

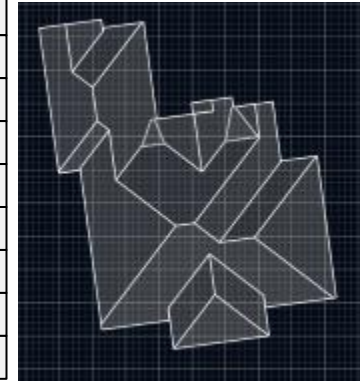
**PROJECT DETAILS**

PV Modules	33 x SOLARIA POWERXT 400R-PM
Optimizers	33 x P401
Inverter	1 x SE11400H-US(RGM)
Roof Type	Asphalt Shingles
Racking	PSR-B84 Rails (Black)
Mounting Type	CompMount Flashing (Black)
DC SIZE	13.2 kW
AC SIZE	11.4 kVA

**DRAWING INDEX**

Item	Drawing #	Rev	Description
1	2274KG00-0	A	Drawing Index
2	2274KG00-1	A	Site Layout
3	2274KG00-2	A	String Mapping
4	2274KG00-3	A	Electrical One Line Diagram
5	2274KG00-4	A	Detailed Electrical Wiring Schematic
6	2274KG00-5	A	PV Labels
7	2274KG00-6	A	Bill of Materials
8	2274KG00-7	A	PV Dead Load

**TOP VIEW OF BUILDING**



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**PHOTOVOLTAIC NOTES**

- THE INSTALLATION OF SOLAR ARRAYS AND PHOTOVOLTAIC POWER SYSTEMS SHALL COMPLY WITH THE FOLLOWING CODES:
  - 2020 NORTH CAROLINA RESIDENTIAL CODE
  - 2018 NORTH CAROLINA BUILDING CODE
  - 2017 NATIONAL ELECTRIC CODE
  - AS ADOPTED BY THE STATE OF NORTH CAROLINA
  - ALL OTHER ORDINANCE ADOPTED BY THE LOCAL GOVERNING AGENCIES
- ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED AND IDENTIFIED BY RECOGNIZED ELECTRICAL TESTING LABORATORY.
- SOLAR SYSTEM SHALL NOT COVER ANY PLUMBING OR MECHANICAL VENTS
- MODULES AND SUPPORT STRUCTURES SHALL BE GROUNDED
- SOLAR INVERTER SHALL BE LISTED TO UL1741
- ALL CONDUCTORS SHALL BE COPPER AND SHOULD BE 75 AND 90 DEG RATED
- 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.
- 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.
- ALL PV MODULES AND ASSOCIATED EQUIPMENT AND WIRING SHALL BE PROTECTED FROM PHYSICAL DAMAGE.



A	12/06/2022	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

JOB NUMBER  
22-74-KG00

DATE ISSUED  
03/04/2022

PROJECT STATUS  
PERMITTING

SHEET

**DRAWING INDEX**

**DRAWING INDEX**  
SCALE: NTS

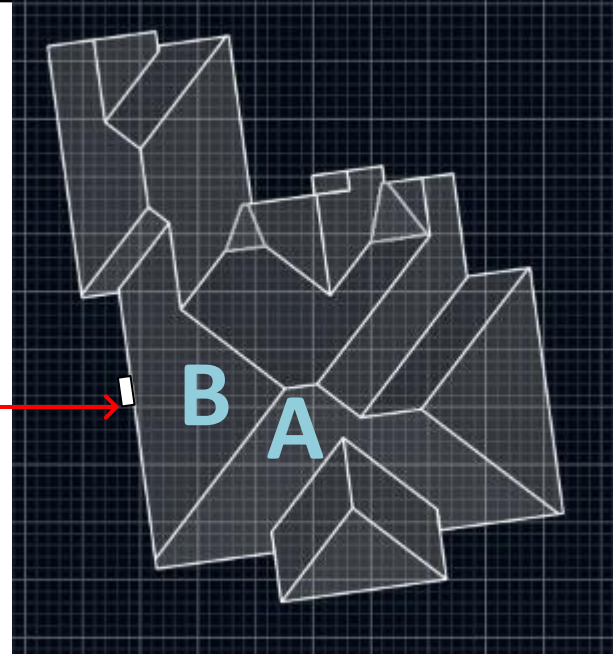


**KG**  
**2274KG00-0**

There is one layer of shingles  
Roofing material is asphalt shingles

The roof is located in 120mph wind zone

Utility Meter



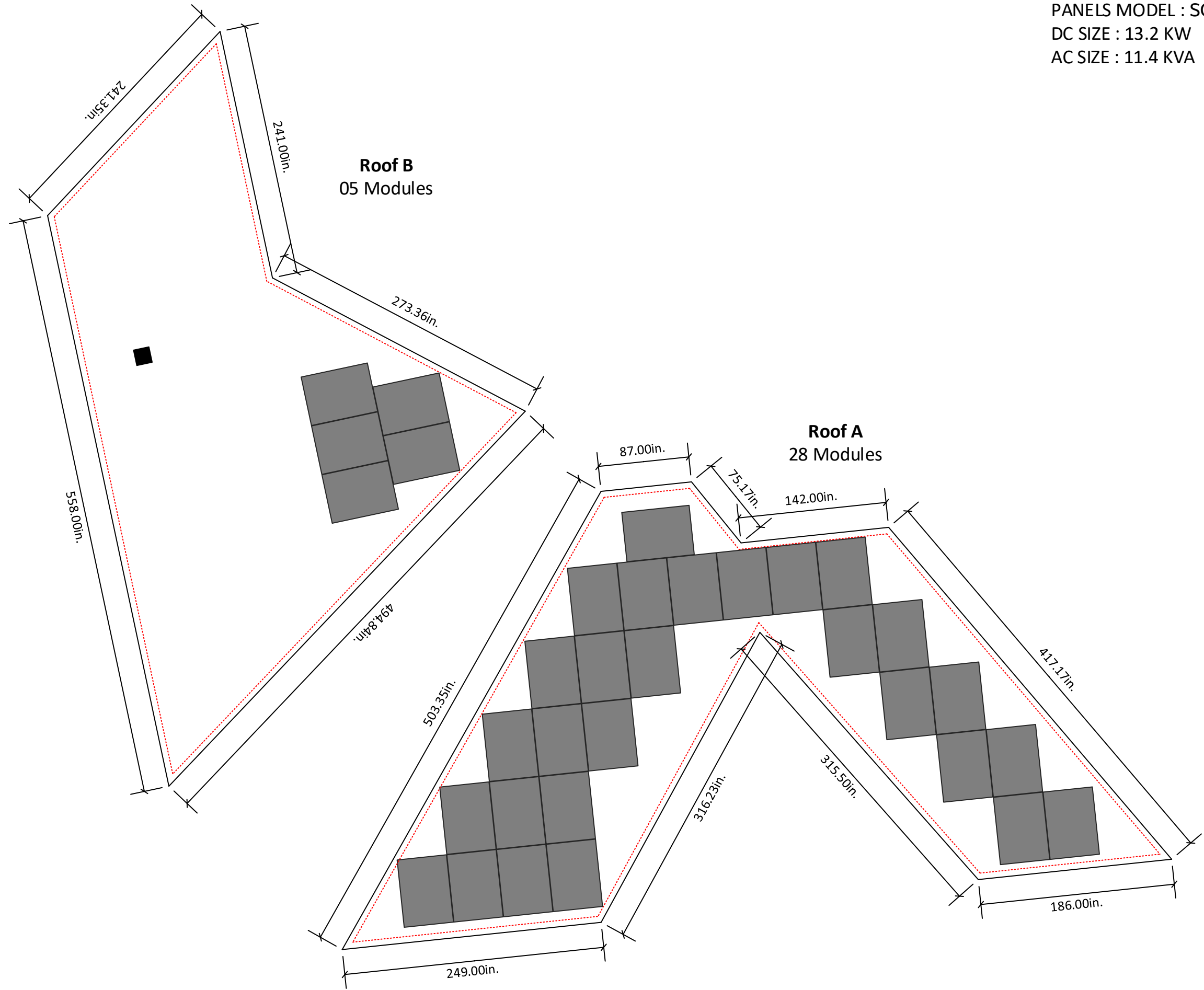
Module Dimension		
Roofs	Pitch	Azimuth
A	45°	174°
B	45°	262°



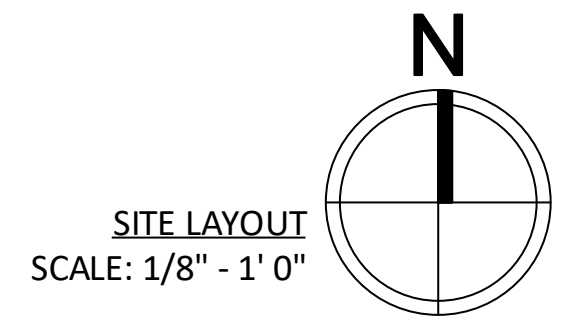
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**SYSTEM DETAILS**

NUMBER OF PANELS : 33  
PANELS MODEL : SOLARIA POWERXT 400R-PM  
DC SIZE : 13.2 KW  
AC SIZE : 11.4 KVA



6" clearance from  
each side of the roof



Jeanette L Gallaher  
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A 12/06/2022

Customer's Signature

JOB NUMBER  
22-74-KG00







PROJECT STATUS  
PERMITTING

SHEET  
SITE LAYOUT

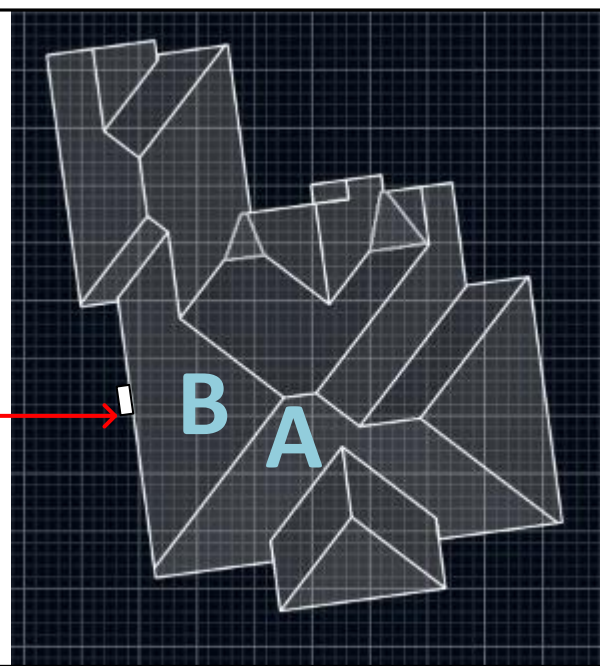
KG  
2274KG00-1

String Layout

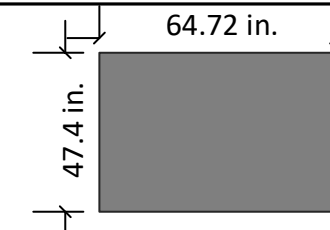
Inverter SE11400H-US (RGM)

Strings #	No. of Modules	Color Code	Strings #	No. of Modules	Color Code
String 1	13				
String 2	11				
String 2	09				

Utility Meter



Module Dimension



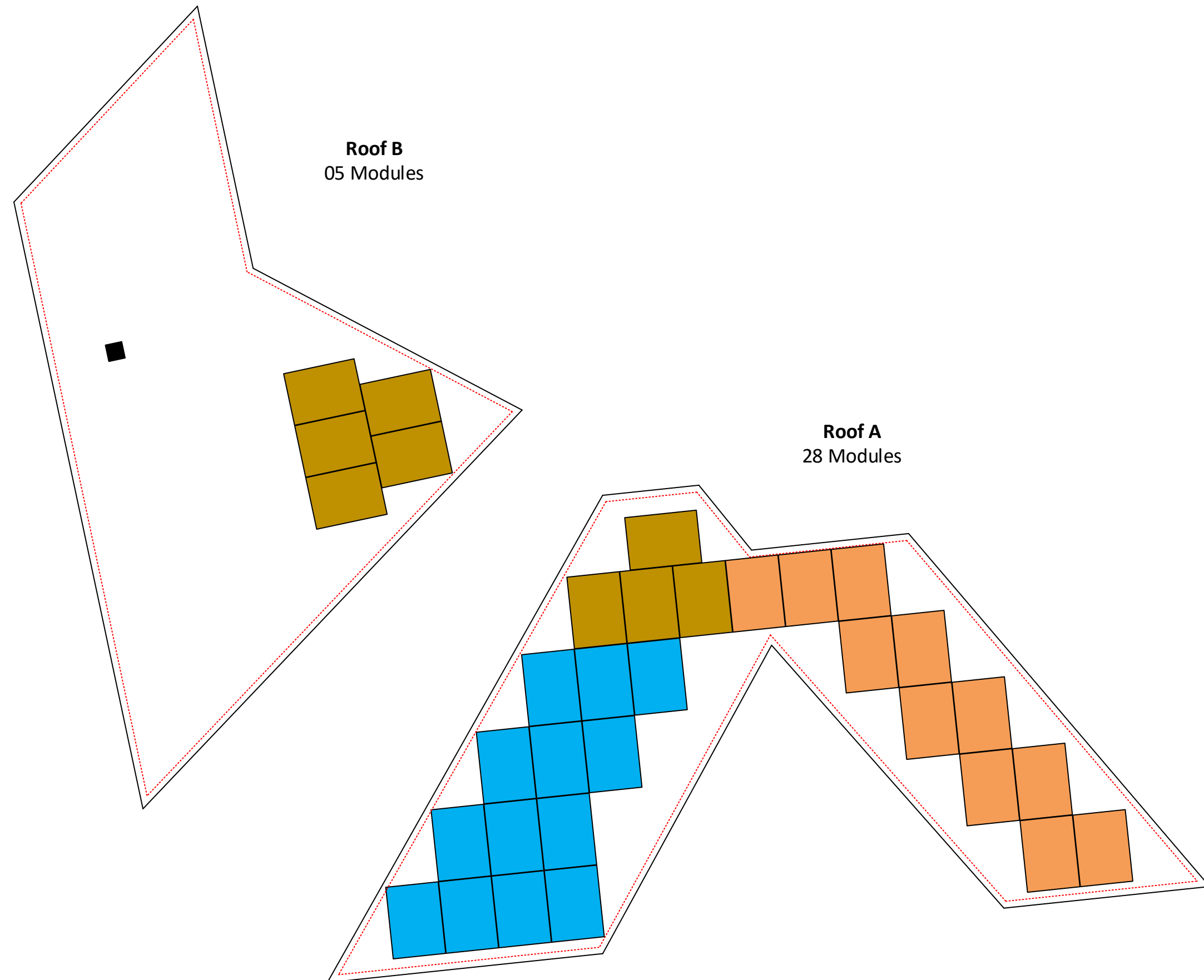
Roofs	Pitch	Azimuth
A	45°	174°
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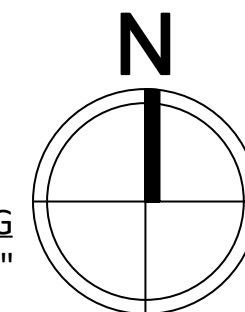
SYSTEM DETAILS

NUMBER OF PANELS : 33  
 PANELS MODEL : SOLARIA POWERXT 400R-PM  
 DC SIZE : 13.2 KW  
 AC SIZE : 11.4 KVA



6" clearance from each side of the roof

STRING MAPPING  
 SCALE: 1/8" - 1' 0"



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Customer's Signature

JOB NUMBER  
 22-74-KG00

PROJECT STATUS  
 PERMITTING

SHEET  
 STRING MAPPING

KG  
 2274KG00-2



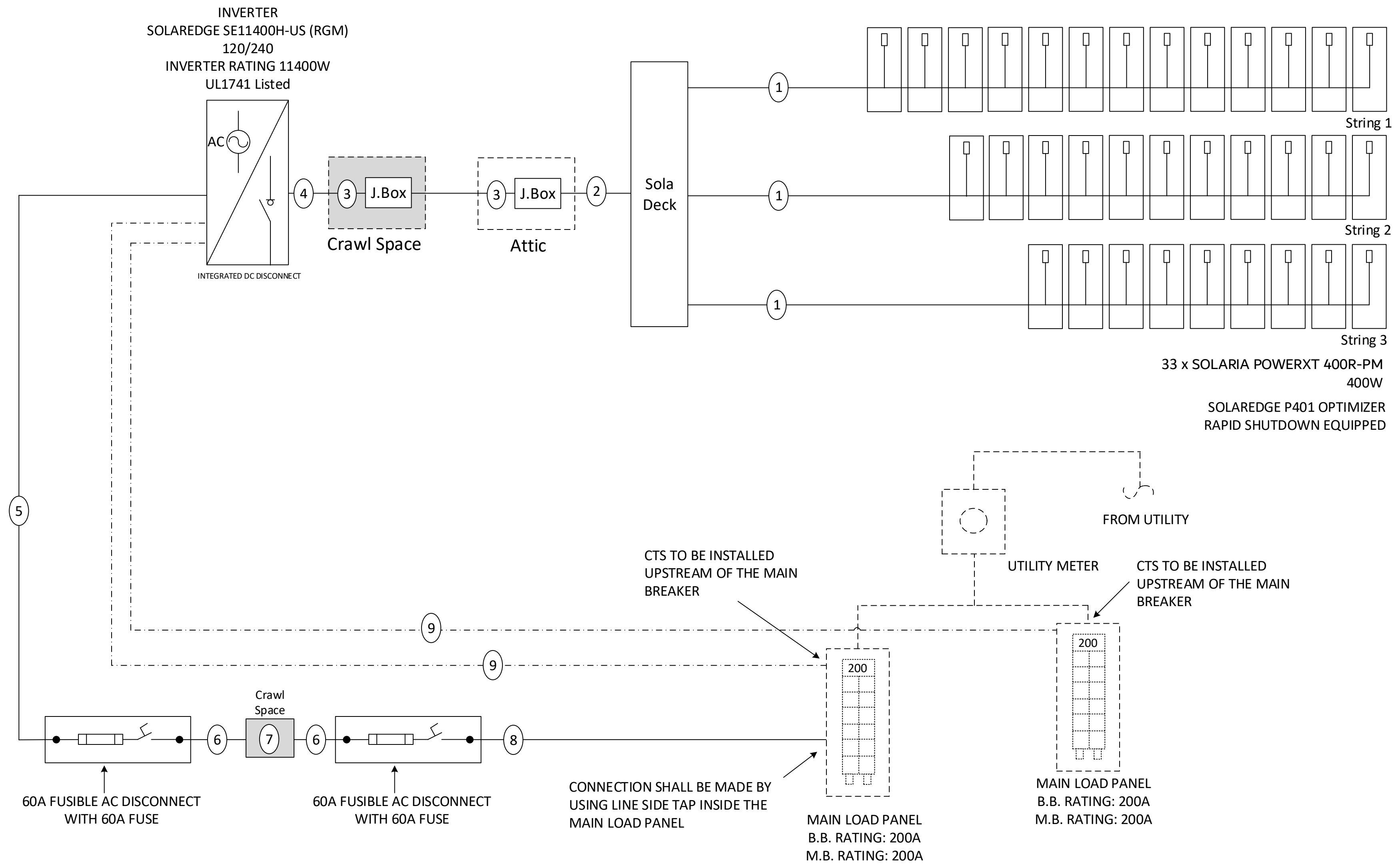
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JOB NUMBER  
22-74-KG00

PROJECT STATUS  
PERMITTING

SHEET  
ELECTRICAL ONE LINE DIAGRAM

KG  
2274KG00-3

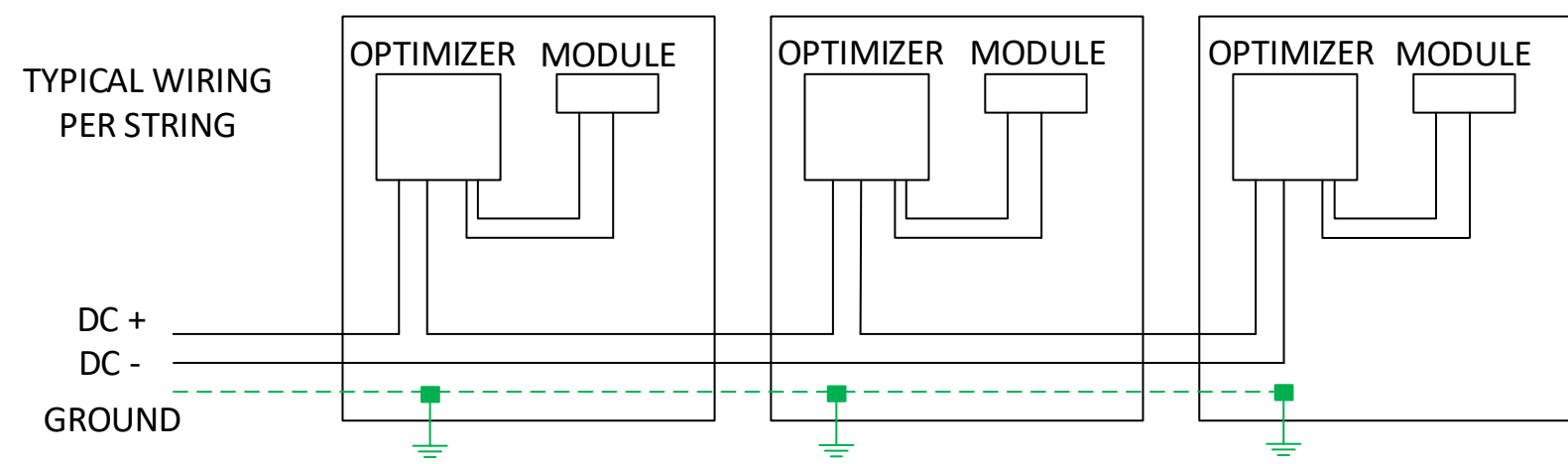


**ELECTRICAL NOTES**

- System Size: 13,200W DC
  - (33) SOLARIA POWERXT 400R-PM
  - (33) SOLAREEDGE P401 OPTIMIZERS
  - (01) SOLAREEDGE SE11400H-US (RGM)
  - Output: 47.5A max @ 240 VAC
  - 11.4 kVA AC output max
- Grounding will be done via Pegasus grounding lugs, 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.

<p>STRING 1: 13 x 400W = 5,200W ea I<sub>mpp</sub> = 13 Adc I<sub>max</sub> = 23.4 Adc V<sub>mpp</sub> = 400 Vdc V<sub>oc</sub> = 13 Vdc</p>	
<p>STRING 2: 11 x 400W = 4,400W ea I<sub>mpp</sub> = 11 Adc I<sub>max</sub> = 23.4 Adc V<sub>mpp</sub> = 400 Vdc V<sub>oc</sub> = 11 Vdc</p>	<p>STRING 3: 09 x 375W = 3,600W ea I<sub>mpp</sub> = 09 Adc I<sub>max</sub> = 23.4 Adc V<sub>mpp</sub> = 400 Vdc V<sub>oc</sub> = 09 Vdc</p>

Sr.No	#Wire	Conduit Size	Ground Wire	Amperage
1	2 x #10 PV		#10 Bare CU	23.4A
2	3 x #10 MC Cable			
3	6 x #10 THHN Cu	3/4" LFMC	#10 Green	
4	6 x #10 THHN Cu	3/4" EMT	#10 Green	59.37A
5	3 x #6 THHN Cu	3/4" LFNC	#08 Green	
6	3 x #6 THHN Cu	3/4" EMT	#08 Green	59.37A
7	3 x #6 THHN Cu	3/4" LFMC	#08 Green	59.37A
8	3 x #6 THHN Cu	3/4" LFNC		59.37A
9	Shielded CAT5e			



Line 1	—
Line 2	—
Neutral	—
Ground	—

DIP SWITCH CONFIGURATION

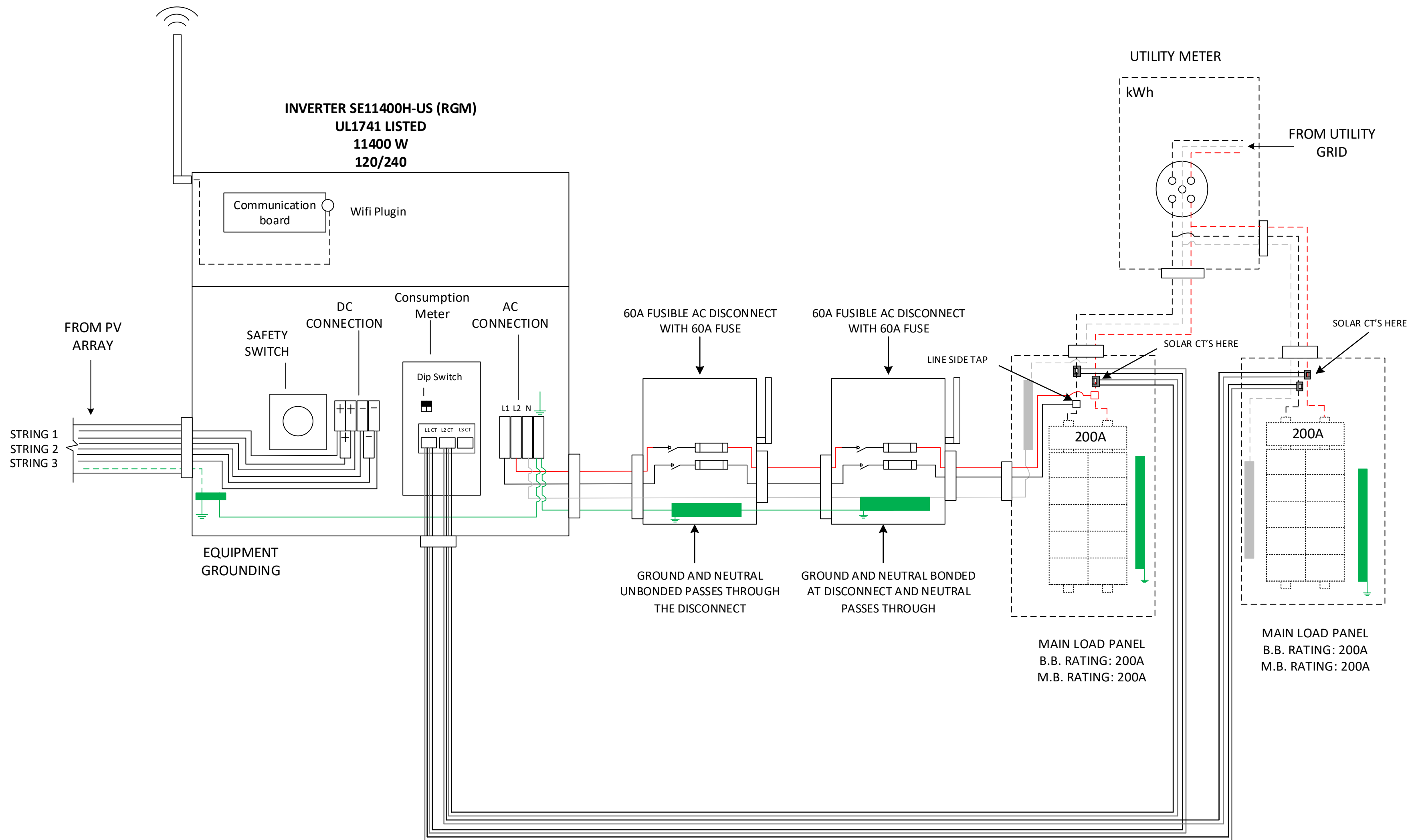
<input checked="" type="checkbox"/>	0	OFF
<input type="checkbox"/>	1	ON

- Note**
- The arrow on the 225A CTs should face the grid.
- Note**
- Dip switch settings are factory set to address 1



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A 12/06/2022

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Customer's Signature

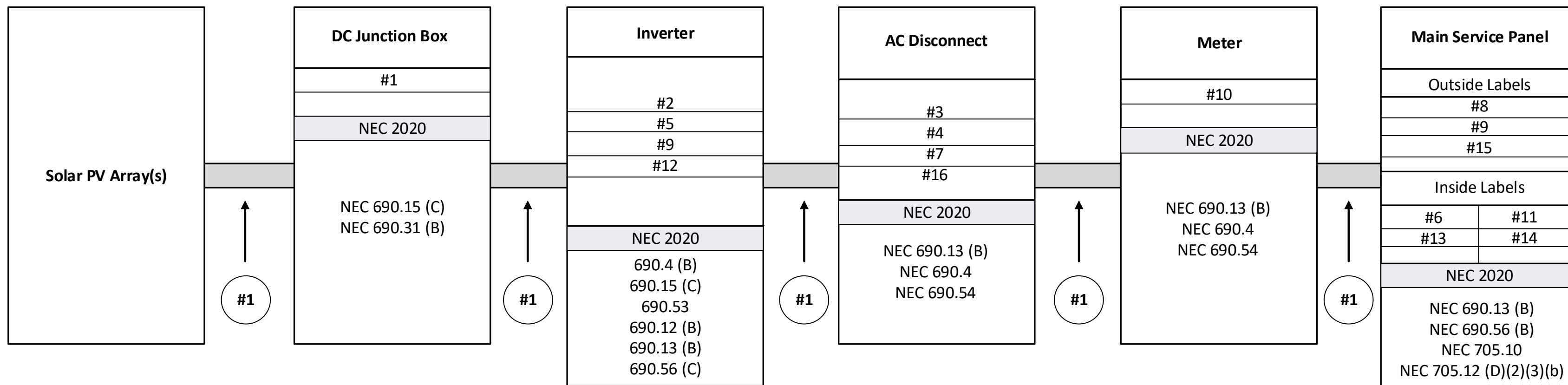
JOB NUMBER  
22-74-KG00

PROJECT STATUS  
PERMITTING

SHEET  
 DETAILED ELECTRICAL DIAGRAM

KG  
 2274KG00-4





**LABELING AND WARNING SIGNS  
NEC 2020**

**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:**

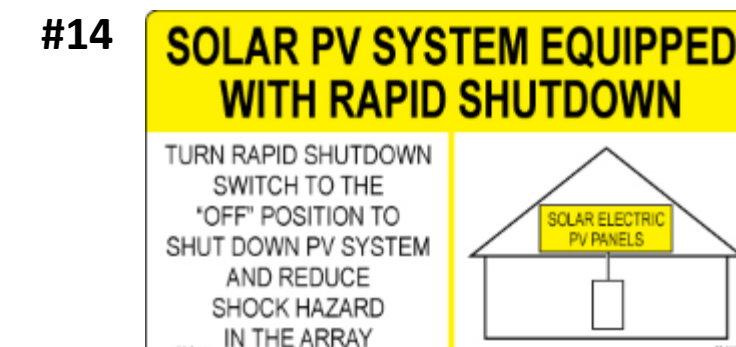
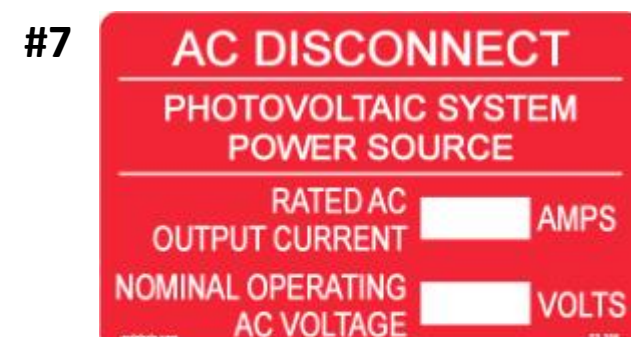
- (1) REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT (USE UL-969) AS STANDARD FOR WEATHER RATING); DURABLE ADHESIVE MATERIALS MEET THIS REQUIREMENT.

**C. MARKING REQUIREMENTS ON DC CONDUIT, RACEWAYS, ENCLOSURES, CABLE ASSEMBLIES, DC COMBINERS AND JUNCTION BOXES;**

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

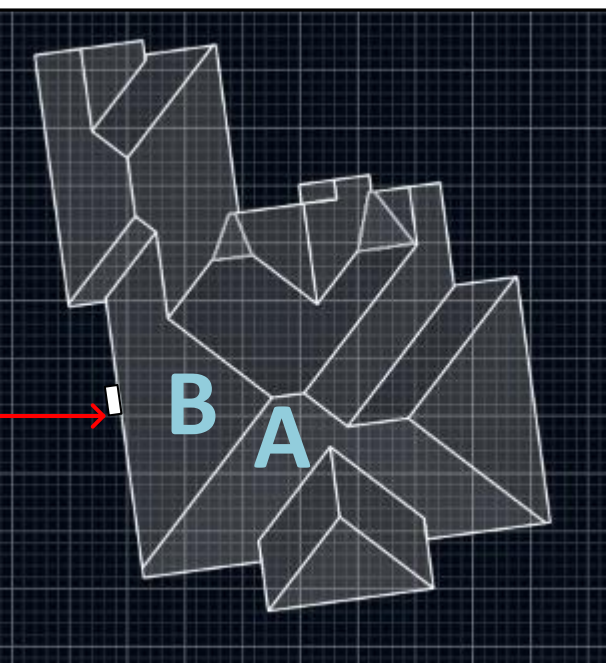
- a. PLACEMENT: MARKINGS SHALL BE PLACED EVERY 10 (TEN) FEET ON ALL INTERIOR AND EXTERIOR DC CONDUITS, RACEWAYS, ENCLOSURES AND CABLE ASSEMBLIES, AT TURNS ABOVE AND/OR BELOW PENETRATIONS, ALL DC COMBINERS AND JUNCTION BOXES.
- b. VERBIAGE: CAUTION SOLAR CIRCUIT
- c. THE FORMAT AND TYPE OF MATERIAL SHALL ADHERE TO SECTION B-3.B & C ABOVE

**D. INVERTERS ARE NOT REQUIRED TO HAVE CAUTION MARKINGS**





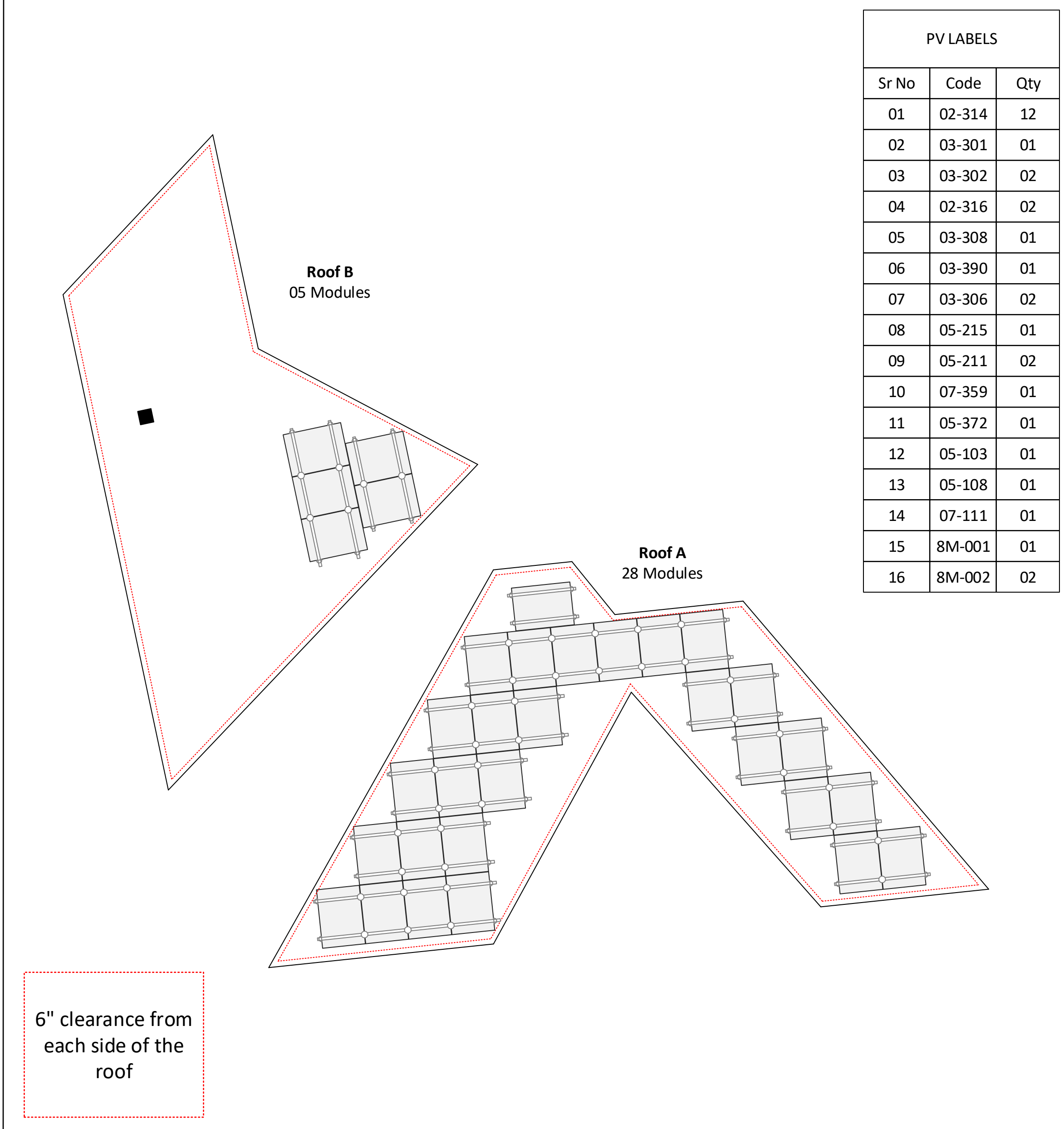
Rails and Splices : PSR-B84 (BLACK)	Roof Attachment : Pegasus Comp Mount
Rafter Spacing : 16 in	There is one layer of shingles Roofing material is asphalt shingles
Attachment Span: 4ft	The roof is located in 120mph wind zone



Module Dimension		
	Roofs	Pitch
A	45°	174°
B	45°	262°



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PV LABELS		
Sr No	Code	Qty
01	02-314	12
02	03-301	01
03	03-302	02
04	02-316	02
05	03-308	01
06	03-390	01
07	03-306	02
08	05-215	01
09	05-211	02
10	07-359	01
11	05-372	01
12	05-103	01
13	05-108	01
14	07-111	01
15	8M-001	01
16	8M-002	02

- 52 x PSR-B84: Pegasus Rail, Black, 84" (7 Feet)
- 28 x PSR-SPL: Pegasus - Bonded, Structural Splice
- 42 x PSR-MCB: Pegasus - Multiclamp, Mid/End, 30 to 40 mm, Black
- 48 x PSR-HEC: Pegasus - Hidden End Clamp
- 33 x PSR-MLP: Pegasus - MLPE Mount
- 25 x PSR-LUG: Pegasus - Grounding Lug
- 50 x PSR-WMC: Pegasus - Wire Management Clip
- 06 x PSR-CBG: Pegasus - Cable Grip
- 48 x PSR-CAP: Pegasus - End Cap
- 90 x PSCR-UBBDT: Pegasus Comp Mount - Open Slot, Black L Foot, Black Flashing, Dovetail 3/8" T-Bolt
- 66 x Heyco Wire Clips

- SOLAR MODULES**
- 33 x SOLARIA POWERXT 400R-PM
- INVERTER & SUPPORTING ITEMS**
- 01 x SolarEdge SE11400H-US US000BNI4 (RGM)
  - 33 x SolarEdge Power Optimizer P401
  - 01 x SE-WFGW-B-S1-NA with Antenna kit
  - 04 x SolarEdge 225A CTs
- WIRE**
- 500 ft x #10 PV WIRE BLK (Cu)

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A 12/06/2022

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Customer's Signature

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JOB NUMBER

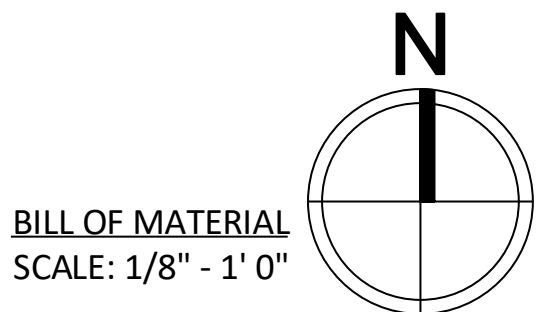
22-74-KG00

PROJECT STATUS

PERMITTING

SHEET

BILL OF MATERIAL

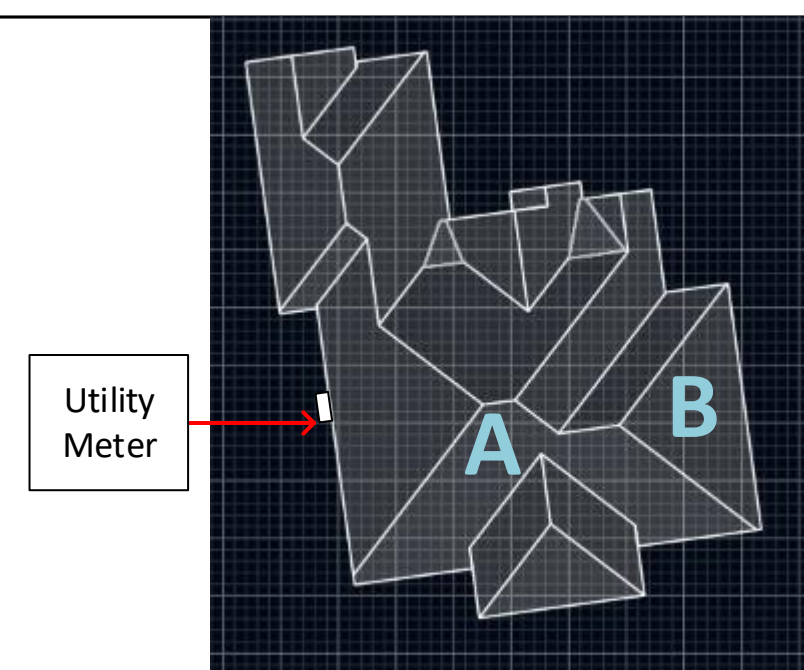


KG  
2274KG00-6

**PV System Dead Load**  
**(Panel + Racking weight) / PV System Area**  
 (No. of panels x Weight of panel(lbs.) +Length of racking(ft.) x 1.17 lb.ft) /  
 (No. of panels x Height x Width) = Total psf

The roof is located in 120mph wind zone

There is one layer of shingles  
 Roofing material is asphalt shingles



Module Dimension		
	Roofs	Pitch
A	45°	174°
B	45°	262°



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**ROOF A**

**PV System Dead Load**  
**(Panel + Racking weight) / PV System Area**  
 (28 panels x 48 lbs./panel + 223 ft. of racking x 1.17 lb.ft) /  
 (28 panels x 5.393' x 3.95') = 2.59 psf

**ROOF B**

**PV System Dead Load**  
**(Panel + Racking weight) / PV System Area**  
 (05 panels x 48 lbs./panel + 40 ft. of racking x 1.17 lb.ft) /  
 (05 panels x 5.393' x 3.95') = 2.59 psf



A 12/06/2022

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Customer's Signature

JOB NUMBER  
22-74-KG00

PROJECT STATUS  
PERMITTING

SHEET  
PV DEAD LOAD

**KG**  
**2274KG00-7**