ENCLOSED EQUIPMENT ACCESSIBLE TO UNQUALIFIED PERSONS, VENTILATING OR SIMILAR OPENINGS IN EQUIPMENT SHALL BE DESIGNED SUCH THAT FOREIGN OBJECTS INSERTED THROUGH THESE OPENINGS ARE DEFLECTED FROM AREAS WHERE EXPOSED TO PHYSICAL DAMAGE FROM VEHICULAR TRAFFIC. SUITABLE GUARDS SHALL BE PROVIDED. EQUIPMENT LOCATED OUTDOORS AND ACCESSIBLE TO UNQUALIFIED PERSONS SHALL BE DESIGNED SUCH THAT EXPOSED NUTS OR BOLTS CANNOT BE READILY REMOVED, PERMITTING ACCESS TO LIVE PARTS. WHERE EQUIPMENT IS ACCESSIBLE TO UNQUALIFIED PERSONS AND THE BOTTOM OF THE ENCLOSURE IS LESS THAN 2.5 M (8 FT) ABOVE THE FLOOR OR GRADE LEVEL, THE ENCLOSURE DOOR OR HINGED COVER SHALL BE KEPT LOCKED. DOORS AND COVERS OF ENCLOSURES USED SOLELY AS PULL BOXES, SPlice BOXES, OR JUNCTION BOXES SHALL BE LOCKED, BOLTED, OR SCREWED ON. UNDERGROUND BOX COVERS THAT WEIGH OVER 24 KG (50 LB) SHALL BE CONSIDERED AS MEETING THIS REQUIREMENT.

DEVICES RATED 600 AMPERES OR LESS, THE NEXT HIGHER STANDARD OVERCURRENT DEVICE RATING (ABOVE THE AMPLITUDE OF THE CONDUCTORS BEING PROTECTED) SHALL BE PERMITTED TO BE USED IF: (1) THE CONDUCTORS BEING PROTECTED ARE NOT PART OF A MULTITUYLT BRANCH CIRCUIT SUPPLYING RECEPTACLES FOR CORD-AND-PLUG-CONECTED PORTABLE LOADS. 2) THE AMPACITY OF THE CONDUCTORS DOES NOT CORRESPOND WITH THE STANDARD AMPERE RATING OF A FUSE OR A CIRCUIT BREAKER WITHOUT OVERLOAD TRIP ADJUSTMENTS ABOVE ITS RATING. 3) THE NEXT HIGHER STANDARD RATING SELECTED DOES NOT EXCEED 600 AMPERES.

FUSES AND FIXED-TRIP CIRCUIT BREAKERS. THE STANDARD AMPERE RATING FOR FUSES AND INVERSE TIME CIRCUIT BREAKERS SHALL BE CONSIDERED: 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125, 150, 200, 225, 250, 300, 350, 400, 450, 500, 600, 700, 800, 1000, 1200, 1600, 2000, 2500, 3000, 4000, 5000, 6000 AMPERES.

GROUNDING ELECTRODE CONDUCTOR MUST BE CONTINUOUS, GROUND CRIMPS TO BE IRREVERSIBLE.

FOR CIRCUITS OVER 250 V Volts TO GROUND, THE ELECTRICAL CONTINUITY OF METAL RACEWAYS AND CABLES WITH METAL SHEATHS THAT CONTAIN ANY CONDUCTOR OTHER THAN SERVICE CONDUCTORS SHALL BE ENSURED BY ONE OR MORE OF THE METHODS SPECIFIED FOR CIRCUIT BREAKERS IN 250.90(B), EXCEPT OR BY (B)(1).

MODULE CONNECTION ARRANGEMENT SHALL BE ARRANGED SO THAT REMOVAL OF A MODULE OR PANEL FROM A PHOTOVOLTAIC SOURCE CIRCUIT DOES NOT INTERRUPT A GROUNDED CONDUCTOR TO ANOTHER PHOTOVOLTAIC SOURCE CURRENT.

GROUND-FAULT PROTECTION.

OUTLET CIRCUITS OVER 150 Volts TO GROUND SHALL NOT BE ACCESSIBLE TO OTHER THAN QUALIFIED PERSONS WHILE ENERGIZED.

THE MAXIMUM CURRENT SHALL BE THE SUM OF THE PARALLEL, MODULE RATED SHORT-CIRCUIT CURRENTS MULTIPLIED BY 125 PERCENT.

THE MAXIMUM CURRENT SHALL BE THE INVERTER CONTINUOUS OUTPUT CURRENT RATING.

OVERCURRENT DEVICES SHALL BE SIZED TO CARRY NOT LESS THAN 125 PERCENT OF MAXIMUM CURRENTS AS CALCULATED IN 680.8(A). THE RATING OR SETTING OF OVERCURRENT DEVICES SHALL BE PERMITTED IN ACCORDANCE WITH 240.4(B) AND (C).

PV SYSTEM DISCONNECT SHALL BE SIGNED LABELED: WARNING - ELECTRIC SHOCK HAZARD TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

PV SYSTEM DISCONNECT SHALL BE PERMANENTLY MARKED AS A "PHOTOVOLTAIC SYSTEM DISCONNECT."
KEYED NOTES:

1. LABEL: "CAUTION – MULTI SOURCES OF POWER" ON PLACARD/DIRECTORY PER NEC 705.10.
2. BI-DIRECTIONAL UTILITY METER TO BE INSTALLED BY UTILITY COMPANY.
3. LABEL BREAKER "PHOTOVOLTAIC ELECTRIC POWER SOURCE" "BREAKERS ARE BACKED", LABEL WITH THE RATED AC OUTPUT CURRENT AND THE NOMINAL OPERATING VOLTAGE PER NEC 690.54.
4. LABEL "UTILITY DISCONNECT", SWITCH COVER TO BE LOCKED PER NEC 690.13(B) AT ALL TIMES BY UTILITY SWITCH TO BE VISIBLE OPEN AND ACCESSIBLE PER UTILITY REQUIREMENTS AND CONFORM TO NEC 705.20.
5. LABEL "PHOTOVOLTAIC ARRAY DC DISCONNECT" PER NEC 690.13(B), LABEL WITH MAXIMUM DC VOLTAGE, CURRENT PER NEC 690.53, SWITCH COVER TO BE LOCKED PER NEC 690.13(A).
6. LABEL "WARNING: THIS SUB-PANEL FED FROM MULTI-POWER PRODUCTION SOURCES".
7. PROVIDE WARNING SIGN PER NEC 690.13(B) AND 706.15(C) READING "WARNING–ELECTRIC SHOCK HAZARD–TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.
8. INVERTER TO BE LISTED TO UL 1741SA AND SB.
9. METALLIC CONDUIT SHALL BE USED WITHIN BUILDING AND Labeled PER NEC 690.31 (D).
10. GROUND FAULT PROTECTION PER NEC 690.41(B) PROVIDED IN DC/AC INVERTER.
11. GEC TO BE INSTALLED AS REQUIRED PER MANUFACTURER INSTRUCTIONS AND NEC 690.47.
12. CUSTOMER WILL INSTALL RING-TYPE METER SOCKET WITH NON-DETENTED FORM 2S. APS WILL INSTALL THE PRODUCTION METERS. LABEL METER SOCKET UNI-DIRECTIONAL METER.
13. SYSTEM COMPLIES WITH RAPID SHUTDOWN PER NEC 690.56.
14. LABEL: "UNI-DIRECTIONAL METER LINE SIDE DISCONNECT", SWITCH COVER TO BE LOCKED PER NEC 690.13(B) AT ALL TIMES BY UTILITY SWITCH TO BE VISIBLE OPEN & ACCESSIBLE PER UTILITY REQUIREMENTS AND CONFORM TO NEC 705.20.

GENERAL NOTES:

A. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE 2020 NEC AND ALL APPLICABLE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
B. DC ARRAY PANEL GROUND WIRES MUST BE CONTINUOUS AND INSTALLED TO ALLOW FOR PANEL REMOVAL WITHOUT DISRUPTING CONTINUITY. ALL MODULE GROUND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC 690.43 & 690.47.
C. FOLLOW MANUFACTURER'S SUGGESTED INSTALLATION PRACTICES AND WIRING SPECIFICATIONS FOR ALL EQUIPMENT.
D. ARRAY DC WIRES SHALL BE RATED AND LABELED "SUNLIGHT RESISTANT" WIRE EXPOSED TO AMBIENT CONDITIONS. NEC 300.6(B)(1).
E. DC EQUIPMENT SHOWN FOR ILLUSTRATION PURPOSES ONLY.
F. A PERMANENT PLAQUE OR DIRECTORY DENOTING ALL ELECTRIC POWER SOURCE DISCONNECTING MEANS ON OR IN THE PREMISES, SHALL BE INSTALLED AT EACH SERVICE EQUIPMENT LOCATION AND AT LOCATIONS OF ALL ELECTRIC POWER PRODUCTION SOURCES CAPABLE OF BEING INTERCONNECTED PER NEC 705.10.
G. EQUIPMENT SHALL BE LISTED, TESTED AND MARKED TO WITHSTAND THE AVAILABLE SHORT CIRCUIT CURRENT.

This Sample Drawing is for Illustration purposes only and is not to be used for design or construction. This drawing and its suitability for end use is not implied. The intent is to only illustrate typical minimum information required at time of application to APS. Additional information may be required.
GENERAL NOTES:

NOTE: UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AND SERVICE ENTRANCE.

NOTE: WORKSPACE IN FRONT OF AC ELECTRICAL SYSTEM COMPONENTS SHALL BE IN ACCORDANCE WITH APS AND NEC REQUIREMENTS. FOR WORKSPACE AND ELEVATION OF PV SYSTEM UTILITY DISCONNECT, APS PRODUCTION METERS WITH ASSOCIATED DISCONNECTS, REFER TO SECTION 300 OF THE APS ESRM.

NOTE: REFERENCE SECTION 301.15 OF THE APS ESRM FOR ELECTRIC METER SEPARATION BETWEEN WATER, GAS METER AND FUEL SOURCES.
GENERAL NOTES:

NOTE: UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AND SERVICE ENTRANCE.

NOTE: WORKSPACE IN FRONT OF AC ELECTRICAL SYSTEM COMPONENTS SHALL BE IN ACCORDANCE WITH APS AND NEC REQUIREMENTS FOR WORKSPACE AND ELEVATION OF PV SYSTEM UTILITY DISCONNECT. APS PRODUCTION METERS WITH ASSOCIATED DISCONNECTS, REFER TO SECTION 300 OF THE APS ESRM.

NOTE: REFERENCE SECTION 301.15 OF THE APS ESRM FOR ELECTRIC METER SEPARATION BETWEEN WATER, GAS METER AND FUEL SOURCES.