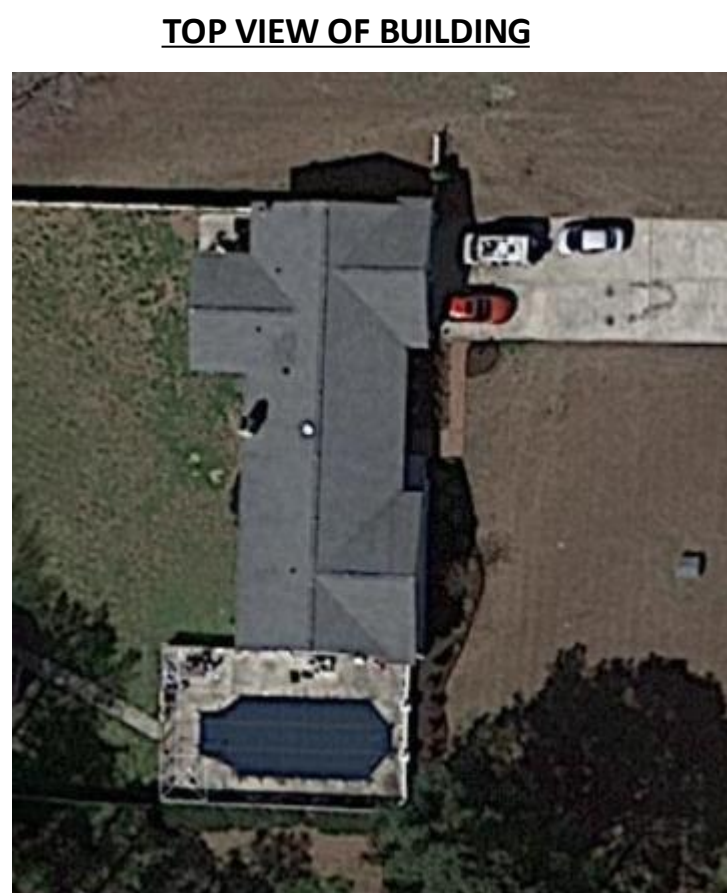


PROJECT DETAILS	
PV Modules	36 x REC ALPHA BLACK 375W
Optimizers	36 x P401
Inverter	1 x SE11400H-US (RGM)
Roof Type	Asphalt Shingles
Racking	PSR-B84 Rails (Black)
Mounting Type	CompMount Flashing (Black)
DC SIZE	13.5 kW
AC SIZE	11.4 kVA

DRAWING INDEX			
Item	Drawing #	Rev	Description
1	22273SM00-0	A	Drawing Index
2	22273SM00-1	A	Site Layout
3	22273SM00-2	A	String Mapping
4	22273SM00-3	A	Electrical One Line Diagram
5	22273SM00-4	A	Detailed Electrical Wiring Schematic
6	22273SM00-5	A	PV Labels
7	22273SM00-6	A	Bill of Materials
8	22273SM00-7	A	PV Dead Load



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PHOTOVOLTIC NOTES

- 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
- 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 07/29/2022

Customer's Signature

JOB NUMBER
22-273-SM00

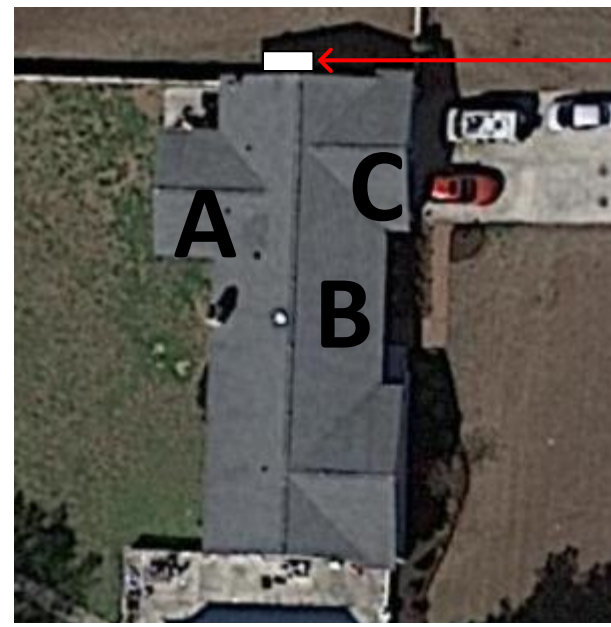
PROJECT STATUS
PERMITTING

SHEET
DRAWING INDEX

SM
22273SM00-0

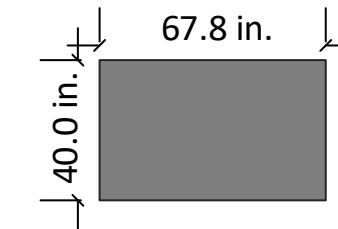
There is one layer of shingles
Roofing material is asphalt shingles

The roof is located in 116mph wind zone



Utility
Meter

Module
Dimension



Roofs	Pitch	Azimuth
A	18°	182°
B	18°	92°
C	18°	182°

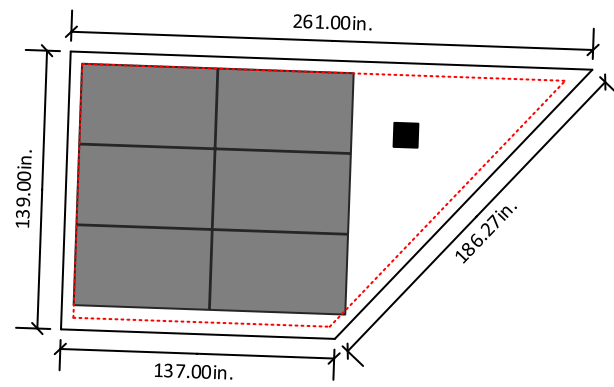


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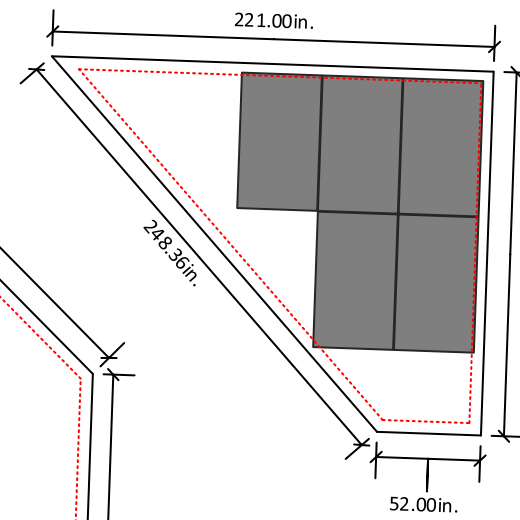
SYSTEM DETAILS

NUMBER OF PANELS : 36
PANELS MODEL : REC ALPHA BLACK 375W
DC SIZE : 13.5 kW
AC SIZE : 11.4 kVA

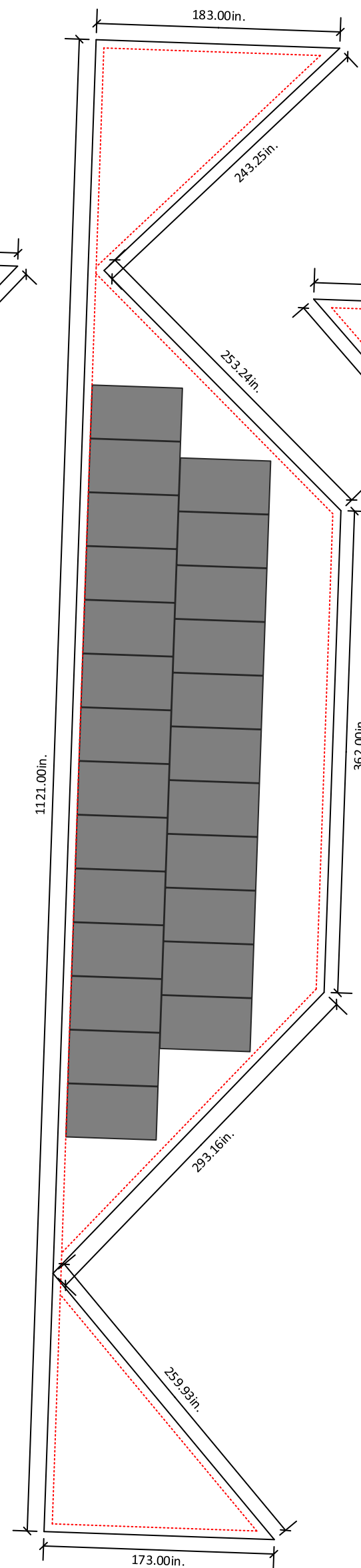
Roof A
06 Modules



Roof C
05 Modules

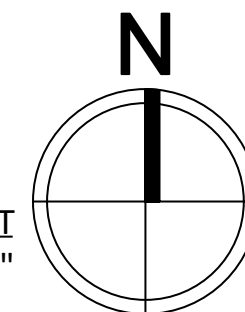


Roof B
25 Modules



6" clearance from
each side of the
roof

SITE LAYOUT
SCALE: 1/8" - 1' 0"



Anne Hollowell

1879 Oakridge Duncan Road
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PV Installation
Professional

Ali Buttar
PVIP #031310-32

A 07/29/2022

Customer's Signature

JOB NUMBER
22-273-SM00

PROJECT STATUS
PERMITTING

SHEET
SITE LAYOUT

SM
22273SM00-1

String Layout					
Inverter SE11400H-US (RGM)					
Strings #	No. of Modules	Color Code	Strings #	No. of Modules	Color Code
String 1	13				
String 2	12				
String 3	11				



Utility Meter

Module Dimension		
	40.0 in.	67.8 in.
Roofs	Pitch	Azimuth
A	18°	182°
B	18°	92°
C	18°	182°

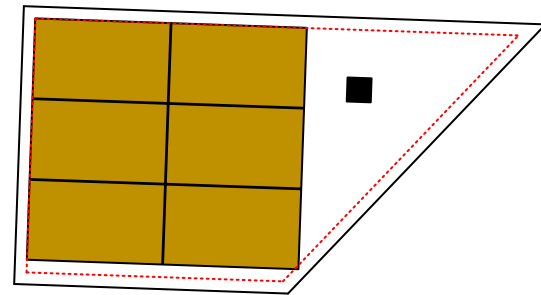


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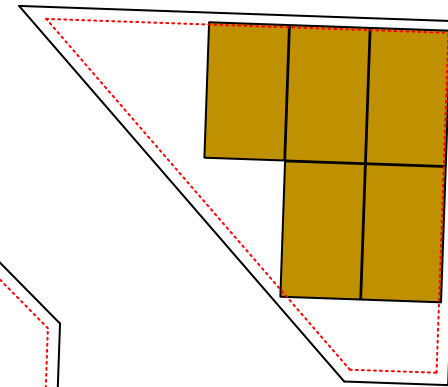
SYSTEM DETAILS

NUMBER OF PANELS : 36
 PANELS MODEL : REC ALPHA BLACK 375W
 DC SIZE : 13.5 kW
 AC SIZE : 11.4 kVA

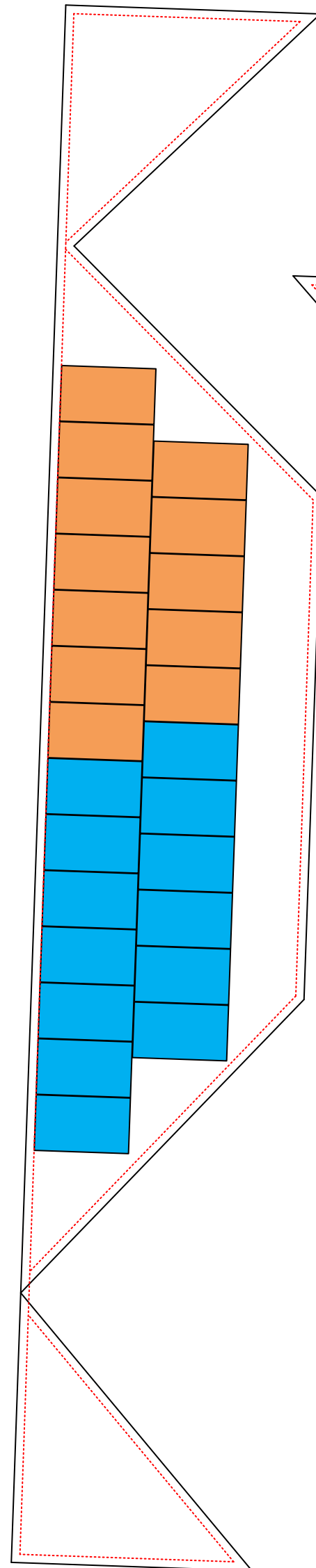
Roof A
06 Modules



Roof C
05 Modules

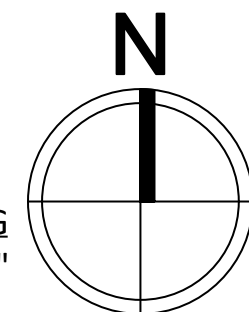


Roof B
25 Modules



6" clearance from each side of the roof

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



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 Fuquay Varina NC 27526



A 07/29/2022

Customer's Signature

JOB NUMBER
22-273-SM00

PROJECT STATUS
PERMITTING

SHEET
STRING MAPPING

SM
22273SM00-2

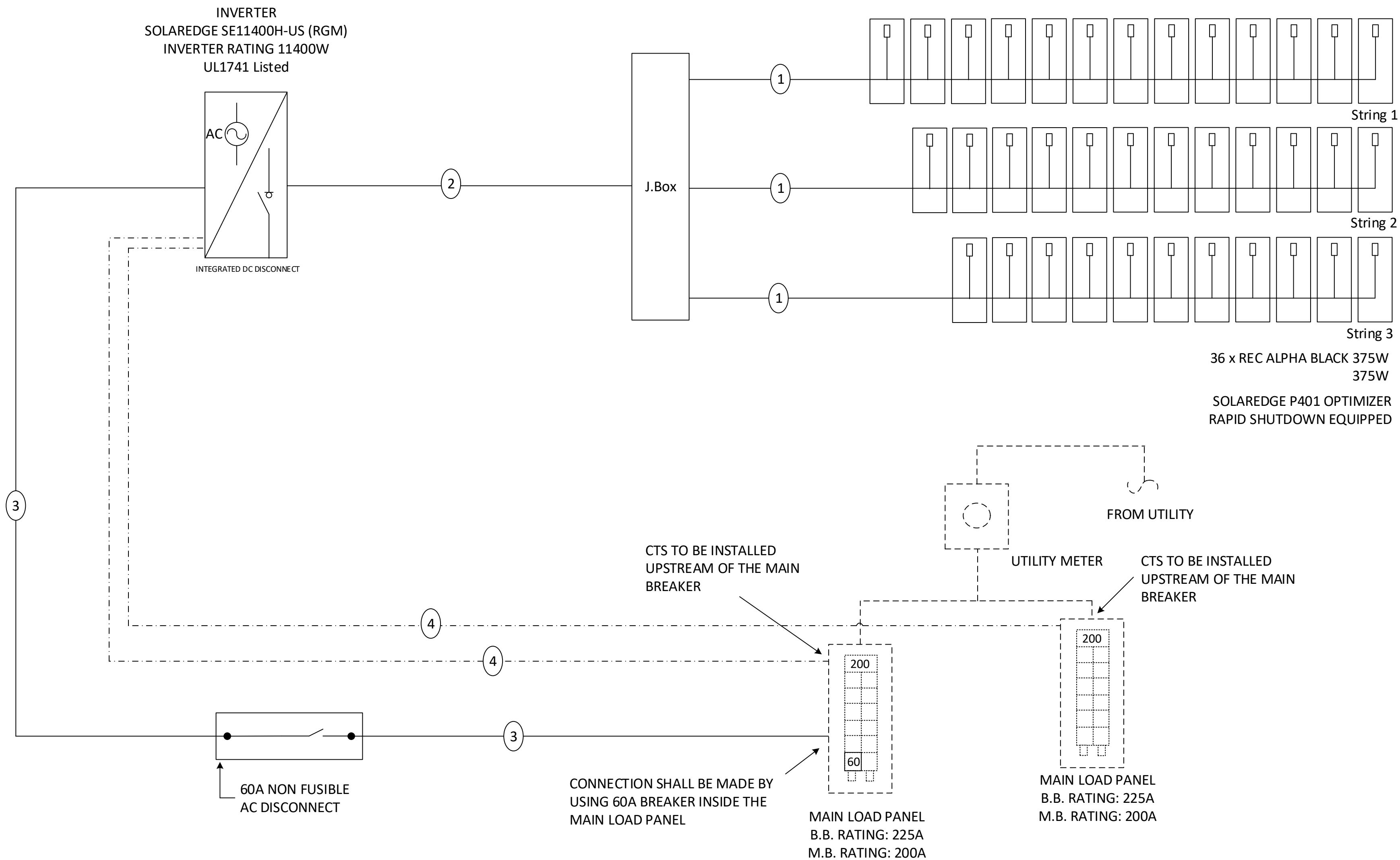
Customer's Signature

JOB NUMBER
22-273-SM00

PROJECT STATUS
PERMITTING

SHEET
ELECTRICAL ONE LINE DIAGRAM

SM
22273SM00-3



ELECTRICAL NOTES

- System Size: 13,500W DC
- (36) REC ALPHA BLACK 375W
- (36) 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.

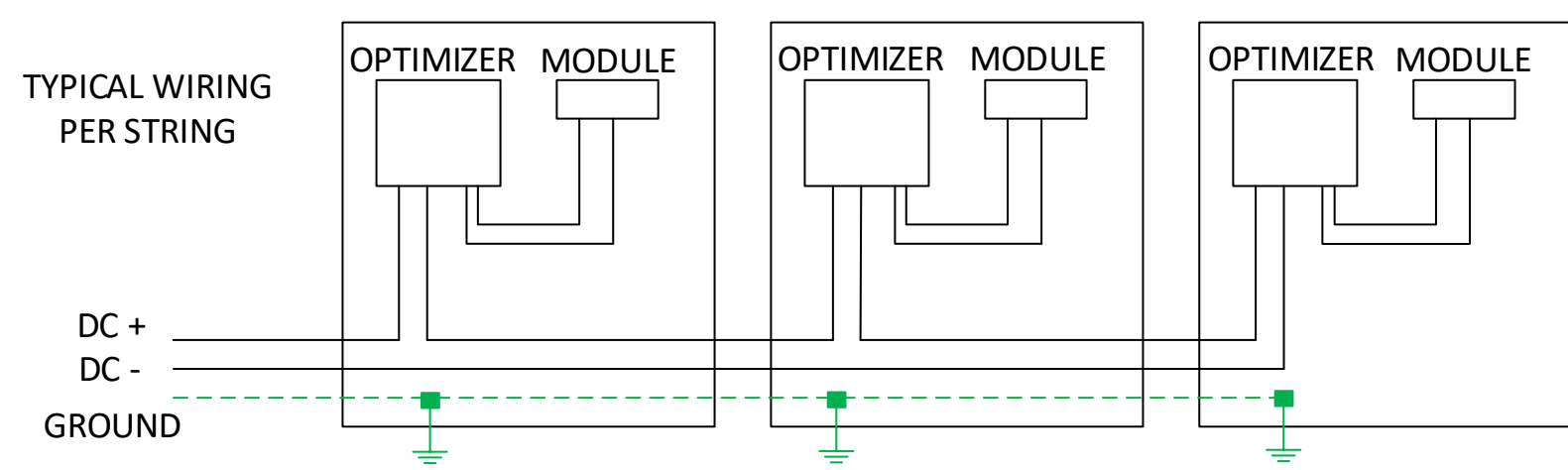
STRING 1:
13 x 375W = 4,875W ea
I_{mpp} = 12.187 Adc
I_{max} = 23.4 Adc
V_{mpp} = 400 Vdc
V_{oc} = 13 Vdc

STRING 2:
12 x 375W = 4,500W ea
I_{mpp} = 11.25 Adc
I_{max} = 23.4 Adc
V_{mpp} = 400 Vdc
V_{oc} = 12 Vdc

STRING 3:
11 x 375W = 4,125W ea
I_{mpp} = 10.31 Adc
I_{max} = 23.4 Adc
V_{mpp} = 400 Vdc
V_{oc} = 11 Vdc

Note: 60A breaker should be connected at the end of the bus bar of main load panel for solar connection

Sr.No	#Wire	Conduit Size	Ground Wire	Amperage
1	2 x #10 PV		#10 Bare CU	23.4A
2	6 x #10 THHN Cu	3/4" EMT	#10 Green	
3	3 x #6 THHN Cu	3/4" EMT	#8 Green	59.37A
4	Shielded CAT5e			



Line 1	—
Line 2	—
Neutral	—
Ground	—

DIP SWITCH CONFIGURATION

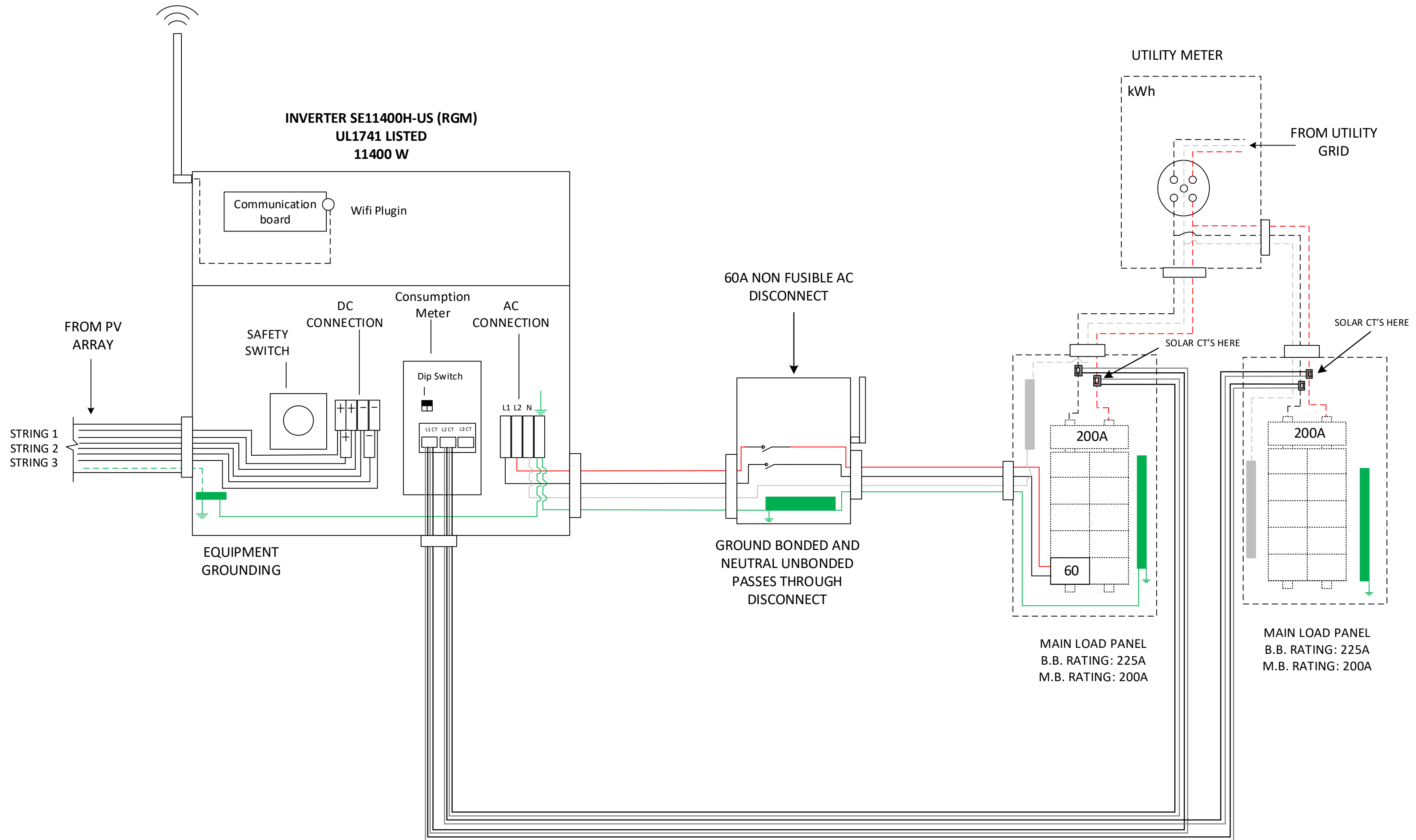
<input checked="" type="checkbox"/>	0	OFF
<input type="checkbox"/>	1	ON

- 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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Note: 60A breaker should be connected at the end of the bus bar of main load panel for solar connection



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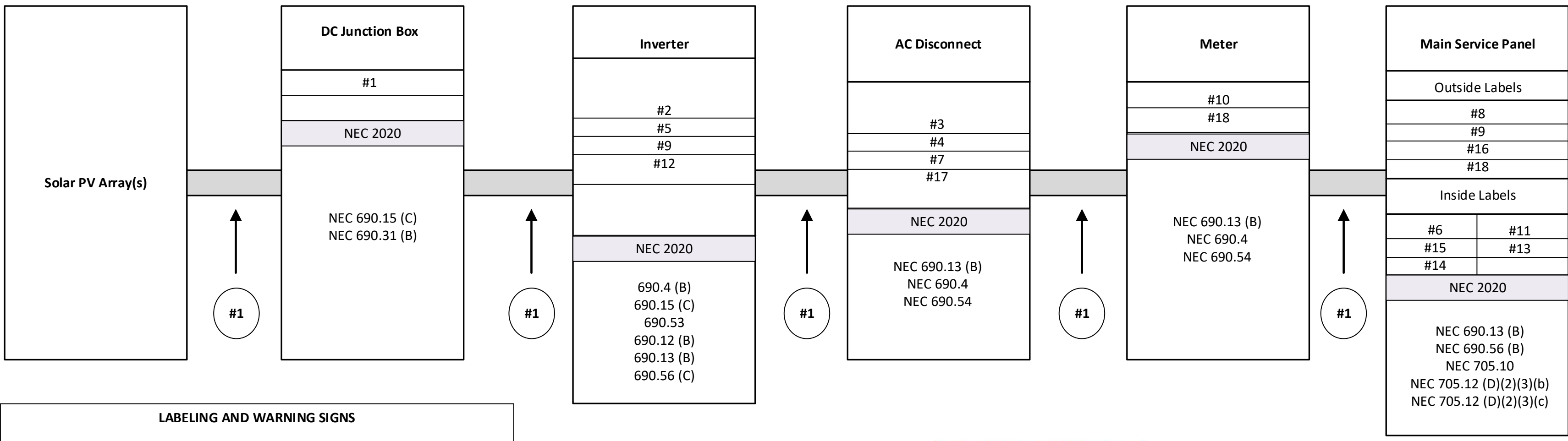
Customer's Signature

JOB NUMBER
 22-273-SM00

PROJECT STATUS
 PERMITTING

SHEET
 DETAILED ELECTRICAL DIAGRAM

SM
 22273SM00-4



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

#2

#3

#4

#5

#6

#7

#8

#9

#10

#11

#12

#13

#14

#15

#16

#17



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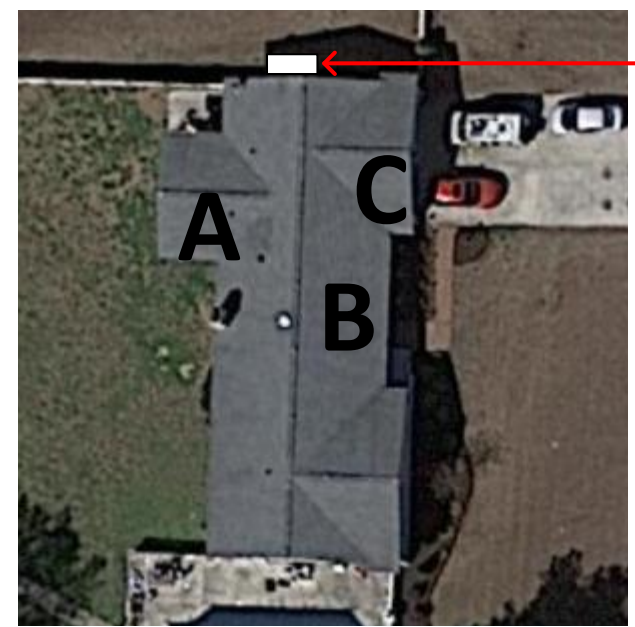
Customer's Signature _____

JOB NUMBER 22-273-SM00

PROJECT STATUS PERMITTING

SHEET PV LABELS

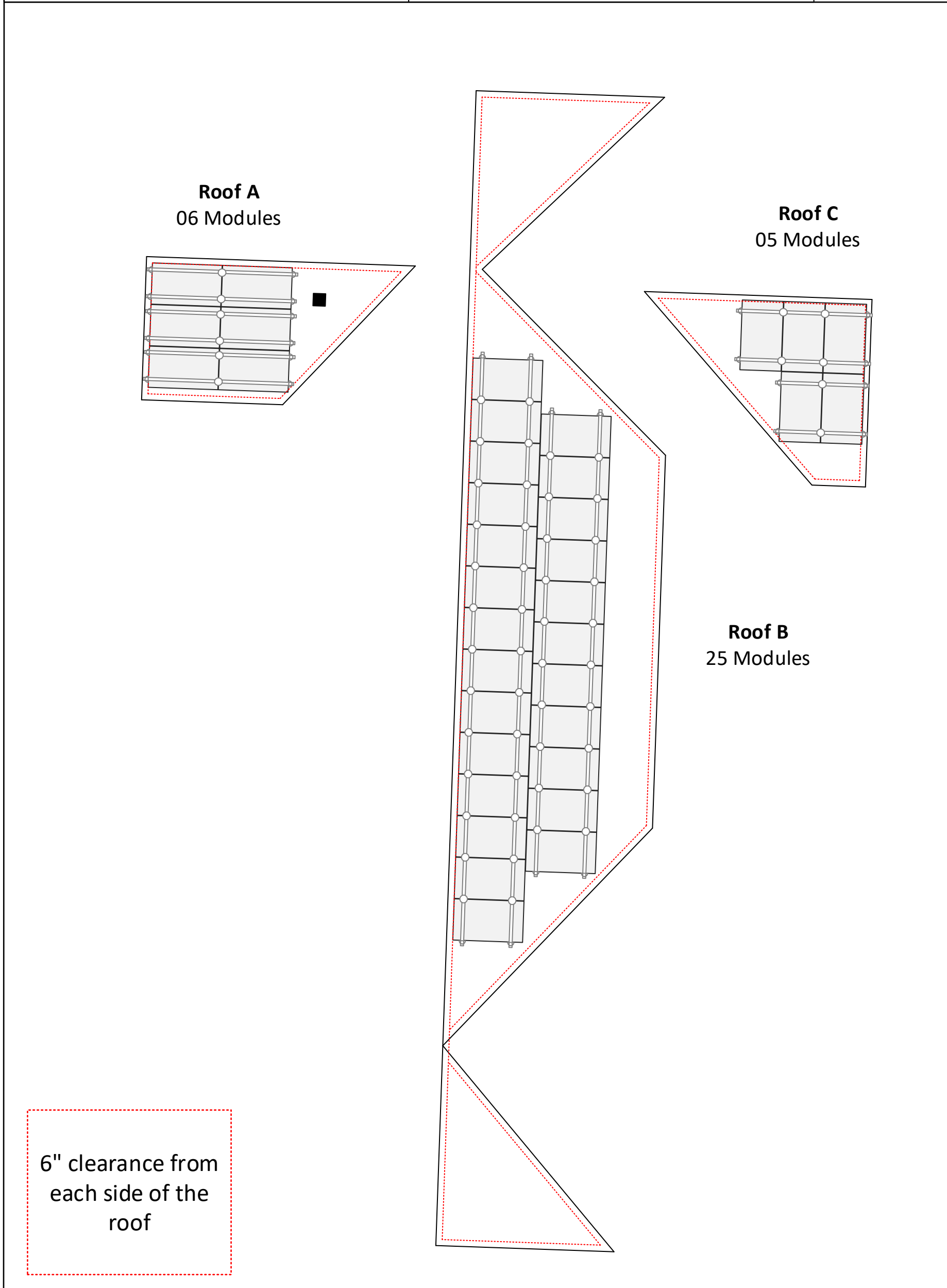
Rails and Splices : PSR-B84 (BLACK)	Roof Attachment : Pegasus Comp Mount
Rafter Spacing : 16 in	There is one layer of shingles Roofing material is asphalt shingles
Attachment Span: 4ft	The roof is located in 116mph wind zone



Module Dimension		
	Roofs	Pitch
A	18°	182°
B	18°	92°
C	18°	182°



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PV LABELS		
Sr No	Code	Qty
01	02-314	12
02	03-301	01
03	03-302	01
04	02-316	01
05	03-308	01
06	03-390	01
07	03-306	01
08	05-215	01
09	05-211	02
10	07-359	01
11	05-372	01
12	05-103	01
13	05-342	01
14	05-108	01
15	07-111	01
16	8M-001	01
17	8M-002	01

- 44 x PSR-B84: Pegasus Rail, Black, 84" (7 Feet)
- 30 x PSR-SPL: Pegasus - Bonded, Structural Splice
- 58 x PSR-MCB: Pegasus - Multiclamp, Mid/End, 30 to 40 mm, Black
- 28 x PSR-HEC: Pegasus - Hidden End Clamp
- 36 x PSR-MLP: Pegasus - MLPE Mount
- 09 x PSR-LUG: Pegasus - Grounding Lug
- 54 x PSR-NSJ: Pegasus - N-S Bonding Jumper
- 06 x PSR-WMC: Pegasus - Wire Management Clip
- 06 x PSR-CBG: Pegasus - Cable Grip
- 28 x PSR-CAP: Pegasus - End Cap
- 74 x PSCR-UBBDT: Pegasus Comp Mount - Open Slot, Black L Foot, Black Flashing, Dovetail 3/8" T-Bolt
- 72 x Heyco Wire Clips

- SOLAR MODULES**
- 36 x REC ALPHA BLACK 375W
- INVERTER & SUPPORTING ITEMS**
- 01 x SolarEdge SE11400H-US US000BNI4 (RGM)
 - 36 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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Customer's Signature

JOB NUMBER
 22-273-SM00

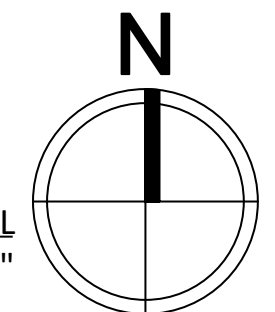
PROJECT STATUS
 PERMITTING

SHEET
 BILL OF MATERIAL

SM
 22273SM00-6

6" clearance from each side of the roof

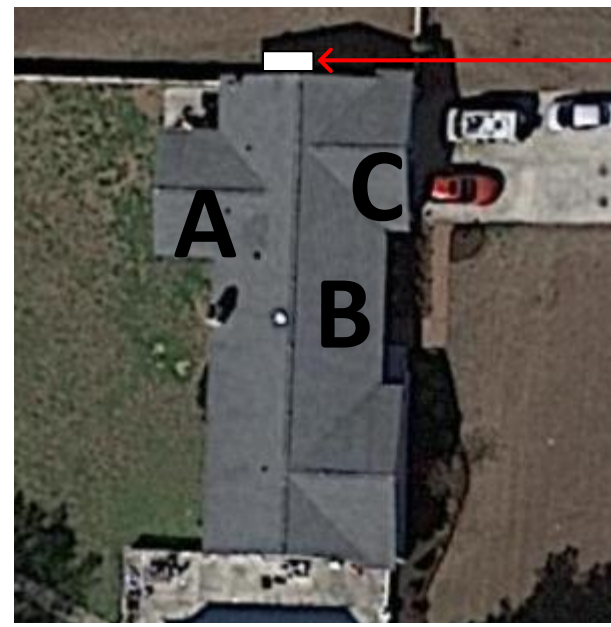
BILL OF MATERIAL
 SCALE: 1/8" - 1' 0"



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

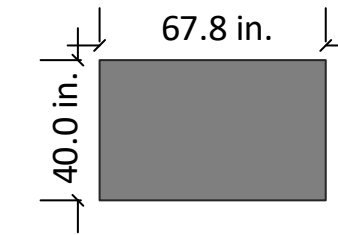
The roof is located in 116mph wind zone

There is one layer of shingles
 Roofing material is asphalt shingles



Utility
Meter

Module
Dimension



Roofs	Pitch	Azimuth
A	18°	182°
B	18°	92°
C	18°	182°



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ROOF A

PV System Dead Load
(Panel + Racking weight) / PV System Area
 (06 panels x 43 lbs./panel + 68 ft. of racking x 1.17 lb.ft) /
 (06 panels x 5.65' x 3.33') = 2.98 psf

ROOF B

PV System Dead Load
(Panel + Racking weight) / PV System Area
 (25 panels x 43 lbs./panel + 168 ft. of racking x 1.17 lb.ft) /
 (25 panels x 5.65' x 3.33') = 2.70 psf

ROOF C

PV System Dead Load
(Panel + Racking weight) / PV System Area
 (05 panels x 43 lbs./panel + 34 ft. of racking x 1.17 lb.ft) /
 (05 panels x 5.65' x 3.33') = 2.70 psf



A 07/29/2022

Customer's Signature

JOB NUMBER
22-273-SM00

PROJECT STATUS
PERMITTING

SHEET
PV DEAD LOAD

SM
 22273SM00-7