


BLOCK DIAGRAM SOLAR PV INSTALLATION

1.0 GENERAL NOTES:

- 1.1 ALL EQUIPMENT AND INSTALLATION SHALL MEET ALL APPLICABLE PROVISIONS OF THE FOLLOWING STANDARDS: UL STANDARD 1703, IEEE 929-2000, AND UL STANDARD 1741 SA.
- 1.2 ALL EQUIPMENT AND INSTALLATION SHALL COMPLY WITH ALAMEDA MUNICIPAL POWER'S (AMP'S) INTERCONNECTION AND PURCHASE AGREEMENT FOR ELIGIBLE RENEWABLE GENERATION METERING, AMP'S RULES AND REGULATIONS, ALAMEDA ELECTRICAL CODE, CALIFORNIA ELECTRICAL CODE, NATIONAL ELECTRICAL CODE, CALIFORNIA STATE FIRE MARSHAL REGULATIONS, AND CALIFORNIA ENERGY COMMISSION'S (CEC) NEW SOLAR HOME PARTNERSHIP (NSHP) OR CALIFORNIA PUBLIC UTILITIES COMMISSION'S (CPUC) CALIFORNIA SOLAR INITIATIVE (CSI) LISTS OF ELIGIBLE EQUIPMENT.
- 1.3 IF THE EXISTING ELECTRICAL METER IS NOT CAPABLE OF MEASURING THE FLOW OF ELECTRICITY IN TWO DIRECTIONS, THE CUSTOMER SHALL BE RESPONSIBLE FOR ALL EXPENSES INVOLVED IN PURCHASING AND INSTALLING A NET KWH METER THAT IS ABLE TO MEASURE ELECTRICITY FLOW IN TWO DIRECTIONS.
- 1.4 CUSTOMER SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE SOLAR PHOTOVOLTAIC SYSTEM INSTALLATION INCLUDING ALL AMP'S COSTS THAT ARE RELATED TO THE PROJECT.
- 1.5 CUSTOMER SHALL OBTAIN A CITY OF ALAMEDA ELECTRICAL PERMIT.
- 1.6 SOLAR PHOTOVOLTAIC SYSTEM SHALL TERMINATE ON ITS OWN AC BREAKER IN THE MAIN SERVICE EQUIPMENT EXCLUSIVELY.
- 1.7 THE DC DISCONNECT AND THE INVERTER AT GRADE LEVEL WILL NOT BE REQUIRED IF MICRO-INVERTER TECHNOLOGY IS PROPOSED ON THE SOLAR PV MODULES.
- 1.8 AMP RESERVES THE RIGHT TO WITNESS THE FUNCTIONAL TESTS OF THE SOLAR PHOTOVOLTAIC SYSTEM INSTALLATION. THE CUSTOMER SHALL NOTIFY AMP AT LEAST 5 DAYS PRIOR TO THE ESTABLISHED DATE OF INSPECTION OR TESTING.
- 1.9 APPROVAL FOR PARALLEL OPERATION WITH AMP'S DISTRIBUTION SYSTEM IS SUBJECT TO SUCCESSFULLY MEETING ALL REQUIREMENTS BY THE CITY'S BUILDING SERVICES DEPARTMENT AND AMP.
- 1.10 CUSTOMER SHALL SUBMIT DETAILED INFORMATION ON THE INVERTER TO VERIFY UL 1741 SA COMPLIANCE. THE CUSTOMER INVERTER SHALL HAVE THE FOLLOWING MINIMUM SPECIFICATIONS FOR PARALLEL OPERATION WITH AMP'S ELECTRIC DISTRIBUTION SYSTEM:
 - INVERTER OUTPUT SHALL AUTOMATICALLY DISCONNECT FROM AMP'S UTILITY SOURCE UPON LOSS OF UTILITY VOLTAGE AND SHALL NOT BE RECONNECTED UNTIL THE UTILITY VOLTAGE HAS BEEN RESTORED.
 - INVERTER OUTPUT DISTORTION SHALL MEET THE IEEE 519 STANDARDS.
 - INVERTER/SAR SHALL AUTOMATICALLY DISCONNECT FROM AMP'S UTILITY SOURCE WITHIN THE TIMES INDICATED IN IEEE 1547 FOR VOLTAGE AND FREQUENCY FLUCTUATIONS.
- 1.11 APPLICABLE ONLY ON EXISTING SOLAR PV SYSTEM WITH NEM.
- 1.12 SEE DRAWING 1-L-617 FOR ALTERNATE DESIGN. CONNECTION TO A SUB-PANEL.

M:\PwrDwgs\ConstructionStd\1L613-1.DWG December 21, 2016

 ALAMEDA MUNICIPAL POWER <small>A Department of the City of Alameda 2000 GRAND STREET, P.O. BOX H ALAMEDA, CALIFORNIA 94501</small>				TITLE : SINGLE METER SOLAR PV INSTALLATION ELIGIBLE RENEWABLE GENERATION (UP TO 25KW)			
REV	DESCRIPTION	BY	DATE	DRAWN :	DATE:		
0	NEW DRAWING	LS	12/21/16	reuch/LVA	APRIL 17, 2018		
1	ADDED NOTE 2.8	DH	06/14/18				
2	REVISED NOTES	DH	08/14/18				
3	ADDED NOTE 1.12	RCB	04/17/24				
				DWG. NO. :	REV.		
					1-L-613		
				APPROVED:	SCALE : NTS		
				<i>[Signature]</i>	SHT <u>1</u> OF <u>2</u>		

2.0 INSTALLATION REQUIREMENTS:

- 2.1 THERE WILL BE A MINIMUM OF 36" WALKING SPACE AROUND THE PERIMETER OF SOLAR ARRAYS INSTALLED ON ROOFS.
- 2.2 GROUND MOUNTED SOLAR ARRAYS WILL BE ERECTED IN AREAS CLEAR OF COMBUSTIBLE VEGETATION. A MINIMUM VEGETATION CLEARANCE OR MOWED PERIMETER OF 10" SHALL BE MAINTAINED.
- 2.3 ALL SOLAR CONDUITS, INTERIOR OR EXTERIOR, SHALL BE PERMANENTLY LABELED WITH FADE RESISTANT MATERIAL AS SHOWN IN 3.6. THIS LABEL SHALL BE INSTALLED EVERY 20'. FOR VERTICAL CONDUIT, A MINIMUM OF ONE LABEL SHALL BE AFFIXED AT EYE LEVEL.
- 2.4 BATTERY STORAGE IN ENCLOSED ROOMS TO BE MOUNTED A MINIMUM OF 24" ABOVE FLOOR. IF CONTAINED WITHIN CABINET, A PERMANENT PLACARD IS TO BE POSTED.
- 2.5 PERMANENT PLACARD SHALL BE INSTALLED ON EXTERIOR OF MAIN ELECTRICAL PANEL AS SHOWN IN 3.1.
- 2.6 ALL DISCONNECTS SHALL BE ACCESSIBLE TO AUTHORIZED REPRESENTATIVES OF THE CITY OF ALAMEDA. THE NET KWH METER, AC DISCONNECT, INVERTER AND DC DISCONNECT SHALL BE LOCATED TOGETHER WHEN POSSIBLE.
- 2.7 THE MAXIMUM LENGTH OR WIDTH OF THE SOLAR ARRAY SHALL NOT EXCEED 100 FEET.
- 2.8 NO INSTALLATION OF EQUIPMENT IS PERMITTED ABOVE THE GAS METER.

3.0 LABELING REQUIREMENTS

LABELS SHALL HAVE A RED BACKGROUND WITH REFLECTIVE WHITE LETTERING AND SHALL BE FADE-RESISTANT. LETTERS SHALL BE 1/4-INCH MINIMUM. ALL LABELS SHALL BE PERMANENTLY INSTALLED ON EQUIPMENT.

LABEL LOCATION AND LABELING:

3.1 ELECTRIC PANEL (NOTE 2.5)

**CAUTION
DUAL POWER SUPPLY**

AND

**CAUTION
SOLAR PV SYSTEM INSTALLED. WHEN POWER DISCONNECTED, SOLAR PANELS AND WIRING MAY REMAIN ENERGIZED DURING DAYLIGHT HOURS**

3.2 ELECTRIC PANEL PV BREAKER. LETTERS MAY BE REDUCED TO 1/8-INCH MINIMUM IN HEIGHT AND INSTALLED IN THE MAIN ELECTRICAL PANEL, ADJACENT TO THE BREAKER.

**PHOTOVOLTAIC
BREAKER**

3.3 AC DISCONNECT

**PHOTOVOLTAIC
AC DISCONNECT**

3.4 INVERTER

**PHOTOVOLTAIC
INVERTER**

3.5 DC DISCONNECTS (NEAR INVERTER)


**PHOTOVOLTAIC
DC DISCONNECT**

3.6 CONDUITS (NOTE 2.3)

**CAUTION
SOLAR PV WIRING MAY REMAIN ENERGIZED AFTER DISCONNECTION DURING DAYLIGHT HOURS**

M:\PwrDwggs\ConstructionStd\11613-2.DWG December 21, 2016

REV	DESCRIPTION	BY	DATE
0	NEW DRAWING	LS	12/21/16
1	ADDED NOTE 2.8	DH	06/14/18
2	REVISED NOTES	VT	08/14/18



**ALAMEDA
MUNICIPAL POWER**
A Department of the City of Alameda
2000 GRAND STREET, P.O. BOX 91
ALAMEDA, CALIFORNIA 94501

TITLE : SINGLE METER SOLAR PV INSTALLATION ELIGIBLE RENEWABLE GENERATION (UP TO 25KW)			
DRAWN :	DATE: AUGUST 14, 2018	DWG. NO. :	REV.
REVIEWED:		1-L-613	2
APPROVED: <i>[Signature]</i>		SCALE : NTS	SHT <u>2</u> OF <u>2</u>