

## SOLAR PHOTOVOLTAIC SYSTEM APPLICATION

See the Solar Plan Review Checklist for information to submit for plan review with your permit application.

Date: \_\_\_\_\_

Property Owner: \_\_\_\_\_ Phone: \_\_\_\_\_

Property Owner Address: \_\_\_\_\_ Email: \_\_\_\_\_

Construction Address: \_\_\_\_\_ Subdivision: \_\_\_\_\_ Lot #: \_\_\_\_\_

Provide the total system capacity rating (sum of all panels) Solar Electric System: \_\_\_\_\_ kW-DC

Building Use:  Non-Residential  Single-Family Residential  Multi-Family Residential  Other \_\_\_\_\_

If non-residential OR other, please list type of business or use: \_\_\_\_\_

**Valuation of Work: \$ \_\_\_\_\_ Total cost of project (Include site development, professional design, and all subcontractors; exclude land cost)**

Attach a copy of your signed contract.

Solar Installation Contractor: \_\_\_\_\_ Phone: \_\_\_\_\_ Contract Cost \$ \_\_\_\_\_

Solar Installation Contractor Address: \_\_\_\_\_ State Lic.# \_\_\_\_\_ City BL# \_\_\_\_\_

Electrical Contractor: \_\_\_\_\_ Phone: \_\_\_\_\_ Contract Cost \$ \_\_\_\_\_

Electrical Contractor Address: \_\_\_\_\_ State Lic.# \_\_\_\_\_ City BL# \_\_\_\_\_

Is this property located in a flood zone?  Yes  No If yes, what is the flood zone classification? \_\_\_\_\_

What is the existing roofing material? \_\_\_\_\_ How many layers of existing roofing material? \_\_\_\_\_

Provide method and type of weatherproofing for roof penetrations (i.e., flashing, caulk) \_\_\_\_\_

Is the mounting structure an engineered product designed to mount solar electric modules? \_\_\_\_ Yes \_\_\_\_ No If No, provide details of structural attachment in a letter certified by a registered design professional.

For manufactured mounting systems, provide the following information about the mounting system:

A. Mounting System Manufacturer: \_\_\_\_\_

B. Product Name and Model Number: \_\_\_\_\_

C. Total Weight of Solar Electric Modules and Rails \_\_\_\_\_ lbs. D. Total # of attachment points \_\_\_\_\_ E. Weight per attachment point (c÷d) \_\_\_\_\_ lbs.

F. Maximum spacing between attachment points on a rail \_\_\_\_\_ inches (see product manual for max spacing allowed based on max design wind speed)

G. Total surface area of Solar Electric Modules (square feet) \_\_\_\_\_ ft<sup>2</sup>

H. Distributed Weight of Solar Electric Module on Roof (c÷g) \_\_\_\_\_ lbs/ft<sup>2</sup>

Indicate quantity, brand, make, model of the

Inverter(s): Qty: \_\_\_\_\_ Make: \_\_\_\_\_ Model: \_\_\_\_\_

Modules: Qty: \_\_\_\_\_ Make: \_\_\_\_\_ Model: \_\_\_\_\_

### Certification

- I certify to the best of my knowledge that all information provided herein is true and correct and all work performed under this permit shall conform to the plans and specifications herewith submitted and to all applicable Building Codes and Laws and Ordinances pertaining thereto.
- By signing this application I certify that I have the authority to make the foregoing application and I am the property owner or an authorized agent for the company performing the work stated above. I understand that I must use contractors licensed or registered with the State of South Carolina. If I choose to represent myself as the owner/builder, I understand that I or my immediate family members are required to occupy the property, that only contractors and subcontractors duly licensed as required by the State of South Carolina and the City of Rock Hill must be used to perform work associated with this application and permit, and as owner/builder I may not rent, lease or sell the property for a period of no less than two years from the date of final inspection for which this permit is issued.
- I further understand that if any information provided is found to be incorrect or falsely stated that this permit will be null and void and that I may be responsible for violation of other related state laws and local ordinances.
- I certify no construction or portion of construction will be built over or under any electrical, water, sewer, storm water or any other utility easements or rights-of-way.
- Renovation and demolition of most facilities are subject to State and Federal asbestos regulations. The facility owner and the renovation or demolition contractor are both responsible for ensuring compliance with these regulations. Please visit [http://www.scdhec.gov/environment/baq/Asbestos/regulatory\\_information.asp](http://www.scdhec.gov/environment/baq/Asbestos/regulatory_information.asp) for more information. The EPA requires contractors to have a Lead Paint Removal Certification when working on a structure built before 1978. Visit <http://www.epa.gov/lead/rrp/contractors.html> for more information.

**Applicant Signature:** \_\_\_\_\_ **Applicant Title:** \_\_\_\_\_

(Contractor, Owner, Agent, etc.)

**Applicant Printed Name:** \_\_\_\_\_

Sworn to and subscribed before me on

this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_

Signature of Notary: \_\_\_\_\_

(Place Notarial Seal Here)

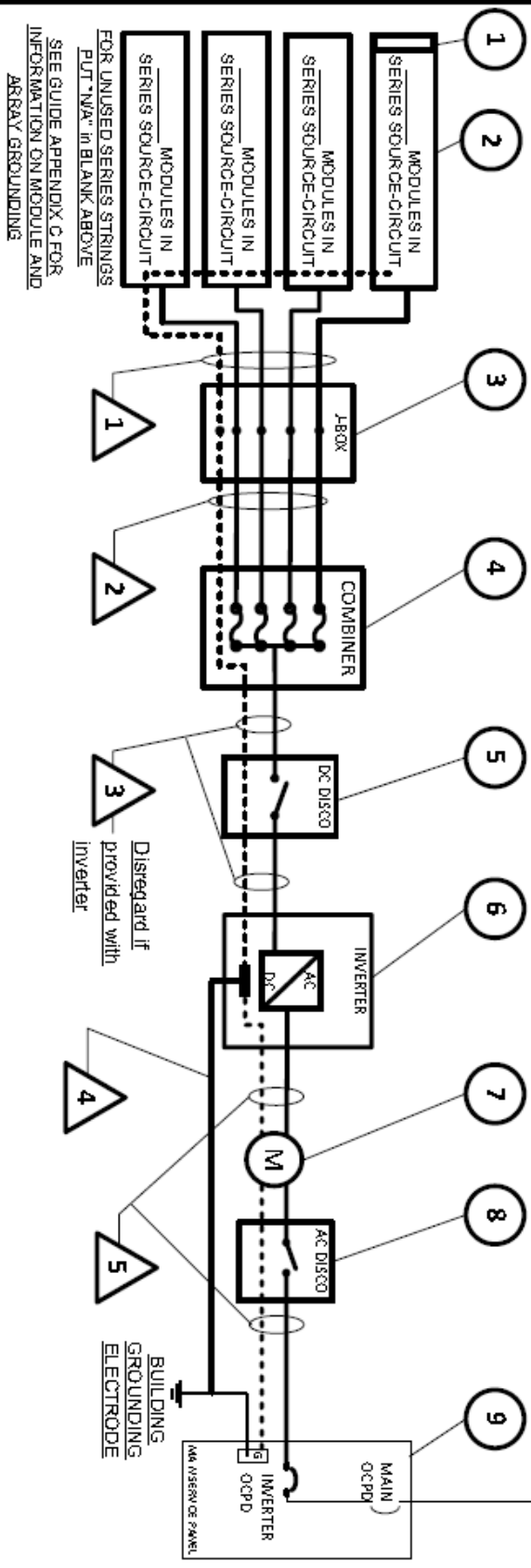
Notary Public for: \_\_\_\_\_

My commission expires: \_\_\_\_\_

<b>OFFICE USE ONLY</b> <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved By: _____ Zoning Permit Required: <input type="checkbox"/> Yes <input type="checkbox"/> No Occupancy Type _____ Sub Occup. Type _____ Construction Type _____ Comments: _____ _____	<b>VALUATION:</b> HEATED _____ UNHEATED _____ TOTAL _____
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# STANDARD ELECTRICAL DIAGRAM

EQUIPMENT SCHEDULE		
TAG	DESCRIPTION	PART NUMBER NOTES
1	SOLAR PV MODULE	
2	PV ARRAY	
3	J-BOX (IF USED)	
4	COMBINER (IF USED)	
5	DC DISCONNECT	
6	DC/AC INVERTER	
7	GEN METER (IF USED)	
8	AC DISCONNECT (IF USED)	
9	SERVICE PANEL	VAC, _____ A MAIN, _____ A BUS, _____ A INVERTER OCPD (SEE NOTE 5 FOR INVERTER OCPDS, ALSO SEE GUIDE SECTION 9)



CONDUIT AND CONDUCTOR SCHEDULE				
TAG	DESCRIPTION OR CONDUCTOR TYPE	CONDUIT GAUGE	NUMBER OF CONDUCTORS	CONDUIT TYPE SIZE
1	USE-2 <input type="checkbox"/> or PV WIRE <input type="checkbox"/>			N/A
2	BARE COPPER EQ. GRD. COND. (EGC)			N/A
3	THWN-2 <input type="checkbox"/> or XHHW-2 <input type="checkbox"/> or RHW-2 <input type="checkbox"/>			N/A
4	DC GROUNDING ELECTRODE COND.			
5	INSULATED EGC			

Contractor Name Address and Phone _____ _____		One-Line Standard Electrical Diagram for Small-Scale, Single-Phase PV Systems	
Site Name: _____ Site Address: _____ System DC Size: _____		Scale: 3/8" = 1'	Date: _____
Drawn by: _____ Checked by: _____	NTS	Date: _____	ELL 11.1

# NOTES FOR STANDARD ELECTRICAL DIAGRAM

### PV MODULE RATINGS @ STC (Guide Section 5)

MODULE MAKE	
MODULE MODEL	
MAX POWER-POINT CURRENT (I <sub>mp</sub> )	A
MAX POWER-POINT VOLTAGE (V <sub>mp</sub> )	V
OPEN-CIRCUIT VOLTAGE (V <sub>oc</sub> )	V
SHORT-CIRCUIT CURRENT (I <sub>sc</sub> )	A
MAX SERIES FUSE (OCFD)	A
MAXIMUM POWER (P <sub>max</sub> )	W
MAX VOLTAGE (TYP 600V <sub>dc</sub> )	V
VOC TEMP COEFF (mV/°C or %/°C)	
IF COEFF SUPPLIED, CIRCLE UNITS	

### NOTES FOR ALL DRAWINGS:

OCFD = OVERCURRENT PROTECTION DEVICE  
 NATIONAL ELECTRICAL CODE® REFERENCES  
 SHOWN AS (NEC XXXXX)

### INVERTER RATINGS (Guide Section 4)

INVERTER MAKE	
INVERTER MODEL	
MAX DC VOLT RATING	V
MAX POWER @ 40°C	W
NOMINAL AC VOLTAGE	V
MAX AC CURRENT	A
MAX OCPD RATING	A

### SIGNS--SEE GUIDE SECTION 7

SIGN FOR DC DISCONNECT	
PHOTOVOLTAIC POWER SOURCE	
RATED MPP CURRENT	A
RATED MPP VOLTAGE	V
MAX SYSTEM VOLTAGE	V
MAX CIRCUIT CURRENT	A
WARNING: ELECTRICAL SHOCK HAZARD--LINE AND LOAD MAY BE ENERGIZED IN OPEN POSITION	
SIGN FOR INVERTER OCPD AND AC DISCONNECT (IF USED)	
SOLAR PV SYSTEM	
AC POINT OF CONNECTION	A
AC OUTPUT CURRENT	A
NOMINAL AC VOLTAGE	V
THIS PANEL FED BY MULTIPLE SOURCES (UTILITY AND SOLAR)	

### NOTES FOR ARRAY CIRCUIT WIRING (Guide Section 6 and Appendix D):

- 1) LOWEST EXPECT AMBIENT TEMPERATURE BASED ON ASHRAE MINIMUM MEAN EXTREME DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION. LOWEST EXPECTED AMBIENT TEMP \_\_\_\_\_°C
- 2) HIGHEST CONTINUOUS AMBIENT TEMPERATURE BASED ON ASHRAE HIGHEST MONTH 2% DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION. HIGHEST CONTINUOUS TEMPERATURE \_\_\_\_\_°C
- 3) 2005 ASHRAE FUNDAMENTALS 2% DESIGN TEMPERATURES DO NOT EXCEED 47°C IN THE UNITED STATES (PALM SPRINGS, CA IS 44.1°C). FOR LESS THAN 9 CURRENT-CARRYING CONDUCTORS IN ROOF-MOUNTED SUNLIT CONDUIT AT LEAST 0.5" ABOVE ROOF AND USING THE OUTDOOR DESIGN TEMPERATURE OF 47°C OR LESS (ALL OF UNITED STATES).
  - a) 12 AWG, 90°C CONDUCTORS ARE GENERALLY ACCEPTABLE FOR MODULES WITH I<sub>sc</sub> OF 7.68 AMPS OR LESS WHEN PROTECTED BY A 12 AMP OR SMALLER FUSE.
  - b) 10 AWG, 90°C CONDUCTORS ARE GENERALLY ACCEPTABLE FOR MODULES WITH I<sub>sc</sub> OF 9.6 AMPS OR LESS WHEN PROTECTED BY A 13-AMP OR SMALLER FUSE.

### NOTES FOR INVERTER CIRCUITS (Guide Section 8 and 9):

- 1) IF UTILITY REQUIRES A VISIBLE-BREAK SWITCH, DOES THIS SWITCH MEET THE REQUIREMENT? YES  NO  N/A
- 2) IF GENERATION METER REQUIRED, DOES THIS METER SOCKET MEET THE REQUIREMENT? YES  NO  N/A
- 3) SIZE PHOTOVOLTAIC POWER SOURCE (DC) CONDUCTORS BASED ON MAX CURRENT ON NEC 690.53 SIGN OR OCPD RATING AT DISCONNECT
- 4) SIZE INVERTER OUTPUT CIRCUIT (AC) CONDUCTORS ACCORDING TO INVERTER OCPD/AMPERE RATING. (See Guide Section 9)
- 5) TOTAL OF \_\_\_\_\_ INVERTER OCPD(S), ONE FOR EACH INVERTER. DOES TOTAL SUPPLY BREAKERS COMPLY WITH 120% BUSBAR EXCEPTION IN 690.64(B)(2)(a)? YES  NO

Notes for One-Line Standard Electrical  
 Diagram for Single-Phase PV Systems

Contractor Name: \_\_\_\_\_  
 Address and Phone: \_\_\_\_\_

Site Name: \_\_\_\_\_  
 Site Address: \_\_\_\_\_  
 System DC Size: \_\_\_\_\_

Drawn By:	SIZE	FCOMNO	DWG NO	REV
Checked By:	SCALE	NTS	Date:	SHEET
			E.1.2	