SCOPE OF WORK

TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT THE OWNER RESIDENCE LOCATED AT 64 TEAK WOOD CT, LILLINGTON, NC 27546, 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
26 SILFAB SIL-410HC+ MODULES
1 SOLAREDGE SE10000H-US INVERTER
26 SOLAREDGE 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 BULDING 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 2020 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
10.660 kWDC
10.000 kWAC

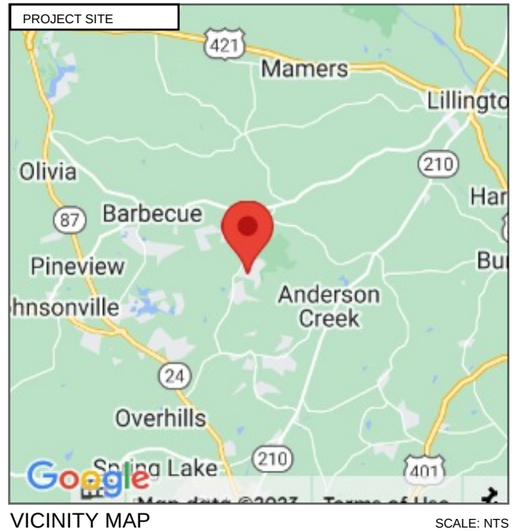
PHOTOVOLTAIC SYSTEM FIRE CLASSIFICATION LISTING IN ACCORDANCE WITH UL 1703 STANDARD.

SHEET INDEX	
PV1	COVER PAGE
PV2	SITE PLAN
PV3	ROOF PLAN
PV4	STRING LAYOUT & BOM
PV5-PV7	ATTACHMENT DETAILS
PV8-PV9	ELECTRICAL LINE & CALCS.
PV10	SPECIFICATIONS & NOTES
PV11-PV12	SIGNAGE
PV13	JOB SAFETY PLAN
PV14-PV22	EQUIPMENT SPECIFICATIONS

PROJECT SITE

HOUSE PHOTO SCALE: NTS

PROJECT SITE



VICINITY MAP SCALE: NTS

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

SYSTEM INFO
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV

Richard Pantel
Digitally signed by Richard Pantel
DN: c=US, o=TECTONICORP PC, dnQualifier=A01410D00001780DDC8FCA000A0095, cn=Richard Pantel
Date: 2023.08.29 12:37:11 -04'00'

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043326 RICHARD PANTEL

PROJECT NAME & ADDRESS
Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

JOHN RHODES
RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
COVER PAGE

SHEET SIZE
ANSI B
11" X 17"

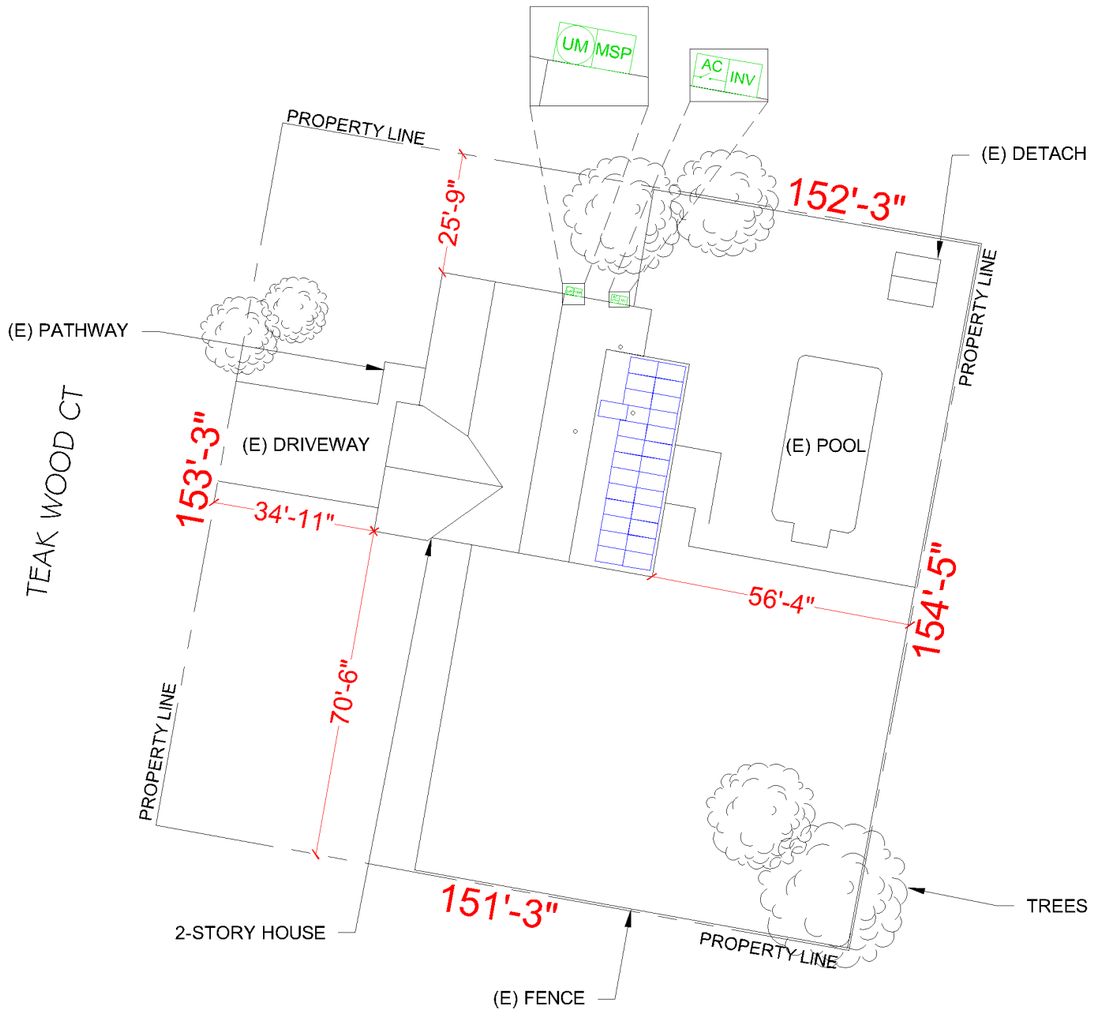
SHEET NUMBER
PV-1

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 — SOLAREDGE SE10000H-US INVERTER
- SILFAB SIL-410HC+ MODULES
- NXT UMOUNT RAIL - 168" MILL
- TRENCH



SCALE: 1/32"= 1'-0

METER NO#: 113 904 472

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

SYSTEM INFO
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043326 RICHARD PANTEL

PROJECT NAME & ADDRESS

Reviewed and approved
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EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
SITE PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-2

DESIGN SPECIFICATION	
RISK CATEGORY:	II
CONSTRUCTION:	SFD
ZONING:	RESIDENTIAL
SNOW LOAD (ASCE7-10):	10 PSF
EXPOSURE CATEGORY:	B
WIND SPEED (ASCE7-10):	117 MPH

MODULE TYPE, DIMENSIONS & WEIGHT	
NUMBER OF MODULES:	26 MODULES
MODULE TYPE:	SILFAB SIL-410HC+
MODULE WEIGHT:	47 LBS
MODULE DIMENSIONS:	75.3" X 40.8" = 21.33 SF
UNIT WEIGHT OF AREA:	2.21 PSF

ROOF DESCRIPTION				
ROOF	ROOF TILT	TRUSS SIZE	TRUSS SPACING	ROOF MATERIAL
#1	18°	2" x 4"	24" o.c.	COMP SHINGLE

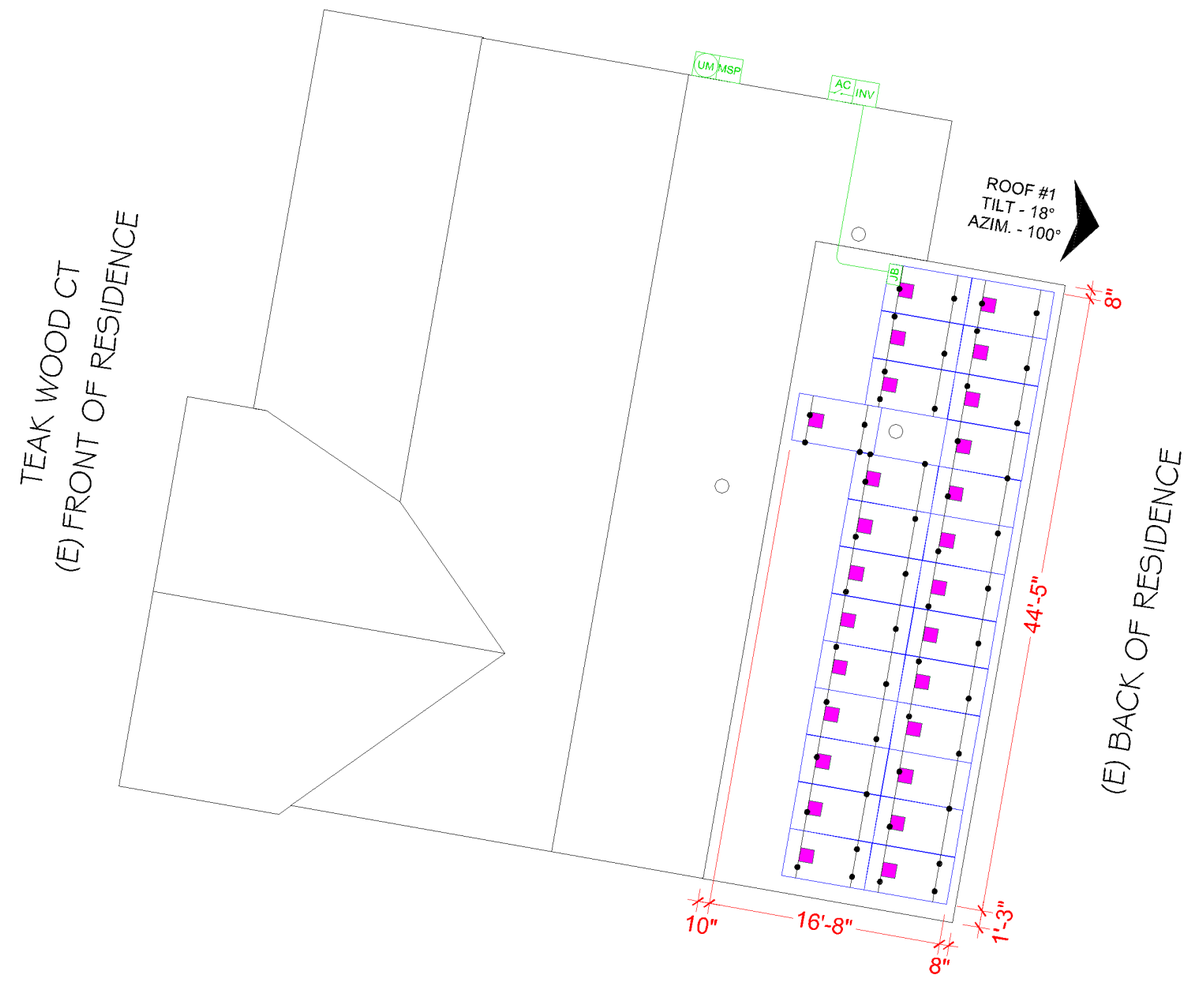
ARRAY AREA & ROOF AREA CALC'S		
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)
#1	26	554.71
(TOTAL ARRAY AREA/TOTAL ROOF AREA) X 100%		
= (554.71/3182) X 100% = 17.44%		

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 — SOLAREDGE SE10000H-US INVERTER
- SILFAB SIL-410HC+ MODULES
- NXT UMOUNT RAIL - 168" MILL
- TRENCH

DEAD LOAD CALCULATION			
EQUIPMENT'S DESCRIPTIONS	QTY	LBS/UNIT	TOTAL WEIGHT
MODULES	26	47	1222
MID CLAMP	44	0.3	13.2
END CLAMP	16	0.31	4.96
NXT UMOUNT RAIL - 168" MILL	15	6.25	93.75
SPLICE BAR	10	0.65	6.5
STRONGHOLD ATT W / BUTYL, MILL	53	0.8	42.40
TOTAL WEIGHT OF THE SYSTEM (LBS)			1382.83
TOTAL ARRAY AREA ON THE ROOF (SQ. FT.)			554.71
WEIGHT PER SQ. FT. (LBS)			2.5
WEIGHT PER PENETRATION (LBS)			26.1

NOTE: ATTACHMENT SPACING @ 48" O.C.



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

METER NO#: 113 904 472

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

SYSTEM INFO
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV

Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

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EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

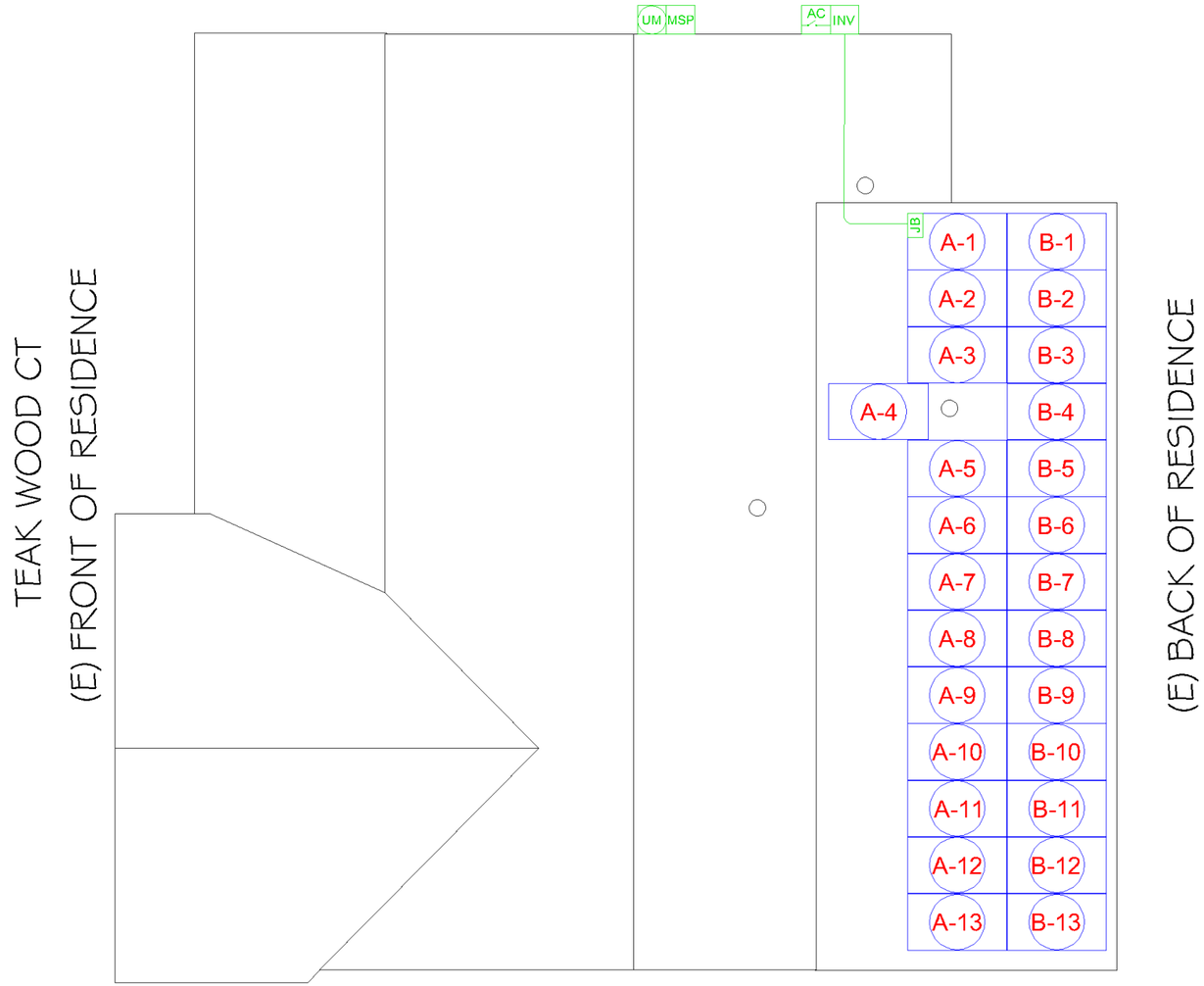
DATE: 8/29/2023

SHEET NAME
ROOF PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-3

BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	26	SILFAB SIL-410HC+ MODULES
INVERTER	1	SOLAREDGE SE10000H-US
OPTIMIZER	26	SOLAREDGE 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	53	STRONGHOLD ATT W / BUTYL, MILL
ATTACHMENT	106	#12-14 SCREW, HWH, SS, SELF-DR W/ #12 EPDM WASHER WITH MINIMUM 2" PENETRATION DEPTH
RAILS	15	NXT UMOUNT RAIL - 168" MILL
BONDED SPLICE	10	SPLICE KIT
MID CLAMP	44	MODULES MID CLAMPS
END CLAMP	16	MODULES END CLAMPS
GROUNDING LUG	4	GROUNDING LUG



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

A B - **MODULE STRINGING**

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

SYSTEM INFO
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043326 RICHARD PANTEL

PROJECT NAME & ADDRESS

Reviewed and approved
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NC Lic. No. 043326

JOHN RHODES
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64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

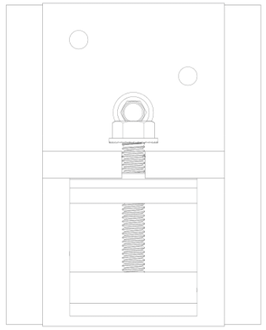
DATE: 8/29/2023

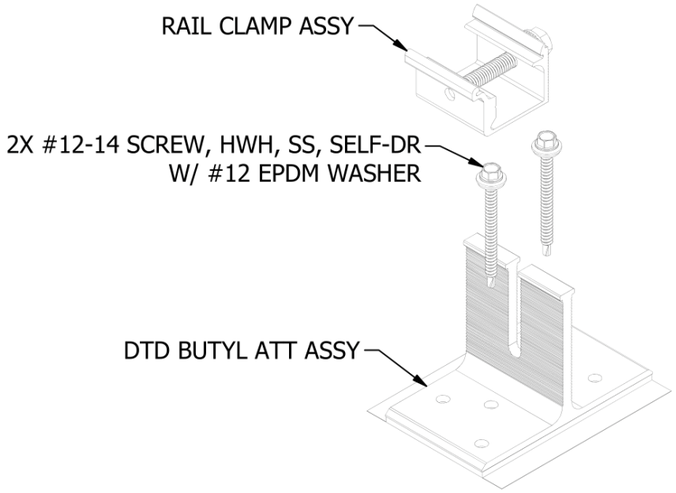
SHEET NAME
STRING LAYOUT & BOM

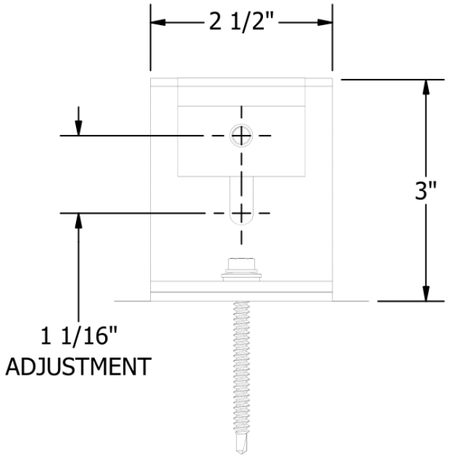
SHEET SIZE
ANSI B
11" X 17"

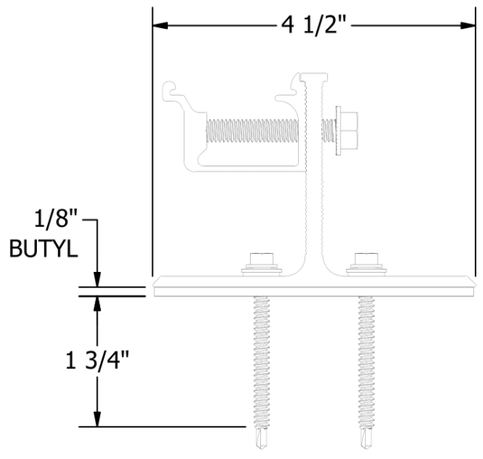
SHEET NUMBER
PV-4

PART # TABLE	
P/N	DESCRIPTION
SBUTYLM1	STRONGHOLD ATT W/BUTYL, MILL
SBUTYLD1	STRONGHOLD ATT W/BUTYL, DARK









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

PRODUCT LINE:	NXT UMOUNT
DRAWING TYPE:	PARTS
DESCRIPTION:	SH BUTYL ATTACHMENT
REVISION DATE:	2/3/2023

DRAWING NOT TO SCALE
ALL DIMENSIONS ARE NOMINAL

PRODUCT PROTECTED BY ONE OR MORE US PATENTS

LEGAL NOTICE

NU-A10

SHEET

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

SYSTEM INFO
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV

Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

JOHN RHODES
RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

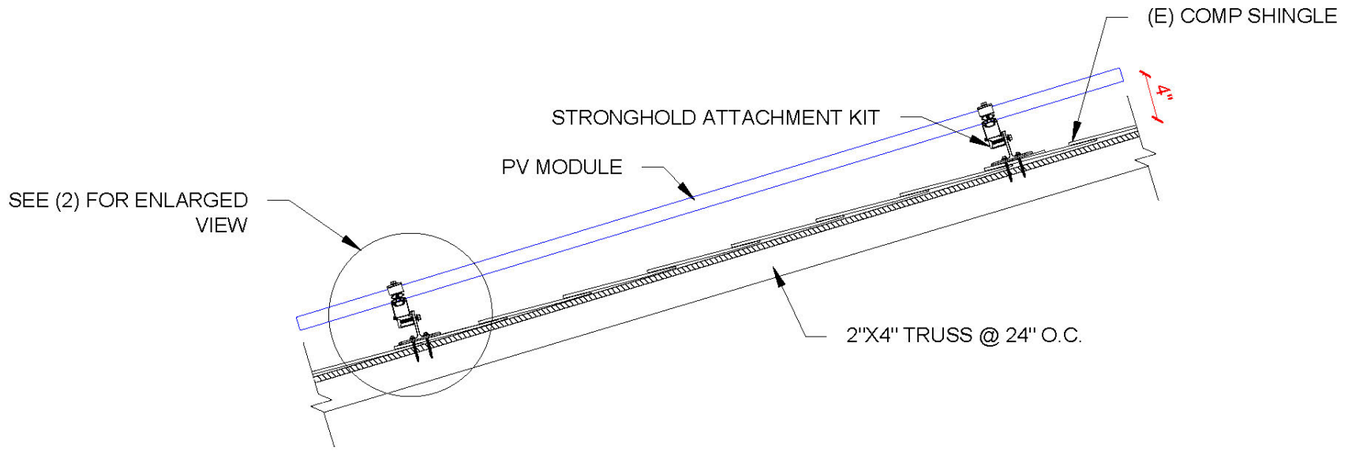
SHEET NAME
ATTACHMENT DETAILS

SHEET SIZE
ANSI B
11" X 17"

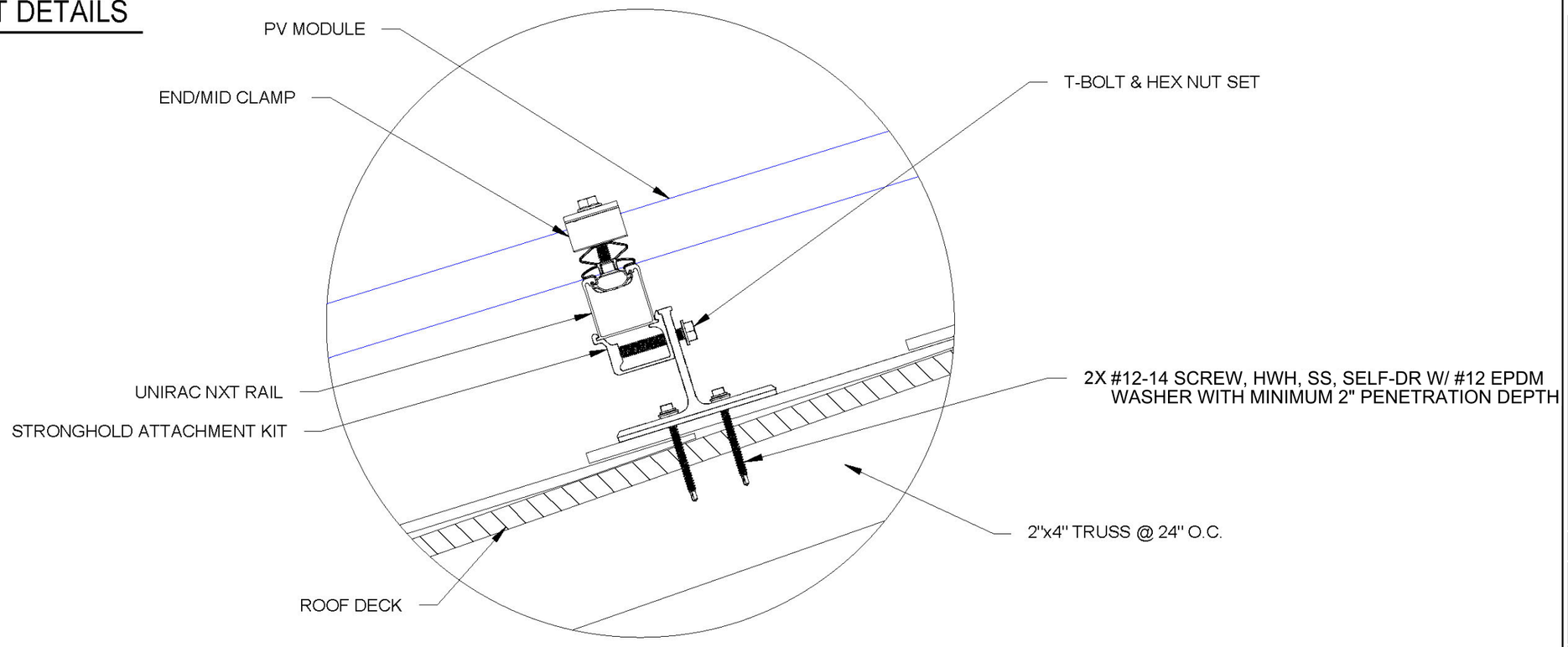
SHEET NUMBER
PV-5

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
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV

Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

PROJECT NAME & ADDRESS

JOHN RHODES
RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

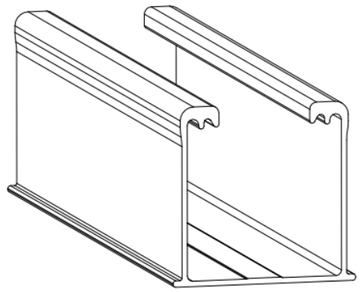
DATE: 8/29/2023

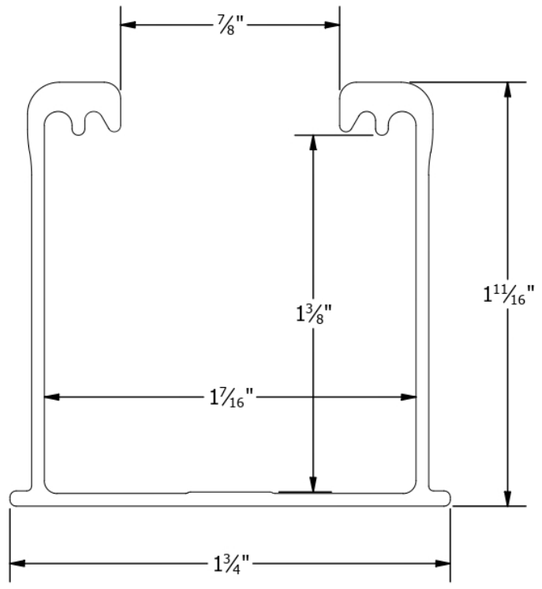
SHEET NAME
ATTACHMENT DETAILS

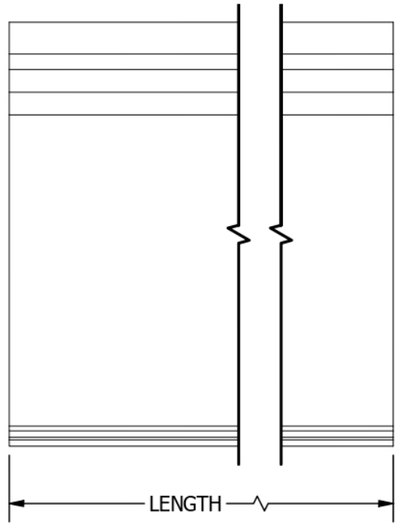
SHEET SIZE
ANSI B
11" X 17"

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"







UNIRAC
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

SYSTEM INFO
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043326 RICHARD PANTEL

PROJECT NAME & ADDRESS

Reviewed and approved
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NC Lic. No. 043326

JOHN RHODES
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EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

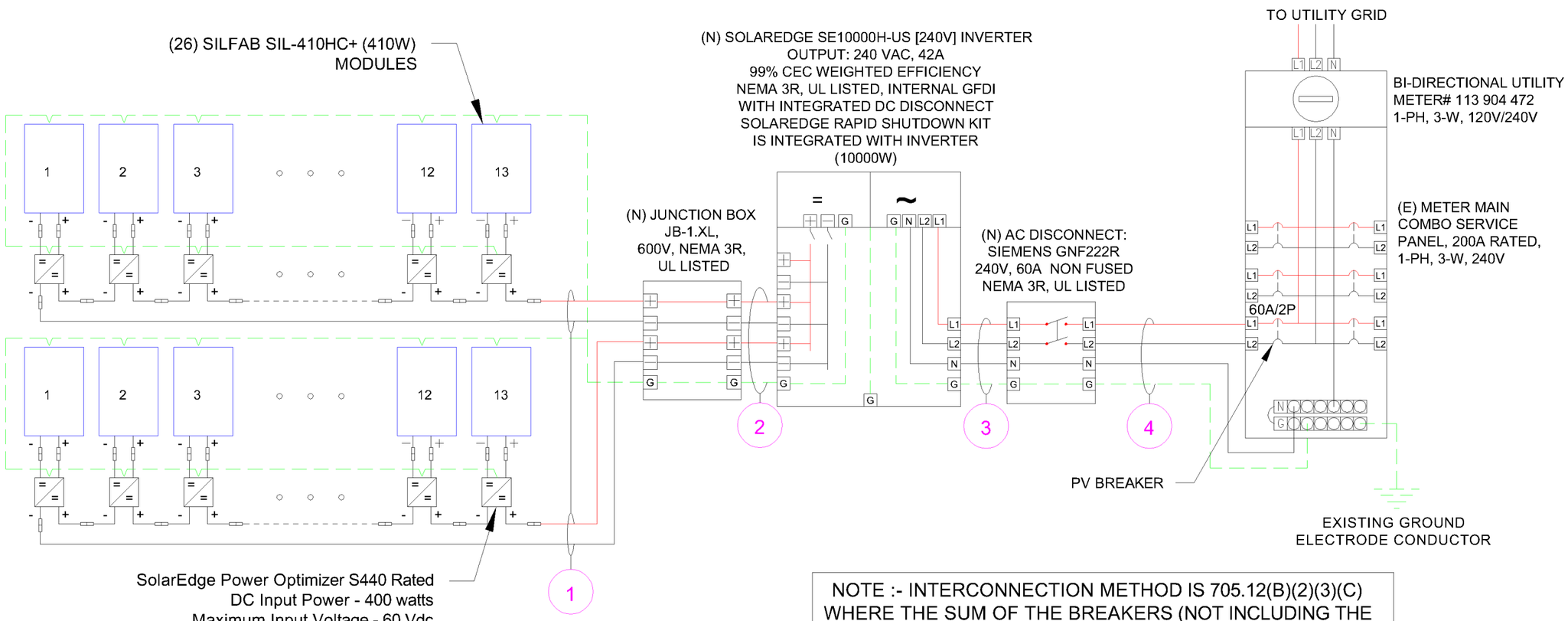
DATE: 8/29/2023

SHEET NAME
ATTACHMENT DETAILS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-7

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
1	2	ARRAY	JUNCTION BOX	10 AWG	PV WIRE	COPPER	OPEN AIR	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	50FT	0.81%
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)	1	15.00A	18.75A	40A	36.40A	75°C	35FT	0.56%
3	1	INVERTER	NON FUSED AC DISCONNECT	6 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	34.90%	N/A	8 AWG	THWN-2 COPPER	0.91	(36°C)	1	42.00A	52.5A	75A	68.25A	75°C	5FT	0.09%
4	1	NON FUSED AC DISCONNECT	MSP	6 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	34.90%	60A	8 AWG	THWN-2 COPPER	0.91	(36°C)	1	42.00A	52.5A	75A	68.25A	75°C	5FT	0.09%



NOTE :- INTERCONNECTION METHOD IS 705.12(B)(2)(3)(C) WHERE THE SUM OF THE BREAKERS (NOT INCLUDING THE MAIN BREAKER) DOES NOT EXCEED THE BUSBAR RATING.

SYSTEM RATING
10.660 kWDC
10.000 kWAC

SERVICE INFO	
UTILITY PROVIDER:	SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION
AHJ NAME:	HARNETT COUNTY
MAIN SERVICE VOLTAGE:	240V
MAIN PANEL BRAND:	GENERAL ELECTRIC
MAIN SERVICE PANEL:	200 A
SERVICE FEED SOURCE:	UNDERGROUND

METER NO#: 113 904 472

SCALE: NTS

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

SYSTEM INFO
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043326 RICHARD PANTEL

PROJECT NAME & ADDRESS
Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

JOHN RHODES
RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
ELECTRICAL LINE & CALCS.

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-8

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
1	2	ARRAY	JUNCTION BOX	10 AWG	PV WIRE	COPPER	OPEN AIR	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	50FT	0.81%
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)	1	15.00A	18.75A	40A	36.40A	75°C	35FT	0.56%
3	1	INVERTER	NON FUSED AC DISCONNECT	6 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	34.90%	N/A	8 AWG	THWN-2 COPPER	0.91	(36°C)	1	42.00A	52.5A	75A	68.25A	75°C	5FT	0.09%
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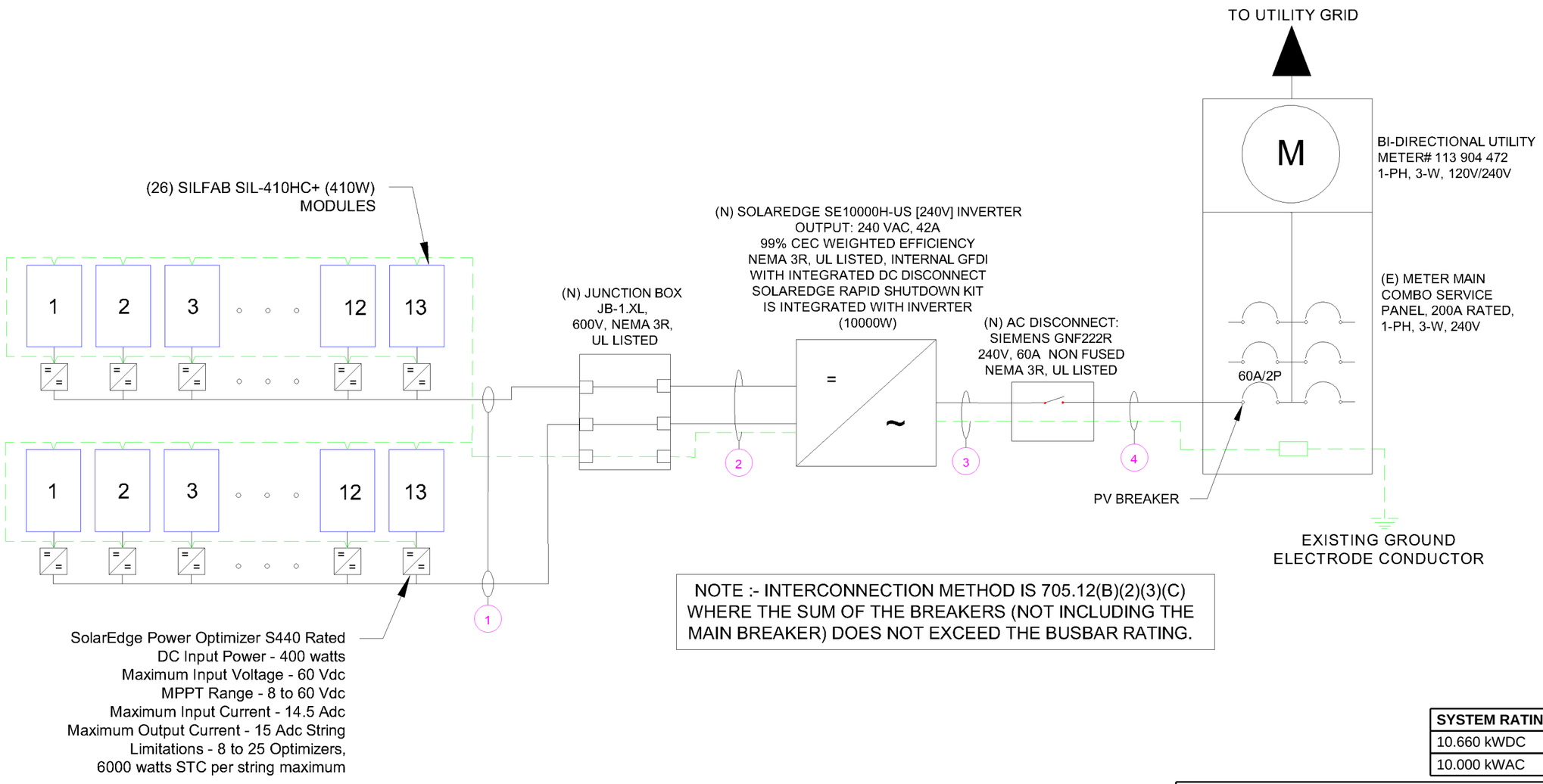


NOTE :- INTERCONNECTION METHOD IS 705.12(B)(2)(3)(C) WHERE THE SUM OF THE BREAKERS (NOT INCLUDING THE MAIN BREAKER) DOES NOT EXCEED THE BUSBAR RATING.

SYSTEM RATING
10.660 kWDC
10.000 kWAC

SERVICE INFO	
UTILITY PROVIDER:	SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION
AHJ NAME:	HARNETT COUNTY
MAIN SERVICE VOLTAGE:	240V
MAIN PANEL BRAND:	GENERAL ELECTRIC
MAIN SERVICE PANEL:	200 A
SERVICE FEED SOURCE:	UNDERGROUND

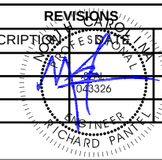
METER NO#: 113 904 472

SCALE: NTS

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

SYSTEM INFO
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV



PROJECT NAME & ADDRESS
Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

JOHN RHODES
RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
ELECTRICAL LINE & CALCS.

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-9

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL	SILFAB SIL-410HC+
VMP	38.99 V
IMP	10.52 A
VOC	45.59 V
ISC	11.15 A
TEMP. COEFF. VOC	-0.28%/K
PTC RATING	376.9 W
MODULE DIMENSION	75.3"(L) x 40.8"(W)
PANEL WATTAGE	410 W

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL	SOLAREDGE SE10000H-US
NOMINAL AC POWER	10000 W
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	42 A

POWER OPTIMIZER (SOLAREDGE 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	-10°C
AMBIENT TEMP (HIGH TEMP 2%)	36°C
CONDUIT HEIGHT	7/8"
ROOF TOP TEMP	90°C
CONDUCTOR TEMPERATURE RATE	58°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

(26) SILFAB
SIL-410HC+

(1) SOLAREDGE
SE10000H-US

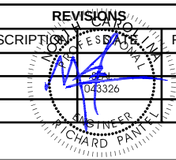
DC SYSTEM SIZE: 10.660 kWDC

AC SYSTEM SIZE: 10.000 kWAC

METER: 113 904 472

REVISIONS

DESCRIPTION	DATE	REV



PROJECT NAME & ADDRESS

Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

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RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME

SPECIFICATIONS & NOTES

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-10

1

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)

2

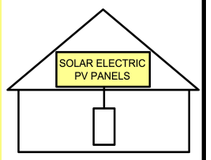
CAUTION : SOLAR ELECTRIC SYSTEM CONNECTED

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

3

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: 2020 NEC 690.56(C)

4

SERVICE DISCONNECT

SECTIONNEUR PRINCIPALE

SERVICIO DE DESCONEXION

LABEL LOCATION:
AC DISCONNECT
PER CODE: NEC 230.66

5

PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH

LABEL LOCATION:
AC DISCONNECT
PER CODE: NEC 690.56(C)(2)

6

MAXIMUM VOLTAGE: 480 VDC
MAXIMUM CIRCUIT CURRENT: 27 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: NFPA 70, NEC 690.53

7

PHOTOVOLTAIC AC DISCONNECT
RATED AC OUTPUT CURRENT 42 AMPS
NOMINAL OPERATING AC VOLTAGE 240 VOLTS

LABEL LOCATION:
INTERACTIVE SYSTEM POINT OF INTERCONNECTION
PER CODE: NFPA 70, NEC 690.54

8

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: NEC 705.12(B)(3)(2)

9

WARNING:
PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION:
CONDUIT
PER CODE: NEC 690.31(D)(2)

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 CIRCUIT

LABEL LOCATION:
MARKINGS PLACED ON ALL INTERIOR AND EXTERIOR CONDUIT, RACEWAYS, ENCLOSURES, AND CABLE ASSEMBLIES AT LEAST EVERY 1O FT, AT TURNS AND ABOVE/BELOW PENETRATIONS AND ALL COMBINER/JUNCTION BOXES
PER CODE: IFC 606.11.1.4

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

ELECTRIC SHOCK HAZARD

IF A GROUND FAULT IS INDICATED, NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED

LABEL LOCATION:
PLACE THIS LABEL ON INVERTER(S) OR NEAR GROUND-FAULT INDICATOR (ON INVERTER(S) U.O.N)
PER CODE: NEC 690.5 (C)

14

WARNING

DUAL POWER SUPPLY
SOURCES: UTILITY AND PV POWER SOURCE ELECTRIC SYSTEM

LABEL LOCATION:
POINT OF INTERCONNECTION
PER CODE: NEC 705.12(C)

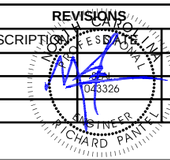
ADHESIVE FASTENED SIGNS

- 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
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV



PROJECT NAME & ADDRESS
Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

JOHN RHODES
RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

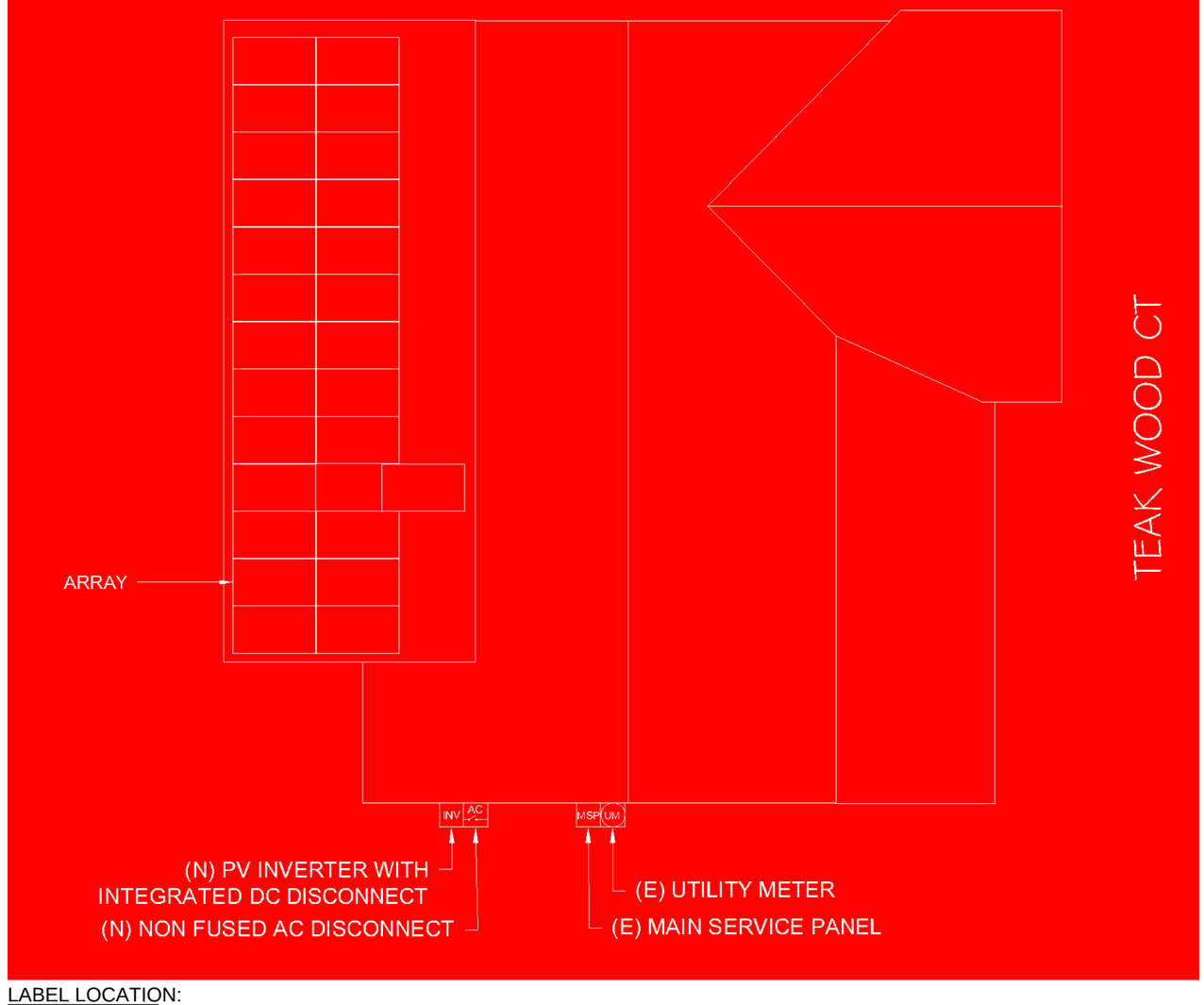
SHEET NAME
SIGNAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-11

CAUTION

POWER TO THIS BUILDING IS SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN



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)

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

SYSTEM INFO
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV

Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

PROJECT NAME & ADDRESS

JOHN RHODES
RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

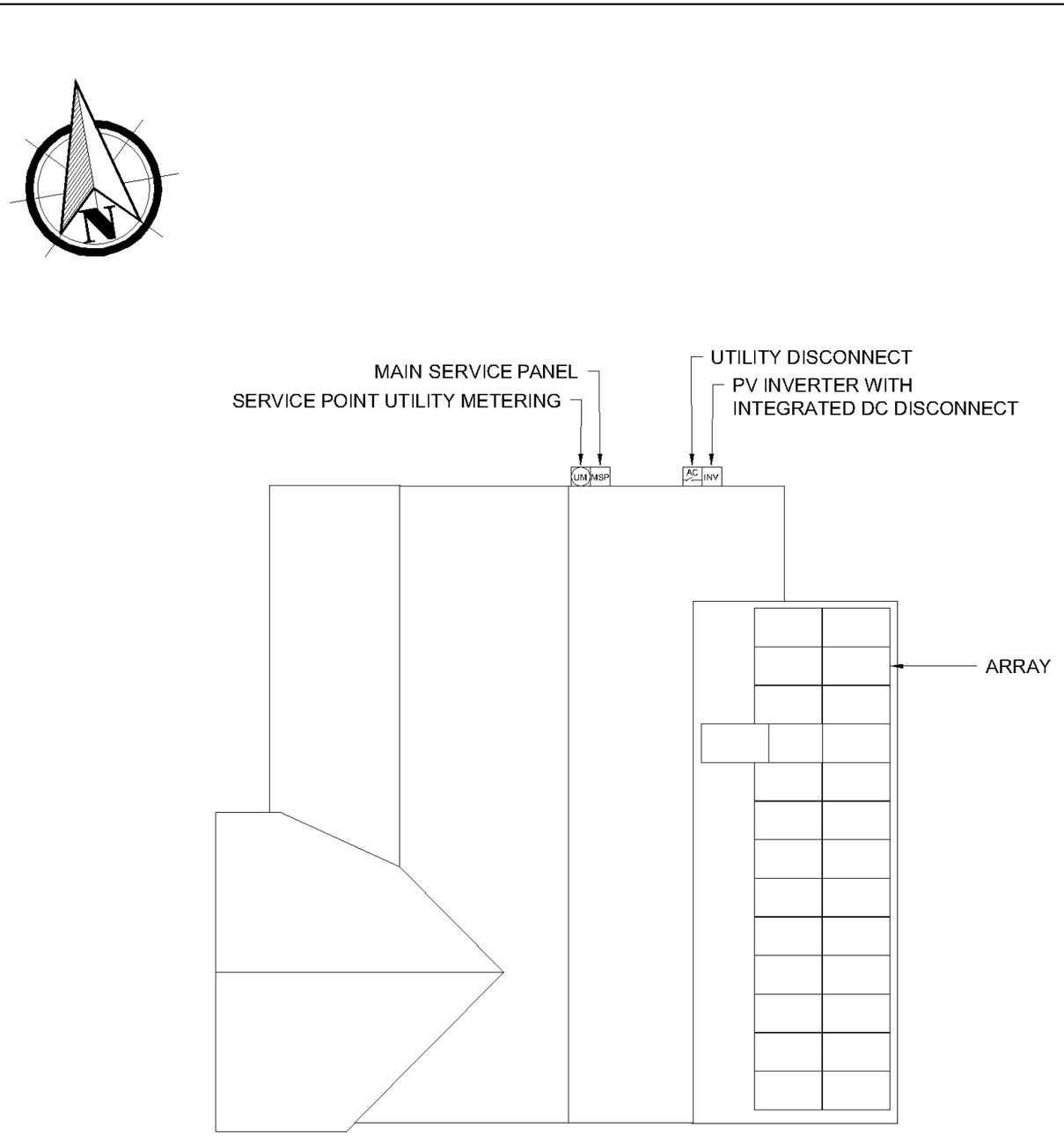
DATE: 8/29/2023

SHEET NAME
SIGNAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-12

JOB SAFETY PLAN



64 TEAK WOOD CT, LILLINGTON, NC 27546, 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.

PERSON COVERED BY THIS JOB SAFETY PLAN

INJURED AT WORK TODAY ? INITIAL YES OR NO

PRINT NAME	INITIAL	YES	NO

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

SYSTEM INFO
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(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
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METER: 113 904 472

REVISIONS		
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EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
JOB SAFETY PLAN

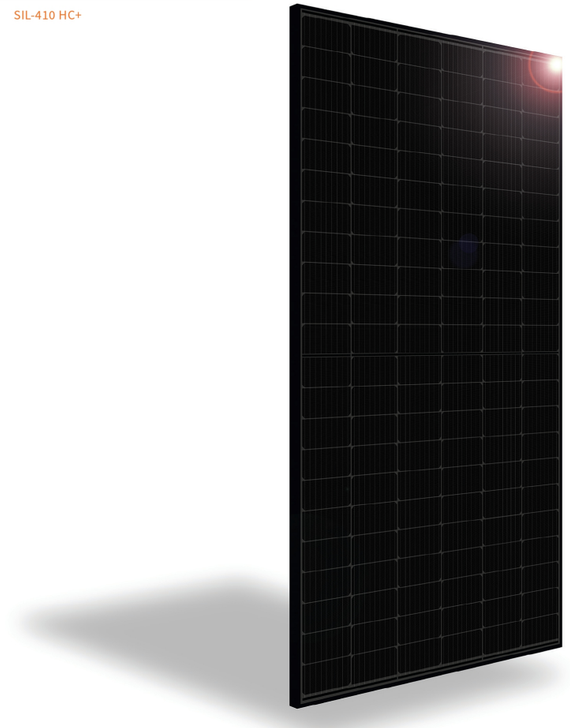
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-13

SILFAB PRIME

SIL-410 HC+

SILFAB SOLAR®



RELIABLE ENERGY.
DIRECT FROM THE SOURCE.

Designed to outperform.

Dependable, durable, high-performance solar panels engineered for North American homeowners.

SILFABSOLAR.COM

PROUD PARTNER OF

TITAN SOLAR POWER

CE · Intertek · Intertek · IEC · Fraunhofer ISE

CHUBB*

* Chubb provides error and omission insurance to Silfab Solar Inc.

ELECTRICAL SPECIFICATIONS		410	
Test Conditions		STC	NOCT
Module Power (Pmax)	Wp	410	306
Maximum power voltage (Vpmax)	V	38.99	36.24
Maximum power current (Ipmax)	A	10.52	8.43
Open circuit voltage (Voc)	V	45.59	42.76
Short circuit current (Isc)	A	11.15	8.99
Module efficiency	%	20.7%	19.3%
Maximum system voltage (VDC)	V	1000	
Series fuse rating	A	20	
Power Tolerance	Wp	0 to +10	

Measurement conditions: STC 1000 W/m² • AM 1.5 • Temperature 25 °C • NOCT 800 W/m² • AM 1.5 • Measurement uncertainty ≤ 3%
Sun simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by 0 to +10W.

MECHANICAL PROPERTIES / COMPONENTS	METRIC	IMPERIAL
Module weight	21.3kg ±0.2kg	47lbs ±0.4lbs
Dimensions (H x L x D)	1914 mm x 1036 mm x 35 mm	75.3 in x 40.8 in x 1.37 in
Maximum surface load (wind/snow)*	5400 Pa rear load / 5400 Pa front load	112.8 lb/ft² rear load / 112.8 lb/ft² front load
Hail impact resistance	ø 25 mm at 83 km/h	ø 1 in at 51.6 mph
Cells	132 Half cells - Si mono PERC 9 busbar - 83 x 166 mm	132 Half cells- Si mono PERC 9 busbar - 3.26 x 6.53 in
Glass	3.2 mm high transmittance, tempered, anti-reflective coating	0.126 in high transmittance, tempered, anti-reflective coating
Cables and connectors (refer to installation manual)	1350 mm, ø 5.7 mm, MC4 from Staubli	53 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	

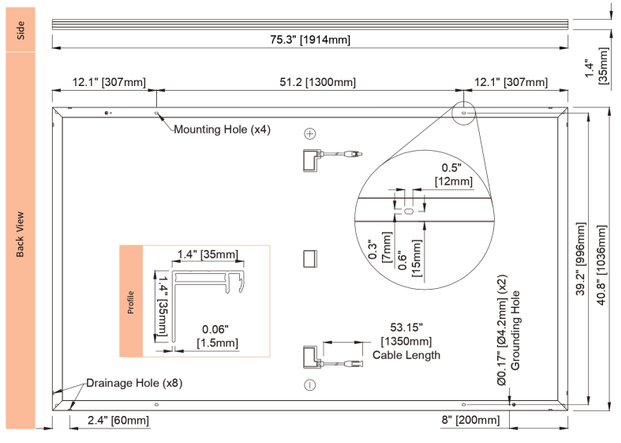
TEMPERATURE RATINGS	
Temperature Coefficient Isc	+0.064 %/°C
Temperature Coefficient Voc	-0.28 %/°C
Temperature Coefficient Pmax	-0.36 %/°C
NOCT (± 2°C)	45 °C
Operating temperature	-40/+85 °C

WARRANTIES	
Module product workmanship warranty	25 years**
Linear power performance guarantee	30 years
	≥ 97.1% end 1st yr ≥ 91.6% end 12th yr ≥ 85.1% end 25th yr ≥ 82.6% end 30th yr

CERTIFICATIONS	
Product	UL 61215-1:2017 Ed.1***, UL 61215-2:2017 Ed.1***, UL 61730-1:2017 Ed.1, UL 61730-2:2017 Ed.1 , CSA C22.2#61730-1:2019 Ed.2, CSA C22.2#61730-2:2019 Ed.2, IEC 61215-1:2016 Ed.1***, IEC 61215-2:2016 Ed.1***, IEC 61730-1:2016 Ed.2, IEC 61730-2:2016 Ed.2, IEC 61701:2020 (Salt Mist Corrosion), IEC 62716:2013 (Ammonia Corrosion), CEC Listing, UL Fire Rating: Type 2
Factory	ISO9001:2015

SHIPPING SPECS	
Modules Per Pallet:	26 or 26 (California)
Pallets Per Truck	32 or 30 (California)
Modules Per Truck	832 or 780 (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.
PAN files generated from 3rd party performance data are available for download at: silfabsolar.com/downloads.
*** Certification in progress.



TITAN SOLAR POWER

Titan Solar Power
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F +1 905.696.0267

Silfab - SIL-410-HC+-20230616

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

SYSTEM INFO

(26) SILFAB
SIL-410HC+

(1) SOLAREDGE
SE10000H-US

DC SYSTEM SIZE: 10.660 kWDC

AC SYSTEM SIZE: 10.000 kWAC

METER: 113 904 472

REVISIONS

DESCRIPTION	REV

CALIFORNIA LICENSED PROFESSIONAL ENGINEER
No. 043326
CIVIL
RICHARD PANTEL

PROJECT NAME & ADDRESS

Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

JOHN RHODES
RESIDENCE
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EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

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

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)

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SolarEdge Home Wave Inverter
For North America

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

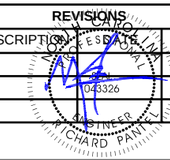
Applicable to inverters with part number	SEXXXXH-XXXXXBXX4					SE11400H-XXXXXBXX5	
	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	Units
OUTPUT							
Rated AC Power Output	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power 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[1]						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
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS	
DESCRIPTION	REV



PROJECT NAME & ADDRESS

Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

JOHN RHODES
RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-15

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	SEXXXH-XXXXXBXX4					SE11400H-XXXXXBXX5	
	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]						°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)						

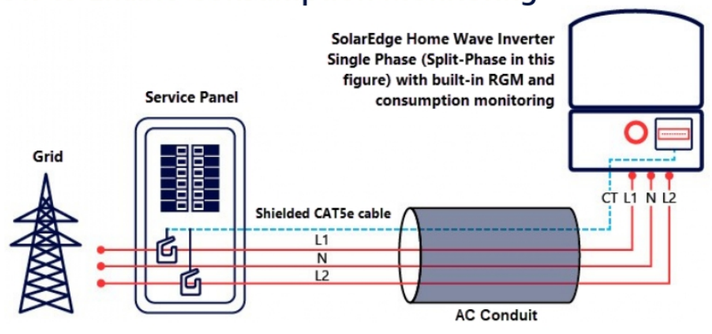
(3) For more information, refer to the SolarEdge Home Network datasheet

(4) Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxxH-US000BEI4. For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20. 20 units per box.

(5) SE11400H-USxxxBxx**5** is the updated PN, though SE11400H-USxxxBxx**4** will still be available. All specifications are similar for both models, **EXCLUDING** the weight and dimensions [HxWxD]; The weight and dimensions of SE11400H-USxxxBxx**4** 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.

CE

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

SYSTEM INFO

(26) SILFAB SIL-410HC+

(1) SOLAREDGE SE10000H-US

DC SYSTEM SIZE: 10.660 kWDC

AC SYSTEM SIZE: 10.000 kWAC

METER: 113 904 472

REVISIONS

DESCRIPTION	DATE	REV

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043326 RICHARD PANTEL

PROJECT NAME & ADDRESS

Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

JOHN RHODES
RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-16

Power Optimizer

For North America

S440

POWER OPTIMIZER

PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Detects abnormal PV connector behavior, preventing potential safety issues*
- Module-level voltage shutdown for installer and firefighter safety
- 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
- Flexible system design for maximum space utilization
- Compatible with bifacial PV modules
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)

* Functionality subject to inverter model and firmware version

solaredge.com

solaredge

Power Optimizer

For North America

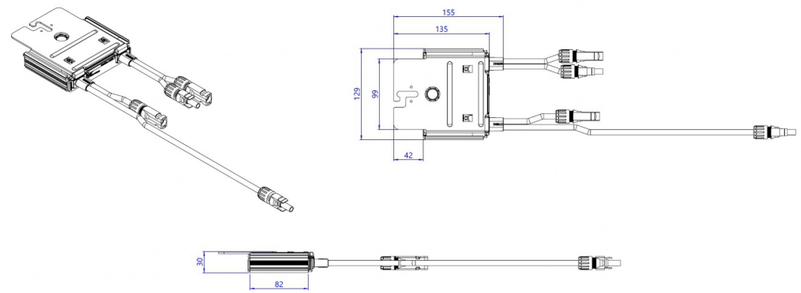
S440

	S440	Unit
INPUT		
Rated Input DC Power(1)	440	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	%
Overvoltage 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		
Photovoltaic Rapid Shutdown System	NEC 2014, 2017 & 2020	
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3	
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 155 x 30 / 5.07 x 6.10 x 1.18	mm / in
Weight (including cables)	655 / 1.5	gr / lb
Input Connector	MC4(2)	
Input Wire Length	0.1 / 0.32	m / ft
Output Connector	MC4	
Output Wire Length	(+) 2.3, (-) 0.10 / (+) 7.54, (-) 0.32	m / ft
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	Three Phase 208V Grid	Three Phase for 277/480V Grid	
Minimum String Length (Power Optimizers)	S440	8	10	18	
Maximum String Length (Power Optimizers)		25		50(4)	
Maximum Nominal Power per String(5)		5700 (6000 with SE7600-US - SE11400-US)	6000(6)	12750(7)	W
Parallel Strings of Different Lengths or Orientations		Yes			

(4) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
(5) 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
(6) For the 208V grid: it is allowed to install up to 7,800W per string, two minimum string count are required and up to 7,200W without minimum string count. The maximum power difference between each string is 1,000W
(7) 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
(8) It is not allowed to mix S-series and P-series Power Optimizers in new installations



Intertek RoHS

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

SYSTEM INFO

(26) SILFAB SIL-410HC+

(1) SOLAREDGE SE10000H-US

DC SYSTEM SIZE: 10.660 kWDC

AC SYSTEM SIZE: 10.000 kWAC

METER: 113 904 472

REVISIONS

DESCRIPTION	REV

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043326 RICHARD PANTEL

PROJECT NAME & ADDRESS

Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

JOHN RHODES
RESIDENCE
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EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-17

STRONGHOLD™ | BUTYL

UNIRAC
BETTER SOLAR STARTS HERE

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

UNIRAC
BETTER SOLAR STARTS HERE

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.

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

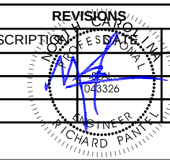
PROTECT YOUR REPUTATION WITH QUALITY RACKING SOLUTIONS BACKED BY ENGINEERING EXCELLENCE AND A SUPERIOR SUPPLY CHAIN

PUB2023JAN26-V2

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

SYSTEM INFO
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV



PROJECT NAME & ADDRESS

Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

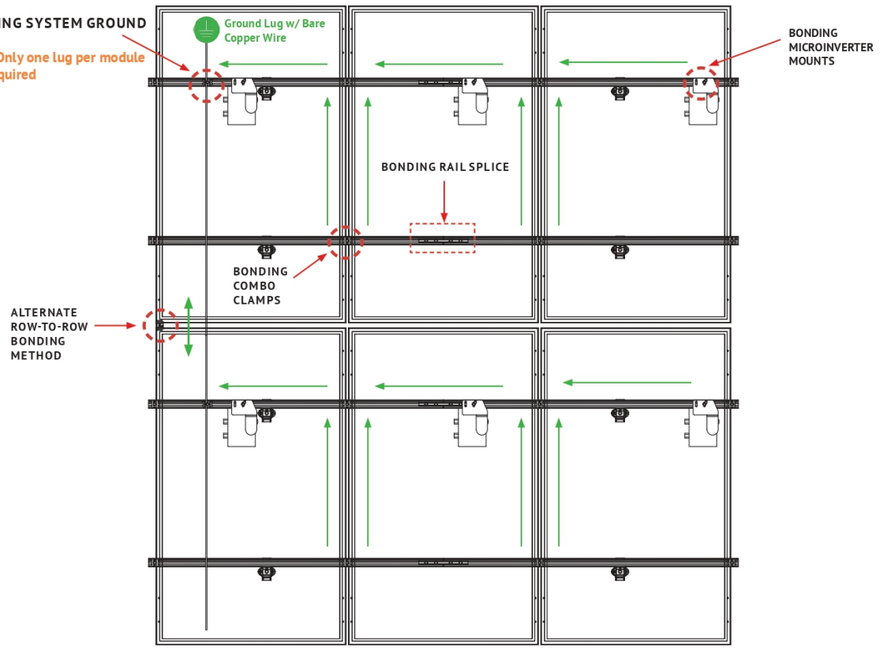
JOHN RHODES
RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-18



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 ⩾ 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.

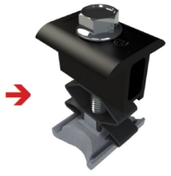
Tested Module	UL2703 Certification Load Ratings	Tested Loads	Tested Module Area
SunPower SPR-A440-COM	Down: 50 psf, Up: 50 psf , Slope: 15 psf	Down: 75 psf, Up: 75 psf , Slope: 23 psf	21.86 sq ft
Jinko JKM-xxxM 72HL4-V	Down: 50.12 psf, Up: 22.28 psf, Slope: 8 psf	Down: 75.19 psf, Up: 33.42 psf, Slope: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

UNIRAC
C SA US
266909



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

SYSTEM INFO
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS		
DESCRIPTION	DATE	REV

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043326 RICHARD PANTEL

PROJECT NAME & ADDRESS
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NC Lic. No. 043326

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PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-19

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
Aionrise	AION60G1, AION72G1
Aleo	P-Series & S-Series
Aptos Solar	DNA-120-(MF/BF)10-xxxW 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-xxxW
Astronergy	CHSM6612 M, M/HV CHSM6612P Series CHSM6612P/HV Series CHSM72M-HC CHSM72M(DG)/F-BH
Auxin	AXN6M610T AXN6P610T AXN6M612T AXN6P612T
Axitec	AC-xxx(M/P)/60S, AC-xxx(M/P)/72S AC-xxxP/156-60S AC-xxxMH/120(S/V/SB/VB) AC-xxxMH/144(S/V/SB/VB)
Boviet	BVM6610, BVM6612
BYD	P6K & MHK-36 Series

Manufacture	Module Model / Series
Canadian Solar	CS1(H/K/U/Y)-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 CS6K-(M/MS/MS AllBlack/P/P HE) CS6P-(M/P), CS6R-MS CS6U-(M/P/P HE), CS6W-(MB-AG/MS) CS6X-P, CSX-P, CS7L-MB-AG ELPS CS6(A/P)-MM
Centrosolar America	C-Series & E-Series
CertainTeed	CT2xxMxx-01, CT2xxPxx-01, CTxxxMxx-01 CTxxxPxx-01, CTxxxMxx-02, CTxxxMxx-03 CTxxxMxx-04, CTxxxHC11-04
Eco Solargy	Orion 1000 & Apollo 1000
ET Solar	ET AC Module, ET Module ET-M772BH520-550WW/WB
First Solar	FS-6XXX(A) FS-6XXX(A)-P, FS-6XXX(A)-P-I
Flextronics	FXS-xxxBB
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

Manufacture	Module Model / Series
Heliene	36M, 36P 60M, 60P, 72M & 72P Series 144HC M6 144HC M10 SL Bifacial
H-SAAE	HT60-156M-C HT60-156M(V)-C HT72-156(M/P) HT72-156P-C, HT72-156P(V)-C HT72-156M(PDV)-BF, HT72-156M(PD)-BF HT72-166M, HT72-18X
Hyundai	KG, MG, RW, TG, RI, RG, TI, KI, HI Series HIA-SxxxHG, HID-SxxxRG(BK), HIS-S400PI HIS-SxxxYH(BK), HiS-SxxxXG(BK)
ITEK	iT-SE Series
Japan Solar	JPS-60 & JPS-72 Series
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, BP, HiT, IB, MW, MR ** = Backsheet, ## Cell technology
Jinko	JKM & JKMS Series JKMxxxM-72HL-V JKMxxxM-72HLM-TV JKMxxxM-72HL4-(T)V JKMxxxM-7RL3-V JKMxxxM-72HL4-TV

- 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 fire 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
Kyocera	KD-F & KU Series
LA Solar	LSxxxHC(166) LSxxxBL LSxxxHC
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-B3 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
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
Maxeon	SPR-MAX3-xxx-COM
Meyer Burger	Meyer Burger Glass
Mission Solar Energy	MSE Mono, MSE Perc MSExxx(SR8T/SR8K/SR9S/SX5T) MSExxx(SX5K/SX6W)
Mitrex	Mxxx-L3H, Mxxx-I3H

Manufacture	Module Model / Series
Mitsubishi	MJE & MLE Series
Neo Solar Power Co.	D6M Series
NE Solar	NESE xxx-72MHB-M10 NESE xxx-60MH-M6
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)
Peimar	SGxxxM (FB/BF) SMxxxM
Phono Solar	PSxxxM1-20/U PSxxxM1H-20/U PSxxxM1-20UH PSxxxM1H-20UH PSxxxM4(H)-24/TH PSxxxM1-20/UH PSxxxM1H-20/UH PSxxxM-24/T PSxxxMH-24/T PSxxxM-24/TH PSxxxMH-24/TH
Prism Solar	P72 Series
Q.Cells	Plus, Pro, Peak, G3, G4, Peak G5(SC) , G6(+)(SC)(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

Manufacture	Module Model / 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 (BFF/BFG/BGT) Q.PEAK DUO (BLK) ML-G9(+) Q.PEAK DUO XL-(G9/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) Q.PEAK DUO XL-G10.3/BFG Q.PEAK DUO XL-G10.d/BFG Q.PEAK DUO XL-(G11.2/G11.3) Q.PEAK DUO XL-G11.3/BFG
REC	RECxxxAA (BLK/Pure) RECxxxNP (N-PEAK) RECxxxNP2 (Black) RECxxxPE, RECxxxPE72 RECxxxTP, RECxxxTP72 RECxxxTP2(M/BLK2) RECxxxTP2S(M)72 RECxxxTP3M (Black) RECxxxTP4 (Black)
Renesola	All 60-cell modules
Risen	RSM Series, RSM110-8-xxxBMDG
SEG Solar	SEG-xxx-BMD-HV
S-Energy	SN72 & SN60 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 fire 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
(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS	
DESCRIPTION	REV

CALIFORNIA
RICHARD PANTEL
043326
REGISTERED PROFESSIONAL ENGINEER

PROJECT NAME & ADDRESS
Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

JOHN RHODES
RESIDENCE
64 TEAK WOOD CT, LILLINGTON, NC 27546, USA
EMAIL ID: THEMANAGER5578@GMAIL.COM
PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-20

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 TD6I72M
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 fire typed 1, 2, 3 with metal frame, 10 with metal frame, 19, 22, 25, 29, or 30. See Appendix A Page 24.**

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(26) SILFAB SIL-410HC+
(1) SOLAREDGE SE10000H-US
DC SYSTEM SIZE: 10.660 kWDC
AC SYSTEM SIZE: 10.000 kWAC
METER: 113 904 472

REVISIONS

DESCRIPTION	REV

RICHARD PANTEL — REGISTERED PROFESSIONAL ENGINEER — CAROLINA — 043326

PROJECT NAME & ADDRESS
Reviewed and approved
Richard Pantel, P.E.
NC Lic. No. 043326

JOHN RHODES
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PHONE NO. (843) 291-9336

DATE: 8/29/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-21

EZ⚡SOLAR
making solar simple.

JB-1.XL
Specification Sheet
PV Junction Box for Composition/Asphalt Shingle Roofs

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 bock	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)	-		-		-	

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SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-22