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June 23, 2022
Revised March 15, 2023

Illumine Industries
39111 Paseo Padre Parkway Suite 313
Fremont, CA 94538

Scott Wyssling, PE

Digitally signed by Scott Wyssling, PE
DN: C=US, S=Utah, L=Alpine, O=Wyssling Consulting, OU=Engineering, CN="Scott Wyssling, PE", E=swyssling@wysslingconsulting.com
Reason: I am the author of this document
Location: your signing location here
Date: 2023.03.15 09:59:17-0600
Foxit PDF Editor Version: 11.1.0

Re: Engineering Services
Ramirez Residence
38 Kirby Smith Circle, Spring Lake NC
10.800 kW System

To Whom It May Concern:

We have received information regarding solar panel installation on the roof of the above referenced structure. Our evaluation of the structure is to verify the existing capacity of the roof system and its ability to support the additional loads imposed by the proposed solar system.

A. Site Assessment Information

1. Site visit documentation identifying attic information including size and spacing of framing for the existing roof structure.
2. Design drawings of the proposed system including a site plan, roof plan and connection details for the solar panels. This information will be utilized for approval and construction of the proposed system.

B. Description of Structure:

Roof Framing: Assumed prefabricated wood trusses at 24" on center. All truss members are constructed of 2x4 dimensional lumber.

Roof Material: Composite Asphalt Shingles

Roof Slopes: 27 degrees

Attic Access: Inaccessible

Foundation: Permanent

C. Loading Criteria Used

- **Dead Load**
 - Existing Roofing and framing = 7 psf
 - New Solar Panels and Racking = 3 psf
 - TOTAL = 10 PSF
- **Live Load** = 20 psf (reducible) – 0 psf at locations of solar panels
- **Ground Snow Load** = 10 psf
- **Wind Load** based on ASCE 7-10
 - Ultimate Wind Speed = 119 mph (based on Risk Category II)
 - Exposure Category C

Analysis performed of the existing roof structure utilizing the above loading criteria is in accordance with the 2018 North Carolina Residential Code, including provisions allowing existing structures to not require strengthening if the new loads do not exceed existing design loads by 105% for gravity elements and 110% for seismic elements. This analysis indicates that the existing framing will support the additional panel loading without damage, if installed correctly.

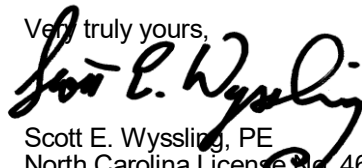
D. Solar Panel Anchorage

1. The solar panels shall be mounted in accordance with the most recent K2 Systems installation manual. If during solar panel installation, the roof framing members appear unstable or deflect non-uniformly, our office should be notified before proceeding with the installation.
2. The maximum allowable withdrawal force for a M5 x 60mm lag screw is 213 lbs per inch of penetration as identified in the National Design Standards (NDS) of timber construction specifications. Based on two (2) screws with a minimum penetration depth of 1-5/8", the allowable capacity per connection is greater than the design withdrawal force (demand). Considering the variable factors for the existing roof framing and installation tolerances, the connection using two (2) M5 x 60mm lag screw with a minimum of 1-5/8" embedment will be adequate and will include a sufficient factor of safety.
3. Considering the wind speed, roof slopes, size and spacing of framing members, and condition of the roof, the panel supports shall be placed no greater than 48" on center.

Based on the above evaluation, this office certifies that with the racking and mounting specified, the existing roof system will adequately support the additional loading imposed by the solar system. This evaluation is in conformance with the North Carolina Residential Code, current industry standards and practice, and is based on information supplied to us at the time of this report.

Should you have any questions regarding the above or if you require further information do not hesitate to contact me.

Very truly yours,



Scott E. Wyssling, PE
North Carolina License No. 46546
North Carolina Firm No. P-2308

THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES



Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
North Carolina COA # P-2308

Date Signed 3/15/2023

SHEET CATALOG

INDEX NO.	DESCRIPTION
T-01	COVER PAGE
S-01	MOUNTING DETAIL
S-02	STRUCTURAL DETAIL
E-01	SINGLE LINE DIAGRAM
E-02	THREE LINE DIAGRAM
E-03	STRING WIRING DIAGRAM
PL-01	WARNING PLACARDS
PL-02	DIRECTORY PLACARD
PL-03	SAFETY PLANS-1
PL-04	SAFETY PLANS-2
SS	SPEC SHEET(S)

SCOPE OF WORK

GENERAL SYSTEM INFORMATION:
 SYSTEM SIZE:
 10800W DC, 10000W AC
 MODULES:
 (27)HANWHA QCELLS Q.PEAK DUO BLK ML-G10PLUS 400W
 INVERTER:
 (1)SOLAREDEGE TECHNOLOGIES SE10000H-US(240V)
 OPTIMIZER:
 (27)SOLAREDEGE P340 POWER OPTIMIZER

GENERAL NOTES

- 1.MODULES ARE LISTED UNDER UL 1703 AND CONFORM TO THE STANDARDS.
- 2.INVERTERS ARE LISTED UNDER UL 1741 AND CONFORM TO THE STANDARDS.
- 3.DRAWINGS ARE DIAGRAMMATIC, INDICATING GENERAL ARRANGEMENT OF THE PV SYSTEM AND THE ACTUAL SITE CONDITION MIGHT VARY.
- 4.WORKING CLEARANCES AROUND THE NEW PV ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH NEC 110.26.
- 5.ALL GROUND WIRING CONNECTED TO THE MAIN SERVICE GROUNDING IN MAIN SERVICE PANEL/ SERVICE EQUIPMENT.
- 6.ALL CONDUCTORS SHALL BE 600V, 75°C STANDARD COPPER UNLESS OTHERWISE NOTED.
- 7.WHEN REQUIRED, A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
- 8.THE SYSTEM WILL NOT BE INTERCONNECTED BY THE CONTRACTOR UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND/OR THE UTILITY.
- 9.ROOF ACCESS POINT SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREES, WIRES OR SIGNS.
- 10.PV ARRAY COMBINER/JUNCTION BOX PROVIDES TRANSITION FROM ARRAY WIRING TO CONDUIT WIRING

NANCY RAMIREZ - 10.800kW DC, 10.000kW AC

SITE PLAN LAYOUT

APPLICABLE CODES

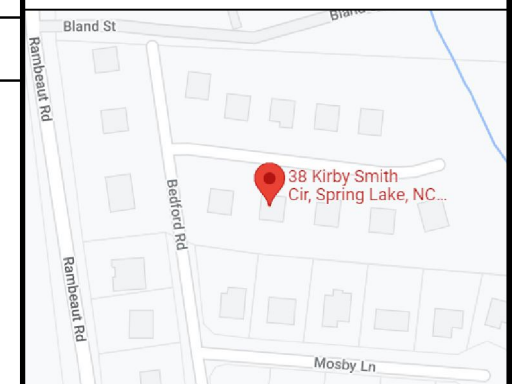
- NORTH CAROLINA ELECTRIC CODE:NCEC 2017
- NORTH CAROLINA FIRE CODE:NCFC 2018
- NORTH CAROLINA BUILDING CODE:NCBC 2018
- NORTH CAROLINA RESIDENTIAL CODE: NCRC 2018

NOTE: NO GATE OR FENCE

ENGINEERING SCOPE OF WORK

1. ILLUMINE INDUSTRIES INC. HAS ONLY PROVIDED DRAFTING SERVICES FOR THE PERMIT DRAWINGS. NO ACTUAL ENGINEERING WORK, ENGINEERING REVIEW OR ENGINEERING APPROVAL HAS BEEN CONDUCTED BY ILLUMINE INDUSTRIES INC UNLESS NOTED OTHERWISE.
2. WHEN A PROFESSIONAL ENGINEER APPROVES AND SEALS THE DESIGN FOR COMPONENTS OF THEIR RESPECTIVE DISCIPLINE (STRUCTURAL/ELECTRICAL) SHOWN ON THESE PERMIT DRAWINGS, HE/SHE:
 - a. TAKES FULL DIRECT CONTROL OF THE ENGINEERED DESIGN.
 - b. IS GIVEN ACCESS TO PERSONALLY SUPERVISE AND RECTIFY ANY ASPECT OF THE ENGINEERED DESIGN.
 - c. HAS FULLY ACCEPTED RESPONSIBILITY FOR THE ENGINEERED DESIGN.

VICINITY MAP



TITAN SOLAR POWER
 ADDRESS: 525W, BASELINE RD
 MESA AZ,85210
 LICENSE#'S GC:84439 EC:U.34445

CUSTOMER INFORMATION

NAME:NANCY RAMIREZ
 ADDRESS:38 KIRBY SMITH CIR, SPRING LAKE, NC 28390
 35.233667, -78.941037
 APN: 010-513-000-464
 TITAN'S PRN NO: TSP130202
 AHJ:NC-COUNTY HARNETT
 UTILITY:SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION
 PRN NUMBER: TPS-54899



COVER PAGE

DRAFTED BY: K.UTKARSHA	PAPER SIZE:17"X11"
QC'ED BY: A.N.KRISHNAN	
SCALE:AS NOTED	REV:D
DATE:3/14/2023	T-01

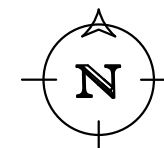
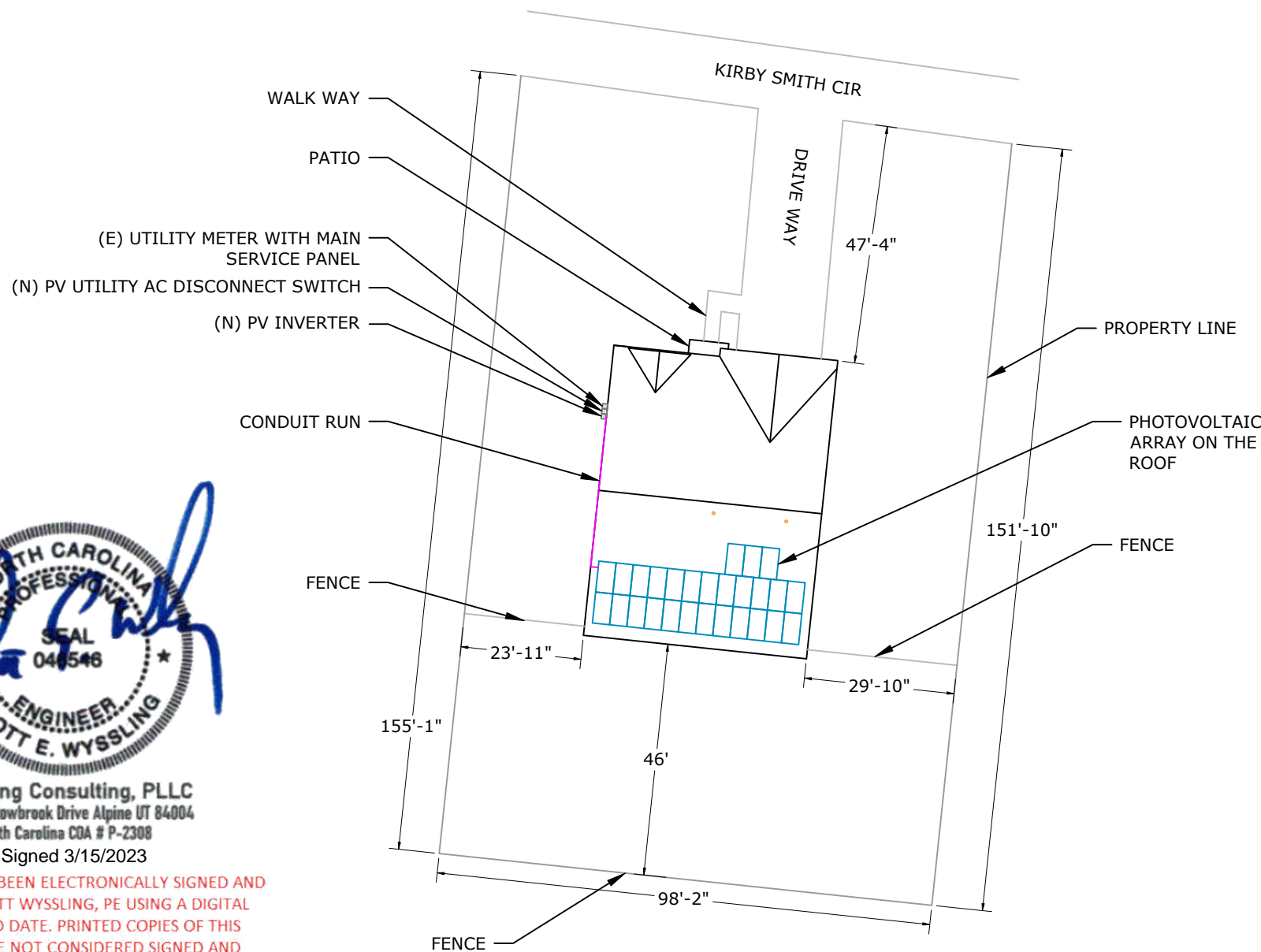
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03/14/2023



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SCALE:1"=30'-0"



INSTALLATION NOTES

- 1.STRUCTURAL ROOF MEMBER LOCATIONS ARE ESTIMATED AND SHOULD BE LOCATED AND VERIFIED BY THE CONTRACTOR WHEN LAG BOLT PENETRATION OR MECHANICAL ATTACHMENT TO THE STRUCTURE IS REQUIRED.
- 2.ROOFTOP PENETRATIONS FOR SOLAR RACKING WILL BE COMPLETED AND SEALED WITH APPROVED SEALANT PER CODE BY A LICENSED CONTRACTOR.
- 3.LAGS MUST HAVE A MINIMUM 2.5" THREAD EMBEDMENT INTO THE STRUCTURAL MEMBER.
- 4.ALL PV RACKING ATTACHMENTS SHALL BE STAGGERED BY ROW BETWEEN THE ROOF FRAMING MEMBERS AS NECESSARY.
- 5.ROOF MOUNTED STANDARD RAIL REQUIRES ONE THERMAL EXPANSION GAP FOR EVERY RUN OF RAIL GREATER THAN 40'.
- 6.ALL CONDUCTORS AND CONDUITS ON THE ROOF SHALL BE MINIMUM 2.5" ABOVE THE ROOF SURFACE (INCLUDING CABLES UNDERNEATH MODULES AND RACKING).
- 7.THE PV INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL OR BUILDING ROOF VENTS.



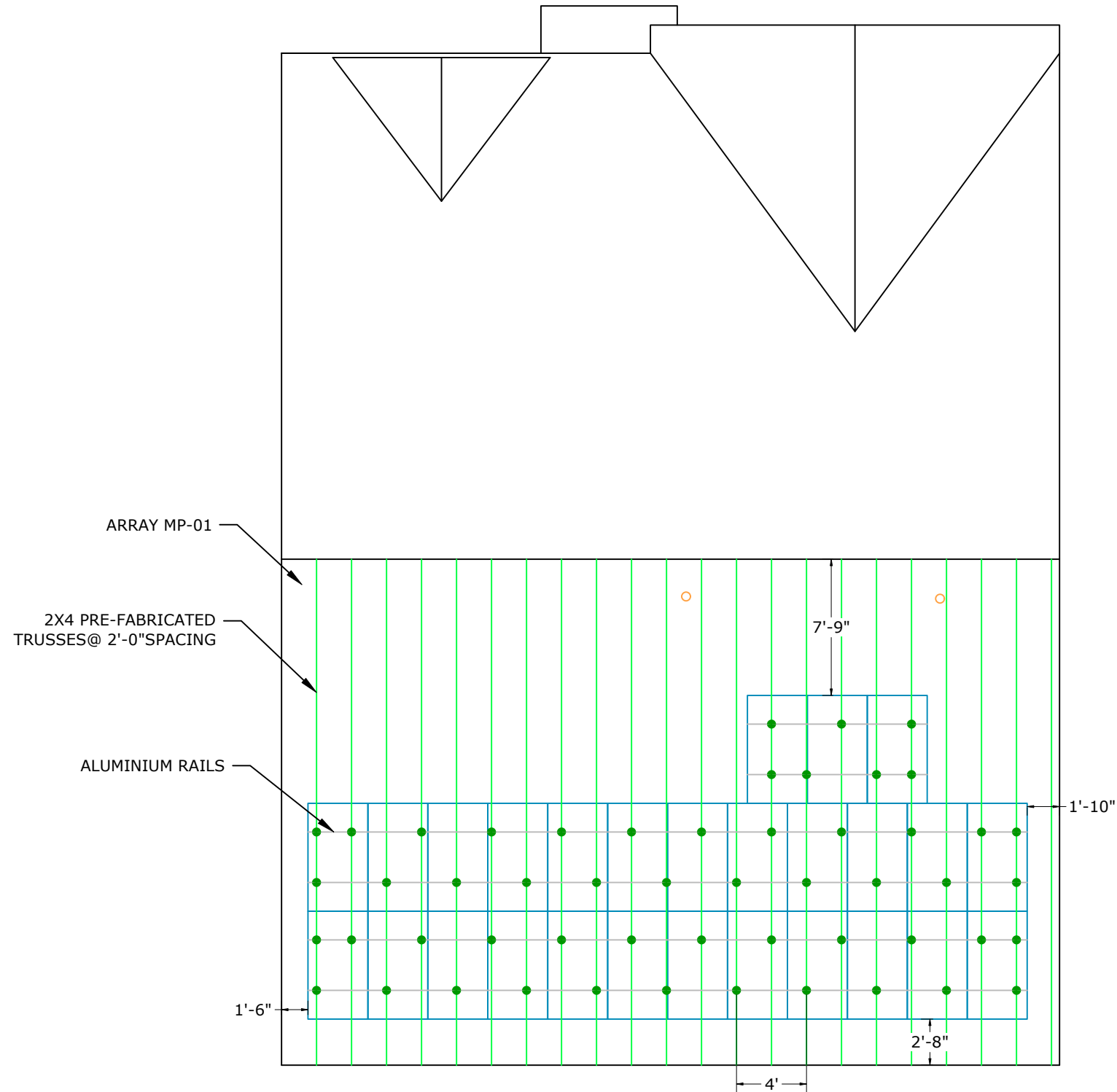
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SITE INFORMATION - WIND SPEED: 119 MPH AND SNOW LOAD: 10 PSF

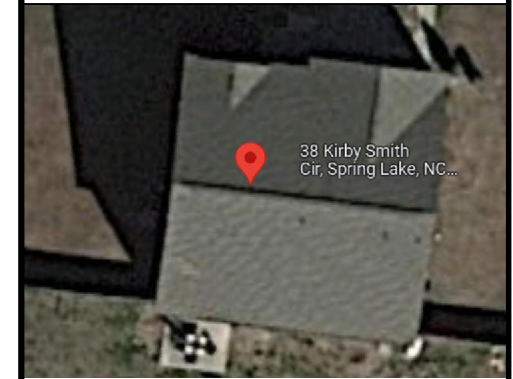
SR. NO	AZIMUTH	PITCH	NO. OF MODULES	ARRAY AREA (SQ. FT.)	ROOF TYPE	ATTACHMENT	ROOF EXPOSURE	FRAME TYPE	FRAME SIZE	FRAME SPACING	MAX RAIL SPAN	OVER HANG
MP-01	188°	27°	27	570.3	COMPOSITION SHINGLE	K2 SPLICE FOOT X	ATTIC	PRE-FABRICATED TRUSSES	2 X 4	2'-0"	4'-0"	1'-6"

NOTE: PENETRATIONS ARE STAGGERED



SCALE:0.010417

AERIAL VIEW



ADDRESS: 525W, BASELINE RD
 MESA AZ, 85210
 LICENSE #'S GC:84439 EC:U.34445

CUSTOMER INFORMATION

NAME: NANCY RAMIREZ
 ADDRESS: 38 KIRBY SMITH CIR, SPRING LAKE, NC 28390

35.233667, -78.941037
 APN: 010-513-000-464

TITAN'S PRN NO: TSP130202

AHJ: NC-COUNTY HARNETT

UTILITY: SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION

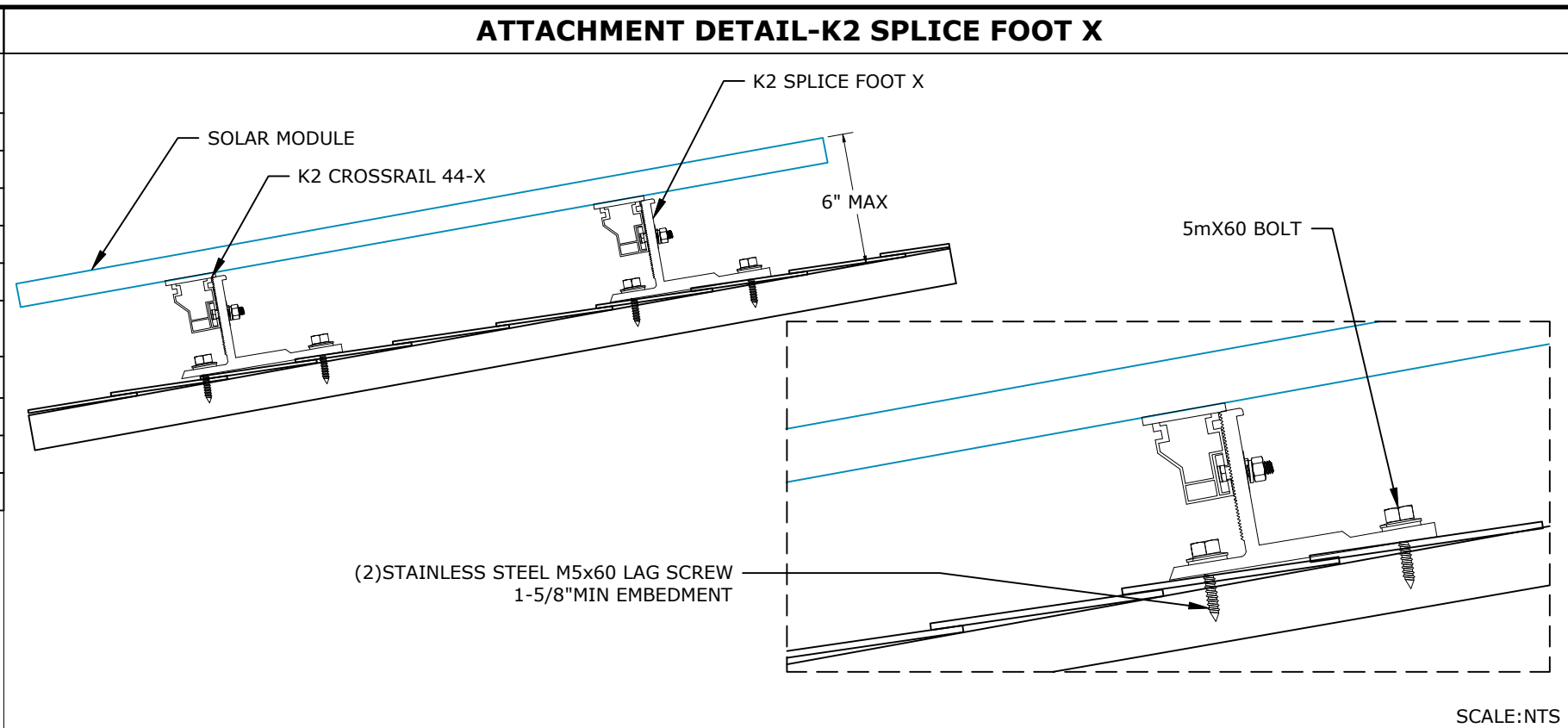
PRN NUMBER: TPS-54899



MOUNTING DETAIL

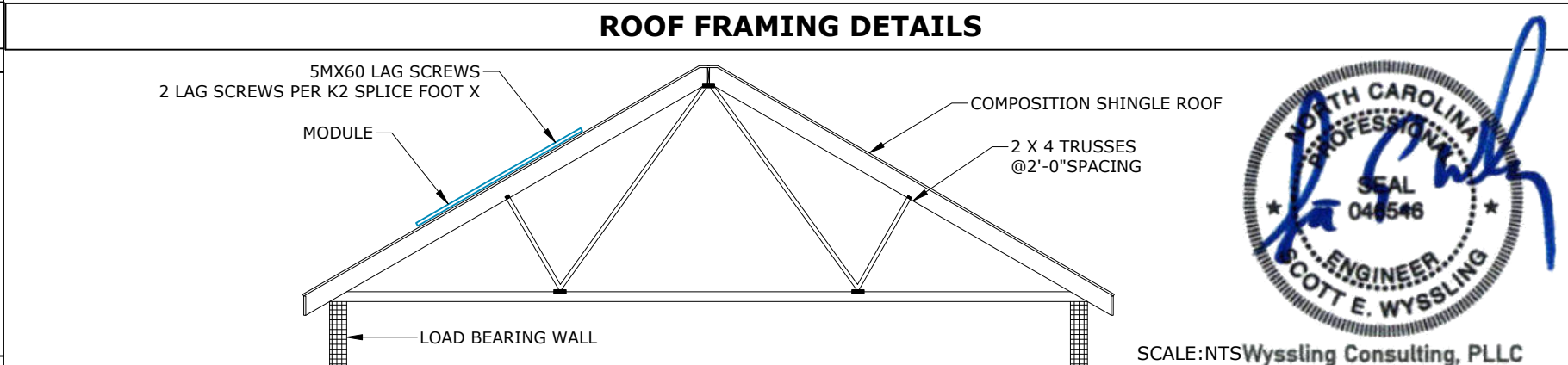
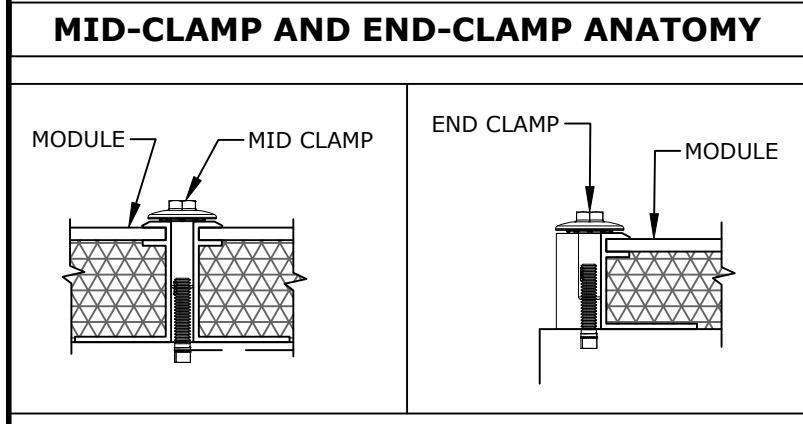
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QC'ED BY: A.N.KRISHNAN	
SCALE: AS NOTED	REV: D
DATE: 3/14/2023	S-01

DEAD LOAD CALCULATIONS			
BOM	QUANTITY	LBS/UNIT	TOTAL WEIGHT (LBS)
MODULES	27	48.5	1309.50
MID-CLAMP	48	0.300	14.40
END-CLAMP	12	0.310	3.72
RAIL LENGTH	179	0.560	100.24
SPLICE BAR	8	0.650	5.20
K2 SPLICE FOOT X	53	1.45	76.85
TOTAL WEIGHT OF THE SYSTEM (LBS)			1509.91
TOTAL ARRAY AREA ON THE ROOF (SQ. FT.)			570.26
WEIGHT PER SQ. FT.(LBS)			2.65
WEIGHT PER PENETRATION (LBS)			28.488868



MODULES DATA	
HANWHA QCELLS Q.PEAK DUO BLK ML-G10PLUS 400W	
MODULE DIMS	74"x41.1"x1.26"
LAG SCREWS	M5X60:1-5/8"MIN EMBEDMENT

UPLIFT CALCULATIONS		
UPLIFT	17107.9	LBS
PULL OUT STRENGTH	32595	LBS
POINT LOADING	25	LBS

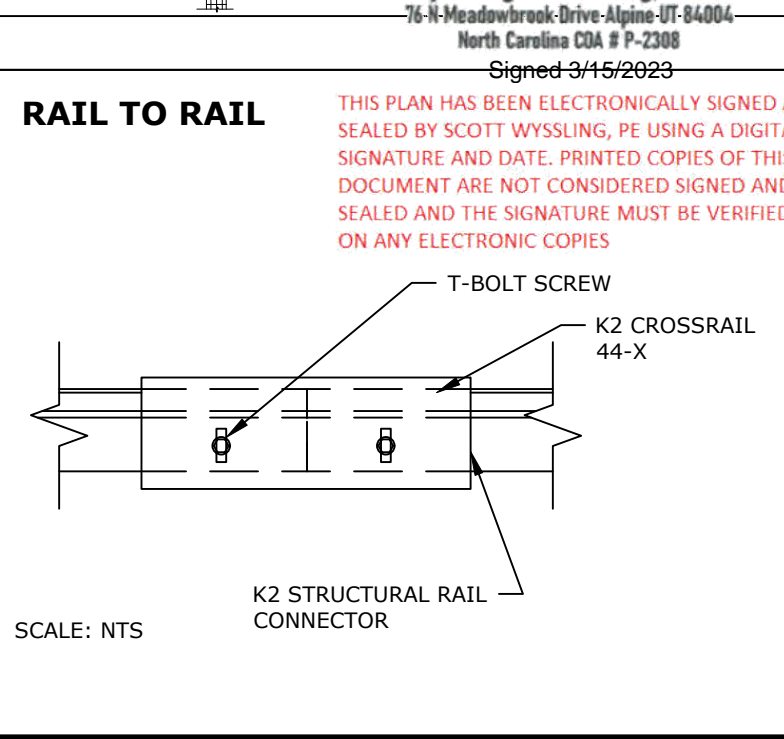
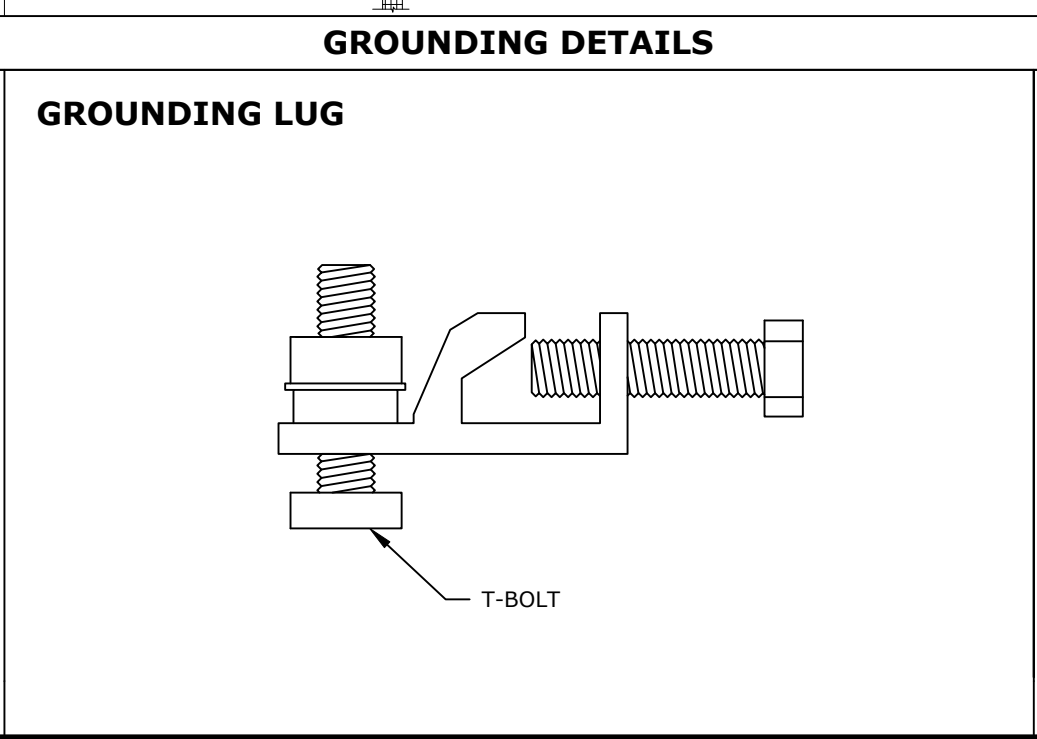
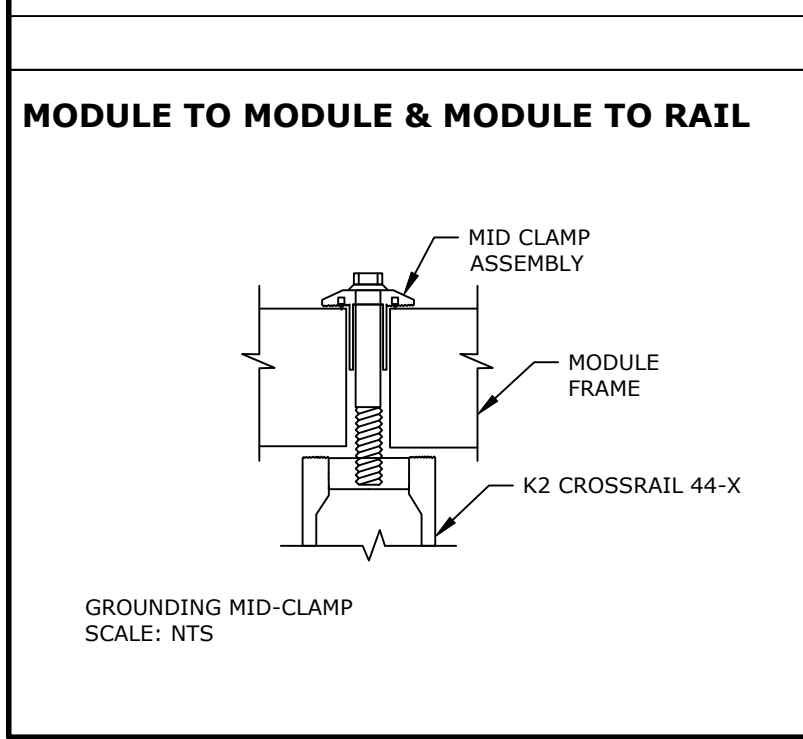


TITAN
SOLAR POWER

ADDRESS: 525W, BASELINE RD
 MESA AZ,85210
 LICENSE#'S GC:84439 EC:U.34445

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35.233667, -78.941037 APN: 010-513-000-464
TITAN'S PRN NO: TSP130202



NAME: NC-COUNTY HARNETT
UTILITY: SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION
PRN NUMBER: TPS-54899

STRUCTURAL DETAIL

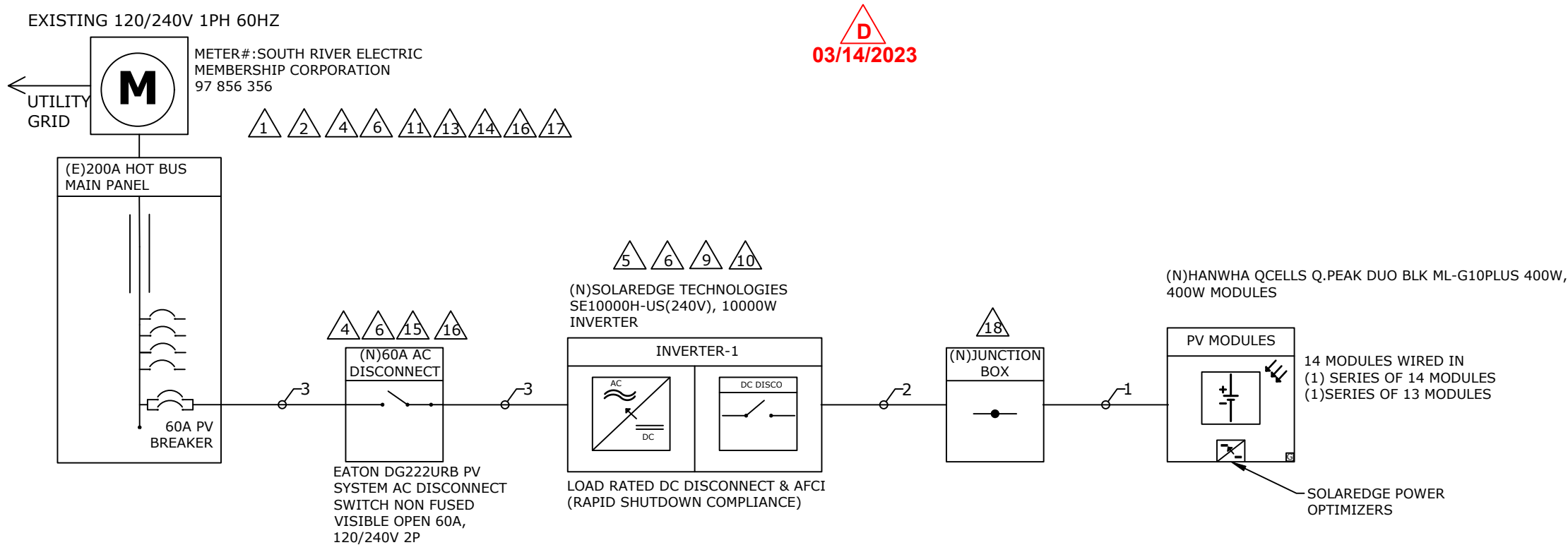
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SCALE: AS NOTED	REV: D
DATE: 3/14/2023	S-02

SINGLE LINE DIAGRAM: DC SYSTEM SIZE - 10800W, AC SYSTEM SIZE - 10000W

ELECTRICAL NOTES

INVERTER-1 SPECIFICATIONS		MODULE SPECIFICATION		OPTIMIZER CHARACTERISTICS		SYSTEM CHARACTERISTICS	
MODEL	SOLAREEDGE TECHNOLOGIES SE10000H-US(240V)	MODEL	HANWHA QCELLS Q.PEAK DUO BLK ML-G10PLUS 400W	MODEL	P340	DC SYSTEM SIZE	10800 W
POWER RATING	10000W	MODULE POWER @ STC	400W	MIN INPUT VOLTAGE	8 VDC	INVERTER STRING VOLTAGE: Vmp	400V
MAX OUTPUT CURRENT	42A	OPEN CIRCUIT VOLTAGE: Voc	45.30V	MAX INPUT VOLTAGE	48 VDC	MAX INVERTER SYSTEM VOLTAGE: Voc	480V
CEC WEIGHTED EFFICIENCY	99%	MAX POWER VOLTAGE: Vmp	37.13V	MAX INPUT CURRENT	11 ADC	MAX SHORT CIRCUIT CURRENT	15A
MAX INPUT CURRENT	27A	SHORT CIRCUIT CURRENT: Isc	11.14A	MAX OUTPUT CURRENT	15 ADC	OPERATING CURRENT	14.00A
MAX DC VOLTAGE	480V	MAX POWER CURRENT: Imp	10.77A				

- CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC 310.10(D).
- CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC 310.10(C).
- MAXIMUM DC/AC VOLTAGE DROP SHALL BE NO MORE THAN 2%.
- ALL CONDUCTORS SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED.
- BREAKER/FUSE SIZES PER NEC 240.
- AC EQUIPMENT GROUNDING CONDUCTOR SIZED PER NEC 250.122.
- AMBIENT TEMPERATURE CORRECTION FACTOR IS BASED ON NEC 690.31(A).
- AMBIENT TEMPERATURE ADJUSTMENT FACTOR IS BASED ON NEC 310.15(B)(2).
- MAX SYSTEM VOLTAGE CORRECTION IS PER NEC 690.7.
- CONDUCTORS ARE SIZED PER NEC TABLE 310.15(B)(16).



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SOLAR POWER

ADDRESS: 525W, BASELINE RD
MESA AZ, 85210
LICENSE#'S GC:84439 EC:U.34445

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 35.233667, -78.941037
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 TITAN'S PRN NO: TSP130202
 AHJ: NC-COUNTY HARNETT
 UTILITY: SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION
 PRN NUMBER: TPS-54899

CONDUIT SCHEDULE

TAG ID	CONDUIT SIZE	CONDUCTOR	NEUTRAL	GROUND
1	NONE	(4) 10AWG PV WIRE	NONE	(1) 6AWG BARE COPPER
2	3/4"EMT	(4) 10AWG THHN/THWN-2	NONE	(1) 10AWG THHN/THWN-2
3	3/4"EMT	(2) 6AWG THHN/THWN-2	(1) 6AWG THHN/THWN-2	(1) 10AWG THHN/THWN-2

NOTE:
 MAIN PANEL RATING: 200A
 ALLOWABLE BACKFEED IS = 200A

OCPD CALCULATIONS:
 INVERTER OVERCURRENT PROTECTION = INVERTER O/P I X CONTINUOUS LOAD (1.25)
 = 42 x 1.25 = 52.50A => PV BREAKER = 60A
 TOTAL REQUIRED PV BREAKER SIZE => 60A PV BREAKER

ELECTRICAL CALCULATIONS

DC WIRE SIZING CALCULATIONS BASED ON THE FOLLOWING EQUATIONS>>

- REQUIRED CONDUCTOR AMPACITY: 125% X Isc(A) X #OF PARALLEL STRINGS = MAX CURRENT PER 690.8(A)(1) X 125% = MAX CURRENT PER 690.8(B)(1)
- CORRECTED AMPACITY CALCULATIONS: AMPACITY X TEMPERATURE DERATE FACTOR X CONDUIT FILL DERATE = DERATED CONDUCTOR AMPACITY PER 690.8(B)(2)
- DERATE CONDUCTOR AMPACITY CHECK: MAX CURRENT PER 690.8(A)(1) < DERATED CONDUCTOR AMPACITY

AC WIRE SIZING CALCULATIONS BASED ON THE FOLLOWING EQUATIONS>>

- REQUIRED CONDUCTOR AMPACITY: INVERTER OUTPUT CURRENT X #OF INVERTERS = MAX CURRENT PER 690.8(A)(3) X 125% = MAX CURRENT PER 690.8(B)(1)
- CORRECTED AMPACITY CALCULATIONS: AMPACITY X TEMPERATURE DERATE FACTOR X CONDUIT FILL DERATE = DERATED CONDUCTOR AMPACITY PER 690.8(B)(2)
- DERATED CONDUCTOR AMPACITY CHECK: MAX CURRENT PER 690.8(A)(3) < DERATED CONDUCTOR AMPACITY

DC WIRE CALCULATIONS:- MATERIAL: COPPER & TEMPERATURE RATING: 90°C																					
TAG ID	REQUIRED CONDUCTOR AMPACITY						CORRECTED AMPACITY CALCULATION						DERATED CONDUCTOR AMPACITY CHECK								
1	1	X	15	X	1	=	15	X	1.25	=	18.75A	40	X	0.71	X	0.8	=	22.72A	18.75A	<	22.72A
2	1	X	15	X	1	=	15	X	1.25	=	18.75A	40	X	0.71	X	0.8	=	22.72A	18.75A	<	22.72A

AC WIRE CALCULATIONS:- MATERIAL: COPPER & TEMPERATURE RATING: 90°C																			
TAG ID	REQUIRED CONDUCTOR AMPACITY						CORRECTED AMPACITY CALCULATION						DERATED CONDUCTOR AMPACITY CHECK						
3	42	X	1	=	42.00	X	1.25	=	52.50A	75	X	0.87	X	1	=	65.25A	52.50A	<	65.25A



SINGLE LINE DIAGRAM

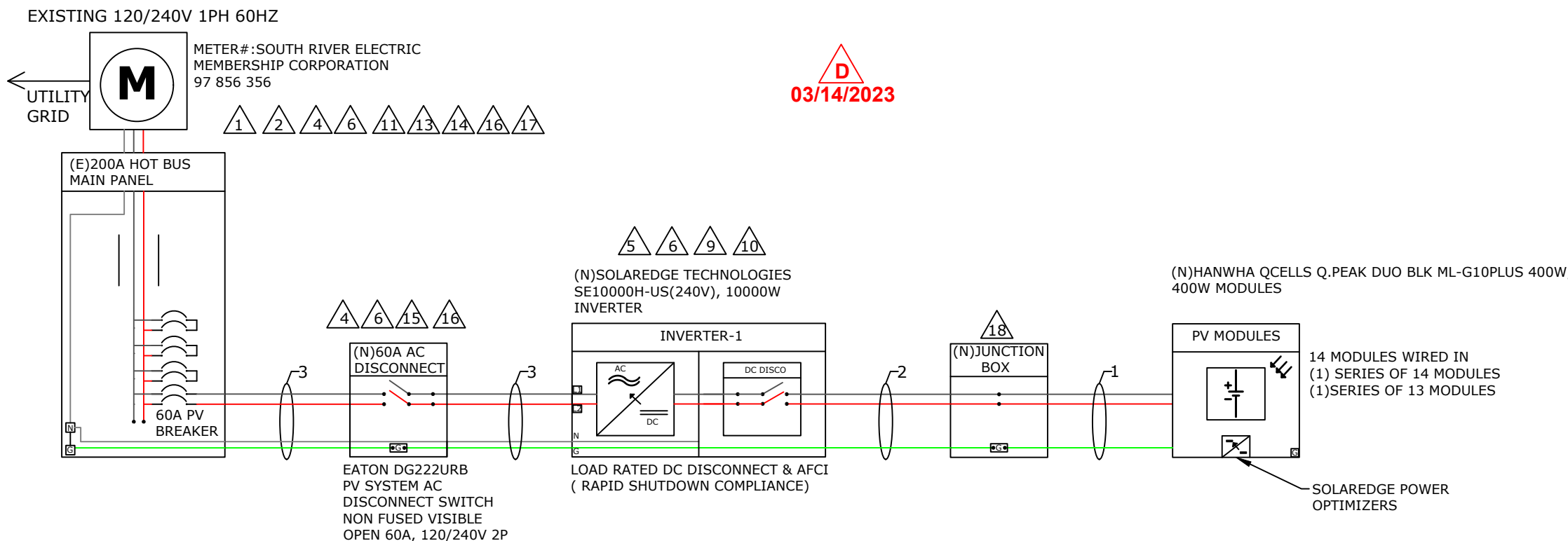
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 E-01

THREE LINE DIAGRAM: DC SYSTEM SIZE - 10800W, AC SYSTEM SIZE - 10000W

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DC WIRE SIZING CALCULATIONS BASED ON THE FOLLOWING EQUATIONS>>

- REQUIRED CONDUCTOR AMPACITY: 125% X Isc(A) X #OF PARALLEL STRINGS = MAX CURRENT PER 690.8(A)(1) X 125% = MAX CURRENT PER 690.8(B)(1)
- CORRECTED AMPACITY CALCULATIONS: AMPACITY X TEMPERATURE DERATE FACTOR X CONDUIT FILL DERATE = DERATED CONDUCTOR AMPACITY PER 690.8(B)(2)
- DERATE CONDUCTOR AMPACITY CHECK: MAX CURRENT PER 690.8(A)(1) < DERATED CONDUCTOR AMPACITY

AC WIRE SIZING CALCULATIONS BASED ON THE FOLLOWING EQUATIONS>>

- REQUIRED CONDUCTOR AMPACITY: INVERTER OUTPUT CURRENT X #OF INVERTERS = MAX CURRENT PER 690.8(A)(3) X 125% = MAX CURRENT PER 690.8(B)(1)
- CORRECTED AMPACITY CALCULATIONS: AMPACITY X TEMPERATURE DERATE FACTOR X CONDUIT FILL DERATE = DERATED CONDUCTOR AMPACITY PER 690.8(B)(2)
- DERATED CONDUCTOR AMPACITY CHECK: MAX CURRENT PER 690.8(A)(3) < DERATED CONDUCTOR AMPACITY

DC WIRE CALCULATIONS:- MATERIAL: COPPER & TEMPERATURE RATING: 90°C																					
TAG ID	REQUIRED CONDUCTOR AMPACITY						CORRECTED AMPACITY CALCULATION						DERATED CONDUCTOR AMPACITY CHECK								
1	1	X	15	X	1	=	15	X	1.25	=	18.75A	40	X	0.71	X	0.8	=	22.72A	18.75A	<	22.72A
2	1	X	15	X	1	=	15	X	1.25	=	18.75A	40	X	0.71	X	0.8	=	22.72A	18.75A	<	22.72A
AC WIRE CALCULATIONS:- MATERIAL: COPPER & TEMPERATURE RATING: 90°C																					
TAG ID	REQUIRED CONDUCTOR AMPACITY						CORRECTED AMPACITY CALCULATION						DERATED CONDUCTOR AMPACITY CHECK								
3	42	X	1	=	42.00	X	1.25	=	52.50A	75	X	0.87	X	1	=	65.25A	52.50A	<	65.25A		

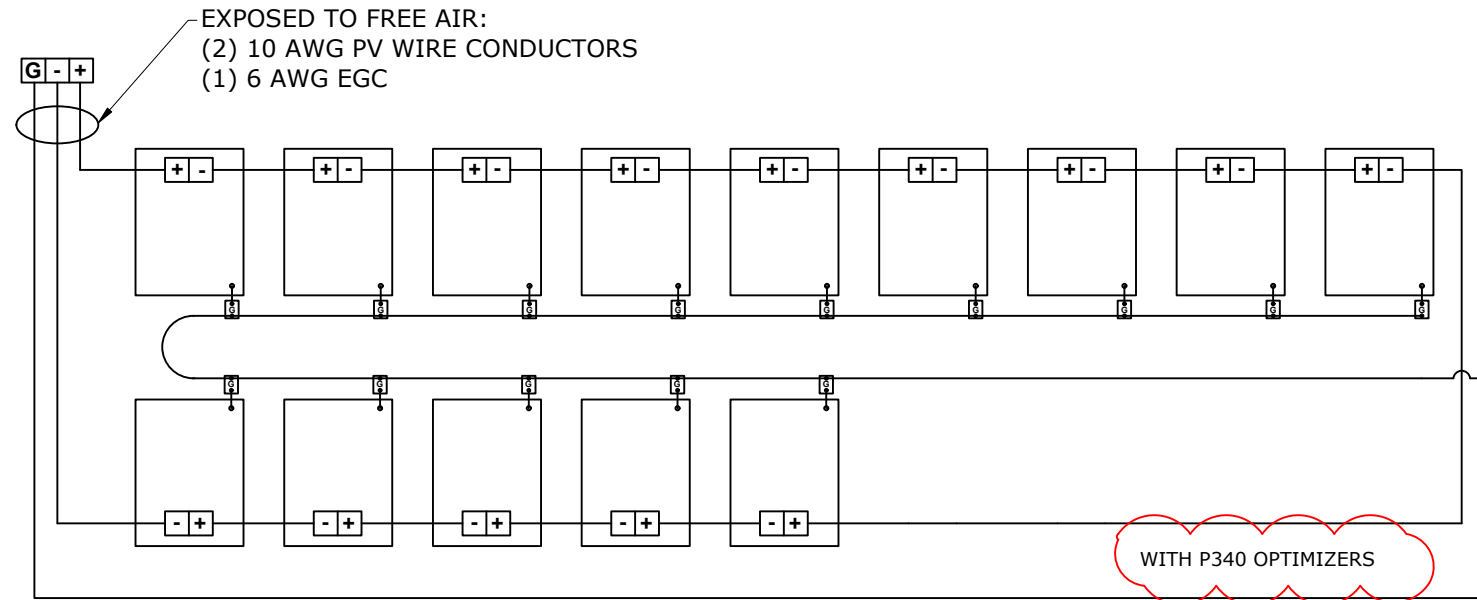


THREE LINE DIAGRAM

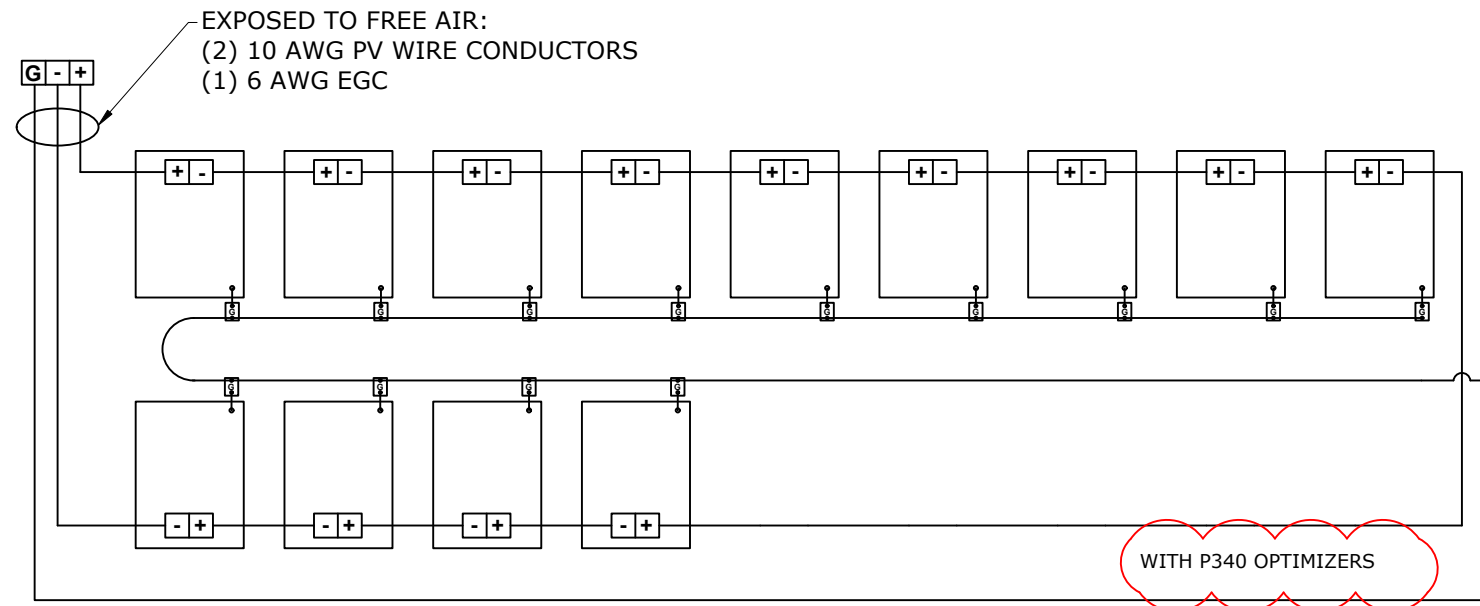
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 QC'ED BY: A.N.KRISHNAN
 SCALE: AS NOTED
 DATE: 3/14/2023
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 E-02

STRING WIRING DIAGRAM

1 STRING OF 14 MODULES



1 STRING OF 13 MODULES



ADDRESS: 525W, BASELINE RD
MESA AZ,85210
LICENSE#'S GC:84439 EC:U.34445

CUSTOMER INFORMATION

NAME:NANCY RAMIREZ
ADDRESS:38 KIRBY SMITH CIR, SPRING LAKE, NC 28390
35.233667, -78.941037
APN: 010-513-000-464
TITAN'S PRN NO: TSP130202
AHJ:NC-COUNTY HARNETT
UTILITY:SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION
PRN NUMBER: TPS-54899



STRING WIRING DIAGRAM

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DATE:3/14/2023	E-03

D
03/14/2023

WARNING PLACARDS

1

CAUTION
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

LABEL LOCATION
BACKFED BREAKER [PER CODE: NEC 705.12(4)]

2

WARNING
INVERTER OUTPUT CONNECTION:
DO NOT RELOCATE THIS
OVERCURRENT DEVICE

LABEL LOCATION: BACKFED BREAKER
[PER CODE: 2017 NEC 705.12(B)(2)(3)(b)]

3

WARNING
A GENERATION SOURCE IS CONNECTED TO THE SUPPLY
(UTILITY) SIDE OF THE MAIN SERVICE DISCONNECT. FOLLOW
THE PROPER LOCK-OUT/TAG-OUT PROCEDURES TO ENSURE
THE PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH IS
OPENED PRIOR TO PERFORMING WORK ON THIS DEVICE

LABEL LOCATION: (IF APPLICABLE) SUPPLY SIDE TAP LOAD PANEL
[PER CODE: UTILITY]

4

PHOTOVOLTAIC AC DISCONNECT
RATED AC OPERATING CURRENT 42.00 A
AC NOMINAL OPERATING VOLTAGE 240 VAC

LABEL LOCATION: MAIN SERVICE DISCONNECT,
AC DISCONNECT(S) & SERVICE PANEL
[PER CODE: NEC 690.13(B)]

5

**RAPID SHUTDOWN SWITCH
FOR SOLAR PV SYSTEM**

LABEL LOCATION: INVERTER
[PER CODE: NEC 690.56(C)(3)]

6

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

LABEL LOCATION: MAIN SERVICE DISCONNECT
AC DISCONNECT, SERVICE PANEL,
AC COMBINER & INVERTER(S)
[PER CODE: NEC 690.13(B)]

8

WARNING
PHOTOVOLTAIC SYSTEM
COMBINER PANEL
DO NOT ADD LOADS

LABEL LOCATION: AC COMBINER PANEL
[PER CODE: NEC 690.13(B)]

9

MAXIMUM VOLTAGE: 480 VDC
MAXIMUM CIRCUIT CURRENT: 15 ADC
**MAX. RATED OUTPUT CURRENT OF THE
CHARGE CONTROLLER OR
DC-TO-DC-CONVERTER (IF
INSTALLED) 15 ADC**

LABEL LOCATION: INVERTER
[PER CODE: NEC 690.53]

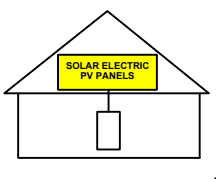
10

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
DC DISCONNECT INVERTER, COMBINE BOX
[PER CODE: NEC 690.13(B)]

11

**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



LABEL LOCATION: MAIN SERVICE DISCONNECT
[PER CODE: NEC 690.56(C)(1)(a)]

13

CAUTION
DUAL POWER SOURCE
SECOND SOURCE IS
PHOTOVOLTAIC

LABEL LOCATION : MAIN SERVICE DISCONNECT
AC DISCONNECT, SERVICE PANEL,
REVENUE METER & AC COMBINER
[PER CODE: NEC705.12(B)(3)]

14

WARNING
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS
OVER-CURRENT DEVICE

LABEL LOCATION : (IF APPLICABLE) SERVICE PANEL
[PER CODE: NEC 705.12(D)(7)]

15

**PHOTOVOLTAIC SYSTEM
UTILITY DISCONNECT SWITCH**

LABEL LOCATION : AC DISCONNECT
[PER CODE: NEC 690.56(C)(3)]

16

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

LABEL LOCATION
AC DISCONNECT COMBINER BOX SERVICE METER
[PER CODE: NEC 690.5(C)]

17

PV SOLAR BREAKER
DO NOT RELOCATE THIS
OVERCURRENT DEVICE

LABEL LOCATION
MAIN SERVICE DISCONNECT & SERVICE PANEL
[PER CODE: NEC 705.12(B)(2)(3)(b)]

18

WARNING PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION
DC CONDUIT NO MORE THAN 10FT
[PER CODE: NEC 690.31(G)(3)]



ADDRESS: 525W, BASELINE RD
MESA AZ, 85210
LICENSE #'S GC:84439 EC:U.34445

CUSTOMER INFORMATION

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ADDRESS: 38 KIRBY SMITH CIR, SPRING
LAKE, NC 28390

35.233667, -78.941037
APN: 010-513-000-464

TITAN'S PRN NO: TSP130202

AHJ: NC-COUNTY HARNETT

UTILITY: SOUTH RIVER ELECTRIC
MEMBERSHIP CORPORATION

PRN NUMBER: TPS-54899



WARNING PLACARDS


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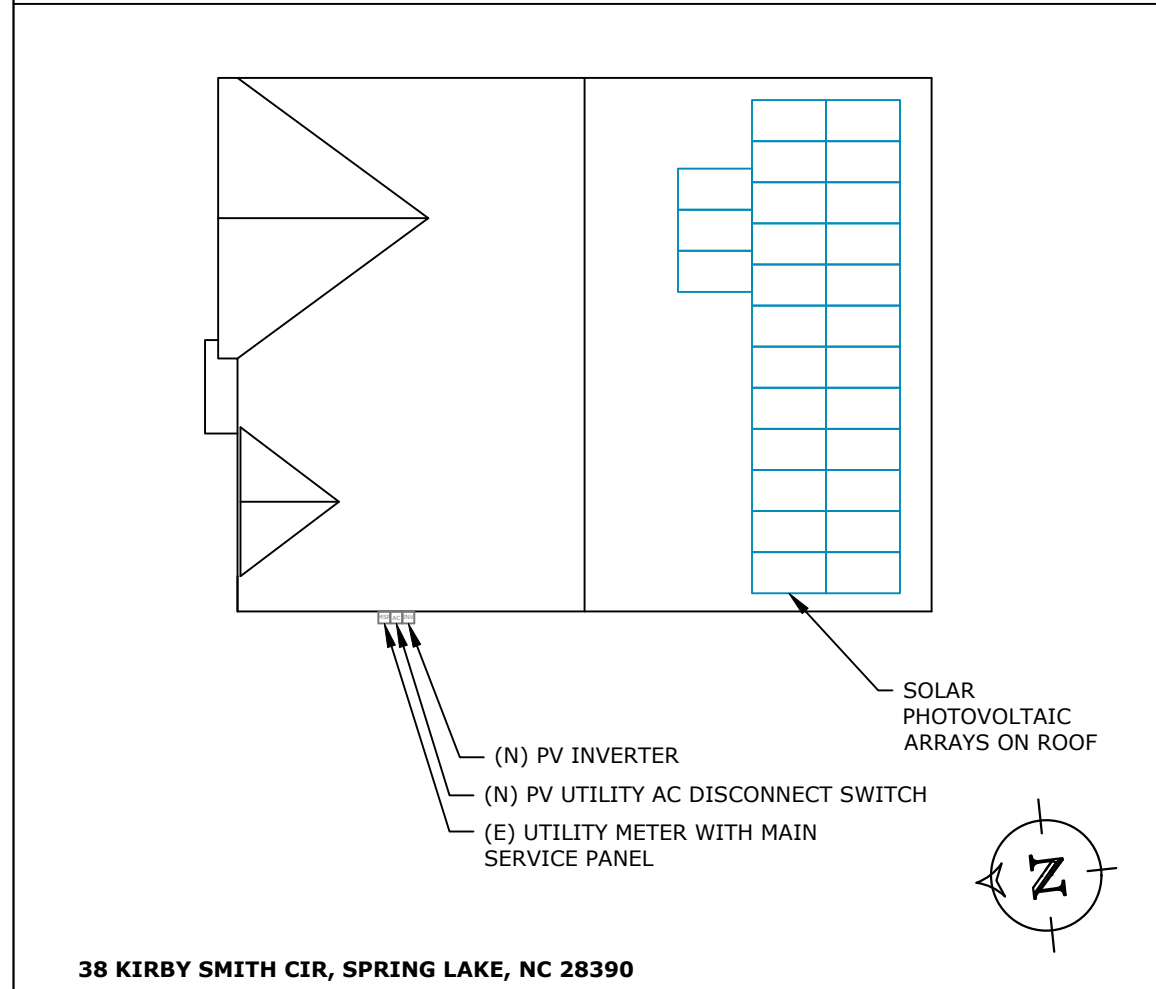
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REFLECTIVE AND WEATHER RESISTANCE LABEL REQUIRES CAPITALIZED LETTERS WITH A MINIMUM HEIGHT OF 3/8 INCH, WHITE LETTERS ON RED BACKGROUND LABELS SHALL BE PLACED ON INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURE, AND CABLE ASSEMBLIES EVERY 10 FEET, WITHIN 1 FOOT OF TURNS OR BENDS AND WITHIN 1 FOOT ABOVE AND BELOW PENETRATIONS OF ROOF/ CEILING ASSEMBLIES, WALLS OR BARRIERS.

DIRECTORY PLACARD

**CAUTION: MULTIPLE SOURCES
OF POWER** 
POWER TO THIS BUILDING IS ALSO
SUPPLIED FROM THE FOLLOWING
SOURCES WITH DISCONNECTS LOCATED
AS SHOWN



**LABEL LOCATION
SERVICE PANEL**

PER CODE: NEC 705.10

ALL PLACARDS SHALL BE OF WEATHER PROOF CONSTRUCTION, BACKGROUND ON ALL PLACARDS SHALL BE RED WITH WHITE LETTERING U.O.N.

PLACARD SHALL BE MOUNTED DIRECTLY ON THE EXISTING UTILITY ELECTRICAL SERVICE.

FASTENERS APPROVED BY THE LOCAL JURISDICTION



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DIRECTORY PLACARD

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A.N.KRISHNAN

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PL-02

SAFETY PLANS-1

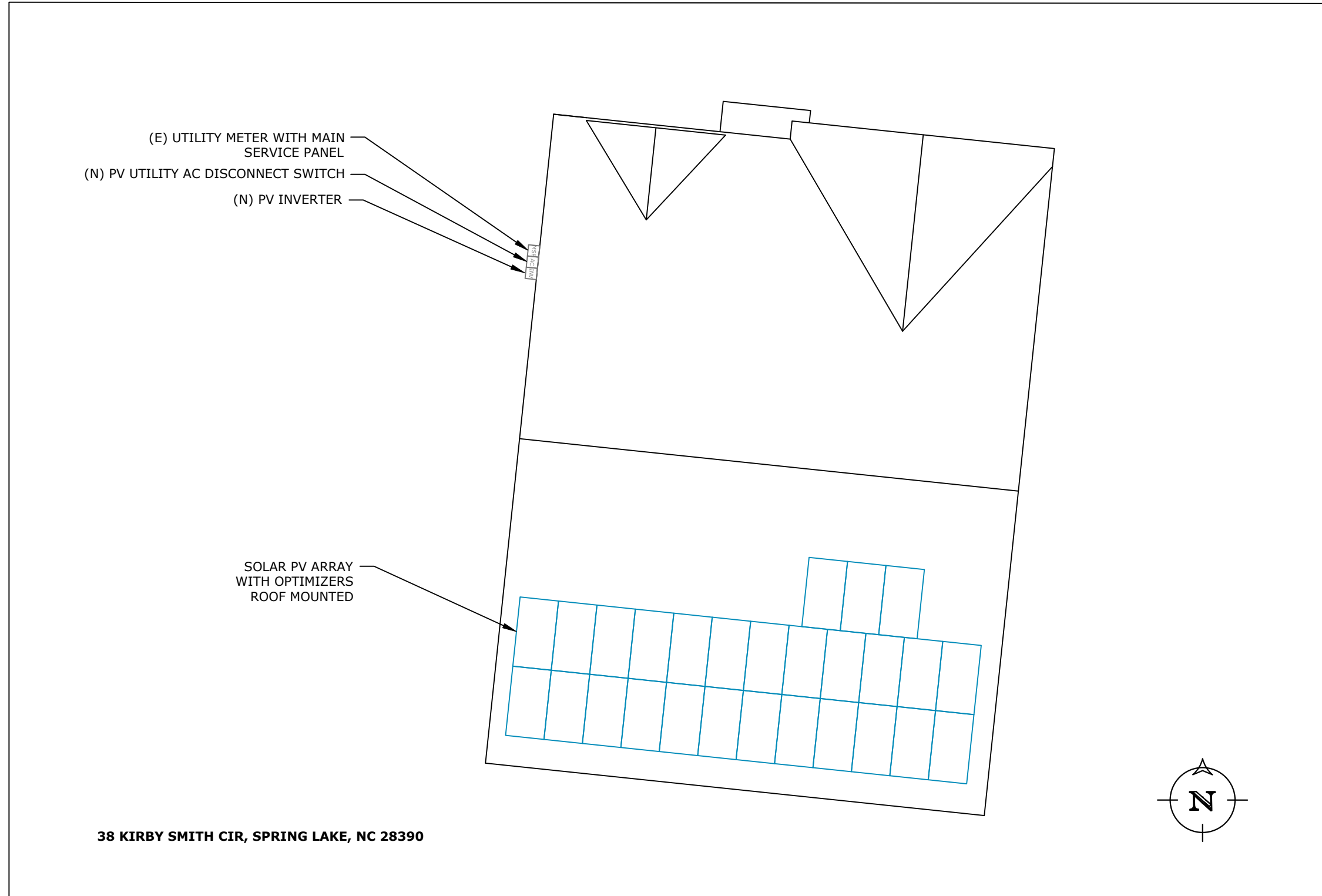
SAFETY PLANS

NOTES:

1. INSTALLERS SHALL DRAW IN DESIGNATED SAFETY AREA AROUND HOME.
2. INSTALLERS SHALL UPDATE NAME ADDRESS AND PHONE NUMBER OF NEAREST.
3. URGENT CARE FACILITY RELATIVE TO THE SITE BEFORE STARTING WORK.

LOCATION OF NEAREST URGENT CARE FACILITY

NAME:
ADDRESS:
PHONE NUMBER:



ADDRESS: 525W, BASELINE RD
MESA AZ,85210
LICENSE#'S GC:84439 EC:U.34445

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UTILITY:SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION
PRN NUMBER: TPS-54899



SAFETY PLANS-1

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SAFETY PLANS-2

SAFETY PLANS

NOTES:

1. INSTALLERS SHALL DRAW IN DESIGNATED SAFETY AREA AROUND HOME.
2. INSTALLERS SHALL UPDATE NAME ADDRESS AND PHONE NUMBER OF NEAREST.
3. URGENT CARE FACILITY RELATIVE TO THE SITE BEFORE STARTING WORK.

LOCATION OF NEAREST URGENT CARE FACILITY

NAME:
ADDRESS:
PHONE NUMBER:

PERSONS COVERED BY THIS JOB SAFETY PLAN

**INJURED AT WORK TODAY?
INITIAL YES OR NO**

PRINT NAME	INITIAL	YES	NO

UNDERGROUND DIG REQUIRED?

YES _____ PERMIT # _____



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SAFETY PLANS-2

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SPEC SHEET



powered by
Q.ANTUM DUO Z

Q. PEAK DUO BLK ML-G10+ 385-405

ENDURING HIGH PERFORMANCE



BREAKING THE 20% EFFICIENCY BARRIER

Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9%.



THE MOST THOROUGH TESTING PROGRAMME IN THE INDUSTRY

Q CELLS is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.



INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.



ENDURING HIGH PERFORMANCE

Long-term yield security with Anti LID Technology, Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.



EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400Pa) and wind loads (4000Pa).



A RELIABLE INVESTMENT

Inclusive 25-year product warranty and 25-year linear performance warranty².

¹ APT test conditions according to IEC/TS 62804-1:2015, method A (~1500 V, 96 h)

² See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:

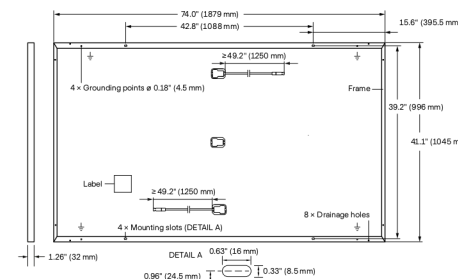


Engineered in Germany



MECHANICAL SPECIFICATION

Format	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
Weight	48.5 lbs (22.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 × 22 monocrystalline Q.ANTUM solar half cells
Junction Box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 49.2 in (1250 mm), (-) ≥ 49.2 in (1250 mm)
Connector	Stäubli MC4; IP68

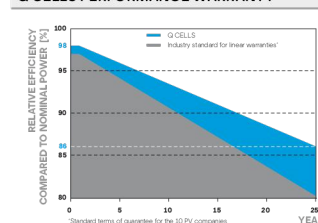


ELECTRICAL CHARACTERISTICS

POWER CLASS		385	390	395	400	405	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W / -0 W)							
Minimum	Power at MPP ¹	P _{MPP} [W]	385	390	395	400	405
	Short Circuit Current ¹	I _{SC} [A]	11.04	11.07	11.10	11.14	11.17
	Open Circuit Voltage ¹	V _{OC} [V]	45.19	45.23	45.27	45.30	45.34
	Current at MPP	I _{MPP} [A]	10.59	10.65	10.71	10.77	10.83
	Voltage at MPP	V _{MPP} [V]	36.36	36.62	36.88	37.13	37.39
	Efficiency ¹	η [%]	≥ 19.6	≥ 19.9	≥ 20.1	≥ 20.4	≥ 20.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²							
Minimum	Power at MPP	P _{MPP} [W]	288.8	292.6	296.3	300.1	303.8
	Short Circuit Current	I _{SC} [A]	8.90	8.92	8.95	8.97	9.00
	Open Circuit Voltage	V _{OC} [V]	42.62	42.65	42.69	42.72	42.76
	Current at MPP	I _{MPP} [A]	8.35	8.41	8.46	8.51	8.57
	Voltage at MPP	V _{MPP} [V]	34.59	34.81	35.03	35.25	35.46

¹ Measurement tolerances P_{MPP} ± 3%; I_{SC}; V_{OC} ± 5% at STC: 1000 W/m², 25 ± 2°C, AM 1.5 according to IEC 60904-3 • ² 800 W/m², NMOT, spectrum AM 1.5

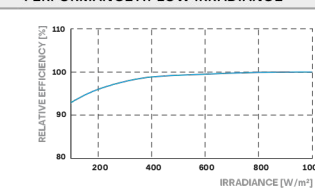
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.5% degradation per year. At least 93.5% of nominal power up to 10 years. At least 86% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25°C, 1000 W/m²)

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{SC}	α [%/K]	+0.04	Temperature Coefficient of V _{OC}	β [%/K]	-0.27
Temperature Coefficient of P _{MPP}	γ [%/K]	-0.34	Nominal Module Operating Temperature	NMOT [°F]	109 ± 5.4 (43 ± 3°C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V _{sys}	[V]	1000 (IEC) / 1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI/UL 61730	TYPE 2
Max. Design Load, Push / Pull ¹	[lbs/ft ²]	75 (3600Pa) / 55 (2660Pa)	Permitted Module Temperature on Continuous Duty	-40°F up to +185°F (-40°C up to +85°C)
Max. Test Load, Push / Pull ²	[lbs/ft ²]	113 (5400Pa) / 84 (4000Pa)		

¹ See Installation Manual

QUALIFICATIONS AND CERTIFICATES

UL 61730, CE-compliant, Quality Controlled PV - TÜV Rheinland, IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,893,215 (solar cells), QCPV Certification ongoing.



PACKAGING INFORMATION

Horizontal packaging	76.4 in 1940 mm	43.3 in 1100 mm	48.0 in 1220 mm	1656 lbs 751 kg	24 pallets	24 pallets	32 modules
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Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Hanwha Q CELLS America Inc.

400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us



ADDRESS: 525W, BASELINE RD
MESA AZ, 85210
LICENSE #'S GC: 84439 EC: U.34445

CUSTOMER INFORMATION

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MODULE SPEC SHEET

DRAFTED BY:
K.UTKARSHA
QC'ED BY:
A.N.KRISHNAN

PAPER SIZE: 17"X11"

SCALE: AS NOTED

REV: D

DATE: 3/14/2023

SS-01

Specifications subject to technical changes © Q CELLS Q. PEAK DUO BLK ML-G10+ 385-405_2021-05_Rev01_NA

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US



INVERTERS

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking 99% weighted efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

solaredge.com



Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5 ^①							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, Adjustable - 0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380			400				Vdc
Maximum Input Current @240V ^②	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V ^②	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600k _Ω Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

^① For other regional settings please contact SolarEdge support

^② A higher current source may be used; the inverter will limit its input current to the values stated



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INVERTER SPECSHEET

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SPEC SHEET

/ Single Phase Inverter with HD-Wave Technology for North America

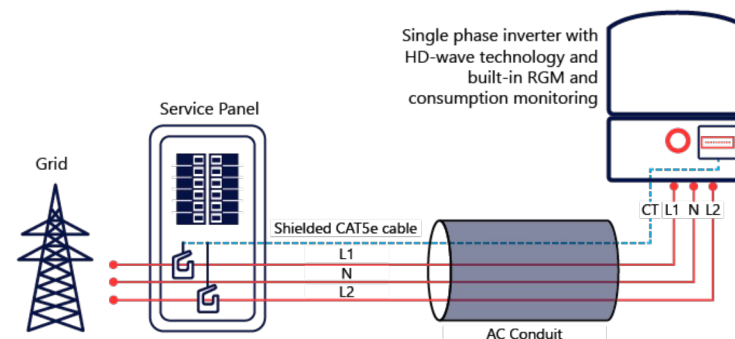
SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US
ADDITIONAL FEATURES							
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)						
Revenue Grade Metering, ANSI C12.20	Optional ⁽³⁾						
Consumption metering							
Inverter Commissioning	With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection						
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect						
STANDARD COMPLIANCE							
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07						
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)						
Emissions	FCC Part 15 Class B						
INSTALLATION SPECIFICATIONS							
AC Output Conduit Size / AWG Range	1" Maximum / 14-6 AWG			1" Maximum / 14-4 AWG			
DC Input Conduit Size / # of Strings / AWG Range	1" Maximum / 1-2 strings / 14-6 AWG			1" Maximum / 1-3 strings / 14-6 AWG			
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174			21.3 x 14.6 x 7.3 / 540 x 370 x 185			in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6		lb / kg	
Noise	< 25			< 50			
Cooling	Natural Convection						
Operating Temperature Range	-40 to +140 / -40 to +60 ⁽⁴⁾						
Protection Rating	NEMA 4X (Inverter with Safety Switch)						

⁽³⁾ Inverter with Revenue Grade Meter P/N: SExxxH-US000BNC4; Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxH-US000BNI4. For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20, 20 units per box
⁽⁴⁾ Full power up to at least 50°C / 122°F; for power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

How to Enable Consumption Monitoring

By simply wiring current transformers through the inverter's existing AC conduits and connecting them to the service panel, homeowners will gain full insight into their household energy usage helping them to avoid high electricity bills



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RoHS



ADDRESS: 525W, BASELINE RD
MESA AZ, 85210
LICENSE#'S GC:84439 EC:U.34445

CUSTOMER INFORMATION

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35.233667, -78.941037
APN: 010-513-000-464

TITAN'S PRN NO: TSP130202

AHJ: NC-COUNTY HARNETT

UTILITY: SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION

PRN NUMBER: TPS-54899



INVERTER SPECSHEET

DRAFTED BY:
K.UTKARSHA
QC'ED BY:
A.N.KRISHNAN

PAPER SIZE: 17"X11"

SCALE: AS NOTED

REV: D

DATE: 3/14/2023

SS-03

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / P505



POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge.com



Power Optimizer For North America

P320 / P340 / P370 / P400 / P405 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P405 (for thin film modules)	P505 (for higher current modules)		
INPUT								
Rated Input DC Power ⁽¹⁾	320	340	370	400	405	505	W	
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	125 ⁽²⁾	83 ⁽²⁾	Vdc	
MPP Operating Range	8 - 48		8 - 60	8 - 80	12.5 - 105	12.5 - 83	Vdc	
Maximum Short Circuit Current (Isc)		11		10.1		14	Adc	
Maximum DC Input Current		13.75		12.63		17.5	Adc	
Maximum Efficiency			99.5				%	
Weighted Efficiency			98.8			98.6	%	
Overvoltage Category	II							
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)								
Maximum Output Current			15				Adc	
Maximum Output Voltage		60			85		Vdc	
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)								
Safety Output Voltage per Power Optimizer	1 ± 0.1						Vdc	
STANDARD COMPLIANCE								
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3							
Safety	IEC62109-1 (class II safety), UL1741							
RoHS	Yes							
INSTALLATION SPECIFICATIONS								
Maximum Allowed System Voltage	1000						Vdc	
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters							
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1		129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3		mm / in	
Weight (including cables)	630 / 1.4		750 / 1.7	845 / 1.9	1064 / 2.3		gr / lb	
Input Connector	MC4 ⁽³⁾							
Output Wire Type / Connector	Double Insulated; MC4							
Output Wire Length	0.95 / 3.0		1.2 / 3.9				m / ft	
Input Wire Length	0.16 / 0.52							m / ft
Operating Temperature Range	-40 - +85 / -40 - +185							°C / °F
Protection Rating	IP68 / NEMA6P							
Relative Humidity	0 - 100							%

⁽¹⁾ Rated STC power of the module. Module of up to +5% power tolerance allowed
⁽²⁾ NEC 2017 requires max input voltage be not more than 80V
⁽³⁾ For other connector types please contact SolarEdge

PV System Design Using a SolarEdge Inverter ⁽⁴⁾⁽⁵⁾	Single Phase HD-Wave	Single phase	Three Phase 208V	Three Phase 480V	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400 P405 / P505	8	10	18	
Maximum String Length (Power Optimizers)		6	8	14	
Maximum Power per String	5700 (6000 with SE7600-US - SE11400-US)	25	25	50 ⁽⁶⁾	W
Parallel Strings of Different Lengths or Orientations	Yes				

⁽⁴⁾ For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
⁽⁵⁾ It is not allowed to mix P405/P505 with P320/P340/P370/P400 in one string
⁽⁶⁾ A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
⁽⁷⁾ For SE14.4KUS/SE43.2KUS: It is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (3 strings per unit for SE43.2KUS) and when the maximum power difference between the strings is up to 1,000W
⁽⁸⁾ For SE30KUS/SE33.3KUS/SE66.6KUS/SE100KUS: It is allowed to install up to 15,000W per string when 3 strings are connected to the inverter (3 strings per unit for SE66.6KUS/SE100KUS) and when the maximum power difference between the strings is up to 2,000W



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PRN NUMBER: TPS-54899



OPTIMIZER SPECSHEET

DRAFTED BY: K.UTKARSHA	PAPER SIZE: 17"X11"
QC'ED BY: A.N.KRISHNAN	
SCALE: AS NOTED	REV: D
DATE: 3/14/2023	SS-04

SPEC SHEET

We support PV systems
Formerly Everest Solar Systems



Splice Foot X

TECHNICAL SHEET

Item Number	Description	Part Number
1	Splice Foot X	4000113 Splice Foot X Kit, Mill
2	K2 Solar Seal Butyl Pad	
3	M5 x 60 lag screws	
4	T-Bolt & Hex Nut Set	

Technical Data

Splice Foot X	
Roof Type	Composition shingle
Material	Aluminum with stainless steel hardware
Finish	Mill
Roof Connection	M5 x 60 lag screws
Code Compliance	UL 2703
Compatibility	CrossRail 44-X, 48-X, 48-XL, 80

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ADDRESS: 525W, BASELINE RD
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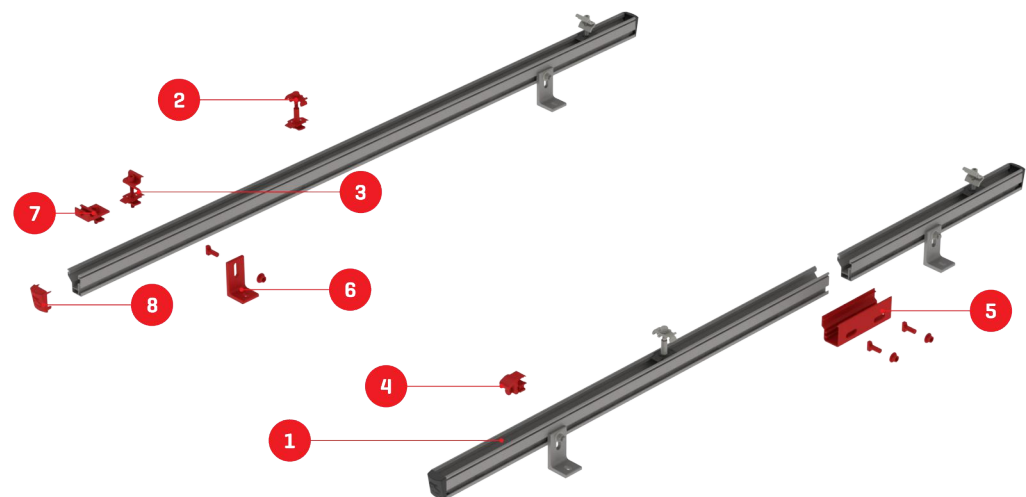
MOUNT SPECSHEET

DRAFTED BY: K.UTKARSHA QC'ED BY: A.N.KRISHNAN	PAPER SIZE:17"X11"
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SCALE:AS NOTED	REV:D
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DATE:3/14/2023	SS-05
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CONNECTING STRENGTH



CrossRail System

TECHNICAL SHEET

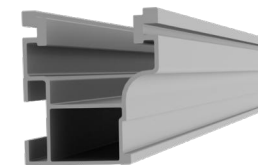
Item Number	Description	Part Number
1	CrossRail 44-X (shown) all CR profiles applicable	4000019 [166" mill], 4000020 [166" dark], 4000021 [180" mill], 4000022 [180" dark]
2	CrossRail Mid Clamp	4000601-H (mill), 4000602-H (dark)
3	CrossRail End Clamp	4000090 (silver), 4000091 (dark), 4000092 (silver), 4000093 (dark)
4	Yeti Hidden End Clamp for CR	4000050-H
5	CrossRail 44-X Rail Connector (shown) CR 48-X, 48-XL Rail Connector available	4000051 (mill), 4000052 (dark)
6	L-Foot Slotted Set	4000630 (mill), 4000631 (dark)
7	Everest Ground Lug	4000006-H
8	CrossRail 44-X End Cap (shown) CrossRail 48-X, 48-XL and 80 available	4000067

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CONNECTING STRENGTH



CROSSRAIL 44-X



Mechanical Properties

	CrossRail 44-X
Material	6000 Series Aluminum
Ultimate Tensile Strength	37.7 ksi [260 MPa]
Yield Strength	34.8 ksi [240 MPa]
Weight	0.47 lbs/ft [0.699 kg/m]
Finish	Mill or Dark Anodized

Sectional Properties

	CrossRail 44-X
Sx	0.1490 in ³ [0.3785 cm ³]
Sy	0.1450 in ³ [0.3683 cm ³]
A [X-Section]	0.4050 in ² [1.0287 cm ²]

Units: [mm] in



Notes:

- ▶ Structural values and span charts determined in accordance with Aluminum Design Manual and ASCE 7-16
- ▶ UL2703 Listed System for Fire and Bonding

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RAIL SPECSHEET

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