WYSSLING CONSULTING
CORPORATE EXPERIENCE WITH SMALL BUSINESS VALUE

Scott E. Wyssling, PE
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May 15, 2023
Revised August 19, 2023

Titan Solar Power
210 North Sunway Drive
Gilbert, AZ 85233

Scott
Wyssling, PE

Digitally signed by Scott Wyssling, PE
DN: C=US, S=Utah, L=Alpine, O=Wyssling Consulting, OU=Engineering, CN="Scott Wyssling, PE", E=swyssling@wysslingconsulting.com
Reason: I am the author of this document
Location: your signing location here
Date: 2023.08.19 07:16:32-06'00'
Foxit PDF Editor Version: 11.1.0

Re: Engineering Services
Tucker Residence
111 4th Street, Erwin NC
10.000 kW System

To Whom It May Concern:

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

A. Site Assessment Information

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

B. Description of Structure:

Roof Framing:	2x6 dimensional lumber at 24" on center.
Roof Material:	Composite Asphalt Shingles
Roof Slope:	31 degrees
Attic Access:	Accessible
Foundation:	Permanent

C. Loading Criteria Used

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

Analysis performed of the existing roof structure utilizing the above loading criteria is in accordance with the 2018 NCRC (2015 IRC), including provisions allowing existing structures to not require strengthening if the new loads do not exceed existing design loads by 105% for gravity elements and 110% for seismic elements. This analysis indicates that the existing framing will support the additional panel loading without damage, if installed correctly.

D. Solar Panel Anchorage

1. The solar panels shall be mounted in accordance with the most recent K2 installation manual. If during solar panel installation, the roof framing members appear unstable or deflect non-uniformly, our office should be notified before proceeding with the installation.
2. The maximum allowable withdrawal force for a M5 x 60mm lag screw is 158 lbs per inch of penetration as identified in the National Design Standards (NDS) of timber construction specifications. Based on two (2) screws with a minimum penetration depth of 1.25", the allowable capacity per connection is greater than the design withdrawal force (demand). Considering the variable factors for the existing roof framing and installation tolerances, the connection using two (2) M5 x 60mm lag screw with a minimum of 1.25" embedment will be adequate and will include a sufficient factor of safety.
3. Considering the roof slopes, the size, spacing, condition of roof, the panel supports shall be placed no greater than 48" o/c.

Based on the above evaluation, this office certifies that with the racking and mounting specified, the existing roof system will adequately support the additional loading imposed by the solar system. This evaluation is in conformance with the 2018 NCRC (2015 IRC), current industry standards, and is based on information supplied to us at the time of this report.

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

Very truly yours,

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

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

NORTH CAROLINA PROFESSIONAL SEAL 046546 ENGINEER SCOTT E. WYSSLING

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

Signed 08-19-23

Project Information:

08/17/2023

TSP157581 Adrian Tucker

111 4th Street Erwin NC 28339

Senior Manager - Design
manish@wattmonk.com

Comments:

- We have revised layout as per the image attached. 20 modules in roof 1 and 5 modules in roof 2.

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No Further Changes.

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.
- 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 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 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 : 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 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

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North Carolina COA # P-2308

Signed 8/19/2023

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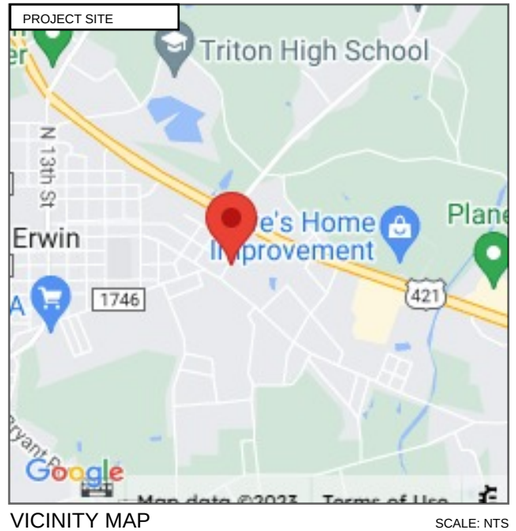
SYSTEM RATING
10.000 kWDC
7.600 kWAC

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-PV17	EQUIPMENT SPECIFICATIONS

HOUSE PHOTO SCALE: NTS



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
REVISION	08/15/2023	A
REVISION	08/17/2023	B

PROJECT NAME & ADDRESS

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

DATE: 8/17/2023

SHEET NAME
COVER PAGE

SHEET SIZE
ANSI B
11" X 17"

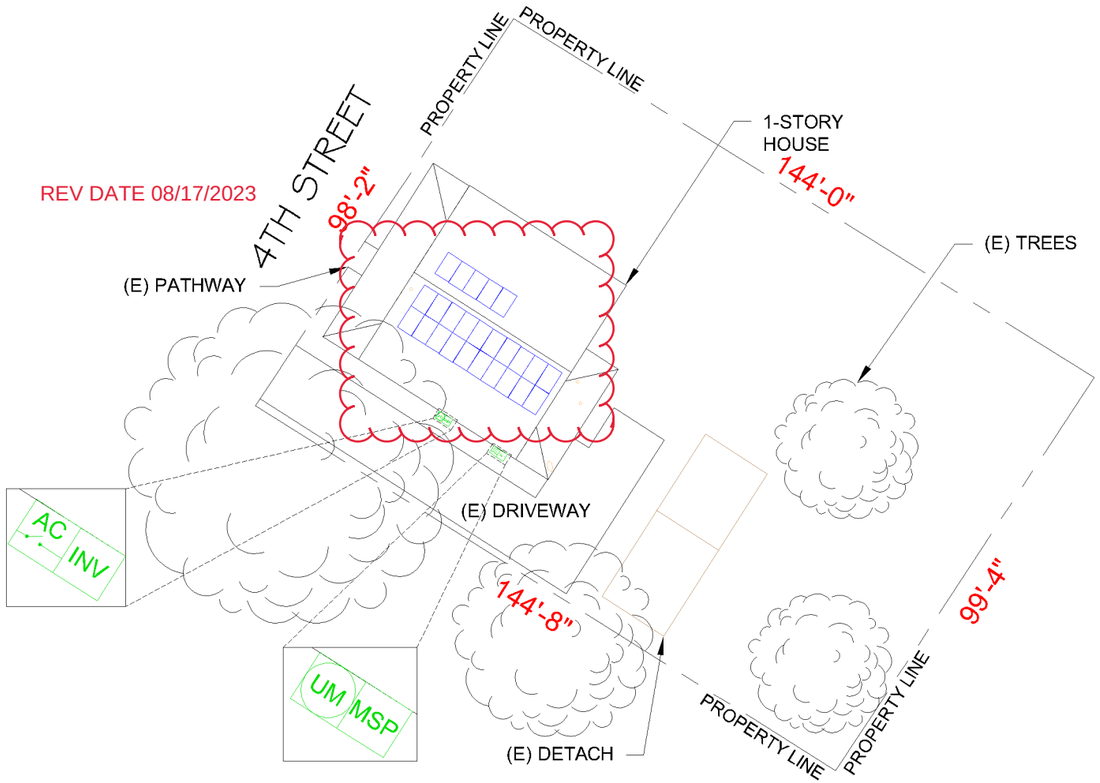
SHEET NUMBER
PV-1

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 ENERGY HUB SE7600H-US INVERTER
- Q CELLS Q.PEAK DUO BLK ML-G10+ 400 (TITAN) MODULES
- K2 CROSSRAIL 44-X
- TRENCH



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76 N Meadowbrook Drive Alpine UT 84004
North Carolina COA # P-2308

Signed 8/19/2023

DATE: 8/17/2023

SHEET NAME
SITE PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-2

SCALE: 1/32"= 1'-0

METER NO#: 332 293 277

DESIGN SPECIFICATION	
RISK CATEGORY:	II
CONSTRUCTION:	SFD
ZONING:	RESIDENTIAL
SNOW LOAD (ASCE 7-10):	10 PSF
EXPOSURE CATEGORY:	C
WIND SPEED (ASCE7-10):	119 MPH

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

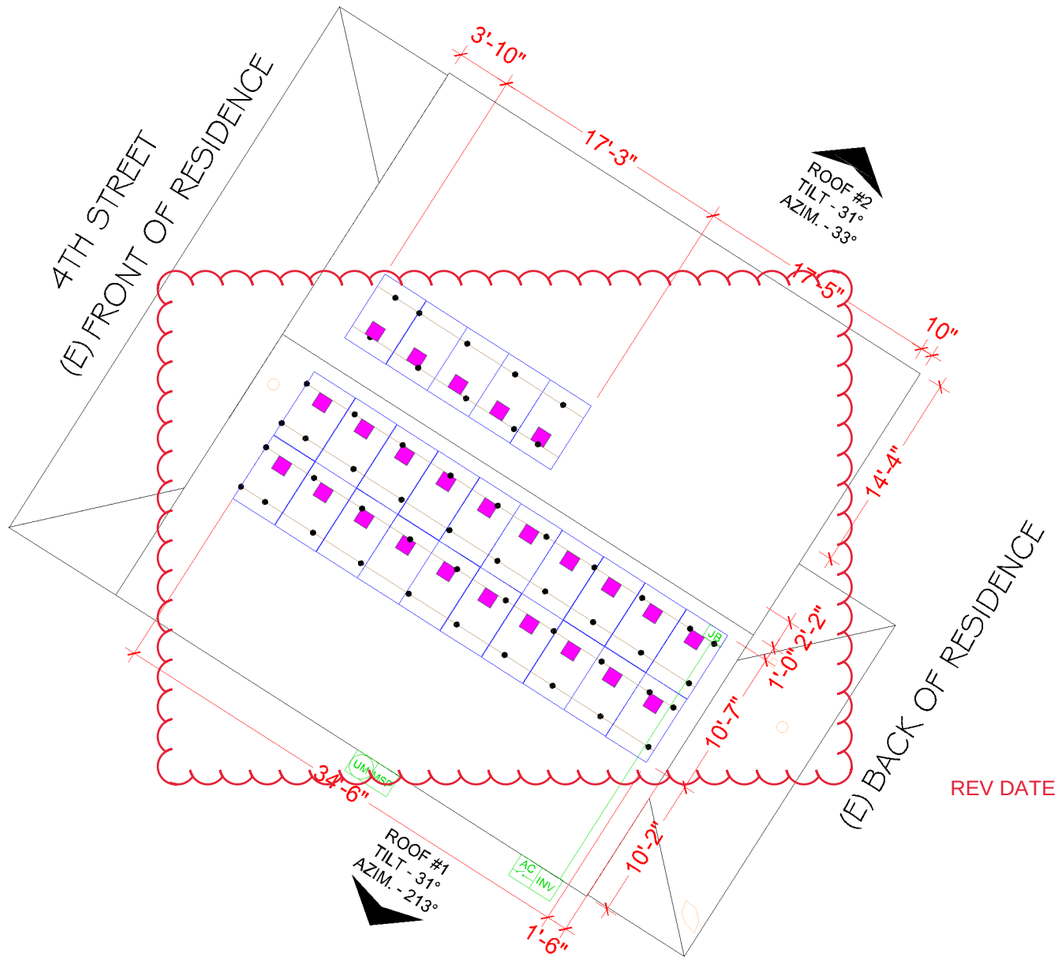
ARRAY AREA & ROOF AREA CALC'S		
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)
#1	20	422.42
#2	5	105.61
(TOTAL ARRAY AREA/TOTAL ROOF AREA) X 100%		
= (528.03/2324) X 100% = 22.73%		

LEGEND

- JB — (N) JUNCTION BOX
- UM — (E) UTILITY METER
- MSP — (E) MAIN SERVICE PANEL
- AC — (N) NON 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"

DEAD LOAD CALCULATION			
EQUIPMENT'S DESCRIPTIONS	QTY	LBS/UNIT	TOTAL WEIGHT
MODULES	25	48.5	1212.5
MID CLAMP	44	0.3	13.2
END CLAMP	12	0.31	3.72
K2 CROSSRAIL 44-X	13	10	130.00
SPLICE BAR	10	0.65	6.5
SPLICE FOOT X	50	0.9	45.00
K2 SOLAR SEAL BUTYL PAD	50	0.42	21.00
M5 X 60 LAG SCREWS	100	0.08	8.00
T BOLT AND HEX NUT SET	50	0.05	2.50
TOTAL WEIGHT OF THE SYSTEM (LBS)			1442.42
TOTAL ARRAY AREA ON THE ROOF (SQ. FT.)			528.03
WEIGHT PER SQ. FT. (LBS)			2.74
WEIGHT PER PENETRATION (LBS)			5.77



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

REV DATE 08/17/2023

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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

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DESCRIPTION	DATE	REV
REVISION	08/15/2023	A
REVISION	08/17/2023	B

PROJECT NAME & ADDRESS

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

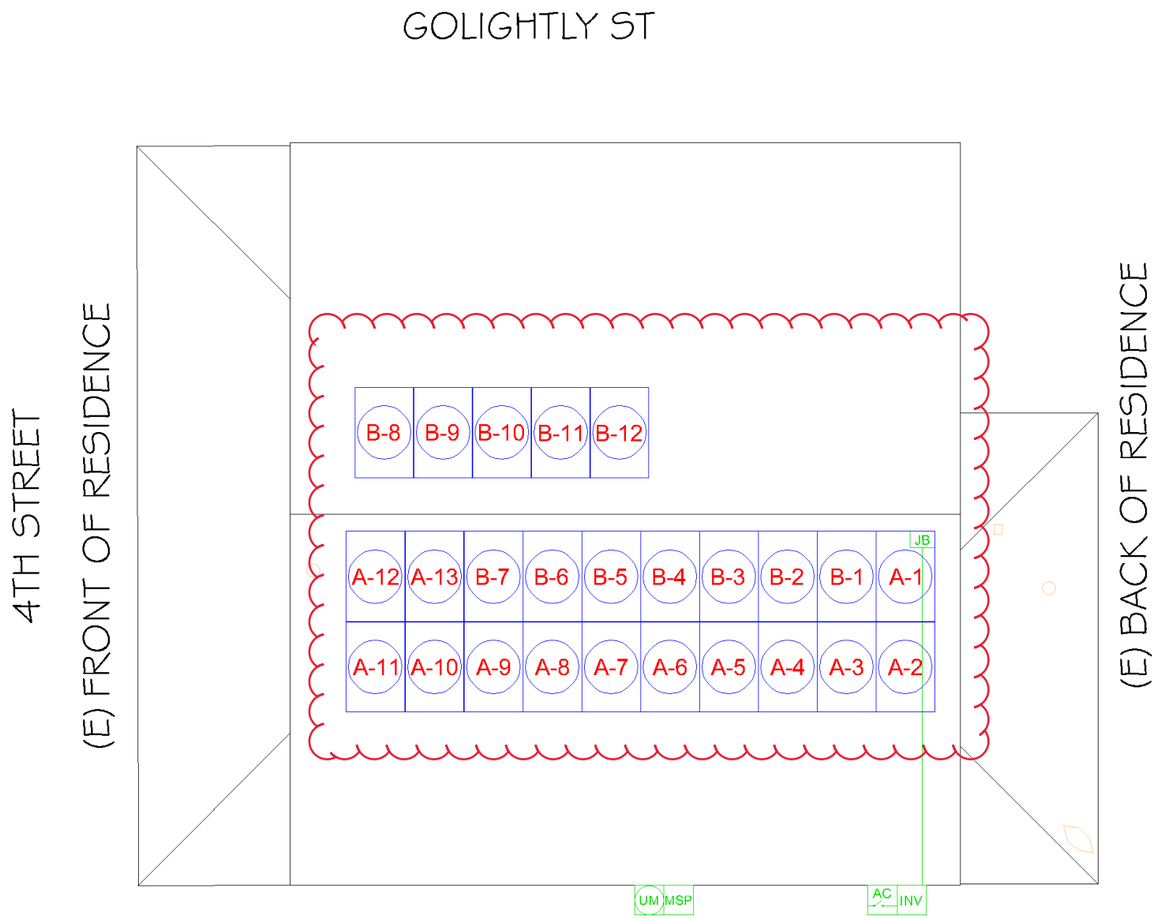
DATE: 8/17/2023

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
NON FUSED AC DISCONNECT	1	SIEMENS GNF222R PV SYSTEM AC DISCONNECT SWITCH NON FUSED VISIBLE OPEN 60A, 120/240V 2P NEMA 3R
ATTACHMENT	49	SPLICE FOOT X
ATTACHMENT	49	K2 SOLAR SEAL BUTYL PAD
ATTACHMENT	98	M5 X 60 LAG SCREWS
ATTACHMENT	49	T BOLT AND HEX NUT SET
RAILS	13	K2 CROSSRAIL 44-X
BONDED SPLICE	10	SPLICE KIT
MID CLAMP	44	MID CLAMPS
END CLAMP	12	END CLAMPS
GROUNDING LUG	3	GROUNDING LUG



REV DATE 08/17/2023

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

A B **- MODULE STRINGING**

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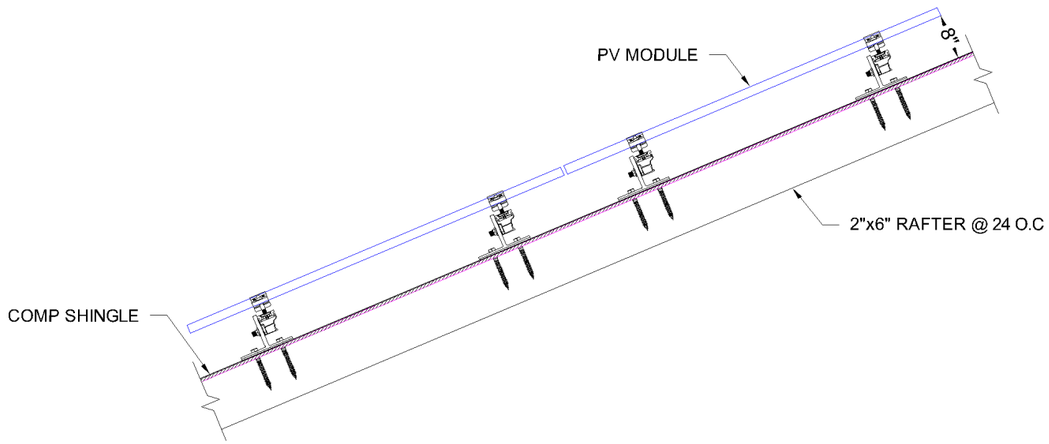
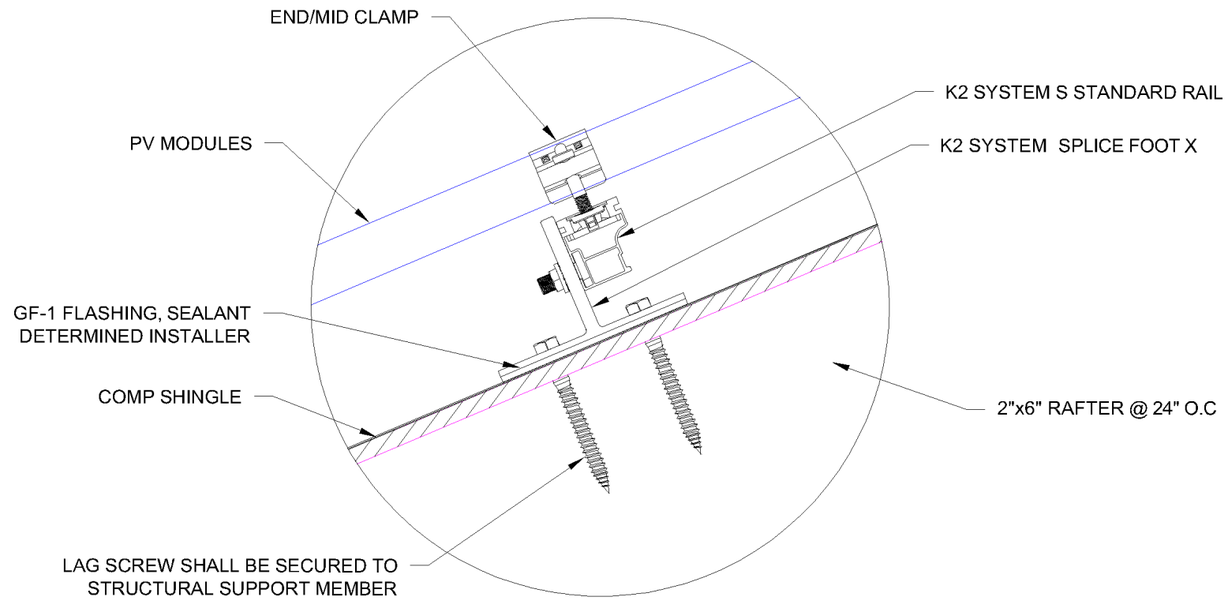
DATE: 8/17/2023

SHEET NAME
STRING LAYOUT & BOM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4





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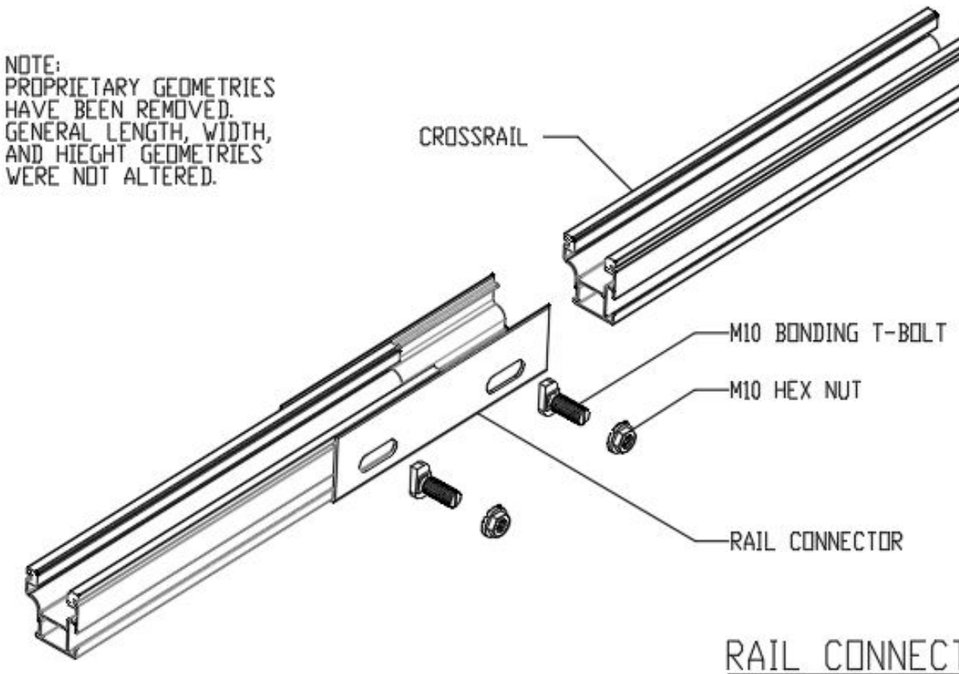
DATE: 8/17/2023

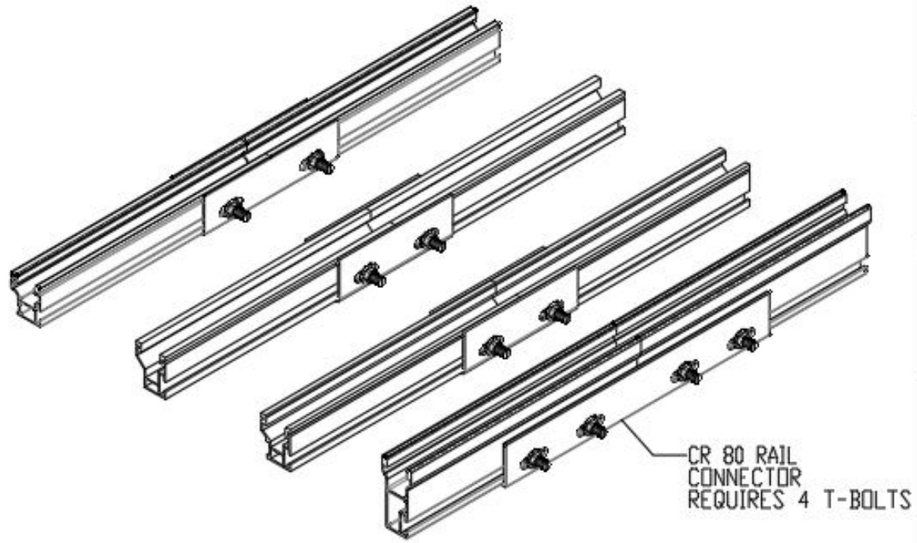
SHEET NAME
ATTACHMENT DETAILS

SHEET SIZE
ANSI B
11" X 17"

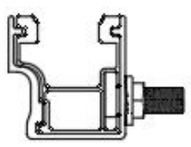
SHEET NUMBER
PV-5

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

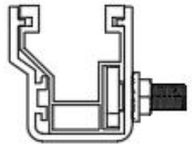




RAIL CONNECTOR ASSEMBLIES



44-X



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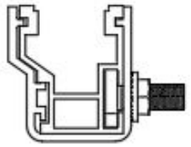

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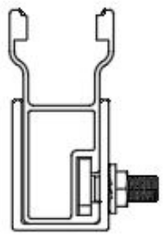

80

Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
North Carolina COA # P-2308
Signed 8/19/2023

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

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	07/27/2023
Checked	B. HAGEN	08/07/2023
Approved	T. WIGGINS	08/15/2023
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

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
REVISION	08/15/2023	A
REVISION	08/17/2023	B

PROJECT NAME & ADDRESS

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

DATE: 8/17/2023

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	31.71%	N/A	6 AWG	BARE COPPER	0.71	(57°C)	N/A	15.00A	18.75A	N/A	N/A	75°C	60FT	0.97%
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	0.48%
3	1	INVERTER	NON FUSED AC DISCONNECT	8 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	29.27%	N/A	8 AWG	THWN-2 COPPER	0.96	(35°C)	1	32.00A	40A	55A	52.80A	75°C	5FT	0.10%
4	1	NON FUSED AC DISCONNECT	MSP	8 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	29.27%	40A	8 AWG	THWN-2 COPPER	0.96	(35°C)	1	32.00A	40A	55A	52.80A	75°C	10FT	0.21%

(N)SOLAREDGE ENERGY HUB SE7600H-US
INVERTER(7600 W)
OUTPUT: 240 VAC, 32A
99% CEC WEIGHTED EFFICIENCY
NEMA 3R, UL LISTED, INTERNAL GFDI
WITH INTEGRATED DC DISCONNECT
SOLAREDGE RAPID SHUTDOWN KIT
IS INTEGRATED WITH INVERTER

25 Q PEAK DUO BLK ML-G10+400 (400W) MODULES

(N)JUNCTION BOX
JB-1.XL,
600V, NEMA 3R,
UL LISTED

(N) AC DISCONNECT:
SIEMENS GNF222R
240V, 60A FUSED
NEMA 3R, UL LISTED

TO UTILITY GRID

BI-DIRECTIONAL UTILITY
METER# 332 293 277
1-PH, 3-W, 120V/240V

(E) MAIN BREAKER TO
HOUSE 240 V, 200A/2P

(E) MAIN SERVICE
PANEL, 200A RATED,
1-PH, 3-W, 240V

40A/2P

BACK FEED BREAKER AT
THE OPPOSITE END OF
THE MAIN BREAKER

EXISTING GROUND
ELECTRODE CONDUCTOR

SolarEdge Power Optimizer S440 Rated
DC Input Power - 400 watts
Maximum Input Voltage - 60 Vdc
MPPT Range - 8 to 60 Vdc
Maximum Input Current - 14.5 Adc
Maximum Output Current - 15 Adc String
Limitations - 8 to 25 Optimizers,
6000 watts STC per string maximum

SCALE: NTS

METER NO#: 332 293 277

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

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
SERVICE FEED SOURCE:	OVERHEAD

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

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REVISION	08/15/2023	A
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RESIDENCE
111 4TH ST, ERWIN, NC 28339, USA
EMAIL ID: TUCKERADRIAN79@GMAIL.COM
PHONE NO. (919) 324-2368

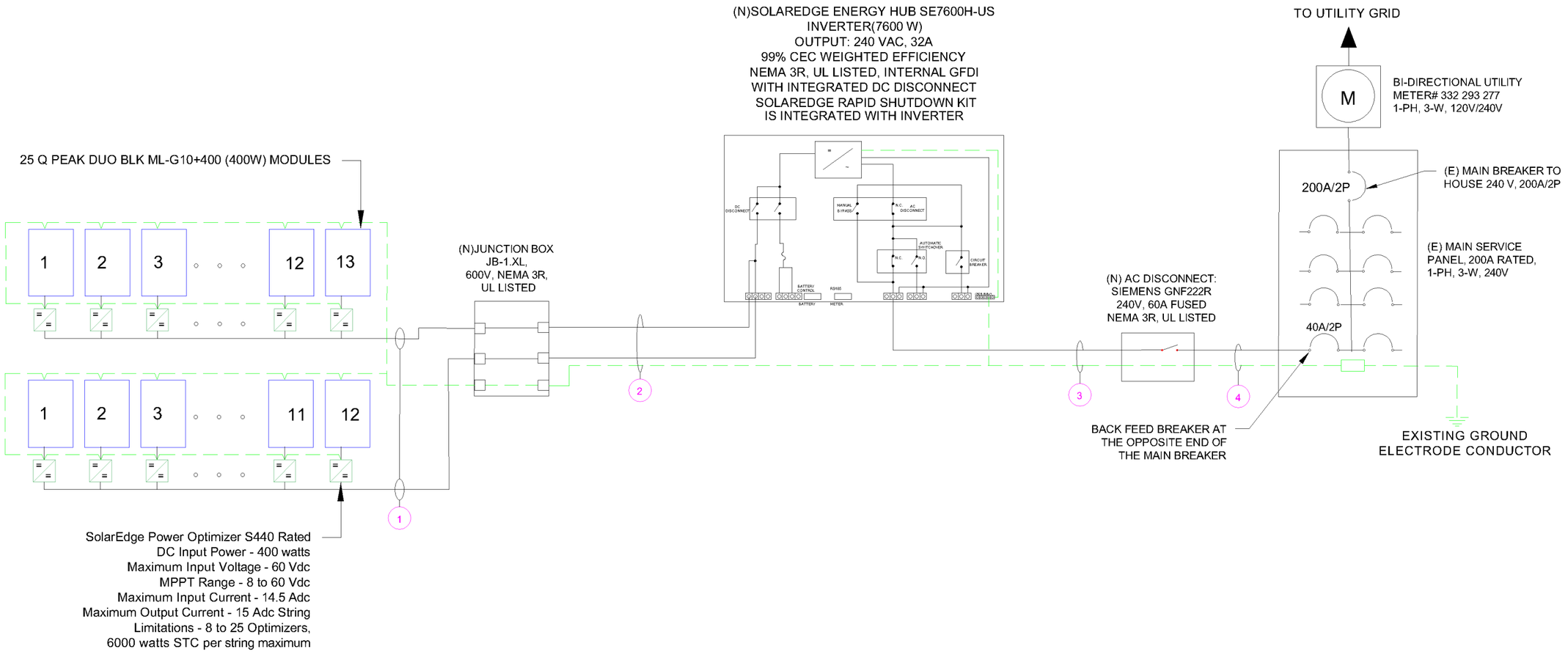
DATE: 8/17/2023

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	31.71%	N/A	6 AWG	BARE COPPER	0.71	(57°C)	N/A	15.00A	18.75A	N/A	N/A	75°C	60FT	0.97%
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	0.48%
3	1	INVERTER	NON FUSED AC DISCONNECT	8 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	29.27%	N/A	8 AWG	THWN-2 COPPER	0.96	(35°C)	1	32.00A	40A	55A	52.80A	75°C	5FT	0.10%
4	1	NON FUSED AC DISCONNECT	MSP	8 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	3	29.27%	40A	8 AWG	THWN-2 COPPER	0.96	(35°C)	1	32.00A	40A	55A	52.80A	75°C	10FT	0.21%



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
SERVICE FEED SOURCE:	OVERHEAD

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

METER NO#: 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

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PHONE NO. (919) 324-2368

DATE: 8/17/2023

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,
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PH# : (808) 371-5338
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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

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PHONE NO. (919) 324-2368

DATE: 8/17/2023

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: NEC 690.13(B)

2

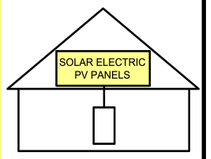
CAUTION : SOLAR ELECTRIC SYSTEM CONNECTED

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: 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: NFPA 70, NEC 690.53

7

PHOTOVOLTAIC AC DISCONNECT
RATED AC OUTPUT CURRENT 32 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

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

11

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
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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

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

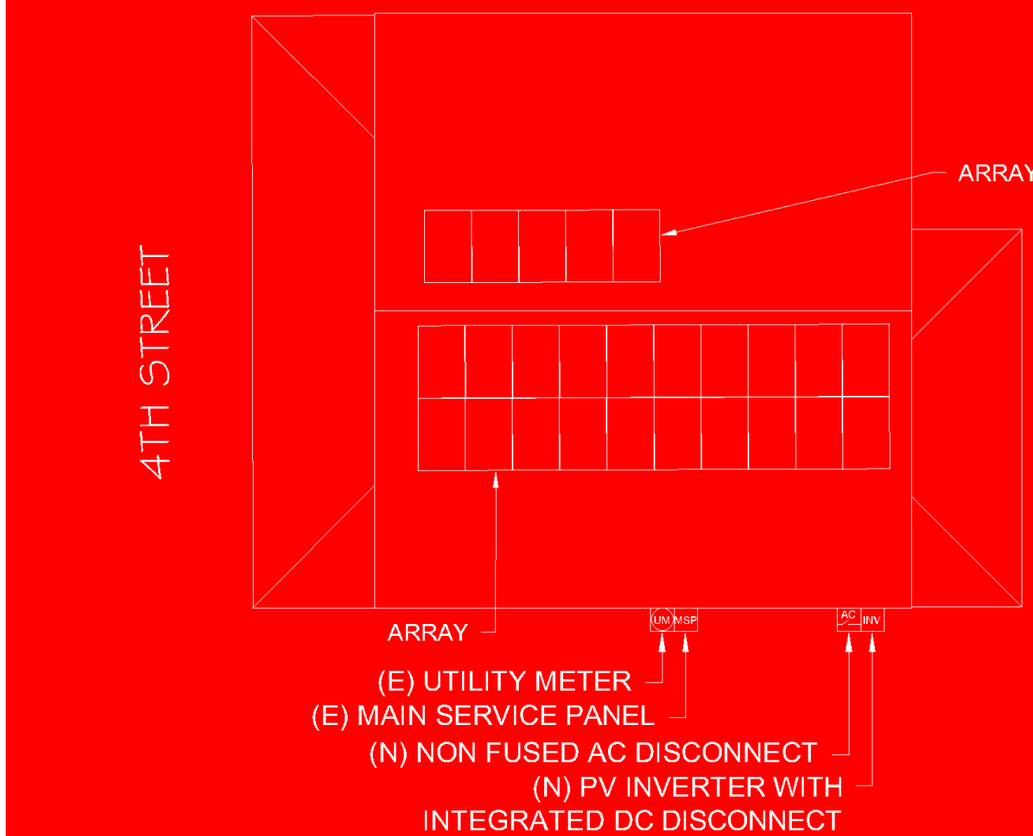
DATE: 8/17/2023

SHEET NAME
SIGNAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-10

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
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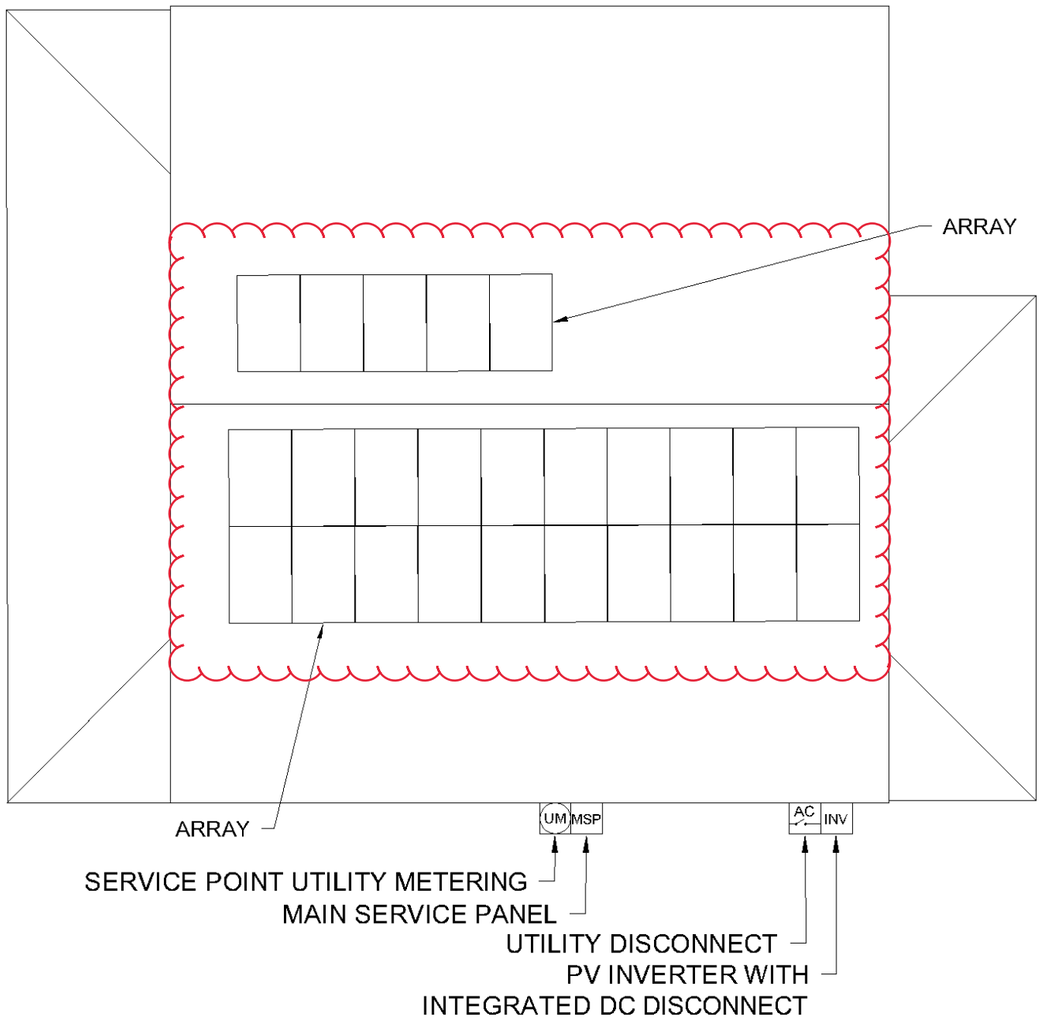
SHEET NAME
SIGNAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-11

JOB SAFETY PLAN



REV DATE 08/17/2023

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,
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PH# : (808) 371-5338
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EMAIL ID: TUCKERADRIAN79@GMAIL.COM
PHONE NO. (919) 324-2368

DATE: 8/17/2023

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

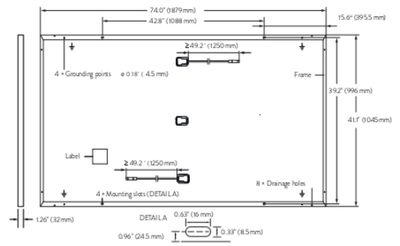
Q PEAK DUO BLK ML-G10+

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

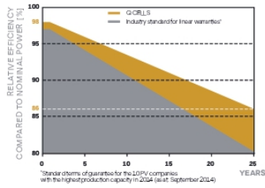


ELECTRICAL CHARACTERISTICS

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
MINIMUM	SHORT CIRCUIT CURRENT	I_{SC}	[A]	11.04	11.07	11.10	11.14	11.17
MINIMUM	OPEN CIRCUIT VOLTAGE	V_{OC}	[V]	45.19	45.23	45.27	45.30	45.34
MINIMUM	CURRENT AT MPP	I_{MPP}	[A]	10.59	10.65	10.71	10.77	10.83
MINIMUM	VOLTAGE AT MPP	V_{MPP}	[V]	36.36	36.62	36.88	37.13	37.39
MINIMUM	**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
MINIMUM	SHORT CIRCUIT CURRENT	I_{SC}	[A]	8.90	8.92	8.95	8.97	9.00
MINIMUM	OPEN CIRCUIT VOLTAGE	V_{OC}	[V]	42.62	42.65	42.69	42.72	42.76
MINIMUM	CURRENT AT MPP	I_{MPP}	[A]	8.35	8.41	8.46	8.51	8.57
MINIMUM	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

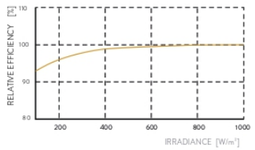
Q CELLS PERFORMANCE WARRANTY



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
(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

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

DATE: 8/17/2023

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

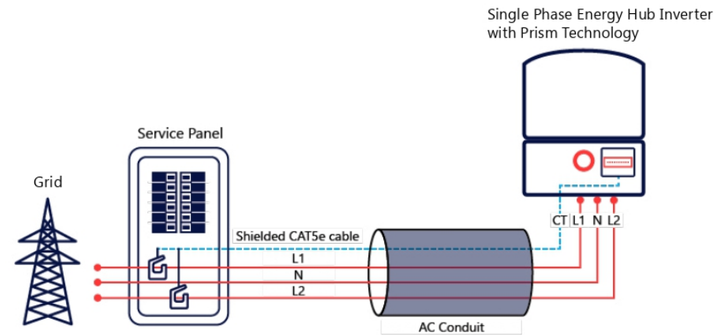
for North America

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

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REVISION	08/17/2023	B

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PHONE NO. (919) 324-2368

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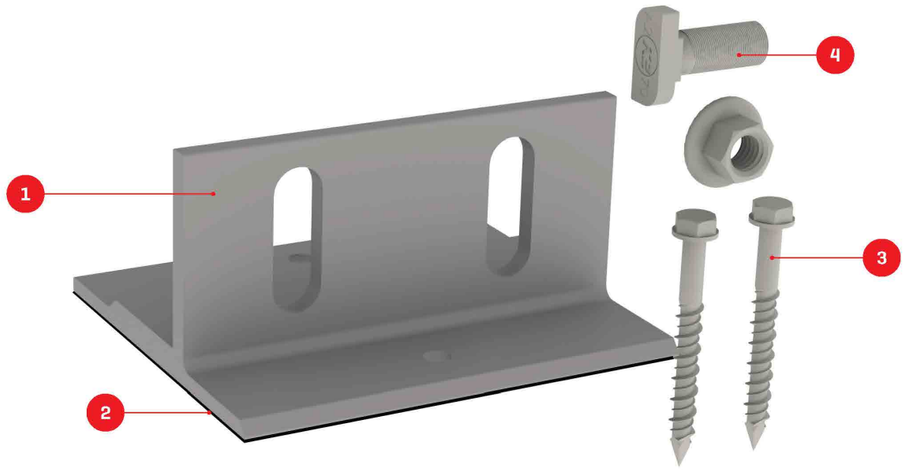
SHEET NAME
EQUIPMENT SPECIFICATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-14



Splice Foot X

TECHNICAL SHEET

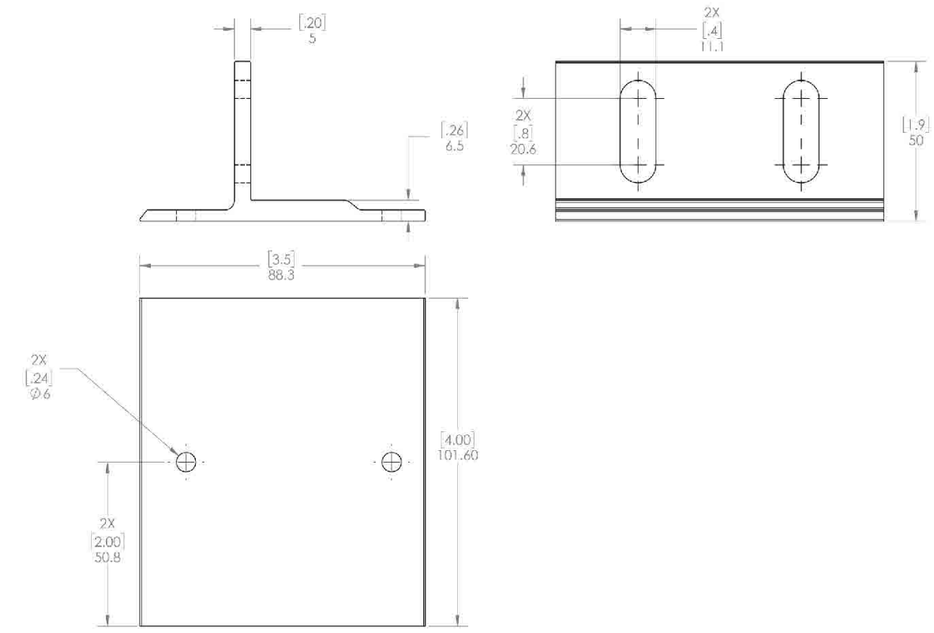
Item Number	Description	Part Number
1	Splice Foot X	4000113 | Splice Foot X Kit, Mill
2	K2 Solar Seal Butyl Pad	
3	M5 x 60 lag screws	
4	T-Bolt & Hex Nut Set	

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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SHEET SIZE
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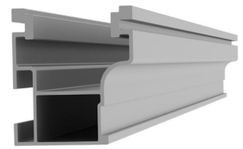
SHEET NUMBER
PV-15

We support PV systems
Formerly Everest Solar Systems

CROSSRAIL 44-X



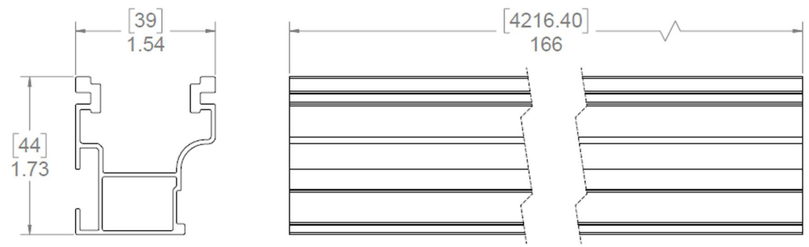
Mechanical Properties

	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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PV-16

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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