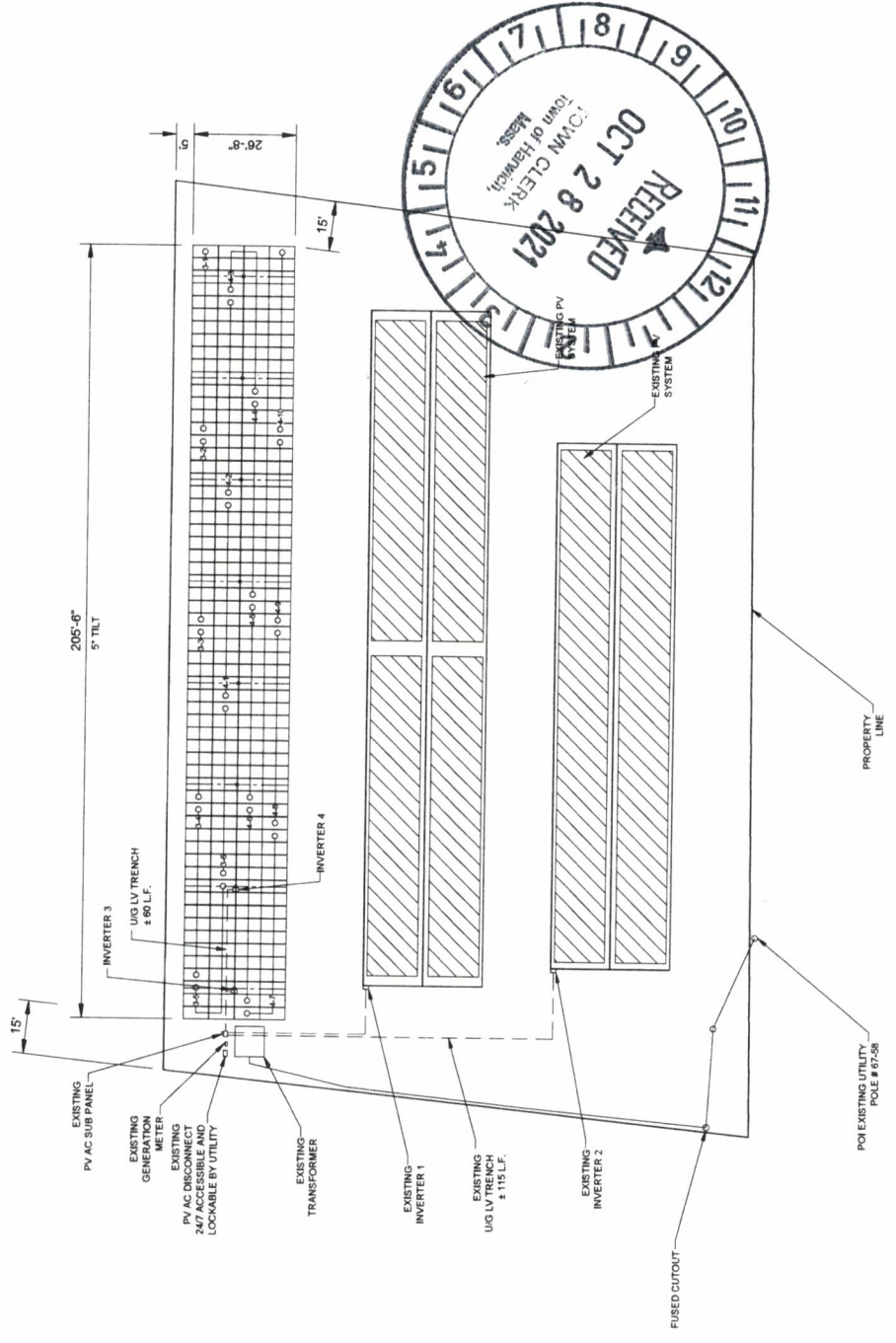




REV. NO.	DATE	COMMENT



1 MODULE LAYOUT PLAN
 1/2" SCALE



2-1	STRING LABEL (INVERTER-STRING)
G	PACKING GROUND CONNECTION
□	INVERTER
□	AC LOADCENTER
□	AC DISCONNECT
D	METER

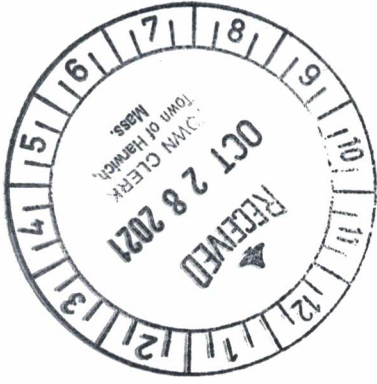
ARC DESIGN
 409 NORTH MAIN STREET
 ELMER, NEW JERSEY, U.S. 08318
 (856) 712-2166 FAX: (856) 358-1511

PROPOSED PHOTOVOLTAIC ARRAY
 QUEEN ANNE LLC (CARPORT)
 254 QUEEN ANNE ROAD
 HARWICH, MA 02645

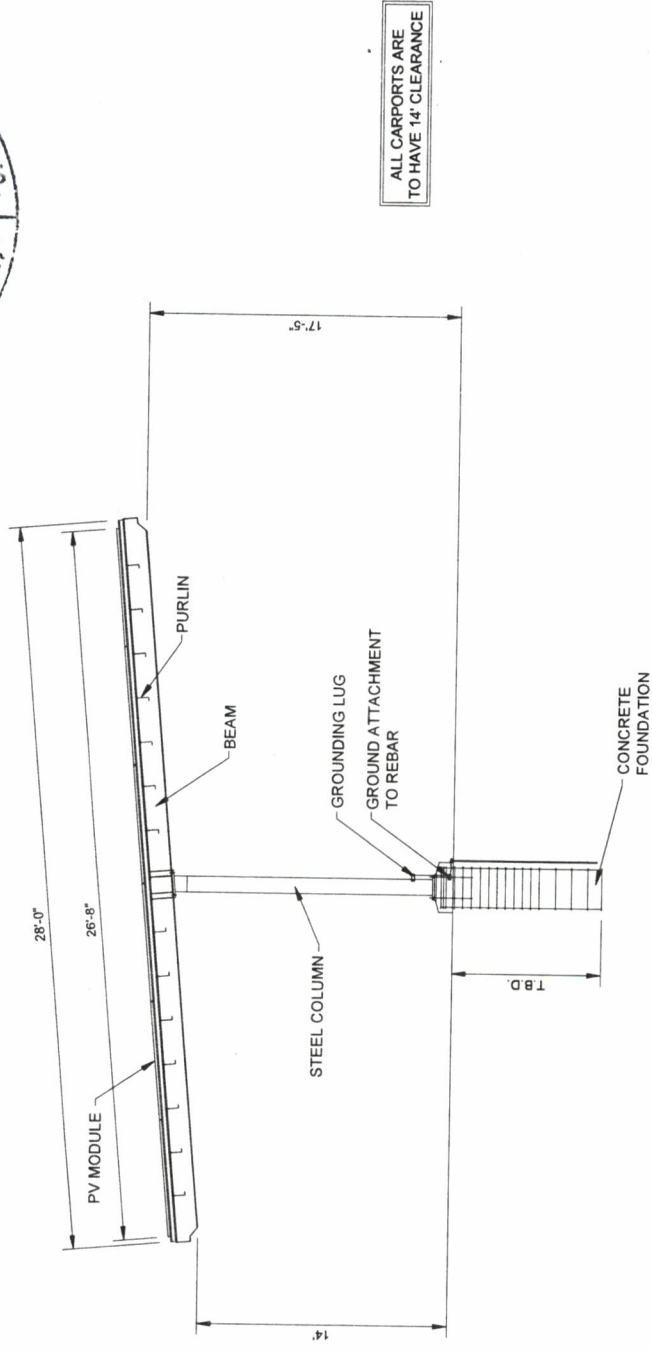


REVISIONS	
DATE	COMMENT

A-3



SEALED SHOP DRAWINGS TO BE PROVIDED BY CARPORT MANUFACTURE FOR REVIEW AND APPROVAL.



ALL CARPORTS ARE TO HAVE 14' CLEARANCE

CARPORT STRUCTURE & FOUNDATION DETAILS TO BE PROVIDED BY MANUFACTURER FOR REVIEW PRIOR TO FABRICATION & INSTALLATION.

1 TYP. CARPORT ILLUSTRATION ONLY

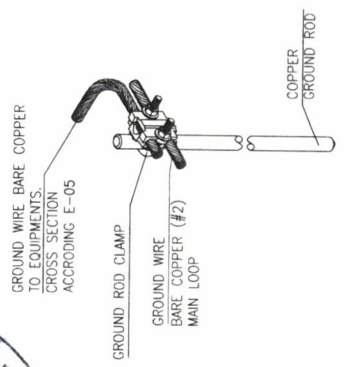
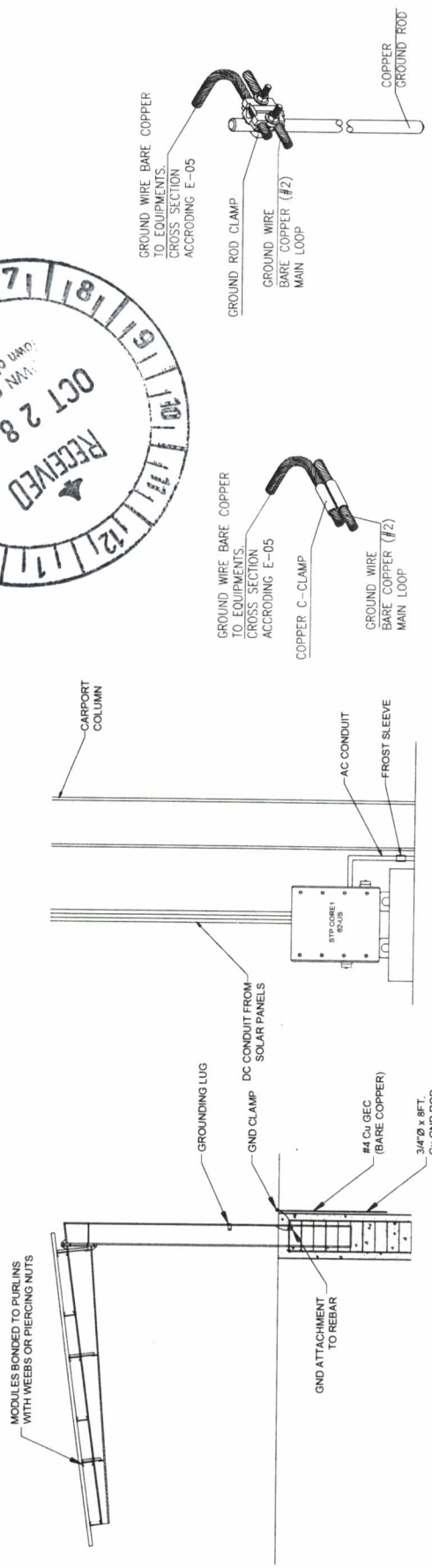
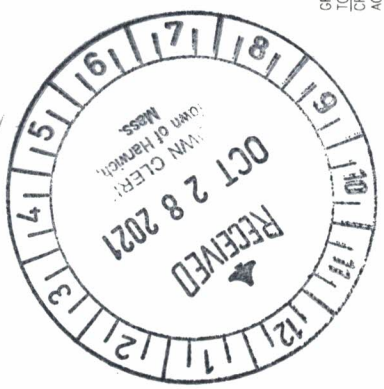
ARC DESIGN
 409 NORTH MAIN STREET
 ELMER, NEW JERSEY, U.S. 08318
 (856) 712-2166 FAX: (856) 358-1511

PROPOSED PHOTOVOLTAIC ARRAY
 QUEEN ANNE LLC (CARPORT)
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 HARWICH, MA 02645



REVISIONS	
DATE	COMMENTS

A-4

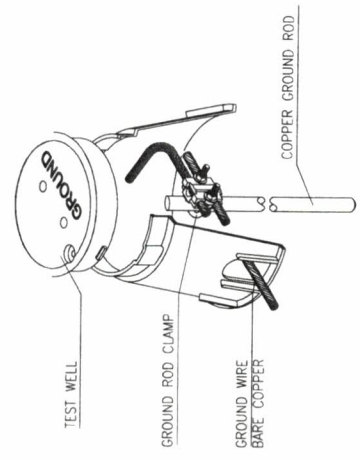


① TYP. GROUND ROD

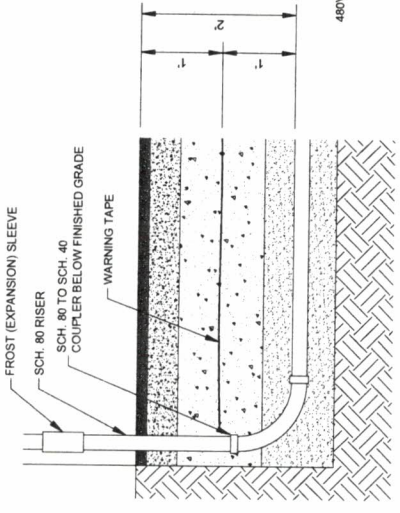
② TYP. GROUND ROD

③ TYP. INVERTER MOUNT

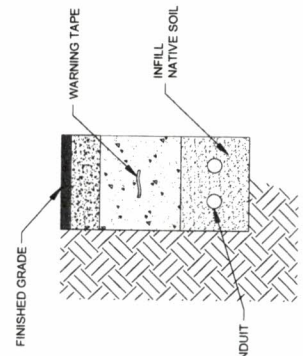
④ CARPORT GROUNDING



⑤ TYP. GROUND WELL



⑥ ABOVE TO BELOW GROUND TRANSITION DETAIL



⑦ TYPICAL TRENCH DETAIL

ARC DESIGN
 409 NORTH MAIN STREET
 ELMER, NEW JERSEY, U.S. 08318
 (856) 712-2166 FAX: (856) 358-1511

PROPOSED PHOTOVOLTAIC ARRAY
 QUEEN ANNE LLC (CARPORT)
 254 QUEEN ANNE ROAD
 HARWICH, MA 02645



DATE	COMMENTS	REVISIONS

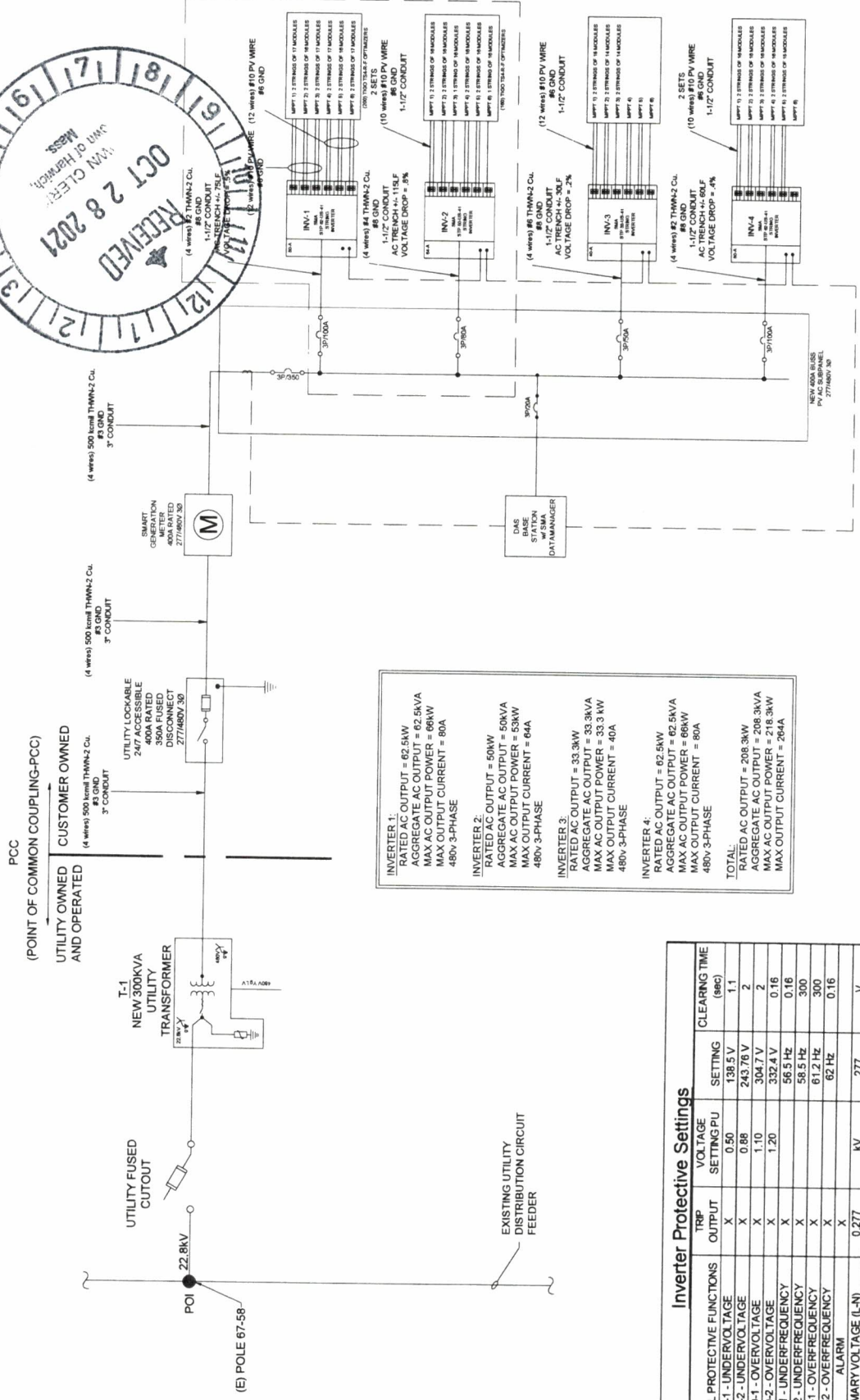
DRAWN: JAC
 CHECKED: JAC
 SCALE: AS NOTED
 DATE: 10/28/2021

E-1

(244) ASTRONERGY ASTROSEMI CHSM72M-HC-420W
 (1) SMA STP-CORE1 62-US-41
 (1) SMA STP-CORE1 33-US-41

TOTAL SYSTEM SIZE = 253.68 kW DC
 208.3 kW AC NOMINAL

NEW SYSTEM SIZE = 102.48 kW DC
 95.8 kW AC NOMINAL



INVERTER 1:	RATED AC OUTPUT = 62.5kW
	AGGREGATE AC OUTPUT = 62.5kVA
	MAX AC OUTPUT POWER = 66kW
	MAX OUTPUT CURRENT = 80A
	480V 3-PHASE
INVERTER 2:	RATED AC OUTPUT = 50kW
	AGGREGATE AC OUTPUT = 50kVA
	MAX AC OUTPUT POWER = 53kW
	MAX OUTPUT CURRENT = 64A
	480V 3-PHASE
INVERTER 3:	RATED AC OUTPUT = 33.3kW
	AGGREGATE AC OUTPUT = 33.3kVA
	MAX AC OUTPUT POWER = 33.3 kW
	MAX OUTPUT CURRENT = 40A
	480V 3-PHASE
INVERTER 4:	RATED AC OUTPUT = 62.5kW
	AGGREGATE AC OUTPUT = 62.5kVA
	MAX AC OUTPUT POWER = 66kW
	MAX OUTPUT CURRENT = 80A
	480V 3-PHASE
TOTAL:	RATED AC OUTPUT = 208.3kW
	AGGREGATE AC OUTPUT = 208.3kVA
	MAX AC OUTPUT POWER = 218.3kW
	MAX OUTPUT CURRENT = 264A

INTERNAL PROTECTIVE FUNCTIONS	TRIP	OUTPUT	VOLTAGE SETTING PU	SETTING	CLEARING TIME (sec)
27-1 - UNDERVOLTAGE	X	X	0.50	138.5 V	1.1
27-2 - UNDERVOLTAGE	X	X	0.88	243.76 V	2
59-1 - OVERVOLTAGE	X	X	1.10	304.7 V	2
59-2 - OVERVOLTAGE	X	X	1.20	332.4 V	0.16
81U-1 - UNDERFREQUENCY	X	X	X	58.5 Hz	300
81U-2 - UNDERFREQUENCY	X	X	X	61.2 Hz	300
81O-1 - OVERFREQUENCY	X	X	X	62 Hz	0.16
81O-2 - OVERFREQUENCY	X	X	X	62 Hz	0.16
ALARM	X	X	X	277	V
PRIMARY VOLTAGE (L-N)	X	X	X	277	V

WARNING
ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED
NORMALLY GROUNDED AND ENERGIZED
MAY BE UNGROUNDED AND ENERGIZED

LABEL LOCATION:
DC DISCONNECT, INVERTER
(PER CODE: NEC 690.35(F))
[To be used when inverter is ungrounded]

WARNING
ELECTRIC SHOCK HAZARD
TERMINALS ON BOTH LINE AND LOAD
SIDES MAY BE ENERGIZED IN THE
OPEN POSITION

DC VOLTAGE IS ALWAYS PRESENT
WHEN SOLAR MODULES ARE EXPOSED
TO SUNLIGHT

LABEL LOCATION:
AC DISCONNECT, POINT OF INTERCONNECTION
(PER CODE: NEC 690.17(E))

WARNING
ELECTRIC SHOCK HAZARD
TERMINALS ON BOTH LINE AND LOAD
SIDES MAY BE ENERGIZED IN THE
OPEN POSITION

LABEL LOCATION:
AC DISCONNECT, POINT OF INTERCONNECTION
PER CODE: NEC 690.17(E), CB

WARNING - Electric Shock Hazard
No user serviceable parts inside
Contact authorized service provider for assistance

LABEL LOCATION:
INVERTER, JUNCTION BOXES (ROOF), AC DISCONNECT
(PER CODE: NEC 690.15(G,3) & NEC 690.13(G,4))

**WARNING - PHOTOVOLTAIC
POWER SOURCE**

LABEL LOCATION:
OUTPUT, COMBINER BOX
(PER CODE: NEC 690.31(O,3)(4) & NEC 690.15(G)(4))

**WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM**

LABEL LOCATION:
POINT OF INTERCONNECTION
(PER CODE: NEC 705.12(D)(4))

**CAUTION: SOLAR ELECTRIC
SYSTEM CONNECTED**

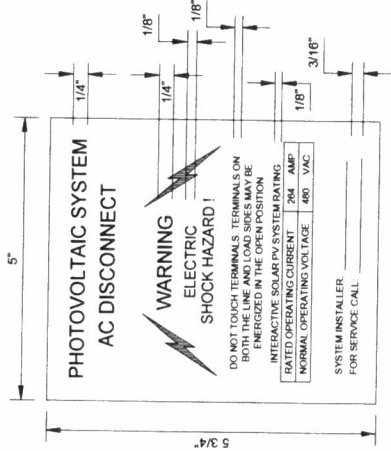
LABEL LOCATION:
POINT OF INTERCONNECTION
(PER CODE: NEC 690.15, 690.13(B))

PHOTOVOLTAIC SYSTEM AC DISCONNECT
RATED AC OPERATING CURRENT 264 AMPS
AC NOMINAL OPERATING VOLTAGE 480 VOLTS

LABEL LOCATION:
AC DISCONNECT, POINT OF INTERCONNECTION
(PER CODE: NEC 690.54)

SOLAR DISCONNECT

LABEL LOCATION:
AC DISCONNECT, POINT OF INTERCONNECTION
(PER CODE: NEC 690.13(B))



AC DISCONNECT WARNING LABEL

NOTE: BE MOUNTED AT AC DISCONNECT IN
1. ELECTRICAL PANEL
2. TEXT HEIGHTS SHALL BE THE SAME AS FOR THE
DC DISCONNECT LABEL

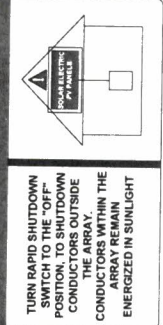
CAUTION: SOLAR CIRCUIT

LABEL LOCATION:
MARKINGS PLACED ON ALL INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES, AND
CABLE ASSEMBLIES AT LEAST EVERY 10 FT. AT TURNS AND ABOVE/BELOW PENETRATIONS AND ALL
COMBINER/JUNCTION BOXES (PER CODE: IFC 690.11.1.4)

**RAPID SHUTDOWN SWITCH
FOR SOLAR PV SYSTEM**

LABEL LOCATION:
* A RAPID SHUTDOWN SWITCH SHALL HAVE A LABEL LOCATED
ON OR NO MORE THAN 1 METER (3 FEET) FROM THE SWITCH
THAT INCLUDES THE ABOVE WORDING

**SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN**



WARNING
INVERTER OUTPUT CONNECTION DO NOT
RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
POINT OF INTERCONNECTION
(PER CODE: NEC 705.12(D)(7))
[To be used when inverter is ungrounded or
overcurrent devices supplying it]

PHOTOVOLTAIC
INVERTER INPUT
DC DISCONNECT

WARNING
ELECTRIC
SHOCK HAZARD!

DO NOT TOUCH TERMINALS, TERMINALS ON
BOTH THE LINE AND LOAD SIDES MAY BE
ENERGIZED IN THE OPEN POSITION

INTERACTIVE SOLAR PV SYSTEM RATING

RATED DC CURRENT	59.52 AMP
RATED DC VOLTAGE	605.25 VDC
MAXIMUM SYSTEM VOLTAGE	641.45 VDC
SHORT CIRCUIT CURRENT	78.9 AMP

SYSTEM INSTALLER: _____
FOR SERVICE CALL: _____

INVERTER 3

DC COMBINER BOX WARNING LABEL

NOTE:
1. TO BE MOUNTED ON EACH COMBINER SUB-ARRAY COMBINER
2. TEXT HEIGHTS SHALL BE THE SAME AS FOR THE
DC DISCONNECT LABEL

PHOTOVOLTAIC
INVERTER INPUT
DC DISCONNECT

WARNING
ELECTRIC
SHOCK HAZARD!

DO NOT TOUCH TERMINALS, TERMINALS ON
BOTH THE LINE AND LOAD SIDES MAY BE
ENERGIZED IN THE OPEN POSITION

INTERACTIVE SOLAR PV SYSTEM RATING

RATED DC CURRENT	66.2 AMP
RATED DC VOLTAGE	677.6 VDC
MAXIMUM SYSTEM VOLTAGE	807.56 VDC
SHORT CIRCUIT CURRENT	131.5 AMP

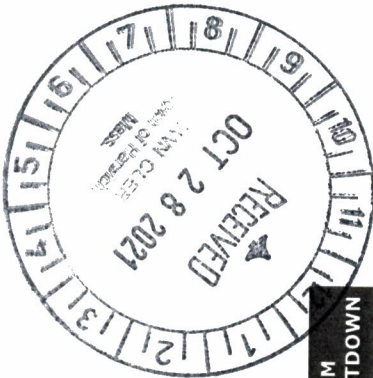
SYSTEM INSTALLER: _____
FOR SERVICE CALL: _____

INVERTER 4

INVERTER 3

INVERTER 4

3" x 1" PLACARD (QTY. 1)
APPLY TO:
SYSTEM INSTALLER: _____
INVERTER #3, #4



**PHOTOVOLTAIC SYSTEM
EQUIPPED WITH RAPID SHUTDOWN**

ADHESIVE FASTENED SIGNS:
* THE LABEL SHALL BE SUITABLE FOR THE ENVIRONMENT
* WHERE APPLICABLE, WHERE IN THIS CODE, ALL FIELD
APPLIED LABELS, WARNINGS, AND MARKINGS SHOULD
COMPLY WITH ANSI Z39.4 (NEC 110.2(B) FIELD MARKING)
* ADHESIVE FASTENERS MAY BE ACCEPTABLE IF
PROPERLY ADHERED TO VINTL SIGNS SHALL BE WEATHER
RESISTANT (IFC 605.11.1.3)

PHOTOVOLTAIC
SYSTEM EQUIPPED
WITH RAPID
SHUTDOWN

