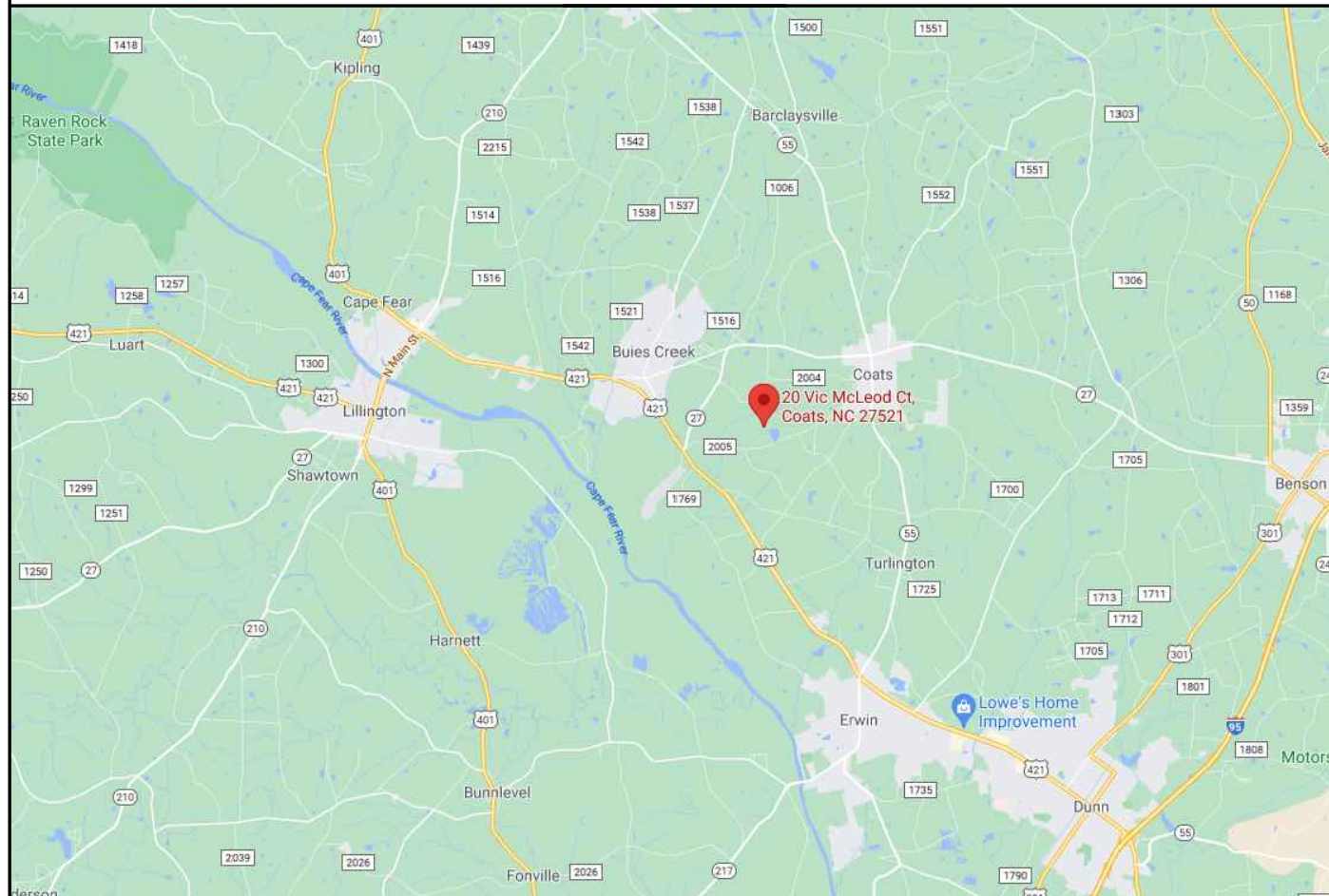
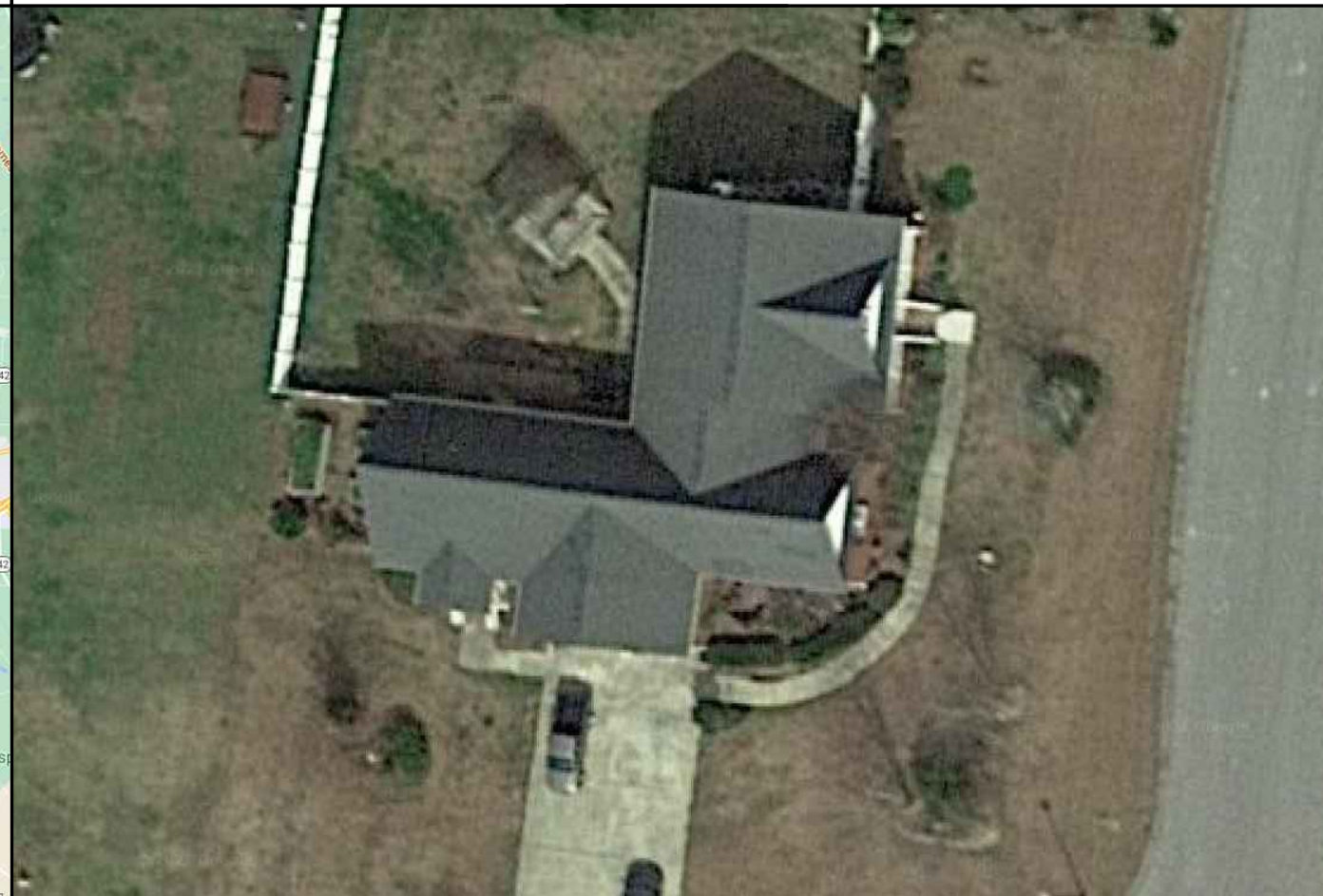


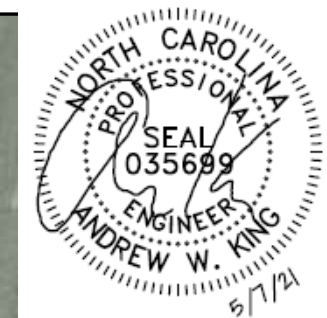
## VICINITY MAP



## PROPERTY MAP



ENGINEER:



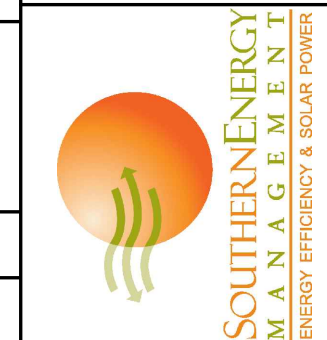
**MODEL ENERGY**

300 FAYETTEVILLE ST.  
#1430  
RALEIGH, NC 27602  
919-274-9905  
MODELENERGY.COM  
P-1194

JOB TITLE:

**NEW SOLAR PV SYSTEM**  
8.45 kW DC INPUT  
10.00 kW AC EXPORT  
**LINDA S JAMES**  
20 VIC MCLEOD CT  
COATS, NC 27521

CLIENT:



ISSUED FOR:	DATE:
CONSTRUCTION	05/06/21

PROJECT INFORMATION

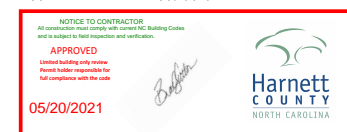
# PV1.1

## CONSTRUCTION NOTES

- ALL WORK AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES
- FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS, BEST PRACTICES, AND SPECIFICATIONS
- WIRES SHALL BE RATED AND LABELED "SUNLIGHT RESISTANT" WHERE EXPOSED TO AMBIENT CONDITIONS
- THE PHOTOVOLTAIC SYSTEM SHALL NOT EXCEED 600 VOLTS OR 800 AMPS
- EACH ELECTRICAL APPLIANCE SHALL BE PROVIDED WITH A NAMEPLATE GIVING THE IDENTIFYING NAME AND THE RATING IN VOLTS AND AMPERES, OR VOLTS AND WATTS. IF THE APPLIANCE IS TO BE USED ON A SPECIFIC FREQUENCY OR FREQUENCIES, IT SHALL BE SO MARKED. WHERE MOTOR OVERLOAD PROTECTION EXTERNAL TO THE APPLIANCES IS REQUIRED, THE APPLIANCE SHALL BE SO MARKED
- WHERE APPLICABLE, GROUNDING ELECTRODE CONDUCTOR TO BE CONTINUOUS. GROUNDING CRIMPS TO BE IRREVERSIBLE
- GROUNDING DC PHOTOVOLTAIC ARRAYS SHALL BE PROVIDED WITH DC GROUND-FAULT PROTECTION THAT MEETS THE REQUIREMENTS OF NEC SECTION 690.5. UNGROUNDING DC PHOTOVOLTAIC ARRAYS SHALL COMPLY WITH NEC SECTION 690.35
- IN ONE- AND TWO-FAMILY DWELLINGS, LIVE PARTS IN PHOTOVOLTAIC SOURCE CIRCUITS AND PHOTOVOLTAIC OUTPUT CIRCUITS OVER 150 VOLTS TO GROUND, SHALL ONLY BE ACCESSIBLE TO QUALIFIED PERSONS WHILE ENERGIZED.
- PHOTOVOLTAIC SYSTEMS SHALL BE PERMANENTLY MARKED AT VARIOUS EQUIPMENT LOCATIONS TO IDENTIFY THAT A PHOTOVOLTAIC SYSTEM IS INSTALLED AND THAT VARIOUS DANGERS ARE PRESENT.
- EACH PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS SHALL BE PERMANENTLY MARKED TO IDENTIFY IT AS A PHOTOVOLTAIC SYSTEM DISCONNECT
- WHERE ALL TERMINALS OF A DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION, A WARNING SIGN SHALL BE MOUNTED ON OR ADJACENT TO THE DISCONNECT
- A PERMANENT LABEL FOR THE DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE SHALL BE PROVIDED BY THE INSTALLER AT THE DC DISCONNECT MEANS
- A PERMANENT PLAQUE OR DIRECTORY, DENOTING ALL ELECTRIC POWER SOURCES SERVING THE PREMISES, SHALL BE INSTALLED AT EACH SERVICE EQUIPMENT LOCATION AND AT LOCATIONS OF ALL POWER PRODUCTION SOURCES.
- A PERMANENT PLAQUE OR DIRECTORY SHALL BE PROVIDED DENOTING THE LOCATIONS OF THE SERVICE DISCONNECT MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECT MEANS IF THEY ARE NOT LOCATED AT THE SAME LOCATION.
- ALL MODULE GROUND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC SECTION 690.4 (C)

## ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
DC	DIRECT CURRENT
EGC	EQUIPMENT GROUNDING CONDUCTOR
EMT	ELECTRICAL METAL TUBING
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND
I	CURRENT
IMP	CURRENT AT MAXIMUM POWER
ISC	SHORT-CIRCUIT CURRENT
KVA	KILOVOLT AMPERE
KW	KILOWATT
MAX	MAXIMUM
MIN	MINIMUM
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUG ONLY
NOM	NOMINAL
NTS	NOT TO SCALE
PNOM	NOMINAL POWER
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
SN	SOLAR NOON
STC	STANDARD TEST CONDITIONS
TYP	TYPICAL
V	VOLT
VMP	VOLTAGE AT MAXIMUM POWER
Voc	OPEN-CIRCUIT VOLTAGE
W	WATT



## CODE REFERENCES

2017 NATIONAL ELECTRIC CODE  
2018 NORTH CAROLINA BUILDING CODE  
2018 NORTH CAROLINA RESIDENTIAL CODE  
2018 NORTH CAROLINA FIRE CODE

## SHEET INDEX

PV1.1 - PROJECT INFORMATION  
PV2.1 - SITE INFORMATION  
PV3.1 - STRUCTURAL INFORMATION  
PV4.1 - ELECTRICAL INFORMATION  
PV5.1 - EQUIPMENT LABELS

## SITE CONDITIONS

ASCE 7-10 WIND SPEED - 118 MPH  
EXPOSURE CATEGORY - B  
RISK CATEGORY - II

## LEGEND

	DISCONNECT SWITCH
	FUSE
	CIRCUIT BREAKER
	EQUIP. GROUND

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ENGINEER:



MODEL ENERGY

300 FAYETTEVILLE ST.  
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919-274-9905  
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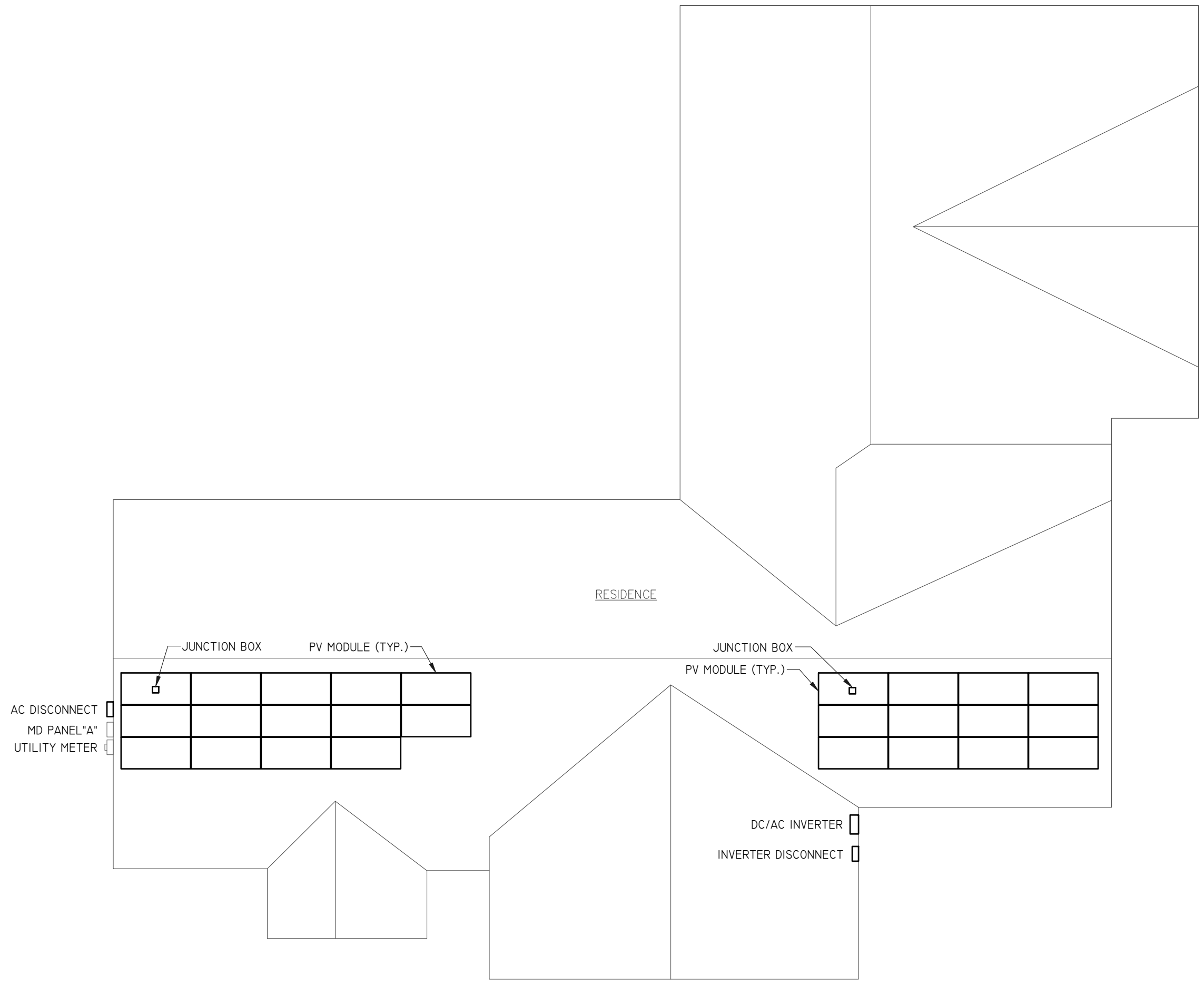
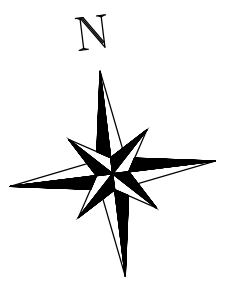
CLIENT:



ISSUED FOR: CONSTRUCTION      DATE: 05/06/21

SITE INFORMATION

**PV2.1**



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ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	SNAPNRACK
MODEL	RL UNIVERSAL
MATERIAL	ALUMINUM
FASTENER	
MAKE	GENERIC
MODEL	LAG BOLT
MATERIAL	304 SS
SIZE	5/16"-18 X 3/4"
GENERAL	
WEIGHT	1 LBS
FASTENERS PER MOUNT	1 PER MOUNT
MAX. PULL-OUT FORCE	800 LBS.
SAFETY FACTOR	2
DESIGN PULL-OUT FORCE	400 LBS.

- LAG BOLT EMBEDDED WITH 2.5" OF THREAD IN WOOD RAFTER OR TRUSSES MEMBER


ARRAY SUMMARY	
# MODULES	26
# ROOF MOUNTS	61
RAIL LENGTH	N/A
ARRAY AREA	468 SQFT.
ARRAY WEIGHT	1101 LBS.
AZIMUTH @ SN	187°
TILT ANGLE	34°

PV MODULES	
MAKE	REC
MODEL	REC325NP
WIDTH	39.3"
LENGTH	66.0"
THICKNESS	1.2"
WEIGHT	40.0 LBS

ROOF SUMMARY	
STRUCTURE:	
TYPE	RAFTERS
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16" o.c.
EFF. SPAN	7'-6"
PITCH	10 / 12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	7/16"
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	ARCH SHINGLE
MATERIAL	ASPHALT
WEIGHT	2.3 LBS./SQFT.

**STATEMENT OF STRUCTURAL COMPLIANCE**

THE EXISTING ROOF STRUCTURE HAS BEEN DESIGNED TO SUPPORT THE ADDITIONAL LOADS OF THE PROPOSED PV SYSTEM. IN ADDITION, THE RACKING AND FASTENING SYSTEM SHALL BE CAPABLE OF SECURING THE SYSTEM TO THE STRUCTURE UNDER DESIGN CONDITIONS WHEN INSTALLED PROPERLY AND IN ACCORDANCE WITH THE RACKING AND FASTENING ARRANGEMENT DETAILED WITHIN THESE DRAWINGS.

SIGNED: 

NAME: ANDREW W. KING, PE


TITLE: PROFESSIONAL ENGINEER

**ROOF ZONES:**

ALL ZONES	MAX. RAIL OVERHANG = 12"
<input type="checkbox"/> ZONE 1	MAX. FASTENER SPAN ZONE 1 = 48"
<input checked="" type="checkbox"/> ZONE 2	MAX. FASTENER SPAN ZONE 2 = 48"
<input checked="" type="checkbox"/> ZONE 3	MAX. FASTENER SPAN ZONE 3 = 16"

ROOF LOADING	
GROUND SNOW LOAD:	15 LBS./SQFT.
LIVE LOAD:	20 LBS./SQFT.
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.3 LBS./SQFT.
TOTAL	6.2 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-24.6 LBS./SQFT.
UPLIFT ZONE 2	-29.0 LBS./SQFT.
UPLIFT ZONE 3	-29.0 LBS./SQFT.
DOWNWARD	23.0 LBS./SQFT.
FASTENER LOAD:	
UPLIFT ZONE 1	-239 LBS.
UPLIFT ZONE 2	-282 LBS.
UPLIFT ZONE 3	-94 LBS.
DOWNWARD	224 LBS.

ENGINEER:



**MODEL ENERGY**


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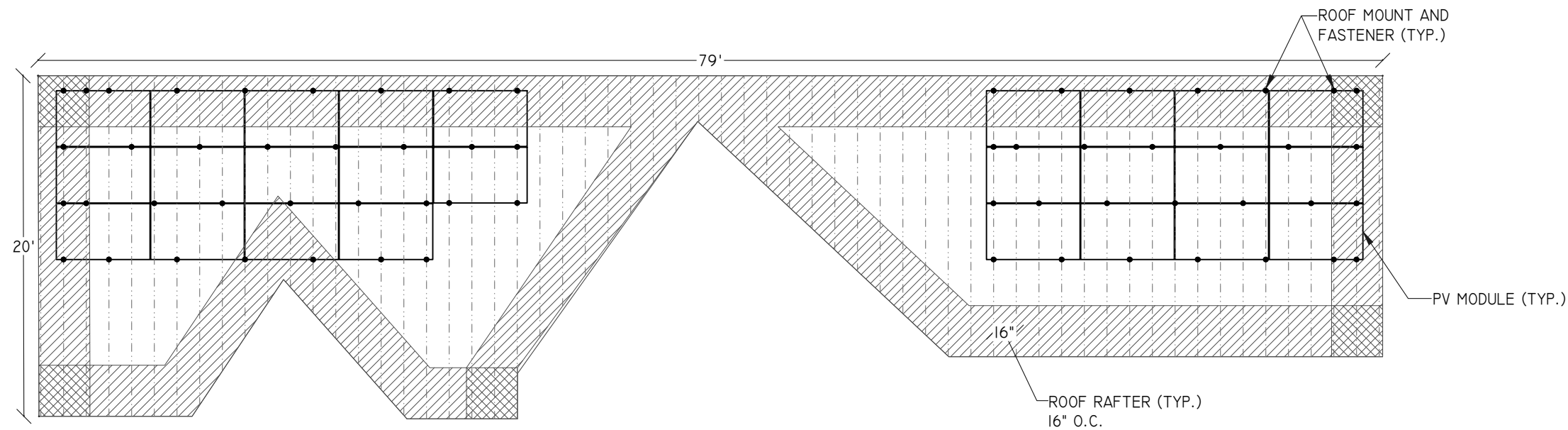


**SOUTHERN ENERGY MANAGEMENT**  
ENERGY EFFICIENCY & SOLAR POWER

ISSUED FOR:	DATE:
CONSTRUCTION	05/06/21

STRUCTURAL INFORMATION

**PV3.1**



1 MODULE, RACKING, AND FASTENER LAYOUT – ROOF PLANAR VIEW

SCALE: 1/8" = 1'-0"

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PV MODULES	
MAKE	REC
MODEL	REC325NP
TECHNOLOGY	MONO-CRYST.
NOM. POWER (P <sub>nom</sub> )	325 WATTS
NOM. VOLT. (V <sub>mp</sub> )	34.4 VOLTS
O.C. VOLT. (V <sub>oc</sub> )	40.7 VOLTS
MAX. SYS. VOLT.	1000 V (UL)
TEMP. COEF. (V <sub>tc</sub> )	-0.27 %/°C
NOM. CURR. (I <sub>mp</sub> )	9.46 AMPS
S.C. CURR. (I <sub>sc</sub> )	10.28 AMPS
MAX. SERIES FUSE	25 AMPS

DC/AC INVERTER	
MAKE	SOLAREEDGE
MODEL	SEI0000H-US
TECHNOLOGY	TRANS-LESS
DC INPUT:	
MAX. POWER	15500 WATTS
MAX. VOLT	480 VOLTS
NOM. VOLT.	400 VOLTS
MAX. CURRENT	27 AMPS
MAX. SCC	45 AMPS
STRINGS INPUTS	3 STRINGS
AC OUTPUT:	
RATED POWER	10000 WATTS
MAX. POWER	10000 WATTS
NOM. VOLT.	240 VOLTS
MAX. CURR.	42 AMPS
GFP (Y/N)	YES
RPP (Y/N)	YES
GFCI (Y/N)	YES
AFCI (Y/N)	YES
DC DISC. (Y/N)	YES
RAPID SHUTDOWN	AUTOMATIC
FUSE RATING	15 AMPS
PROTECT. RATING	NEMA 4X

CONDUCTOR SCHEDULE													
TAG	CURRENT CARRYING CONDUCTORS				GROUNDING CONDUCTORS				CONDUIT/RACEWAY			NOTES	
	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL		LOCATION
C1	2	10 AWG	COPPER	PV WIRE	1	6 AWG	COPPER	PV WIRE	-	-	-	FREE AIR	1
C2.1	2	10 AWG	COPPER	THWN-2	1	10 AWG	COPPER	THWN-2	1	1/2"	FMC/EMT/MC	EXT/INT	2,4
C2.2	4	10 AWG	COPPER	THWN-2	1	10 AWG	COPPER	THWN-2	1	1/2"	FMC/EMT/MC	EXT/INT	2,4
C3	3	6 AWG	COPPER	THWN	1	10 AWG	COPPER	THWN	1	3/4"	NOTE 5	INT/EXT	2,4,5
C4	3	6 AWG	COPPER	THWN	-	-	-	-	1	3/4"	NOTE 5	EXTERIOR	2,4,5,6
C5	3	14 AWG	COPPER	THWN	1	14 AWG	COPPER	THWN	1	1/2"	NOTE 5	INT/EXT	2,4,5
XC	-	-	-	-	-	-	-	-	-	-	-	-	3

NOTES:

1. MANUFACTURER PROVIDED, UL LISTED WIRING HARNESS FOR USE ON EXPOSED ROOFS
2. CONDUIT SIZE SHOWN IS CODE MINIMUM. LARGER SIZES ARE ALLOWED.
3. EXISTING CONDUCTORS, FIELD VERIFY
4. EQUIPMENT TERMINAL RATING SHALL BE A MINIMUM OF 75°C AT BOTH END OF CONDUCTOR
5. PVC, EMT, ROMEX, LFNMC & FMC ARE ACCEPTABLE WHEN USED IN ACCORDANCE WITH ARTICLES 330, 334, 348, 350, 352, 356, & 358 OF THE 2017 NEC
6. SERVICE CONDUCTORS SHALL NOT BE LONGER THAN 5' AND SHALL TERMINATE AT THE FIRST POINT OF DISCONNECT.

MODULE OPTIMIZER	
MAKE	SOLAREEDGE
MODEL	P370
DC INPUT:	
RATED POWER	370 WATTS
VOLT. RANGE	8-60
MAX. SCC	11.0 AMPS
MAX. DC INPUT CURRENT	13.75 AMPS
DC OUTPUT:	
MAX. CURRENT	15 AMPS
MAX. VOLT.	60 VOLTS
MAX. SYSTEM VOLT.	1000 VOLTS
MIN. STRING	8 OPTIMIZERS
MAX. STRING	25 OPTIMIZERS
MAX. POWER	
INVERTERS: SE3000H-SE6000H	5700 WATTS
INVERTERS: SE7600H-SE11400H	6000 WATTS

JUNCTION BOX	
MAKE	SOLADECK
MODEL	0783-3R
PRO. RATING	NEMA 3R
VOLT. RATING	600 VOLTS
AMP RATING	120 AMPS
UL LISTING	UL 50

MONITORING SYSTEM	
MAKE	SOLAREEDGE
MODEL	SEI000-ZBGW-K5-NA
METER	SE-MTR240-2-200-SI
LINE TO LINE VOLTAGE	211-254 VAC
WIRING	L1/L2/N/PE
POWER CONSUMPTION	1.2W
COMM. INTERFACE	RS485
RATED RMS CURRENT	200 AMPS
SAFETY	UL1741
ENCLOSURE TYPE	ABS, ABS/PC
PROTECTION RATING	UL94V-0, IEC FV-0

AC DISCONNECT	
MAKE	GENERIC
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
AMP RATING	60 AMPS
UL LIST. (Y/N)	YES
FUSED (Y/N)	YES
FUSE RATING	60 AMPS

NOTES:

- LOAD-BREAK RATED
- VISIBLE OPEN
- LOCKABLE IN OPEN POSITION
- INSTALL ADJACENT TO METER
- DISCONNECT TO BE READILY ACCESSIBLE TO UTILITY COMPANY PERSONNEL AT ALL TIMES

MD PANEL "A" (EXISTING)	
MAKE	N/A
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
BUS RATING	200 AMPS
UL LIST. (Y/N)	YES
MAIN BREAKER (Y/N)	YES
BREAKER RATING	200 AMPS

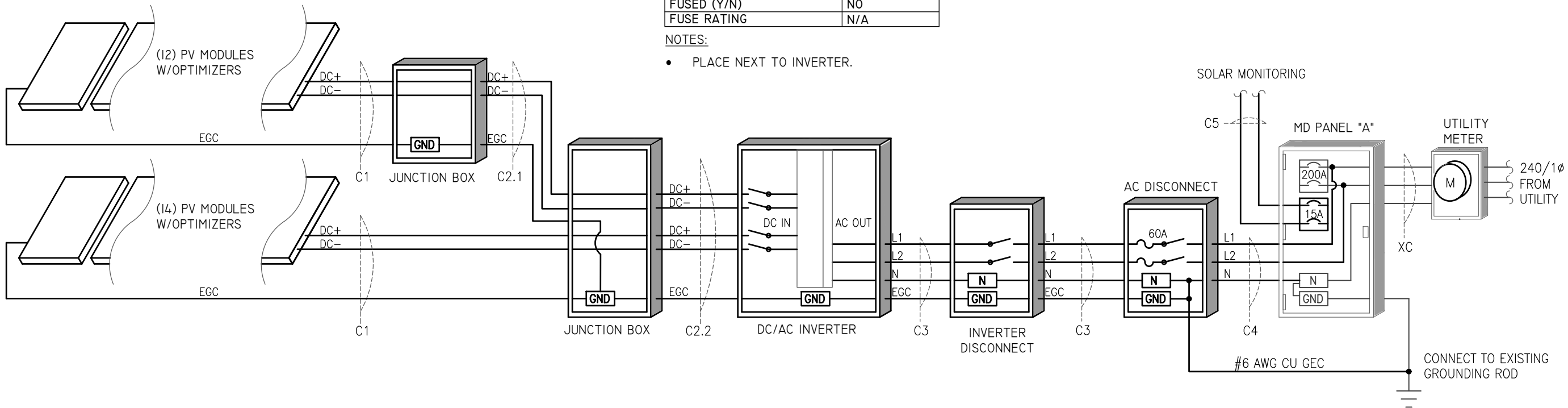
NOTES:

- BACK-FEED SOLAR OUTPUT VIA SUPPLY SIDE TAP IN THE MD PANEL "A".
- PROVIDE 15A CIRCUIT WITH OUTLET FOR SOLAR MONITORING EQUIPMENT.

INVERTER DISCONNECT	
MAKE	GENERIC
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
AMP RATING	60 AMPS
UL LIST. (Y/N)	YES
FUSED (Y/N)	NO
FUSE RATING	N/A

NOTES:

- PLACE NEXT TO INVERTER.



ENGINEER:



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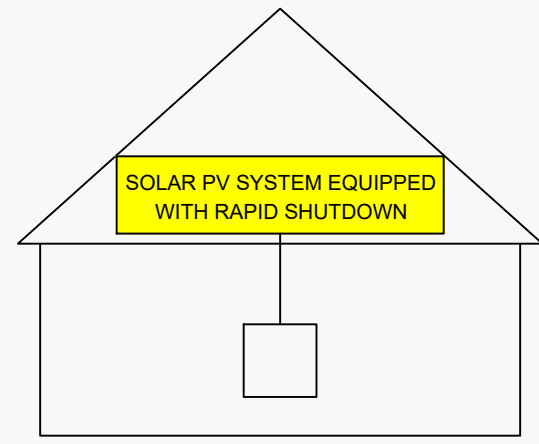
ELECTRICAL INFORMATION

PV4.1

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# 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



NEC 690.56 (C)(1)(a)

PLACE WITHIN 3FT OF SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATIONS OF RAPID SHUTDOWN SWITCHES

# WARNING: PHOTOVOLTAIC POWER SOURCE

NEC 690.31 (G)(3)&(4)

PLACE ON ALL JUNCTION BOXES, EXPOSED RACEWAYS, AND OTHER WIRING METHODS EVERY 10' AND ON EVERY SECTION SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS.

# RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

NEC 690.56 (C)(3)

PLACE ON RAPID SHUTDOWN SWITCH OR EQUIPMENT WITH INTEGRATED RAPID SHUTDOWN \*REFLECTIVE\*

# PV SYSTEM DISCONNECT

NEC 690.13 (B)

PLACE ON PV SYSTEM DISCONNECTING MEANS.

# WARNING

DUAL POWER SUPPLY SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

NEC 705.12 (B)(3)

PLACE ON ALL EQUIPMENT THAT IS SUPPLIED BY BOTH POWER SOURCES

# WARNING

ELECTRIC SHOCK HAZARD TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

NEC 690.13 (B)

PLACE ON PV SYSTEM DISCONNECTING MEANS.

# WARNING

POWER SOURCE OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

NEC 705.12 (B)(2)(3)(b)

PLACE ADJACENT TO BACK-FED BREAKER

DIRECT CURRENT

PHOTOVOLTAIC POWER SOURCE

MAXIMUM VOLTAGE 600 VDC

MAX CIR. CURRENT 30.0 AMPS

NEC 690.53

PLACE ON ALL DC DISCONNECTING MEANS

PHOTOVOLTAIC POWER SOURCE

OPERATING AC VOLT. 240 VAC

MAXIMUM OPERATING AC OUTPUT CURRENT 42.0 AMPS

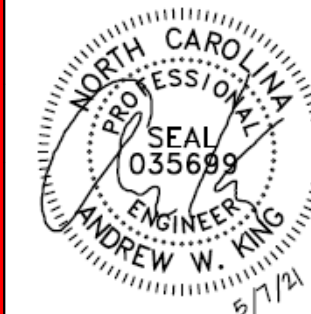
NEC 690.54

PLACE ON INTERCONNECTION DISCONNECTING MEANS

### EQUIPMENT LABEL NOTES

1. LABELS SHOWN ARE THEIR ACTUAL REQUIRED SIZE.
2. LABEL MATERIAL SHALL BE SUITABLE FOR THE EQUIPMENT ENVIRONMENT.
3. CONDUIT SHALL BE MARKED WITH REQUIRED LABEL EVERY 10 FEET.

ENGINEER:



MODEL ENERGY

300 FAYETTEVILLE ST. #1430 RALEIGH, NC 27602 919-274-9905 MODELENERGY.COM P-1194

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EQUIPMENT LABELS

# PV5.1

SOLAR'S MOST TRUSTED



# REC N-PEAK SERIES

PREMIUM MONO N-TYPE  
SOLAR PANELS WITH  
SUPERIOR PERFORMANCE



MONO N-TYPE: THE  
MOST EFFICIENT C-SI  
TECHNOLOGY



NO LIGHT INDUCED  
DEGRADATION



SUPER-STRONG  
FRAME UP TO 7000 PA  
SNOW LOAD



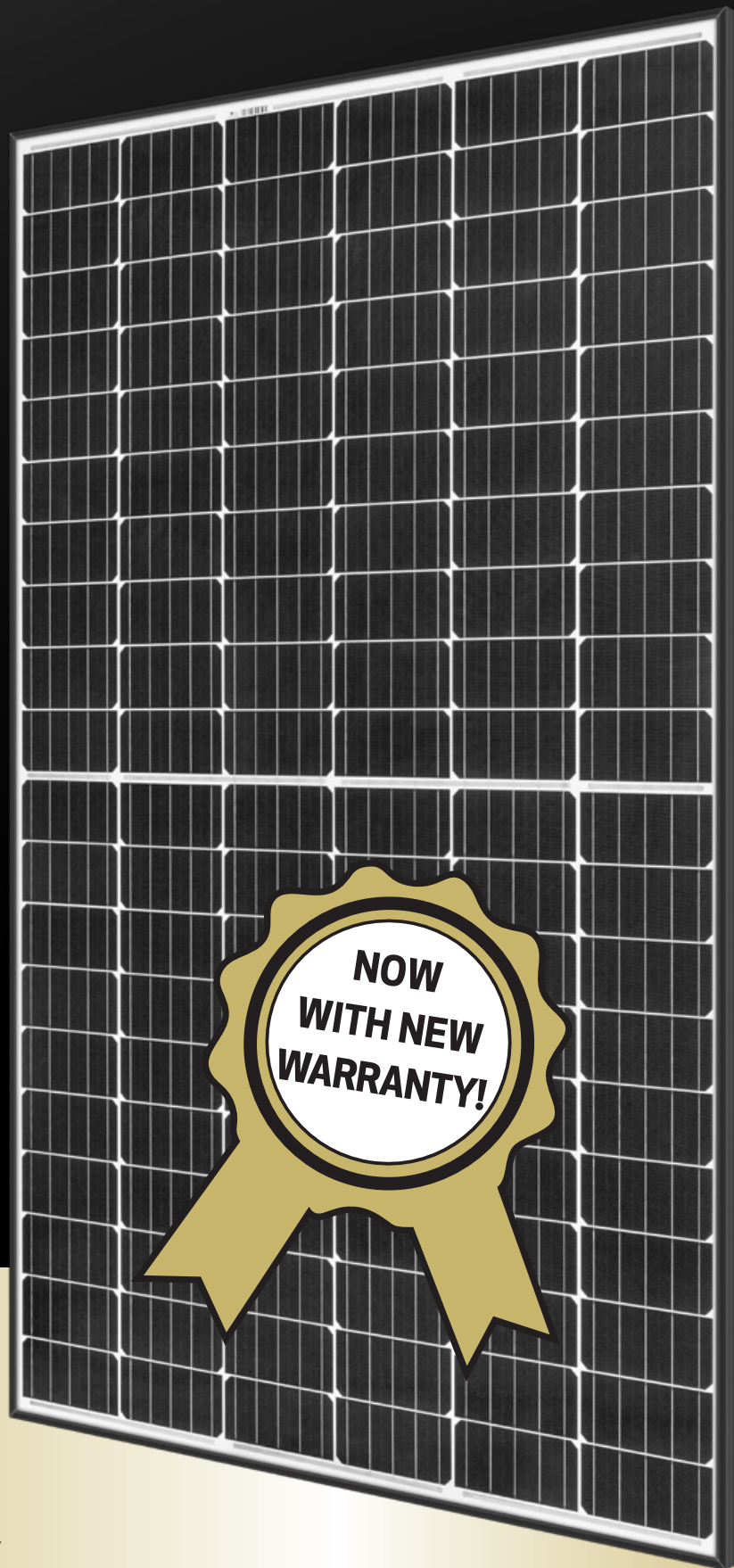
FLEXIBLE  
INSTALLATION  
OPTIONS



IMPROVED  
PERFORMANCE IN  
SHADED CONDITIONS



GUARANTEED HIGH  
POWER OVER LIFETIME



330 W<sub>P</sub>

POWER

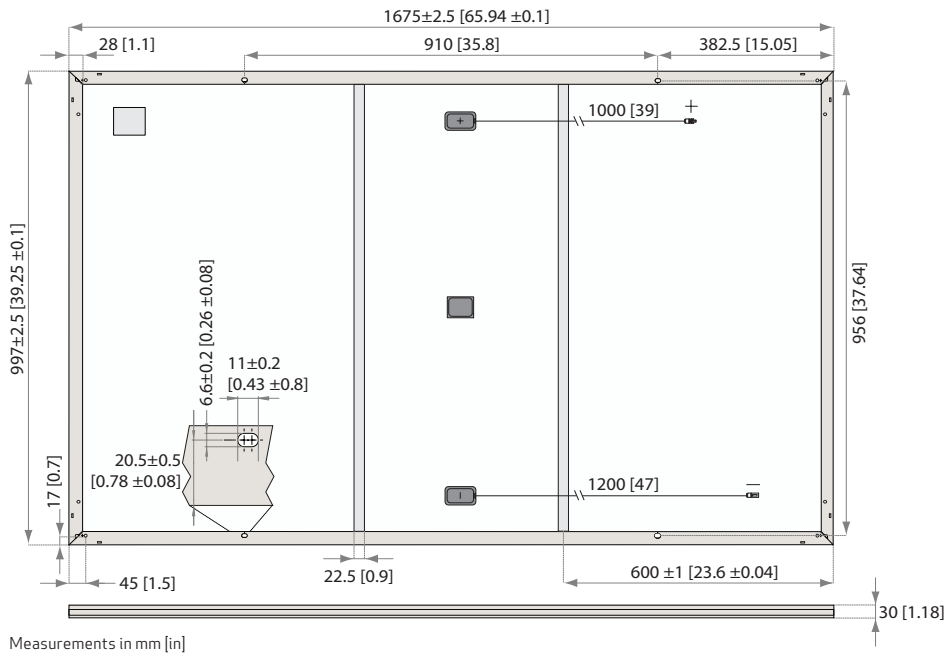
20

YEAR PRODUCT  
WARRANTY

0.5%

ANNUAL DEGRADATION OVER  
25-YEAR POWER WARRANTY

# REC N-PEAK SERIES



## ELECTRICAL DATA @ STC

Product code\*: RECxxxNP

	310	315	320	325	330
Nominal Power - $P_{MPP}$ (Wp)	310	315	320	325	330
Watt Class Sorting - (W)	-0/+5	-0/+5	-0/+5	-0/+5	-0/+5
Nominal Power Voltage - $V_{MPP}$ (V)	33.6	33.9	34.2	34.4	34.6
Nominal Power Current - $I_{MPP}$ (A)	9.24	9.31	9.37	9.46	9.55
Open Circuit Voltage - $V_{OC}$ (V)	40.2	40.5	40.8	41.0	41.3
Short Circuit Current - $I_{SC}$ (A)	10.01	10.09	10.18	10.27	10.36
Panel Efficiency (%)	18.6	18.9	19.2	19.5	19.8

Values at standard test conditions (STC: air mass AM 1.5, irradiance 1000 W/m<sup>2</sup>, temperature 25°C), based on a production spread with a tolerance of  $V_{OC}$  &  $I_{SC}$  ±3% within one watt class. \* Where xxx indicates the nominal power class ( $P_{MPP}$ ) at STC above.

## ELECTRICAL DATA @ NOCT

Product code\*: RECxxxNP

	234	238	241	245	249
Nominal Power - $P_{MPP}$ (Wp)	234	238	241	245	249
Nominal Power Voltage - $V_{MPP}$ (V)	31.1	31.4	31.7	31.9	32.1
Nominal Power Current - $I_{MPP}$ (A)	7.51	7.56	7.62	7.69	7.76
Open Circuit Voltage - $V_{OC}$ (V)	37.3	37.5	37.8	38.0	38.3
Short Circuit Current - $I_{SC}$ (A)	8.01	8.07	8.14	8.22	8.29

Nominal operating cell temperature (NOCT: air mass AM 1.5, irradiance 800 W/m<sup>2</sup>, temperature 20°C, windspeed 1 m/s).

\* Where xxx indicates the nominal power class ( $P_{MPP}$ ) at STC above.

## CERTIFICATIONS



UL 1703 (Fire type 2), IEC 61215, IEC 61730  
IEC 62804 (PID), IEC 61701 (Salt Mist), IEC 62716 (Ammonia),  
ISO 9001: 2015, ISO 14001: 2004, OHSAS 18001: 2007

## WARRANTY

20 year product warranty  
25 year linear power output warranty, maximum  
degression in performance of 0.5% p.a., giving  
86% at end of year 25.

See warranty conditions for further details.

## GENERAL DATA

Cell type:	120 half-cut n-type mono c-Si cells 6 strings of 20 cells in series
Glass:	0.13" (3.2 mm) solar glass with anti-reflection surface treatment
Backsheet:	Highly resistant polymeric construction
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, IP67 rated in accordance with IEC 62790
Cable:	12 AWG (4 mm <sup>2</sup> ) PV wire, 39 + 47" (1 m + 1.2 m) in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/KST4, 12 AWG (4 mm <sup>2</sup> ) in accordance with IEC 62852 IP68 only when connected
Origin:	Made in Singapore

## MECHANICAL DATA

Dimensions:	65.9 x 39.25 x 1.1" (1675 x 997 x 30 mm)
Area:	17.98 ft <sup>2</sup> (1.67 m <sup>2</sup> )
Weight:	39.7 lbs (18 kg)

## MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V
Design load (+): snow	4666 Pa (97.5 lbs/ft <sup>2</sup> )*
Maximum test load (+):	7000 Pa (146 lbs/ft <sup>2</sup> )*
Design load (-): wind	1600 Pa (33.4 lbs/ft <sup>2</sup> )*
Maximum test load (-):	2400 Pa (50 lbs/ft <sup>2</sup> )*
Max series fuse rating:	25 A
Max reverse current:	25 A

\* Calculated using a safety factor of 1.5  
\* See installation manual for mounting instructions

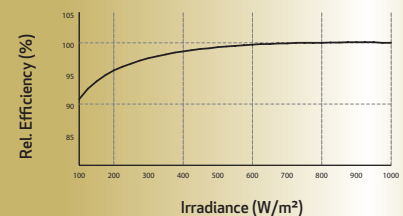
## TEMPERATURE RATINGS \*

Nominal Operating Cell Temperature:	44°C (±2°C)
Temperature coefficient of $P_{MPP}$ :	-0.35 %/°C
Temperature coefficient of $V_{OC}$ :	-0.27 %/°C
Temperature coefficient of $I_{SC}$ :	0.04 %/°C

\*The temperature coefficients stated are linear values

## LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC.



Founded in Norway in 1996, REC is a leading vertically integrated solar energy company. Through integrated manufacturing from silicon to wafers, cells, high-quality panels and extending to solar solutions, REC provides the world with a reliable source of clean energy. REC's renowned product quality is supported by the lowest warranty claims rate in the industry. REC is a Bluostar Elkem company with headquarters in Norway and operational headquarters in Singapore. REC employs more than 2,000 people worldwide, producing 1.5 GW of solar panels annually.



www.recgroup.com

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# Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / P505

POWER OPTIMIZER



## PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety



# / Power Optimizer

## For North America

P320 / P340 / P370 / P400 / P405 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P405 (for thin film modules)	P505 (for higher current modules)	
<b>INPUT</b>							
Rated Input DC Power <sup>(1)</sup>	320	340	370	400	405	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	125 <sup>(2)</sup>	83 <sup>(2)</sup>	Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11			10.1		14	Adc
Maximum DC Input Current	13.75			12.63		17.5	Adc
Maximum Efficiency	99.5						%
Weighted Efficiency	98.8					98.6	%
Overvoltage Category	II						
<b>OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)</b>							
Maximum Output Current	15						Adc
Maximum Output Voltage	60			85			Vdc
<b>OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)</b>							
Safety Output Voltage per Power Optimizer	1 ± 0.1						Vdc
<b>STANDARD COMPLIANCE</b>							
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3						
Safety	IEC62109-1 (class II safety), UL1741						
RoHS	Yes						
<b>INSTALLATION SPECIFICATIONS</b>							
Maximum Allowed System Voltage	1000						Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters						
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1			129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	630 / 1.4			750 / 1.7	845 / 1.9	1064 / 2.3	gr / lb
Input Connector	MC4 <sup>(3)</sup>						
Output Wire Type / Connector	Double Insulated; MC4						
Output Wire Length	0.95 / 3.0		1.2 / 3.9				m / ft
Input Wire Length	0.16 / 0.52						m / ft
Operating Temperature Range	-40 - +85 / -40 - +185						°C / °F
Protection Rating	IP68 / NEMA6P						
Relative Humidity	0 - 100						%

<sup>(1)</sup> Rated STC power of the module. Module of up to +5% power tolerance allowed

<sup>(2)</sup> NEC 2017 requires max input voltage be not more than 80V

<sup>(3)</sup> For other connector types please contact SolarEdge

PV System Design Using a SolarEdge Inverter <sup>(4)(5)</sup>	Single Phase HD-Wave	Single phase	Three Phase 208V	Three Phase 480V	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400 P405 / P505	8	10	18	
Maximum String Length (Power Optimizers)		6	8	14	
Maximum String Length (Power Optimizers)		25	25	50 <sup>(6)</sup>	
Maximum Power per String	5700 (6000 with SE7600-US - SE11400-US)	5250	6000 <sup>(7)</sup>	12750 <sup>(8)</sup>	W
Parallel Strings of Different Lengths or Orientations	Yes				

<sup>(4)</sup> For detailed string sizing information refer to: [http://www.solaredge.com/sites/default/files/string\\_sizing\\_na.pdf](http://www.solaredge.com/sites/default/files/string_sizing_na.pdf)

<sup>(5)</sup> It is not allowed to mix P405/P505 with P320/P340/P370/P400 in one string

<sup>(6)</sup> A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement

<sup>(7)</sup> For SE14.4KUS/SE43.2KUS: It is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (3 strings per unit for SE43.2KUS) and when the maximum power difference between the strings is up to 1,000W

<sup>(8)</sup> For SE30KUS/SE33.3KUS/SE66.6KUS/SE100KUS: It is allowed to install up to 15,000W per string when 3 strings are connected to the inverter (3 strings per unit for SE66.6KUS/SE100KUS) and when the maximum power difference between the strings is up to 2,000W

# Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US /  
SE7600H-US / SE10000H-US / SE11400H-US



## Optimized installation with HD-Wave technology

- / Specifically designed to work with power optimizers
- / Record-breaking efficiency
- / Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- / Fixed voltage inverter for longer strings
- / Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- / UL1741 SA certified, for CPUC Rule 21 grid compliance
- / Extremely small
- / Built-in module-level monitoring
- / Outdoor and indoor installation
- / Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

# / Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/  
SE7600H-US / SE10000H-US / SE11400H-US

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXXBXX4							
<b>OUTPUT</b>								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5 <sup>(1)</sup>							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, adjustable -0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
<b>INPUT</b>								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V <sup>(2)</sup>	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V <sup>(2)</sup>	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600k $\Omega$ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

<sup>(1)</sup> For other regional settings please contact SolarEdge support

<sup>(2)</sup> A higher current source may be used; the inverter will limit its input current to the values stated

# / Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/  
SE7600H-US / SE10000H-US / SE11400H-US

SE3000H-US SE3800H-US SE5000H-US SE6000H-US SE7600H-US SE10000H-US SE11400H-US

## ADDITIONAL FEATURES

Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)
Revenue Grade Data, ANSI C12.20	Optional <sup>(3)</sup>
Inverter Commissioning	with the SetApp mobile application using built-in Wi-Fi station for local connection
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect

## STANDARD COMPLIANCE

Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)
Emissions	FCC Part 15 Class B

## INSTALLATION SPECIFICATIONS

AC Output Conduit Size / AWG Range	3/4" minimum / 14-6 AWG			3/4" minimum /14-4 AWG	
DC Input Conduit Size / # of Strings / AWG Range	3/4" minimum / 1-2 strings / 14-6 AWG			3/4" minimum / 1-3 strings / 14-6 AWG	
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174			21.3 x 14.6 x 7.3 / 540 x 370 x 185	in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6	lb / kg
Noise	< 25			<50	dBA
Cooling	Natural Convection				
Operating Temperature Range	-40 to +140 / -40 to +60 <sup>(4)</sup>				
Protection Rating	NEMA 4X (Inverter with Safety Switch)				

<sup>(3)</sup> Revenue grade inverter P/N: SExxxxH-US000BNC4

<sup>(4)</sup> 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>

DESCRIPTION:

**SNAPNRACK, MLPE FRAME ATTACHMENT KIT**

DRAWN BY:

mwatkins

REVISION:

**A**

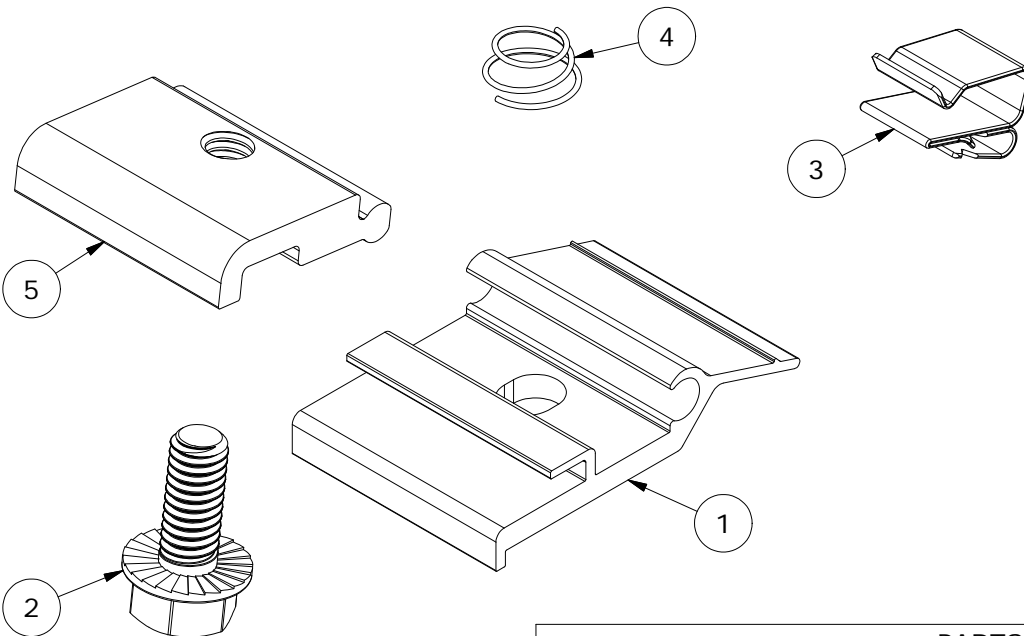
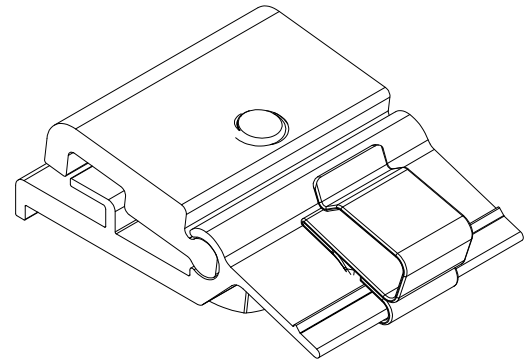
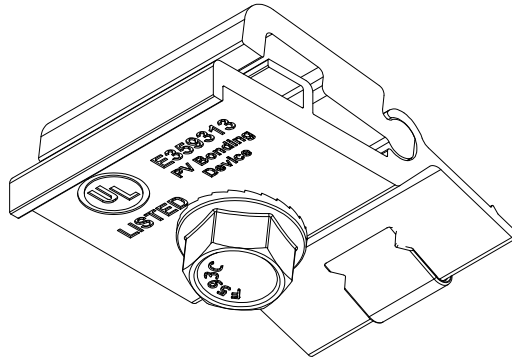


PART NUMBER(S):

242-02151

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PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	SNAPNRACK, MLPE FRAME ATTACHMENT BOTTOM PRC
2	1	BOLT, FLANGE, 5/16IN-18 X 3/4IN, CLEAR, SS
3	1	SNAPNRACK, SMART CLIP II
4	1	SNAPNRACK, COIL SPRING FOR MLPE FRAME ATTACHMENT
5	1	SNAPNRACK, MLPE FRAME ATTACHMENT TOP PRC

MATERIALS:

6000 SERIES ALUMINUM, STAINLESS STEEL

OPTIONS:

DESIGN LOAD (LBS):

N/A

ULTIMATE LOAD (LBS):

N/A

TORQUE SPECIFICATION:

10 LB-FT

CERTIFICATION:

UL 2703, FILE E359313

WEIGHT (LBS):

0.13

DESCRIPTION:  
**SNAPNRACK, MLPE FRAME ATTACHMENT KIT**

PART NUMBER(S):  
**242-02151**

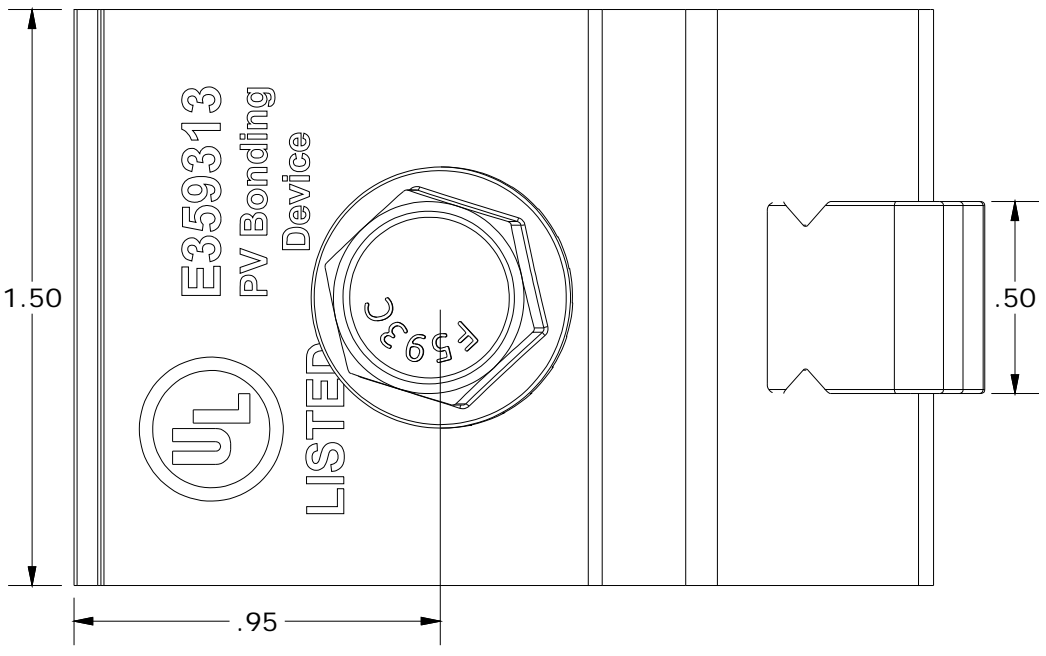
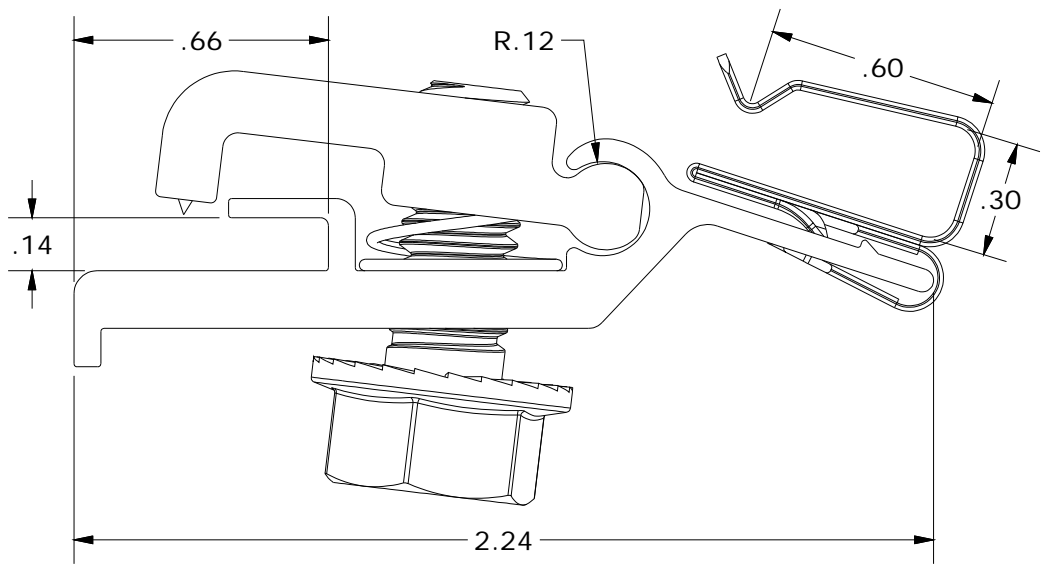
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DESCRIPTION:  
**SNAPNRACK, RL UNIVERSAL, ARRAY SKIRT**

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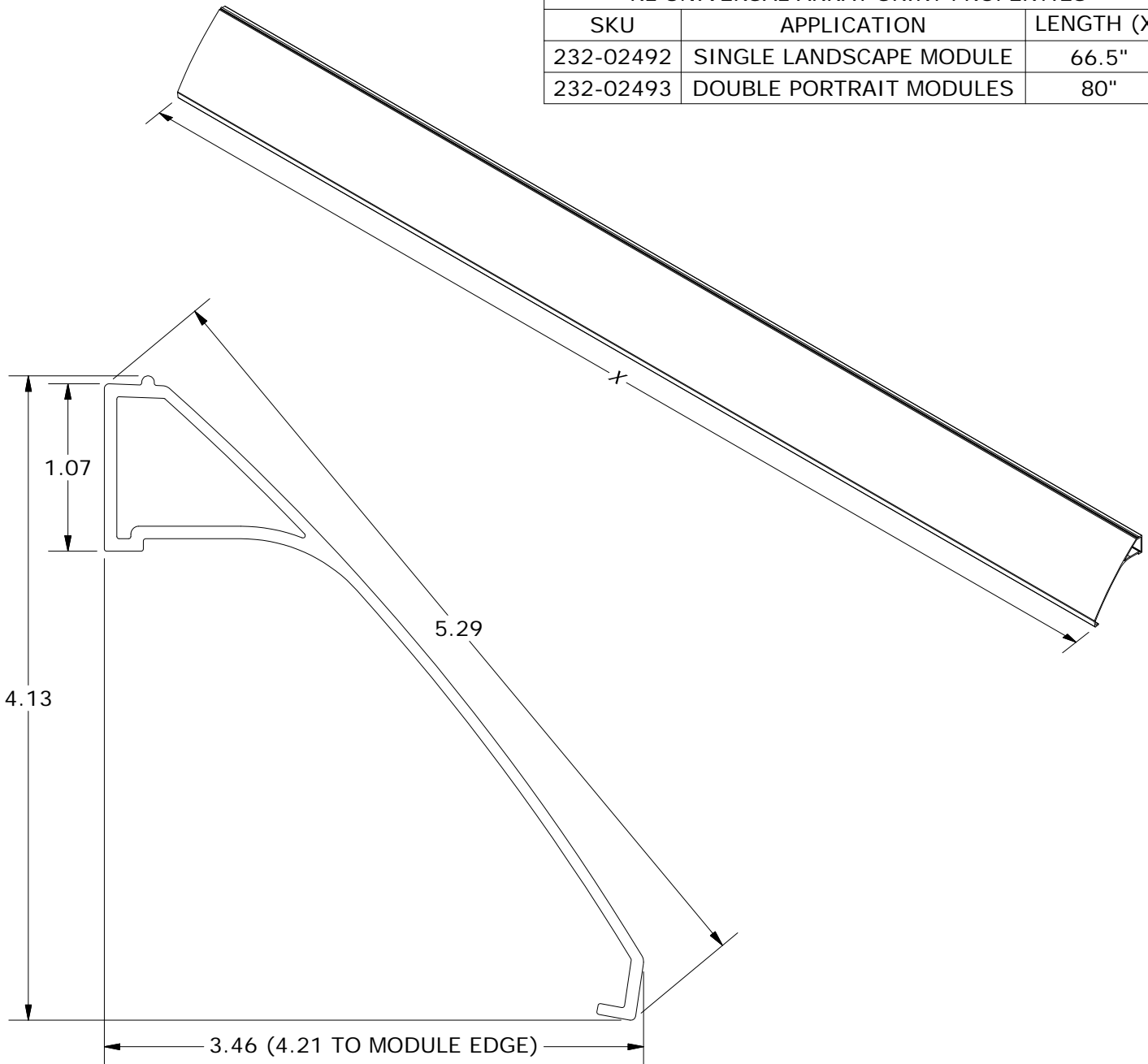


PART NUMBER(S):  
**232-02492, 232-02493**

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RL UNIVERSAL ARRAY SKIRT PROPERTIES		
SKU	APPLICATION	LENGTH (X)
232-02492	SINGLE LANDSCAPE MODULE	66.5"
232-02493	DOUBLE PORTRAIT MODULES	80"



ALL DIMENSIONS IN INCHES

MATERIALS:	6000 SERIES ALUMINUM	OPTIONS:
DESIGN LOAD (LBS):	N/A	BLACK ANODIZED
ULTIMATE LOAD (LBS):	N/A	
TORQUE SPECIFICATION:	N/A LB-FT	
CERTIFICATION:	UL 2703, FILE E359313	
WEIGHT (LBS):	3.94 - 4.74	

DESCRIPTION:  
**SNAPRACK, RL UNIVERSAL, LINK**

PART NUMBER(S):  
**242-02156**

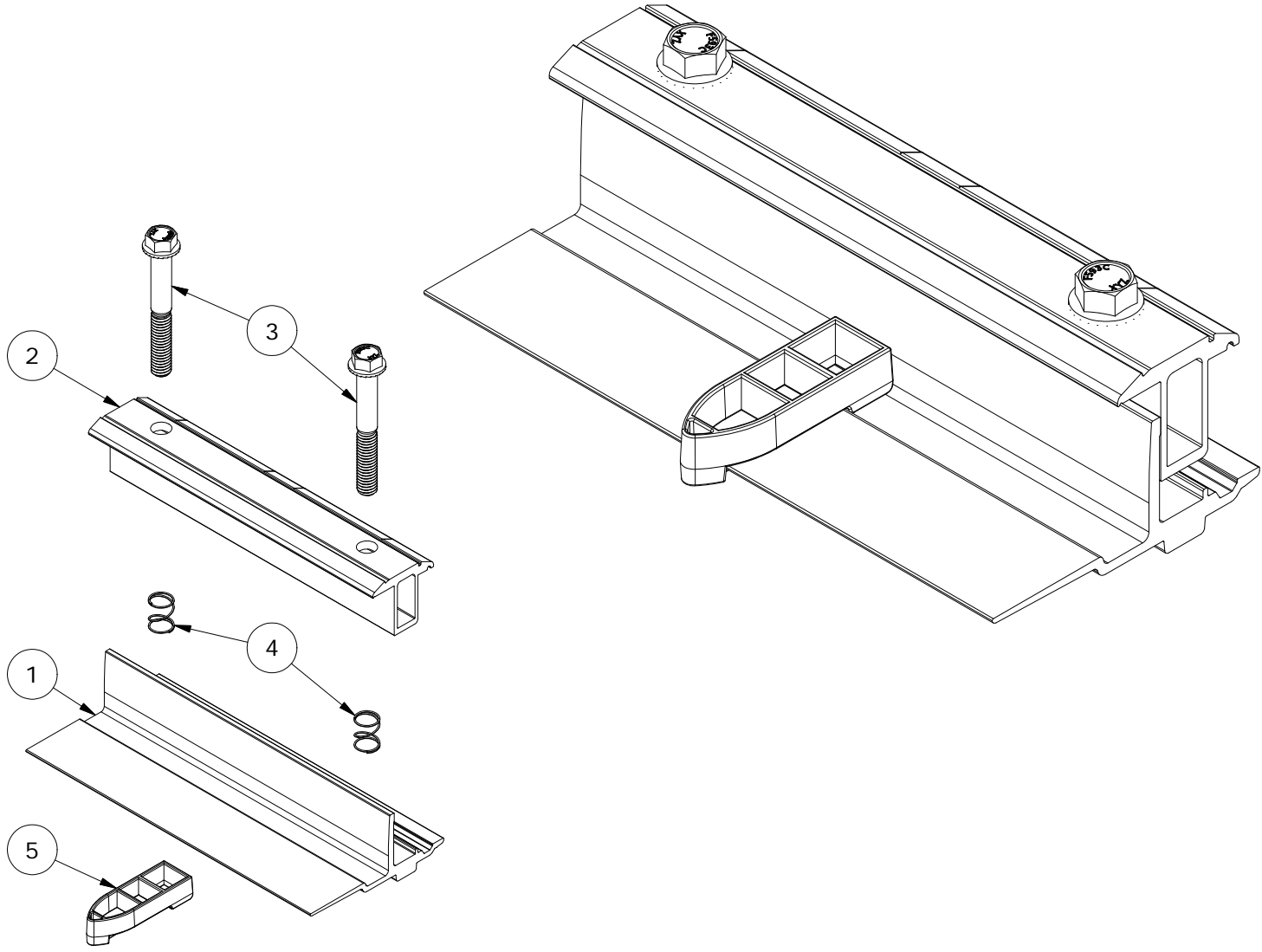
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PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	SNAPNRACK, RL UNIVERSAL, LINK BOTTOM, MILL
2	1	SNAPNRACK, RL UNIVERSAL, LINK TOP, BONDING, BLACK
3	2	BOLT, FLANGE, SERRATED, 3/8IN-16 X 2-3/4IN, 1/2IN TRIM HEAD, 1.2IN THREAD, BLACK, SS
4	2	SNAPNRACK, RL UNIVERSAL, MOUNT SPRING, SS
5	1	SNAPNRACK, RL UNIVERSAL, LINK COLUMN SPACER

MATERIALS:	6000 SERIES ALUMINUM, STAINLESS STEEL, POLYCARBONATE	OPTIONS:
DESIGN LOAD (LBS):	N/A	
ULTIMATE LOAD (LBS):	N/A	
TORQUE SPECIFICATION:	12 LB-FT	
CERTIFICATION:	UL 2703, FILE E359313	
WEIGHT (LBS):	1.03	



DESCRIPTION:

SNAPNRACK, RL UNIVERSAL, LINK

DRAWN BY:

mwatkins

REVISION:

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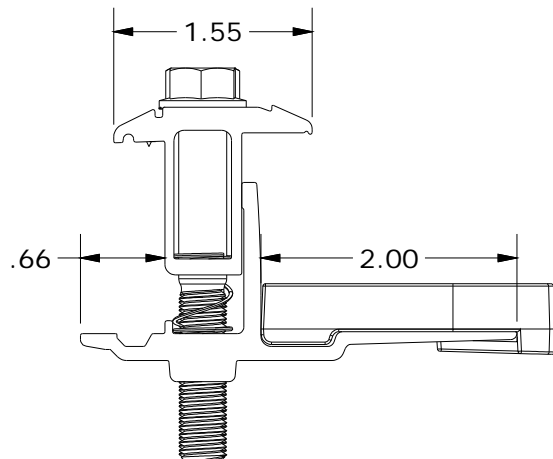
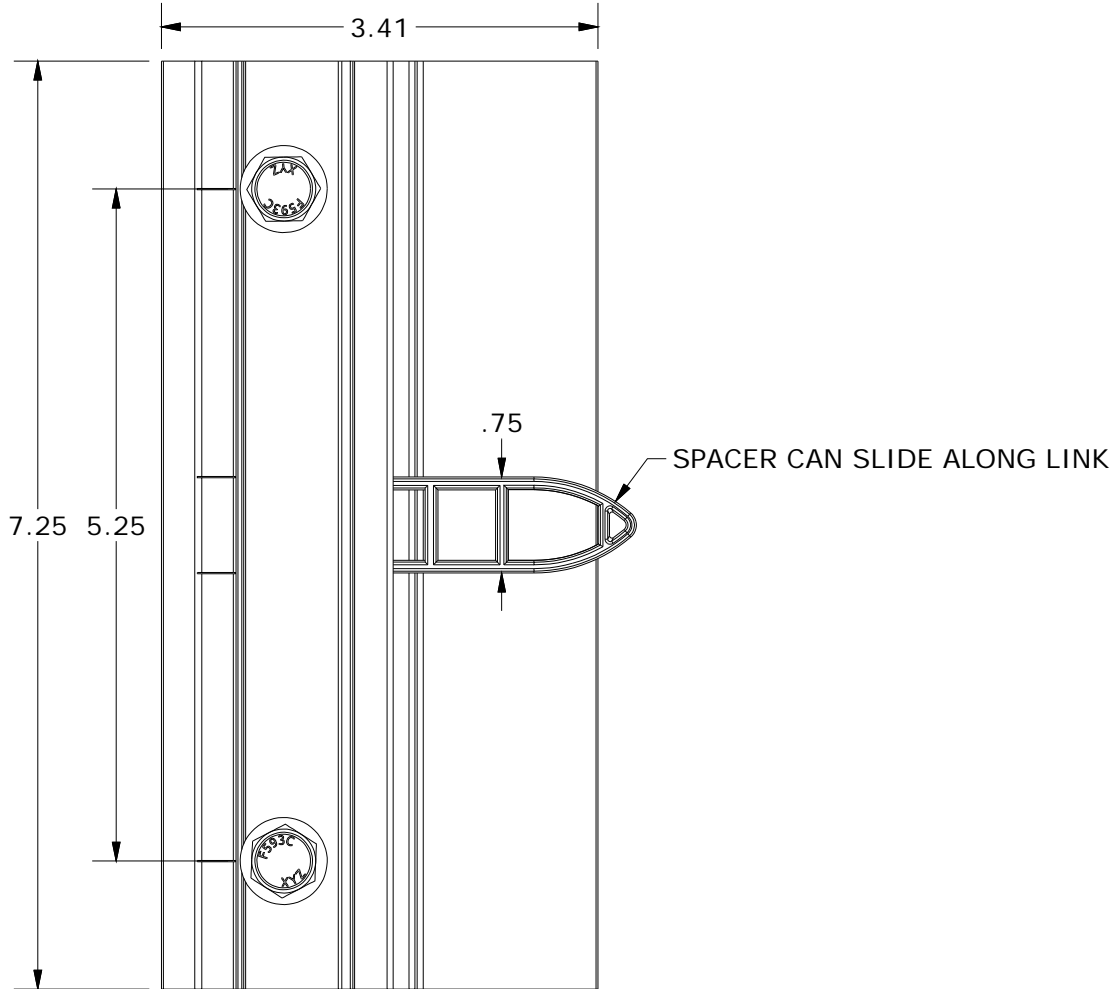
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DESCRIPTION:  
**SNAPNRACK, RL UNIVERSAL, MOUNT**

PART NUMBER(S):  
**242-02155**

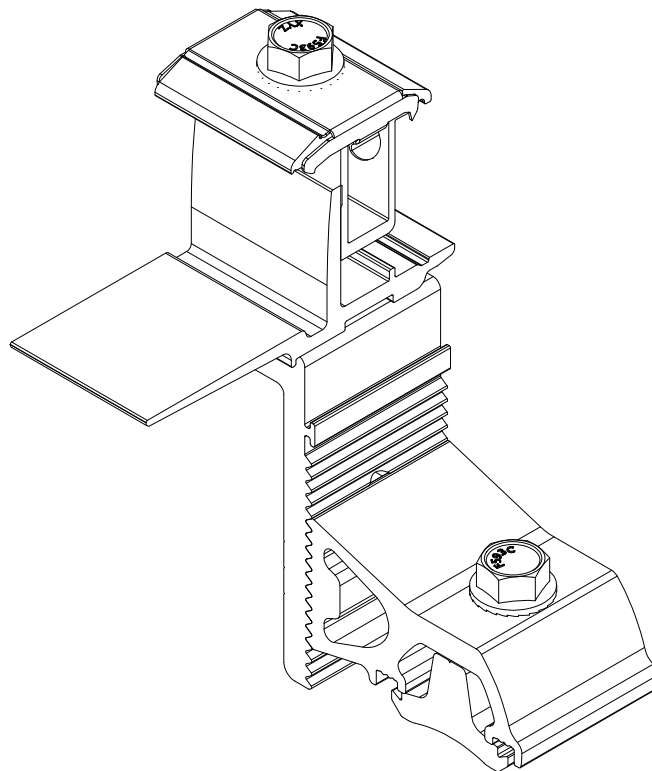
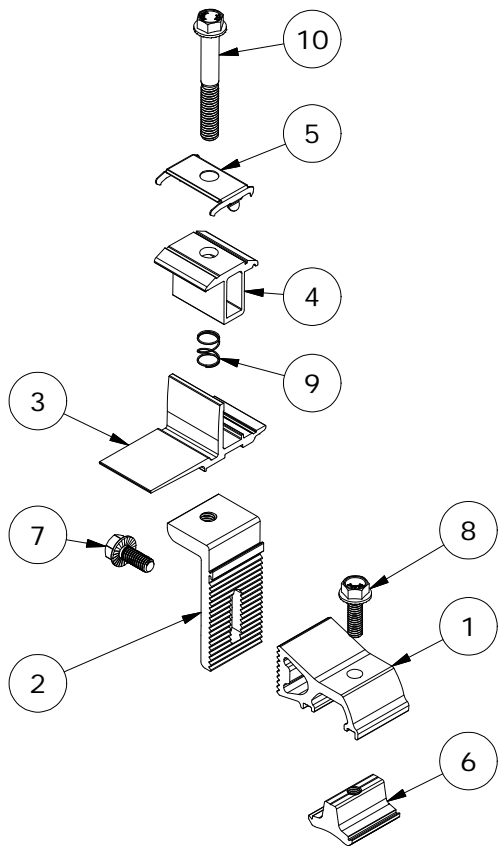
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PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	SNAPNRACK, RL UNIVERSAL, RISER, MILL
2	1	SNAPNRACK, RL UNIVERSAL, LEVELER, MILL
3	1	SNAPNRACK, RL UNIVERSAL, MOUNT BOTTOM, MILL
4	1	SNAPNRACK, RL UNIVERSAL, MOUNT TOP, BLACK
5	1	SNAPNRACK, RL UNIVERSAL, BONDING CLIP
6	1	SNAPNRACK, DROP IN/ROCK IN CHANNEL NUT
7	1	BOLT, FLANGE, 5/16IN-18 X 3/4IN, CLEAR, SS
8	1	BOLT, FLANGE, SERRATED, 5/16IN-18 X 1IN, SS
9	1	SNAPNRACK, RL UNIVERSAL, MOUNT SPRING, SS
10	1	BOLT, FLANGE, SERRATED, 3/8IN-16 X 2-3/4IN, 1/2IN TRIM HEAD, 1.2IN THREAD, BLACK, SS

MATERIALS:	6000 SERIES ALUMINUM, STAINLESS STEEL	OPTIONS:
DESIGN LOAD (LBS):	623 UP, 674 DOWN, 505 SIDE	
ULTIMATE LOAD (LBS):	N/A	
TORQUE SPECIFICATION:	12 LB-FT	
CERTIFICATION:	UL 2703, FILE E359313	
WEIGHT (LBS):	0.73	

DESCRIPTION:

SNAPNRACK, RL UNIVERSAL, MOUNT

DRAWN BY:

mwatkins

REVISION:

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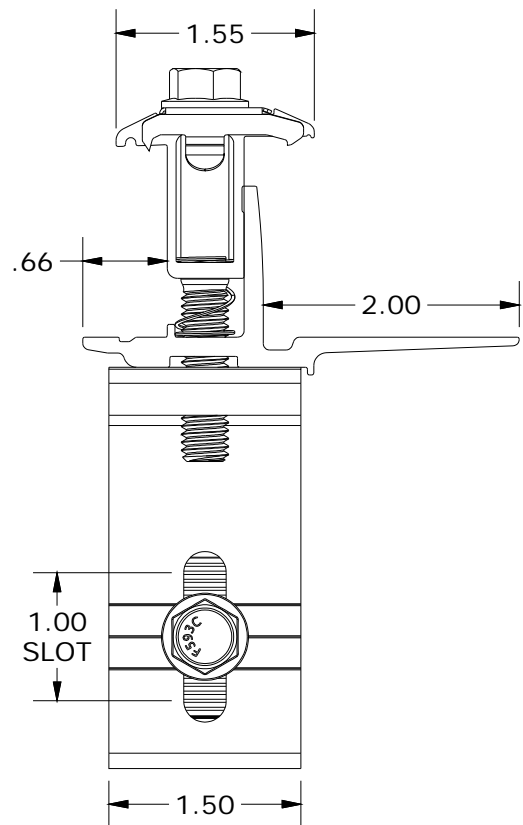
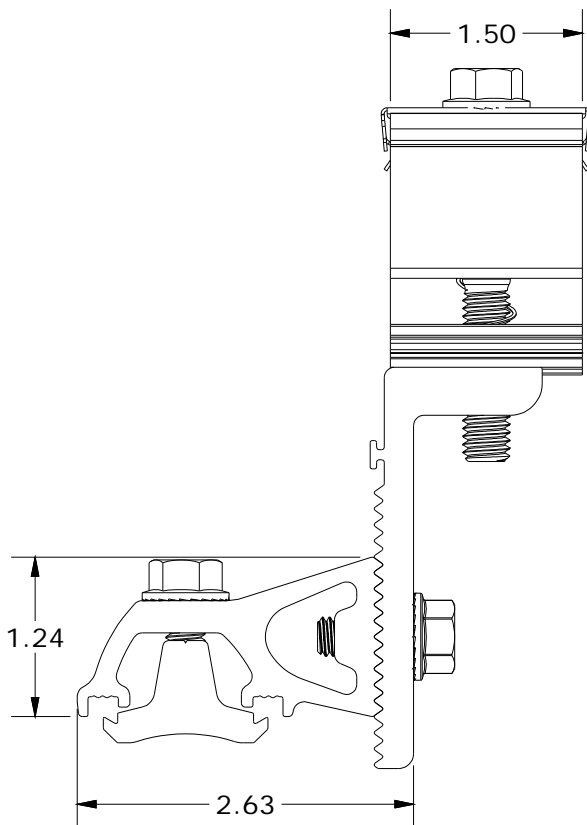
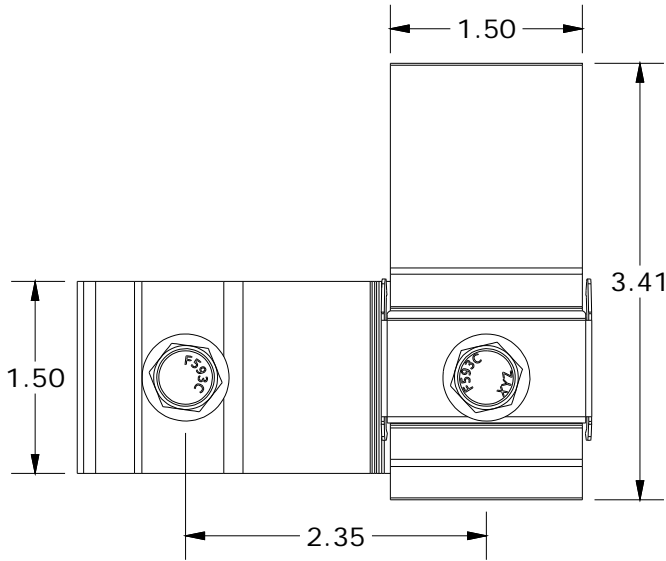
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PART NUMBER(S):

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DESCRIPTION:  
**SNAPNRACK, RL UNIVERSAL, RIDGE MOUNT**

PART NUMBER(S):  
**242-02157**

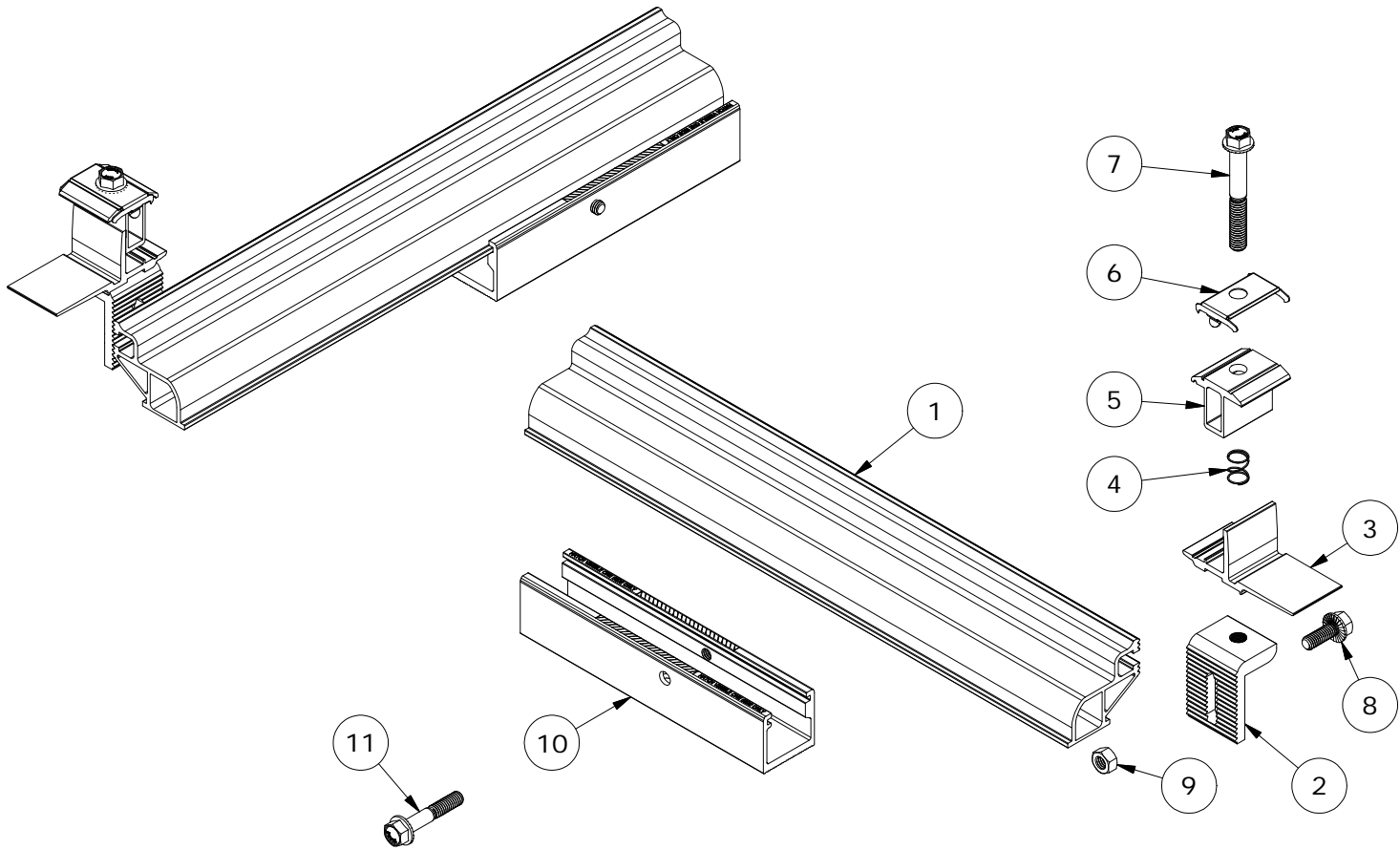
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**PARTS LIST**

ITEM	QTY	DESCRIPTION
1	1	SNAPNRACK, RL UNIVERSAL, RIDGE MOUNT EXTENSION, 16-3/4IN, MILL
2	1	SNAPNRACK, RL UNIVERSAL, RIDGE MOUNT LEVELER, MILL
3	1	SNAPNRACK, RL UNIVERSAL, MOUNT BOTTOM, MILL
4	1	SNAPNRACK, RL UNIVERSAL, MOUNT SPRING, SS
5	1	SNAPNRACK, RL UNIVERSAL, MOUNT TOP, BLACK
6	1	SNAPNRACK, RL UNIVERSAL, BONDING CLIP
7	1	BOLT, FLANGE, SERRATED, 3/8IN-16 X 2-3/4IN, 1/2IN TRIM HEAD, 1.2IN THREAD, BLACK, SS
8	1	BOLT, FLANGE, SERRATED, 5/16IN-18 X 7/8IN, SS
9	1	NUT, FULL HEX, 5/16IN-18, FLAT, SS
10	1	SNAPNRACK, RL UNIVERSAL, RIDGE MOUNT TRACK, 7-1/2IN, MILL
11	1	BOLT, FLANGE, SERRATED, 5/16IN-18 X 1-3/4IN, SS

MATERIALS:	6000 SERIES ALUMINUM, STAINLESS STEEL	OPTIONS:
DESIGN LOAD (LBS):	311 UP, 337 DOWN, 252 SIDE	
ULTIMATE LOAD (LBS):	N/A	
TORQUE SPECIFICATION:	12 LB-FT	
CERTIFICATION:	UL 2703, FILE E359313	
WEIGHT (LBS):	2.36	

DESCRIPTION:  
**SNAPNRACK, RL UNIVERSAL, RIDGE MOUNT**

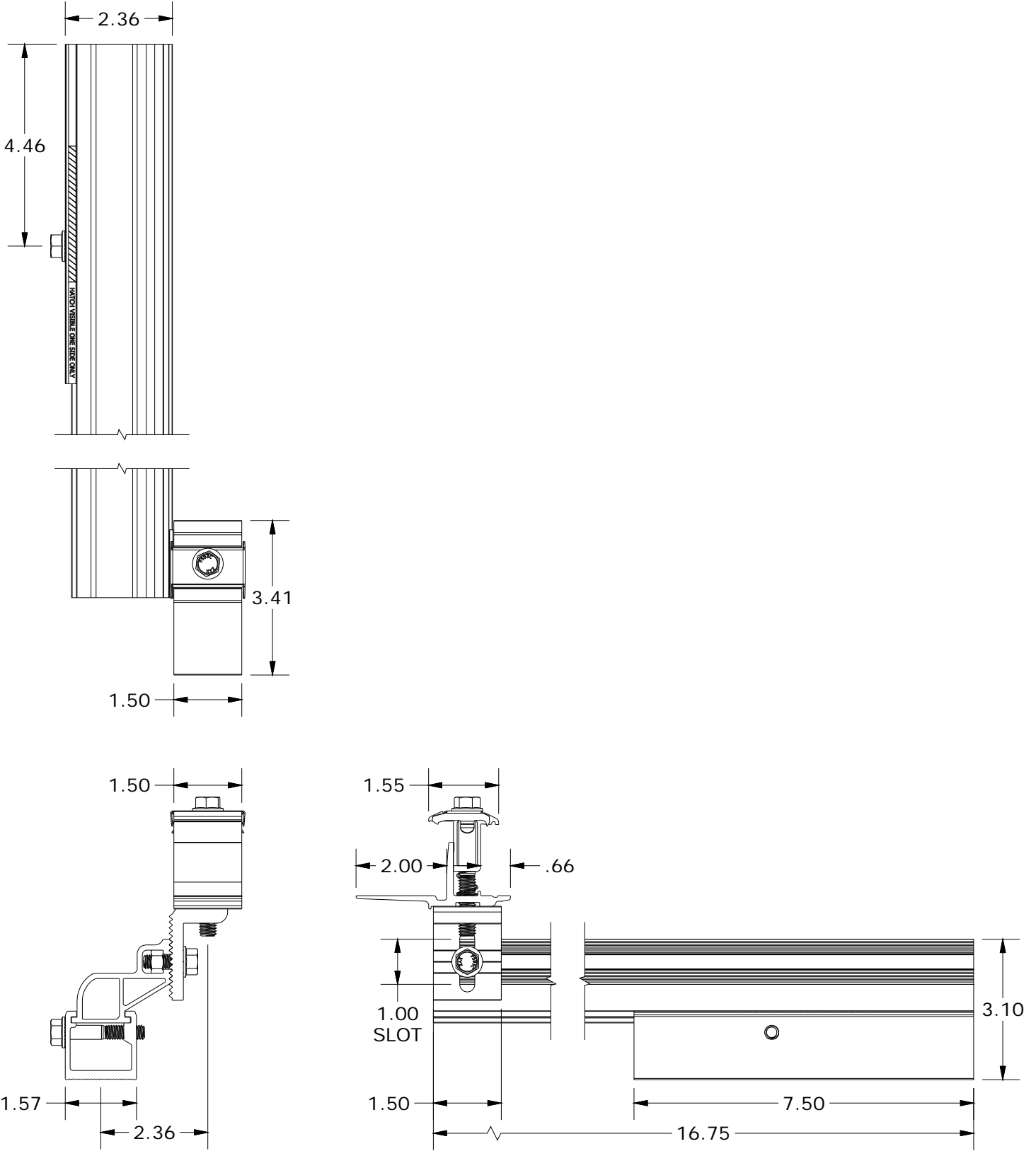
DRAWN BY:  
 mwatkins



PART NUMBER(S):  
**242-02157**

REVISION:  
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ALL DIMENSIONS IN INCHES

DESCRIPTION:  
**SNAPNRACK, RL UNIVERSAL, SKIRT SPACERS**

PART NUMBER(S):  
**232-02494, 232-02495, 232-02496, 232-02497**

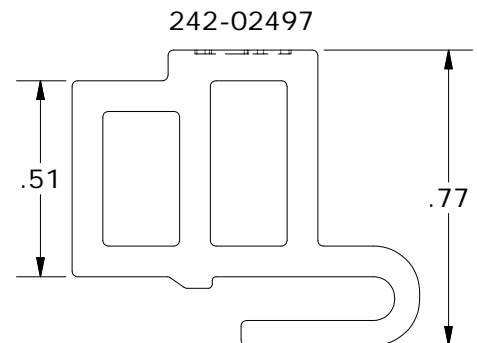
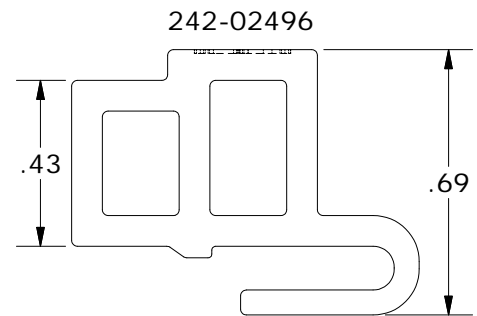
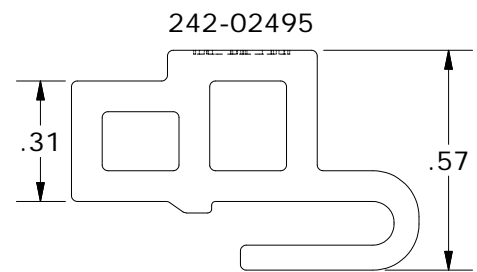
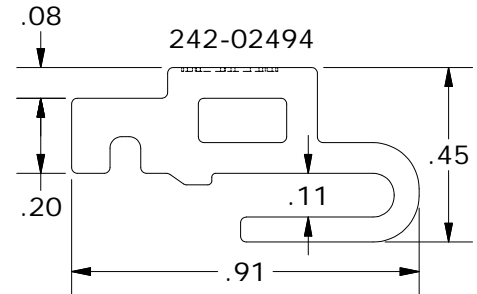
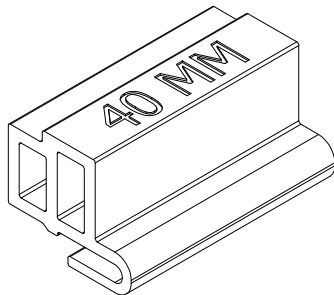
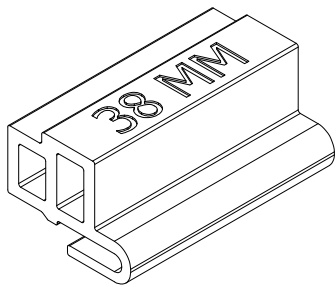
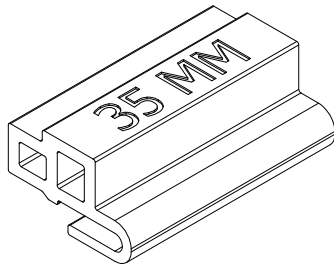
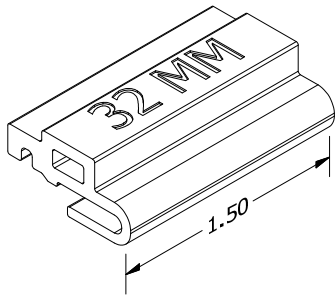
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 mwatkins

REVISION:  
**A**

**SnapNrack™**  
 Solar Mounting Solutions

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RL UNIVERSAL SKIRT SPACER PROPERTIES		
SKU	MODULE FRAME SIZE	COLOR
232-02494	32 MM	GOLD
232-02495	35 MM	BLUE
232-02496	38 MM	BLACK
232-02497	40 MM	SILVER/CLEAR

ALL DIMENSIONS IN INCHES

MATERIALS:	6000 SERIES ALUMINUM	OPTIONS:
DESIGN LOAD (LBS):	N/A	32 MM FRAMES
ULTIMATE LOAD (LBS):	N/A	35 MM FRAMES
TORQUE SPECIFICATION:	N/A LB-FT	38 MM FRAMES
CERTIFICATION:	UL 2703, FILE E359313	40 MM FRAMES
WEIGHT (LBS):	0.03 - 0.04	

DESCRIPTION:  
**SNAPNRACK, RL UNIVERSAL, SPEEDSEAL™ MOUNT KIT**

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mwatkins

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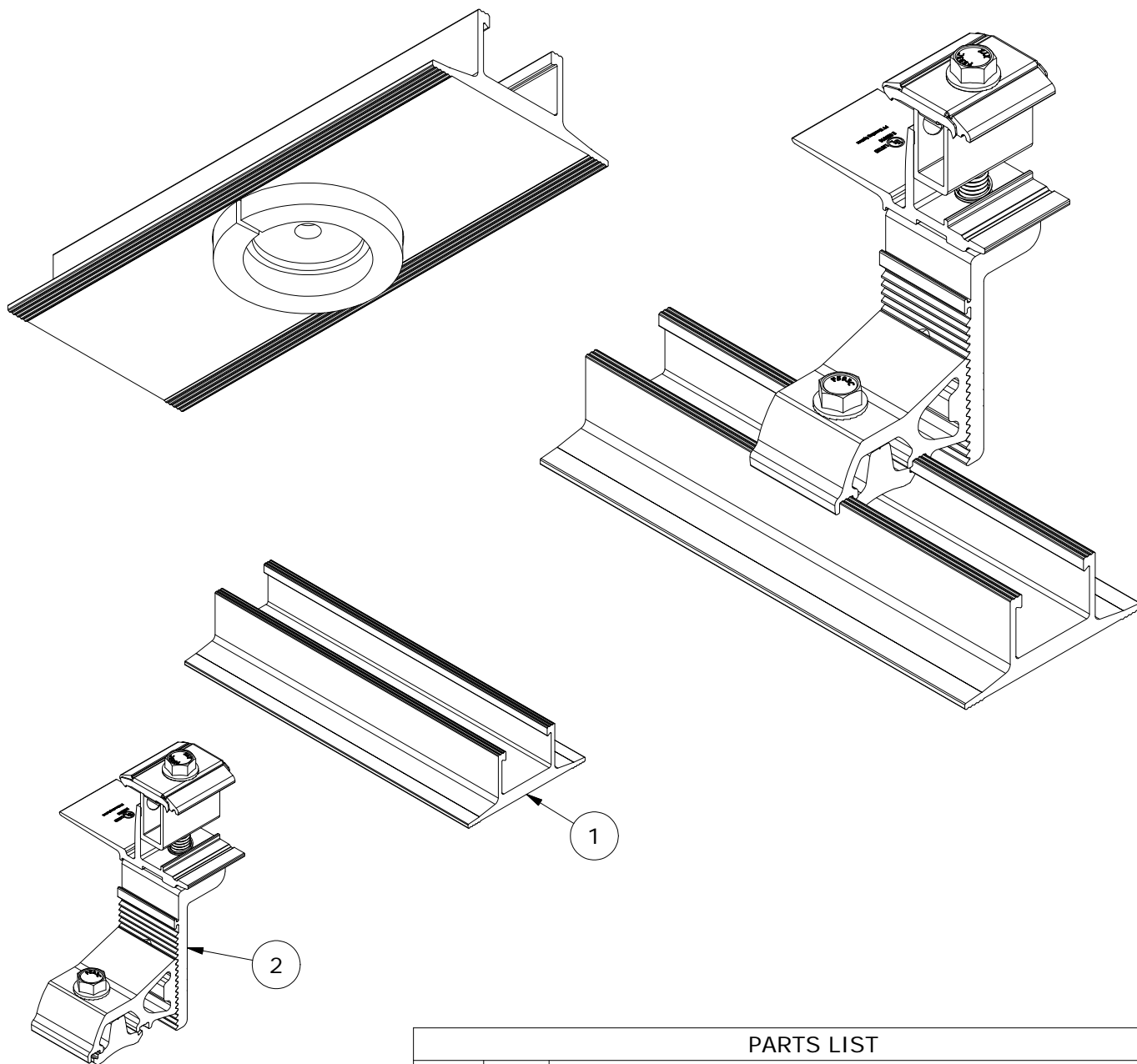
**SnapNrack™**  
**Solar Mounting Solutions**

PART NUMBER(S):

242-92642

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**PARTS LIST**

ITEM	QTY	DESCRIPTION
1	1	SNAPNRACK, SPEEDSEAL TRACK, 7-1/2IN, SEALING, MILL
2	1	SNAPNRACK, RL UNIVERSAL, MOUNT

MATERIALS:	6000 SERIES ALUMINUM, STAINLESS STEEL, FOAM
DESIGN LOAD (LBS):	623 UP, 674 DOWN, 505 SIDE
ULTIMATE LOAD (LBS):	N/A
TORQUE SPECIFICATION:	12 LB-FT
CERTIFICATION:	UL 2703, FILE E359313; WIND-DRIVEN RAIN TEST FROM UL SUBJECT 2582
WEIGHT (LBS):	1.39

DESCRIPTION:  
SNAPNRACK, RL UNIVERSAL, SPEEDSEAL™ MOUNT  
KIT

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REVISION:

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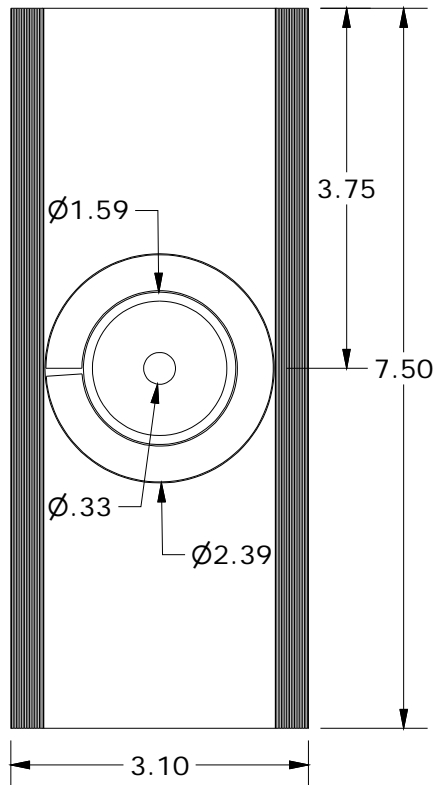
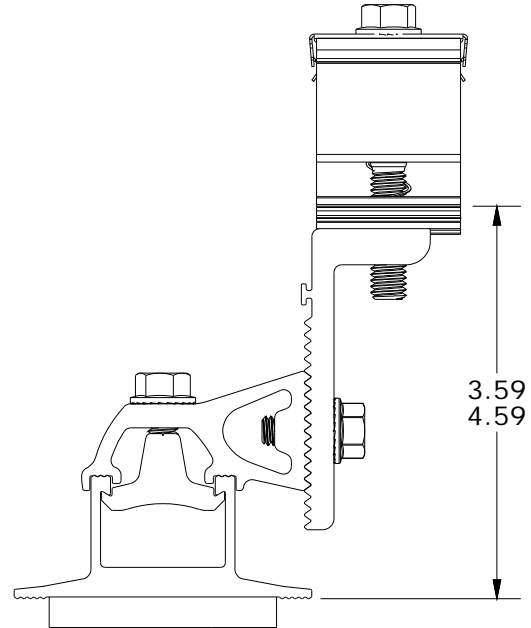
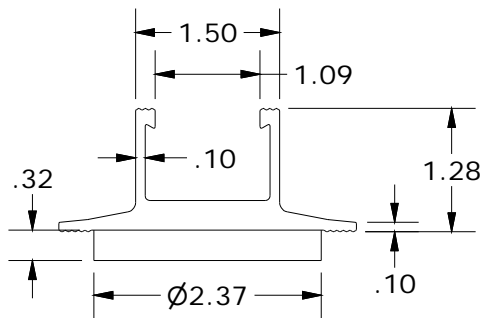
SnapNrack™  
Solar Mounting Solutions

PART NUMBER(S):

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DESCRIPTION:

SNAPNRACK, WIRE SAVER

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mwatkins

REVISION:

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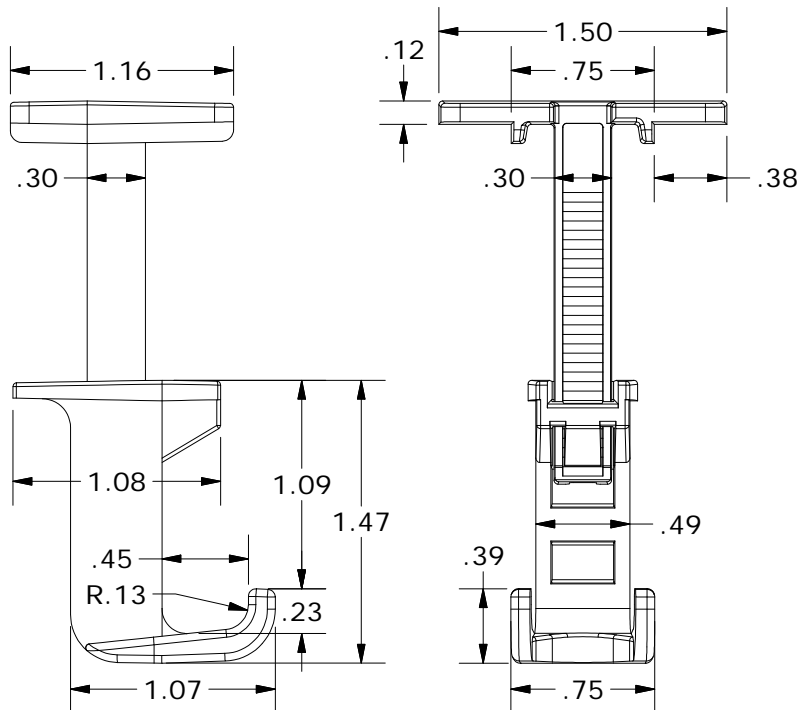
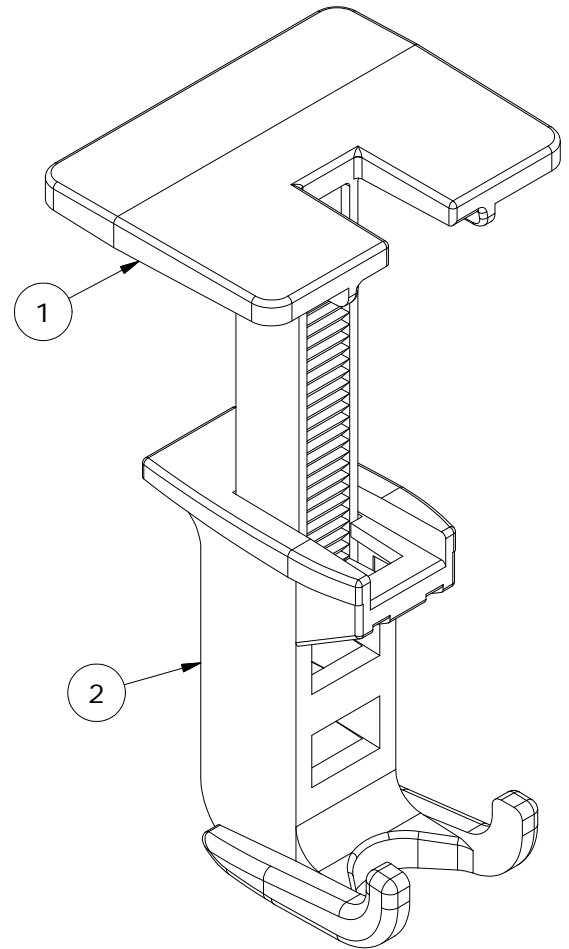


PART NUMBER(S):

242-92262

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PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	SNAPNRACK, WIRE SAVER TOP
2	1	SNAPNRACK, WIRE SAVER BOTTOM

MATERIALS:

POLYCARBONATE

OPTIONS:

DESIGN LOAD (LBS):

N/A

ULTIMATE LOAD (LBS):

N/A

TORQUE SPECIFICATION:

N/A LB-FT

CERTIFICATION:

N/A

WEIGHT (LBS):

0.022