WYSSLING CONSULTING
CORPORATE EXPERIENCE WITH SMALL BUSINESS VALUE
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January 27, 2022

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

Re: Engineering Services
Hines Residence
236 SW Sweetbriar Drive, Lake City, FL
18.250 kW System

To Whom It May Concern:

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

A. Site Assessment Information

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

B. Description of Structure:

Roof Framing:	Prefabricated wood trusses at 24" on center. All truss members are constructed of 2x4 dimensional lumber.
Roof 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 72" on center with 2 x 6 purlins spaced at 24" on center.
Roof Material:	Composite Asphalt Shingles & Metal Roofing
Roof Slope:	18 degrees
Attic Access:	Accessible
Lumber type:	Assumed Douglas Fir
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** = 25 psf
- **Wind Load** based on ASCE 7-16
  - 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 FBC 2020, 7th Edition, 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.

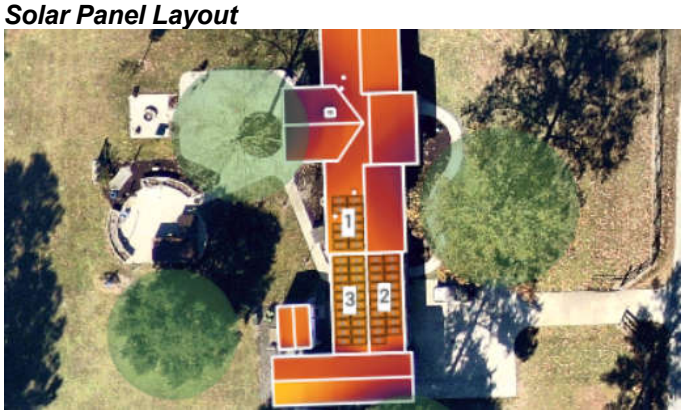
D. Solar Panel Anchorage
Composition Asphalt Shingles

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.

Metal Roofing

1. The solar panels shall be mounted in accordance with the most recent "S-5 Installation Manual", which can be found on the S-5 website (http://s-5.com/). 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. System will be attached to the metal roofing material utilizing the patented S-5 connection. Installation of the connections shall be in accordance with the manufacturer's recommendations.
3. Considering the roof slopes, the size, spacing, condition of roof, the panel supports shall be placed no greater than 48" o/c.

E. Solar Panel Layout



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 FBC 2020, 7th Edition, 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
Florida License No. 81558

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

SCOTT E WYSSLING
LICENSE
No. 81558
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
Florida License # RY34912

Columbia County Building Department
Plans Reviewed for Code Compliance
State of Florida

PROJECT DESCRIPTION:

50 x TRINA SOLAR: TSM-DE06X.05(II) 365W MONO MODULES
ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES
DC SYSTEM SIZE: 18.250kW DC
AC SYSTEM SIZE: 14.500kW AC

EQUIPMENT SUMMARY:
50 TRINA SOLAR: TSM-DE06X.05(II) 365W MONO MODULES
50 ENPHASE IQ7PLUS-72-2-US 290W MICRO INVERTERS
EQUIPPED WITH RAPID SHUTDOWN

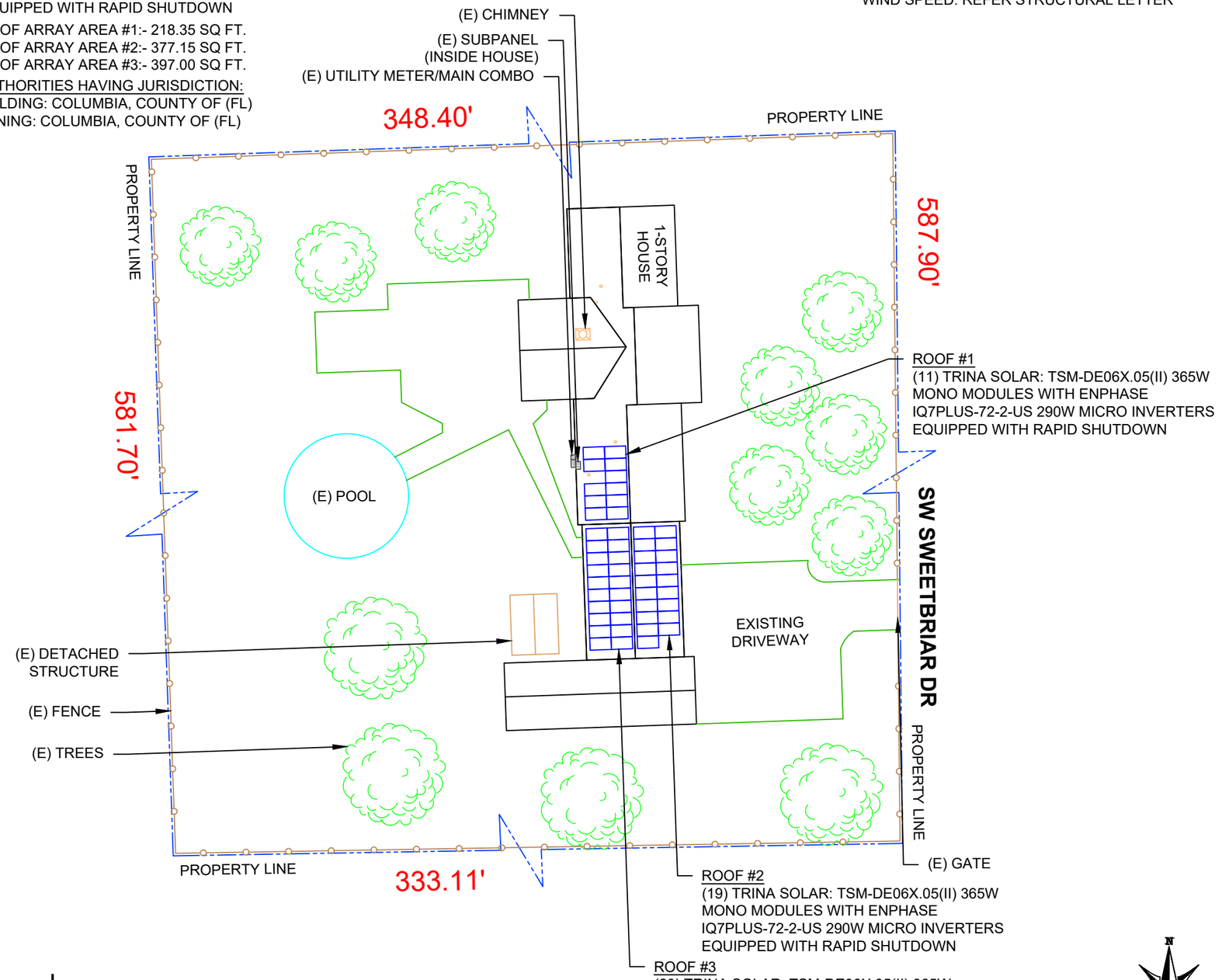
ROOF ARRAY AREA #1:- 218.35 SQ FT.
ROOF ARRAY AREA #2:- 377.15 SQ FT.
ROOF ARRAY AREA #3:- 397.00 SQ FT.

AUTHORITIES HAVING JURISDICTION:
BUILDING: COLUMBIA, COUNTY OF (FL)
ZONING: COLUMBIA, COUNTY OF (FL)

SCOPE OF WORK:
DESIGNED FOR INSTALLATION OF GRID-TIED PHOTOVOLTAIC SOLAR SYSTEM

APPLICABLE CODES & STANDARDS
FBC 2020
NEC 2017

DESIGN SPECIFICATION
OCCUPANCY: II
CONSTRUCTION: SINGLE-FAMILY
ZONING: RESIDENTIAL
GROUND SNOW LOAD: REFER STRUCTURAL LETTER
WIND EXPOSURE: REFER STRUCTURAL LETTER
WIND SPEED: REFER STRUCTURAL LETTER



ROOF #1
(11) TRINA SOLAR: TSM-DE06X.05(II) 365W MONO MODULES WITH ENPHASE IQ7PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN

ROOF #2
(19) TRINA SOLAR: TSM-DE06X.05(II) 365W MONO MODULES WITH ENPHASE IQ7PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN

ROOF #3
(20) TRINA SOLAR: TSM-DE06X.05(II) 365W MONO MODULES WITH ENPHASE IQ7PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN

1 PLOT PLAN WITH ROOF PLAN
PV-1 SCALE: 1/32" = 1'-0"

2 HOUSE PHOTO
PV-1 SCALE: NTS

3 VICINITY MAP
PV-1 SCALE: NTS

SHEET INDEX

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

REVISIONS

DESCRIPTION	DATE	REV
INITIAL	01/27/2022	

DATE:01/27/2022

PROJECT NAME & ADDRESS
GEORGE HINES RESIDENCE
236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
PLOT PLAN WITH ROOF PLAN

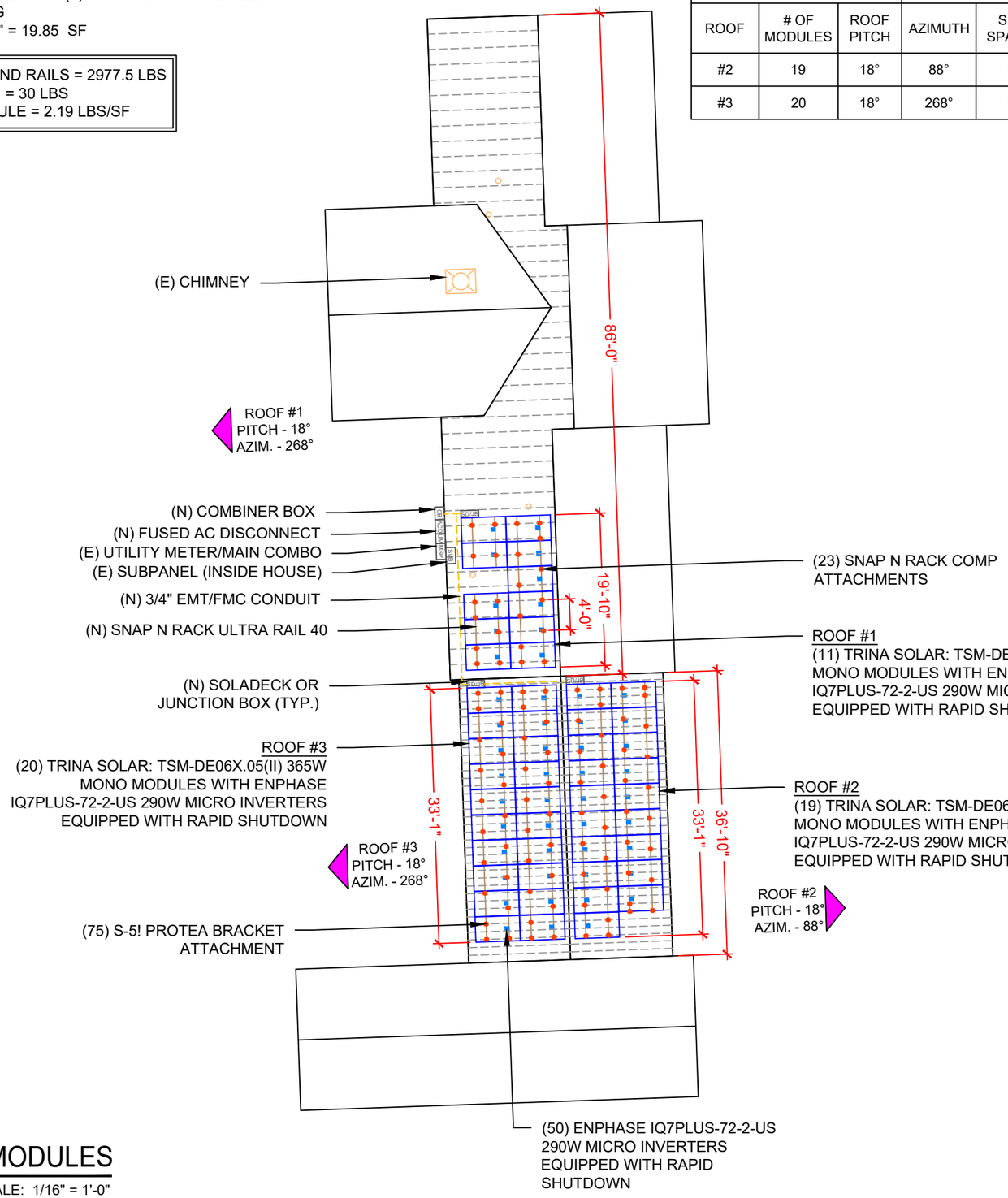
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-1

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 50 MODULES
MODULE TYPE = TRINA SOLAR: TSM-DE06X.05(II) 365W MONO MODULES
MODULE WEIGHT = 43.40 LBS / 19.7KG
MODULE DIMENSIONS = 72.91"x 39.21" = 19.85 SF

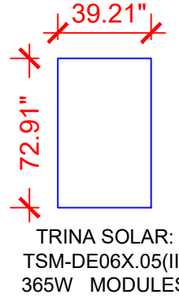
- TOTAL WEIGHT OF PV MODULES AND RAILS = 2977.5 LBS
- WEIGHT PER ATTACHMENT POINT = 30 LBS
- DISTRIBUTED WEIGHT OF PV MODULE = 2.19 LBS/SF



ROOF DESCRIPTION				
ROOF TYPE			TRAPEZOIDAL METAL	
ROOF	# OF MODULES	ROOF PITCH	AZIMUTH	SEAM SPACING
#2	19	18°	88°	12"
#3	20	18°	268°	12"

ROOF DESCRIPTION					
ROOF TYPE				ASPHALT SHINGLE	
ROOF LAYER				1 LAYER	
ROOF	# OF MODULES	ROOF PITCH	AZIMUTH	TRUSS SIZE	TRUSS SPACING
#1	11	18°	268°	2X6	24"

ARRAY AREA & ROOF AREA CALC'S		
TOTAL PV ARRAY AREA (SQ. FT.)	TOTAL ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)
992.50	4977.96	20



TRINA SOLAR:
TSM-DE06X.05(II)
365W MODULES

LEGEND

- SD/JB - SOLADECK OR JUNCTION BOX
- INV - INVERTER
- CB - COMBINER BOX
- ACD - AC DISCONNECT
- LC - LOAD CENTER
- UM - UTILITY METER
- MSP - MAIN SERVICE PANEL
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- ROOF ATTACHMENT
- TRUSS
- CONDUIT

1 ROOF PLAN & MODULES
PV-2 SCALE: 1/16" = 1'-0"

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

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	01/27/2022	

DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE
236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

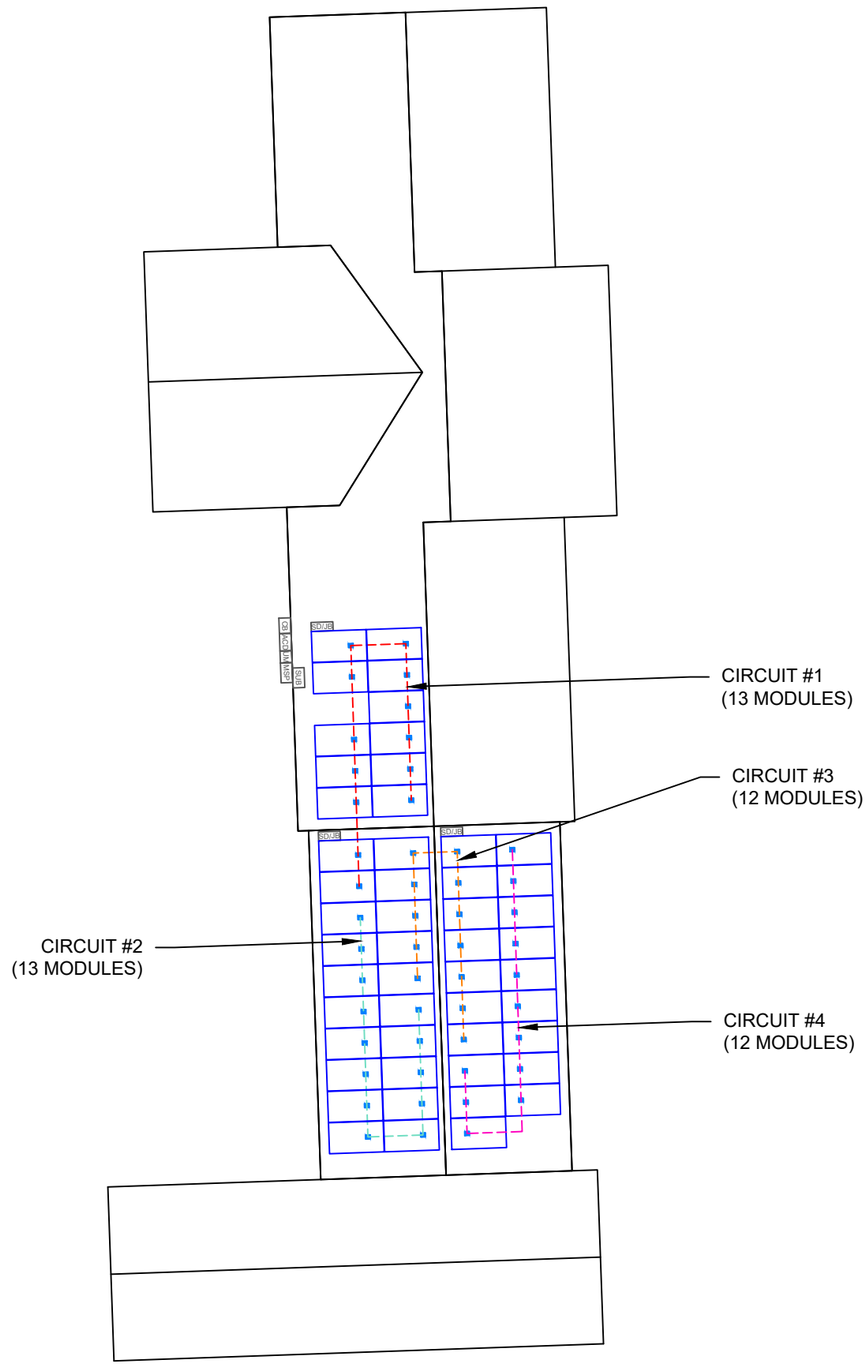
DRAWN BY
ESR

SHEET NAME
ROOF PLAN & MODULES

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-2

CIRCUIT LEGENDS
CIRCUIT #1
CIRCUIT #2
CIRCUIT #3
CIRCUIT #4



BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULES	50	TRINA SOLAR: TSM-DE06X.05(II) 365W
MICRO INVERTERS	50	ENPHASE IQ7PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN
SOLADECKS OR JUNCTION BOXES	3	SOLADECKS OR JUNCTION BOXES
MODULE CLAMPS	86	MID MODULE CLAMPS
END CLAMPS	28	END CLAMPS / STOPPER SLEEVE
ATTACHMENT	23	SNAP N RACK COMP
BOLT	23	LAG BOLT
ATTACHMENT	75	S-5-PROTIA BRACKET
SQUARE-BOLT	75	SQUARE-BOLT BONDING ATTACHMENT HARDWARE

1 ROOF PLAN WITH CIRCUIT LAYOUT

PV-2A

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

SIGORA SOLAR

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

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	01/27/2022	

DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE

236 SW SWEETBRIAR DR,
LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

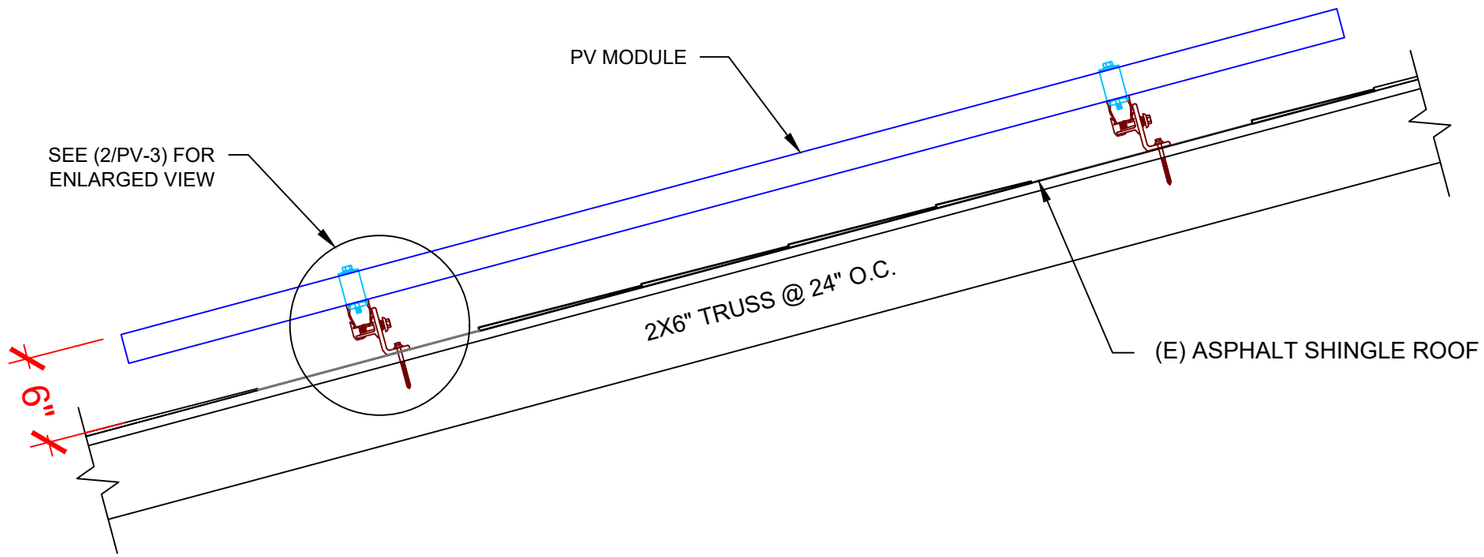
CIRCUIT LAYOUT

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

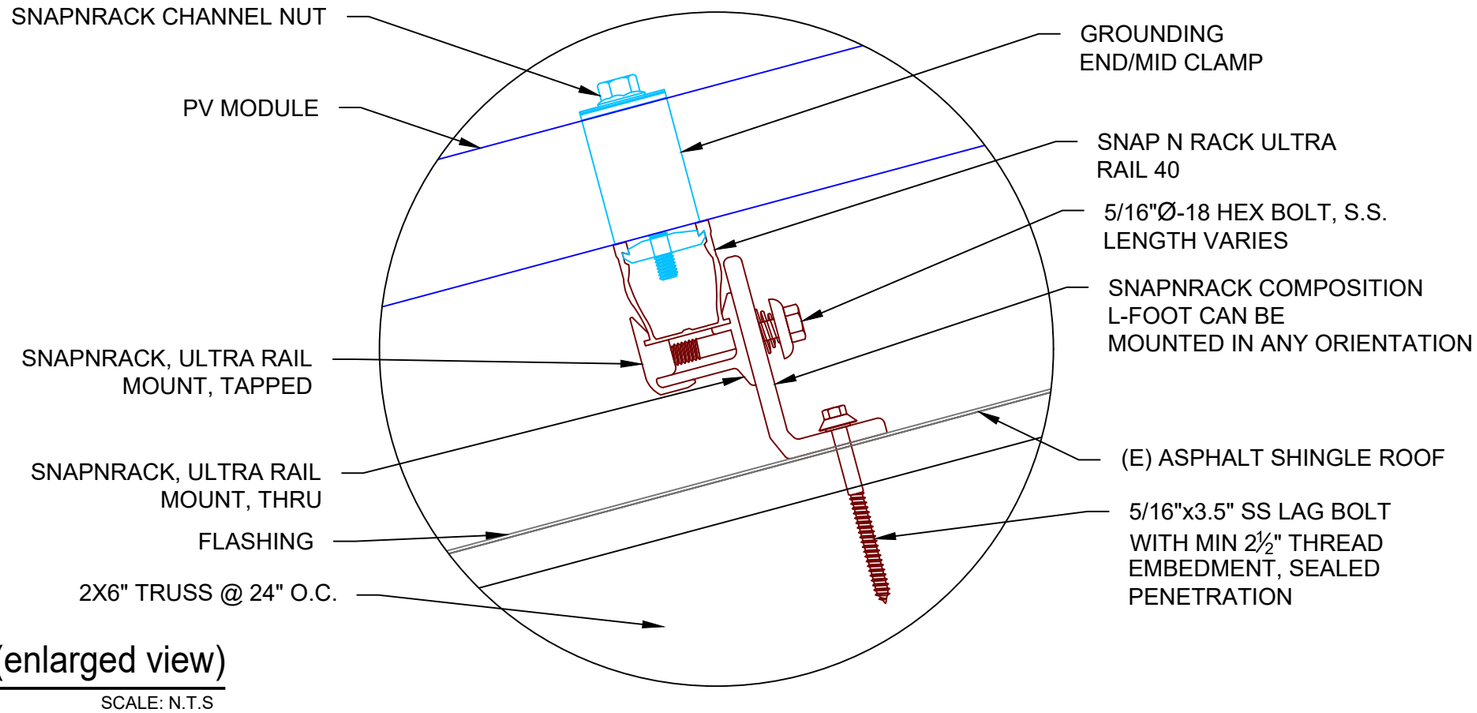
PV-2A



1 | PV-3

STRUCTURAL ATTACMENT (SIDE VIEW)

SCALE: N.T.S



2 | PV-3

ATTACHMENT DETAIL (enlarged view)

SCALE: N.T.S

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

REVISIONS

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DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE

236 SW SWEETBRIAR DR,
LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

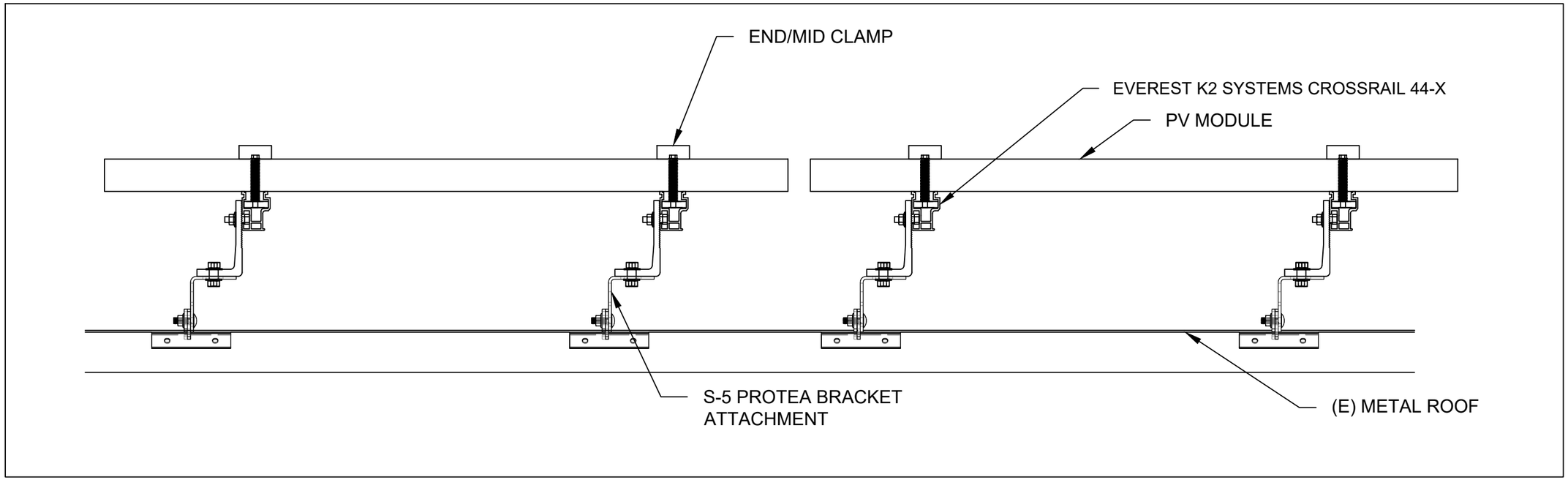
ATTACHMENT DETAIL

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

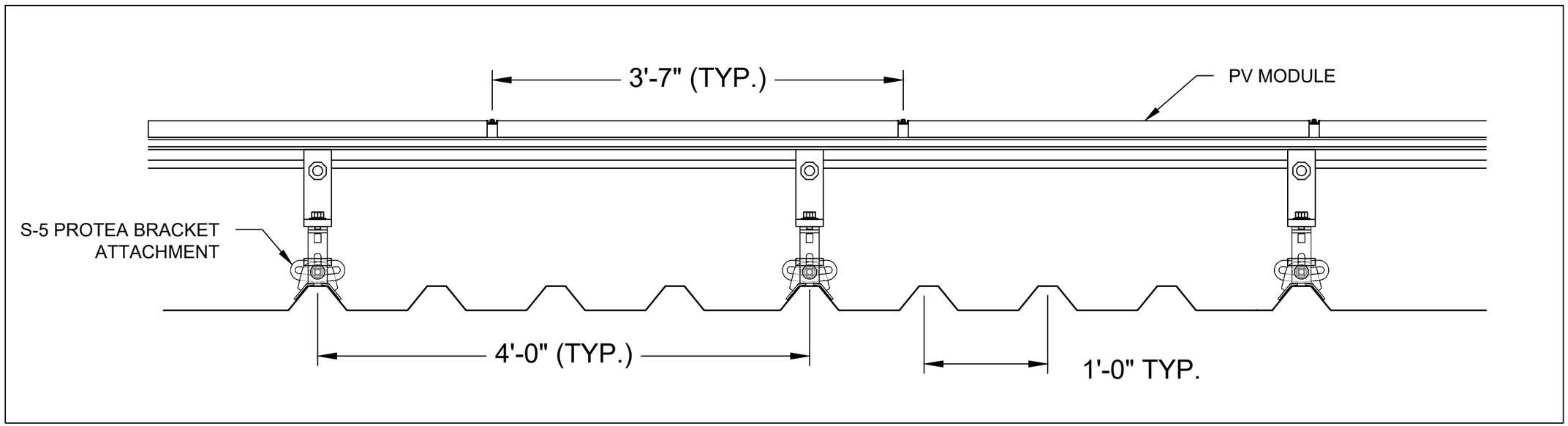
PV-3



1 STRUCTURAL ATTACMENT (SIDE VIEW)

PV-3A

SCALE: N.T.S



2 ATTACHMENT DETAIL (FRONT VIEW)

PV-3A

SCALE: N.T.S

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

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DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE

236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

ATTACHMENT DETAIL

SHEET SIZE

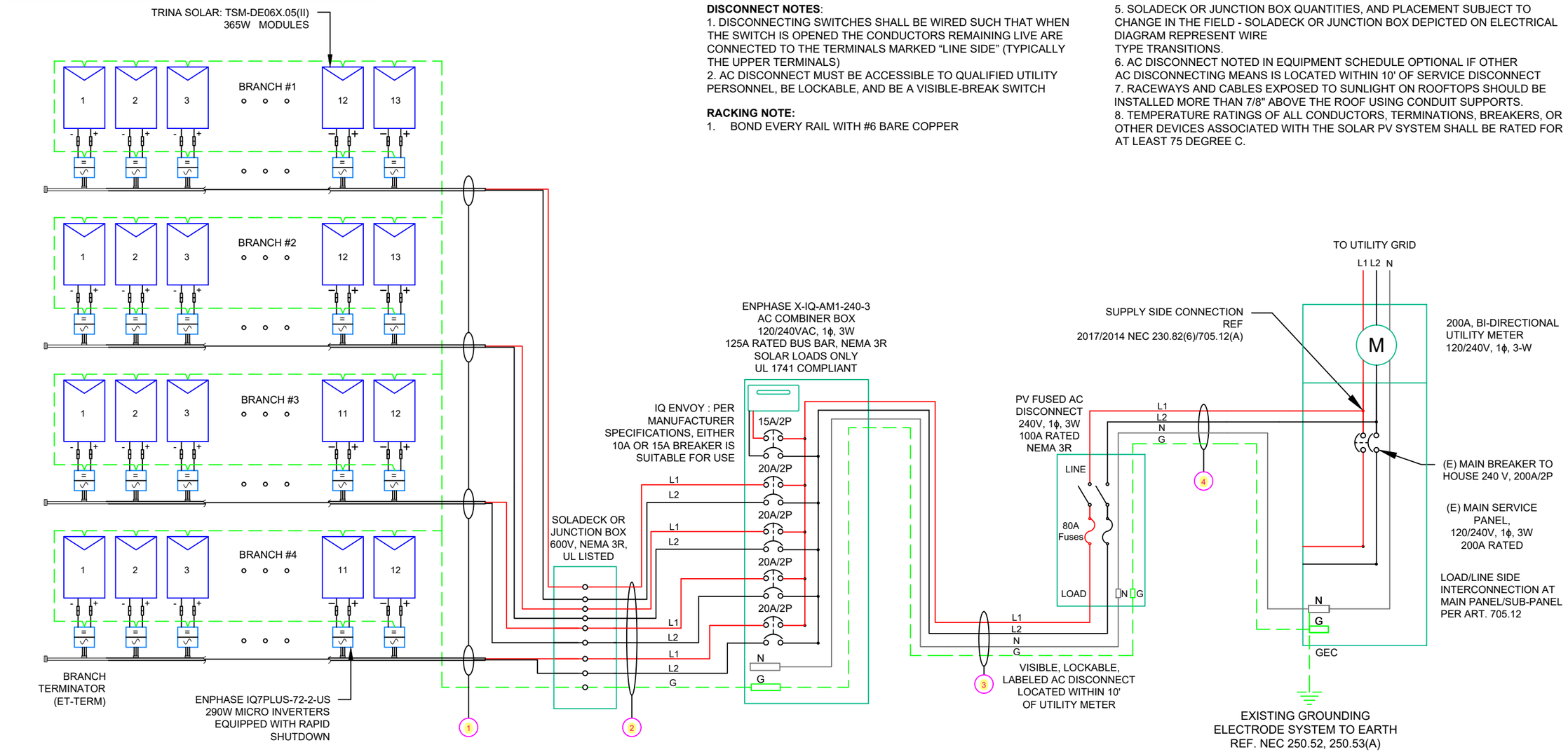
ANSI B
11" X 17"

SHEET NUMBER

PV-3A

DC SYSTEM SIZE: 18.250 kW DC
AC SYSTEM SIZE: 14.500 kW AC

(50) TRINA SOLAR: TSM-DE06X.05(II) 365W MONO MODULES
WITH (50) ENPHASE IQ7PLUS-72-2-US 290W MICRO INVERTERS
EQUIPPED WITH RAPID SHUTDOWN
(2) BRANCH CIRCUITS OF 13 MODULES AND
(2) BRANCH CIRCUITS OF 12 MODULES CONNECTED IN PARALLEL



INTERCONNECTION NOTES:
1. INTERCONNECTION SIZING, LIMITATIONS AND COMPLIANCE DETERMINED IN ACCORDANCE WITH [NEC 705.12], AND [NEC 690.64].
2. GROUND FAULT PROTECTION IN ACCORDANCE WITH [NEC 215.9], [NEC 230.95] AND [NEC 690.5]
3. ALL EQUIPMENT TO BE RATED FOR BACKFEEDING.
4. PV BREAKER TO BE POSITIONED AT THE OPPOSITE END OF THE BUSBAR RELATIVE TO THE MAIN BREAKER.

DISCONNECT NOTES:
1. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING LIVE ARE CONNECTED TO THE TERMINALS MARKED “LINE SIDE” (TYPICALLY THE UPPER TERMINALS)
2. AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH

RACKING NOTE:
1. BOND EVERY RAIL WITH #6 BARE COPPER

GROUNDING & GENERAL NOTES:
1. A SECOND FACILITY GROUNDING ELECTRODE IS NOT REQUIRED PER [NEC 690.47(C)(3)]
2. PV INVERTER IS UNGROUNDED, TRANSFORMER-LESS TYPE.
3. DC GEC AND AC EGC TO REMAIN UNSPLICED, OR SPLICED TO EXISTING ELECTRODE
4. ANY EXISTING WIRING INVOLVED WITH PV SYSTEM CONNECTION THAT IS FOUND TO BE INADEQUATE PER CODE SHALL BE CORRECTED PRIOR TO FINAL INSPECTION.
5. SOLADECK OR JUNCTION BOX QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - SOLADECK OR JUNCTION BOX DEPICTED ON ELECTRICAL DIAGRAM REPRESENT WIRE TYPE TRANSITIONS.
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 AT LEAST 75 DEGREE C.

	QTY	CONDUCTOR INFORMATION		CONDUIT TYPE	CONDUIT SIZE
1	(8)	#12AWG -	ENPHASE ENGAGE CABLE (L1 & L2 NO NEUTRAL)	N/A	N/A
	(1)	#6AWG -	BARE COPPER IN FREE AIR		
2	(8)	#10AWG -	CU,THWN-2	EMT OR FMC IN ATTIC	3/4"
	(1)	#10AWG -	CU,THWN-2 GND		
3	(2)	#4AWG -	CU,THWN-2	EMT, LFMC OR PVC	1"
	(1)	#4AWG -	CU,THWN-2 N		
	(1)	#8AWG -	CU,THWN-2 GND		
4	(2)	#4AWG -	CU,THWN-2	EMT, LFMC OR PVC	1"
	(1)	#4AWG -	CU,THWN-2 N		
	(1)	#8AWG -	CU,THWN-2 GND		

1 ELECTRICAL LINE DIAGRAM
PV-4 SCALE: NTS

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

REVISIONS

DESCRIPTION	DATE	REV
INITIAL	01/27/2022	

DATE:01/27/2022

PROJECT NAME & ADDRESS
GEORGE HINES RESIDENCE
236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
ELECTRICAL LINE DIAGRAM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4

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 FLOORS.

NEC 690.31(G)(3&4)

(NOT USED FOR ENPHASE MICROINVERTERS)

PHOTOVOLTAIC

DC DISONNECT

LABEL 2

AT EACH PV DISCONNECTING MEANS

NEC 690.13(B)

(NOT USED FOR ENPHASE MICROINVERTERS)

MAXIMUM VOLTAGE

MAXIMUM CIRCUIT CURRENT

MAX RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC CONVERTER (IF INSTALLED)

LABEL 3

AT DC PV SYSTEM DISCONNECTING MEANS

NEC 690.53

(NOT USED FOR ENPHASE MICROINVERTERS)

PHOTOVOLTAIC

AC DISONNECT

LABEL 4

AT AC DISCONNECTING MEANS

NEC 690.13(B)

PHOTOVOLTAIC AC DISCONNECT

RATED AC OUTPUT CURRENT: 60.50A

NOMINAL OPERATING AC VOLTAGE: 240V

LABEL 5

AT AC DISCONNECTING MEANS

NEC 690.54

50 MICROS X 1.21 AMP/MICRO = 60.50AMP

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]

WARNING

INVERTER OUTPUT CONNECTION

DO NOT RELOCATE THIS OVERCURRENT DEVICE

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)

WARNING: DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

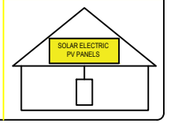
LABEL 7

SIGN LOCATED AT LOAD CENTER

NEC 705.12(B)(3-4) & NEC 690.59

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

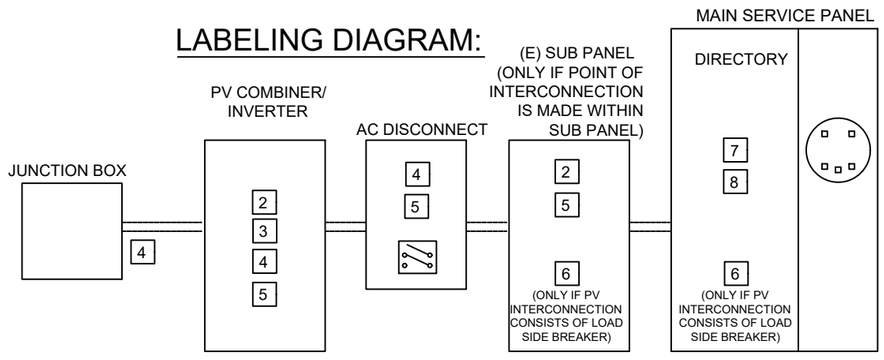
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY



LABEL 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)]

LABELING DIAGRAM:



** 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. **

SIGORA SOLAR

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

REVISIONS

DESCRIPTION	DATE	REV
INITIAL	01/27/2022	

DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE

236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

LABELS

SHEET SIZE

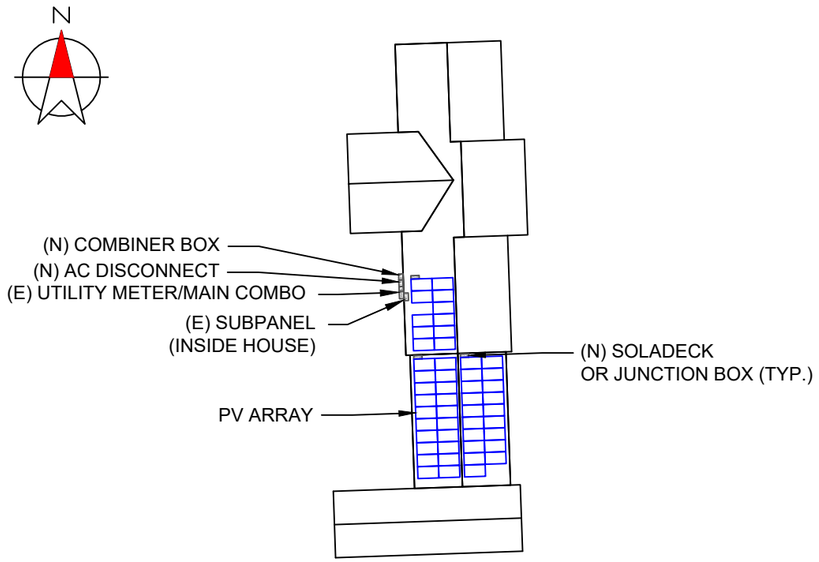
ANSI B
11" X 17"

SHEET NUMBER

PV-5

CAUTION

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM MULTIPLE SOURCES OF POWER WITH SAFETY DISCONNECTS AS SHOWN:



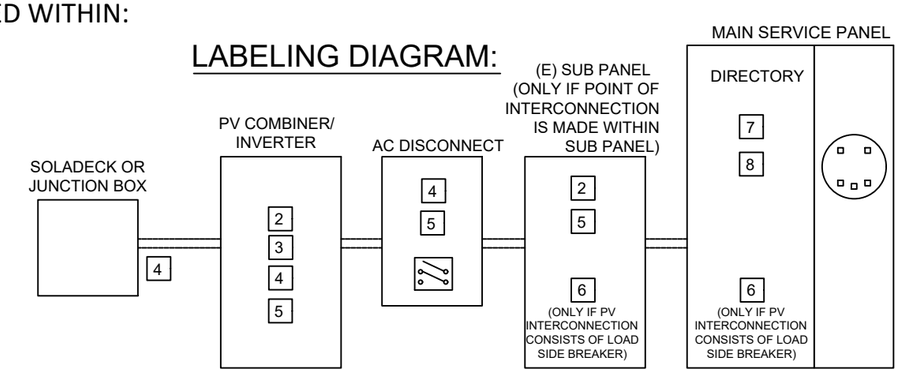
236 SW SWEETBRIAR DR,LAKE CITY, FL 32024

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:



** 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. **

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]

SIGORA SOLAR

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

REVISIONS

DESCRIPTION	DATE	REV
INITIAL	01/27/2022	

DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE

236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

PLACARD

SHEET SIZE

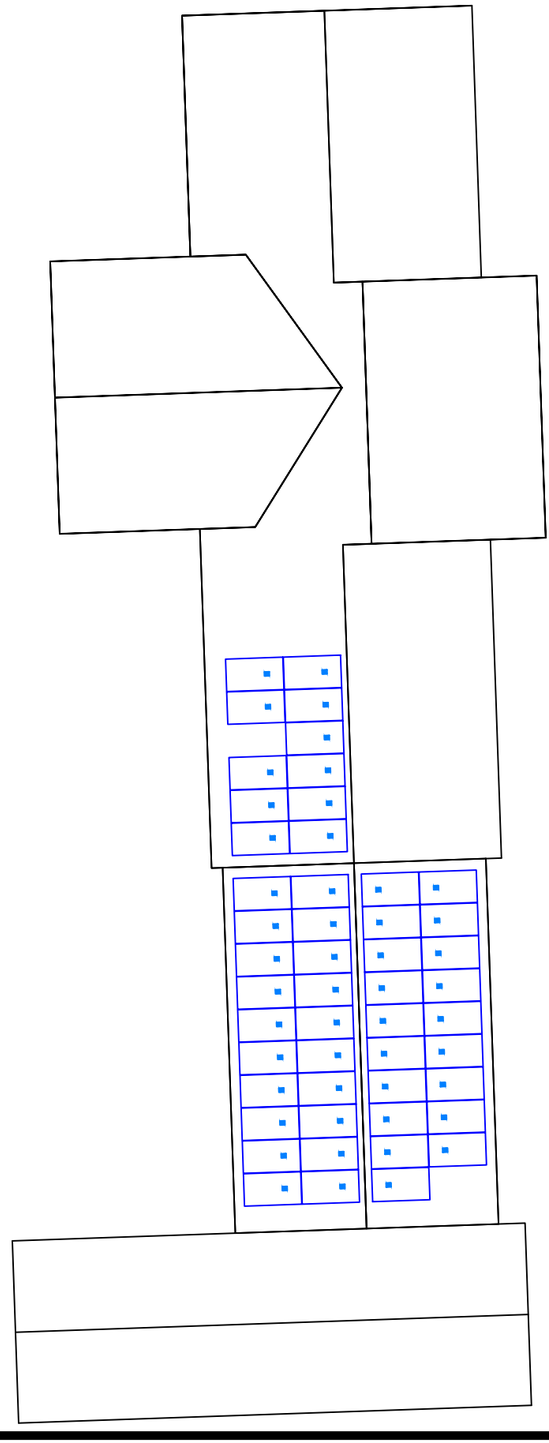
ANSI B
11" X 17"

SHEET NUMBER

PV-6

	1-10	11-20	21-30	31-40	41-50	51-60	61-70
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

MICRO INVERTER CHART



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

REVISIONS

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INITIAL	01/27/2022	

DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE

236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

MICRO INVERTER CHART

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

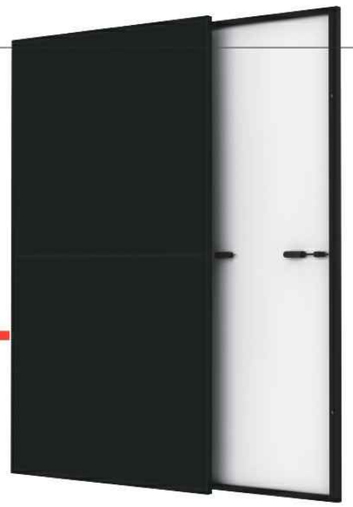
PV-7

Mono Multi Solutions

THE

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

PRODUCTS	POWER RANGE
TSM-DE06X.05(II)	355-380W

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
- 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

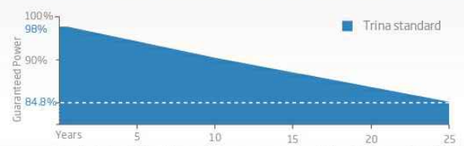
- Ensured PID resistance through cell process and module material control
- Resistant to salt, acid and ammonia
- Mechanical performance: Up to 5400 Pa positive load and 2400 Pa negative load

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 lower LCOE
- Better anti-shading performance and lower operating temperature

PERFORMANCE WARRANTY

25 Year Product Warranty · 25 Year Power Warranty



From the 2nd year to the 25th year, the average annual power decline will be no more than 0.55%.

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

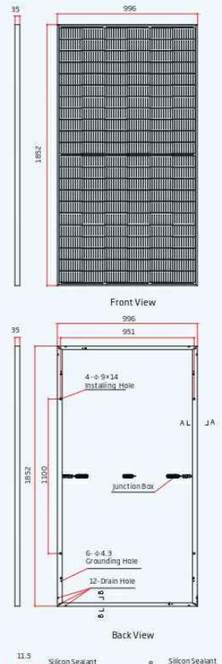
IEC61215/IEC61730/IEC61701/IEC62716/UL61730
ISO9001: Quality Management System
ISO14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
OHSAS 18001: Occupation Health and Safety Management System

Trinasolar

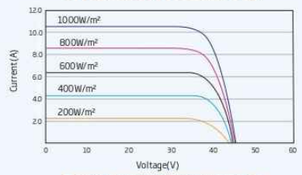
Residential Module

MULTI-BUSBAR MONO PERC MODULE

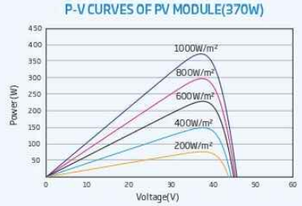
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(370W)



P-V CURVES OF PV MODULE(370W)



ELECTRICAL DATA (STC)

Peak Power Watts-P_{MAX} (Wp)*	355	360	365	370	375	380
Power Output Tolerance-P_{MAX} (W)			0 ~ +5			
Maximum Power Voltage-V_{MPP} (V)	36.8	37.0	37.2	37.4	37.6	37.8
Maximum Power Current-I_{MPP} (A)	9.66	9.74	9.82	9.90	9.98	10.07
Open Circuit Voltage-V_{OC} (V)	44.6	44.8	45.0	45.2	45.3	45.5
Short Circuit Current-I_{SC} (A)	10.24	10.30	10.35	10.40	10.45	10.51
Module Efficiency η_m (%)	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_{OC} (V)	42.0	42.2	42.4	42.6	42.6	42.8
Short Circuit Current-I_{SC} (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	132 cells
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	MC4 EVO2
Fire Type	Type 2

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P_{MAX}	- 0.34%/°C
Temperature Coefficient of V_{OC}	- 0.25%/°C
Temperature Coefficient of I_{SC}	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

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 31 pieces
Modules per 40' container: 744 pieces

Trinasolar

Version number: TSM_DE06X.05(II)_NA_2020_PA3 www.trinasolar.com

SIGORA SOLAR

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

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	01/27/2022	

DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE
236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
MODULE SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-8

Data Sheet
Enphase Microinverters
Region: AMERICAS

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)

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

UL CERTIFIED SAFETY US-CA E341165

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE

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	II		II	
DC port backfeed current	0 A		0 A	
PV array configuration	1 x 1 ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit			
OUTPUT DATA (AC)	**IQ 7 Microinverter**		**IQ 7+ Microinverter**	
Peak output power	250 VA		295 VA	
Maximum continuous output power	240 VA		290 VA	
Nominal (L-L) voltage/range[2]	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	III		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 mm x 30.2 mm (without bracket)			
Weight	1.08 kg (2.38 lbs)			
Cooling	Natural convection - No fans			
Approved for wet locations	Yes			
Pollution degree	PD3			
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure			
Environmental category / UV exposure rating	NEMA Type 6 / outdoor			
FEATURES				
Communication	Power Line Communication (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.			

1. 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.
3. 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**

ENPHASE

2019-3-26

SIGORA SOLAR

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

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	01/27/2022	

DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE
236 SW SWEETBRIAR DR,
LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
INVERTER SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-9

Data Sheet
Enphase Networking

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 bridge
- 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

UL LISTED

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE.

Enphase IQ Combiner 3

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** (not 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 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**

2018-09-13

ENPHASE.

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

REVISIONS

DESCRIPTION	DATE	REV
INITIAL	01/27/2022	

DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE
236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

DRAWN BY
ESR

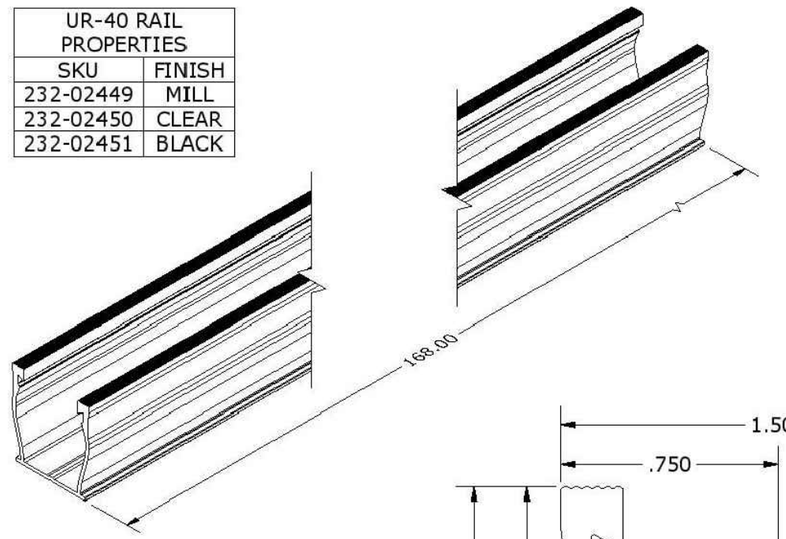
SHEET NAME
COMBINER SPECIFICATION

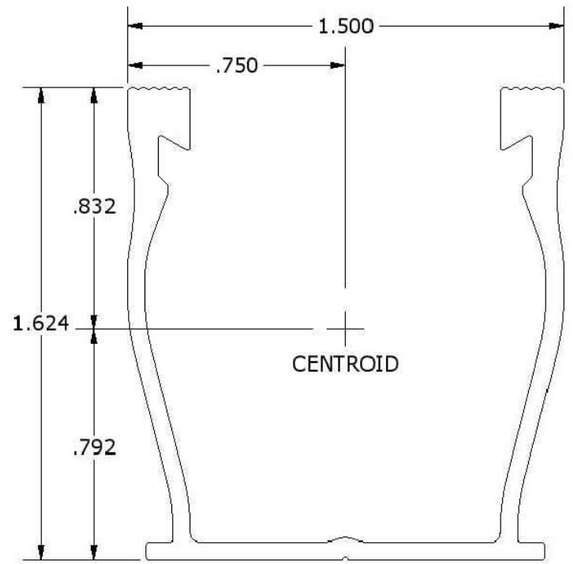
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-10

DESCRIPTION:	DRAWN BY:	SnapNrack™ Solar Mounting Solutions
SNAPNRACK, UR-40 RAIL	mwatkins	
PART NUMBER(S):	REVISION:	595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA. PHONE (415) 580-6900 • FAX (415) 580-6902
232-02449, 232-02450, 232-02451	B	THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC.

UR-40 RAIL PROPERTIES	
SKU	FINISH
232-02449	MILL
232-02450	CLEAR
232-02451	BLACK





SECTION PROPERTIES	
A	0.357 in²
Ixx	0.125 in⁴
Iyy	0.132 in⁴
Sx (TOP)	0.150 in³
Sx (BOT)	0.158 in³
Sy (LEFT)	0.175 in³
Sy (RIGHT)	0.175 in³

ALL DIMENSIONS IN INCHES

MATERIALS:	6000 SERIES ALUMINUM	OPTIONS:
DESIGN LOAD (LBS):	N/A	CLEAR / BLACK ANODIZED
ULTIMATE LOAD (LBS):	N/A	MILL FINISH
TORQUE SPECIFICATION:	N/A LB-FT	BUNDLES OF 144
CERTIFICATION:	UL 2703, FILE E359313	BOXES OF 8
WEIGHT (LBS):	5.85	

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

REVISIONS		
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DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE
236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

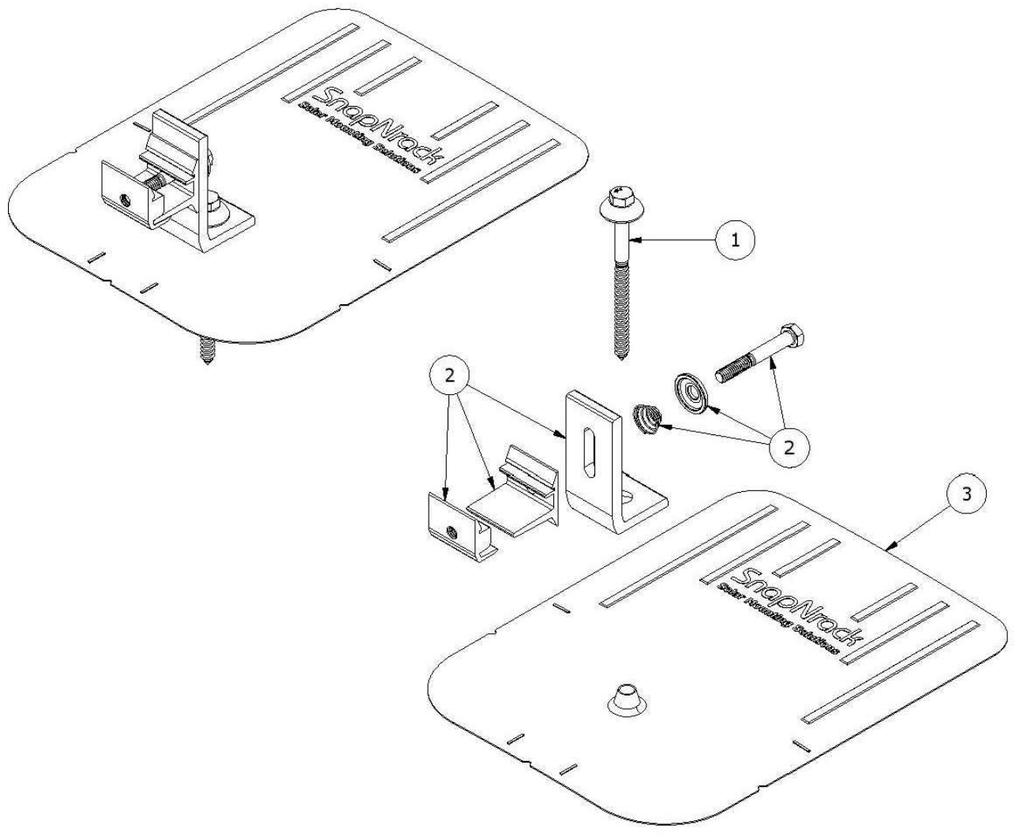
DRAWN BY
ESR

SHEET NAME
RAIL SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-11

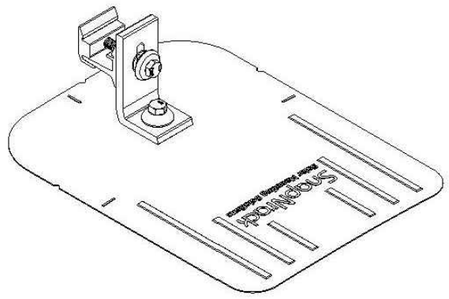
DESCRIPTION:	DRAWN BY:	SnapNrack™ Solar Mounting Solutions
SNAPNRACK, ULTRA RAIL COMP KIT	mwatkins	
PART NUMBER(S):	REVISION:	595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA PHONE (415) 580-6900 • FAX (415) 580-6902
SEE BELOW	B	THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC.



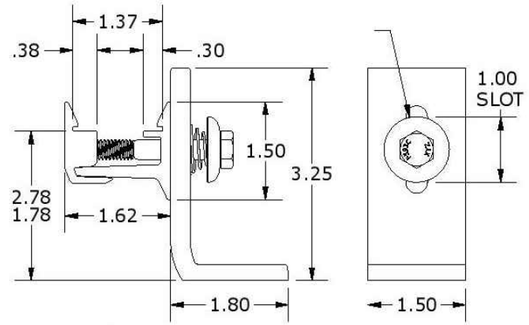
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	242-92266	SNAPNRACK, UMBRELLA LAG, TYPE 3, 4IN, SS
2	1	242-01219, 242-01220	SNAPNRACK, ULTRA FOOT FOR U FLASHING, SILVER / BLACK
3	1	232-01375, 232-01376	SNAPNRACK, COMP FLASHING, 9IN X 12IN, SILVER / BLACK ALUM

MATERIALS:	6000 SERIES ALUMINUM, STAINLESS STEEL, RUBBER
DESIGN LOAD (LBS):	802 UP, 1333 DOWN, 356 SIDE
ULTIMATE LOAD (LBS):	2005 UP, 4000 DOWN, 1070 SIDE
TORQUE SPECIFICATION:	12 LB-FT
CERTIFICATION:	UL 2703, FILE E359313; WIND-DRIVEN RAIN TEST FROM UL SUBJECT 2582
WEIGHT (LBS):	0.80

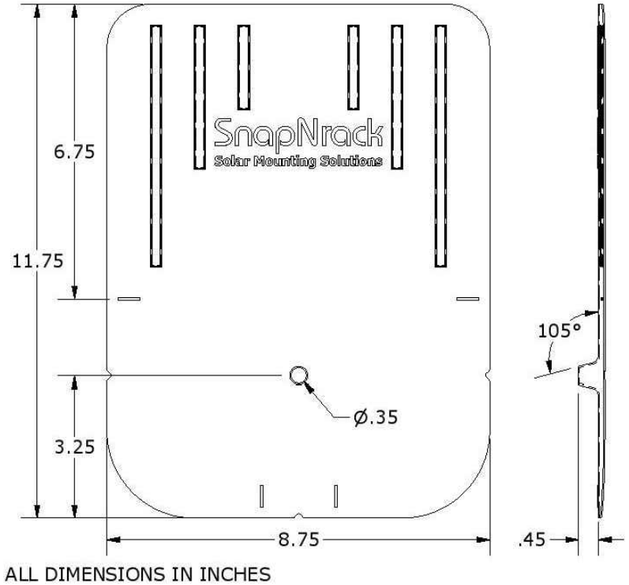
DESCRIPTION:	DRAWN BY:	SnapNrack™ Solar Mounting Solutions
SNAPNRACK, ULTRA RAIL COMP KIT	mwatkins	
PART NUMBER(S):	REVISION:	595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA PHONE (415) 580-6900 • FAX (415) 580-6902
SEE BELOW	B	THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC.

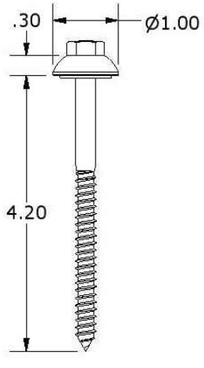


UMBRELLA L FOOT PROPERTIES	
SKU	DESCRIPTION
242-01219	ULTRA RAIL UMBRELLA L FOOT, SILVER
242-01220	ULTRA RAIL UMBRELLA L FOOT, BLACK



COMP FLASHING PROPERTIES	
SKU	DESCRIPTION
232-01375	COMP FLASHING, 9" X 12", BLACK ALUM
232-01376	COMP FLASHING, 9" X 12", SILVER ALUM





ALL DIMENSIONS IN INCHES

SIGORA SOLAR

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

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	01/27/2022	

DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE

236 SW SWEETBRIAR DR,
LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
ATTACHMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-12

S-5!®

The Right Way!

ProteaBracket™

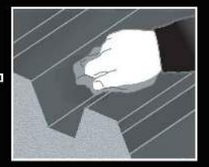
ProteaBracket™ is the most versatile standing seam metal roof attachment solution on the market, fitting most trapezoidal sheet profiles with and without intermediate insulation. It features an adjustable attachment base and multiple solar module attachment options (illustrated on back) to accommodate varying widths and heights. There are no messy sealants to apply and no chance for leaks; the ProteaBracket comes with factory-applied, adhesive rubber sealant to ensure quick installation and a weather-proof fit.

Installation is simple! The ProteaBracket is mounted directly onto the crown of the panel, straddling the profile. No surface preparation is necessary; simply wipe away excess oil and debris, align, and apply. Secure ProteaBracket through its pre-punched holes, using the hardened drill point S-5!® screws.

ProteaBracket is the perfect match for our S-5-PV Kit and spares you the hassle of cold-bridging! For a solar attachment solution that is both economical and easy to use, choose ProteaBracket.*

*When ProteaBracket is used in conjunction with the S-5-PV Kit, an additional nut is required during installation.

The right way to attach almost anything to metal roofs!

1

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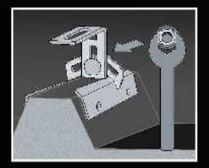
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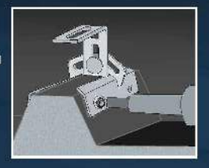


ProteaBracket™

S-5!® ProteaBracket™ is a versatile bracket that adjusts easily to most trapezoidal roof profiles.

888-825-3432 | www.S-5.com

S-5!®

The Right Way!

ProteaBracket™ is the perfect solar attachment solution for most trapezoidal exposed-fastened metal roof profiles! No messy sealants to apply. The factory-applied adhesive rubber sealant weather-proofs and makes installation easy!

Each **ProteaBracket™** comes with a factory-applied, adhesive rubber sealant on the base. A structural A2 stainless steel bimetal attachment bracket, ProteaBracket is compatible with most common metal roofing materials. All four pre-punched holes must be used to achieve tested strength. Mounting hardware is furnished with the ProteaBracket. For design assistance, ask your distributor, or visit **www.S-5.com** for the independent lab test data that can be used for load-critical designs and applications. Also, please visit our website for more information including metallurgical compatibilities and specifications. S-5!® holding strength is unmatched in the industry.

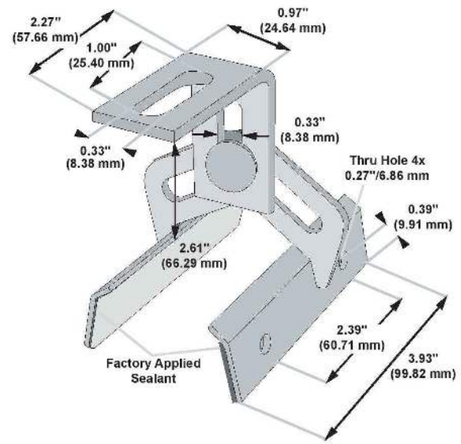
Multiple Attachment Options:

Side Rail Option

Top Rail Option

S-5-PV Kit Option

ProteaBracket™



Please note: All measurements are rounded to the second decimal place.

Example Applications

S-5-PV Kit demonstrated with a ProteaBracket on a trapezoidal profile.

Example Profile

S-5!® Warning! Please use this product responsibly!

Products are protected by multiple U.S. and foreign patents. For published data regarding holding strength, bolt torque, patents, and trademarks, visit the S-5! website at www.S-5.com.

Distributed by

SIGORA SOLAR

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

REVISIONS

DESCRIPTION	DATE	REV
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DATE:01/27/2022

PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE

236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

ATTACHMENT SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-13

SolaDeck

FLASHED PV ROOF-MOUNT COMBINER/ENCLOSURE

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

Model SD 0783-41 3" Fixed Din Rail fastened using Norlock System

****Typical System Configuration**

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 Claire, WI 54703
For product information call 1(866) 367-7782

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490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

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PROJECT NAME & ADDRESS

GEORGE HINES RESIDENCE

236 SW SWEETBRIAR DR, LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

SOLADECK SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-14