

## PROJECT DETAILS

PV Modules	20 x Q.PEAK DUO BLK ML-G10+400
Optimizers	20 x P401
Inverter	1 x SE7600H-US (RGM)
Roof Type	Asphalt Shingles
Racking	PSR-B84 Rails (Black)
Mounting Type	CompMount Flashing (Black)
DC SIZE	8.0 kW
AC SIZE	7.6 kVA

## DRAWING INDEX

Item	Drawing #	Rev	Description
1	2267JF00-0	A	Drawing Index
2	2267JF00-1	A	Site Layout
3	2267JF00-2	A	String Mapping
4	2267JF00-3	A	Electrical One Line Diagram
5	2267JF00-3	A	Detailed Electrical Wiring Schematic
6	2267JF00-4	A	PV Labels
7	2267JF00-6	A	Bill of Materials

## TOP VIEW OF BUILDING



1600 Heritage Commerce Ct Ste 104,  
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**Melody Lao**  
131 Old Barn Way  
Fuquay Varina NC 27526

## PHOTOVOLTIC NOTES

1. THE INSTALLATION OF SOLAR ARRAYS AND PHOTOVOLTAIC POWER SYSTEMS SHALL COMPLY WITH THE FOLLOWING CODES:

- 2020 NATIONAL ELECTRICAL CODE
- 2018 NORTH CAROLINA RESIDENTIAL CODE
- 2018 NORTH CAROLINA BUILDING CODE
- AS ADOPTED BY THE STATE OF NORTH CAROLINA
- ALL OTHER ORDINANCE ADOPTED BY THE LOCAL GOVERNING AGENCIES

2. ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED AND IDENTIFIED BY RECOGNIZED ELECTRICAL TESTING LABORATORY.

3. SOLAR SYSTEM SHALL NOT COVER ANY PLUMBING OR MECHANICAL VENTS

4. MODULES AND SUPPORT STRUCTURES SHALL BE GROUNDED

5. SOLAR INVERTER SHALL BE LISTED TO UL1741

6. ALL CONDUCTORS SHALL BE COPPER AND SHOULD BE 75 AND 90 DEG RATED

7. REMOVAL OF AN INTERACTIVE INVERTER OR OTHER EQUIPMENT SHALL NOT DISCONNECT THE BONDING CONNECTION BETWEEN THE GROUNDING ELECTRODE CONDUCTOR AND THE PHOTOVOLTAIC SOURCE AND/OR OUTPUT CIRCUIT GROUNDED CONDUCTORS.

8. LIVE PARTS OF PV SOURCE CIRCUITS AND PV OUTPUT CIRCUITS OVER 150V TO GROUND SHALL NOT BE ACCESSIBLE TO OTHER THAN QUALIFIED PERSONS WHILE ENERGIZED.

9. ALL PV MODULES AND ASSOCIATED EQUIPMENT AND WIRING SHALL BE PROTECTED FROM PHYSICAL DAMAGE.



1	03/21/2022	A

Customer's Signature

JOB NUMBER

22-67-JF00

PROJECT STATUS

PERMITTING

SHEET

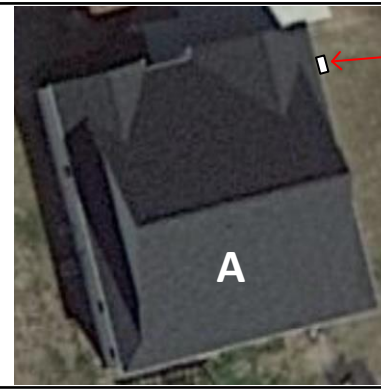
DRAWING INDEX

**JF**  
**2267JF00-0**

**PV System Dead Load**  
**(Panel + Racking weight) / PV System Area**  
 (20 panels x 48.5 lbs./panel + 139 ft. of racking x 1.17 lb.ft) /  
 (20 panels x 6.16' x 3.45') = 2.67 psf

The roof is located in 115mph wind zone

There is one layer of shingles  
 Roofing material is asphalt shingles



Utility Meter

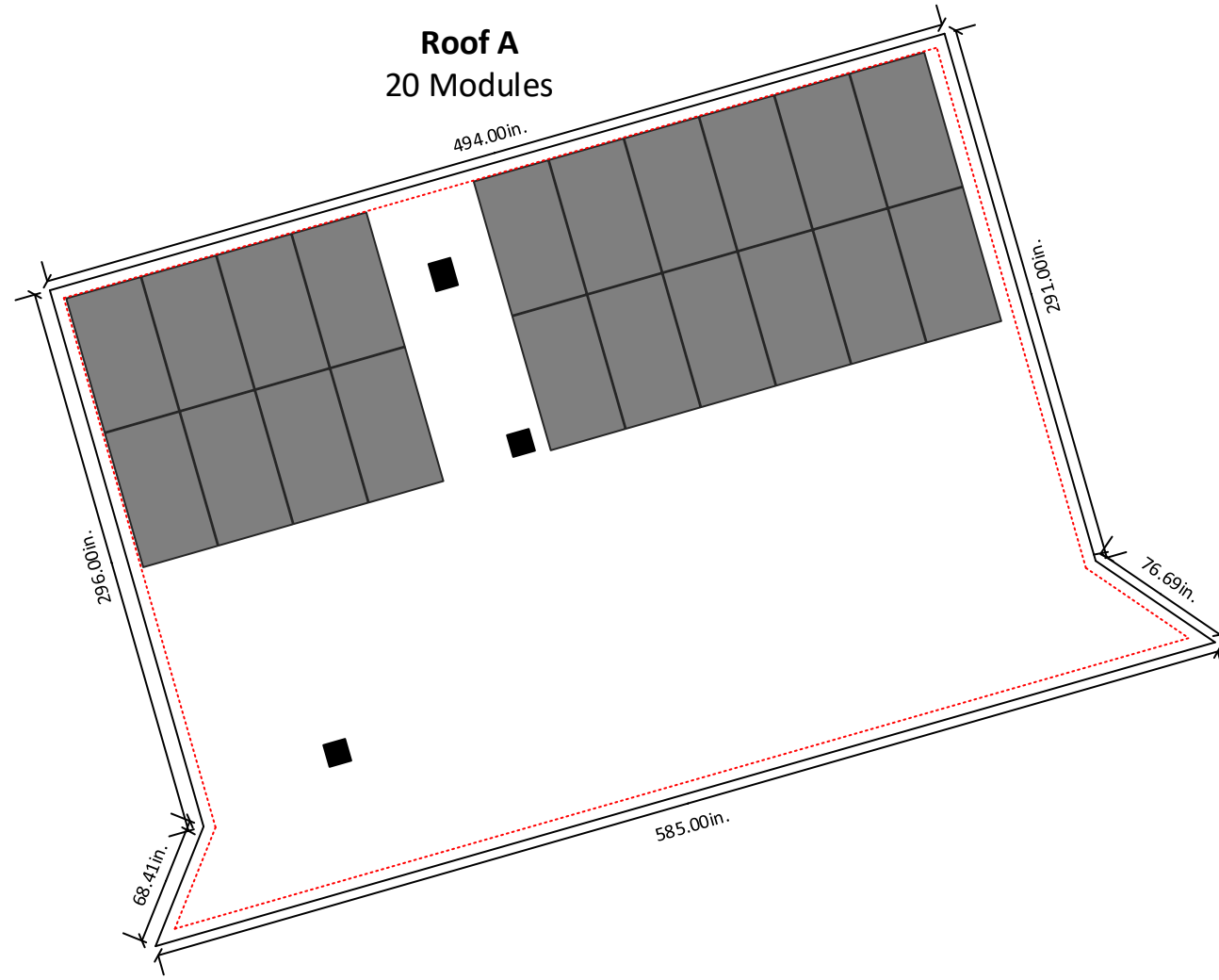
Module Dimension		
Roofs	Pitch	Azimuth
A	26°	164°



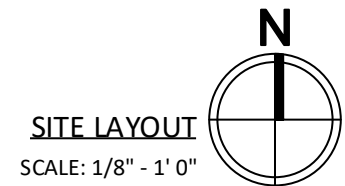
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**SYSTEM DETAILS**

NUMBER OF PANELS : 20  
 PANELS MODEL : Q.PEAK DUO BLK ML-G10+400  
 DC SIZE : 8.0 KW  
 AC SIZE : 7.6 KVA



6" clearance  
 from each side  
 of the roof



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 PROJECT STATUS PERMITTING  
 SHEET SITE LAYOUT

**JF**  
**2267JF00-1**

String Layout					
Inverter SE7600H-US(RGM)					
Strings #	No. of Modules	Color Code	Strings #	No. of Modules	Color Code
String 1	12				
String 2	08				

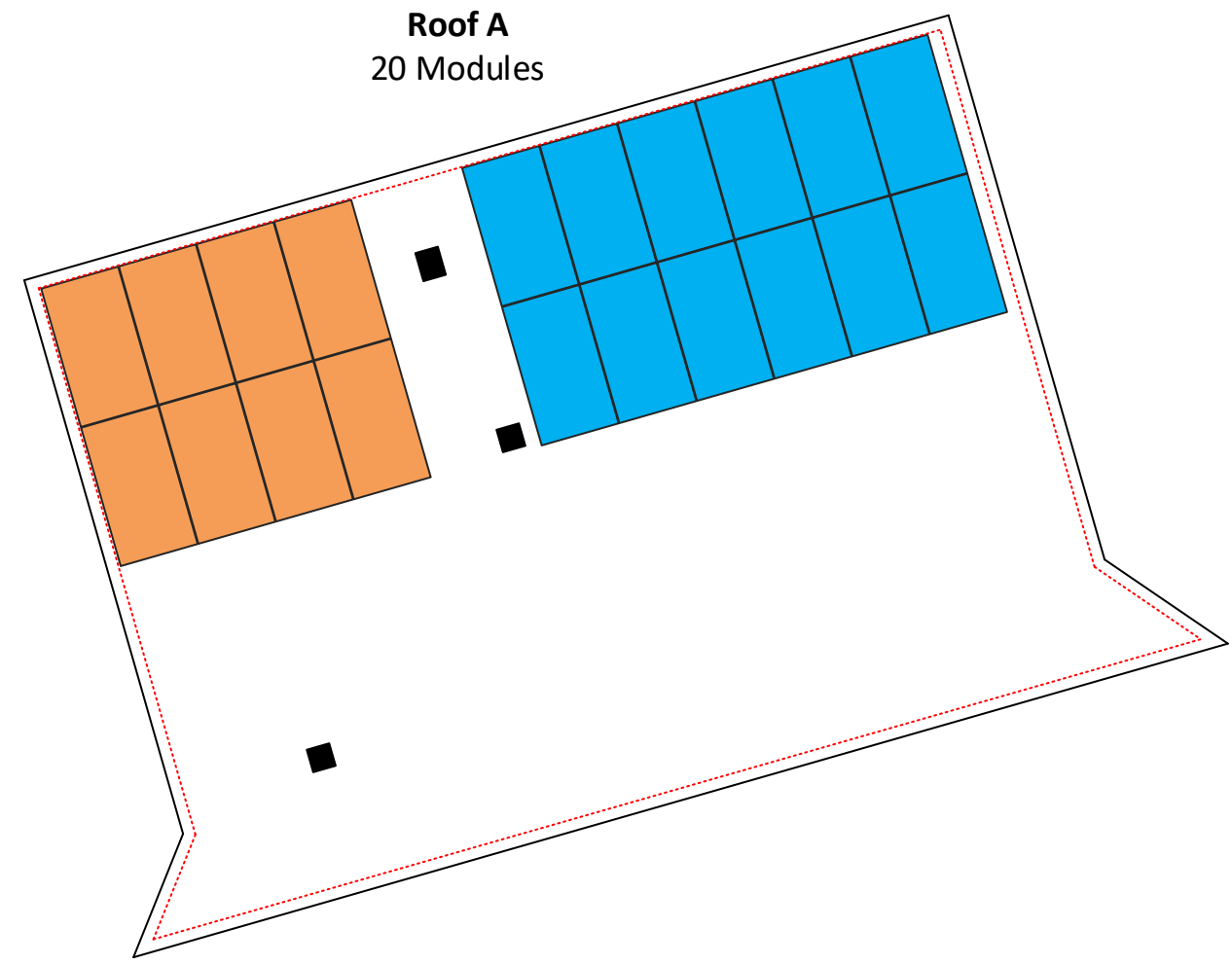


Module Dimension		
	Pitch	Azimuth
Roofs	26°	164°
A		

**8MSOLAR**  
ADVANCING ENERGY INDEPENDENCE  
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from each side  
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**STRING MAPPING**  
SCALE: 1/8" - 1' 0"

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**NABCEP  
CERTIFIED**  
PV Installation  
Professional  
Ali Buttar  
PVIP #031310-32

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JOB NUMBER  
22-67-JF00

PROJECT STATUS  
PERMITTING

SHEET  
STRING MAPPING

**JF**  
**2267JF00-2**

1	03/21/2022	A

Customer's Signature

JOB NUMBER

22-67-JF00

PROJECT STATUS

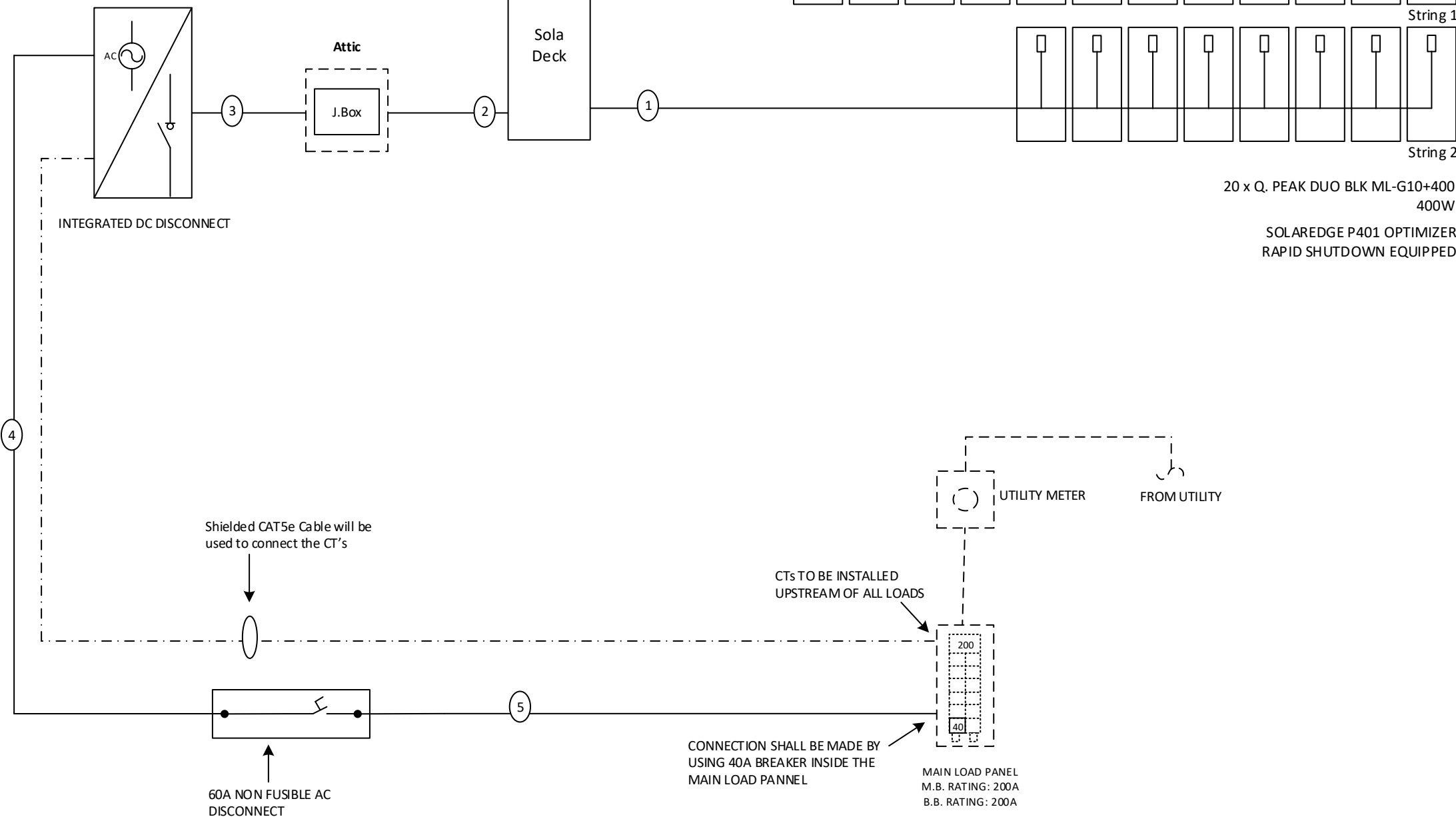
PERMITTING

SHEET

ELECTRICAL ONE LINE DIAGRAM

**JF**  
**2267JF00-3**

SOLAREEDGE  
SE7600H-US (RGM)  
INVERTER RATING 7600W  
UL 1741 Listed



**ELECTRICAL NOTES**

- System Size: 8,000W DC
- (20) Q.PEAK DUO BLK ML-G10+400
- (20) SOLAREEDGE P401 OPTIMIZERS
- (01) SOLAREEDGE SE7600H-US (RGM)
- Inverter Output: 32A max @ 240 VAC
- 7.6 kVA AC output max

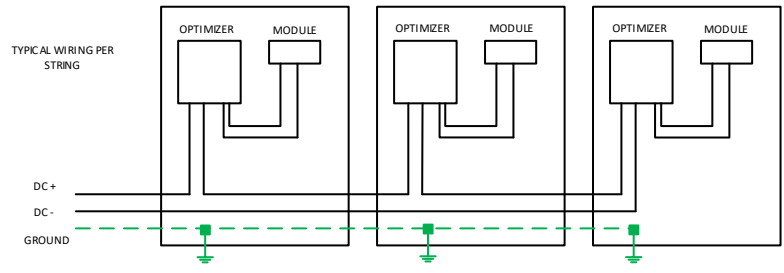
- Grounding will be done via Pegasus grounding mid-clamps and NS bonding jumpers to ensure the rail and panels are continuously grounded.
- Rapid Shutdown is included in the Inverter, refer to inverter & optimizer attached datasheets.
- The load center / disconnect will be visible, lockable accessible to utility linesmen and will be properly labelled as per NEC requirements. It will be located on the exterior wall of the building next to the utility meter.

STRING 1:  
12 x 400W = 4,800W ea  
I<sub>mpp</sub> = 12 Adc  
I<sub>max</sub> = 23.4 Adc  
V<sub>mpp</sub> = 400 Vdc  
V<sub>oc</sub> = 12 Vdc

STRING 2:  
08 x 400W = 3,200W ea  
I<sub>mpp</sub> = 08 Adc  
I<sub>max</sub> = 23.4 Adc  
V<sub>mpp</sub> = 400 Vdc  
V<sub>oc</sub> = 08 Vdc

**Note:** For more than 2ft of conduit use EMT instead of LFNC

Sr.No	#Wire	Conduit Size	Ground Wire	Amperage
1	2 x #10 PV		#10 Bare CU	23.4A
2	2 x #10 MC Cable			
3	4 x #10 THHN Cu	3/4" EMT	#10 Green	40
4	3 x #08 THHN Cu	3/4" EMT	#10 Green	
5	3 x #08 THHN Cu	3/4" EMT	#10 Green	



Line 1	
Line 2	
Neutral	
Ground	

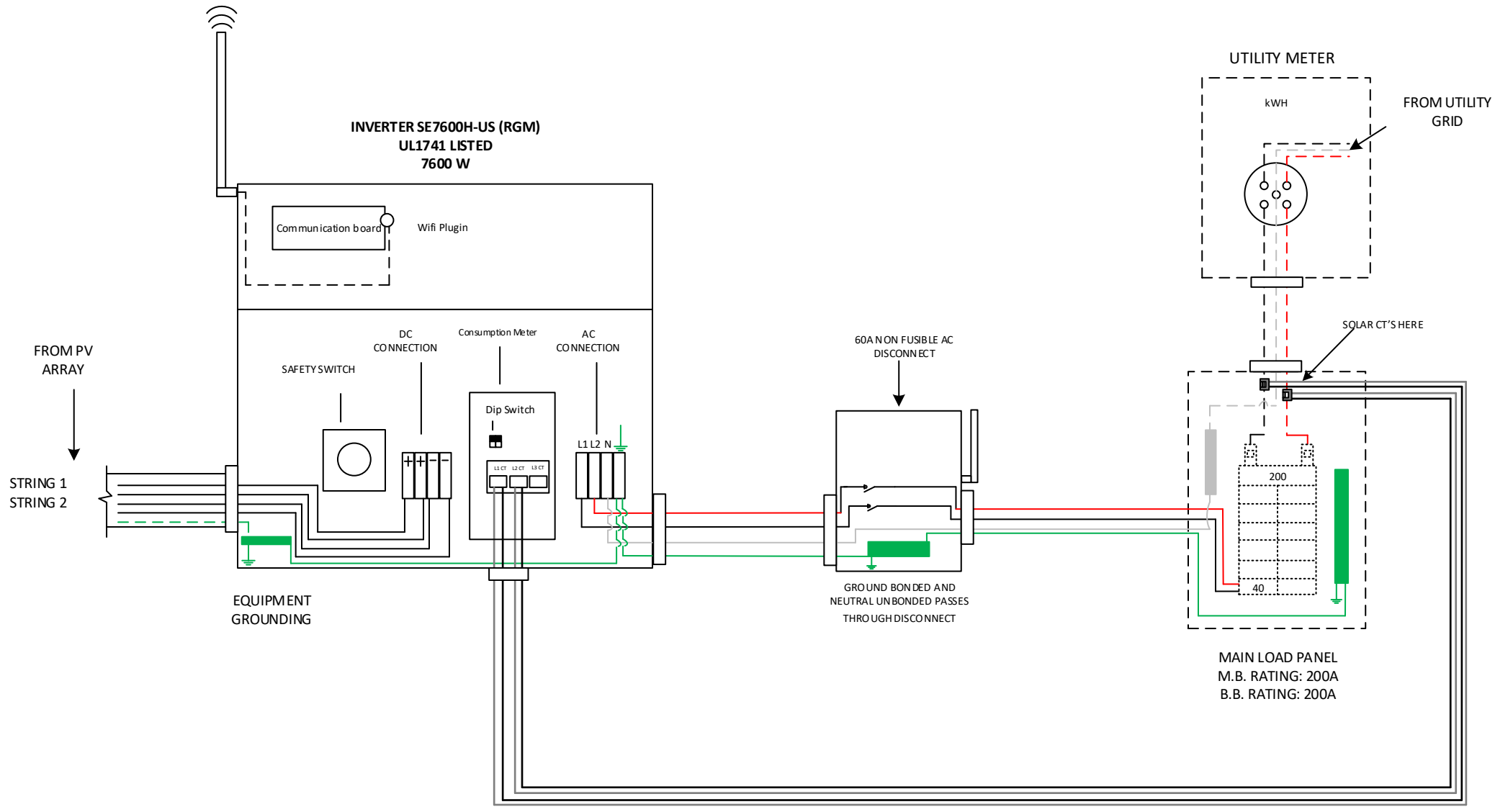
### DIP SWITCH CONFIGURATION

<input checked="" type="checkbox"/>	0	OFF
<input type="checkbox"/>	1	ON

- Note**
- The arrow on the CTs should face the source.
- Note**
- Dip switch settings are factory set to address 1



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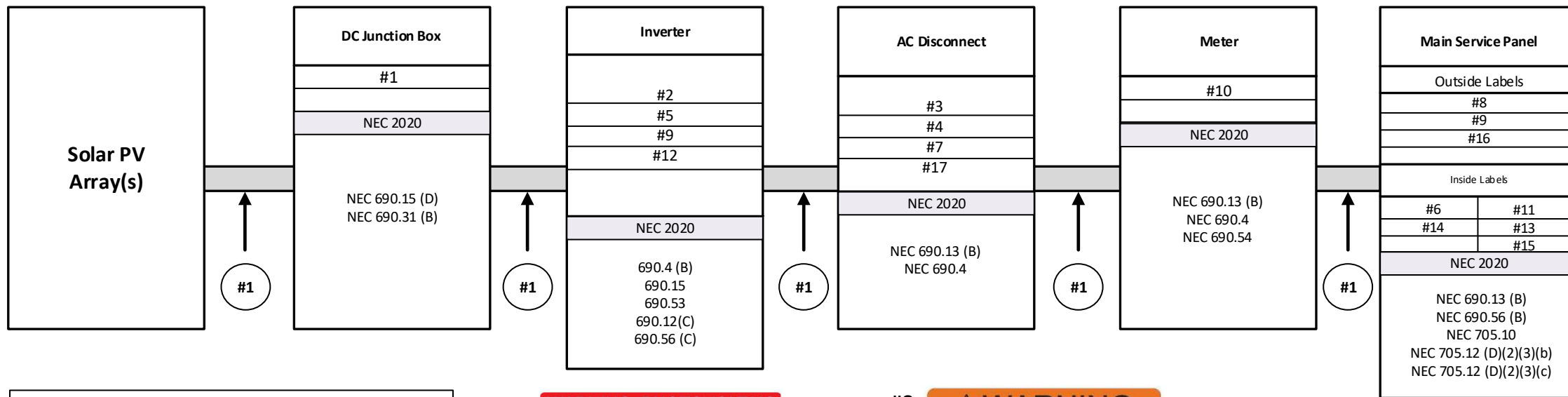
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PROJECT STATUS  
PERMITTING

SHEET  
DETAILED ELECTRICAL DIAGRAM



## LABELING AND WARNING SIGNS

- A. PURPOSE**  
PROVIDE EMERGENCY RESPONDERS WITH APPROPRIATE WARNING AND GUIDANCE WITH RESPECT TO ISOLATING THE SOLAR ELECTRIC SYSTEM. THIS CAN FACILITATE IDENTIFYING ENERGIZED ELECTRICAL LINES THAT CONNECT THE SOLAR PANELS TO THE INVERTER, AS SHOULD NOT BE CUT WHEN VENTING FOR SMOKE REMOVAL.
- B. MAIN SERVICE DISCONNECT:**
- RESIDENTIAL BUILDINGS- THE MARKING MAY BE PLACED WITHIN THE MAIN SERVICE DISCONNECT. THE MARKING SHALL BE PLACED ON THE OUTSIDE COVER IF THE MAIN SERVICE DISCONNECT IS OPERABLE WITH THE SERVICE PANEL CLOSED.
  - COMMERCIAL BUILDINGS- THE MARKINGS SHALL BE PLACED ADJACENT TO THE MAIN SERVICE DISCONNECT CLEARLY VISIBLE FROM THE LOCATION WHERE THE LEVER IS OPERATED
  - MARKINGS, VERBIAGE, FORMAT AND TYPE OF MATERIAL
    - VERBIAGE: CAUTION; SOLAR ELECTRIC SYSTEM CONNECTED
    - FORMAT:
      - WHITE LETTERING ON A RED BACKGROUND
      - MINIMUM 3/8 INCH LETTER HEIGHT
      - ALL LETTERS SHALL BE CAPITALIZED
      - ARIAL OR SIMILAR FONT, NON-BOLD
    - MATERIAL:
      - REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT (USE UL-969) AS STANDARD FOR WEATHER RATING); DURABLE ADHESIVE MATERIALS MEET THIS REQUIREMENT.
- C. MARKING REQUIREMENTS ON DC CONDUIT, RACEWAYS, ENCLOSURES, CABLE ASSEMBLIES, DC COMBINERS AND JUNCTION BOXES;**
- MARKING: PLACEMENT, VERBIAGE, FORMAT AND TYPE OF MATERIAL.
    - PLACEMENT: MARKINGS SHALL BE PLACED EVERY 10 (TEN) FEET ON ALL INTERIOR AND EXTERIOR DC CONDUITS, RACEWAYS, ENCLOSURES AND CABLE ASSEMBLIES, AT TURNS ABOVE AND/OR BELOW PENETRATIONS, ALL DC COMBINERS AND JUNCTION BOXES.
    - VERBIAGE: CAUTION SOLAR CIRCUIT
    - THE FORMAT AND TYPE OF MATERIAL SHALL ADHERE TO SECTION B-3.B & C ABOVE
- D. INVERTERS ARE NOT REQUIRED TO HAVE CAUTION MARKINGS**

#1 **WARNING: PHOTOVOLTAIC POWER SOURCE**

#2 **PHOTOVOLTAIC DC DISCONNECT**

#3 **PHOTOVOLTAIC AC DISCONNECT**

#4 **RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM**

#5 **MAXIMUM VOLTAGE**   
**MAXIMUM CIRCUIT CURRENT**   
**MAX. RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC CONVERTER (IF INSTALLED)**

#6 **PHOTOVOLTAIC POWER SOURCE**  
**OPERATING AC VOLTAGE**  V  
**MAXIMUM OPERATING AC OUTPUT CURRENT**  A

#7 **AC DISCONNECT PHOTOVOLTAIC SYSTEM POWER SOURCE**  
**RATED AC OUTPUT CURRENT**  AMPS  
**NOMINAL OPERATING AC VOLTAGE**  VOLTS

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

#9 **WARNING**  
DUAL POWER SUPPLY  
SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

#10 **WARNING**  
THIS SERVICE METER IS ALSO SERVED BY A PHOTOVOLTAIC SYSTEM

#11 **WARNING**  
TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

#12 **WARNING**  
BIPOLAR PHOTOVOLTAIC ARRAY  
DISCONNECTION OF NEUTRAL GROUNDED CONDUCTORS MAY RESULT IN OVERVOLTAGE ON ARRAY OR INVERTER

#13 **WARNING**  
POWER SOURCE OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

#14 **WARNING**  
SOLAR ELECTRIC CIRCUIT BREAKER IS BACKFED

#15 **SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN**  
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY

#16 **SOLAR AC DISCONNECT LOCATED AT WEST SIDE WALL OF THE HOUSE BESIDE THE UTILITY METER**

#17 **SERVICE DISCONNECT LOCATED IN MAIN LOAD PANEL**

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SHEET

PV LABELS

