

PROJECT DETAILS	
PV Modules	45 x Q.PEAK DUO BLK G6+ 340
Optimizers	45 x P340
Inverter	1 x SE10000H-US
Roof Type	Asphalt Shingles
Racking	IronRidge XR10
Mounting Type	Flashfoot2
DC SIZE	15.3 kW
AC SIZE	10.0 kVA

DRAWING INDEX			
Item	Drawing #	Rev	Description
1	2185JU00-0	B	Drawing Index
2	2185JU00-1	B	Site Layout
3	2185JU00-2	B	String Mapping
4	2185JU00-3	B	Electrical One Line Diagram
5	2185JU00-4	B	Detailed Electrical Wiring Schematic
6	2185JU00-5	B	PV Labels
7	2185JU00-6	B	Bill of Materials

**Jamie Urtz**  
 128 Canterbury Rd.,  
 Sanford NC 27332

TOP VIEW OF BUILDING



FRONT VIEW OF BUILDING



1	05/06/2021	A
2	05/11/2021	B

JOB NUMBER  
21-85-JU00

DATE ISSUED  
05/06/2021

PROJECT STATUS  
PERMITTING

SHEET  
**DRAWING INDEX**

DRAWING INDEX  
SCALE: NTS

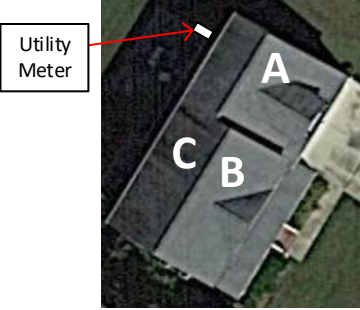


JU  
2185JU00-0

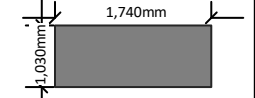
**PV System Dead Load**  
**(Panel + Racking weight) / PV System Area**  
 (45 modules x 43.9 lbs./panel + 321 ft. of racking x 1.15 lb.ft) /  
 (45 panels x 68.5" x 40.6") = 2.70 psf

The roof is located in 116mph wind zone

There is one layer of shingles  
 Roofing material is asphalt shingles



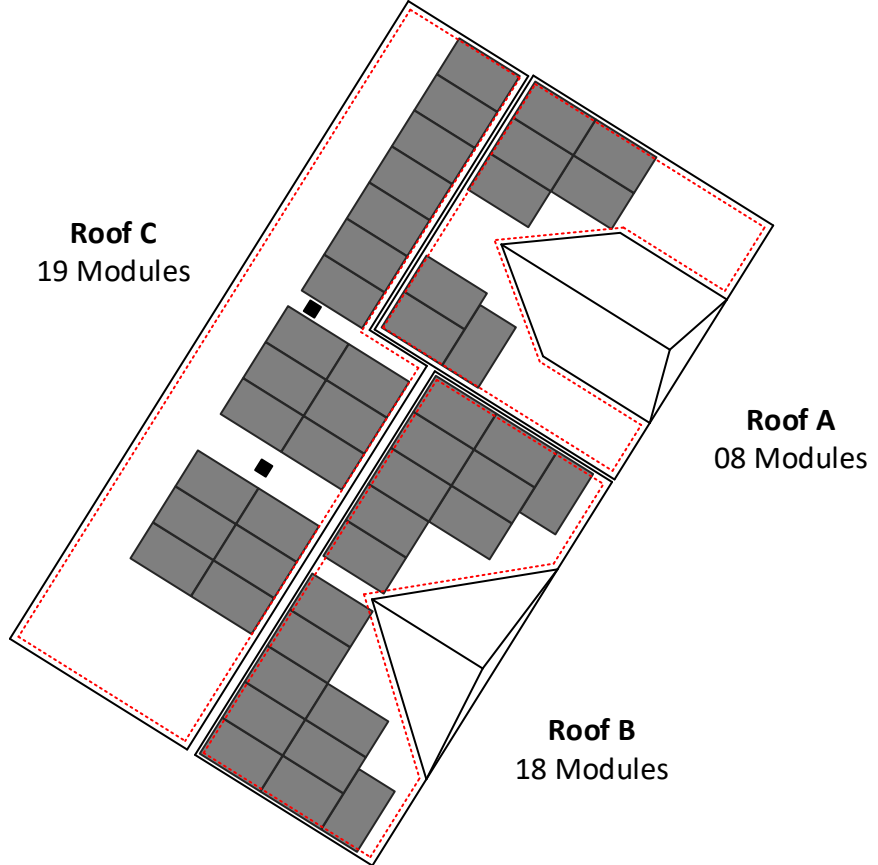
Module Dimension		
Roofs	Pitch	Azimuth
A	35°	122°
B	35°	122°
C	35°	305°



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**SYSTEM DETAILS**

NUMBER OF PANELS : 45  
 PANELS MODEL : Q.PEAK DUO BLK G6+ 340  
 DC SIZE : 15.3 kW  
 AC SIZE : 10.0 kVA



6" clearance  
 from each side  
 of the roof

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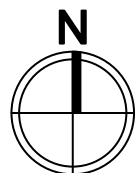


1	05/06/2021	A
2	05/11/2021	B
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JOB NUMBER  
 21-85-JU00  
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 PROJECT STATUS  
 PERMITTING

SHEET  
**SITE LAYOUT**

SITE LAYOUT  
 SCALE: 13/200" - 1' 0"



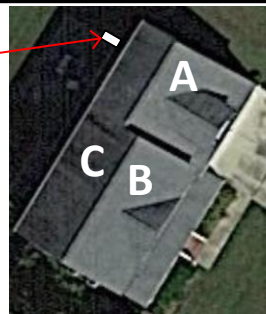
JU  
 2185JU00-1

String Layout

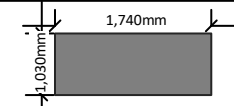
Inverter: SE10000H-US

Strings #	No. of Modules	Color Code	Strings #	No. of Modules	Color Code
String 1	15	Blue			Green
String 2	15	Orange			Purple
String 3	15	Brown			Light Blue

Utility Meter



Module Dimension



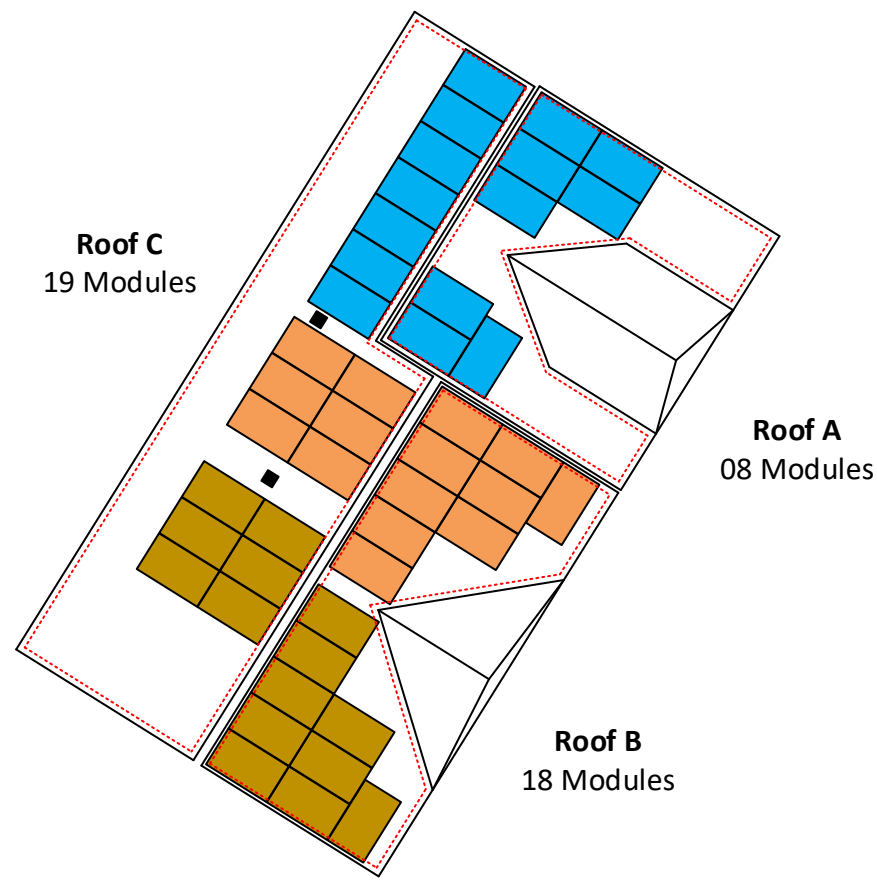
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1	05/06/2021	A
2	05/11/2021	B

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PROJECT STATUS  
PERMITTING

SHEET  
STRING MAPPING

JU  
2185JU00-2

STRING MAPPING  
SCALE: 13/200" - 1' 0"



1	05/06/2021	A
2	05/11/2021	B

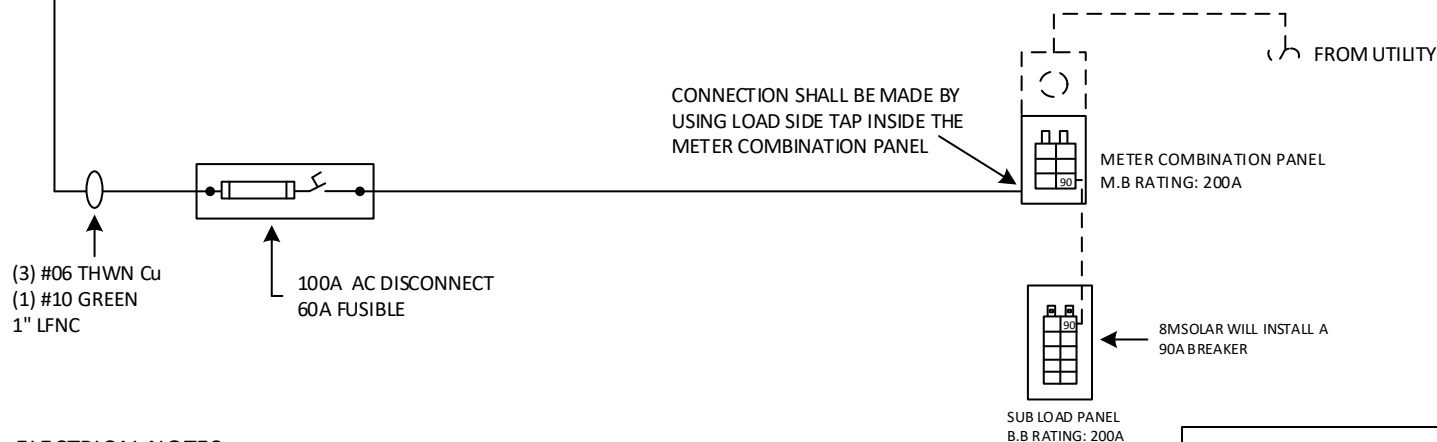
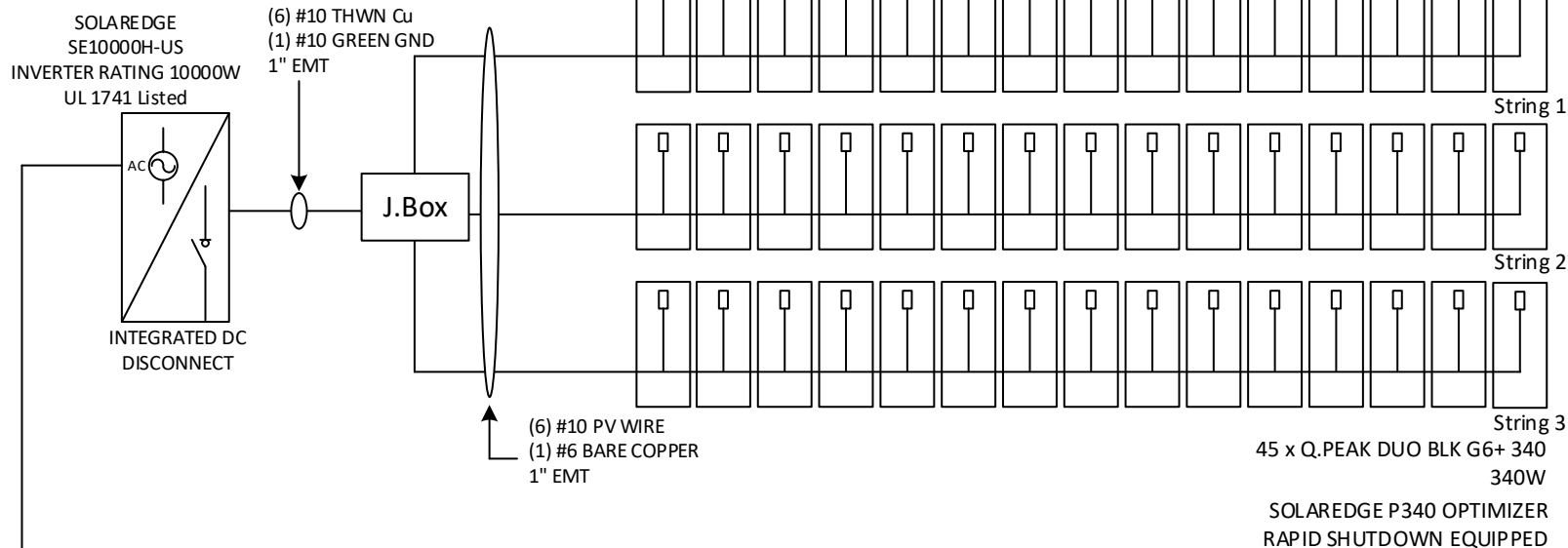
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21-85-JU00

DATE ISSUED  
05/06/2021

PROJECT STATUS  
PERMITTING

SHEET  
**ELECTRICAL ONE LINE  
DIAGRAM**

**JU**  
**2185JU00-3**



**ELECTRICAL NOTES**

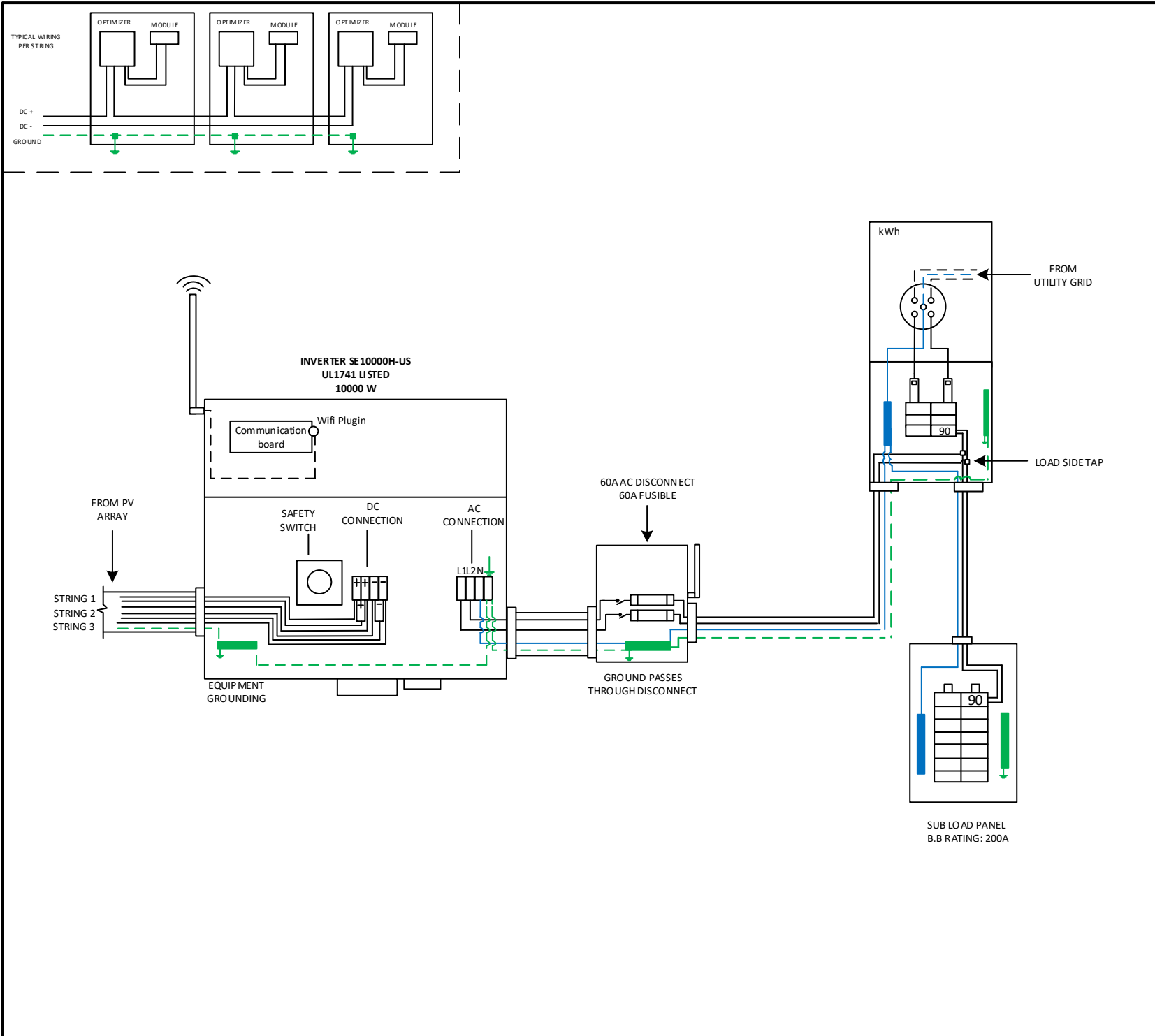
- System Size: 15,300 W DC
- (45) Q.PEAK DUO BLK G6+ 340
- (45) SOLAREEDGE P340 OPTIMIZERS
- (01) SOLAREEDGE SE10000H-US Inverter
- SE10000H-US Output: 42A max @ 240 VAC
- Combined AC output max: 10.0 kVA

STRING 1:  
15 x 340W = 5,100W ea  
I<sub>mpp</sub> = 12.75 Adc  
I<sub>max</sub> = 23.4 Adc  
V<sub>mpp</sub> = 400 Vdc  
V<sub>oc</sub> = 15 Vdc

STRING 2:  
15 x 340W = 5,100W ea  
I<sub>mpp</sub> = 12.75 Adc  
I<sub>max</sub> = 23.4 Adc  
V<sub>mpp</sub> = 400 Vdc  
V<sub>oc</sub> = 15 Vdc

STRING 3:  
15 x 340W = 5,100W ea  
I<sub>mpp</sub> = 12.75 Adc  
I<sub>max</sub> = 23.4 Adc  
V<sub>mpp</sub> = 400 Vdc  
V<sub>oc</sub> = 15 Vdc

- Grounding will be done via IronRidge grounding mid-clamps and WEEB 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.



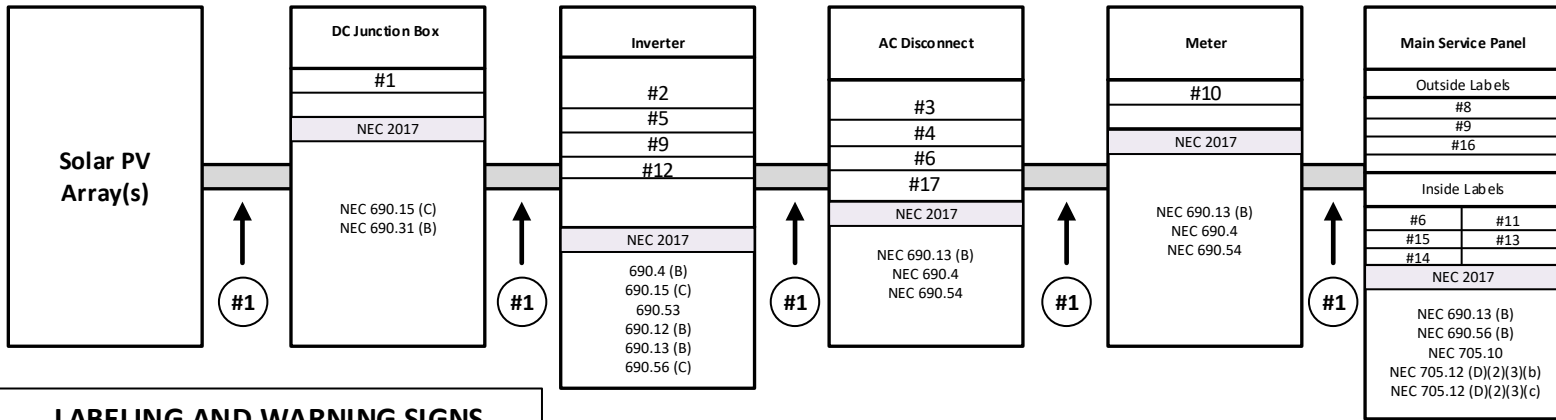
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1	05/06/2021	A
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JOB NUMBER 21-85-JU00  
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SHEET  
**DETAILED ELECTRICAL WIRING  
SCHEMATIC**



## 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:

1. 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.

2. COMMERCIAL BUILDINGS- THE MARKINGS SHALL BE PLACED ADJACENT TO THE MAIN SERVICE DISCONNECT CLEARLY VISIBLE FROM THE LOCATION WHERE THE LEVER IS OPERATED

### 3. MARKINGS, VERBIAGE, FORMAT AND TYPE OF MATERIAL

- a. VERBIAGE: CAUTION; SOLAR ELECTRIC SYSTEM CONNECTED
- b. FORMAT:

- (1) WHITE LETTERING ON A RED BACKGROUND
- (2) MINIMUM 3/8 INCH LETTER HEIGHT
- (3) ALL LETTERS SHALL BE CAPITALIZED
- (4) ARIAL OR SIMILAR FONT, NON-BOLD

### c. MATERIAL:

- (1) 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;

#### 1. MARKING: PLACEMENT, VERBIAGE, FORMAT AND TYPE OF MATERIAL.

- a. 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.
- b. VERBIAGE: CAUTION SOLAR CIRCUIT
- c. 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  
SOLAR ELECTRIC CIRCUIT BREAKER IS BACKFED

#14 WARNING  
THIS EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES, EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE, SHALL NOT EXCEED AMPACITY OF BUSBAR

#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 NORTH-EAST SIDE WALL OF THE HOUSE BESIDE THE UTILITY METER

#17 SERVICE DISCONNECT LOCATED IN METER COMBINATION PANEL

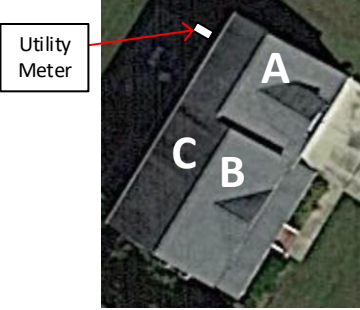
1	05/06/2021	A
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DATE ISSUED 05/06/2021  
PROJECT STATUS PERMITTING

SHEET PV LABELS

Rails and Splices : XR10
Rafter Spacing : 16 in
Attachment Span: 4ft

Roof Attachment : Flashfoot2
There is one layer of shingles Roofing material is asphalt shingles
The roof is located in 116mph wind zone

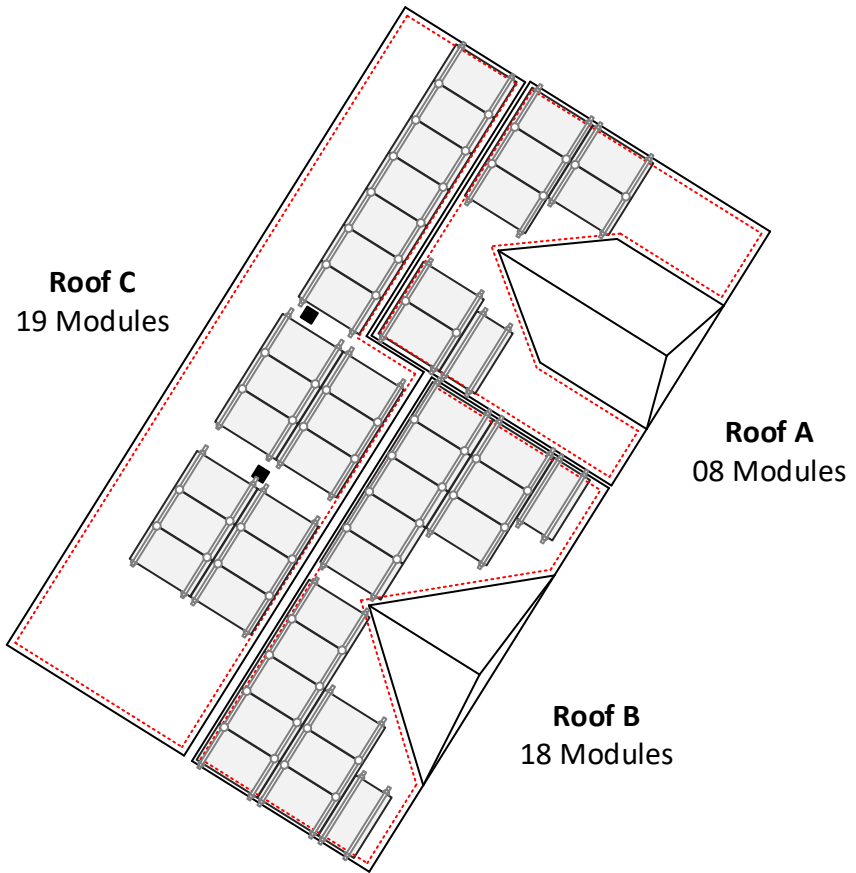


Module Dimension		
Roofs	Pitch	Azimuth
A	35°	122°
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- RAILS AND SPLICES**
- 05 x XR-10-204B: XR10, Rail 204" (17 Feet) Black
  - 23 x XR-10-168B: XR10, Rail 168" (14 Feet) Black
  - 06 x XR-10-BOSS-01-M1: XR10 Bonded Splice (Incl. Self-tapping Screws)
- CLAMPS & GROUNTING**
- 60 x UFO-CL-01-B1: Universal Module Clamp, Black
  - 60 x CAMO-01-M1: Hidden End Cam (universal clamp)
  - 17 x XR-LUG-03-A1: Grounding Lug, Low Profile
- ATTACHMENTS**
- 96 x FF2-01-M2: Flash Foot2, Mill
  - 96 x BHW-SQ-02-A1: Square-Bolt Bonding Hardware
- ACCESSORIES**
- 03 x XR-10-CAP: Kit, End Cap XR10 (10 sets per bag)
  - 45 x BHW-MI-01-A1: Microinverter Bonding Hardware, T-Bot

- SOLAR MODULES**
- 45 x Q, Peel Duo Blk G6+ 340
- INVERTER & SUPPORTING ITEMS**
- 01 x SolarEdge SE1000H-US
  - 45 x SolarEdge Power Optimizer P340
  - 01 x SE-WFGW-B-S1-NA with Anten na kit
  - 01 x PV Labels kit
- WIRE & DISCONNECTS**
- 500 ft x PV WIRE BLK (Cu)



1	05/06/2021	A
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JOB NUMBER: 21-85-JU00  
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PROJECT STATUS: PERMITTING

SHEET: BILL OF MATERIAL

JU  
2185JU00-6

6" clearance from each side of the roof

Row: 5' 11" (1 x 7') = 7'		Row: 6' 11" (1 x 8') = 8'	
Mounts = 02 (Cantilever 11")		Mounts = 02 (Cantilever 1'6")	
Row: 17'2" (1x 14' + 1 x 7') = 21'		Cut one 17' rail into half and use	
Mounts = 5 (Cantilever 7")		Row: 10'4" (1 x 14') = 14'	
Row: 24' (1 x 17' + 1 x 8') = 25'		Mounts = 03 (Cantilever 1'2")	
Mounts = 6 (Cantilever 0")			

BILL OF MATERIAL  
SCALE: 13/200" - 1' 0"