structural evaluation of the existing building where the photovoltaic system is proposed to be installed is required to be submitted.
   - **a.** The structural evaluation can be performed and signed by the Design Professional listed in item 4 above, or
   - **b.** A completed and signed PV Toolkit Document #5 found on Page 45 of the California Solar Permitting Guidebook, 4th edition.

6) A single line diagram of the proposed photovoltaic system is required.
   - **a.** The single line diagram is to show the wire type, insulation type, American wire gauge size, conduit type, conduit size and the number of conductors installed in the conduit.

- **b.** Calculations are required to justify the proposed wiring.
  - **i.** PV system conductor ampacity is required to comply with CEC 690.8(B).
    - **1.** The ambient air temperature (138-degrees F) correction factor shall be .71 when using table 310.15(B)(1) for THWN-2 wire.
      - **a.** A note shall be on the plan specifying the height of the conductors or conduit above the roof of 7/8-inch or greater.
        - **i.** If the conductor or conduit is installed less than 7/8-inch above the roof, the Temperature Correction Factor shall be increase by 60-degrees Fahrenheit above the ambient temperature. This will have the temperature correction factor of .41 for THWN-2 wire.
    - **2.** The Adjustment Factor for more than three (3) current carrying conductors shall be based on Table 310.15(C)(1).
- **c.** The Voltage Correction Factor (multiply the open-circuit voltage (Voc)) for Crystalline and Multicrystalline Silicon Modules for the City of San Dimas is 1.12.

7) A manufactures data sheet for the racking system is required to be submitted.
- **a.** The manufactures data sheet for the racking system is to specify that it has a UL 1703 Fire Rating when installed and must specify the Fire Type of the Module the listing was approved under.
- **b.** The support base spacing is to be specified on the plans and match the wind uplift calculations.

8) A manufactures data sheet for the proposed Photovoltaic Module must be submitted.
- **a.** The manufactures data sheet for the module is required to list the Fire Rating Type (Type 1, 2, 3, etc.).
  - **i.** Please note that data sheets that only provide a Letter for the fire rating will not be accepted.

9) A manufactures data sheet is required to be submitted for the rapid shutdown device.

10) A manufactures data sheet is required to be submitted for the inverter type used.

11) If optimizers are used, the manufactures data sheet is required to be submitted.

12) If the main overcurrent device is to be de-rated, then a load calculation is to be submitted to justify the reduced ampacity of the main breaker.

13) CEC Articles 690 and 705 and CA Residential Code Section R324 require photovoltaic warning labels. Provide a warning label marking sheet with the submittal. A simplified version can be found in the California Solar Permitting Guidebook, 4th edition.

14) If a battery backup system with an emergency load panel is provided, a load calculation for the emergency panel is required to justify the size and corresponding emergency panel overcurrent device.