SCOPE OF WORK

TO INSTALL A RESIDENTIAL ROOFTOP SOLAR PHOTOVOLTAIC (PV) SYSTEM.
THE POWER GENERATED BY THE PV SYSTEM WILL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING ELECTRICAL SERVICE EQUIPMENT.
THE PV SYSTEM DOES NOT INCLUDE BATTERIES.

ELECTRICAL NOTES

1) ALL EQUIPMENT TO BE LISTED BY THE UL OR OTHER NRTL AND LABELED FOR ITS APPLICATION.
2) ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600V AND 90°C WET ENVIRONMENT.
3) WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
4) WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
5) DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
6) WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
7) ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
8) MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
9) MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR THE ILSCO GBL-4DBT LAY-IN LUG.
10) THE POLARITY OF THE GROUNDED CONDUCTORS IS (positive/negative) OR THE DC SIDE OF THE PV SYSTEM IS UNGROUNDED AND SHALL COMPLY WITH NEC 690.35

NCDOI REQUIREMENTS

OPTION 2

WEIGHT OF PV SYSTEM ON ROOF:

2.6695 PSF

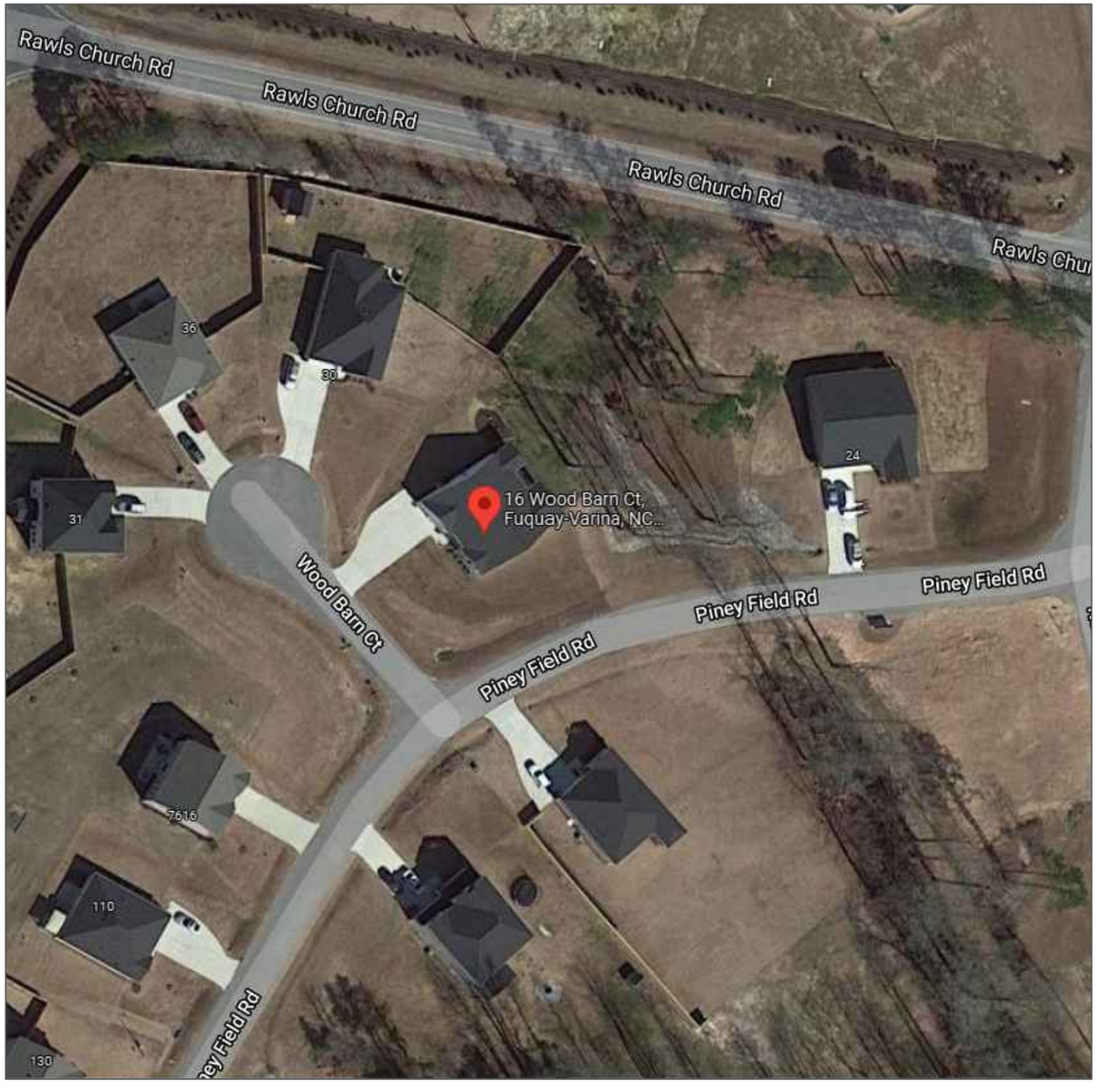
EXISTING ROOF MATERIAL TYPE:

ASPHALT SHINGLE (SINGLE LAYER)

PROJECT LOCATION WIND ZONE:

115 MPH

VICINITY MAP



SHEET INDEX	
COVER	GENERAL INFORMATION
PV-1	SITE PLAN
PV-2	ROOF LAYOUT AND MOUNTING DETAIL
PV-3	ELECTRICAL SCHEMATIC
PV-4	AMPACITY CALCULATIONS AND WIRE SIZING
PV-5	LABELING SCHEDULE
CUTSHEETS	MANUFACTURER SPECIFICATION SHEETS

GOVERNING CODES
NFPA 70 NATIONAL ELECTRICAL CODE 2017
2018 INTERNATIONAL BUILDING CODE
2018 NORTH CAROLINA BUILDING CODE
2018 NORTH CAROLINA RESIDENTIAL CODE
UNDERWRITERS LABORATORIES (UL) STANDARDS
OSHA 29 CFR 1910.269
NORTH CAROLINA DEPARTMENT OF INSURANCE

DESIGN SPECIFICATIONS	
CONSTRUCTION TYPE	SINGLE-FAMILY
ZONING	RESIDENTIAL
GROUND SNOW LOAD	20 PSF
WIND EXPOSURE CATEGORY	CATEGORY B
WIND SPEED	115 MPH
UTILITY PROVIDER	DUKE ENERGY PROGRESS
AHJ	TOWN OF FUQUAY-VARINA (HARNETT COUNTY)

SYSTEM SPECIFICATIONS	
SOLAR MODULES	(18) TWINPEAK REC365TP4 PANELS 365W
POWER OPTIMIZERS	(18) SOLAREDGE P401
INVERTER(S)	(1) SOLAREDGE SE6000H-US000BNI4
SOLAR MOUNTS	SNAPNRACK SPEEDSEAL FOOT
SOLAR RACKING SYSTEM	SNAPNRACK ULTRA RAIL 40 WITH SNAPNRACK SKIRTING
MONITORING	YES
POINT OF INTERCONNECT	BUCHANAN BTC 4/0-10 TAP CONNECTORS IN M/M COMBO

CONTRACTOR

Covenant Solar Tech
DBA SUN DOLLAR ENERGY
3200 WELLINGTON COURT SUITE 101
RALEIGH, NC 27615
(919) 508-6907
NC ELE LICENSE #: 34789
NC GC LICENSE #: 84770

PROJECT & CLIENT INFORMATION

DEBERRY RESIDENCE
NEW SOLAR PV SYSTEM
SYSTEM SIZE: 6.57 KW DC
SYSTEM SIZE: 6.0 KW AC

TERESA AMICK DEBERRY
16 WOOD BARN CT
FUQUAY-VARINA, NC 27526
(919) 961-0551

ENGINEER OF RECORD

DRAWING BY

RJW

REVISIONS

DESCRIPTION	DATE	#	BY
RELEASED FOR PERMITTING	12/27/2021	1	CST

SHEET SIZE

ANSI B
11" X 17"

DATE

12/27/2021

SHEET NAME

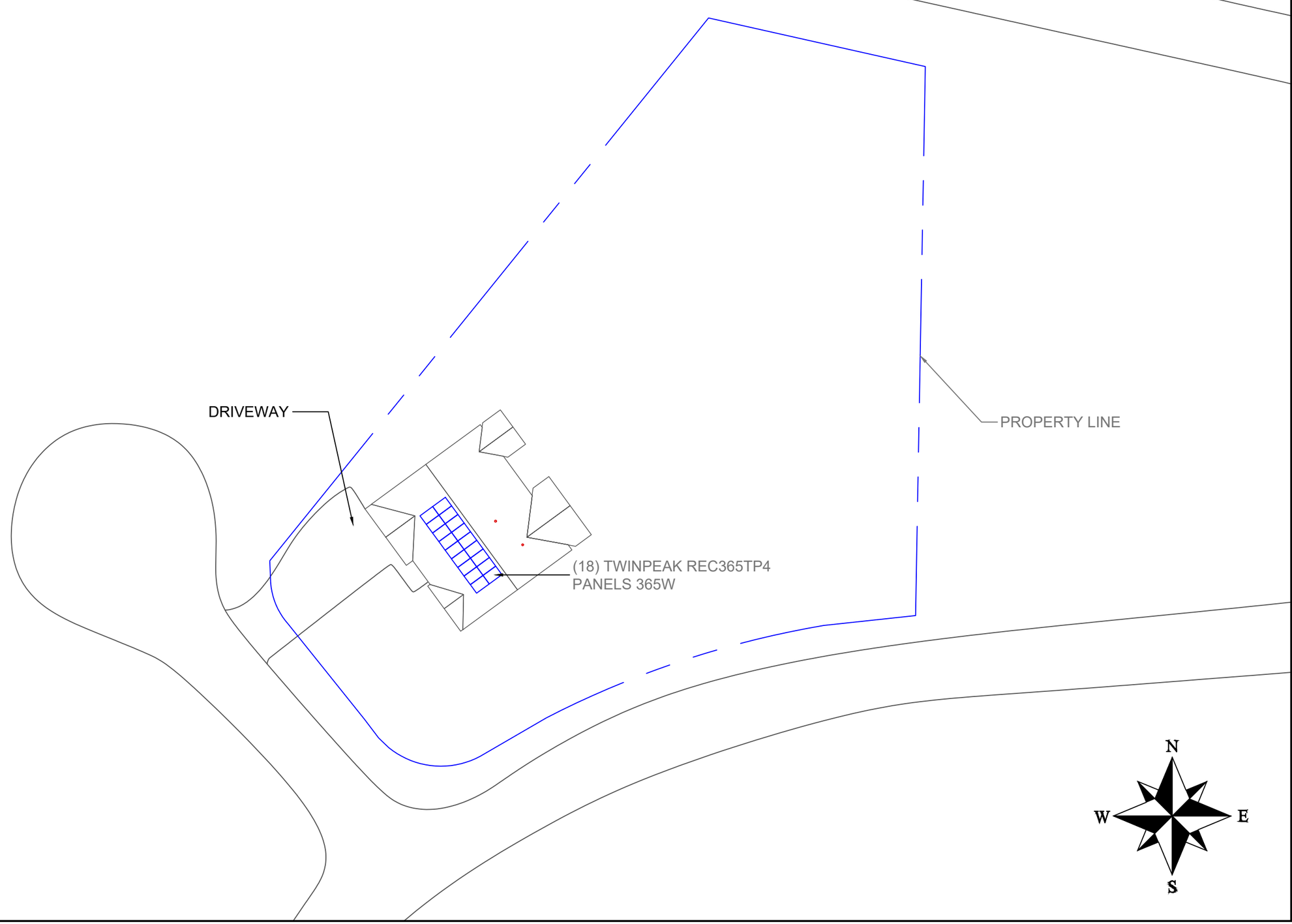
GENERAL INFORMATION

SHEET NUMBER

COVER

PROPERTY PLAN

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



CONTRACTOR

Covenant Solar Tech

DBA SUN DOLLAR ENERGY
3200 WELLINGTON COURT SUITE 101
RALEIGH, NC 27615
(919) 508-6907
NC ELE LICENSE #: 34789
NC GC LICENSE #: 84770

PROJECT & CLIENT INFORMATION

DEBERRY RESIDENCE
NEW SOLAR PV SYSTEM
SYSTEM SIZE: 6.57 KW DC
SYSTEM SIZE: 6.0 KW AC

TERESA AMICK DEBERRY
16 WOOD BARN CT
FUQUAY-VARINA, NC 27526
(919) 961-0551

ENGINEER OF RECORD

DRAWING BY

RJW

REVISIONS

DESCRIPTION	DATE	#	BY
RELEASED FOR PERMITTING	12/27/2021	1	CST

SHEET SIZE

ANSI B
11" X 17"

DATE

12/27/2021

SHEET NAME

SITE PLAN

SHEET NUMBER

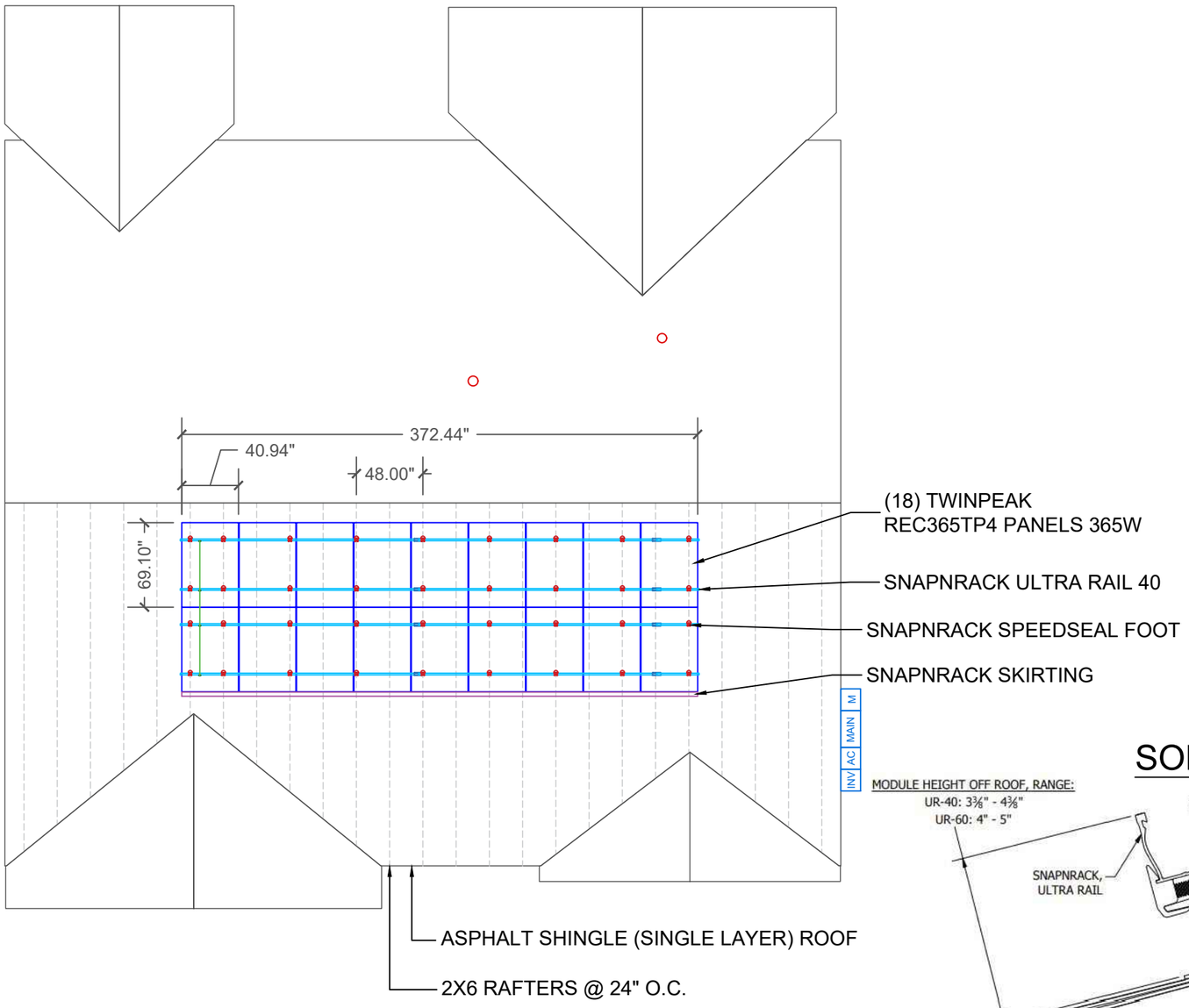
PV-1

ROOF PLAN

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

NOTE:
MAXIMUM ALLOWABLE MOUNTING SPACING IS 68".
MAXIMUM CANTILEVER DISTANCE IS 1/3 OF THE
MAXIMUM ALLOWABLE SPACING AND NEVER EXCEEDS 24".

ROOF 1 PITCH: 28°
ROOF 1 AZIMUTH: 234°



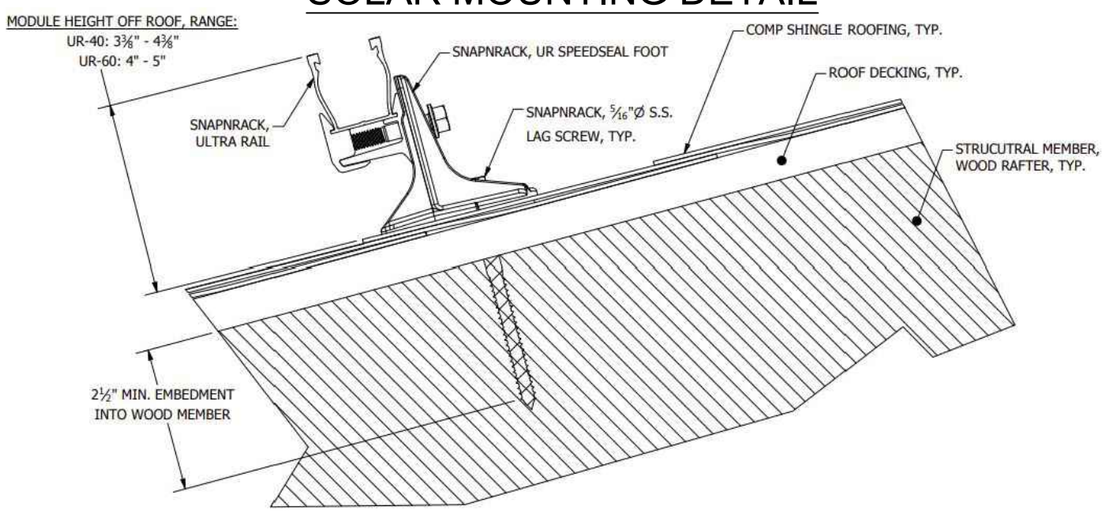
Racking	
Manufacturer	SnapNrack
Model Number	Ultra Rail 40
Length	172"
Width	1.54"
Height	1.89"
Weight	0.56 Lbs./Ft
Material	Aluminum
Structural	IBC Compliant
UL Listing	UL 2703

Flashings/Mounts	
Manufacturer	SnapNrack
Mount Type	SpeedSeal
Fastener Type	Lag Screw
Fastener Material	18-8 Stainless Steel
Fastener Size	5/16" x 4"
L-Foot Material	Aluminum
Sealing Washer	EPDM Bonded SS
Sealing Washer Size	5/16" ID x 3/4" OD
Weight	0.7565 Lbs.
Structural	IBC Compliant
UL Listing	UL 2703

LOAD CALCULATIONS

NUMBER OF MODULES	18	
MODULE WEIGHT	44	LBS
MODULE SQ FT	19.7	SQ FT
TOTAL MODULE WEIGHT	792	LBS
TOTAL MODULE SQ FT	354.6	SQ FT
NUMBER OF PORTRAIT	18	
NUMBER OF LANDSCAPE	0	
NUMBER OF OPTIMIZERS	18	
WEIGHT PER OPTIMIZER	1.7	LBS
TOTAL OPTIMIZER WEIGHT	30.6	LBS
TOTAL LENGTH OF RAIL	125	LF
RAIL WEIGHT PER FOOT	0.56	LBS
TOTAL RAIL WEIGHT	70	LBS
NUMBER OF FLANGES	36	
WEIGHT PER FLANGE	1.22	LBS
WEIGHT PER SYSTEM	43.92	LBS
NUMBER OF MID CLAMPS	32	
MID CLAMP WEIGHT	0.21	LBS
WEIGHT PER SYSTEM	6.72	LBS
NUMBER OF END CLAMPS	8	
END CLAMP WEIGHT	0.32	LBS
WEIGHT PER SYSTEM	2.56	LBS
NUMBER OF SPLICES	8	
WEIGHT PER SPLICE	0.1	LBS
WEIGHT PER SYSTEM	0.8	LBS
TOTAL ARRAY WEIGHT	946.6	LBS
POINT LOAD	26.294444	LBS/FT
TOTAL ARRAY AREA	354.6	SQ FT
ARRAY DEAD LOAD	**2.6695**	**PSF**

SOLAR MOUNTING DETAIL



LEGEND

M UTILITY METER	DC DC DISCONNECT	PV METER	RAILS
MSP MAIN SERVICE PANEL	JB JUNCTION BOX	EXTERIOR CONDUIT	GROUNDING
INV INVERTER	SUB SUBPANEL	G GAS METER	RAIL SPLICE
AC AC DISCONNECT	LC LOAD CENTER	FLASHINGS	

CONTRACTOR

Covenant Solar Tech
DBA SUN DOLLAR ENERGY
3200 WELLINGTON COURT SUITE 101
RALEIGH, NC 27615
(919) 508-6907
NC ELE LICENSE #: 34789
NC GC LICENSE #: 84770

PROJECT & CLIENT INFORMATION

DEBERRY RESIDENCE
NEW SOLAR PV SYSTEM
SYSTEM SIZE: 6.57 KW DC
SYSTEM SIZE: 6.0 KW AC

TERESA AMICK DEBERRY
16 WOOD BARN CT
FUQUAY-VARINA, NC 27526
(919) 961-0551

ENGINEER OF RECORD

DRAWING BY

RJW

REVISIONS

DESCRIPTION	DATE	#	BY
RELEASED FOR PERMITTING	12/27/2021	1	CST

SHEET SIZE

ANSI B
11" X 17"

DATE

12/27/2021

SHEET NAME

ROOF LAYOUT & DETAIL DRAWINGS

SHEET NUMBER

PV-2

Solar PV Module Data	
Manufacturer	REC
Model Number	TwinPeak REC365TP4
Max Power (Pmax)	365
Max Power Voltage (Vmp)	34.3
Max Power Current (Imp)	10.65
Open Circuit Voltage (Voc)	40.8
Short Circuit Current (Isc)	11.32
Max Series Fuse (OCPD)	25
Max System Voltage	1000
UL Listing	UL61730
Protection Rating	IP68

Temperature Data	
Average High Temp	93.2˚ F
Record Low Temp	10.4˚ F

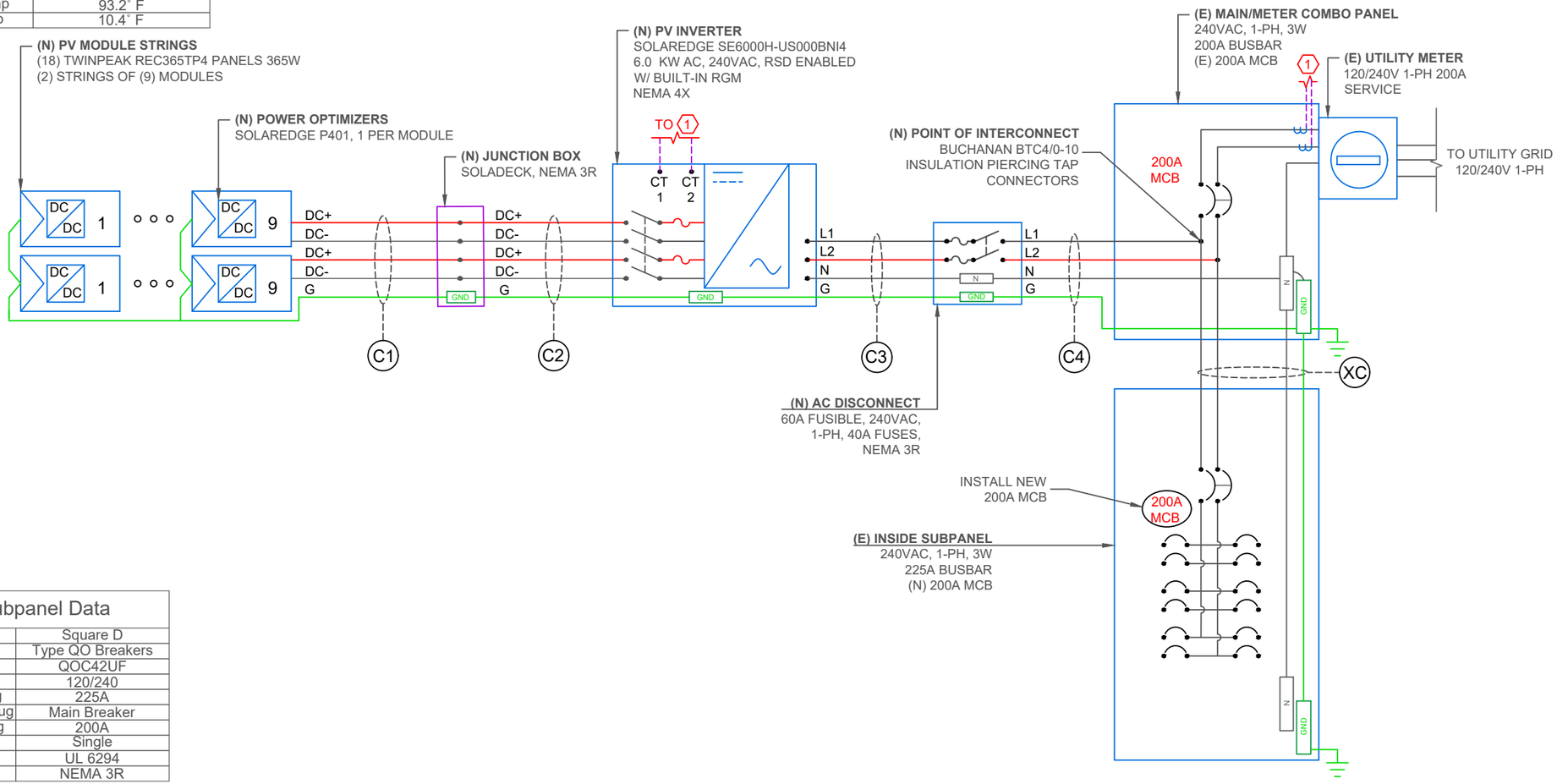
Power Optimizer Data	
Manufacturer	SolarEdge
Model Number	P401
Rated DC Input Power	405
Max Input Voltage	60
Max Input Current	14.65
Max Short Circuit Current	11.75
Max Output Voltage	60
Max Output Current	15
UL Listing	UL1741
Protection Rating	IP68/NEMA6P

Junction Box Data	
Manufacturer	Soladeck
Model Number	0799-5B
Voltage Rating	600
Amperage Rating	120
UL Listing	UL 50
Enclosure Rating	NEMA 3R

Inverter Data	
Manufacturer	SolarEdge
Model Number	SE6000H-US000BNI4
Max DC Input Voltage	480
Nominal DC Input Voltage	380
Max DC Input Current	16.5
Max DC Short Circuit Current	45
Max DC Input Power	9300
Max AC Output Power	6000
Nominal AC Output Voltage	240
Max AC Output Current	25
Strings Per Inverter	1 - 2
UL Listing	UL1741
Enclosure Rating	NEMA 4X

AC Disconnect Data	
Manufacturer	Eaton
Model Number	DG222NRB
Voltage Rating	240V
Amperage Rating	60A
Phase	Single
Switch Style	Fusible
Fuse Rating	40A
UL Listing	UL 98
Enclosure Rating	NEMA 3R

Main/Meter Combo Panel Data	
Manufacturer	Square D
Model Type	Type QO Breakers
Model Number	RC2M200SH
Voltage Rating	120/240
Busbar Amp Rating	200A
Main Breaker/Main Lug	Main Breaker
Breaker Amp Rating	200A
Phase	Single
UL Listing	UL 6294
Enclosure Rating	NEMA 3R



Inside Subpanel Data	
Manufacturer	Square D
Model Type	Type QO Breakers
Model Number	QOC42UF
Voltage Rating	120/240
Busbar Amp Rating	225A
Main Breaker/Main Lug	Main Breaker
Breaker Amp Rating	200A
Phase	Single
UL Listing	UL 6294
Enclosure Rating	NEMA 3R

WIRE SCHEDULE

TAG	CURRENT CARRYING CONDUCTORS				GROUNDING CONDUCTORS				CONDUIT/RACEWAY				NOTES
	QTY.	SIZE	MATERIAL	INSULATION TYP.	QTY.	SIZE	MATERIAL	INSULATION TYP.	QTY.	SIZE	MATERIAL	LOCATION	
C1	4	10 AWG	COPPER	PV WIRE	1	8 AWG	BARE COPPER	N/A	-	-	-	FREE AIR	
C2	4	10 AWG	COPPER	THHN/THWN-2	1	10 AWG	COPPER	THHN/THWN-2	1	3/4"	LFMC/EMT	EXTERIOR/INTERIOR	
C3	3	8 AWG	COPPER	THHN/THWN-2	1	10 AWG	COPPER	THHN/THWN-2	1	3/4"	LFNC/EMT	EXTERIOR	
C4	3	8 AWG	COPPER	THHN/THWN-2	1	10 AWG	COPPER	THHN/THWN-2	1	3/4"	LFNC/EMT	EXTERIOR	
XC	-	-	-	-	-	-	-	-	-	-	-	-	

CONTRACTOR

Covenant Solar Tech

DBA SUN DOLLAR ENERGY
3200 WELLINGTON COURT SUITE 101
RALEIGH, NC 27615
(919) 508-6907
NC ELE LICENSE #: 34789
NC GC LICENSE #: 84770

PROJECT & CLIENT INFORMATION

DEBERRY RESIDENCE
NEW SOLAR PV SYSTEM
SYSTEM SIZE: 6.57 KW DC
SYSTEM SIZE: 6.0 KW AC

TERESA AMICK DEBERRY
16 WOOD BARN CT
FUQUAY-VARINA, NC 27526
(919) 961-0551

ENGINEER OF RECORD

DRAWING BY

RJW

REVISIONS

DESCRIPTION	DATE	#	BY
RELEASED FOR PERMITTING	12/27/2021	1	CST

SHEET SIZE

ANSI B
11" X 17"

DATE

12/27/2021

SHEET NAME

ELECTRICAL SCHEMATIC

SHEET NUMBER

PV-3

Ampacity Calculations

Wiring Location: Module to Power Optimizer (Direct Current)
Wiring Location: Inverter to Service Entrance (Alternating Current)
All calculations show minimum sizing for ampacity
Actual wire sizing may be larger for voltage drop or other factors
All calculations are according to the 2017 National Electric Code

Modules: **REC** **TwinPeak REC365TP4**
Inverter: **SolarEdge** **SE6000H-US**

Initial Input Values

Isc (Short Circuit Current)	11.32				
Number of circuits	11.32	x	1	=	11.32
Maximum Circuit Current (NEC 690.8 (A)(1+2)	11.32	x	156%	=	17.6592
Minimum Overcurrent Device	25	A	Series Fuse Rating by Manufacturer		
	Size AWG #				
Chosen Conductor Type (THHN, RHW-2, or USE-2)	10				

Conductor Derating

NEC 690.31 © ref (NEC 310.16)						
Conductor 90°C Ampacity		40				
Conduit Fill Derating	1-3	40	x	1	=	40
Temperature Derating (°F)	141-149	40	x	0.65	=	26

Ampacity vs Overcurrent Device

Conductor Ampacity Check	26	17.6592	OK
Conductor to Overcurrent Check	26	25	OK

Input Data Into Yellow Fields
Green Field must say OK

Use this calculation for over current protection and wire sizing for stringers coming from Solar Panels.
Isc comes from manufacturer

Ampacity Calculations

Wiring Location: Inverter to Service Entrance (Alternating Current)
All calculations show minimum sizing for ampacity
Actual wire sizing may be larger for voltage drop or other factors
All calculations are according to the 2017 National Electric Code

Modules: **REC** **TwinPeak REC365TP4**
Inverter: **SolarEdge** **SE6000H-US**

Initial Input Values

Inverter Continuous AC Output Combined (Watts)	6000					
Minimum Operating Voltage	240					
		Watts		Volts		Amps
		6000	/	240	=	25
Inverter Continuous AC Amps		25				
Number of Inverters		25	x	1	=	25
Overcurrent Device Rating						
NEC 690.8 (B)(3)		25	x	125%	=	31.25
Minimum Overcurrent Device		40	Amps			
Circuit Breaker Size per NEC 240.6(A)		40	Amps			
		Size AWG #				
Chosen Conductor Type THHN,THWN,RHW-2 or USE-2		8				

Conductor Derating

NEC 690.31© ref (NEC 310.16)						
Conductor 90°C Ampacity		55				
Conduit Fill Derating	1-3	55	x	1	=	55
Temperature Derating (°F)	105-113	55	x	0.87	=	47.85

Ampacity vs Overcurrent Device

Conductor Ampacity Check	47.85	31.25	OK
Conductor to Overcurrent Check	47.85	40	OK

Input Data into Yellow Fields
Green Fields must say OK

Use this calculation for over current protection and wire sizing for inverter

CONTRACTOR

Covenant Solar Tech
DBA SUN DOLLAR ENERGY
3200 WELLINGTON COURT SUITE 101
RALEIGH, NC 27615
(919) 508-6907
NC ELE LICENSE #: 34789
NC GC LICENSE #: 84770

PROJECT & CLIENT INFORMATION

DEBERRY RESIDENCE
NEW SOLAR PV SYSTEM
SYSTEM SIZE: 6.57 KW DC
SYSTEM SIZE: 6.0 KW AC

TERESA AMICK DEBERRY
16 WOOD BARN CT
FUQUAY-VARINA, NC 27526
(919) 961-0551

ENGINEER OF RECORD

DRAWING BY
RJW

REVISIONS

DESCRIPTION	DATE	#	BY
RELEASED FOR PERMITTING	12/27/2021	1	CST

SHEET SIZE
ANSI B
11" X 17"

DATE
12/27/2021

SHEET NAME
AMPACITY CALCULATIONS

SHEET NUMBER
PV-4

PV LABELS

SIGNAGE REQUIREMENTS

> WARNING SIGNS OR LABELS SHALL COMPLY WITH NEC 110.21(B)
> MIN. 3/8" LETTER HEIGHT
> ALL CAPITAL LETTERS
> ARIAL OR SIMILAR FONT
> REFLECTIVE, WEATHER RESISTANT MATERIAL, UL 969

PHOTOVOLTAIC SYSTEM
⚠ DC DISCONNECT ⚠

RATED MMP CURRENT	AMPS
RATED MPP VOLTAGE	VOLTS
MAX SYSTEM VOLTAGE	VDC
MAX CIRCUIT CURRENT	AMPS

NEC 690.53 — 1

APPLY TO:
INVERTER

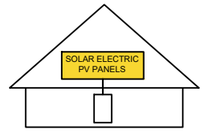
WARNING: PHOTOVOLTAIC POWER SOURCE

NEC 690.31(G)(3)(4) — 2

APPLY TO:
SOLAR DC RACEWAYS
DC JUNCTION BOXES

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) — 3

APPLY TO:
MAIN SERVICE DISCONNECT

⚠ WARNING

ELECTRIC SHOCK HAZARD

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

NEC 690.13(B) — 4

APPLY TO:
DISCONNECTS
COMBINER BOXES

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

NEC 690.56(C)(3) — 5

APPLY TO:
INVERTERS

PHOTOVOLTAIC SYSTEM
⚠ AC DISCONNECT ⚠

OPERATING VOLTAGE	VAC
OPERATING CURRENT	AMPS

NEC 690.54 — 6

APPLY TO:
AC DISCONNECT

⚠ WARNING

THIS EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES, EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE, SHALL NOT EXCEED AMPACITY OF BUSBAR

NEC 705.12 (B)(2)(3)(c) — 7

APPLY TO:
SERVICE PANEL(S)

⚠ WARNING

THE DISCONNECTION OF THE GROUNDED CONDUCTOR(S) MAY RESULT IN OVERVOLTAGE ON THE EQUIPMENT

NEC 690.31 (I) — 8

APPLY TO:
INVERTER(S)

MAIN PV SYSTEM DISCONNECT

NEC 690.13 (B) — 9

APPLY TO:
MAIN AC DISCONNECT

CONTRACTOR

Covenant Solar Tech
DBA SUN DOLLAR ENERGY
3200 WELLINGTON COURT SUITE 101
RALEIGH, NC 27615
(919) 508-6907
NC ELE LICENSE #: 34789
NC GC LICENSE #: 84770

PROJECT & CLIENT INFORMATION

DEBERRY RESIDENCE
NEW SOLAR PV SYSTEM
SYSTEM SIZE: 6.57 KW DC
SYSTEM SIZE: 6.0 KW AC

TERESA AMICK DEBERRY
16 WOOD BARN CT
FUQUAY-VARINA, NC 27526
(919) 961-0551

ENGINEER OF RECORD

DRAWING BY

RJW

REVISIONS

DESCRIPTION	DATE	#	BY
RELEASED FOR PERMITTING	12/27/2021	1	CST

SHEET SIZE

ANSI B
11" X 17"

DATE

12/27/2021

SHEET NAME

LABELING SCHEDULE

SHEET NUMBER

PV-5

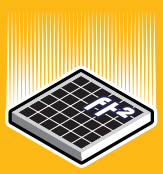
SOLAR'S MOST TRUSTED REC

REC TWINPEAK 4 BLACK SERIES

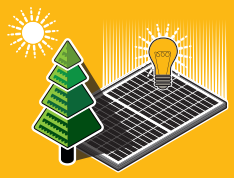
PREMIUM SOLAR PANELS WITH SUPERIOR PERFORMANCE

REC TwinPeak 4 Black Series solar panels feature an aesthetically-pleasing full-black design with high panel efficiency and power output, enabling customers to get the most out of the space used for the installation.

Combined with industry-leading product quality and the reliability of a strong and established European brand, REC TwinPeak 4 Black Series panels are ideal for residential and commercial rooftops worldwide.



MORE POWER OUTPUT PER FT²



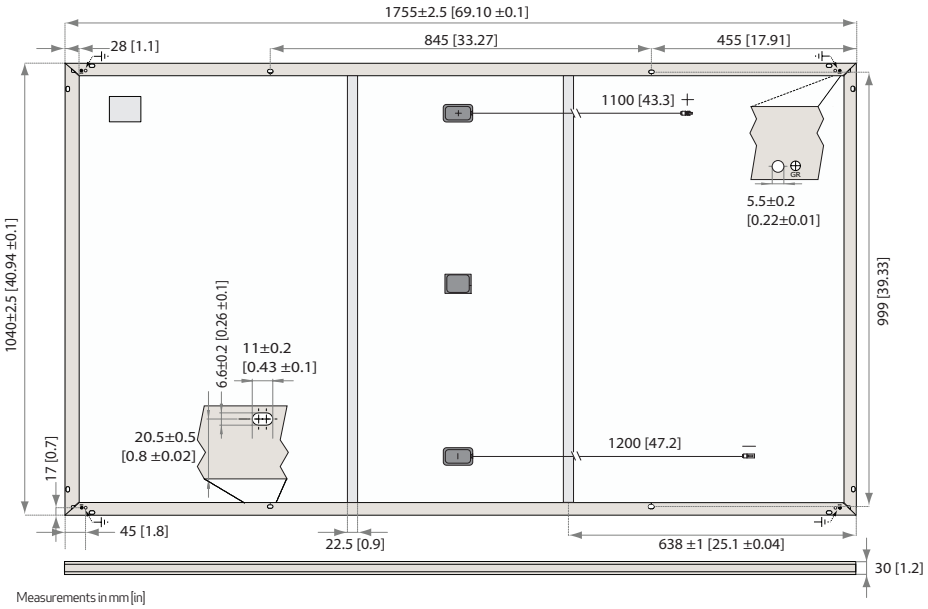
FEATURING REC'S PIONEERING TWIN DESIGN

100% PID FREE

SUPER-STRONG FRAME

ELIGIBLE

REC TWINPEAK 4 BLACK SERIES



Measurements in mm [in]

GENERAL DATA

Cell type:	120 half-cut mono c-Si p-type 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 (black)
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, IP68 rated in accordance with IEC 62790
Cable:	12 AWG (4 mm²) PV wire, 43 + 47" (1.1 m + 1.2 m) in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/KST4, 12 AWG(4 mm²) in accordance with IEC 62852 IP68 only when connected
Origin:	Made in Singapore

MECHANICAL DATA

Dimensions:	69.1 x 40.94 x 1.2 in (1755 x 1040 x 30 mm)
Area:	19.70 sq ft (1.83 m²)
Weight:	44.0 lbs (20.0 kg)

ELECTRICAL DATA @ STC

Product code*: RECxxxTP4 Black				
Power Output - P_{MAX} (Wp)	355	360	365	370
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V_{MPP} (V)	33.5	33.9	34.3	34.7
Nominal Power Current - I_{MPP} (A)	10.60	10.62	10.65	10.68
Open Circuit Voltage - V_{OC} (V)	40.5	40.6	40.8	41.0
Short Circuit Current - I_{SC} (A)	11.19	11.26	11.32	11.38
Panel Efficiency (%)	19.4	19.7	20.0	20.3

Values at standard test conditions (STC: air mass AM 1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of P_{MAX}, V_{OC} & I_{SC} ±3% within one watt class. * Where xxx indicates the nominal power class (P_{MAX}) at STC above.

ELECTRICAL DATA @ NMOT

Product code*: RECxxxTP4 Black				
Power Output - P_{MAX} (Wp)	269	272	276	280
Nominal Power Voltage - V_{MPP} (V)	31.4	31.7	32.1	32.5
Nominal Power Current - I_{MPP} (A)	8.56	8.58	8.60	8.63
Open Circuit Voltage - V_{OC} (V)	37.9	38.0	38.2	38.4
Short Circuit Current - I_{SC} (A)	9.04	9.10	9.15	9.19

Nominal module operating temperature (NMOT: air mass AM 1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s).
*Where xxx indicates the nominal power class (P_{MAX}) at STC indicated above.

MAXIMUM RATINGS

Operational temperature:	-40 ... +185°F (-40 ... +85°C)
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (146 psf)*
Maximum test load (rear):	-4000 Pa (83.5 psf)*
Max series fuse rating:	25 A
Max reverse current:	25 A

* See installation manual for mounting instructions.
Design load = Test load / 1.5 (safety factor)

TEMPERATURE RATINGS *

Nominal Module Operating Temperature:	44.6°C (±2°C)
Temperature coefficient of P_{MAX}:	-0.34 %/°C
Temperature coefficient of V_{OC}:	-0.26 %/°C
Temperature coefficient of I_{SC}:	0.04 %/°C

*The temperature coefficients stated are linear values

CERTIFICATIONS

IEC 61215:2016, IEC 61730:2016, UL 61730 (Pending)

ISO 14001:2004, ISO 9001:2015, OHSAS 18001:2007, IEC 62941

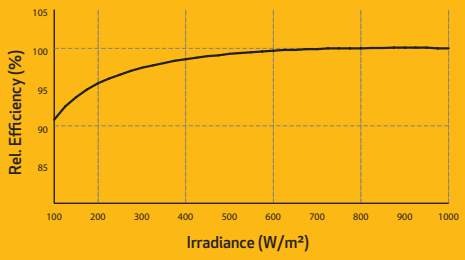
WARRANTY

	Standard	REC ProTrust	
Installed by an REC Certified Solar Professional	No	Yes	Yes
System Size	Any	≤25 kW	25-500 kW
Product Warranty (yrs)	20	25	25
Power Warranty (yrs)	25	25	25
Labor Warranty (yrs)	0	25	10
Power in Year 1	98%	98%	98%
Annual Degradation	0.5%	0.5%	0.5%
Power in Year 25	86%	86%	86%

See warranty documents for details. Conditions apply.

TEMPERATURE RATINGS

Typical low irradiance performance of module at STC.



Specifications subject to change without notice.

Ref: PM-DS-07-29 Rev-A 05.21

Founded in 1996, REC Group is an international pioneering solar energy company dedicated to empowering consumers with clean, affordable solar power. As Solar's Most Trusted, REC is committed to high quality, innovation, and a low carbon footprint in the solar materials and solar panels it manufactures. Headquartered in Norway with operational headquarters in Singapore, REC also has regional hubs in North America, Europe, and Asia-Pacific.

REC

www.recgroup.com

INVERTERS

Single Phase Inverter with HD-Wave Technology

for North America

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

12-25 YEAR WARRANTY

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)

solaredge

Single Phase Inverter with HD-Wave Technology for North America

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

Model Number	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXXBXX4							
OUTPUT								
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[1]							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							
INPUT								
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[2]	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V[2]	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

[1] For other regional settings please contact SolarEdge support
[2] 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

Model Number	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[3]							
Inverter Commissioning	with the SetApp mobile application using built-in Wi-Fi Access Point 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	1'' Maximum / 14-6 AWG					1'' Maximum /14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	1'' Maximum / 1-2 strings / 14-6 AWG					1'' Maximum / 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[4]							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

[3] Revenue grade inverter P/N: SExxxxH-US000BNC4
[4] 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

RoHS

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / 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

solaredge

/ Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / 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)	P401 (for high power 60 and 72 cell modules)	P405 (for high-voltage modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT									
Rated Input DC Power[1]	320	350	370	400	405		485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	60	125[2]		83[2]	Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	8-60	12.5 - 105		12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11	11.02	11	10.1	11.75	11		14	Adc
Maximum DC Input Current	13.75			12.5	14.65	12.5		17.5	Adc
Maximum Efficiency	99.5								%
Weighted Efficiency	98.8							98.6	%
Overvoltage Category	II								
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)									
Maximum Output Current	15								Adc
Maximum Output Voltage	60					85			Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)									
Safety Output Voltage per Power Optimizer	1 ± 0.1								Vdc
STANDARD COMPLIANCE									
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3								
Safety	IEC62109-1 (class II safety), UL1741								
Material	UL94 V-0, UV Resistant								
RoHS	Yes								
INSTALLATION SPECIFICATIONS									
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 153 x 29.5 / 5.1 x 6 x 1.16	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	655 / 1.5	845 / 1.9		1064 / 2.3	gr / lb
Input Connector	MC4[3]						Single or dual MC4[3][4]	MC4[3]	
Input Wire Length	0.16 / 0.52				0.16 or 0.9 /0.52 or 2.95[5]	0.16 / 0.52			m / ft
Output Wire Type / Connector	Double Insulated / MC4								
Output Wire Length	0.9 / 2.95	1.2 / 3.9							m / ft
Operating Temperature Range[6]	-40 to +85 / -40 to +185								°C / °F
Protection Rating	IP68 / NEMA6P								
Relative Humidity	0 - 100								%

(1) Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed
(2) NEC 2017 requires max input voltage be not more than 80V
(3) For other connector types please contact SolarEdge
(4) For dual version for parallel connection of two modules use P485-4NMDMRM. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer connected to one PV module. When connecting a single module seal the unused input connectors with the supplied pair of seals
(5) Longer inputs wire length are available for use. For 0.9m input wire length order P401-xxxLxxx
(6) For ambient temperature above +85°C / +185°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details

PV System Design Using a SolarEdge Inverter[7][8]		Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400, P401	8		10	18	
	P405, P485, P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50[9]	
Maximum Power per String		5700 (6000 with SE7600-US - SE11400-US)	5250	6000[10]	12750[11]	W
Parallel Strings of Different Lengths or Orientations		Yes				

(7) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
(8) It is not allowed to mix P405/P485/P505 with P320/P340/P370/P400/P401 in one string
(9) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
(10) For 208V grid: it is allowed to install up to 6,500W per string when the maximum power difference between each string is 1,000W
(11) For 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W

Intertek RoHS

METERING

Energy Meter with Modbus Connection

for North America

SE-MTR240-NN-S-S1

Energy Meter for Residential Installations:

- Simple installations and connectivity
- Type NEMA 3R enclosure for outdoor protection
- Provides high accuracy meter readings
- Communicates over RS485 to provide monitoring data
- Suitable for export limitation, consumption monitoring and StorEdgeTM applications

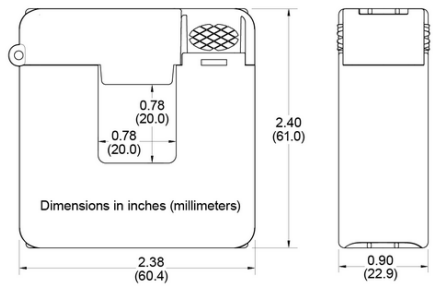
/ Energy Meter with Modbus Connection
for North America
SE-MTR240-NN-S-S1

SUPPORTED INVERTERS	SINGLE PHASE INVERTERS		UNITS
ELECTRICAL SERVICE			
AC Input Voltage (Nominal)	240		Vac
AC Frequency (Nominal)	60		Hz
Max AC Input Current	100		mA
Connector Type	Terminal block - 22 to 12		AWG
Grids supported	L1 / L2 / N / PE L1 / L2 / PE		
Power Consumption (Nominal)	3		W
METER ACCURACY (@ 77°F / 25°C, PF:0.7- 1)			
1 - 100% of Rated Current CT	±1.0		%
CURRENT TRANSFORMERS[1]			
Nominal Input (at CT Rated Current)	CT1, CT2: 0.333		Vac RMS
Rated RMS current[2]	200	400	A
Dimensions (Internal / External)	0.8 x 0.8; 2.4 x 2.4 / 20 x 20; 61 x 61	1.26 x 1.83; 3.3 x 4.5 / 32 x 46.5; 83.4 x 114	in/mm
STANDARD COMPLIANCE			
Safety	UL 1741:2010 Ed.2(Supplement SA)+R: 07 Sep 2016		
Emmissions	FCC 47 CFR Part 15 Subpart B		
ENVIRONMENTAL			
Operating Temperatures	-40 to +140 / -40 to +60		°F / °C
Relative Humidity (noncondensing)	5-90		%
Enclosure type	High impact, ABS and/or ABS/PC plastic UL 94V-0, IEC FV-0		
Protection Rating	NEMA Type 3R		
INSTALLATION SPECIFICATIONS			
Dimensions (HxWxD)	8.1 x 12.4 x 4.6 / 206.6 x 316 x 117.5		in / mm
Weight	3.9 / 1.8		lb / kg
Conduit Entry Diameters	0.75 or 1 / 19 or 25		in
Mounting Type	Bracket mount		

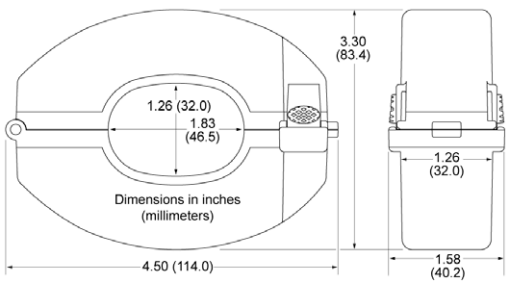
[1] Current Transformers should be ordered separately: SEACT0750-200NA-20 (200A) or SEACT1250-400NA-20 (400A), 20 per box
[2] For other ratings contact SolarEdge

Current Transformer Dimensions

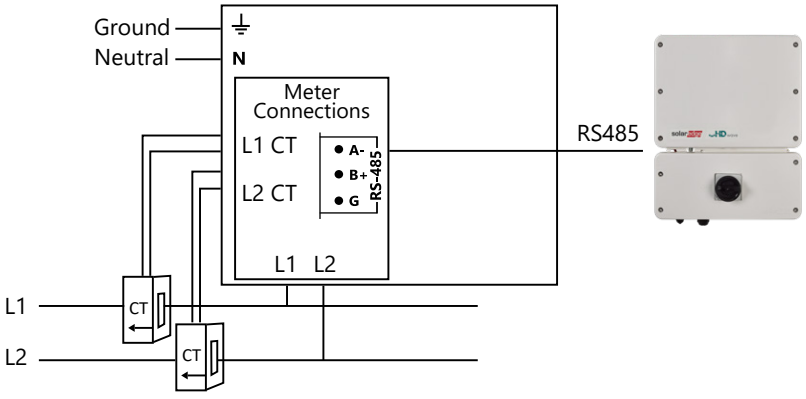
200A CT



400A CT



Connecting the Energy Meter



* Current Transformers (CTs) should be ordered separately: SEACT0750-200NA-20 (200A); SEACT1250-400NA-20 (400A). Each comes in boxes of 20.

FC RoHS

RSTC Enterprises, Inc.
2214 Heimstead Road
Eau Claire, WI 54703
715-830-9997

SOLADECK
FLASHED PV ROOF-MOUNT COMBINER/ENCLOSURES

Outdoor Photovoltaic Enclosures

0799 Series

Composition/Cedar Roof System

ETL listed and labeled

Report # 3171411PRT-002 Revised May, 2018

- UL50 Type 3R, 11 Edition Electrical equipment enclosures
- CSA C22.2 No. 290 Nema Type 3R
- Conforms to UL 1741 Standard

0799 Series Includes:

0799 - 2	Wire size 2/0-14
0799 - 5	Wire size 14-6
0799 - D	Wire size 14-8

Models available in Grey, Black or Stainless Steel


SolaDeck 0799-2S


SolaDeck 0799-5G


SolaDeck 0799-DG

Basic Specifications

Material options:
- Powder coated, 18 gauge galvanized 90 steel (1,100 hours salt spray)
- Stainless steel

Process - Seamless draw (stamped)
Flashing - 15.25” x 17.25”
Height - 3”
Cavity - 255 Cubic inches

Base Plate:

- Fastened to base using toggle fastening system
- 5 roof deck knockouts
- Knockout sizes: (3) .5”, (1) .75” and (1) 1”
- 8”, 35mm slotted din rail
- Ground Block

Passthrough and combiner kits are available for either AC or DC applications.

pe.eaton.com

Eaton general duty cartridge fuse safety switch

DG222NRB

UPC:782113144221

Dimensions:

- **Height:** 14.37 IN
- **Length:** 7.35 IN
- **Width:** 8.4 IN

Weight:10 LB

Notes: Maximum hp ratings apply only when dual element fuses are used. 3-Phase hp rating shown is a grounded B phase rating, UL listed.

Warranties:

- Eaton Selling Policy 25-000, one (1) year from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.

Specifications:

- **Type:** General duty, cartridge fused
- **Amperage Rating:** 60A
- **Enclosure:** NEMA 3R
- **Enclosure Material:** Painted galvanized steel
- **Fuse Class Provision:** Class H fuses
- **Fuse Configuration:** Fusible with neutral
- **Number Of Poles:** Two-pole
- **Number Of Wires:** Three-wire
- **Product Category:** General duty safety switch
- **Voltage Rating:** 240V

Supporting documents:

- Eatons Volume 2-Commercial Distribution
- Eaton Specification Sheet - DG222NRB

Certifications:

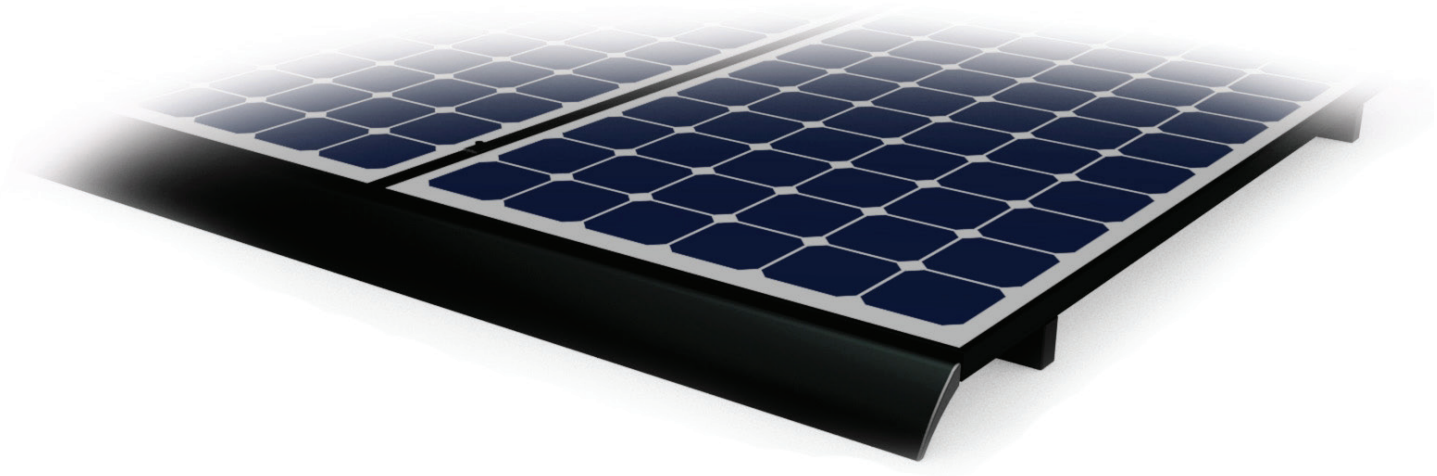
- UL Listed

Product compliance: No Data

SnapNrack™
Solar Mounting Solutions

Ultra Rail
Series 100
RL

Array Skirt



Sleek Look. Attractive Design. Easily Mounted.

- Skirt mounts attach to any standard module using single bolt with 1/2” socket
- Splice provides snap-in attachment of skirt sections together
- Skirt easily snaps onto mount providing a clean finished look
- Can be installed at any time allowing easy retrofit of existing systems

Start Installing the Array Skirt Today

RESOURCES	snapnrack.com/resources
DESIGN	snapnrack.com/configurator
WHERE TO BUY	snapnrack.com/where-to-buy

The SnapNrack Array Skirt

is an enhanced aesthetic option with a sleek black finish providing a flush clean line homeowners love. When installed the Array Skirt provides a clean finish to the front of arrays covering any screws, bolts, wires, or mounting hardware. It mounts directly to standard module frames allowing it to attach to almost any array.

Skirt Mounts

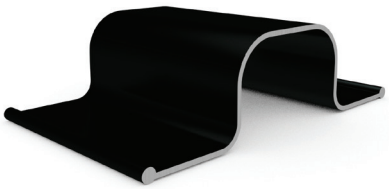
- Hook onto the inside of module frame
- Secured in place with ½" fastener from front of module preventing any need for reaching under array

Skirt

- Snaps into place on the mount easily with no tools required
- Smooth curved profile provides an elegant finished look

Splice

- Attaching separate sections of skirt is easy with the snap-in splice
- Provides a seamless transition between skirt sections



End Caps

- Cover end sections of skirt so no cuts are visible
- Easily snap end caps onto the ends of any skirt section

Quality. Innovative. Superior.

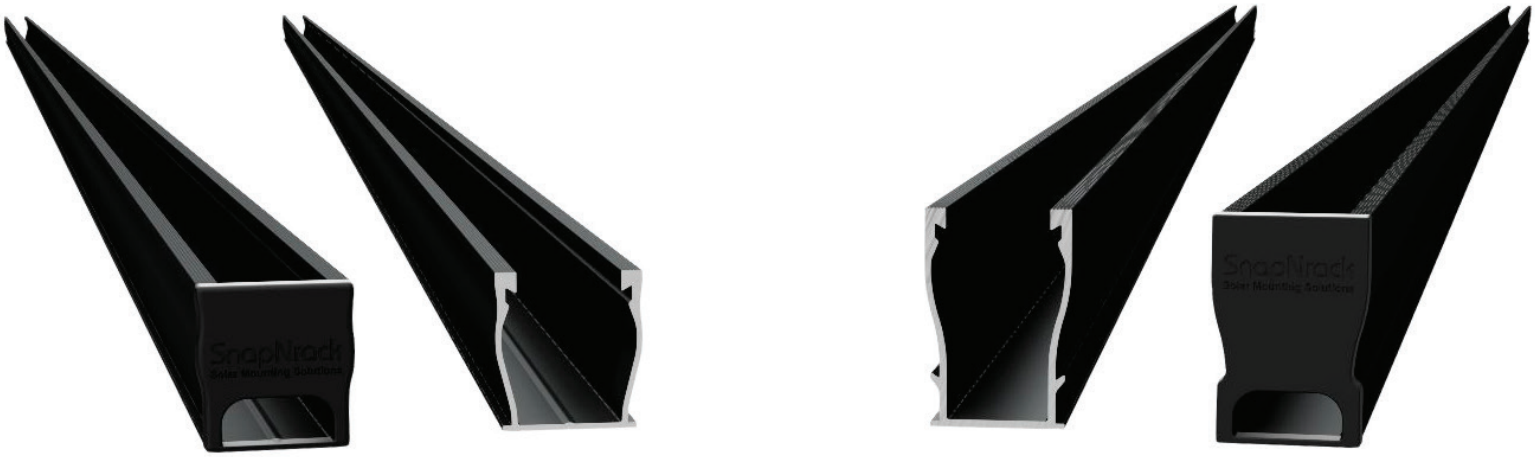
SnapNrack Solar Mounting Solutions are engineered to optimize material use and labor resources and improve overall installation quality and safety.

877-732-2860 **www.snapnrack.com** **contact@snapnrack.com**

SnapNrack™
Solar Mounting Solutions

UR-40
UR-60

Ultra Rail



The Ultimate Value in Rooftop Solar

- Industry leading Wire Management Solutions
- Mounts available for all roof types
- Single Tool Installation
- All SnapNrack Module Clamps & Accessories are compatible with both rail profiles

Start Installing Ultra Rail Today

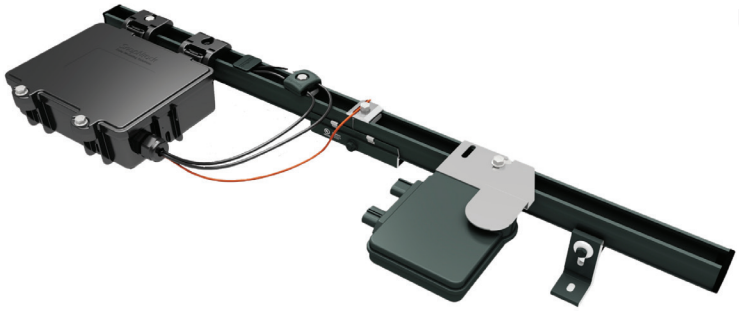
RESOURCES	snapnrack.com/resources
DESIGN	snapnrack.com/configurator
WHERE TO BUY	snapnrack.com/where-to-buy

SnapNrack Ultra Rail System

A sleek, straightforward rail solution for mounting solar modules on all roof types. Ultra Rail features two rail profiles; UR-40 is a lightweight rail profile that is suitable for most geographic regions and maintains all the great features of SnapNrack rail, while UR-60 is a heavier duty rail profile that provides a larger rail channel and increased span capabilities. Both are compatible with all existing mounts, module clamps, and accessories for ease of install.

The Entire System is a Snap to Install

- New Ultra Rail Mounts include snap-in brackets for attaching rail
- Compatible with all the SnapNrack Mid Clamps and End Clamps customers love
- Universal End Clamps and snap-in End Caps provide a clean look to the array edge



Unparalleled Wire Management

- Open rail channel provides room for running wires resulting in a long-lasting quality install
- Industry best wire management offering includes Junction Boxes, Universal Wire Clamps, MLPE Attachment Kits, and Conduit Clamps
- System is fully bonded and listed to UL 2703 Standard

Heavy Duty UR-60 Rail

- UR-60 rail profile provides increased span capabilities for high wind speeds and snow loads
- Taller, stronger rail profile includes profile-specific rail splice and end cap
- All existing mounts, module clamps, and accessories are retained for the same great install experience

Quality. Innovative. Superior.

SnapNrack Solar Mounting Solutions are engineered to optimize material use and labor resources and improve overall installation quality and safety.

877-732-2860 **www.snapnrack.com** **contact@snapnrack.com**

SnapNrack SpeedSeal™ Foot

Patent Pending Lag Driven Sealant Solution for Ultra Rail

A New Generation of Roof Attachments

- Innovative design incorporates flashing reliability into a single roof attachment
- 100% waterproof solution
- Sealing cavity with compressible barrier secures sealant in place & fills voids

Maintain the Integrity of the Roof by Eliminating Disruption

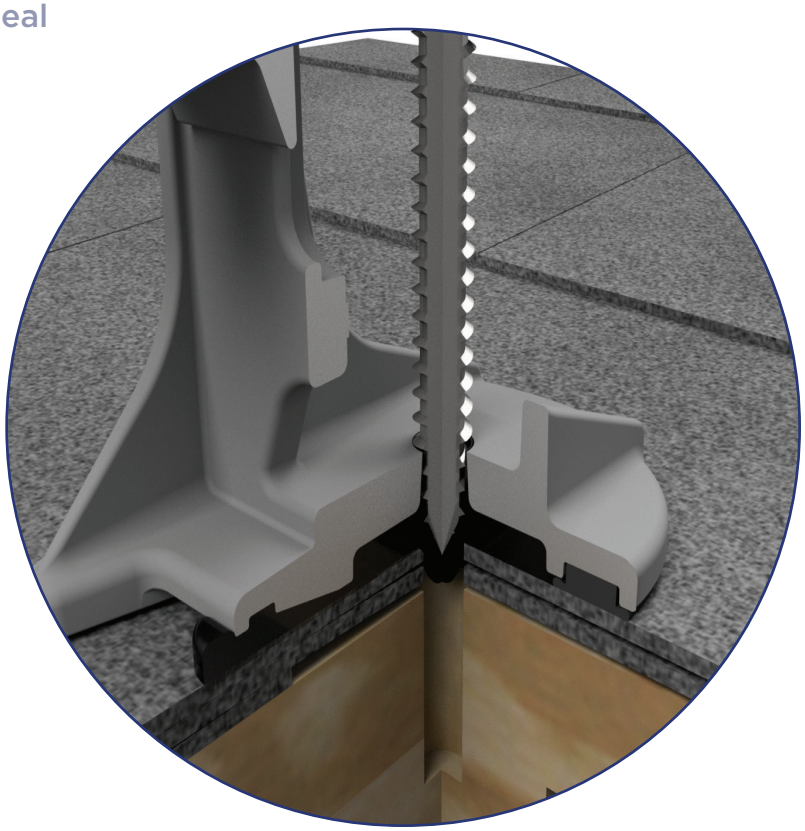
- Zero prying of shingles
- Zero removal of nails leaving holes in the roof
- Roof remains installed the way manufacturer meant it to be

Lag Driven Sealant Waterproofing

- Time Tested Roof Sealant provides lasting seal
- Sealant is compressed into cavity and lag hole as attachment is secured to rafter
- Active sealant solidifies bond if ever touched by liquid
- Technology passes UL 2582 Wind Driven Rain Test and ASTM E2140 Water Column Testing standards. Patent Pending.

Single Tool Installation

- SnapNrack was the first in the industry to develop a complete system that only requires a single tool. That tradition is continued as a ½" socket is still the only tool necessary to secure the mount as well as all other parts of the system.



Note: Sealant shown in white for illustration purposes only.

SnapNrack SpeedSeal™ Foot

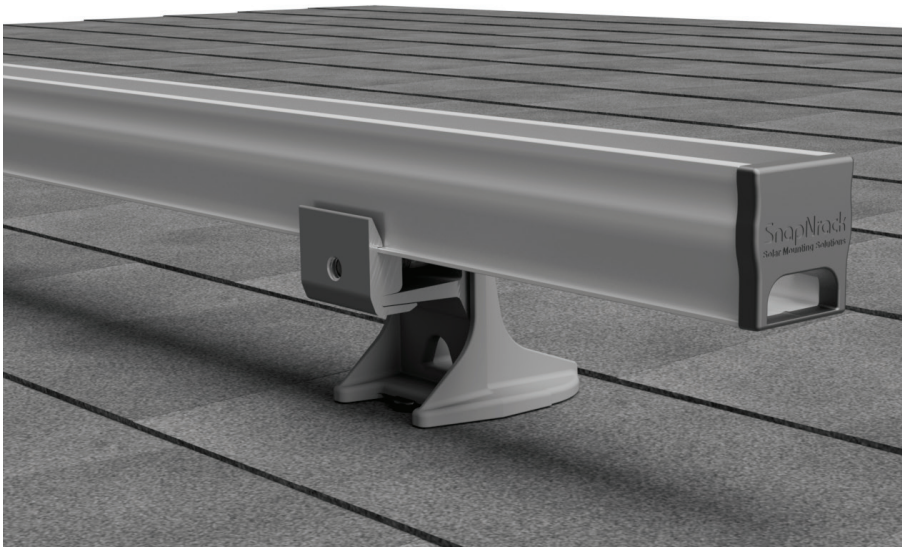
Fastest Roof Attachment in Solar

- Lag straight to a structural member, no in-between components such as flashings or bases.
- Simply locate rafter, fill sealant cavity & secure to roof. *It's that simple!*

Integrated Flashings. No Questions.

- Sealant fills around lag screw keeping roof and structure sealed and intact
- No added holes from ripping up nails, staples and screws holding shingles on roof

Less Time. Less Parts. Less Tools.



- No more need for a pry bar to rip up shingles
- No more proprietary lag screws
- Single Tool installation with ½" socket

Total System Solution

One Tool. One Warranty.

- SnapNrack Ultra Rail is a straightforward intuitive install experience on the roof without compromising quality, aesthetics & safety, all supported by a 25 year warranty.
- Built-in Wire Management & Aesthetically pleasing features designed for Ultra Rail result in a long-lasting quality install that installers and homeowners love.

Certifications

SnapNrack Ultra Rail System has been evaluated by Underwriters Laboratories (UL) and Listed to UL/ANSI Standard 2703 for Mechanical Loading and Fire. Additionally it is listed to UL 2582 for wind-driven rain and ASTM 2140.

SnapNrack™
Solar Mounting Solutions

877-732-2860 www.snapnrack.com contact@snapnrack.com

OVERVIEW OF THE SNAPNRACK ULTRA RAIL SYSTEM INSTALLED ON A TYPICAL ROOF

REFER TO SPECIFIC "ATTACHMENT DETAIL" FOR DETAILS ON ATTACHING AND WATERPROOFING THE VARIOUS SNAPNRACK ROOF ATTACHMENT PRODUCTS

REFER TO SPECIFIC "COMPONENT DETAIL" FOR DETAILS ON VARIOUS SNAPNRACK ACCESSARY AND COMPONENT PRODUCTS

BOTH THE SNAPNRACK, UNIVERSAL END CLAMP AND SNAPNRACK, ULTRA RAIL END CLAMP CAN BE USED ON END MODULES

MODULES MAY BE CLAMPED ON SHORT OR LONG SIDE PER MODULE MANUFACTURER REQUIREMENTS

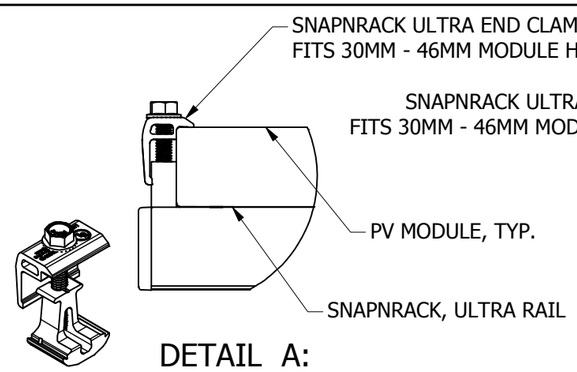
RAILS MAY BE MOUNTED UP/DOWN OR ACROSS THE SLOPE OF THE ROOF

REFER TO SNAPNRACK INSTALLATION MANUAL FOR 5/16"Ø HARDWARE TORQUE SPECIFICATIONS

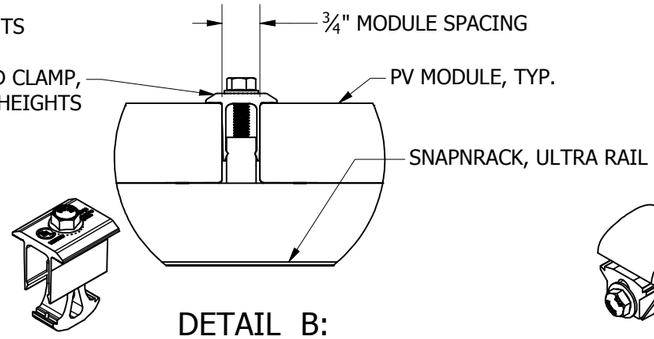
BIN: ALL

REVISION:

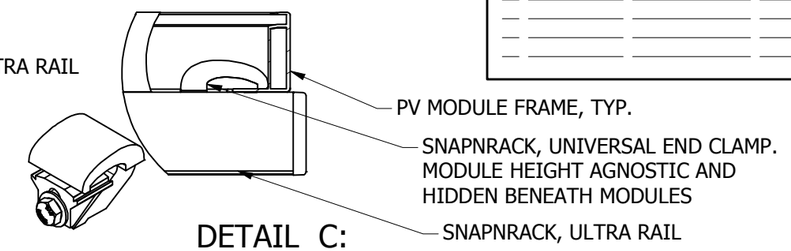
1	5/7/2019	NEW DETAIL	MJA
2	1/3/2020	ULTRA CLAMPS	MJA



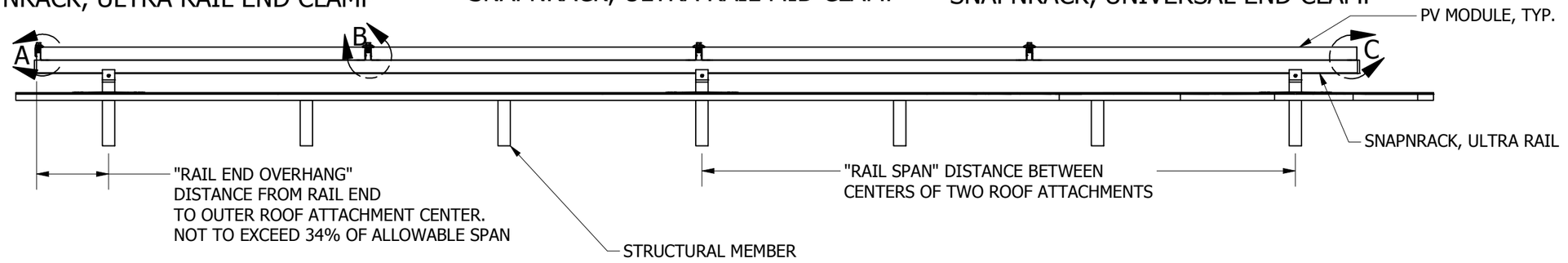
DETAIL A:
SNAPNRACK, ULTRA RAIL END CLAMP

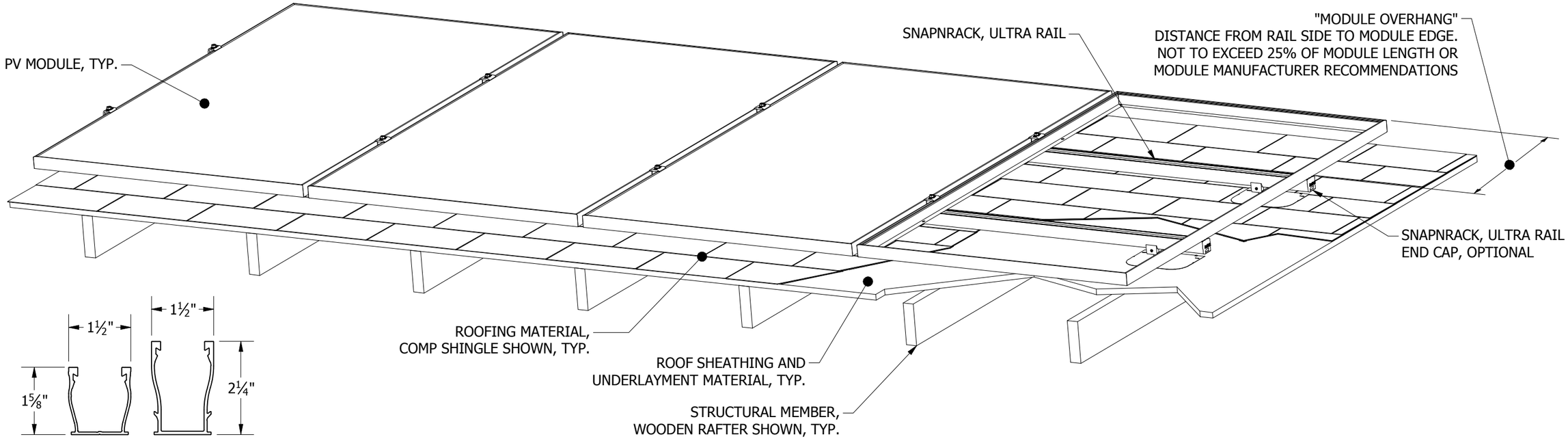


DETAIL B:
SNAPNRACK, ULTRA RAIL MID CLAMP



DETAIL C:
SNAPNRACK, UNIVERSAL END CLAMP





UR-40 RAIL | UR-60 RAIL
FOR USE WITH SNAPNRACK ULTRA SERIES RAILS

SnapNrack™
Solar Mounting Solutions

Sunrun South LLC
595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
PHONE (415) 580-6900 • FAX (415) 580-6902

DESIGNER: M.AFFENTRANGER DRAFTER: M.AFFENTRANGER APPROVED BY: B.PETERSON	SCALE: DNS DATE: 1/3/2020	DRAWING NUMBER: SNR-DC-00329	DESCRIPTION: ULTRA RAIL, SYSTEM OVERVIEW, TYPICAL	REV 2

SNAPNRACK UR SPEEDSEAL FOOT FOR COMPOSTION ROOF MOUNTING

REFER TO SNAPNRACK ENGINEERING CHARTS FOR APPLICABLE RAIL SPANS.

5/16"Ø S.S. LAG SCREW MUST EMBED A MIN. OF 2½" INTO STRUCTURAL MEMBER

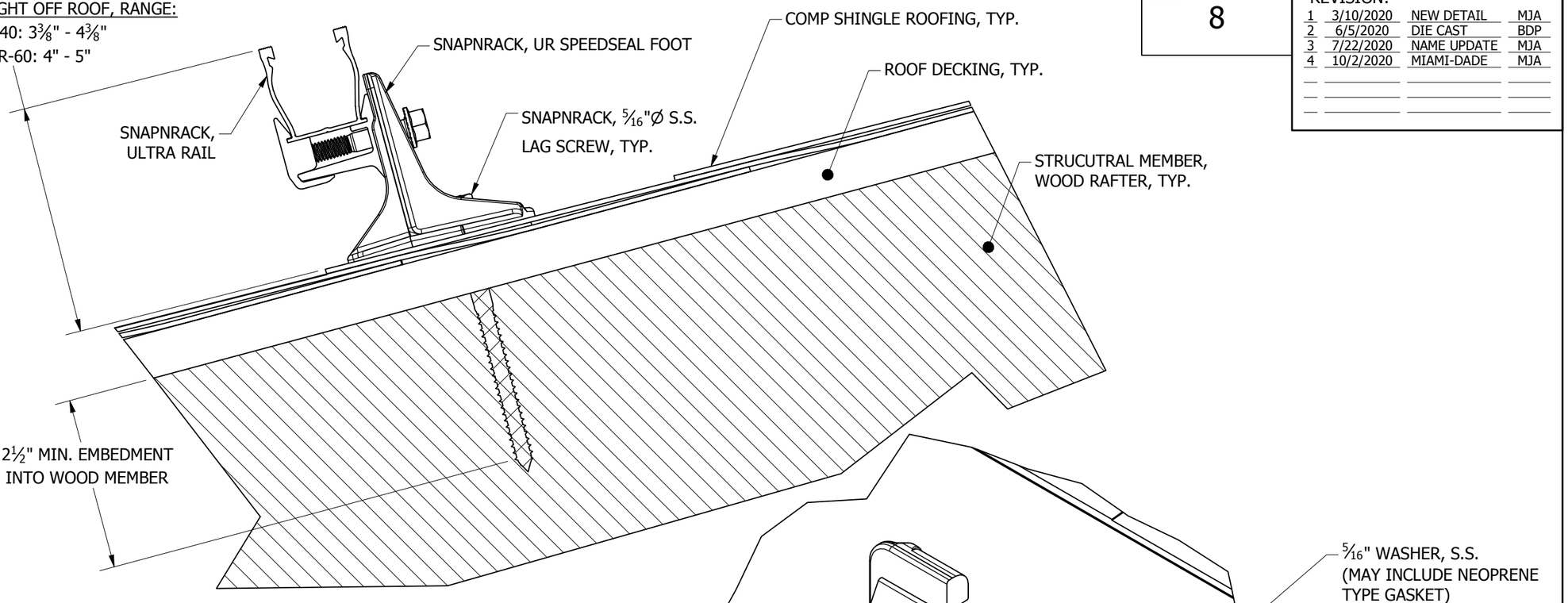
REFER TO SNAPNRACK INSTALLATION MANUAL FOR 5/16"Ø HARDWARE TORQUE SPECIFICATIONS

STRUCTURAL MEMBER SPECIFICATIONS:
MINIMUM WOOD GRADE = SPF #2
MINIMUM SPECIFIC GRAVITY = 0.42

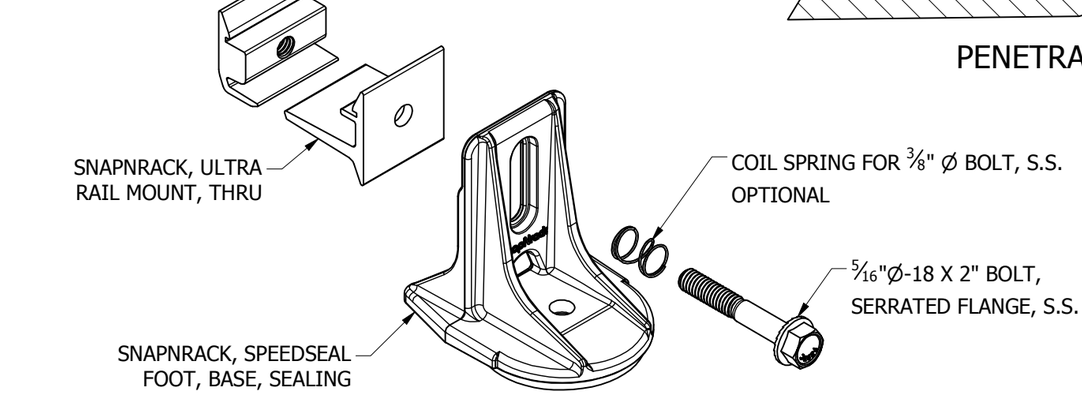
ALLOWABLE FASTENER UPLIFT = 820 LBS
ALLOWABLE FASTENER LATERAL = 250 LBS

MINIMUM FASTENER EDGE DISTANCE = 0.5"
MINIMUM FASTENER END DISTANCE = 2.2"

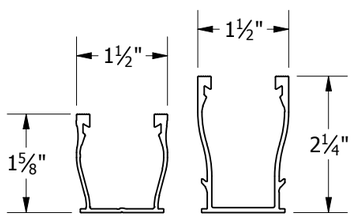
MODULE HEIGHT OFF ROOF, RANGE:
UR-40: 3⅜" - 4⅜"
UR-60: 4" - 5"



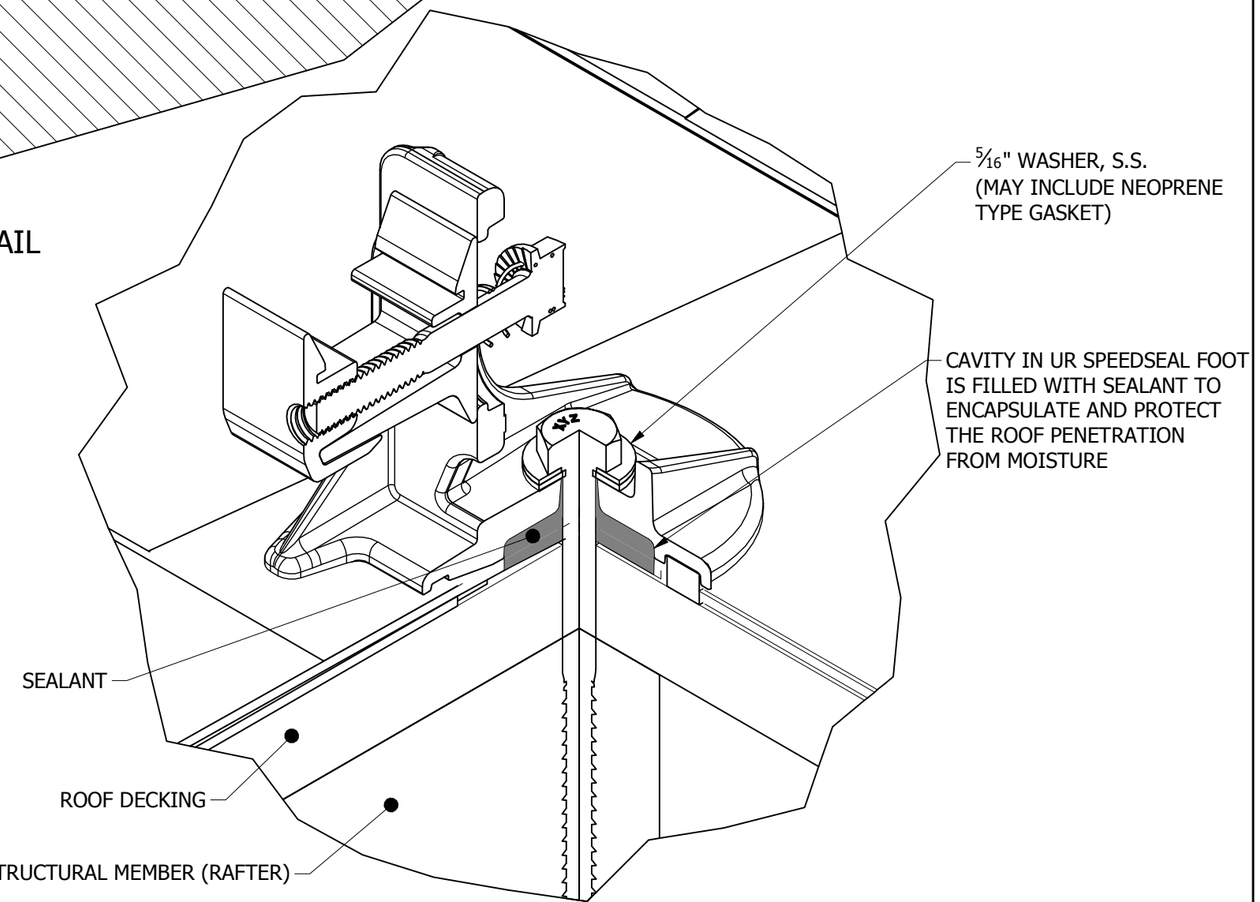
PENETRATION DETAIL



EXPLODED



UR-40 RAIL | UR-60 RAIL
FOR USE WITH SNAPNRACK ULTRA SERIES RAILS



BIN: 8

REVISION:

1	3/10/2020	NEW DETAIL	MJA
2	6/5/2020	DIE CAST	BDP
3	7/22/2020	NAME UPDATE	MJA
4	10/2/2020	MIAMI-DADE	MJA

SnapNrack™ Solar Mounting Solutions

Sunrun South LLC
595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
PHONE (415) 580-6900 • FAX (415) 580-6902

DESIGNER: M.AFFENTRANGER
DRAFTER: M.AFFENTRANGER
APPROVED BY: B.PETERSON

SCALE: DNS
DATE: 10/2/2020

DRAWING NUMBER: SNR-DC-00438

DESCRIPTION: ULTRA RAIL, ATTACHMENT DETAIL, UR SPEEDSEAL FOOT TO RAFTER

REV: 4