SCOPE OF WORK

TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT THE OWNER RESIDENCE LOCATED AT 111 4TH ST, ERWIN, NC 28339, 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
25 Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN) MODULES
1 SOLAREDGE ENERGY HUB SE7600H-US INVERTER
25 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.
- ARCHITECT HAS NOT BEEN RETAINED TO SUPERVISE ANY CONSTRUCTION OR INSTALLATION OF ANY EQUIPMENT AT SITE.
- 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.
- NO CHANGES ARE TO BE MADE WITHOUT THE CONSULTATION AND APPROVAL OF THE ARCHITECT.
- 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 1S 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 NCEC 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 : ERWIN TOWN

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 NCEC 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 NCEC
- 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

Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
North Carolina COA # P-2308
Signed 5/15/2023

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SYSTEM RATING
10.000 kWDC
7.600 kWAC

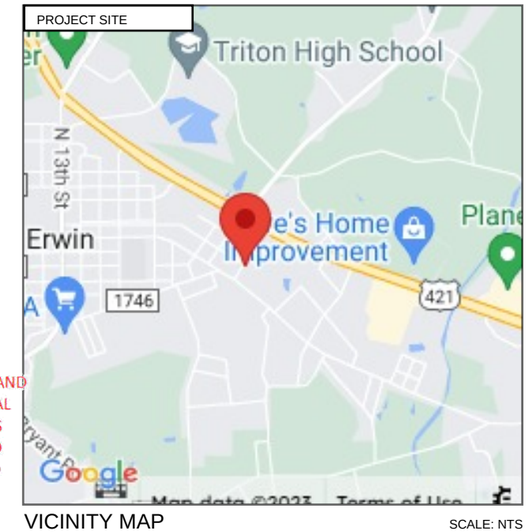
PHOTOVOLTAIC SYSTEM FIRE CLASSIFICATION LISTING IN ACCORDANCE WITH UL 1703 STANDARD.

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-PV18	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
(25) Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN)
(1) SOLAREDGE ENERGY HUB SE7600H-US
DC SYSTEM SIZE: 10.000 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 332 293 277

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

ADRIAN TUCKER
RESIDENCE
111 4TH ST, ERWIN, NC 28339, USA
EMAIL ID: TUCKERADRIAN79@GMAIL.COM
PHONE NO. (919) 324-2368

DATE: 5/12/2023

SHEET NAME
COVER PAGE

SHEET SIZE
ANSI B
11" X 17"

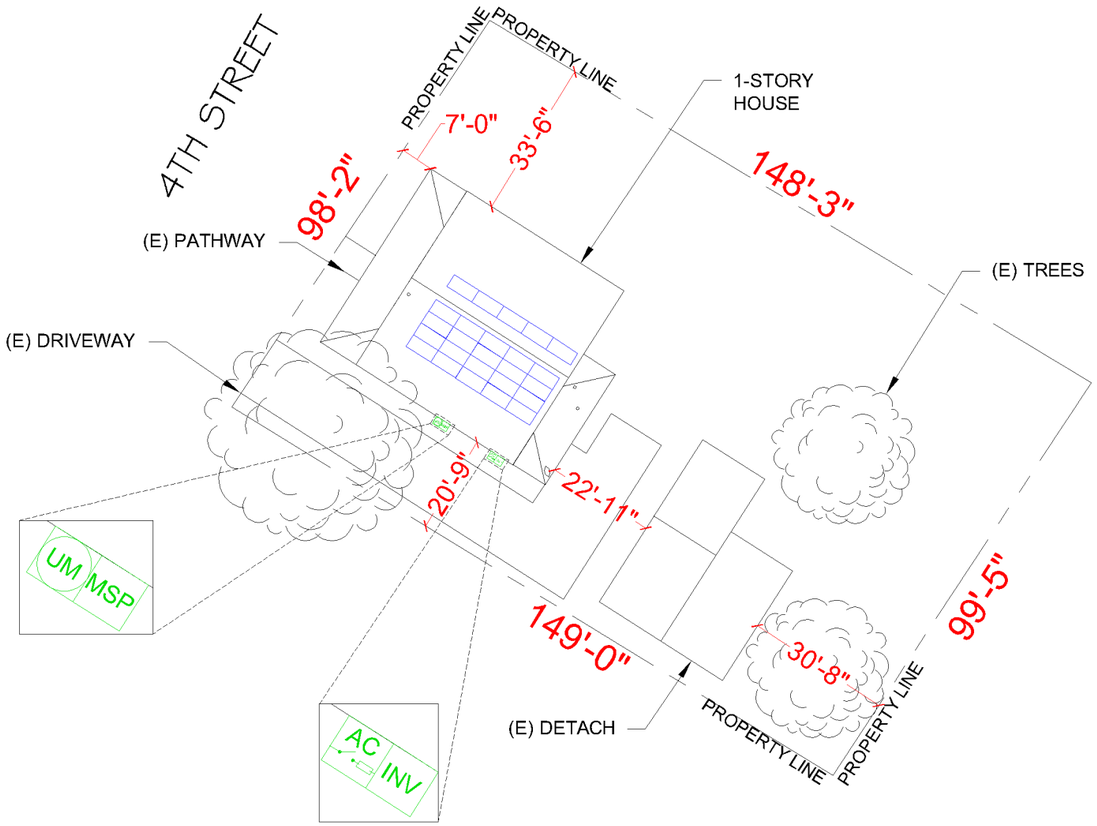
SHEET NUMBER
PV-1

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 [NCEC 110.26]

LEGEND

- JB — (N) JUNCTION BOX
- UM — (E) UTILITY METER
- MSP — (E) MAIN SERVICE PANEL
- AC — (N) FUSED AC DISCONNECT
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- ROOF ATTACHMENT
- CONDUIT
- S440 OPTIMIZER
- INV — SOLAREDGE ENERGY HUB SE7600H-US INVERTER
- Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN) MODULES
- K2 CROSSRAIL 44-X
- TRENCH



SCALE: 1/32"= 1'-0

TITAN SOLAR POWER
160 N MCQUEEN RD,
GILBERT, AZ 85233, USA
PH# : (808) 371-5338
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METER NO#: 332 293 277

DATE: 5/12/2023

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):	10PSF
EXPOSURE CATEGORY:	C
WIND SPEED (ASCE7-10):	119MPH

MODULE TYPE, DIMENSIONS & WEIGHT	
NUMBER OF MODULES:	25 MODULES
MODULE TYPE:	Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN)
MODULE WEIGHT:	48.5 LBS
MODULE DIMENSIONS:	74" X 41.1" = 21.12 SF
UNIT WEIGHT OF AREA:	2.3 PSF

ROOF DESCRIPTION

ROOF	ROOF TILT	AZIMUTH	RAFTER SIZE	RAFTER SPACING	ROOF MATERIAL
#1	31°	213°	2" x 6"	24" o.c.	COMP SHINGLE
#2	31°	33°	2" x 6"	24" o.c.	COMP SHINGLE

ARRAY AREA & ROOF AREA CALC'S

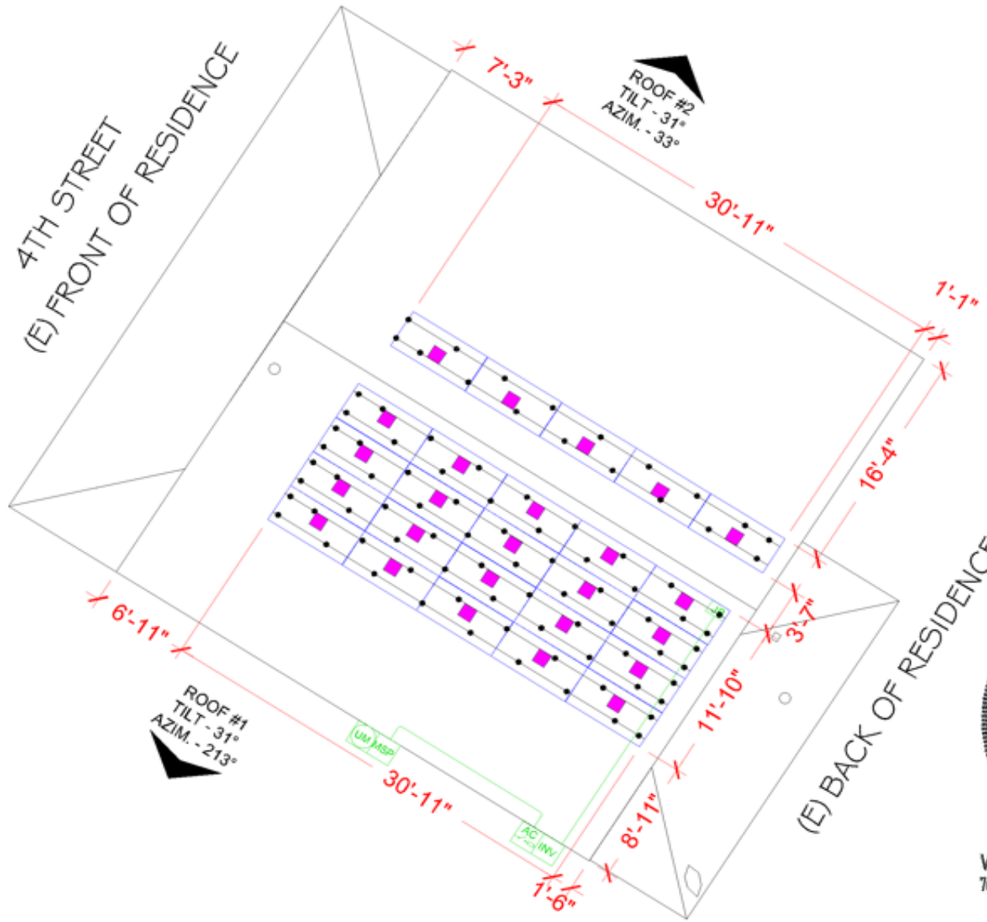
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)
#1	20	422.42
#2	5	105.61
(TOTAL ARRAY AREA/TOTAL ROOF AREA) X 100%		
= (528.03/2324) X 100% = 22.73%		

LEGEND

- JB — (N) JUNCTION BOX
- UM — (E) UTILITY METER
- MSP — (E) MAIN SERVICE PANEL
- AC — (N) FUSED AC DISCONNECT
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- ROOF ATTACHMENT
- CONDUIT
- S440 OPTIMIZER
- INV — SOLAREDGE ENERGY HUB SE7600H-US INVERTER
- Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN) MODULES
- K2 CROSSRAIL 44-X
- TRENCH

PANEL HEIGHT OFF ROOF	8"

NOTE: ATTACHMENT SPACING @ 48" O.C.



DEAD LOAD CALCULATION

EQUIPMENT'S DESCRIPTIONS	QTY	LBS/UNIT	TOTAL WEIGHT
MODULES	25	48.5	1212.5
MID CLAMP	40	0.3	12
END CLAMP	20	0.31	6.2
K2 CROSSRAIL 44-X	25	10	250.00
SPLICE BAR	20	0.65	13
SPLICE FOOT X	90	0.9	81.00
K2 SOLAR SEAL BUTYL PAD	90	0.42	37.80
M5 X 60 LAG SCREWS	180	0.08	14.40
T BOLT AND HEX NUT SET	90	0.05	4.50
TOTAL WEIGHT OF THE SYSTEM (LBS)			1631.4
TOTAL ARRAY AREA ON THE ROOF (SQ. FT.)			528.03
WEIGHT PER SQ. FT. (LBS)			3.09
WEIGHT PER PENETRATION (LBS)			3.63

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

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METER NO#: 332 293 277

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

SYSTEM INFO
(25) Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN)
(1) SOLAREDGE ENERGY HUB SE7600H-US
DC SYSTEM SIZE: 10.000 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 332 293 277

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

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PHONE NO. (919) 324-2368

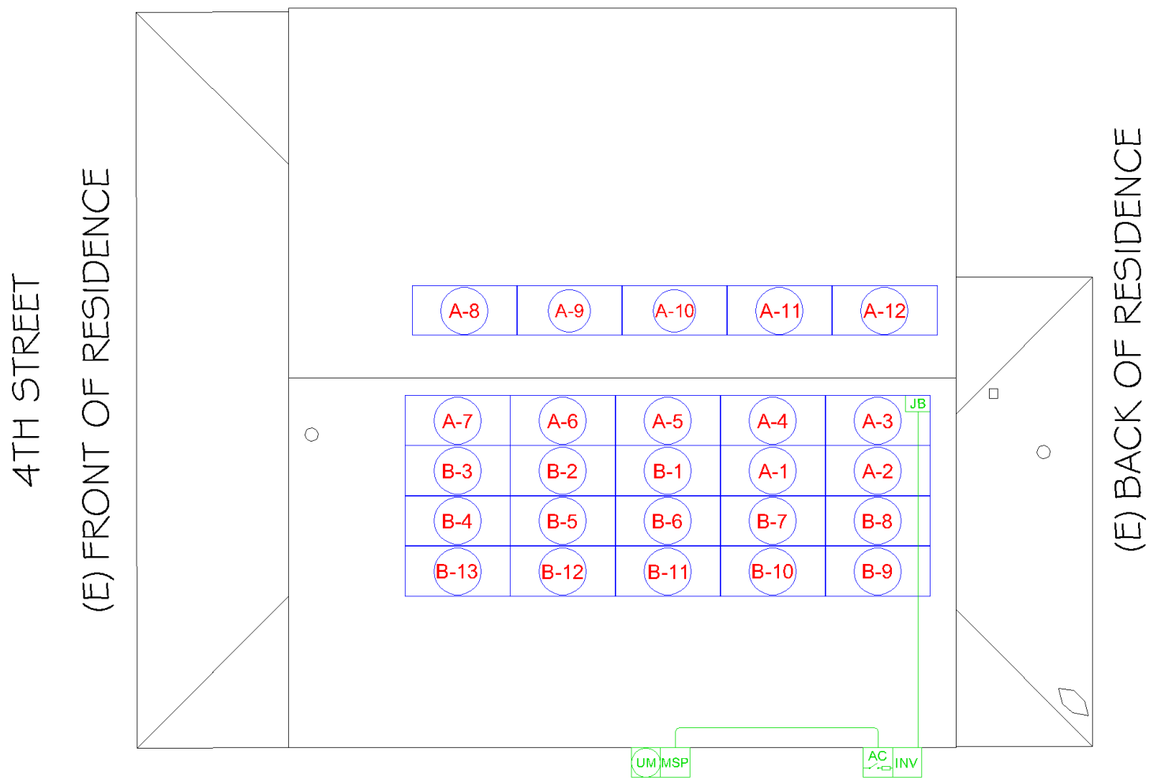
DATE: 5/12/2023

SHEET NAME
ROOF PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-3

BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	25	Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN)
INVERTER	1	SOLAREDGE ENERGY HUB SE7600H-US
OPTIMIZER	25	SOLAREDGE POWER OPTIMIZER S440
JUNCTION BOX	1	JB-1.XL, JUNCTION BOX, NEMA 3R, UL LISTED
FUSED AC DISCONNECT	1	EATON DG222NRB PV SYSTEM AC DISCONNECT SWITCH FUSED, 60A W/X FUSES, 120/240V 2P NEMA 3R
ATTACHMENT	90	SPLICE FOOT X
ATTACHMENT	90	K2 SOLAR SEAL BUTYL PAD
ATTACHMENT	180	M5 X 60 LAG SCREWS
ATTACHMENT	90	T BOLT AND HEX NUT SET
RAILS	25	K2 CROSSRAIL 44-X
BONDED SPLICE	20	SPLICE KIT
MID CLAMP	40	MODULES MID CLAMPS
END CLAMP	20	MODULES END CLAMPS
GROUNDING LUG	5	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

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(1) SOLAREDGE ENERGY HUB SE7600H-US
DC SYSTEM SIZE: 10.000 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 332 293 277

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

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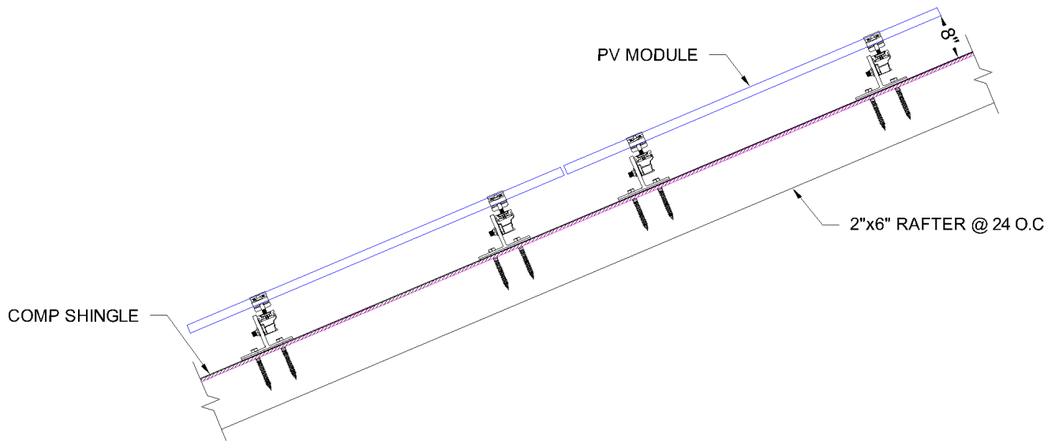
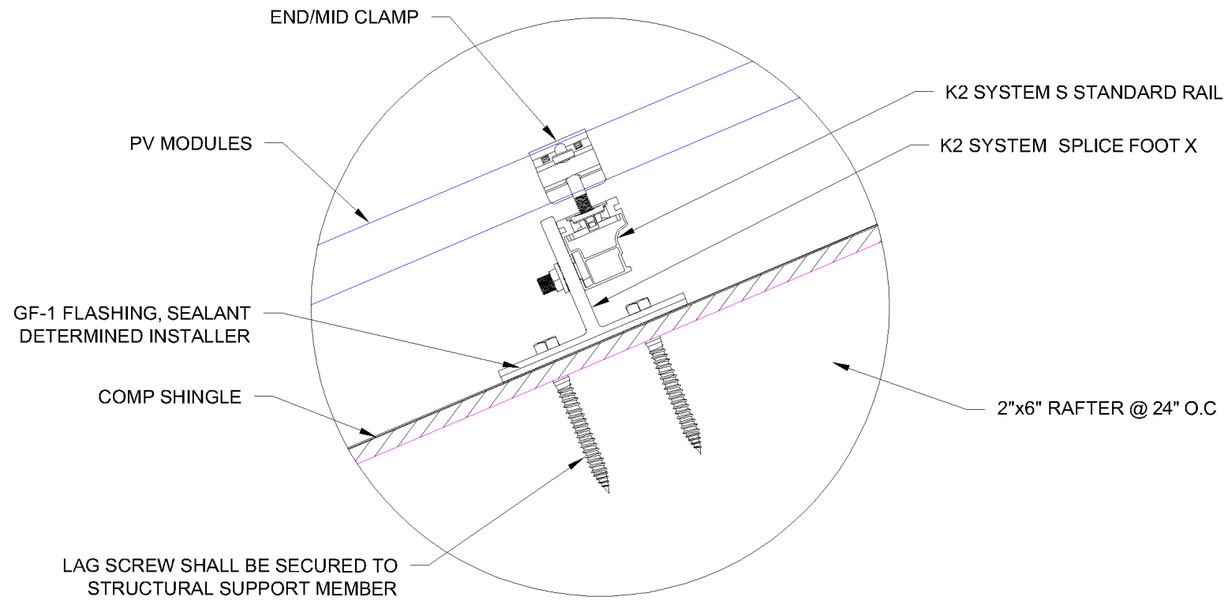
DATE: 5/12/2023

SHEET NAME
STRING LAYOUT & BOM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4





NORTH CAROLINA PROFESSIONAL SEAL 046546 ENGINEER SCOTT E. WYSSLING

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North Carolina COA # P-2308

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PH# : (808) 371-5338
Electrical LIC# : U.33714

SYSTEM INFO

(25) Q CELLS
Q.PEAK DUO BLK ML-G10+ 400
(TITAN)

(1) SOLAREDGE
ENERGY HUB SE7600H-US

DC SYSTEM SIZE: 10.000 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 332 293 277

REVISIONS

DESCRIPTION	DATE	REV

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RESIDENCE
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EMAIL ID: TUCKERADRIAN79@GMAIL.COM
PHONE NO. (919) 324-2368

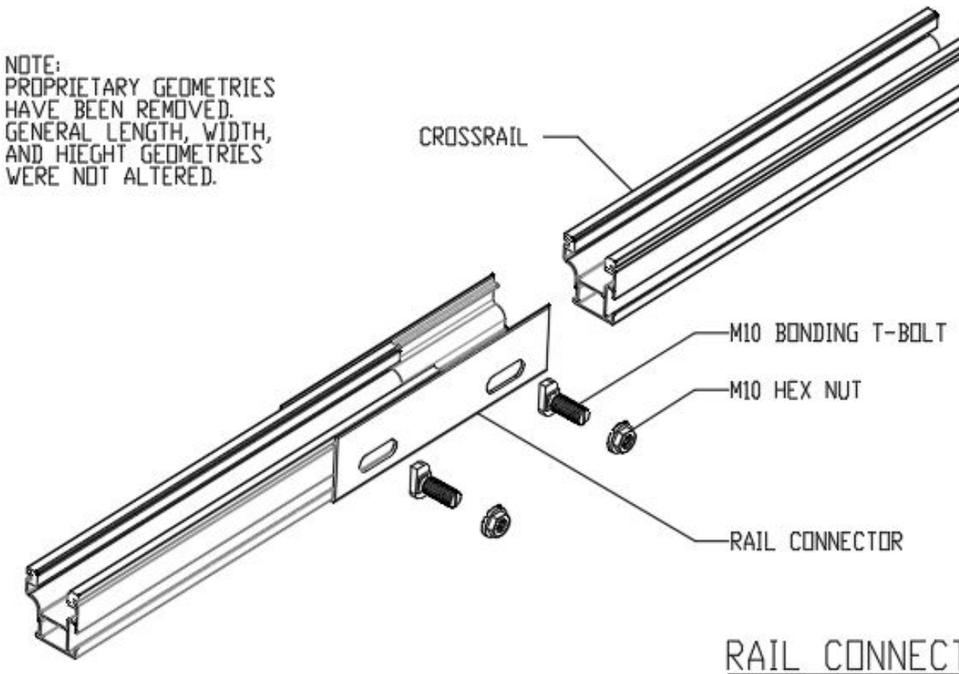
DATE: 5/12/2023

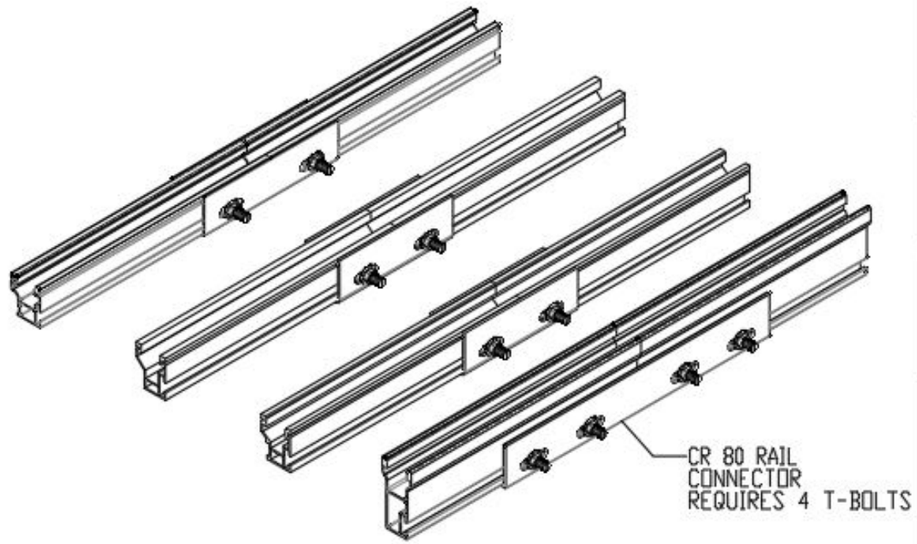
SHEET NAME
ATTACHMENT DETAILS

SHEET SIZE
ANSI B
11" X 17"

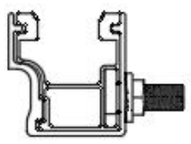
SHEET NUMBER
PV-5

NOTE:
PROPRIETARY GEOMETRIES HAVE BEEN REMOVED. GENERAL LENGTH, WIDTH, AND HIEGHT GEOMETRIES WERE NOT ALTERED.





RAIL CONNECTOR ASSEMBLIES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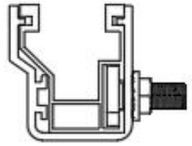
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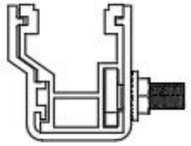
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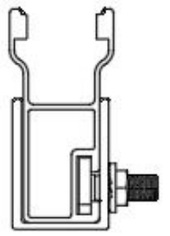
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REVISION HISTORY

Revision	Date	Description
01		
02		
03		
04		
05		

THIRD ANGLE

Everest Solar Systems, LLC.
a division of K2 Systems International
2835 La Mirada Dr Suite A
Vista, CA 92081
phone 760.301.5300

	Name	Date
Drawn	T. WIGGINS	07/27/2020
Checked	B. HAGEN	08/07/2020
Approved	T. WIGGINS	08/20/2020
Last Revision		

Title: CROSSRAIL RAIL CONNECTOR ASSEMBLIES

Size: B

All Dimensions are mm

Scale: 1:25 | Revision: 03 | Sheet 2 of 2

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

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DC SYSTEM SIZE: 10.000 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 332 293 277

REVISIONS

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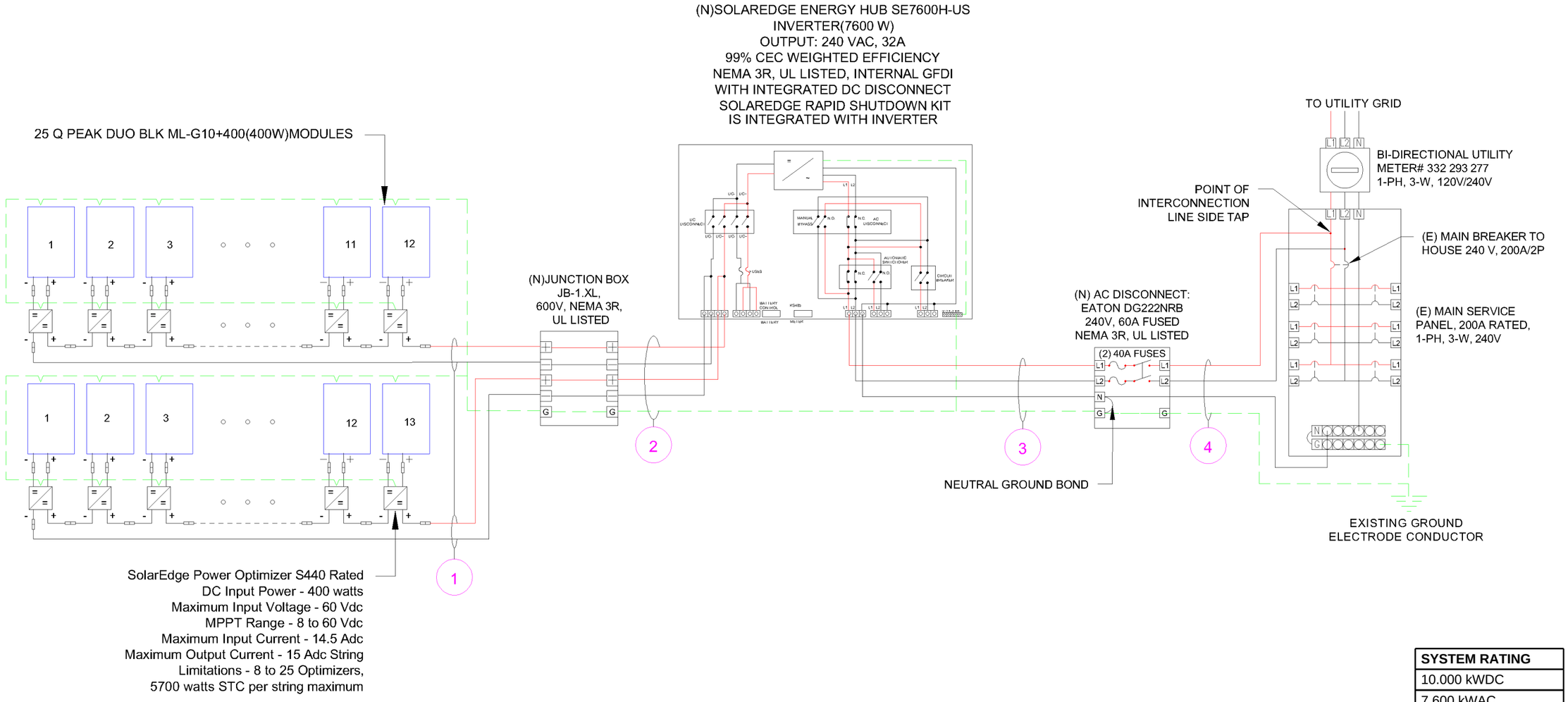
DATE: 5/12/2023

SHEET NAME
ATTACHMENT DETAILS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-6

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	N/A	N/A	6 AWG	BARE COPPER	0.71	(57°C)	N/A	15.00A	18.75A	N/A	N/A	75°C	85FT	0.66%
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	0.96	(35°C)	0.8	15.00A	18.75A	40A	30.72A	75°C	30FT	0.23%
3	1	INVERTER	FUSED AC DISCONNECT	8 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	29.27%	40A	8 AWG	THWN-2 COPPER	0.96	(35°C)	1	32.00A	40A	55A	52.80A	75°C	5FT	0.10%
4	1	FUSED AC DISCONNECT	MSP	6 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	34.90%	N/A	8 AWG	THWN-2 COPPER	0.96	(35°C)	1	32.00A	40A	75A	72.00A	75°C	10FT	0.13%



SYSTEM RATING
10.000 kWDC
7.600 kWAC

SERVICE INFO	
UTILITY PROVIDER:	DUKE ENERGY PROGRESS
AHJ NAME:	ERWIN TOWN
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

METER NO#: 332 293 277

SCALE: NTS

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

SYSTEM INFO

(25) Q CELLS
Q.PEAK DUO BLK ML-G10+ 400
(TITAN)

(1) SOLAREDGE
ENERGY HUB SE7600H-US

DC SYSTEM SIZE: 10.000 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 332 293 277

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

ADRIAN TUCKER
RESIDENCE
111 4TH ST, ERWIN, NC 28339, USA
EMAIL ID: TUCKERADRIAN79@GMAIL.COM
PHONE NO. (919) 324-2368

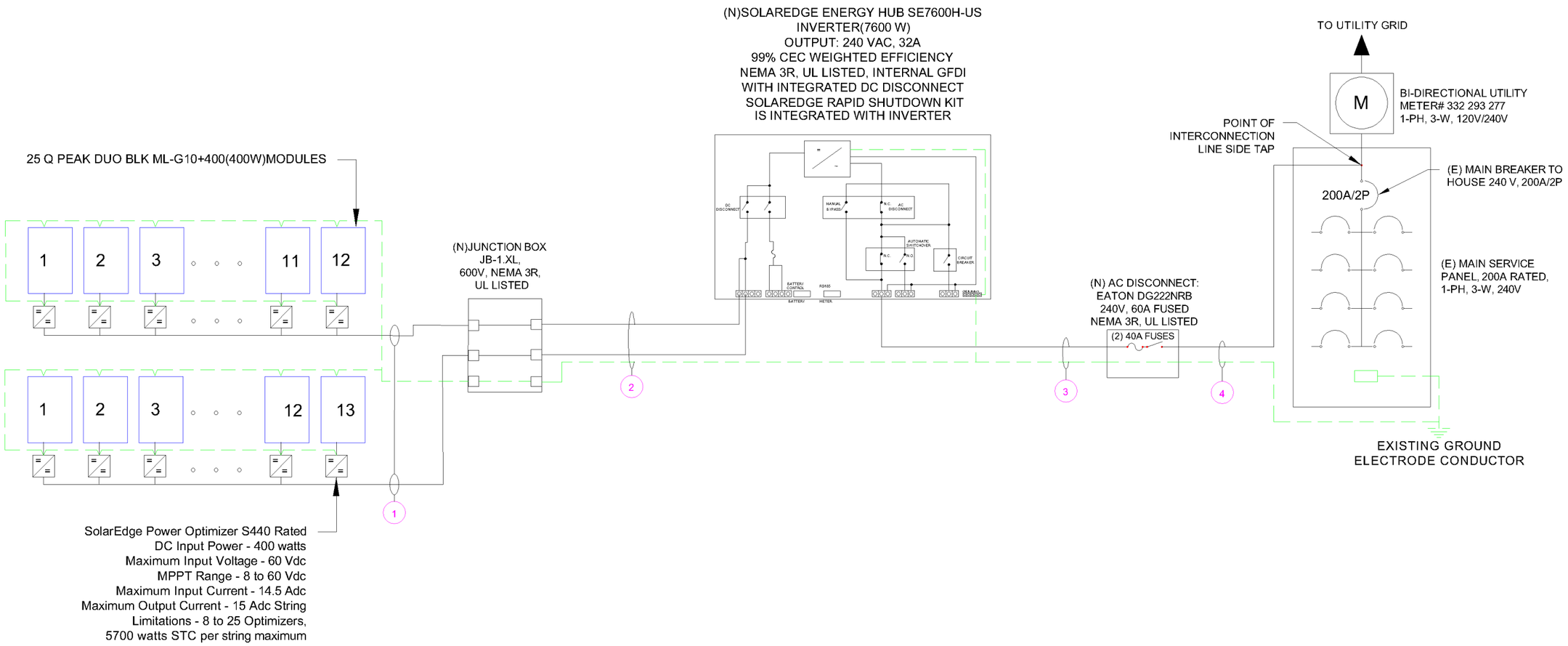
DATE: 5/12/2023

SHEET NAME
ELECTRICAL
LINE & CALCS.

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	N/A	N/A	6 AWG	BARE COPPER	0.71	(57°C)	N/A	15.00A	18.75A	N/A	N/A	75°C	85FT	0.66%
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	0.96	(35°C)	0.8	15.00A	18.75A	40A	30.72A	75°C	30FT	0.23%
3	1	INVERTER	FUSED AC DISCONNECT	8 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	29.27%	40A	8 AWG	THWN-2 COPPER	0.96	(35°C)	1	32.00A	40A	55A	52.80A	75°C	5FT	0.10%
4	1	FUSED AC DISCONNECT	MSP	6 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	34.90%	N/A	8 AWG	THWN-2 COPPER	0.96	(35°C)	1	32.00A	40A	75A	72.00A	75°C	10FT	0.13%



SYSTEM RATING
10.000 kWDC
7.600 kWAC

SERVICE INFO	
UTILITY PROVIDER:	DUKE ENERGY PROGRESS
AHJ NAME:	ERWIN TOWN
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

METER NO#: 332 293 277

SCALE: NTS

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

SYSTEM INFO

(25) Q CELLS
Q.PEAK DUO BLK ML-G10+ 400
(TITAN)

(1) SOLAREDGE
ENERGY HUB SE7600H-US

DC SYSTEM SIZE: 10.000 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 332 293 277

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

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RESIDENCE
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EMAIL ID: TUCKERADRIAN79@GMAIL.COM
PHONE NO. (919) 324-2368

DATE: 5/12/2023

SHEET NAME
ELECTRICAL
LINE & CALCS.

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-8

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL	Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN)
VMP	37.13 V
IMP	10.77 A
VOC	45.3 V
ISC	11.14 A
TEMP. COEFF. VOC	-0.27%/K
PTC RATING	376.55 W
MODULE DIMENSION	74"(L) x 41.1"(W)
PANEL WATTAGE	400 W

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL	SOLAREDGE ENERGY HUB SE7600H-US
NOMINAL AC POWER	7600 W
NOMINAL OUTPUT VOLTAGE	264 VAC
NOMINAL OUTPUT CURRENT	32 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%)	35°C
CONDUIT HEIGHT	7/8"
ROOF TOP TEMP	90°C
CONDUCTOR TEMPERATURE RATE	57°C
MODULE TEMPERATURE COEFFICIENT OF VOC	-0.27%/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

(25) Q CELLS
Q.PEAK DUO BLK ML-G10+ 400
(TITAN)

(1) SOLAREDGE
ENERGY HUB SE7600H-US

DC SYSTEM SIZE: 10.000 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 332 293 277

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

ADRIAN TUCKER
RESIDENCE
111 4TH ST, ERWIN, NC 28339, USA
EMAIL ID: TUCKERADRIAN79@GMAIL.COM
PHONE NO. (919) 324-2368

DATE: 5/12/2023

SHEET NAME
SPECIFICATIONS & NOTES

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-9

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: NCEC 690.13(B)

2

CAUTION

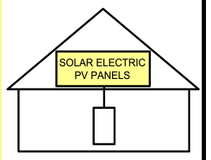
DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC

LABEL LOCATION:
MAIN SERVICE DISCONNECT/ AC DISCONNECT/ MAIN SERVICE PANEL/ REVENUE METER/ AC COMBINER
PER CODE: NCEC 705.12(C)

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 NCEC 690.56(C)

4

PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH

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

5

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: NCFPA 70, NEC 690.53

6

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

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

7

WARNING:
PHOTOVOLTAIC POWER SOURCE

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

8

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: NCEC 690.35 (F)

9

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: NCFC 606.11.1.4

10

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

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

11

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION:
INVERTER AT OR WITHIN 3' OF THE DC COMBINER SWITCH
PER CODE: NCEC 690.56(C)(2)

12

SERVICE EQUIPMENTS

EQUIPMENT DE SERVICE

EQUIPO DE SERVICIO

LABEL LOCATION:
AC DISCONNECT
PER CODE: NCEC 230.66

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 [NCEC 110.21(B) FIELD MARKING].
- ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER RESISTANT [NCFC 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
(25) Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN)
(1) SOLAREDGE ENERGY HUB SE7600H-US
DC SYSTEM SIZE: 10.000 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 332 293 277

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

ADRIAN TUCKER
RESIDENCE
111 4TH ST, ERWIN, NC 28339, USA
EMAIL ID: TUCKERADRIAN79@GMAIL.COM
PHONE NO. (919) 324-2368

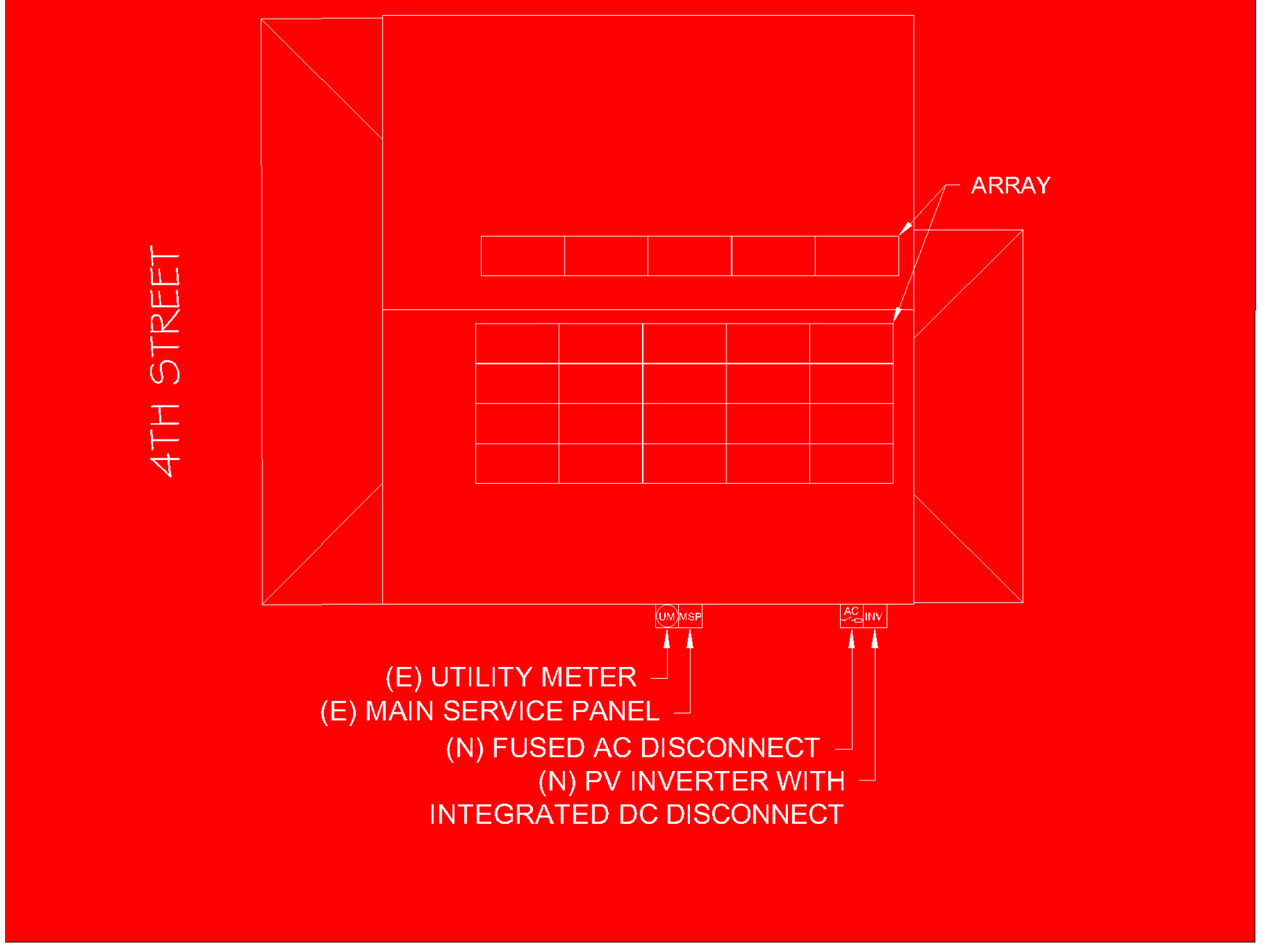
DATE: 5/12/2023

SHEET NAME
SIGNAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-10

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: NCEC 705.10)

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(1) SOLAREDGE ENERGY HUB SE7600H-US
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AC SYSTEM SIZE: 7.600 kWAC
METER: 332 293 277

REVISIONS		
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PHONE NO. (919) 324-2368

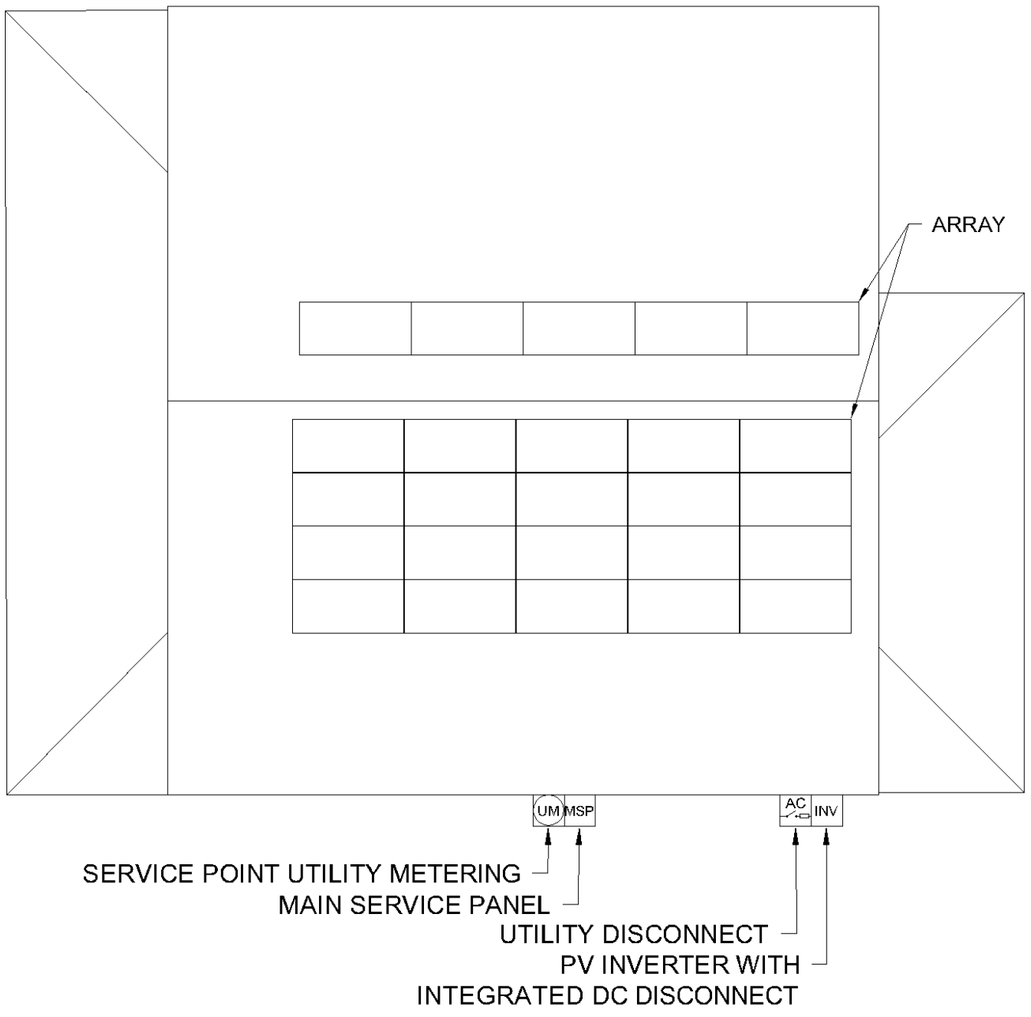
DATE: 5/12/2023

SHEET NAME
SIGNAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-11

JOB SAFETY PLAN



111 4TH ST, ERWIN, NC 28339, 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
(25) Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN)
(1) SOLAREDGE ENERGY HUB SE7600H-US
DC SYSTEM SIZE: 10.000 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 332 293 277

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

ADRIAN TUCKER
RESIDENCE
111 4TH ST, ERWIN, NC 28339, USA
EMAIL ID: TUCKERADRIAN79@GMAIL.COM
PHONE NO. (919) 324-2368

DATE: 5/12/2023

SHEET NAME
JOB SAFETY PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-12

TITAN SOLAR PANEL

25 YR Warranty Product & Performance

EUPD RESEARCH TOP BRAND PV MODULES EUROPE 2021

Q CELLS Yield Security

BREAKING THE 20% EFFICIENCY BARRIER
Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9 %.

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

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

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

A RELIABLE INVESTMENT
Inclusive 25-year product warranty and 25-year linear performance warranty2.

INNOVATIVE ALL-WEATHER TECHNOLOGY
Optimal yields, whatever the weather with excellent low-light and temperature behavior.

1 APT test conditions according to IEC / TS 62804-1:2015, method A (−1500 V, 96 h)
2 See data sheet on rear for further information.

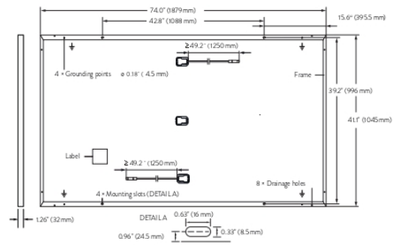
Q CELLS

Q PEAK DUO BLK ML-G10+
395-400 *ENDURING HIGH PERFORMANCE*

THE IDEAL SOLUTION FOR:
Rooftop arrays on residential buildings

MECHANICAL SPECIFICATION

FORMAT	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
WEIGHT	48.5 lbs (22.0 kg)
FRONT COVER	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
BACK COVER	Composite film
FRAME	Black anodized aluminum
CELL	6 × 22 monocrystalline Q.ANTUM solar half cells
JUNCTION BOX	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
CABLE	4 mm² Solar cable; (+) ≥ 49.2 in (1250 mm), (−) ≥ 49.2 in (1250 mm)
CONNECTOR	Stäubli MC4; IP68

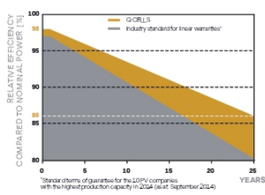


ELECTRICAL CHARACTERISTICS

POWER CLASS				385	390	395	400	405
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC [1] (POWER TOLERANCE +5 W / −0 W)								
MINIMUM	POWER AT MPP	P_{MPP}	[W]	385	390	395	400	405
	SHORT CIRCUIT CURRENT	I_{SC}	[A]	11.04	11.07	11.10	11.14	11.17
	OPEN CIRCUIT VOLTAGE	V_{OC}	[V]	45.19	45.23	45.27	45.30	45.34
	CURRENT AT MPP	I_{MPP}	[A]	10.59	10.65	10.71	10.77	10.83
	VOLTAGE AT MPP	V_{MPP}	[V]	36.36	36.62	36.88	37.13	37.39
	EFFICIENCY	η	[%]	≥19.6	≥19.9	≥20.1	≥20.4	≥20.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT [2]								
MINIMUM	POWER AT MPP	P_{MPP}	[W]	288.8	292.6	296.3	300.1	303.8
	SHORT CIRCUIT CURRENT	I_{SC}	[A]	8.90	8.92	8.95	8.97	9.00
	OPEN CIRCUIT VOLTAGE	V_{OC}	[V]	42.62	42.65	42.69	42.72	42.76
	CURRENT AT MPP	I_{MPP}	[A]	8.35	8.41	8.46	8.51	8.57
	VOLTAGE AT MPP	V_{MPP}	[V]	34.59	34.81	35.03	35.25	35.46

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

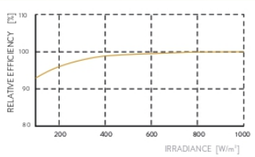
Q CELLS PERFORMANCE WARRANTY



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

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

PERFORMANCE AT LOW IRRADIANCE



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

TEMPERATURE COEFFICIENTS

TEMPERATURE COEFFICIENT OF I_{SC}	α	[%/K]	+0.04	TEMPERATURE COEFFICIENT OF V_{OC}	β	[%/K]	−0.27
TEMPERATURE COEFFICIENT OF P_{MPP}	γ	[%/K]	−0.34	NOMINAL MODULE OPERATING TEMPERATURE	NMOT	[°F]	109±5.4 (43±3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V_{SYS}	[V]	1000 (IEC) / 1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI / UL 61730	TYPE 2
Max. Design Load, Push / Pull[3]	[lbs/ft²]	75 (3600 Pa) / 55 (2660 Pa)	Permitted Module Temperature on Continuous Duty	−40 °F up to +185 °F (−40 °C up to +85 °C)
Max. Test Load, Push / Pull[3]	[lbs/ft²]	113 (5400 Pa) / 84 (4000 Pa)		

[3] See Installation Manual

QUALIFICATIONS AND CERTIFICATES

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

PACKAGING INFORMATION

Horizontal packaging	76.4 in 1940 mm	43.3 in 1100 mm	48.0 in 1220 mm	1656 lbs 751 kg	24 pallets	24 pallets	32 modules

Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Q CELLS
400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA
TEL: +1 949 748 5996
EMAIL: sales@q-cells.com.

TITAN SOLAR PANEL
525 W Baseline Rd., Mesa, AZ, 85210
TEL: 855.SAY.SOLAR
EMAIL: info@titansolarpower.com

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 ENERGY HUB SE7600H-US
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AC SYSTEM SIZE: 7.600 kWAC
METER: 332 293 277

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PHONE NO. (919) 324-2368

DATE: 5/12/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-13

Single Phase Energy Hub Inverter with Prism Technology

for North America

SE3000H-US / SE3800H-US / SE6000H-US / SE7600H-US(1)

	SE3000H-US	SE3800H-US	SE6000H-US	SE7600H-US	UNITS
OUTPUT - AC ON GRID					
Rated AC Power	3000	3800	6000	7600	W
Maximum AC Power Output	3000	3800	6000	7600	W
AC Output Voltage Range	211-264				Vac
AC Frequency Range (min - nom - max)	59.3 - 60 - 60.5(2)				Hz
Maximum Continuous Output Current	12.5	16	25	32	A
GFDI Threshold	1				A
Total Harmonic Distortion (THD)	<3				%
Power Factor	1, adjustable -0.85 to 0.85				
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes				
Charge Battery from AC (if Allowed)	Yes				
Typical Nighttime Power Consumption	<2.5				W
OUTPUT - AC BACKUP(3)					
Rated AC Power in Backup Operation	2400	3050	4800	6100	W
Peak AC Power (<10 sec) in Backup Operation	2700	3400	5400	6900	W
AC L-L Output Voltage Range in Backup	211-264				Vac
AC L-N Output Voltage Range in Backup	105-132				Vac
AC Frequency Range in Backup (min - nom - max)	55 - 60 - 65				Hz
Maximum Continuous Output Current in Backup Operation	10	12.7	20	25.5	A
Peak AC Current (<10sec) in Backup Operation	11.25	14.2	22.5	30	A
GFDI	1				A
THD	<5				%
OUTPUT - SMART EV CHARGER AC					
Rated AC Power	9,600				W
AC Output Voltage Range	211-264				Vac
AC Frequency Range (min - nom - max)	59.3-60-60.5				Hz
Maximum Continuous Output Current @240V (grid, PV and battery)	40				Aac
INPUT - DC (PV AND BATTERY)					
Transformer-less, Ungrounded	Yes				
Max Input Voltage	480				Vdc
Nom DC Input Voltage	380			400	Vdc
Reverse-Polarity Protection	Yes				
Ground-Fault Isolation Detection	600kΩ Sensitivity				
INPUT - DC (PV)					
Maximum DC Power	6000	7600	12000	15600	W
Maximum Input Current(4)	8.5	10.5	16.5	20	Adc
Max. Input Short Circuit Current	45				Adc
Maximum Inverter Efficiency	99.2				%
CEC Weighted Efficiency	99				%
2-pole Disconnection	Yes				
INPUT - DC (BATTERY)					
Supported Battery Types	LG Chem RESU10H				
Number of Batteries per Inverter	1 or 2(5)				
Maximum Battery Capacity per Inverter	19.6				kWh
Continuous Power Per Inverter	5000				W
Peak Power	6900				W
Max Input Current @240V	18				Adc
2-pole Disconnection	Yes				

Single Phase Energy Hub Inverter with Prism Technology

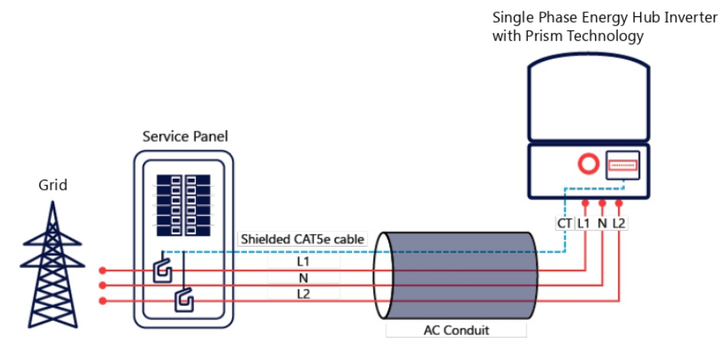
for North America

SE3000H-US / SE3800H-US / SE6000H-US / SE7600H-US(1)

SMART ENERGY CAPABILITIES			
Consumption Metering	Built-in(6)		
Battery Storage	With Backup Interface for service up to 200A; Up to 3 inverters, 15kW backup power, and 60kWh backup capacity		
EV Charging	Direct connection to Smart EV charger		
ADDITIONAL FEATURES			
Supported Communication Interfaces	RS485, Ethernet, Wi-Fi (optional), Cellular		
Revenue Grade Metering, ANSI C12.20	Built - in(6)		
Integrated AC, DC and Communication Connection Unit	Yes		
Inverter Commissioning	with the SetApp mobile application using built-in Wi-Fi Access Point for local connection		
DC Voltage Rapid Shutdown (PV and Battery)	Yes, according to NEC 2014 and 2017 690.12		
STANDARD COMPLIANCE			
Safety	UL1741, UL1741 SA, UL1699B, UL1998, UL9540, CSA 22.2		
Grid Connection Standards	IEEE1547, Rule 21, Rule 14H		
Emissions	FCC part15 class B		
INSTALLATION SPECIFICATIONS			
AC Output Conduit Size / AWG Range	3/4" maximum / 14-8 AWG	1" maximum / 14-6 AWG	
EV AC Output Conduit Size / AWG Range	3/4" maximum / 14-8 AWG	1" maximum / 14-6 AWG	
DC Input (PV) Conduit Size / AWG Range	3/4" maximum / 14-8 AWG	1" maximum / 14-6 AWG	
DC Input (Battery) Conduit Size / AWG Range	3/4" maximum / 14-8 AWG	1" maximum / 14-6 AWG	
Dimensions with Connection Unit (HxWxD)	17.7 X 14.6 X 6.8 / 450 X 370 X 174		in / mm
Weight with Connection Unit	26 / 11.8	30.2 / 13.7	lb / kg
Noise	< 25		dBA
Cooling	Natural Convection		
Operating Temperature Range	-40 to +140 / -40 to +60(7)		°F / °C
Protection Rating	NEMA 4X		

(1) These specifications apply to inverters with part numbers SExxxxH-USS3xxxxx or SE7600H-USSSHxxxx and connection unit model number DCD-1PH-US-PxH-F-x
(2) For other regional settings please contact SolarEdge support
(3) Not designed for standalone applications and requires AC for commissioning
(4) A higher current source may be used; the inverter will limit its input current to the values stated
(5) When connecting two LG Chem RESU batteries, each battery must have a different part number
(6) For consumption metering current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20. 20 units per box.
(7) Full power up to at least 50°C / 122°F; for power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf

Connecting CTs to the Revenue Grade and Consumption Meter



RoHS

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

SYSTEM INFO

(25) Q CELLS
Q.PEAK DUO BLK ML-G10+ 400
(TITAN)

(1) SOLAREDGE
ENERGY HUB SE7600H-US

DC SYSTEM SIZE: 10.000 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 332 293 277

REVISIONS

DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

ADRIAN TUCKER
RESIDENCE
111 4TH ST, ERWIN, NC 28339, USA
EMAIL ID: TUCKERADRIAN79@GMAIL.COM
PHONE NO. (919) 324-2368

DATE: 5/12/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-14

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

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/ Power Optimizer

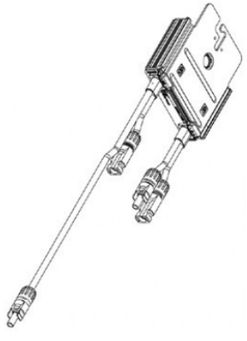
S440, S500

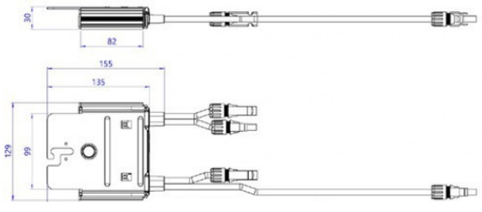
	S440	S500	UNIT
INPUT			
Rated Input DC Power(1)	440	500	W
Absolute Maximum Input Voltage (Voc)	60		Vdc
MPPT Operating Range	8 - 60		Vdc
Maximum Short Circuit Current (Isc) of Connected PV Module	14.5		Adc
Maximum Efficiency	99.5		%
Weighted Efficiency	98.6		%
Overvoltage Category	II		
OUTPUT DURING OPERATION			
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			
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)	W
Parallel Strings of Different Lengths or Orientations		Yes				

(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





CE RoHS

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

SYSTEM INFO
(25) Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN)
(1) SOLAREDGE ENERGY HUB SE7600H-US
DC SYSTEM SIZE: 10.000 kWDC
AC SYSTEM SIZE: 7.600 kWAC
METER: 332 293 277

REVISIONS		
DESCRIPTION	DATE	REV

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PHONE NO. (919) 324-2368

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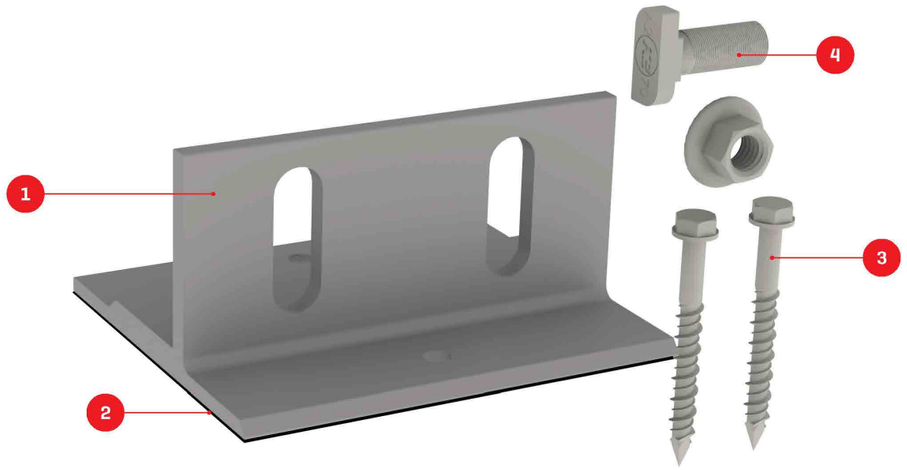
SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-15



Splice Foot X

TECHNICAL SHEET

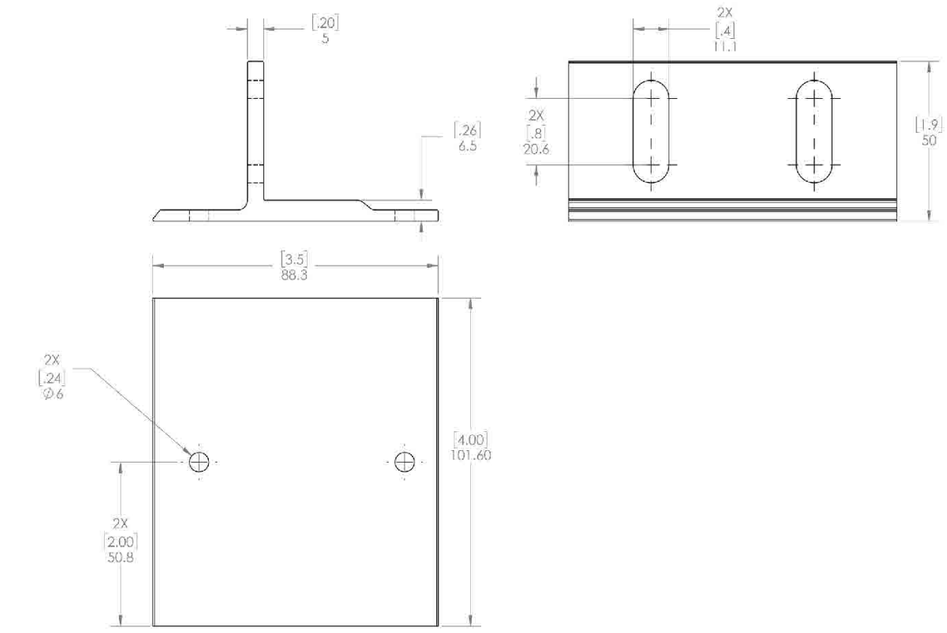
Item Number	Description	Part Number
1	Splice Foot X	4000113 | Splice Foot X Kit, Mill
2	K2 Solar Seal Butyl Pad	
3	M5 x 60 lag screws	
4	T-Bolt & Hex Nut Set	

Technical Data

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

We support PV systems
Formerly Everest Solar Systems

Units: [in] mm



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PH# : (808) 371-5338
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DATE: 5/12/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-16

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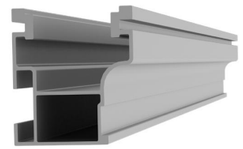
CROSSRAIL 44-X



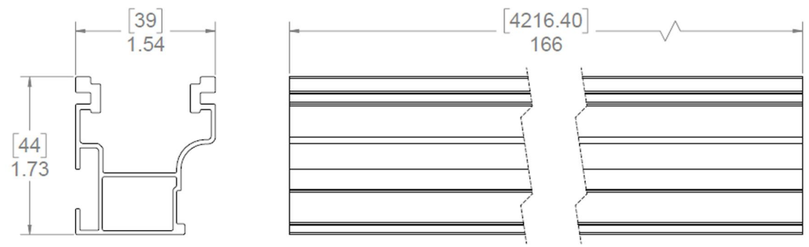
Mechanical Properties

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

Sectional Properties

	CrossRail 44-X
Sx	0.1490 in3 [0.3785 cm3]
Sy	0.1450 in3 [0.3683 cm3]
A [X-Section]	0.4050 in2 [1.0287 cm2

Units: [mm] in



Notes:

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

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Q.PEAK DUO BLK ML-G10+ 400
(TITAN)

(1) SOLAREDGE
ENERGY HUB SE7600H-US

DC SYSTEM SIZE: 10.000 kWDC

AC SYSTEM SIZE: 7.600 kWAC

METER: 332 293 277

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PHONE NO. (919) 324-2368

DATE: 5/12/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-17

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-18