



Scott E. Wyssling, PE
Coleman D. Larsen, SE, PE
Gregory T. Elvestad, PE

76 North Meadowbrook Drive
Alpine, UT 84004
office (201) 874-3483
swyssling@wysslingconsulting.com

June 29, 2023

Titan Solar Power
210 North Sunway Drive
Gilbert, AZ 85233

Re: Engineering Services
Day Residence
124 The Inner Circle, Spring Lake NC
9.120 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: Prefabricated wood trusses at 24" on center. All truss members are constructed of 2x4 dimensional lumber.
Roof Material: Composite Asphalt Shingles
Roof Slope: 39 degrees
Attic Access: Accessible
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 = 118 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 NCRC (2015 IRC), 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.

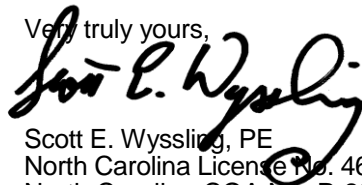
D. Solar Panel Anchorage

1. The solar panels shall be mounted in accordance with the most recent Unirac 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 #12 lag screw is 170 lbs per inch of penetration as identified in the National Design Standards (NDS) of timber construction specifications. Based on a minimum penetration depth of 2", 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 #12 lag screw with a minimum of 2" embedment will be adequate and will include a sufficient factor of safety.
3. Considering the roof slopes, the size, spacing, condition of roof, the panel supports shall be placed no greater than 48" o/c.

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 2018 NCRC (2015 IRC), current industry standards, 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 COA 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

Signed 6/29/2023

SCOPE OF WORK

TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT THE OWNER RESIDENCE LOCATED AT 124 THE INNER CIR, SPRING LAKE, NC 28390, USA. THE POWER GENERATED BY THE PV SYSTEM WILL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING ELECTRICAL SERVICE EQUIPMENT. THE PV SYSTEM DOES NOT INCLUDE STORAGE BATTERIES.

EQUIPMENT SUMMARY

24 SILFAB SIL-380 HC (TITAN) MODULES
1 SOLAREEDGE SE7600H-US [240V] INVERTER
24 SOLAREEDGE POWER OPTIMIZER S440

GENERAL NOTES

- THESE CONSTRUCTION DOCUMENTS HAVE BEEN BASED ON FIELD INSPECTIONS AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS IN CONSTRUCTION DETAILS.
- CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, OBTAINS ALL PERMITS, LICENSES AND PAY ALL REQUIRED FEES AND COMPLETE INSTALLATION.
- CONTRACTOR HAS THE FULL RESPONSIBILITY TO CHECK AND VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. ANY WORK STARTED BEFORE CONSULTATION AND ACCEPTANCE BY THE ENGINEER SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBJECT TO CORRECTION BY THEM WITHOUT ADDITIONAL COMPENSATION.
- DAMAGE CAUSED TO THE EXISTING STRUCTURE, PIPES, DUCTS, WINDOWS, WALL, FLOORS, ETC. SHALL BE REPAIRED TO THE ORIGINAL CONDITION OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE PROPER INSTALLATION AND COMPLETION OF THE WORK WITH APPROVED MATERIALS.
- CONTRACTOR SHALL OBTAIN BUILDING PERMIT. NO WORK TO START UNLESS BUILDING PERMIT IS PROPERLY DISPLAYED.
- ALL WORKMANSHIP AND MATERIALS SHALL BE OF FIRST QUALITY AND IN COMPLIANCE WITH THE REQUIREMENTS OF THE NATIONAL BUILDING CODE, THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ALL PERTINENT AGENCIES.
- IT IS ESSENTIAL THAT ALL WORK PROCEED WITH THE MAXIMUM COOPERATION OF ALL PARTIES AND WITH MINIMUM INTERFERENCE TO THE OCCUPANTS WITHIN THE BUILDING. THE OWNER'S DIRECTIONS IN THIS REGARD SHALL BE FULLY COMPLIED WITH.
- THE CONTRACTOR SHALL PERFORM THE WORK IN STRICT CONFORMANCE WITH THE LOCAL LAWS, REGULATIONS AND THE NATIONAL ELECTRIC CODE.
- THE CONTRACTOR SHALL OBTAIN ALL PERMITS, APPROVALS, AFFIDAVITS, CERTIFICATIONS, ETC. AND PAY ALL FEES AS REQUIRED BY THE LOCAL AUTHORITIES.
- CONTRACTORS SHALL OBTAIN FIRE CERTIF. UPON COMPLETION OF WORK.

ELECTRICAL NOTES

- ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.
- WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
- WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURERS INSTRUCTION.
- MODULE SUPPORT RAIL SHALL BE BONDED TO THE MODULE

GOVERNING CODES

2018 NORTH CAROLINA FIRE CODE
 2018 NORTH CAROLINA BUILDING CODE
 2018 NORTH CAROLINA RESIDENTIAL CODE
 2018 NORTH CAROLINA ENERGY CONSERVATION CODE
 2018 NORTH CAROLINA EXISTING BUILDING CODE
 2018 NORTH CAROLINA SWIMMING POOL AND SPA CODE
 2017 NORTH CAROLINA ELECTRICAL CODE

AHJ NAME : HARNETT COUNTY

WIRING AND CONDUIT NOTES

- ALL CONDUIT SIZES AND TYPES SHALL BE LISTED FOR ITS PURPOSE AND APPROVAL FOR THE SITE APPLICATIONS
- ALL PV CABLES AND HOMERUN WIRES BE #10AWG *USE-2, PV WIRE, OR PROPRIETARY SOLAR CABLING SPECIFIED BY MFR, OR EQUIVALENT; ROUTED TO SOURCE CIRCUIT COMBINER BOXES AS REQUIRED
- ALL PV DC CONDUCTORS IN CONDUIT EXPOSED TO SUNLIGHT SHALL BE DERATED ACCORDING TO AS PER LATEST NEC CODE.
- EXPOSED ROOF PV DC CONDUCTORS SHALL BE USE-2, 90°C RATED, WET AND UV RESISTANT, AND UL LISTED RATED FOR 600V, UV RATED SPIRAL WRAP SHALL BE USED TO PROTECT WIRE FROM SHARP EDGES
- PHASE AND NEUTRAL CONDUCTORS SHALL BE DUAL RATED THHN/THWN-2 INSULATED, 90°C RATED, WET AND UV RESISTANT, RATED FOR 1000V AS PER APPLICABLE NEC
- 4-WIRE DELTA CONNECTED SYSTEMS HAVE THE PHASE WITH THE HIGHER VOLTAGE TO GROUND MARKED ORANGE OR IDENTIFIED BY OTHER EFFECTIVE MEANS
- ALL SOURCE CIRCUITS SHALL HAVE INDIVIDUAL SOURCE CIRCUIT PROTECTION
- VOLTAGE DROP LIMITED TO 2%
- AC CONDUCTORS >4AWG COLOR CODED OR MARKED: PHASE A OR L1- BLACK, PHASE B OR L2- RED, PHASE C OR L3- BLUE, NEUTRAL- WHITE/GRAY

SYSTEM RATING
9.120 kWDC
7.600 kWAC

PHOTOVOLTAIC SYSTEM FIRE CLASSIFICATION LISTING IN ACCORDANCE WITH UL 1703 STANDARD.

SHEET INDEX	
PV1	COVER PAGE
PV2	SITE PLAN
PV3	ROOF PLAN
PV4	STRING LAYOUT & BOM
PV5-PV6	ATTACHMENT DETAILS
PV7-PV8	ELECTRICAL LINE & CALCS.
PV9	SPECIFICATIONS & NOTES
PV10-PV11	SIGNAGE
PV12	JOB SAFETY PLAN
PV13-PV21	EQUIPMENT SPECIFICATIONS



HOUSE PHOTO

SCALE: NTS



VICINITY MAP

SCALE: NTS



Wyssling Consulting, PLLC
 76 N Meadowbrook Drive Alpine UT 84004
 North Carolina COA # P-2308
 Signed 6/29/2023

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



TITAN SOLAR POWER
 160 N MCQUEEN RD,
 GILBERT, AZ 85233, USA
 PH# : (808) 371-5338
 Electrical LIC# : U.33714

SYSTEM INFO
(24) SILFAB SIL-380 HC (TITAN)
(1) SOLAREEDGE SE7600H-US [240V]
DC SYSTEM SIZE: 9.120 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 107 651 144

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
 RESIDENCE

124 THE INNER CIR, SPRING LAKE, NC 28390, USA
 EMAIL ID: USER96235@AOL.COM
 PHONE NO. (910) 568-8003

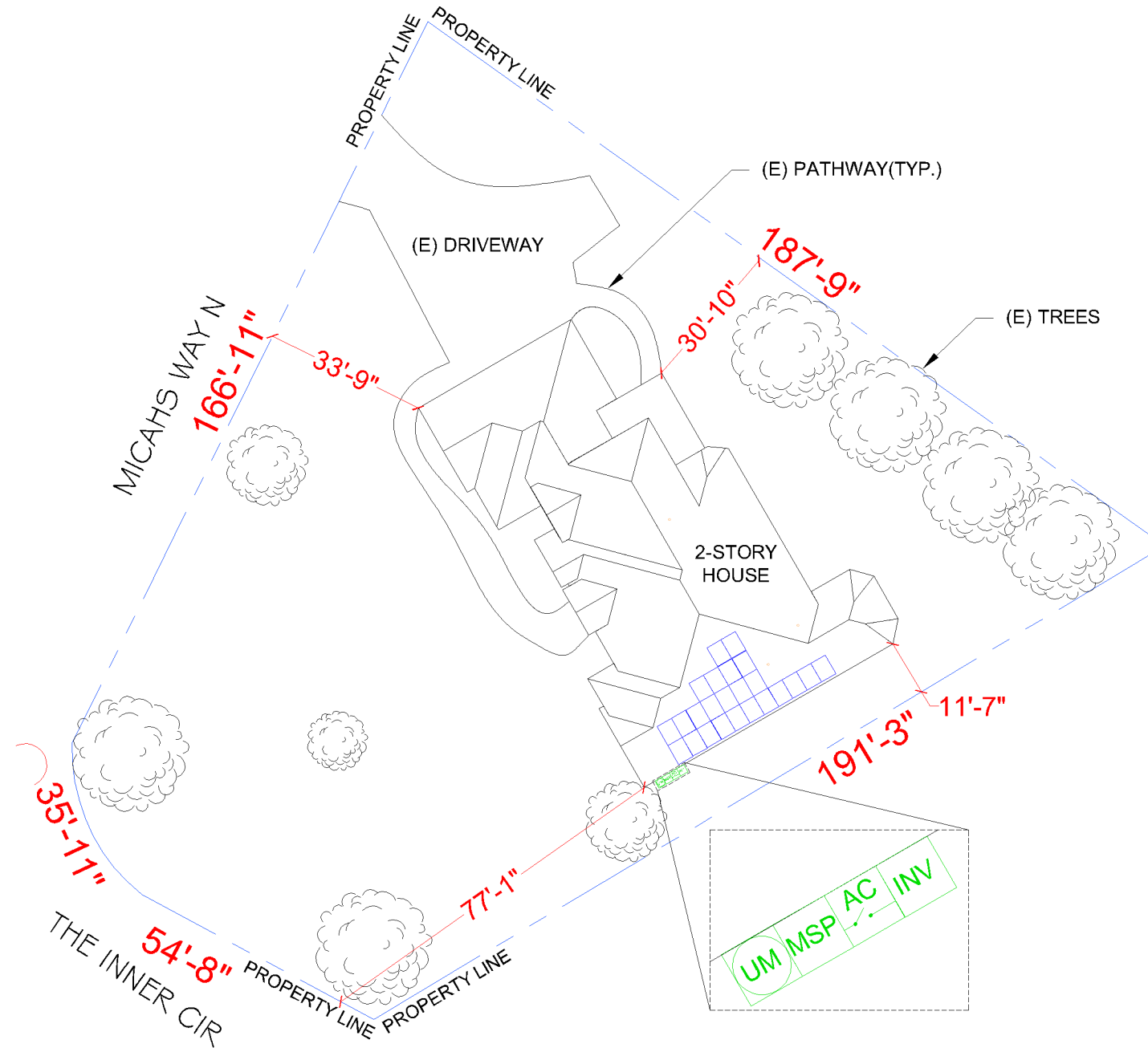
DATE: 6/29/2023
SHEET NAME COVER PAGE
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-1

SITE NOTES

- A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
- THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS AN UTILITY INTERACTIVE SYSTEM WITH NO STORAGE BATTERIES.
- THE SOLAR PV INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
- PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION [NEC 110.26]

LEGEND

- JB (N) JUNCTION BOX
- UM (E) UTILITY METER
- MSP (E) MAIN SERVICE PANEL
- AC (N) NON FUSED AC DISCONNECT
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- ROOF ATTACHMENT
- CONDUIT
- S440 OPTIMIZER
- INV SOLAREEDGE SE7600H-US [240V] INVERTER
- SILFAB SIL-380 HC (TITAN) MODULES
- NXT UMount RAIL - 168" MILL
- TRENCH



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

Signed 6/29/2023

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



TITAN SOLAR POWER
 160 N MCQUEEN RD,
 GILBERT, AZ 85233, USA
 PH# : (808) 371-5338
 Electrical LIC# : U.33714

SYSTEM INFO

(24) SILFAB SIL-380 HC (TITAN)
(1) SOLAREEDGE SE7600H-US [240V]
DC SYSTEM SIZE: 9.120 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 107 651 144

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
 RESIDENCE
 124 THE INNER CIR, SPRING LAKE, NC 28390, USA
 EMAIL ID: USER96235@AOL.COM
 PHONE NO. (910) 568-8003

DATE: 6/29/2023

SHEET NAME

SITE PLAN

SHEET SIZE

**ANSI B
 11" X 17"**

SHEET NUMBER

PV-2



SCALE: 1/32" = 1'-0"

METER NO#: 107 651 144

DESIGN SPECIFICATION	
RISK CATEGORY:	II
CONSTRUCTION:	SFD
ZONING:	RESIDENTIAL
SNOW LOAD (ASCE 7-10):	10 PSF
EXPOSURE CATEGORY:	C
WIND SPEED (ASCE 7-10):	118 MPH

MODULE TYPE, DIMENSIONS & WEIGHT	
NUMBER OF MODULES:	24 MODULES
MODULE TYPE:	SILFAB SIL-380 HC (TITAN)
MODULE WEIGHT:	43 LBS
MODULE DIMENSIONS:	69.4" X 40.8" = 19.66 SF
UNIT WEIGHT OF AREA:	2.19 PSF

ROOF DESCRIPTION					
ROOF	ROOF TILT	AZIMUTH	TRUSS SIZE	TRUSS SPACING	ROOF MATERIAL
#1	39°	150°	2" x 4"	24" o.c.	COMP SHINGLE

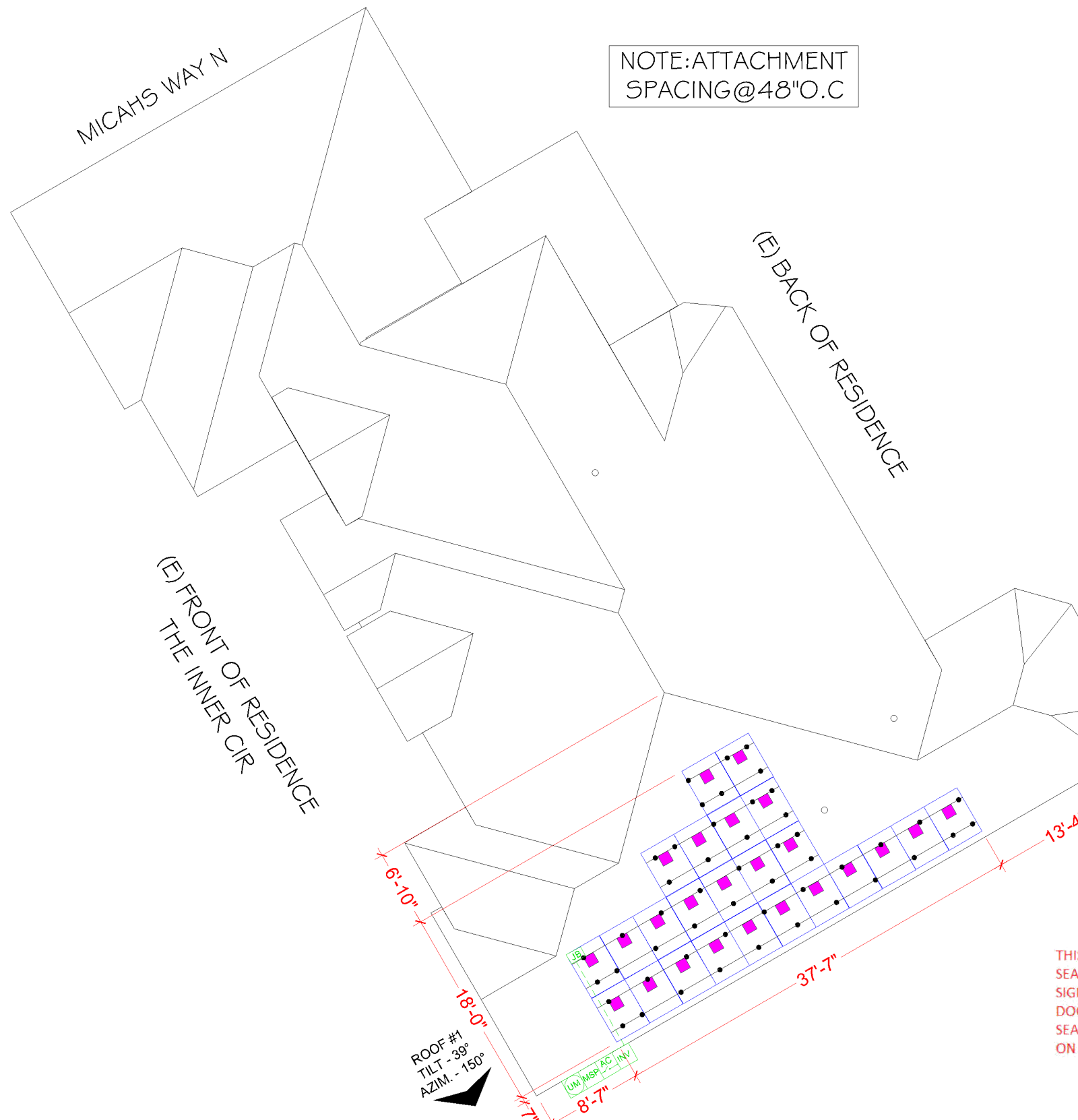
ARRAY AREA & ROOF AREA CALC'S		
ROOF #1	# OF MODULES	ARRAY AREA (Sq. Ft.)
#1	24	471.92
(TOTAL ARRAY AREA/TOTAL ROOF AREA) X 100%		
= (471.92/4233) X 100% = 11.15%		

LEGEND

- JB (N) JUNCTION BOX
- UM (E) UTILITY METER
- MSP (E) MAIN SERVICE PANEL
- AC (N) NON FUSED AC DISCONNECT
- VENT. ATTIC FAN (ROOF OBSTRUCTION)
- ROOF ATTACHMENT
- CONDUIT
- S440 OPTIMIZER
- INV SOLAREEDGE SE7600H-US [240V] INVERTER
- SILFAB SIL-380 HC (TITAN) MODULES
- NXT UMount RAIL - 168" MILL
- TRENCH

PANEL HEIGHT OFF ROOF	4"
-----------------------	----

DEAD LOAD CALCULATION			
EQUIPMENT'S DESCRIPTIONS	QTY	LBS/UNIT	TOTAL WEIGHT
MODULES	24	43	1032
MID CLAMP	40	0.3	12
END CLAMP	16	0.31	4.96
NXT UMount RAIL - 168" MILL	13	6.25	81.25
SPLICE BAR	6	0.65	3.91
STRONGHOLD ATT W / BUTYL, MILL	50	0.8	40.00
TOTAL WEIGHT OF THE SYSTEM (LBS)			1174.13
TOTAL ARRAY AREA ON THE ROOF (SQ. FT.)			471.92
WEIGHT PER SQ. FT. (LBS)			2.49
WEIGHT PER PENETRATION (LBS)			23.49



NOTE: ATTACHMENT SPACING @ 48" O.C.



Wyssling Consulting, PLLC
 76 N Meadowbrook Drive Alpine UT 84004
 North Carolina COA # P-2308
 Signed 6/29/2023

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



SCALE: 3/32" = 1'-0"

METER NO#: 107 651 144



TITAN SOLAR POWER
 160 N MCQUEEN RD,
 GILBERT, AZ 85233, USA
 PH#: (808) 371-5338
 Electrical LIC#: U.33714

SYSTEM INFO
(24) SILFAB SIL-380 HC (TITAN)
(1) SOLAREEDGE SE7600H-US [240V]
DC SYSTEM SIZE: 9.120 KWDC
AC SYSTEM SIZE: 7.600 KWAC
METER: 107 651 144

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
 RESIDENCE
 124 THE INNER CIR, SPRING LAKE, NC 28390, USA
 EMAIL ID: USER96235@AOL.COM
 PHONE NO: (910) 568-8003

DATE: 6/29/2023
SHEET NAME ROOF PLAN
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-3

BILL OF MATERIALS

EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	24	SILFAB SIL-380 HC (TITAN)
INVERTER	1	SOLAREEDGE SE7600H-US [240V]
OPTIMIZER	24	SOLAREEDGE POWER OPTIMIZER S440
JUNCTION BOX	1	JB-1.XL, JUNCTION BOX, NEMA 3R, UL LISTED
NON FUSED AC DISCONNECT	1	SIEMENS GNF222R PV SYSTEM AC DISCONNECT SWITCH NON FUSED VISIBLE OPEN 60A, 120/240V 2P NEMA 3R
ATTACHMENT	50	STRONGHOLD ATT W / BUTYL, MILL
RAILS	13	NXT UMount RAIL - 168" MILL
BONDED SPLICE	6	SPLICE KIT
MID CLAMP	40	MODULE MID CLAMPS
END CLAMP	16	MODULE END CLAMPS
GROUNDING LUG	4	GROUNDING LUG



TITAN SOLAR POWER
 160 N MCQUEEN RD,
 GILBERT, AZ 85233, USA
 PH# : (808) 371-5338
 Electrical LIC# : U.33714

SYSTEM INFO

(24) SILFAB
 SIL-380 HC (TITAN)
 (1) SOLAREEDGE
 SE7600H-US [240V]
 DC SYSTEM SIZE: 9.120 kWDC
 AC SYSTEM SIZE: 7.600 kWAC

METER: 107 651 144

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
 RESIDENCE
 124 THE INNER CIR, SPRING LAKE, NC 28390, USA
 EMAIL ID: USER96235@AOL.COM
 PHONE NO: (910) 568-8003

DATE: 6/29/2023

SHEET NAME
STRING LAYOUT & BOM

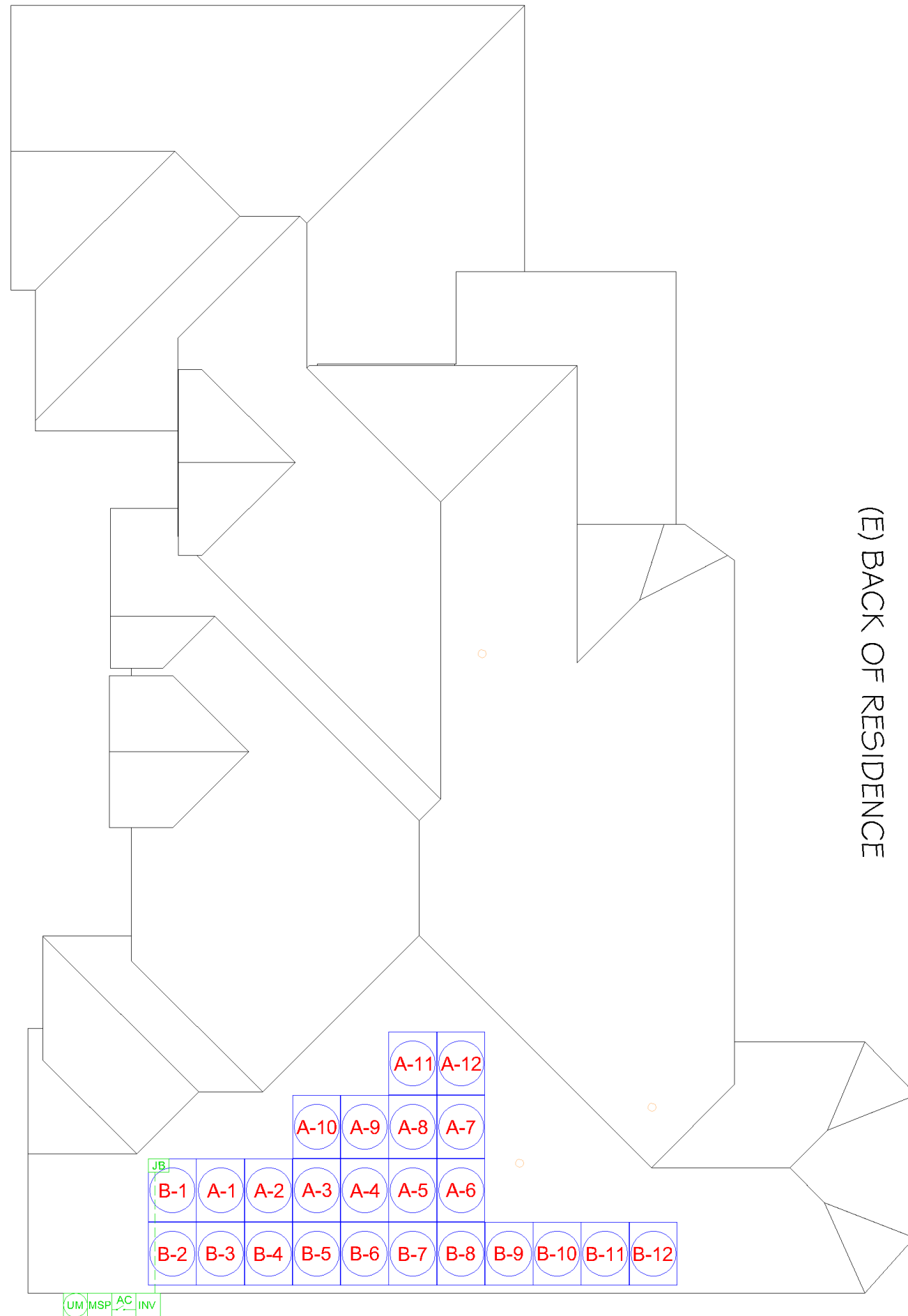
SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-4

MICAH5 WAY N

(E) FRONT OF RESIDENCE
 THE INNER CIR

(E) BACK OF RESIDENCE



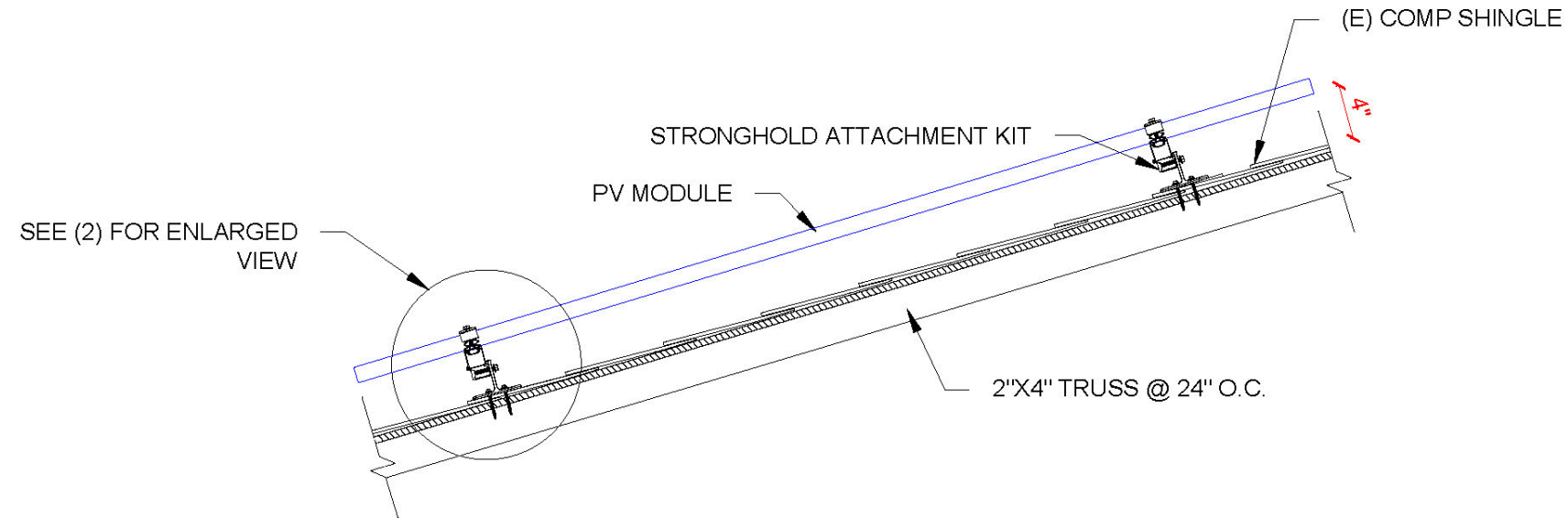
SCALE: 1/16" = 1'-0"



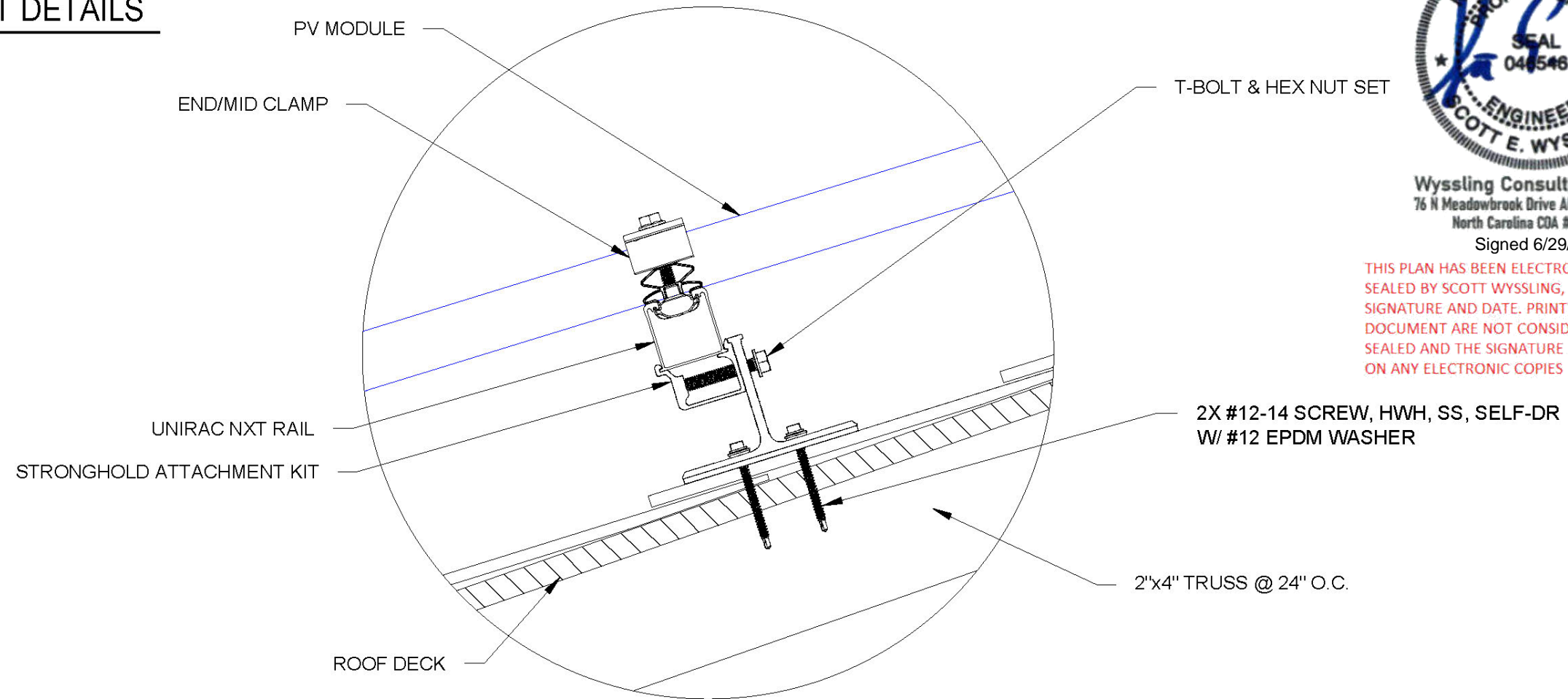
- MODULE STRINGING

SITE NOTES

- A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
- THE SOLAR PV INSTALLATION SHALL COMPLY WITH [IRC P3101.1.3]



1 | ATTACHMENT DETAILS



2 | ENLARGED VIEW OF ATTACHMENT

SCALE: NTS



TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
Electrical LIC# : U.33714

SYSTEM INFO

(24) SILFAB
SIL-380 HC (TITAN)

(1) SOLAREEDGE
SE7600H-US [240V]

DC SYSTEM SIZE: 9.120 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 107 651 144

REVISIONS

DESCRIPTION	DATE	REV



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

Signed 6/29/2023

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

PROJECT NAME & ADDRESS

CARL DAY
RESIDENCE
124 THE INNER CIR, SPRING LAKE, NC 28390, USA
EMAIL ID: USER96235@AOL.COM
PHONE NO. (910) 568-8003

DATE: 6/29/2023

SHEET NAME

ATTACHMENT
DETAILS

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-5



TITAN SOLAR POWER
 160 N MCQUEEN RD,
 GILBERT, AZ 85233, USA
 PH# : (808) 371-5338
 Electrical LIC# : U.33714

SYSTEM INFO

(24) SILFAB
 SIL-380 HC (TITAN)
 (1) SOLAREEDGE
 SE7600H-US [240V]
 DC SYSTEM SIZE: 9.120 kWDC
 AC SYSTEM SIZE: 7.600 kWAC

METER: 107 651 144

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
 RESIDENCE
 124 THE INNER CIR, SPRING LAKE, NC 28390, USA
 EMAIL ID: USER96235@AOL.COM
 PHONE NO. (910) 568-8003

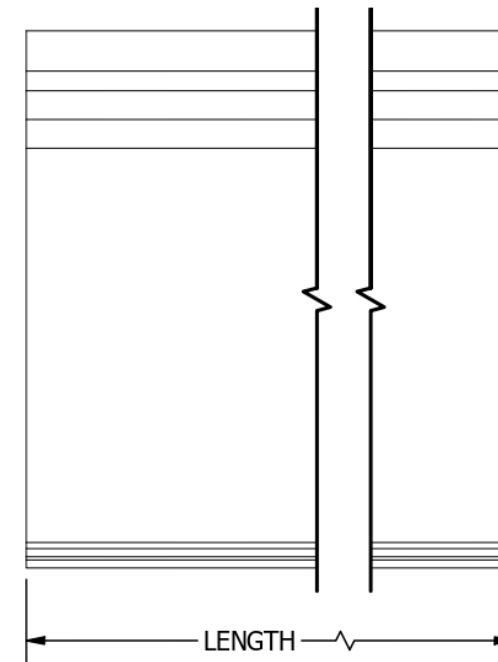
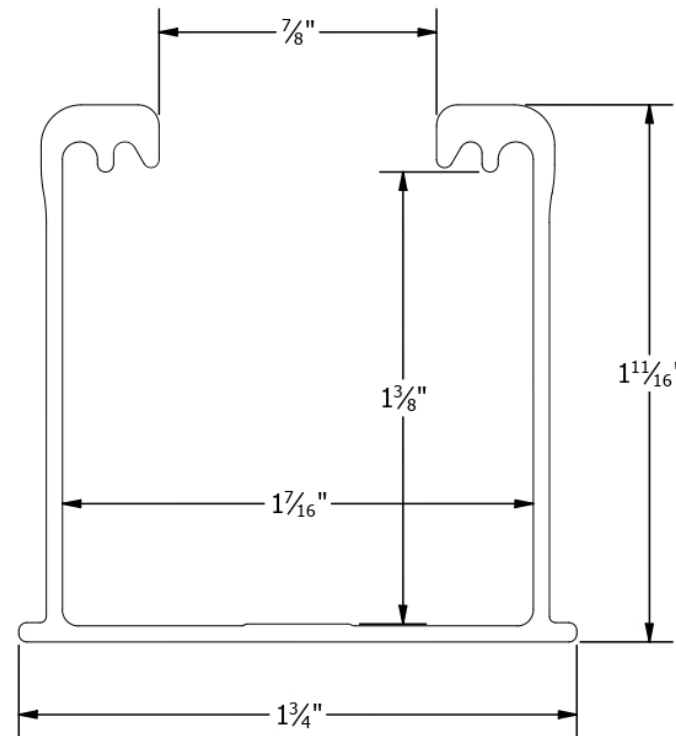
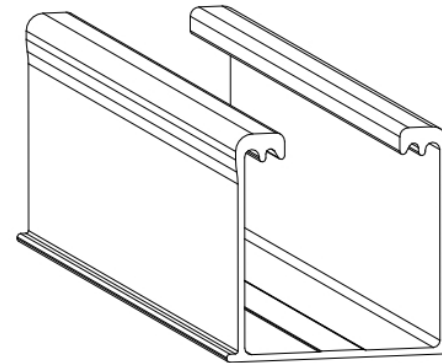
DATE: 6/29/2023

SHEET NAME
**ATTACHMENT
 DETAILS**

SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-6

PART # TABLE		
P/N	DESCRIPTION	LENGTH
084RLM1	NXT UMount RAIL 84" MILL	84"
084RLD1	NXT UMount RAIL 84" DARK	84"
168RLM1	NXT UMount RAIL 168" MILL	168"
168RLD1	NXT UMount RAIL 168" DARK	168"
208RLM1	NXT UMount RAIL 208" MILL	208"
208RLD1	NXT UMount RAIL 208" DARK	208"
246RLM1	NXT UMount RAIL 246" MILL	246"
246RLD1	NXT UMount RAIL 246" DARK	246"
171RLM1	NXT UMount RAIL 171" MILL	171.50"
171RLD1	NXT UMount RAIL 171" DARK	171.50"



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

Signed 6/29/2023

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



1411 BROADWAY BLVD. NE
 ALBUQUERQUE, NM 87102 USA
 PHONE: 505.242.6411
 WWW.UNIRAC.COM

PRODUCT LINE:	NXT UMount
DRAWING TYPE:	PART DETAIL
DESCRIPTION:	RAIL
REVISION DATE:	11/17/2022

DRAWING NOT TO SCALE
 ALL DIMENSIONS ARE
 NOMINAL

PRODUCT PROTECTED BY
 ONE OR MORE US PATENTS
 LEGAL NOTICE

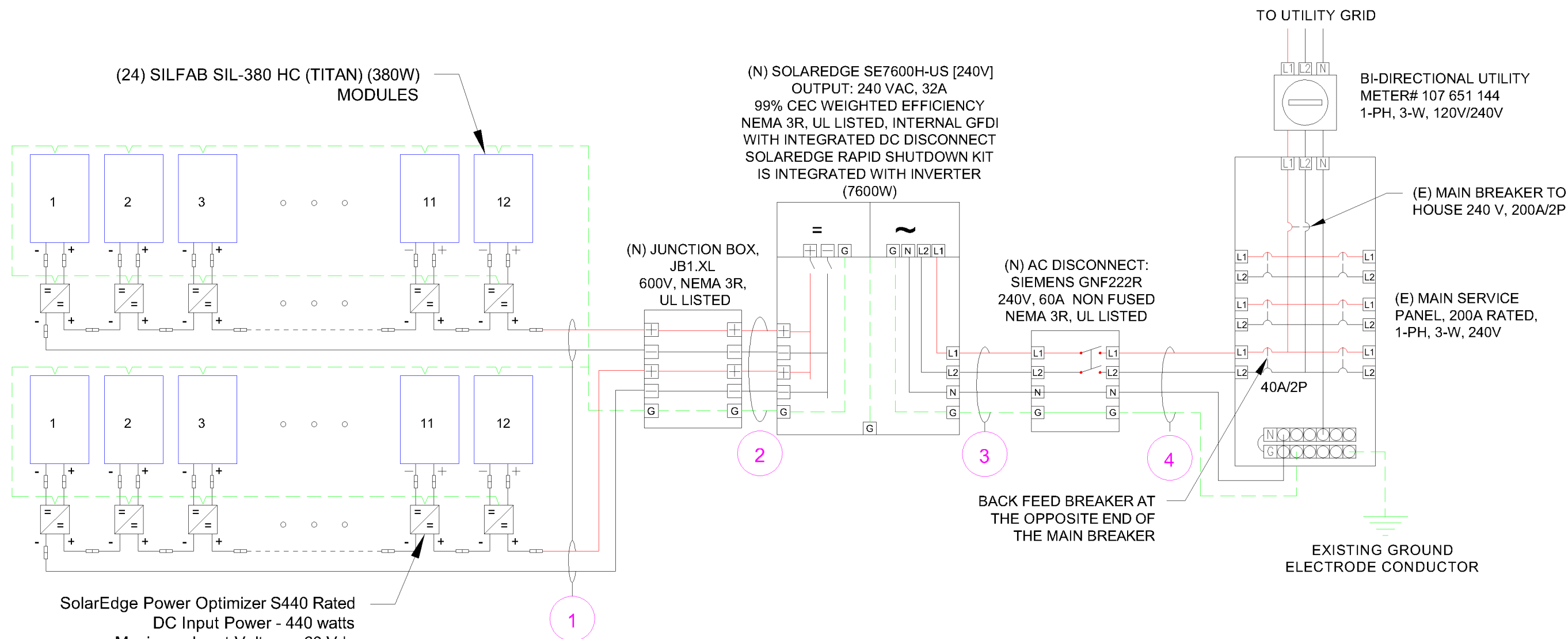
NU-P01

SHEET



TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
Electrical LIC# : U.33714

ID	TYPICAL	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	CONDUCTOR			CONDUIT	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CIRCUIT	CONDUIT FILL PERCENT	OCPD	EGC		TEMP. CORR. FACTOR		CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	LENGTH	VOTAGE DROP
				6 AWG	BARE COPPER	0.71						(58°C)											
1	2	ARRAY	JUNCTION BOX	10 AWG	PV WIRE	COPPER	MIN 0.75" DIA EMT	1	2	31.71%	N/A	6 AWG	BARE COPPER	0.71	(58°C)	N/A	15.00A	18.75A	N/A	N/A	75°C	39FT	0.63%
2	1	JUNCTION BOX	INVERTER	10 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	2	4	21.76%	N/A	8 AWG	THWN-2 COPPER	0.91	(36°C)	0.8	15.00A	18.75A	40A	29.12A	75°C	28FT	0.45%
3	1	INVERTER	NON FUSED AC DISCONNECT	8 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	29.27%	N/A	8 AWG	THWN-2 COPPER	0.91	(36°C)	1	32.00A	40A	55A	50.05A	75°C	5FT	0.10%
4	1	NON FUSED AC DISCONNECT	MSP	8 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	29.27%	40A	8 AWG	THWN-2 COPPER	0.91	(36°C)	1	32.00A	40A	55A	50.05A	75°C	5FT	0.10%



SolarEdge Power Optimizer S440 Rated
DC Input Power - 440 watts
Maximum Input Voltage - 60 Vdc
MPPT Range - 8 to 60 Vdc
Maximum Input Current - 14.5 Adc
Maximum Output Current - 15 Adc String
Limitations - 8 to 25 Optimizers,
5700 watts STC per string maximum

SYSTEM RATING
9.120 kWDC
7.600 kWAC

SERVICE INFO	
UTILITY PROVIDER:	ALBEMARLE ELECTRIC MEMBERSHIP CORPORATION
AHJ NAME:	HARNETT COUNTY
MAIN SERVICE VOLTAGE:	240V
MAIN PANEL BRAND:	SQUARE D
MAIN SERVICE PANEL:	200 A
MAIN BREAKER RATING:	200 A
MAIN SERVICE LOCATION:	SOUTH
SERVICE FEED SOURCE:	OVERHEAD

INTERCONNECTION 120% RULE - NEC 705.12(B)(2)(3)(b)
UTILITY FEED + SOLAR BACKFEED 200A + 40A = 240A
BUSS RATING X 120% 200A x 120% = 240A

METER NO#: 107 651 144

SYSTEM INFO
(24) SILFAB SIL-380 HC (TITAN)
(1) SOLAREGE SE7600H-US [240V]
DC SYSTEM SIZE: 9.120 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 107 651 144

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
RESIDENCE
124 THE INNER CIR, SPRING LAKE, NC 28390, USA
EMAIL ID: USER96235@AOL.COM
PHONE NO. (910) 568-8003

DATE: 6/29/2023
SHEET NAME ELECTRICAL LINE & CALCS.
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-7

SCALE: NTS



TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
Electrical LIC# : U.33714

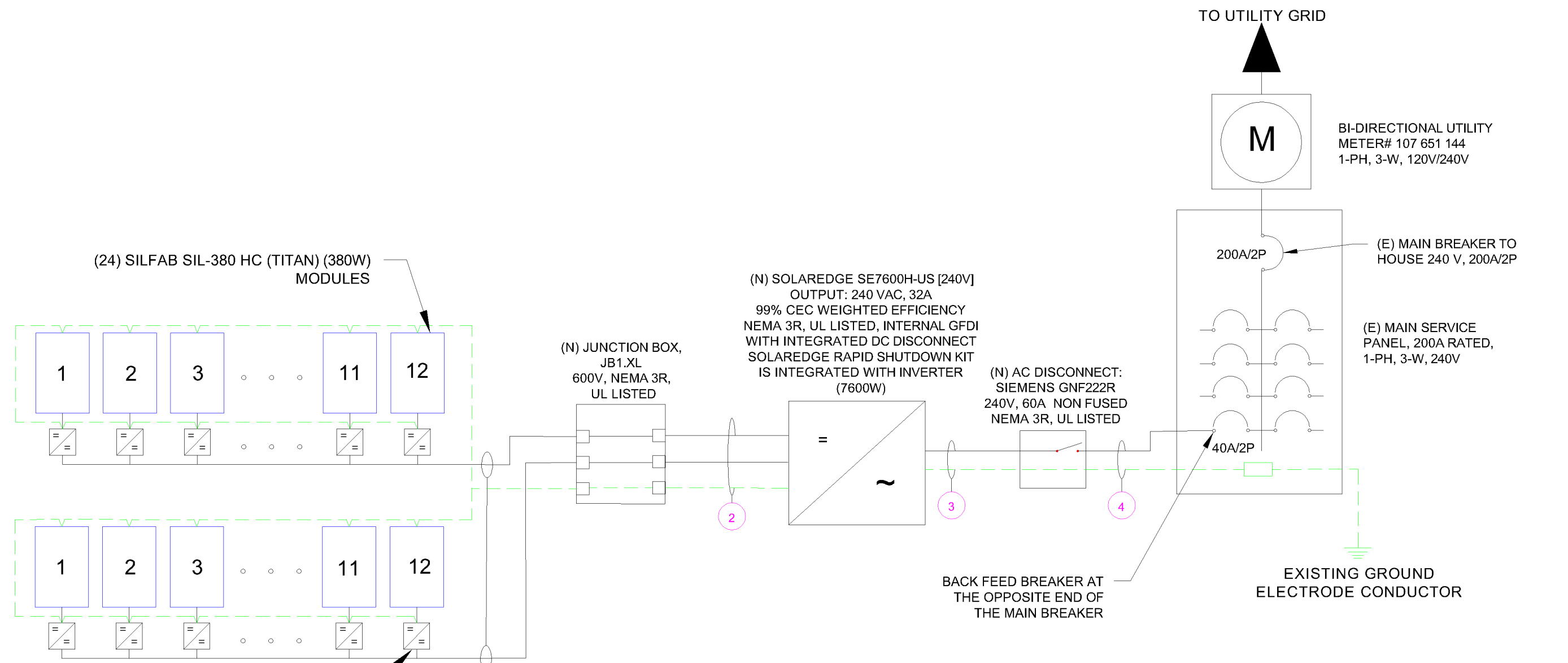
ID	TYPICAL	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	CONDUCTOR			CONDUIT	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CIRCUIT	CONDUIT FILL PERCENT	OCPD	EGC		TEMP. CORR. FACTOR		CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	LENGTH	VOTAGE DROP
				6 AWG	BARE COPPER	0.71						(58°C)	N/A	15.00A	18.75A								
1	2	ARRAY	JUNCTION BOX	10 AWG	PV WIRE	COPPER	MIN 0.75" DIA EMT	1	2	31.71%	N/A	6 AWG	BARE COPPER	0.71	(58°C)	N/A	15.00A	18.75A	N/A	N/A	75°C	39FT	0.63%
2	1	JUNCTION BOX	INVERTER	10 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	2	4	21.76%	N/A	8 AWG	THWN-2 COPPER	0.91	(36°C)	0.8	15.00A	18.75A	40A	29.12A	75°C	28FT	0.45%
3	1	INVERTER	NON FUSED AC DISCONNECT	8 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	29.27%	N/A	8 AWG	THWN-2 COPPER	0.91	(36°C)	1	32.00A	40A	55A	50.05A	75°C	5FT	0.10%
4	1	NON FUSED AC DISCONNECT	MSP	8 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	29.27%	40A	8 AWG	THWN-2 COPPER	0.91	(36°C)	1	32.00A	40A	55A	50.05A	75°C	5FT	0.10%

SYSTEM INFO		
(24) SILFAB SIL-380 HC (TITAN)		
(1) SOLAREEDGE SE7600H-US [240V]		
DC SYSTEM SIZE: 9.120 kWDC		
AC SYSTEM SIZE: 7.600 kWAC		
METER: 107 651 144		

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
RESIDENCE
124 THE INNER CIR, SPRING LAKE, NC 28390, USA
EMAIL ID: USER96235@AOL.COM
PHONE NO. (910) 568-8003



SYSTEM RATING
9.120 kWDC
7.600 kWAC

SERVICE INFO	
UTILITY PROVIDER:	ALBEMARLE ELECTRIC MEMBERSHIP CORPORATION
AHJ NAME:	HARNETT COUNTY
MAIN SERVICE VOLTAGE:	240V
MAIN PANEL BRAND:	SQUARE D
MAIN SERVICE PANEL:	200 A
MAIN BREAKER RATING:	200 A
MAIN SERVICE LOCATION:	SOUTH
SERVICE FEED SOURCE:	OVERHEAD

INTERCONNECTION 120% RULE - NEC 705.12(B)(2)(3)(b)
UTILITY FEED + SOLAR BACKFEED 200A + 40A = 240A
BUSS RATING X 120% 200A x 120% = 240A

METER NO#: 107 651 144

SCALE: NTS

DATE: 6/29/2023
SHEET NAME ELECTRICAL LINE & CALCS.
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-8

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL	SILFAB SIL-380 HC (TITAN)
VMP	35.32 V
IMP	10.77 A
VOC	42.17 V
ISC	11.36 A
TEMP. COEFF. VOC	-0.28%/K
PTC RATING	349.4 W
MODULE DIMENSION	69.4"(L) x 40.8"(W)
PANEL WATTAGE	380 W

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL	SOLAREEDGE SE7600H-US [240V]
NOMINAL AC POWER	7600 W
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	32 A

POWER OPTIMIZER (SOLAREEDGE S440)	
MAXIMUM INPUT POWER	440 W
MAXIMUM INPUT VOLTAGE	60 VDC
MAXIMUM INPUT ISC	14.5 ADC
MAXIMUM OUTPUT CURRENT	15 ADC
WEIGHTED EFFICIENCY	98.6%

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP	-12°C
AMBIENT TEMP (HIGH TEMP 2%)	38°C
CONDUIT HEIGHT	7/8"
ROOF TOP TEMP	90°C
CONDUCTOR TEMPERATURE RATE	56°C
MODULE TEMPERATURE COEFFICIENT OF VOC	-0.28%/K

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
0.80	4-6
0.70	7-9
0.50	10-20



TITAN SOLAR POWER
 160 N MCQUEEN RD,
 GILBERT, AZ 85233, USA
 PH# : (808) 371-5338
 Electrical LIC# : U.33714

SYSTEM INFO
(24) SILFAB SIL-380 HC (TITAN)
(1) SOLAREEDGE SE7600H-US [240V]
DC SYSTEM SIZE: 9.120 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 107 651 144

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
 RESIDENCE
 124 THE INNER CIR, SPRING LAKE, NC 28390, USA
 EMAIL ID: USER96235@AOL.COM
 PHONE NO: (910) 568-8003

DATE: 6/29/2023
SHEET NAME SPECIFICATIONS & NOTES
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-9

1 **PHOTOVOLTAIC AC DISCONNECT**
 RATED AC OUTPUT CURRENT 32 AMPS
 NOMINAL OPERATING AC VOLTAGE 240 VOLTS

LABEL LOCATION:
 MAIN SERVICE PANEL/MAIN SERVICE DISCONNECT/AC DISCONNECT
 PER CODE: NEC 690.13(B)

2 **RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM**

LABEL LOCATION:
 INVERTER AT OR WITHIN 3' OF THE DC COMBINER SWITCH
 PER CODE: NEC 690.56(C)(3)

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

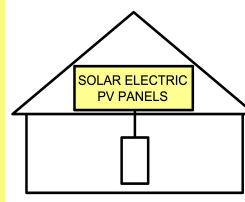
LABEL LOCATION:
 POINT OF INTERCONNECTION, MAIN SERVICE DISCONNECT, AC DISCONNECT, AC COMBINER, INVERTER
 PER CODE: NEC 690.13(B)

4 **WARNING**
INVERTER OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
 PLACE THIS LABEL AT P.O.C. TO SERVICE DISTRIBUTION EQUIPMENT (I.E. MAIN PANEL (AND SUBPANEL IF APPLICABLE))
 PER CODE: NEC705.12(D)(2)(b)

5 **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 IF MSD IS OUTSIDE PLACE IT THERE / IF MSD IS INSIDE PLACE ON THE AC DISCONNECT
 PER CODE: NEC 690.56(C)(1)(a)

6 **CAUTION : SOLAR CIRCUIT**

LABEL LOCATION:
 MARKINGS PLACED ON ALL INTERIOR AND EXTERIOR CONDUIT, RACEWAYS, ENCLOSURES, AND CABLE ASSEMBLIES AT LEAST EVERY 10 FT, AT TURNS AND ABOVE/BELOW PENETRATIONS AND ALL COMBINER/JUNCTION BOXES
 PER CODE: IFC 606.11.1.4

7 **SERVICE DISCONNECT**
SECTIONNEUR PRINCIPALE
SERVICIO DE DESCONEXION

LABEL LOCATION:
 AC DISCONNECT
 2017 NEC 230.66

8 **MAXIMUM VOLTAGE 480 VDC**
MAXIMUM CIRCUIT CURRENT 20 ADC
MAX RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC-CONVERTER(IF INSTALLED) 30 ADC

LABEL LOCATION:
 DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE
 PER CODE: 2017 NFPA 70, NEC 690.53

9 **PHOTOVOLTAIC**
AC DISCONNECT

LABEL LOCATION:
 AC DISCONNECT/BREAKER/POINTS OF CONNECTION
 PER CODE: NEC2017, 690.13(B)

10 **WARNING**
ELECTRIC SHOCK HAZARD
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

LABEL LOCATION:
 PLACE THIS LABEL AT EACH JUNCTION BOX, COMBINER BOX, DISCONNECT AND DEVICE WHERE ENERGIZED, UNGROUNDED BE EXPOSED DURING SERVICE:
 PER CODE: NEC 690.35 (F)

11 **CAUTION : SOLAR ELECTRIC SYSTEM CONNECTED**

LABEL LOCATION:
 POINT OF INTERCONNECTION & INVERTER
 PER CODE: NEC 690.15 & 690.13(B)

12 **WARNING - Electric Shock Hazard**
No user serviceable parts inside
 Contact authorized service provider for assistance

LABEL LOCATION:
 INVERTER & JUNCTION BOXES (ROOF)
 PER CODE: NEC 690.13 (G)(3) & 690.13 (G)(4)

13 **WARNING: PHOTOVOLTAIC POWER SOURCE**

LABEL LOCATION:
 CONDUIT
 PER CODE: 2017 NEC 690.31(G)(3)

14 **CAUTION**
DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC

LABEL LOCATION:
 MAIN SERVICE DISCONNECT/ AC DISCONNECT/ MAIN SERVICE PANEL/ REVENUE METER/ AC COMBINER
 PER CODE: NEC 705.12(B)(3)

15 **PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH**

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

- ADHESIVE FASTENED SIGNS**
- THE LABEL SHALL BE SUITABLE FOR THE ENVIRONMENT WHERE IT IS INSTALLED.
 - WHERE REQUIRED ELSEWHERE IN THIS CODE, ALL FIELD APPLIED LABELS, WARNING AND MARKINGS SHOULD COMPLY WITH ANSI 2535.4 [NEC 110.21(B) FIELD MARKING].
 - ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER RESISTANT [IFC 605.11.1.3]



TITAN SOLAR POWER
 160 N MCQUEEN RD,
 GILBERT, AZ 85233, USA
 PH# : (808) 371-5338
 Electrical LIC# : U.33714

SYSTEM INFO	
(24) SILFAB SIL-380 HC	(TITAN)
(1) SOLAREEDGE SE7600H-US	[240V]
DC SYSTEM SIZE:	9.120 kWDC
AC SYSTEM SIZE:	7.600 kWAC
METER: 107 651 144	

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
 RESIDENCE
 124 THE INNER CIR, SPRING LAKE, NC 28390, USA
 EMAIL ID: USER96235@AOL.COM
 PHONE NO. (910) 568-8003

DATE: 6/29/2023
SHEET NAME SIGNAGE
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-10



TITAN SOLAR POWER
 160 N MCQUEEN RD,
 GILBERT, AZ 85233, USA
 PH# : (808) 371-5338
 Electrical LIC# : U.33714

SYSTEM INFO

(24) SILFAB
 SIL-380 HC (TITAN)

(1) SOLAREEDGE
 SE7600H-US [240V]

DC SYSTEM SIZE: 9.120 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 107 651 144

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
 RESIDENCE
 124 THE INNER CIR, SPRING LAKE, NC 28390, USA
 EMAIL ID: USER96235@AOL.COM
 PHONE NO. (910) 568-8003

DATE: 6/29/2023

SHEET NAME

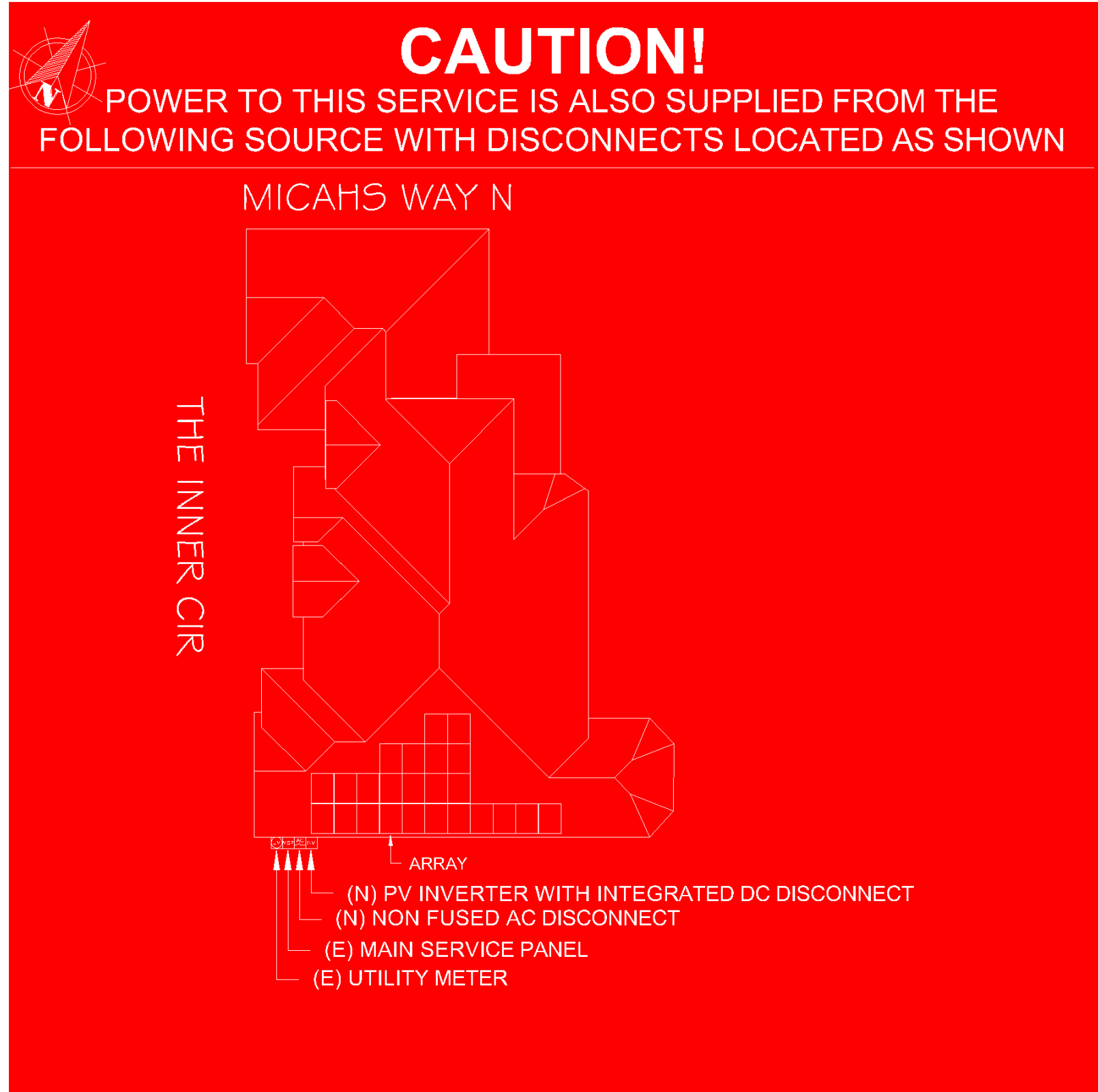
SIGNAGE

SHEET SIZE

ANSI B
 11" X 17"

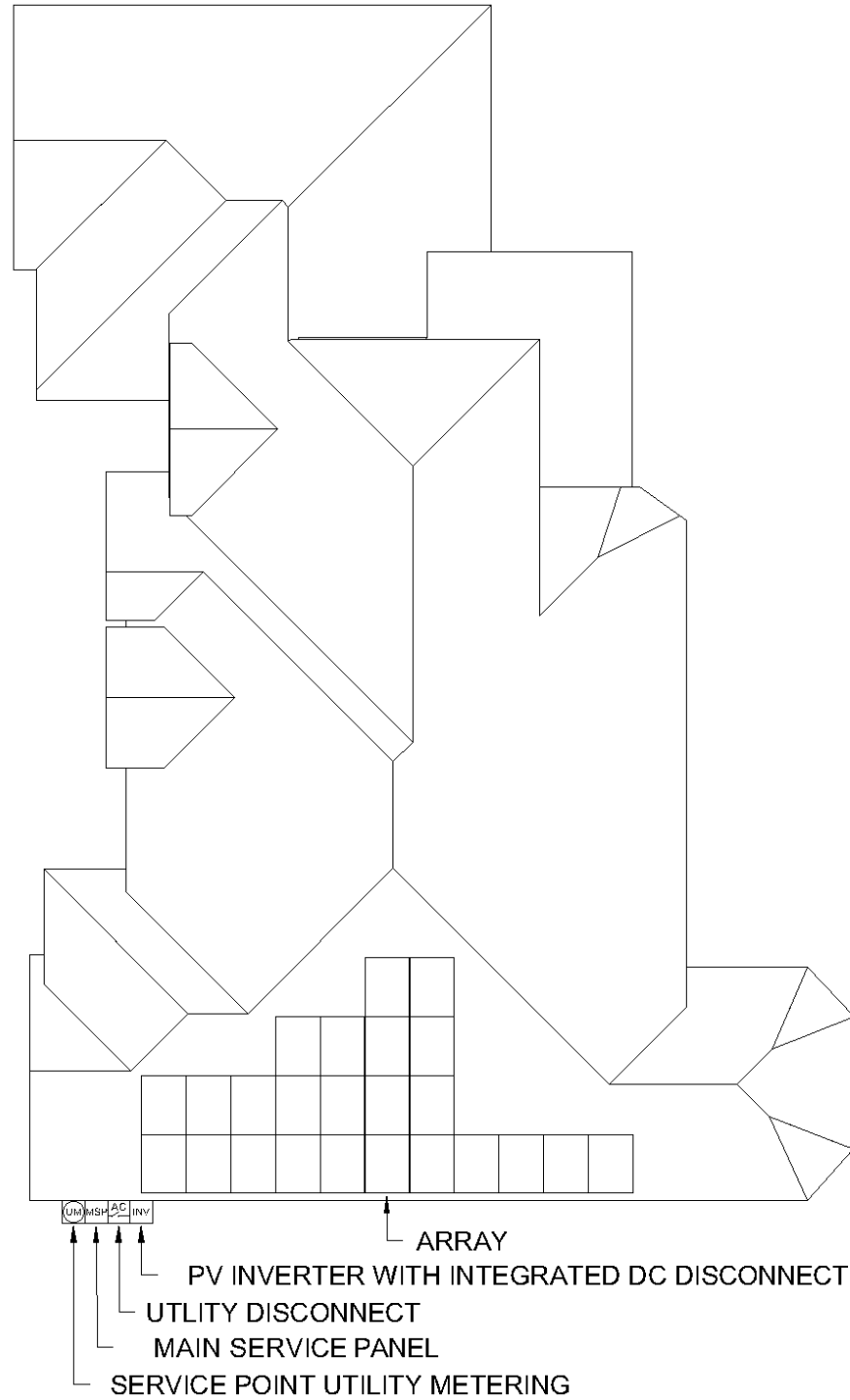
SHEET NUMBER

PV-11



LABEL LOCATION:
 EACH SERVICE EQUIPMENT LOCATION AND AT THE LOCATION(S) OF THE SYSTEM DISCONNECT(S)
 FOR ALL ELECTRIC POWER PRODUCTION SOURCES CAPABLE OF BEING INTERCONNECTED
 (PER CODE: NEC 705.10)

JOB SAFETY PLAN



124 THE INNER CIR, SPRING LAKE, NC 28390, USA

LOCATION OF NEAREST URGENT CARE FACILITY

- NAME:
- ADDRESS:
- PHONE NUMBER:

NOTES

- INSTALLER SHALL DRAW IN DESIGNED SAFETY AREA AROUND HOME.
- INSTALLER SHALL UPDATE NAME, ADDRESS AND PHONE NUMBER OF NEAREST URGENT CARE FACILITY RELATIVE TO THE JOB SITE BEFORE STARTING WORK.



TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
Electrical LIC# : U.33714

SYSTEM INFO

(24) SILFAB
SIL-380 HC (TITAN)

(1) SOLAREEDGE
SE7600H-US [240V]

DC SYSTEM SIZE: 9.120 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 107 651 144

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
RESIDENCE
124 THE INNER CIR, SPRING LAKE, NC 28390, USA
EMAIL ID: USER96235@AOL.COM
PHONE NO. (910) 568-8003

PERSON COVERED BY
THIS JOB SAFETY PLAN

INJURED AT WORK TODAY
? INITIAL YES OR NO

PRINT NAME	INITIAL	YES	NO

DATE: 6/29/2023

SHEET NAME
**JOB SAFETY
PLAN**

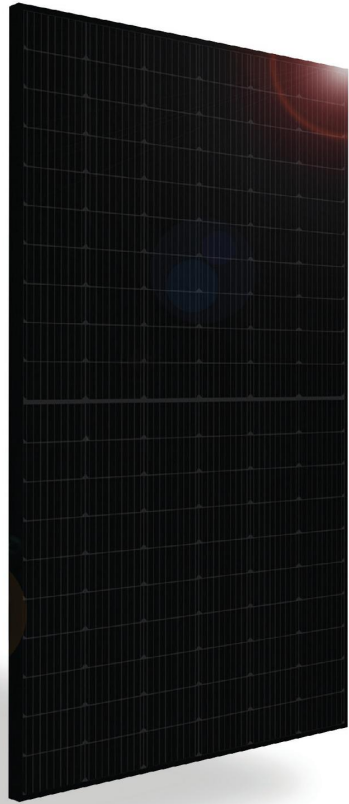
SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-12



TITAN

SOLAR PANEL



INDUSTRY LEADING WARRANTY

The Titan Solar Panel is manufactured by Silfab Solar and includes an industry leading 25-year product and 30-year performance warranty.

40+ YEARS OF SOLAR INNOVATION

Leveraging over 40 years of worldwide experience in the solar industry, Silfab is dedicated to superior manufacturing processes and innovations such as Bifacial and Back Contact technologies to ensure our partners, such as Titan Solar, have the latest in solar innovation.

QUALITY MATTERS

Silfab utilizes premium quality materials and strict quality control management to deliver the highest efficiency, premium PV modules.



SIL-380 HC
POWERED BY **SILFAB SOLAR**

MULTI BUSBAR TECHNOLOGY

The 9-busbar technology enables reduced electrical resistance and maximum module energy conversion efficiency due to shorter electron paths and shading management.

HALF-CELL TECHNOLOGY

High-efficiency half cell technology, designed to improve the module's performance and durability.

BAA / ARRA COMPLIANT

Silfab panels are designed and manufactured to meet Buy American Act Compliance. The US State Department, US Military and FAA have all utilized Silfab panels in their solar installations.

LIGHT AND DURABLE

Engineered to accommodate high wind load conditions for test loads validated up to 5400Pa uplift. The light-weight frame is exclusively designed for wide-ranging racking compatibility and durability.

DOMESTIC SUPPORT AND SERVICES

Silfab Solar manufactures the Titan Solar Panels in our three automated facilities within North America. Our 500+ North American team is ready to help our partners win the hearts and minds of customers, providing customer service and product delivery that is direct, efficient and local.

AESTHETICALLY PLEASING

All black sleek design, ideal for high-profile residential or commercial applications.

PID RESISTANT

PID Resistant due to advanced cell technology and material selection. In accordance to IEC 62804-1.

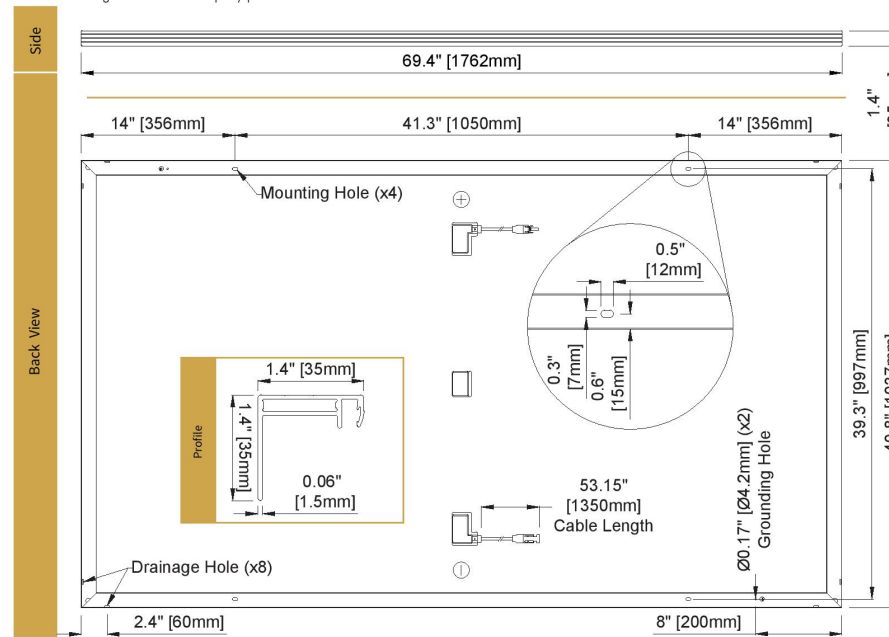
ELECTRICAL SPECIFICATIONS		380	
Test Conditions		STC	NOCT
Module Power (P _{max})	Wp	380	284
Maximum power voltage (V _{pmax})	V	35.32	32.83
Maximum power current (I _{pmax})	A	10.77	8.64
Open circuit voltage (V _{oc})	V	42.17	39.55
Short circuit current (I _{sc})	A	11.36	9.16
Module efficiency	%	20.8%	19.4%
Maximum system voltage (VDC)	V		1000
Series fuse rating	A		20
Power Tolerance	Wp		±3%
Measurement conditions: STC 1000 W/m ² • AM 1.5 • Temperature 25 °C • NOCT 800 W/m ² • AM 1.5 • Measurement uncertainty ≤ 3% Sun simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by ±3%.			

MECHANICAL PROPERTIES / COMPONENTS	METRIC
Module weight	43lbs ±0.4lbs
Dimensions (H x L x D)	69.4 in x 40.8 in x 1.37 in
Maximum surface load (wind/snow)*	112.8 lb/ft ² rear load / 112.8 lb/ft ² front load
Hail impact resistance	1 in at 51.6 mph
Cells	120 Half cells- Si mono PERC, 9 busbar - 3.26 x 6.53 in
Glass	0.126 in high transmittance, tempered, DSM antireflective coating
Cables and connectors (refer to installation manual)	53.15 in, ø 0.22 in (12AWG), MC4 from Staubli
Backsheet	High durability, superior hydrolysis and UV resistance, multi-layer dielectric film, fluorine-free PV backsheet
Frame	Anodized Aluminum (Black)
Bypass diodes	3 diodes-30SQ045T (45V max DC blocking voltage, 30A max forward rectified current)
Junction Box	UL 3730 Certified, IEC 62790 Certified, IP68 rated

TEMPERATURE RATINGS	WARRANTIES		
Temperature Coefficient I _{sc}	+0.064 %/°C	Module product workmanship warranty	25 years**
Temperature Coefficient V _{oc}	-0.28 %/°C	Linear power performance guarantee	30 years
Temperature Coefficient P _{max}	-0.36 %/°C		≥ 97.1% end 1st yr ≥ 91.6% end 12th yr ≥ 85.1% end 25th yr ≥ 82.6% end 30th yr
NOCT (± 2°C)	45 °C		
Operating temperature	-40/+85 °C		

CERTIFICATIONS	SHIPPING SPECS		
Product	ULC ORD C1703, UL1703, CEC listed, UL 61215-1/-1-1/-2, UL 61730-1/-2, IEC 61215-1/-1-1/-2***, IEC 61730-1/-2***, CSA C22.2#61730-1/-2, IEC 62716 Ammonia Corrosion; IEC61701:2011 Salt Mist Corrosion Certified, UL Fire Rating: Type 2	Modules Per Pallet:	26 or 26 (California)
Factory	ISO9001:2015	Pallets Per Truck	34 or 32 (California)
		Modules Per Truck	884 or 832 (California)

* Warning: Read the Safety and Installation Manual for mounting specifications and before handling, installing and operating modules.
** 12 year extendable to 25 years subject to registration and conditions outlined under "Warranty" at silfabsolar.com
*** Certification in progress.
PAN files generated from 3rd party performance data are available for download at: silfabsolar.com/downloads



TITAN SOLAR POWER
Titan Solar Power
525 W Baseline Rd.
Mesa, AZ 85210
Tel 855 SAY-SOLAR
info@titansolarpower.com
TITANSOLARPOWER.COM

SILFAB SOLAR INC.
800 Cornwall Ave
Bellingham WA 98225 USA
T +1 360.569.4733
1770 Port Drive
Burlington WA 98233 USA
T +1 360.569.4733
240 Courtneypark Drive East
Mississauga ON L5T 2Y3 Canada
T +1 905.255.2501
F +1 905.696.0267
info@silfabsolar.com
SILFABSOLAR.COM

Silfab - SIL-380 HC-20211022
No reproduction of any kind is allowed. Data and information is subject to modifications without notice. © Silfab 2021. Silfab Solar™ is a trademark of Silfab Solar Inc.



TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
Electrical LIC# : U.33714

SYSTEM INFO
(24) SILFAB SIL-380 HC (TITAN)
(1) SOLAREEDGE SE7600H-US [240V]
DC SYSTEM SIZE: 9.120 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 107 651 144

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS
CARL DAY
RESIDENCE
124 THE INNER CIR, SPRING LAKE, NC 28390, USA
EMAIL ID: USER96235@AOL.COM
PHONE NO. (910) 568-8003

DATE: 6/29/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B 11" X 17"

SHEET NUMBER
PV-13

SolarEdge Home Wave Inverter For North America

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 SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020 per articles 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



SolarEdge Home Wave Inverter For North America

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

Applicable to inverters with part number	SEXXXXH-XXXXBXX4					SE11400H-XXXXBXX5	Units
	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
OUTPUT							
Rated AC Power Output	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	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 ^m						Hz
Maximum Continuous Output Current @240V	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	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						Vdc
Maximum Input Current @240V ⁽²⁾	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 Sensitivity						
Maximum Inverter Efficiency	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.



TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
Electrical LIC# : U.33714

SYSTEM INFO

(24) SILFAB
SIL-380 HC (TITAN)

(1) SOLAREGE
SE7600H-US [240V]

DC SYSTEM SIZE: 9.120 kWDC
AC SYSTEM SIZE: 7.600 kWAC

METER: 107 651 144

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
RESIDENCE
124 THE INNER CIR, SPRING LAKE, NC 28390, USA
EMAIL ID: USER96235@AOL.COM
PHONE NO. (910) 568-8003

DATE: 6/29/2023

SHEET NAME
EQUIPMENT
SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-14

/ SolarEdge Home Wave Inverter

For North America

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

Applicable to inverters with part number	SEXxxxH-XXXXBXX4					SE11400H-XXXXBXX5
	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US
ADDITIONAL FEATURES						
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), wireless SolarEdge Home Network (optional) ⁽³⁾ , Wi-Fi (optional), Cellular (optional)					
Revenue Grade Metering, ANSI C12.20	Optional ⁽⁴⁾					
Consumption Metering						
Inverter Commissioning	With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection					
Rapid Shutdown - NEC 2014, NEC 2017 and NEC 2020, 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect					
STANDARD COMPLIANCE						
Safety	UL1741, UL1741 SA, UL1741 SB, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07					
Grid Connection Standards	IEEE1547-2018, 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 (H x W x D)	17.7 x 14.6 x 6.8 / 450 x 370 x 174			21.06 x 14.6 x 7.3 / 535 x 370 x 185	21.06 x 14.6 x 8.2 / 535 x 370 x 208 ⁽⁵⁾	in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6	44.9 / 20.4 ⁽⁵⁾	lb / kg
Noise	< 25			< 50		dBA
Cooling	Natural Convection					
Operating Temperature Range	-40 to +140 / -40 to +60 ⁽⁶⁾					
Protection Rating	NEMA 4X (Inverter with Safety Switch)					

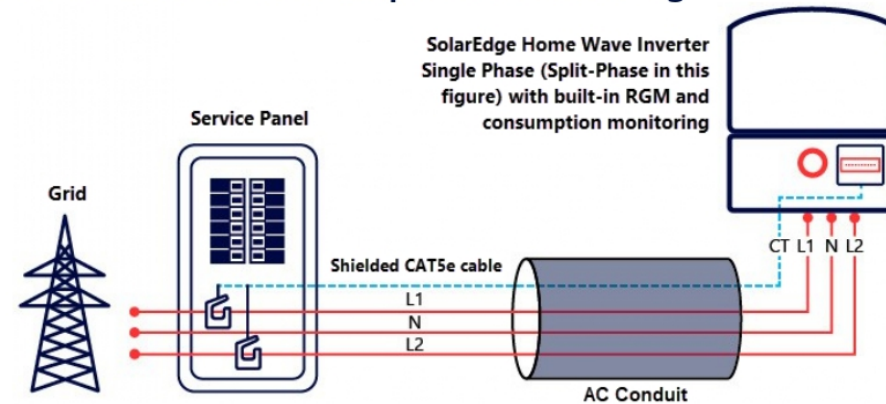
(3) For more information, refer to the [SolarEdge Home Network](#) datasheet

(4) Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxH-US000BE14. For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20, 20 units per box.

(5) SE11400H-USxxxBox5 is the updated PN, though SE11400H-USxxxBox4 will still be available. All specifications are similar for both models, EXCLUDING the weight and dimensions (HxWxD). The weight and dimensions of SE11400H-USxxxBox4 are 17.6 [kg] and 21.06-14.6-7.3 / 535-370-185 [in/mm], accordingly.

(6) Full power up to at least 50°C / 122°F; for power de-rating information refer to the [Temperature De-rating Technical Note for North America](#).

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.



TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
Electrical LIC# : U.33714

SYSTEM INFO

(24) SILFAB
SIL-380 HC (TITAN)

(1) SOLAREEDGE
SE7600H-US [240V]

DC SYSTEM SIZE: 9.120 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 107 651 144

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
RESIDENCE
124 THE INNER CIR, SPRING LAKE, NC 28390, USA
EMAIL ID: USER96235@AOL.COM
PHONE NO. (910) 568-8003

DATE: 6/29/2023

SHEET NAME
**EQUIPMENT
SPECIFICATIONS**

SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-15

Power Optimizer

S440, S500



POWER OPTIMIZER

PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch loss, from manufacturing tolerance to partial shading
- Faster installations with simplified cable management and easy assembly using a single bolt
- Detects abnormal PV connector behavior, preventing potential safety issues*
- Module-level voltage shutdown for installer and firefighter safety
- Flexible system design for maximum space utilization
- Compatible with bifacial PV modules

* Functionality subject to inverter model and firmware version

solaredge.com



Power Optimizer

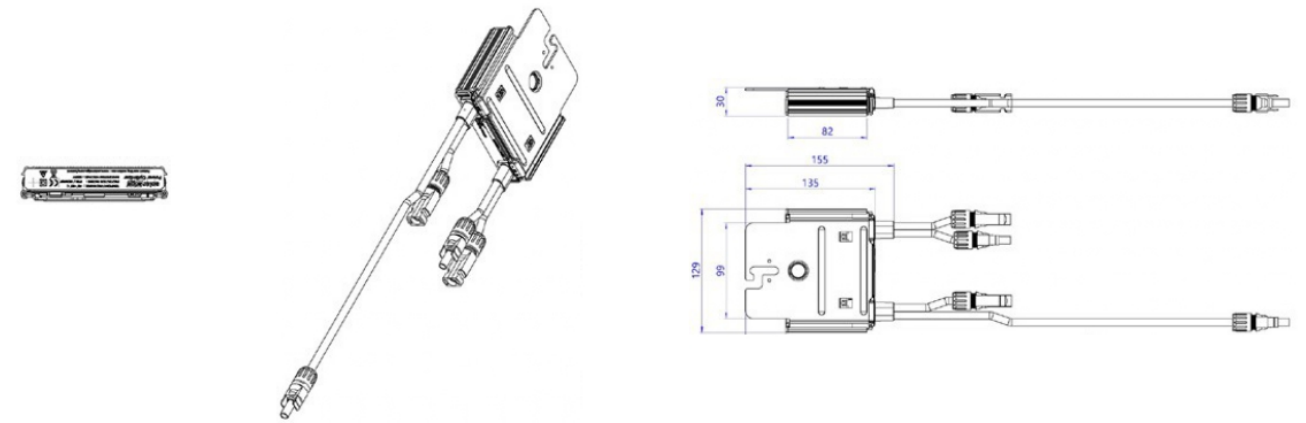
S440, S500

	S440	S500	UNIT
INPUT			
Rated Input DC Power ⁽¹⁾	440	500	W
Absolute Maximum Input Voltage (Voc)		60	Vdc
MPPT Operating Range		8 - 60	Vdc
Maximum Short Circuit Current (Isc) of Connected PV Module		14.5	Adc
Maximum Efficiency		99.5	%
Weighted Efficiency		98.6	%
Overtoltage Category		II	
OUTPUT DURING OPERATION			
Maximum Output Current		15	Adc
Maximum Output Voltage		60	Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)			
Safety Output Voltage per Power Optimizer		1	Vdc
STANDARD COMPLIANCE			
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3, CISPR11, EN-55011		
Safety	IEC62109-1 (class II safety), UL1741		
Material	UL94 V-0, UV Resistant		
RoHS	Yes		
Fire Safety	VDE-AR-E 2100-712:2013-05		
INSTALLATION SPECIFICATIONS			
Maximum Allowed System Voltage		1000	Vdc
Dimensions (W x L x H)		129 x 153 x 30	mm
Weight (including cables)		655 / 1.5	gr / lb
Input Connector		MC4 ⁽²⁾	
Input Wire Length		0.1	m
Output Connector		MC4	
Output Wire Length		(+) 2.3, (-) 0.10	m
Operating Temperature Range ⁽³⁾		-40 to +85	°C
Protection Rating		IP68 / NEMA6P	
Relative Humidity		0 - 100	%

(1) Rated power of the module at STC will not exceed the power optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed
 (2) For other connector types please contact SolarEdge
 (3) For ambient temperature above +70°C / +158°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details

PV System Design Using a SolarEdge Inverter	Single Phase HD-Wave	Single Phase	Three Phase	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	S440, S500	8	16	18	
Maximum String Length (Power Optimizers)		25		50	
Maximum Nominal Power per String ⁽⁴⁾		5700	5250	11250 ⁽⁵⁾	12750 ⁽⁶⁾
Parallel Strings of Different Lengths or Orientations			Yes		W

(4) If the inverters rated AC power ≤ maximum nominal power per string, then the maximum power per string will be able to reach up to the inverters maximum input DC power
 Refer to: <https://www.solaredge.com/sites/default/files/se-power-optimizer-single-string-design-application-note.pdf>
 (5) For the 230/400V grid: it is allowed to install up to 13,500W per string when the maximum power difference between each string is 2,000W
 (6) For the 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W
 (7) It is not allowed to mix S-series and P-series power optimizers in new installations



© SolarEdge Technologies, Inc. All rights reserved. SOLAREEDGE, the SolarEdge logo, OPTIMIZED BY SOLAREEDGE are trademarks or registered trademarks of SolarEdge Technologies, Inc. All other trademarks mentioned herein are trademarks of their respective owners. Date: 06/2021 DS-000052-1.0-ENG-NL. Subject to change without notice.



TITAN SOLAR POWER
 160 N MCQUEEN RD,
 GILBERT, AZ 85233, USA
 PH# : (808) 371-5338
 Electrical LIC# : U.33714

SYSTEM INFO
(24) SILFAB SIL-380 HC (TITAN)
(1) SOLAREEDGE SE7600H-US [240V]
DC SYSTEM SIZE: 9.120 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 107 651 144

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
 RESIDENCE
 124 THE INNER CIR, SPRING LAKE, NC 28390, USA
 EMAIL ID: USER96235@AOL.COM
 PHONE NO. (910) 568-8003

DATE: 6/29/2023
SHEET NAME EQUIPMENT SPECIFICATIONS
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-16

STRONGHOLD™ | BUTYL



Unirac's STRONGHOLD™ Butyl is efficient, dependable, and optimized for UNIRAC's NXT UMOUNT™ system.

The pre-applied butyl pad removes the need for additional flashing. Just peel the liner, place the attachment, and fasten it to the roof. In addition, the butyl, used throughout the roofing and solar industries for its reliability, conforms to the screws and roof for a robust, dependable seal with no extra work! Couple this with the NXT UMOUNT™ system, and you have a highly reliable, easy-to-install system with integrated wire management.



KITTED WITH

- ONE (1) STRONGHOLD™ Butyl direct-to-deck attachment with pre-applied butyl patch (Extra patches for shimming available.)
- TWO (2) screws for rafter installation (Additional screws for direct-to-deck applications available.)
- ONE (1) NXT Rail Clamp

STRONGHOLD™ | BUTYL



SIMPLIFIED FLASHLESS SOLUTION

- One-step Butyl application
- Reliable waterproofing without messy sealant
- Eliminate roof disturbance
- Minimize labor

OPTIMIZED FOR NXT UMOUNT, UNIRAC'S OPEN CHANNEL RAIL SYSTEM

- Open slot design for ease of rail connectivity with included STRONGHOLD™ NXT rail clamp
- STRONGHOLD™ Butyl combined with the NXT UMOUNT system make installation and wire management a breeze
- UL Certified with NXT UMOUNT

DUAL MOUNTING OPTIONS

- Pre-attached butyl pad: Simply peel, stick, and fasten with the two (2) included screws for rafter mount
- For direct-to-deck applications, additional decking screws are available

ADDITIONAL BENEFITS

- Mill and Dark Finishes
- Option for extra cross-course butyl patches
- Competitively priced with standard rafter attachments

UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT



UNMATCHED EXPERIENCE



CERTIFIED QUALITY



ENGINEERING EXCELLENCE



BANKABLE WARRANTY



DESIGN TOOLS



PERMIT DOCUMENTATION

TECHNICAL SUPPORT

UNIRAC's technical support team is dedicated to answering questions & addressing issues in real time. An online library of documents including engineering reports, stamped letters and technical data sheets greatly simplifies your permitting and project planning process.

CERTIFIED QUALITY PROVIDER

UNIRAC is the only PV mounting vendor with ISO certifications for 9001:2015, 14001:2015 and OHSAS 18001:2007, which means we deliver the highest standards for fit, form, and function. These certifications demonstrate our excellence and commitment to first class business practices.

BANKABLE WARRANTY

Don't leave your project to chance, UNIRAC has the financial strength to back our products and reduce your risk. Have peace of mind knowing you are receiving products of exceptional quality. STRONGHOLD™ products are covered by a twenty five (25) year limited product warranty.



TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
Electrical LIC# : U.33714

SYSTEM INFO

(24) SILFAB
SIL-380 HC (TITAN)

(1) SOLAREGE
SE7600H-US [240V]

DC SYSTEM SIZE: 9.120 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 107 651 144

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
RESIDENCE
124 THE INNER CIR, SPRING LAKE, NC 28390, USA
EMAIL ID: USER96235@AOL.COM
PHONE NO. (910) 568-8003

DATE: 6/29/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

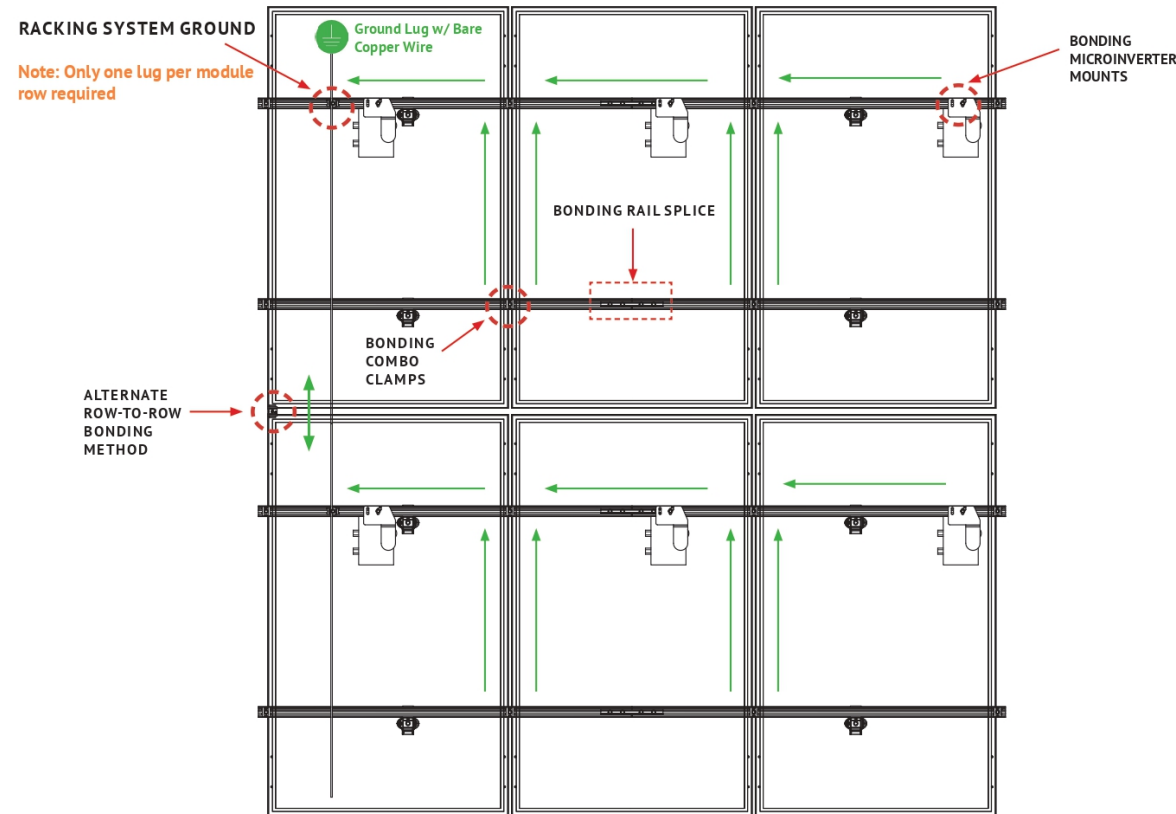
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-17

FOR QUESTIONS OR CUSTOMER SERVICE CONTACT: 505-242-6411 | SALES@UNIRAC.COM | WWW.UNIRAC.COM

PROTECT YOUR REPUTATION WITH QUALITY RACKING SOLUTIONS BACKED BY ENGINEERING EXCELLENCE AND A SUPERIOR SUPPLY CHAIN

PUB2023JAN26-V2



The NXT UMOUNT system has been certified and listed to the UL 2703 standard (Rack Mounting Systems and Clamping Devices for Flat-Plate Photovoltaic Modules and Panels). This standard included electrical grounding, electrical bonding, mechanical load and fire resistance testing.

SYSTEM LEVEL FIRE CLASSIFICATION

The system fire class rating requires installation in the manner specified in the NXT UMOUNT Installation Guide. NXT UMOUNT has been classified to the system level fire portion of UL 2703. NXT UMOUNT has achieved system level performance for steep sloped roofs. System level fire performance is inherent in the NXT UMOUNT design, and no additional mitigation measures are required. The fire classification rating is only valid on roof pitches greater than 2:12 (slopes \geq 2 inches per foot, or 9.5 degrees). The system is to be mounted over fire resistant roof covering rated for the application. There is no required minimum or maximum height limitation above the roof deck to maintain the system fire rating for NXT UMOUNT. Approved Module Types & System Level Fire Ratings are listed below:

Module Type	System Level Fire Rating	Rail Direction	Module Orientation
Type 1, 2, 3 with metal frame, 10 with metal frame, 19, 22, 25, 29, & 30	Class A	Parallel OR Perpendicular to Ridge	Landscape OR Portrait

MECHANICAL LOAD TEST MODULES

The modules selected for UL 2703 mechanical load testing were selected to represent the broadest range possible for modules on the market. The tests performed covers module frame thicknesses greater than or equal to 1.0 mm, single and double wall frame profiles (some complex frame profiles could require further analysis to determine applicability), and clear and dark anodized aluminum frames. PV modules may have a reduced load rating, independent of the NXT UMOUNT rating. Please consult the PV module manufacturer's installation guide for more information.

Tested Module	UL2703 Certification Load Ratings	Tested Loads	Tested Module Area
SunPower SPR-A440 -COM	Down: 50 psf, Up: 50 psf, Slope: 15 psf	Down: 75 psf, Up: 75 psf, Slope: 23 psf	21.86 sq ft
Jinko JKM-xxxM 72HL4-V	Down: 50.12 psf, Up: 22.28 psf, Slope: 8 psf	Down: 75.19 psf, Up: 33.42 psf, Slope: 12 psf	27.76 sq ft

NOTE: Jinko module mechanical load values do not apply to the following part numbers (shown on page 3); RLSPLCM2, SBUTYLM1, SBUTYLD1, SHCLMPM2, & SHCLMPD2

UL2703 CERTIFICATION MARKING:

Unirac NXT UMOUNT is listed to UL 2703. Certification marking is embossed on all Combo Clamps as shown. Labels with additional certification information are provided with clamps and must be applied to the NXT UMOUNT Rail at the edge of the array.

Note: This racking system may be used to ground and/or mount a PV module complying with UL1703/UL61730 only when the specific module has been evaluated for grounding and/or mounting in compliance with the included instructions.



TITAN SOLAR POWER
 160 N MCQUEEN RD,
 GILBERT, AZ 85233, USA
 PH# : (808) 371-5338
 Electrical LIC# : U.33714

SYSTEM INFO
(24) SILFAB SIL-380 HC (TITAN)
(1) SOLAREEDGE SE7600H-US [240V]
DC SYSTEM SIZE: 9.120 kWDC
AC SYSTEM SIZE: 7.600 KWAC
METER: 107 651 144

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS
 CARL DAY
 RESIDENCE
 124 THE INNER CIR, SPRING LAKE, NC 28390, USA
 EMAIL ID: USER96235@AOL.COM
 PHONE NO. (910) 568-8003

DATE: 6/29/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-18

Electrical Bonding and Grounding Test Modules

The list below is not exhaustive of compliant modules but shows those that have been evaluated and found to be electrically compatible with the NXT UMOUNT system.

Manufacture	Module Model / Series	Manufacture	Module Model / Series	Manufacture	Module Model / Series	
Alonrise	AION60G1, AION72G1	Canadian Solar	CS1(H/K/U/V)-MS CS3K-(MB/MB-AG/MS/P/P HE/PB-AG) CS3L-(MS/P), CS3N-MS CS3U-(MB/MB-AG/MS/P/P HE/PB/PB-AG) CS3W-(MB-AG/MS/P/P-PB-AG) CS3Y-MB-AG, CS5A-M CS3U-(MB/MS/MS AllBlack/P/P HE)	Heliene	36M, 36P 60M, 60P, 72M & 72P Series 144HC M6 144HC M10 SL Bifacial	
Aleo	P-Series & S-Series		Centrosolar America	C-Series & E-Series	H-SAAE	HT60-156M-C HT60-156M(V)-C HT72-156(M/P) HT72-156P-C, HT72-156P(V)-C HT72-156M(PD)-BF, HT72-156M(PD)-BF HT72-166M, HT72-18X
Aptos Solar	DNA-120-(MF/BF)10-xxxxW DNA-120-MF10 DNA-120-(MF/BF)23 DNA-144-(MF/BF)23 DNA-120-(MF/BF)26 DNA-144-(MF/BF)26 DNA-108-(MF/BF)10-xxxxW		Certainfeed	CT2xxMxx-01, CT2xxPxx-01, CTxxxMxx-01 CTxxxPxx-01, CTxxxMxx-02, CTxxxMxx-03 CTxxxMxx-04, CTxxxHC11-04	Hyundai	KG, MG, RW, TG, RI, RG, TI, KI, HI Series HIA-SxxxxHG, HD-SxxxxRG(BK), HIS-5400PI HIS-SxxxxYH(BK), HIS-SxxxxXG(BK)
Astronergy	CHSM6612 M, M/HV CHSM6612P Series CHSM6612P/HV Series CHSM72M-HC CHSM72M(DG)/F-BH		Eco Solargy	Orion 1000 & Apollo 1000	ITEK	IT-SE Series
Auxin	AXN6M610T AXN6P610T AXN6M612T AXN6P612T		ET Solar	ET AC Module, ET Module ET-M772BH520-550WW/WB	Japan Solar	JPS-60 & JPS-72 Series
Axitec	AC-xxxx(M/P)/60S, AC-xxxx(M/P)/72S AC-xxxxP/156-60S AC-xxxxMH/120(S/V/SB/VB) AC-xxxxMH/144(S/V/SB/VB)	First Solar	FS-6XXX(A) FS-6XXX(A)-P, FS-6XXX(A)-P-I	JA Solar	JAM72D30MB, JAM78D10MB JAM72S30 /MR JAP6 60-xxx JAM6(k)-60/xxx, JAP6(k)-72-xxx/4BB JAP72S#-xxx** JAP6(k)-60-xxx/4BB, JAP60S#-xxx** JAM6(k)-72-xxx**, JAM72S#-xxx** JAM6(k)-60-xxx**, JAM60S#-xxx** I. #: 01, 02, 03, 09, 10 II. **: SC, PR, BR, HIT, IB, MW, MR ** = Backsheet, ## Cell technology	
Boviet	BVM6610, BVM6612	Flextronics	FXS-xxxBB	Jinko	JKM & JKMS Series JKMxxxM-72HL-V JKMxxxM-72HL-M-TV JKMxxxM-72HL-4(TV) JKMxxxM-7RL3-V JKMxxxM-72HL-4-TV	
BYD	P6K & MHK-36 Series	Freedom Forever	FF-MP-BBB-xxx, FF-MP1-BBB-xxx			
		FreeVolt	PVGraf			
		GCL	GCL-P6 & GCL-M6 Series			
		Hansol	TD-AN3, TD-AN4 UB-AN1, UD-AN1			
		Hanwha SolarOne	HSL 60			

- The frame profile must not have any feature that might interfere with the bonding devices that are integrated into the racking system
- Use with a maximum over current protection device OCPD of 30A
- Listed models can be used to achieve a Class A fire system rating, for steep slope applications, only when modules are typed 1, 2, 3 with metal frame, 10 with metal frame, 19, 22, 25, 29, or 30. See Appendix A Page 24.

Electrical Bonding and Grounding Test Modules

The list below is not exhaustive of compliant modules but shows those that have been evaluated and found to be electrically compatible with the NXT UMOUNT system.

Manufacture	Module Model / Series	Manufacture	Module Model / Series	Manufacture	Module Model / Series	
Kyocera	KD-F & KU Series	Mitsubishi	MJE & MLE Series	Q Cells (Cont.)	Q.PEAK DUO L-(G7/G7.1/G7.2/G7.3/G7.7) Q.PEAK DUO (BLK) G8(+) Q.PEAK DUO L-(G8/G8.1/G8.2/G8.3) Q.PEAK DUO L-G8.3 (BF/BF/GBT) Q.PEAK DUO (BLK) ML-G9(+) Q.PEAK DUO XL-G9.2/G9.3 Q.PEAK DUO XL-G9.3/BFG Q.PEAK DUO-G10+ Q.PEAK DUO BLK G10(+) Q.PEAK DUO BLK G10+ /AC Q.PEAK DUO (BLK) ML-G10(a)(+) Q.PEAK DUO XL-(G10/G10.2/G10.3/G10.c/ G10.d)	
LA Solar	LSxxxHC(166) LSxxxBL LSxxxHC	Neo Solar Power Co.	D6M Series		REC	RECxxxAA (BLK/Pure) RECxxxNP (N-PEAK) RECxxxNP2 (Black) RECxxxPE, RECxxxPE72 RECxxxTP2 (M/BLK2) RECxxxTP2S(M)72 RECxxxTP3M (Black) RECxxxTP4 (Black)
LG Electronics	LGxxx(E1C/E1K/N1C/N1K/N2T/N2W/S1C/ S2W/Q1C/Q1K)-A5 LGxxx(A1C/M1C/M1K/N1C/N1K/Q1C/Q1K/ QAC/QAK)-A6 LGxxxN2W-B5 LGxxxN2T-B5 LGxxxN1K-B6 LGxxx(N1C/N1K/N2T/N2W)-E6 LGxxx(N1C/N1K/N2W/S1C/S2W)-G4 LGxxxN2T-J5 LGxxx(N1K/N1W/N2T/N2W)-L5 LGxxx(M1C/N1C/Q1C/Q1K)-N5 LGxxx(N1C/N1K/N2W/Q1C/Q1K)-V5 LGxxxN3K-V6	NE Solar	NESE xxx-72MHB-M10 NESE xxx-60MH-M6			Renesola
	LONGI	LR4-60(HPB/HPH) LR4-72(HPH) LR6-60 LR6-60(BK/HPB/HPH/HV/PB/PE/PH) LR6-72 LR6-72(BK/HV/PB/PE/PH) RealBlack LR4-60HPB RealBlack LR6-60HPB	Panasonic	VBHNxxxSA06/SA06B/SA11/SA11B VBHNxxxSA15/SA15B/SA16/SA16B, VBHNxxxKA, VBHNxxxKA03/04, VBHNxxxSA17/SA17G/SA17E/SA18/SA18E, VBHNxxxZA01/ZA02/ZA03/VBHNxxxZA04 EVPVxxx EVPVxxx(H/K/PK)		Risen
MAXeon		SPR-MAX3-xxx-COM	Peimar	SxxxxM (FB/BF) SMxxxM		SEG Solar
Meyer Burger	Meyer Burger Glass	Phono Solar	PSxxxM1-20/U PSxxxM1H-20/U PSxxxM1-20UH PSxxxM4(H)-24/TH PSxxxM1-20/UH PSxxxM1H-20/UH PSxxxM-24/T PSxxxMH-24/T PSxxxM-24/TH PSxxxMH-24/TH	S-Energy		SN72 & SN60 Series
Mission Solar Energy	MSE Mono, MSE Perc MSExxx(SR8T/SR8K/SR9S/SX5T) MSExxx(SX5K/SX6W)	Prism Solar	P72 Series			
Mitrex	Mxxx-L3H, Mxxx-L3H	Q.Cells	Plus, Pro, Peak, G3, G4, Peak G5(SC), G6(+)(SQ)(AC), G7, G8(+), Plus, Pro, Peak L-G2, L-G4, L-G5 Peak L-G5, L-G6, L-G7, L-G8(BFF) Q.PEAK DUO (BLK)-G6+ Q.PEAK DUO BLK-G6+/TS Q.PEAK DUO (BLK)-G7			

- The frame profile must not have any feature that might interfere with the bonding devices that are integrated into the racking system
- Use with a maximum over current protection device OCPD of 30A
- Listed models can be used to achieve a Class A fire system rating, for steep slope applications, only when modules are typed 1, 2, 3 with metal frame, 10 with metal frame, 19, 22, 25, 29, or 30. See Appendix A Page 24.



TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
Electrical LIC# : U.33714

SYSTEM INFO
(24) SILFAB SIL-380 HC (TITAN)
(1) SOLAREEDGE SE7600H-US [240V]
DC SYSTEM SIZE: 9.120 KWDC
AC SYSTEM SIZE: 7.600 KWAC
METER: 107 651 144

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
RESIDENCE
124 THE INNER CIR, SPRING LAKE, NC 28390, USA
EMAIL ID: USER96235@AOL.COM
PHONE NO. (910) 568-8003

DATE: 6/29/2023

SHEET NAME
**EQUIPMENT
SPECIFICATIONS**

SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-19



TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
Electrical LIC# : U.33714

Electrical Bonding and Grounding Test Modules

The list below is not exhaustive of compliant modules but shows those that have been evaluated and found to be electrically compatible with the NXT UMount system.

Manufacture	Module Model / Series
Seraphim	SEG-(6PA/6PB/6MA/6MA-HV/6MB/E01/E11) SRP-(6QA/6QB) SRP-xxx-6MB-HV, SRP-320-375-BMB-HV, SRP-xxx-BMC-HV, SRP-390-450-BMA-HV, SRP-xxx-BMZ-HV, SRP-390-405-BMD-HV
Sharp	NU-SA & NU-SC Series
Silfab	SLA-M, SLA-P, SLG-M, SLG-P & BC Series SILxxx(BK/BL/HC/HL/HN/ML/NL/NT/NX/NU)
SolarEver USA	SE-166*83-xxxM-120N
Solaria	PowerXT-xxxR-(AC/PD/BD) PowerXT-xxxC-PD PowerXT-xxxR-PM (AC)
Solartech	STU HJT, STU PERC & Quantum PERC
SolarWorld	Sunmodule Protect, Sunmodule Plus/Pro
Sonali	SS-M-360 to 390 Series SS-M-390 to 400 Series SS-M-440 to 460 Series SS-M-430 to 460 BiFacial Series
Sun Edison	F-Series, R-Series
Suniva	MV Series & Optimus Series (35mm)
SunPower	AC, X-Series, E-Series & P-Series SPR E20 435 COM (G4 Frame) Axxx-BLK-G-AC, SPR-Mxxx-H-AC
SunTech	STP, STPXXXS - B60/Wnhb
Talesun	TP572, TP596, TP654, TP660 TP672, Hipor M, Smart TD6172M
Tesla	SC, SC B, SC B1, SC B2, TxxxS, TxxxH

Manufacture	Module Model / Series
Trina	PA05, PD05, DD05, DD06, DE06, DE09.05 PD14, PE14, DD14, DE14, DE15, DE15V(II) DEG15HC.20(II), DEG15MC.20(II) DEG15VC.20(II), DE18M(II), DEG18MC.20(II) DE19, DEG19C.20
TSMC	TS-150C2 CIGSw
Universal Solar	UNI4xx-144BMH-DG UNI5xx-144BMH-DG UNIxxx-108M-BB UNIxxx-120M-BB UNIxxx-120MH
Upsolar	UP-MxxxP, UP-MxxxM(-B)
URECO	D7Kxxx(H7A/H8A), D7Mxxx(H7A/H8A) FAKxxx(C8G/E8G), FAMxxxE7G-BB FAMxxxE8G(-BB), FBKxxxM8G F6MxxxE7G-BB FBMxxxMFG-BB
Vikram	Eldora, Somera, Ultima PREXOS VSMDHT.60.AAA.05 PREXOS VSMDHT.72.AAA.05
Vina	VNS-72M1-5-xxxW-1.5, VNS-72M3-5-xxxW-1.5, VNS-144M1-5-xxxW-1.5, VNS-144M3-5-xxxW-1.5, VNS-120M3-5-xxxW-1.0
VSUN	VSUNxxx-60M-BB, VSUNxxx-72MH VSUN4xx-144BMH VSUN4xx-144BMH-DG VSUN5xx-144BMH-DG VSUNxxx-108M-BB VSUNxxx-120M-BB

Manufacture	Module Model / Series
Winaico	WST & WSP Series
Yingli	YGE & YLM Series
ZNShine Solar	ZXM6-72 Series, ZXM6-NH144 ZXM6-NHLDD144, ZXM7-SH108 Series

- The frame profile must not have any feature that might interfere with the bonding devices that are integrated into the racking system
- Use with a maximum over current protection device OCPD of 30A
- **Listed models can be used to achieve a Class A fire system rating, for steep slope applications, only when modules are typed 1, 2, 3 with metal frame, 10 with metal frame, 19, 22, 25, 29, or 30. See Appendix A Page 24.**

SYSTEM INFO
(24) SILFAB SIL-380 HC (TITAN)
(1) SOLAREEDGE SE7600H-US [240V]
DC SYSTEM SIZE: 9.120 kWDC
AC SYSTEM SIZE: 7.600 KWAC
METER: 107 651 144

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
RESIDENCE
124 THE INNER CIR, SPRING LAKE, NC 28390, USA
EMAIL ID: USER96235@AOL.COM
PHONE NO. (910) 568-8003

DATE: 6/29/2023
SHEET NAME EQUIPMENT SPECIFICATIONS
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-20

A. System Specifications and Ratings

- Maximum Voltage: 1,000 Volts
- Maximum Current: 120 Amps
- Allowable Wire: 14 AWG – 6 AWG
- Spacing: Please maintain a spacing of at least ½” between uninsulated live parts and fittings for conduit, armored cable, and uninsulated live parts of opposite polarity.
- Enclosure Rating: Type 3R
- Roof Slope Range: 2.5 – 12:12
- Max Side Wall Fitting Size: 1”
- Max Floor Pass-Through Fitting Size: 1”
- Ambient Operating Conditions: (-35°C) - (+75°C)
- Compliance:
 - JB-1.XL: UL1741
 - Approved wire connectors: must conform to UL1741
- System Marking: **Interek Symbol and File #5019942**
- Periodic Re-inspections: If re-inspections yield loose components, loose fasteners, or any corrosion between components, components that are found to be affected are to be replaced immediately.

Table 1: Typical Wire Size, Torque Loads and Ratings

	1 Conductor	2 Conductor	Torque				
			Type	NM	Inch Lbs	Voltage	Current
ABB ZS6 terminal block	10-24 awg	16-24 awg	Sol/Str	0.5-0.7	6.2-8.85	600V	30 amp
ABB ZS10 terminal block	6-24 awg	12-20 awg	Sol/Str	1.0-1.6	8.85-14.16	600V	40 amp
ABB ZS16 terminal block	4-24 awg	10-20 awg	Sol/Str	1.6-2.4	14.6-21.24	600V	60 amp
ABB M6/8 terminal block	8-22 awg		Sol/Str	.08-1	8.85	600V	50 amp
Ideal 452 Red WING-NUT Wire Connector	8-18 awg		Sol/Str			600V	
Ideal 451 Yellow WING-NUT Wire Connector	10-18 awg		Sol/Str			600V	
Ideal, In-Sure Push-In Connector Part #39	10-14 awg		Sol/Str			600V	
WAGO, 221-612	10-14 awg		Sol/Str			600V	
International Hydraulics 2S2/0	10-14 awg		Sol/Str	4	35		
	8 awg		Sol/Str	4.5	40		
Brumall 4-5,3	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
Blackburn LL414	4-14 awg		Sol/Str				

Table 2: Minimum wire-bending space for conductors through a wall opposite terminals in mm (inches)

Wire size, AWG or	Wires per terminal (pole)			
	1	2	3	4 or More
kcmil (mm2)	mm (inch)	mm (inch)	mm (inch)	mm (inch)
14-10 (2.1-5.3)	Not specified	-	-	-
8 (8.4)	38.1 (1-1/2)	-	-	-
6 (13.3)	50.8 (2)	-	-	-



TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
Electrical LIC# : U.33714

SYSTEM INFO

(24) SILFAB
SIL-380 HC (TITAN)

(1) SOLAREEDGE
SE7600H-US [240V]

DC SYSTEM SIZE: 9.120 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 107 651 144

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

CARL DAY
RESIDENCE
124 THE INNER CIR, SPRING LAKE, NC 28390, USA
EMAIL ID: USER96235@AOL.COM
PHONE NO. (910) 568-8003

DATE: 6/29/2023

SHEET NAME

EQUIPMENT SPECIFICATIONS

SHEET SIZE

**ANSI B
11" X 17"**

SHEET NUMBER

PV-21