

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

January 14, 2022

Sigora Solar LLC 490 Westfield Road STE A Charlottesville, VA 22901

> Re: Engineering Services Augusta Residence 45 Oxford Drive, Angier, NC 10.220 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.
- 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: Truss system with a top chord constructed of 2 x 6 dimensional lumber and

all other chords constructed of 2 x 4 dimensional lumber at 24" on center.

Roof Material: Composite Asphalt Shingles

Roof Slope: 40 degrees Attic Access: Accessible

Lumber type: Assumed Doulas Fir

Foundation: Permanent

C. Loading Criteria Used

Dead Load

- Existing Roofing and framing = 7 psfNew Solar Panels and Racking = 3 psf
- TOTAL = 10 PSF
- Live Load = 20 psf (reducible) 0 psf at locations of solar panels
- Ground Snow Load = 15 psf
- Wind Load based on ASCE 7-10
 - Ultimate Wind Speed = 115 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 North Carolina Residential Code (2018), 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 SnapNRack 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 5/16" lag screw is 235 lbs per inch of penetration as identified in the National Design Standards (NDS) of timber construction specifications. Based on a minimum penetration depth of 2½", 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 one 5/16" diameter lag screw with a minimum of 2½" embedment will be adequate and will include a sufficient factor of safety.
- 3. Considering the wind speed, roof slopes, size and spacing of framing members, and condition of the roof, the panel supports shall be placed no greater than 48" on centers.
- 4. Panel supports connections shall be staggered to distribute load to adjacent framing members.

Based on the above evaluation, this office certifies that with the racking and mounting specified, the existing roof system will adequately support the additional loading imposed by the solar system. This evaluation is in conformance with the North Carolina Residential Code, current industry standards, and 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.

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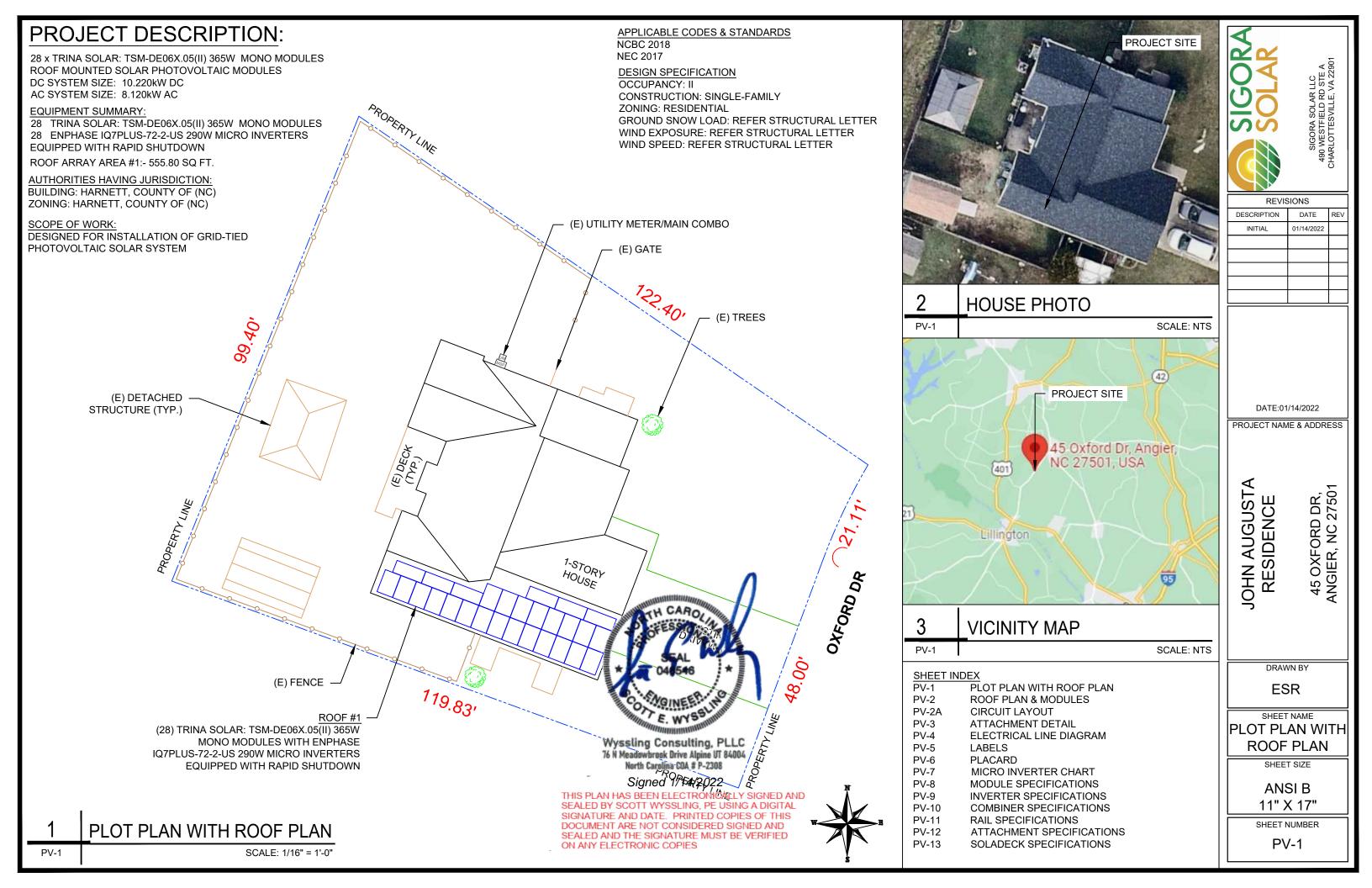
Scott E. Wyssling, PE North Carolina Licence 1. 46546

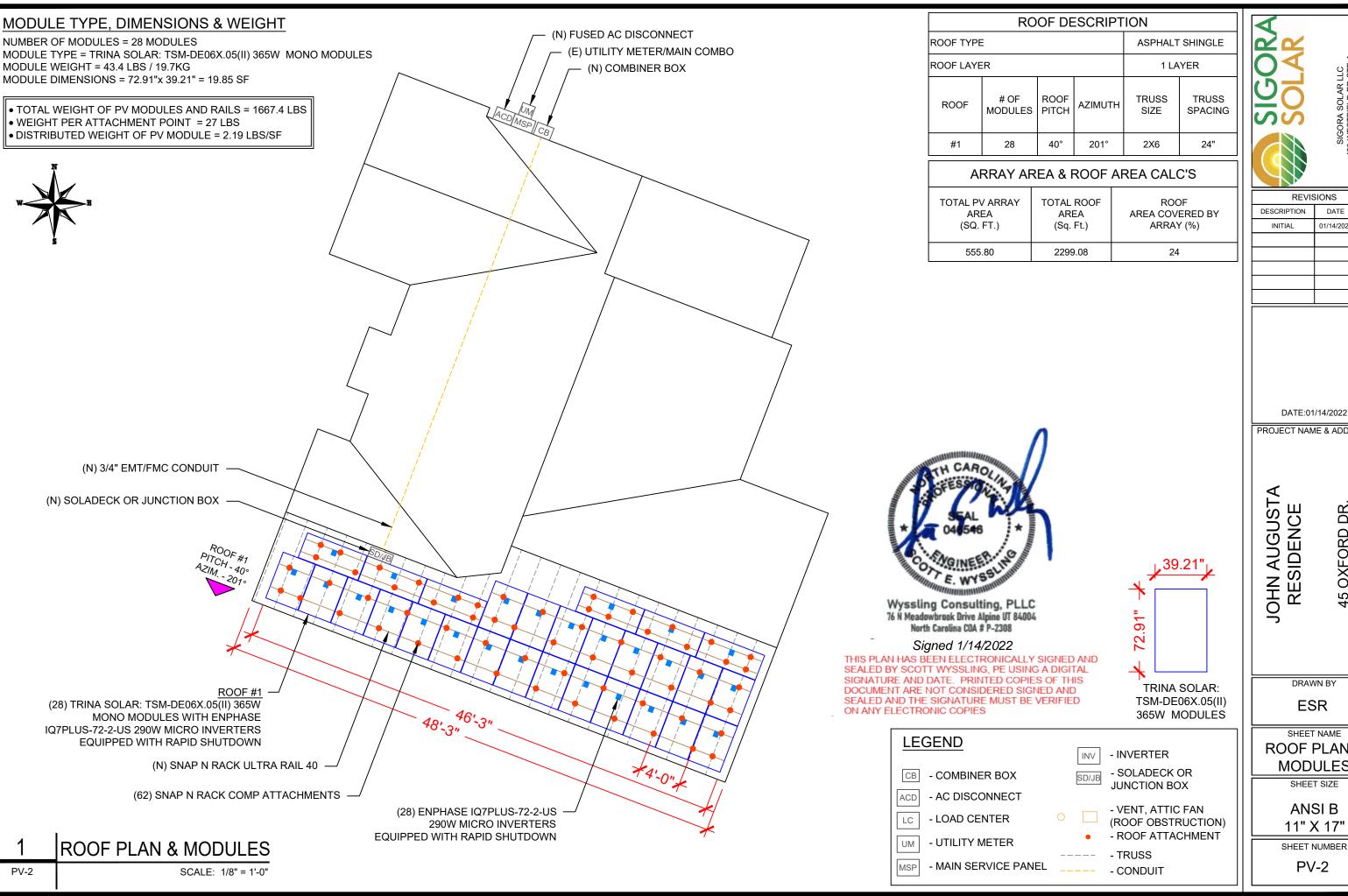
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SEAL WYSSLING CONSULTING PLLC

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







SIGORA SOLAR LLC 490 WESTFIELD RD STE A CHARLOTTESVILLE, VA 2290

REVISIONS			
DESCRIPTION	DATE	REV	
INITIAL	01/14/2022		

DATE:01/14/2022

PROJECT NAME & ADDRESS

45 OXFORD DR, ANGIER, NC 27501

DRAWN BY

ESR

SHEET NAME **ROOF PLAN &**

MODULES SHEET SIZE

11" X 17"

PV-2

CIRCUIT LEGENDS
 CIRCUIT #1
 CIRCUIT #2
 CIRCUIT #3



ACDIAN IN	SOI MIC SOI JUN MO ENI AT
	BOI
CIRCUIT #1 (9 MODULES) CIRCUIT #3 (10 MODULES)	

CIRCUIT #2 (9 MODULES)

BILL OF MATERIALS			
EQUIPMENT	QTY	DESCRIPTION	
SOLAR PV MODULES	28	TRINA SOLAR: TSM-DE06X.05(II) 365W	
MICRO INVERTERS	28	ENPHASE IQ7PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN	
SOLADECK OR JUNCTION BOX	1	SOLADECK OR JUNCTION BOX	
MODULE CLAMPS	48	MID MODULE CLAMPS	
END CLAMPS	16	END CLAMPS / STOPPER SLEEVE	
ATTACHMENT	62	SNAP N RACK COMP	
BOLT	62	LAG BOLT	



REVIS

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PROJECT NAME & ADDRESS

JOHN AUGUSTA RESIDENCE

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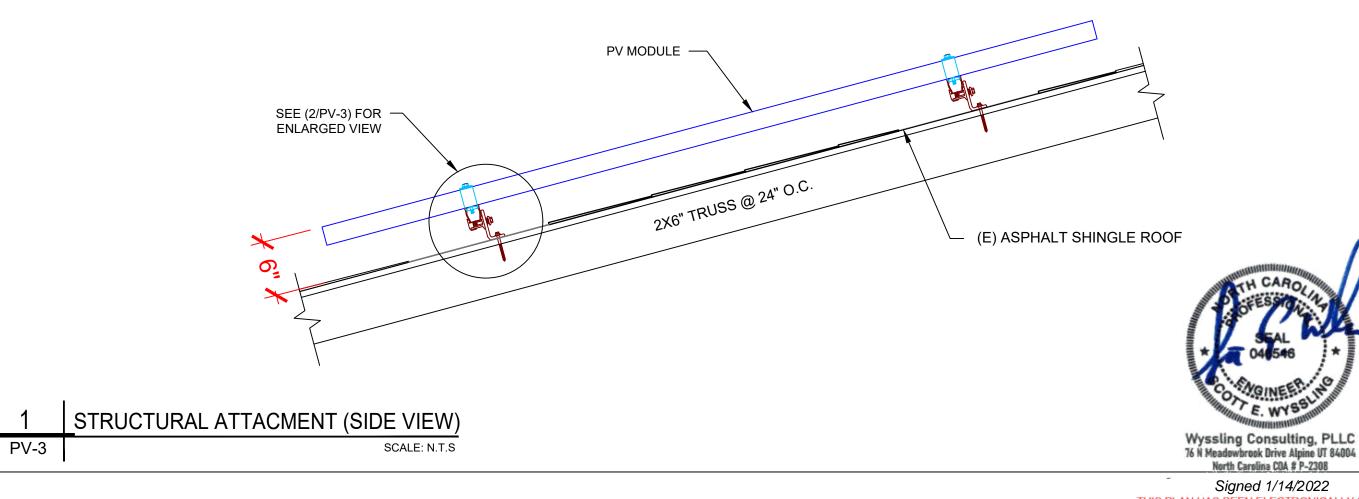
SHEET NAME CIRCUIT LAYOUT

SHEET SIZE

ANSI B 11" X 17"

SHEET NUMBER
PV-2A

ROOF PLAN WITH CIRCUIT LAYOUT



Signed 1/14/2022
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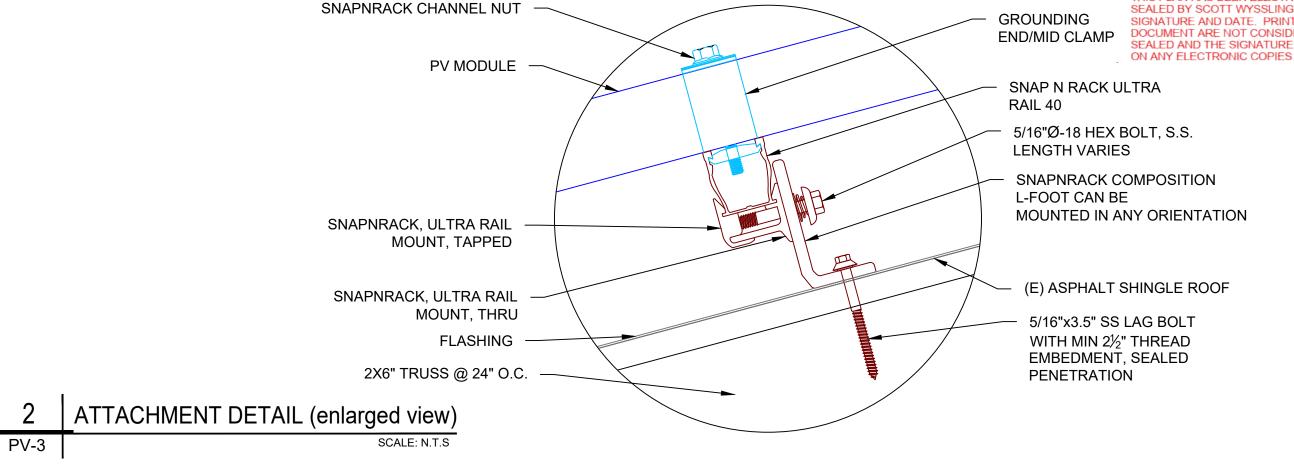
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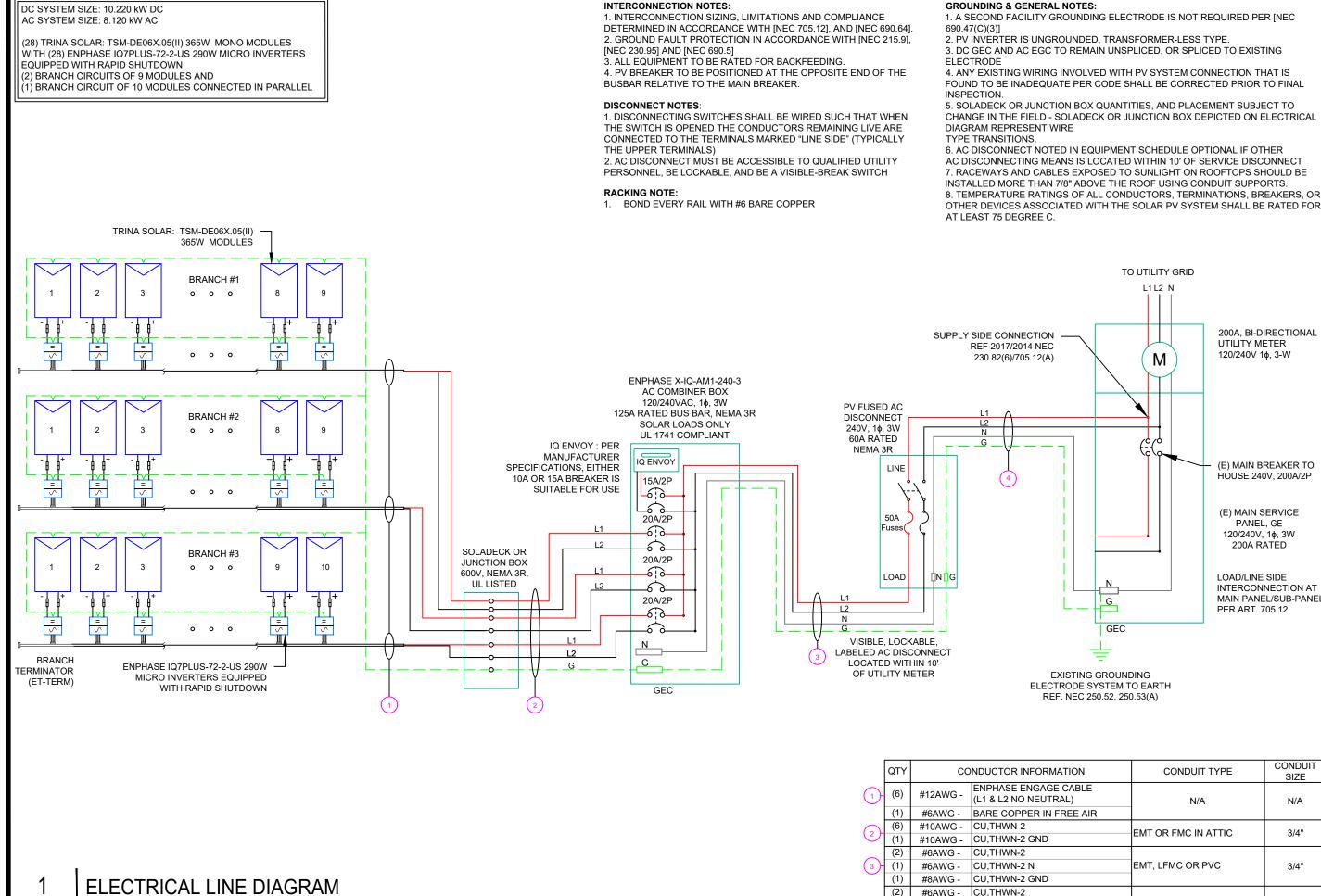
ESR

SHEET NAME **ATTACHMENT DETAIL**

SHEET SIZE

ANSI B 11" X 17"





SCALE: NTS

PV-4

GROUNDING & GENERAL NOTES:

(2)

(1)

(1)

#6AWG -

#6AWG -

#8AWG -

CU,THWN-2

CU,THWN-2 N

CU,THWN-2 GND

1. A SECOND FACILITY GROUNDING ELECTRODE IS NOT REQUIRED PER [NEC

3. DC GEC AND AC EGC TO REMAIN UNSPLICED, OR SPLICED TO EXISTING

4. ANY EXISTING WIRING INVOLVED WITH PV SYSTEM CONNECTION THAT IS FOUND TO BE INADEQUATE PER CODE SHALL BE CORRECTED PRIOR TO FINAL

5. SOLADECK OR JUNCTION BOX QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - SOLADECK OR JUNCTION BOX DEPICTED ON ELECTRICAL

6. AC DISCONNECT NOTED IN EQUIPMENT SCHEDULE OPTIONAL IF OTHER AC DISCONNECTING MEANS IS LOCATED WITHIN 10' OF SERVICE DISCONNECT 7. RACEWAYS AND CABLES EXPOSED TO SUNLIGHT ON ROOFTOPS SHOULD BE INSTALLED MORE THAN 7/8" ABOVE THE ROOF USING CONDUIT SUPPORTS. 8. TEMPERATURE RATINGS OF ALL CONDUCTORS, TERMINATIONS, BREAKERS, OR OTHER DEVICES ASSOCIATED WITH THE SOLAR PV SYSTEM SHALL BE RATED FOR

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PROJECT NAME & ADDRESS

AUGUSTA RESIDENCE NHON

PANEL, GE

200A RATED

CONDUIT

SI7F

N/A

3/4"

3/4"

3/4"

EMT, LFMC OR PVC

45 OXFORD DR, ANGIER, NC 2750

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ELECTRICAL LINE DIAGRAM

SHEET SIZE

ANSI B 11" X 17"

WARNING:PHOTOVOLTAIC **POWER SOURCE**

LABEL 1

AT DIRECT-CURRENT EXPOSED RACEWAYS, CABLE TRAYS, COVERS AND ENCLOSURES OF JUNCTION BOXES, AND OTHER WIRING METHODS; SPACED AT MAXIMUM 10FT SECTION OR WHERE SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR

NEC 690.31(G)(3&4) (NOT USED FOR ENPHASE MICROINVERTERS)

PHOTOVOLTAIC

DCDISONNECT

MAXIMUM CIRCUIT CURRENT

THE CHARGE CONTROLLER

OR DC-TO-DC CONVERTER

FINSTALLED)

MAX RATED OUTPUT CURRENT OF

LABEL 2

AT EACH PV DISCONNECTING MEANS

NEC 690.13(B)

(NOT USED FOR ENPHASE MICROINVERTERS)



AT DC PV SYSTEM DISCONNECTING MEANS

(NOT USED FOR ENPHASE MICROINVERTERS)

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD



LABEL 6

PLACED ADJACENT TO THE BACK-FED BREAKER FROM THE INVERTER IF TIE IN CONSISTS OF LOAD SIDE CONNECTION TO BUSBAR. NEC 705.12(D)(2)(3)(B)

LABEL 7

SIGN LOCATED AT LOAD CENTER NEC 705.12(B)(3-4) & NEC 690.59

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

WARNING

INVERTER OUTPUT CONNECTION

DO NOT RELOCATE

THIS OVERCURRENT

DEVICE

WARNING: DUAL POWER SOURCE

SECOND SOURCE IS PHOTOVOLTAIC SYSTEM



LABEL 8

FOR PV SYSTEMS THAT SHUT DOWN THE ARRAY AND CONDUCTORS LEAVING THE ARRAY:

SIGN TO BE LOCATED ON OR NO MORE THAN 3 FT AWAY FROM SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATION OF ALL IDENTIFIED RAPID SHUTDOWN SWITCHES IF NOT AT THE SAME LOCATION. [NEC 690.56(C)(1)(A)]

PHOTOVOLTAIC

LABEL 4

AT AC DISCONNECTING MEANS NEC 690.13(B)

AC DISONNECT

PHOTOVOLTAIC AC DISCONNECT

RATED AC OUTPUT CURRENT: 33.88A

240V NOMINAL OPERATING AC VOLTAGE

LABEL 5

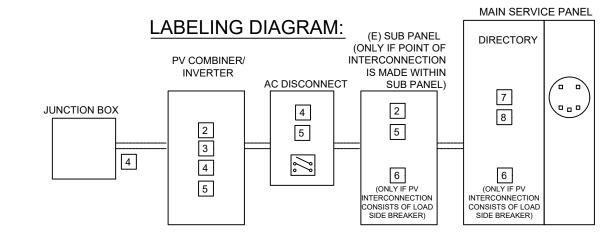
AT AC DISCONNECTING MEANS

NEC 690.54

28 MICROS X 1.21 AMP/MICRO = 33.88AMP

LABELING NOTES

- 1. LABELS CALLED OUT ACCORDING TO ALL COMMON CONFIGURATIONS. ELECTRICIAN TO DETERMINE EXACT REQUIREMENTS IN THE FIELD PER CURRENT NEC AND LOCAL CODES AND MAKE APPROPRIATE ADJUSTMENTS.
- 2. LABELING REQUIREMENTS BASED ON THE 2017 NATIONAL ELECTRIC CODE, OSHA STANDARD 19010.145, ANSI Z535.
- 3. MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
- 4. LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED [NEC 110.21]
- 5. LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8", WHITE ON RED BACKGROUND; REFLECTIVE, AND PERMANENTLY AFFIXED [IFC 605.11.1.1]



** ELECTRICAL DIAGRAM SHOWN ABOVE IS FOR LABELING PURPOSES ONLY. NOT AN ACTUAL REPRESENATION OF EQUIPMENT AND CONNECTIONS TO BE INSTALLED. LABEL LOCATIONS PRESENTED MAY VERY DEPENDING ON TYPE OF INTERCONNECTION METHOD AND LOCATION PRESENTED ELECTRICAL DIAGRAM PAGE. **

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45 OXFORD DR, ANGIER, NC 2750

PROJECT NAME & ADDRESS

JOHN AUGUSTA RESIDENCE

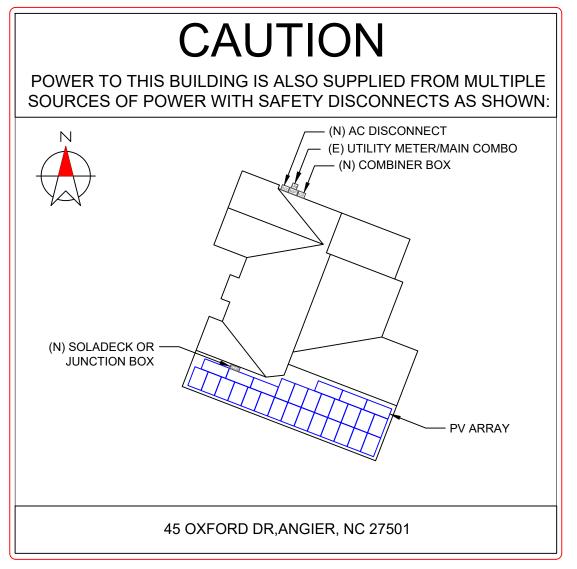
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SHEET NAME LABELS

SHEET SIZE

ANSI B 11" X 17"



DIRECTORY

PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM.

(ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS OUTLINED WITHIN: NEC 690.56(B)&(C), [NEC 705.10])

LABELING DIAGRAM: (E) SUB PANEL DIRECTORY (ONLY IF POINT OF INTERCONNECTION PV COMBINER/ 7 IS MADE WITHIN **INVERTER** AC DISCONNECT SUB PANEL) 8 SOLADECK OR **_**___ JUNCTION BOX 5 5 4 4 6 6 5 (ONLY IF PV (ONLY IF PV CONSISTS OF LOAD CONSISTS OF LOAD

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PROJECT NAME & ADDRESS

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MAIN SERVICE PANEL

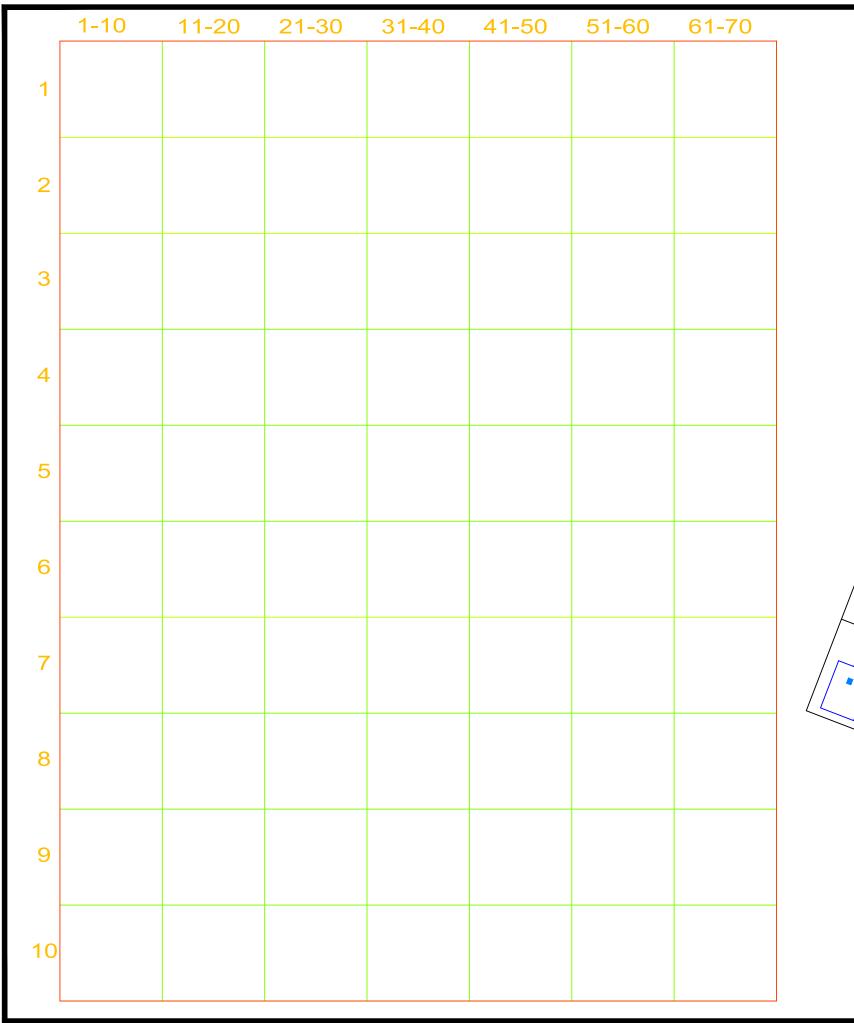
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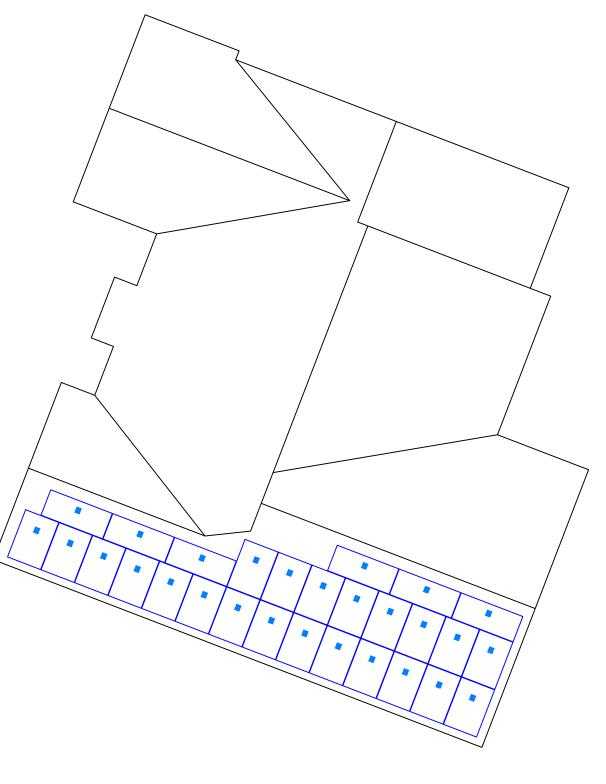
SHEET NAME
PLACARD

SHEET SIZE

ANSI B 11" X 17"



MICRO INVERTER CHART





SIGORA SOLAR LLC 490 WESTFIELD RD STE A CHARLOTTESVILLE, VA 22901

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JOHN AUGUSTA RESIDENCE

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ESR

SHEET NAME MICRO INVERTER CHART

SHEET SIZE

ANSI B 11" X 17"

Residential Module

MULTI-BUSBAR MONO PERC MODULE

132-Cell

MONOCRYSTALLINE MODULE

355-380W

POWER OUTPUT RANGE

20.6% **MAXIMUM EFFICIENCY**

0~+5W POSITIVE POWER TOLERANCE

Founded in 1997, Trina Solar is the world's leading total solution provider for solar energy. With local presence around the globe, Trina Solar is able to provide exceptional service to each customer in each market and deliver our innovative, reliable products with the backing of Trina as a strong, bankable brand. Trina Solar now distributes its PV products to over 100 countries all over the world. We are committed to building strategic, mutually beneficial collaborations with installers, developers distributors and other partners in driving smart energy together

Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716/UL61730 ISO 9001: Quality Management System ISO14001: Environmental Management System ISO14064: Greenhouse Gases Emissions Verification OHSAS 18001: Occupation Health and Safety



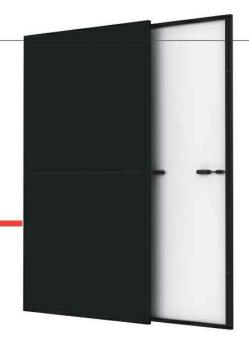












TSM-DE06X.05(II)

High power and High Efficiency

- Up to 380W front power and 20.6% module efficiency with half-cut and MBB (Multi Busbar) technology bringing more BOS savings
- Reduce BOS cost with higher power bin and 1500V system voltage



Outstanding visual appearance

• Designed with aesthetics in mind

POWER RANGE

355-380W

- High standard Production, Excellent cell color control by dedicated cell blackening treatment and machine selection
- Thinner wires that appear all black at a distance



High reliability

- Ensured PID resistance through cell process and module material control
- · Resistant to salt, acid and ammonia
- Mechanical performance: Up to 5400 Pa positive load and 2400 Pa negative



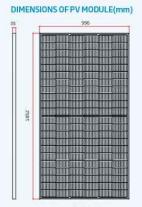
Certified to withstand the most chanllenging environmental conditions

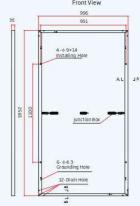
- Excellent IAM and low light performance validated by 3rd party with cell process and module material optimization
- Lower temp co-efficient (-0.34%) and NOCT bring more energy leading to
- Better anti-shading performance and lower operating temperature

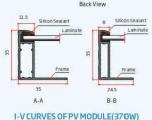


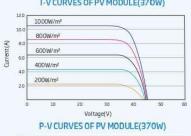
Residential Module

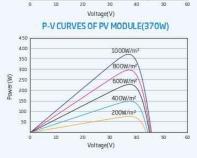
MULTI-BUSBAR MONO PERC MODULE











ELECTRICAL DATA (STC)						
Peak Power Watts-PMAX(Wp)*	355	360	365	370	375	380
Power Output Tolerance-PMAX (W)			0~	+5		
Maximum Power Voltage-V _{MPP} (V)	36.8	37.0	37.2	37.4	37.6	37.8
Maximum Power Current-IMPP (A)	9.66	9.74	9.82	9.90	9.98	10.07
Open Circuit Voltage-Voc (V)	44.6	44.8	45.0	45.2	45.3	45.5
Short Circuit Current-Isc (A)	10.24	10.30	10.35	10.40	10.45	10.51
Module Efficiency η π (%)	19.2	19.5	19.8	20.1	20.3	20.6

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measurement tolerance: ±3%:

ELECTRICAL DATA (NOCT)

Maximum Power-P _{MAX} (Wp)	268	272	276	279	283	287
Maximum Power Voltage-V _{MPP} (V)	34.4	34.7	34.9	35.1	35.3	35.6
Maximum Power Current-I MPP (A)	7.80	7.85	7.90	7.96	8.01	8.06
Open Circuit Voltage-V∞ (V)	42.0	42.2	42.4	42.6	42.6	42.8
Short Circuit Current-Isc (A)	8.25	8.30	8.34	8.38	8.42	8.47

NOCT: Irradiance at 800W/m2, Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
Cell Orientation	132cells
Module Dimensions	1852 × 996 × 35 mm (72.91 × 39.21 × 1.38 inches)
Weight	19.7 kg (43.4 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	EVA
Backsheet	Black-White
Frame	35 mm (inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²), Portrait: N 280mm/P 280mm(11.02/11.02inches) Landscape: N 1400 mm/P 1400 mm (55.12/55.12 inches)
Connector	MC4EVO2
Fire Type	Type 2

TEMPERATURE RATINGS	
NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of PMAX	-0.34%/°C
Temperature Coefficient of V∞	-0.25%/°C
Temperature Coefficient of Isc	0.04%/°C

MAXIMUM RATINGS	
Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	20A

WARRANTY

25 year Product Workmanship Warranty 25 year Linear Power Warranty

PACKA	GING	CONF	GURA	TION
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Modules per box: 31 pieces Modules per 40' container: 744 pieces

(Please refer to product warranty for details



CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT. © 2020 Trina Solar Limited. All rights reserved. Specifications included in this data sheet are subject to change without notice. Version number: TSM_DE06X.05(II)_NA_2020_PA3 www.trinasolar.com





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SHEET NAME **MODULE SPECIFICATION**

ESR

SHEET SIZE

ANSI B 11" X 17"

Enphase IQ 7 and IQ 7+ **Microinverters**

The high-powered smart grid-ready Enphase IQ 7 Micro™ and Enphase IQ 7+ Micro™ dramatically simplify the installation process while achieving the highest system efficiency.

Part of the Enphase IQ System, the IQ 7 and IQ 7+ Microinverters integrate with the Enphase IQ Envoy™, Enphase IQ Battery™, and the Enphase Enlighten™ monitoring and analysis software.

IQ Series Microinverters extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty of up to 25 years.



Easy to Install

- · Lightweight and simple
- · Faster installation with improved, lighter two-wire cabling
- · Built-in rapid shutdown compliant (NEC 2014 & 2017)

Productive and Reliable

- Optimized for high powered 60-cell and 72-cell* modules
- More than a million hours of testing
- · Class II double-insulated enclosure
- UL listed

Smart Grid Ready

- · Complies with advanced grid support, voltage and frequency ride-through requirements
- · Remotely updates to respond to changing grid requirements
- · Configurable for varying grid profiles
- Meets CA Rule 21 (UL 1741-SA)



To learn more about Enphase offerings, visit enphase.com



Enphase IQ 7 and IQ 7+ Microinverters

INPUT DATA (DC)	IQ7-60-2-US		IQ7PLUS-72-2-US	
Commonly used module pairings ¹	235 W - 350 W +		235 W - 440 W +	
Module compatibility	60-cell PV modules only		60-cell and 72-cell PV modules	
Maximum input DC voltage	48 V		60 V	
Peak power tracking voltage	27 V - 37 V		27 V - 45 V	
Operating range	16 V - 48 V		16 V - 60 V	
Min/Max start voltage	22 V / 48 V		22 V / 60 V	
Max DC short circuit current (module Isc)	15 A		15 A	
Overvoltage class DC port	11		11	
DC port backfeed current	0 A		0 A	
PV array configuration		ed array; No additio ion requires max 20		
OUTPUT DATA (AC)	IQ 7 Microinve	erter	IQ 7+ Microin	verter
Peak output power	250 VA		295 VA	
Maximum continuous output power	240 VA		290 VA	
Nominal (L-L) voltage/range²	240 V / 211-264 V	208 V / 183-229 V	240 V / 211-264 V	208 V / 183-229 V
Maximum continuous output current	1.0 A (240 V)	1.15 A (208 V)	1.21 A (240 V)	1.39 A (208 V)
Nominal frequency	60 Hz		60 Hz	
Extended frequency range	47 - 68 Hz		47 - 68 Hz	
AC short circuit fault current over 3 cycles	5.8 Arms		5.8 Arms	
Maximum units per 20 A (L-L) branch circuit ³	16 (240 VAC)	13 (208 VAC)	13 (240 VAC)	11 (208 VAC)
Overvoltage class AC port	Ш	a de a compresentación de la tradición de la comprese de la compre	III	
AC port backfeed current	0 A		0 A	
Power factor setting	1.0		1.0	
Power factor (adjustable)	0.85 leading (0.85 lagging	0.85 leading (0.85 lagging
EFFICIENCY	@240 V	@208 V	@240 V	@208 V
Peak efficiency	97.6 %	97.6 %	97.5 %	97.3 %
CEC weighted efficiency	97.0 %	97.0 %	97.0 %	97.0 %
MECHANICAL DATA				
Ambient temperature range	-40°C to +65°C			
Relative humidity range	4% to 100% (condensing)			
Connector type (IQ7-60-2-US & IQ7PLUS-72-2-US)) MC4 (or Amphenol H4 UTX with additional Q-DCC-5 adapter)			
Dimensions (WxHxD)	212 mm x 175 n	nm x 30.2 mm (with	out bracket)	
Weight	1.08 kg (2.38 lbs	s)		
Cooling	Natural convect	ion - No fans		
Approved for wet locations	Yes			
Pollution degree	PD3			
Enclosure	Class II double-	insulated, corrosio	n resistant polyme	ric enclosure
Environmental category / UV exposure rating	NEMA Type 6 /			TO CONTROL OF THE PROPERTY OF
FEATURES	and the state of t	aronsas TVAIII		
Communication	Power Line Con	nmunication (PLC)		
Monitoring	Enlighten Manager and MyEnlighten monitoring options. Both options require installation of an Enphase IQ Envoy.			
Disconnecting means	The AC and DC connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690.			
Compliance	CA Rule 21 (UL 1741-SA) UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01 This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC-2014 and NEC-2017 section 690.12 and C22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according manufacturer's instructions.			

- No enforced DC/AC ratio. See the compatibility calculator at https://enphase.com/en-us/support/module-compatibility-2. Nominal voltage range can be extended beyond nominal if required by the utility.
 Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

To learn more about Enphase offerings, visit enphase.com

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SIGORA SOLAR LLC 490 WESTFIELD RD STE A CHARLOTTESVILLE, VA 22901

REVIS	REVISIONS				
DESCRIPTION	DATE	REV			
INITIAL	01/14/2022				

DATE:01/14/2022

45 OXFORD DR, ANGIER, NC 27501

PROJECT NAME & ADDRESS

JOHN AUGUSTA RESIDENCE

DRAWN BY

ESR

SHEET NAME **INVERTER SPECIFICATION**

SHEET SIZE

ANSI B 11" X 17"

^{*} The IQ 7+ Micro is required to support 72-cell modules.

Enphase IQ Combiner 3

(X-IQ-AM1-240-3)

The Enphase IQ Combiner 3™ with Enphase IQ Envoy™ consolidates interconnection equipment into a single enclosure and streamlines PV and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.



Smart

- · Includes IQ Envoy for communication and control
- · Flexible networking supports Wi-Fi, Ethernet, or cellular
- · Optional AC receptacle available for PLC
- · Provides production metering and optional consumption monitoring

Simple

- · Reduced size from previous combiner
- · Centered mounting brackets support single stud mounting
- · Supports back and side conduit entry
- · Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- · 80 A total PV or storage branch circuits

Reliable

- · Durable NRTL-certified NEMA type 3R enclosure
- · Five-year warranty
- UL listed



MODEL NUMBER	
IQ Combiner 3 X-IQ-AM1-240-3	IQ Combiner 3 with Enphase IQ Envoy* printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and optional* consumption monitoring (+/- 2.5%).
ACCESSORIES and REPLACEMENT PARTS (no	ot included, order separately)
Enphase Mobile Connect™ CELLMODEM-03 (4G / 12-year data plan) CELLMODEM-01 (3G / 5-year data plan) CELLMODEM-M1 (4G based LTE-M / 5-year data plan)	Plug and play industrial grade cellular modem with data plan for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.)
Consumption Monitoring* CT CT-200-SPLIT	Split core current transformers enable whole home consumption metering (+/- 2.5%).
Circuit Breakers BRK-10A-2-240 BRK-15A-2-240 BRK-20A-2P-240	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers. Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220
EPLC-01	Power line carrier (communication bridge pair), quantity 2
XA-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner 3 (required for EPLC-01)
XA-ENV-PCBA-3	Replacement IQ Envoy printed circuit board (PCB) for Combiner 3
ELECTRICAL SPECIFICATIONS	
Rating	Continuous duty
System voltage	120/240 VAC, 60 Hz
Eaton BR series busbar rating	125 A
Max. continuous current rating (output to grid)	65 A
Max. fuse/circuit rating (output)	90 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
Max. continuous current rating (input from PV)	64 A
Max. total branch circuit breaker rating (input)	80A of distributed generation / 90A with IQ Envoy breaker included
Production Metering CT	200 A solid core pre-installed and wired to IQ Envoy
MECHANICAL DATA	
Dimensions (WxHxD)	$49.5 \times 37.5 \times 16.8 \text{ cm}$ (19.5" x 14.75" x 6.63"). Height is 21.06" (53.5 cm with mounting brackets)
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40° C to +46° C (-40° to 115° F)
Cooling	Natural convection, plus heat shield
	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction

MECHANICAL DATA	
Dimensions (WxHxD)	49.5 x 37.5 x 16.8 cm (19.5" x 14.75" x 6.63"). Height is 21.06" (53.5 cm with mounting brackets).
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40° C to +46° C (-40° to 115° F)
Cooling	Natural convection, plus heat shield
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes	 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors 60 A breaker branch input: 4 to 1/0 AWG copper conductors Main lug combined output: 10 to 2/0 AWG copper conductors Neutral and ground: 14 to 1/0 copper conductors Always follow local code requirements for conductor sizing.
Altitude	To 2000 meters (6.560 feet)

INTERNET CONNECTION OPTIONS

Integrated Wi-Fi	802.11b/g/n
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)
Cellular	Optional, CELLMODEM-01 (3G) or CELLMODEM-03 (4G) or CELLMODEM-M1 (4G based LTE-M) (not included)

COMPLIANCE

Compliance, Combiner	UL 1741 CAN/CSA C22.2 No. 107.1 47 CFR, Part 15, Class B, ICES 003 Production metering: ANSI C12.20 accuracy class 0.5 (PV production)	
Compliance, IQ Envoy	UL 60601-1/CANCSA 22.2 No. 61010-1	

^{*} Consumption monitoring is required for Enphase Storage Systems.

To learn more about Enphase offerings, visit enphase.com

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SIGORA SOLAR LLC 490 WESTFIELD RD STE A CHARLOTTESVILLE, VA 2290

REVISIONS			
DESCRIPTION	DATE	REV	
INITIAL	01/14/2022		

DATE:01/14/2022

45 OXFORD DR, ANGIER, NC 27501

PROJECT NAME & ADDRESS

JOHN AUGUSTA RESIDENCE

DRAWN BY

ESR

SHEET NAME COMBINER **SPECIFICATION**

SHEET SIZE

ANSI B 11" X 17"

SHEET NUMBER PV-10



To learn more about Enphase offerings, visit enphase.com

DESCRIPTION: DRAWN BY: SNAPNRACK, UR-40 RAIL mwatkins REVISION: PART NUMBER(S): В 595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA, PHONE (415) 580-6900 • FAX (415) 580-6902 232-02449, 232-02450, 232-02451 UR-40 RAIL **PROPERTIES** SKU FINISH 232-02449 MILL 232-02450 CLEAR 232-02451 BLACK 1.500 .750 .832 SECTION PROPERTIES 1.624 0.357 in² Α CENTROID 0.125 in 4 Ixx 0.132 in4 Iyy Sx (TOP) 0.150 in³ .792 Sx (BOT) 0.158 in³ Sy (LEFT) 0.175 in³ 0.175 in³ Sy (RIGHT) ALL DIMENSIONS IN INCHES MATERIALS: 6000 SERIES ALUMINUM OPTIONS: DESIGN LOAD (LBS): N/A CLEAR / BLACK ANODIZED N/A MILL FINISH ULTIMATE LOAD (LBS): N/A LB-FT TORQUE SPECIFICATION: **BUNDLES OF 144** CERTIFICATION: UL 2703, FILE E359313 **BOXES OF 8**

WEIGHT (LBS):

5.85



SIGORA SOLAR LLC 490 WESTFIELD RD STE A CHARLOTTESVILLE, VA 22901

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45 OXFORD DR, ANGIER, NC 27501

PROJECT NAME & ADDRESS

JOHN AUGUSTA RESIDENCE

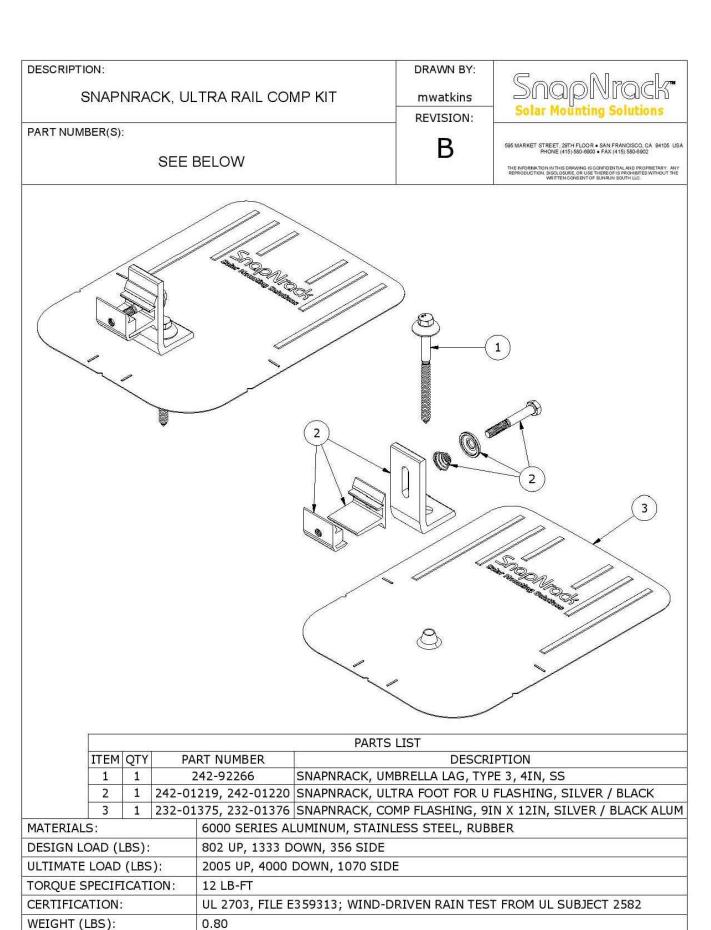
DRAWN BY

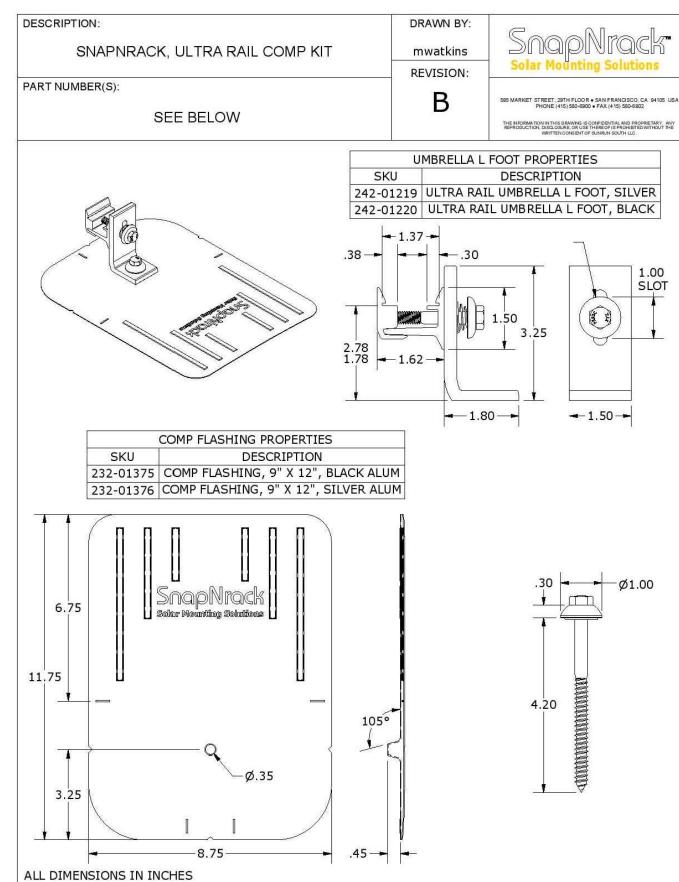
ESR

SHEET NAME RAIL SPECIFICATION

SHEET SIZE

ANSI B 11" X 17"







SIGORA SOLAF 490 WESTFIELD R

REVISIONS		
SCRIPTION	DATE	REV
INITIAL	01/14/2022	

DATE:01/14/2022

PROJECT NAME & ADDRESS

45 OXFORD DR, ANGIER, NC 27501

JOHN AUGUSTA RESIDENCE

DRAWN BY

ESR

SHEET NAME
ATTACHMENT
SPECIFICATION

SHEET SIZE

ANSI B 11" X 17"



Basic Features

- · Stamped Seamless Construction
- 18 Gauge Galvanized Steel
- Powder Coated Surfaces
- · Flashes into the roof deck
- 3 Roof deck knockouts .5", .75", 1"
- 5 Centering dimples for entry/exit fittings or conduit
- 2 Position Ground lug installed
- Mounting Hardware Included



SolaDeck Model SD 0783



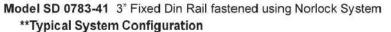
SolaDeck UL50 Type 3R Enclosures

Available Models: Model SD 0783 - (3" fixed Din Rail) Model SD 0786 - (6" slotted Din Rail)

SolaDeck UL 1741 Combiner/Enclosures

Models SD 0783-41 and SD 0786-41 $\,$ are labeled and ETL listed UL STD 1741 according to the UL STD 1741 for photovoltaic combiner enclosures.

Max Rated - 600VDC, 120AMPS



- 4- Din Rail Mounted Fuse Holders 600VDC 30 AMP
- 1- Power Distribution Block 600VDC 175AMP
- 1- Bus Bar with UL lug

Model SD 0786-41 6" Slotted Din Rail fastened using steel studs

**Typical System Configuration

- 4- Din Rail Mounted Fuse Holders 600VDC 30 AMP
- 4- Din Rail Mounted Terminal Blocks Bus Bars with UL lug

**Fuse holders and terminal blocks added in the field must be UL listed or recognized and meet 600 VDC 30 AMP 110C for fuse holders, 600V 50 AMP 90C for rail mounted terminal blocks and 600 V 175 AMP 90C for Power Distribution Blocks. Use Copper Wire Conductors.



Cover is trimmed to allow conduit or fittings, base is center dimpled for fitting locations.



Model SD 0783-41, wired with Din Rail mounted fuse holders, bus bar and power distribution block



Model SD 0786-41, wired with Din Rail mounted fuse holders, terminal blocks and bus bars.

RSTC Enterprises, Inc • 2219 Heimstead Road • Eau Cliare, WI 54703 For product information call 1(866) 367-7782



SIGORA SOLAR LLC 490 WESTFIELD RD STE A CHARLOTTESVILLE, VA 2290

REVISIONS			
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PROJECT NAME & ADDRESS

45 OXFORD DR, ANGIER, NC 27501

JOHN AUGUSTA RESIDENCE

DRAWN BY

ESR

SHEET NAME
SOLADECK
SPECIFICATION

SHEET SIZE

ANSI B 11" X 17"