

GENERAL NOTES:

N1. DRAWINGS ARE DIAGRAMMATIC ONLY. THE LOCATION AND ROUTING OF RACEWAYS SHALL BE DETERMINED BY THE CONTRACTOR UNLESS OTHERWISE NOTED OR STANDARDIZED.

N2. IF A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT DEVICES, OVERCURRENT PROTECTION, GROUNDING SYSTEMS, ETC. (ALL EQUIPMENT AND MATERIALS) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIALS AND SERVICES REQUIRED BY THE STRICTEST CONDITIONS IN THE SPECIFICATIONS OR NOTED ON THE PLANS TO ENSURE COMPLETE COMPLIANCE WITH ALL CODES AND TO ENSURE THE LONGEVITY AND SAFETY OF THE OPERABLE SYSTEM.

N3. ALL OUTDOOR EQUIPMENT SHALL BE MIN. NEMA 3R RATED.

N4. METAL CONDUIT AND ENCLOSURES SHALL BE USED WHERE PV SOURCE OR OUTPUT CIRCUITS ARE RUN INSIDE A BUILDING.

N5. MODULES SHALL NOT BE PLACED OVER ANY PLUMBING VENTS AND AT LEAST 6" ABOVE FLUSH VENTS.

N6. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH ANY AND ALL REQUIREMENTS GIVEN BY UTILITY COMPANIES.

N7. FOR ADDITIONAL EQUIPMENT SPECIFICATIONS, SEE PROVIDED CUT SHEETS.

N8. ALL NEC REFERENCES SHALL BE DIRECTLY INTERCHANGEABLE WITH CEC REFERENCES.

N9. IT IS ILLEGAL FOR ANYONE UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT TO ALTER ANY ITEMS ON THIS PLAN.

N10. THE ENGINEER HAS NOT BEEN RETAINED FOR JOB SUPERVISION.

N11. ALL OSHA REGULATIONS AND STANDARDS FOR SAFE AND HEALTHFUL WORKING CONDITIONS TO BE FOLLOWED.

N12. ALL CONTRACTORS WORKING ON ROOFS TO BE INSURED AS SUCH.

STRUCTURAL NOTES:

S1. MOUNTS ARE DIAGRAMMATIC AND EXACT LOCATION MAY CHANGE, BUT SHALL BE ACCURATELY SPACED.

S2. MOUNTS SHALL BE STAGGERED WHEN NECESSARY TO EVENLY DISTRIBUTE LOAD AMONGST TRUSS.

S3. DO NOT SPLICE RAILS IN MIDDLE 50% OF SPAN BETWEEN TWO MOUNTS.

ELECTRICAL NOTES:

E1. MAXIMUM POWER PER STRING DOES NOT EXCEED 6000W.

E2. ANY EQUIPMENT OR ELECTRICAL MATERIALS USED FOR THIS INSTALLATION SHALL BE NEW AND LISTED BY A RECOGNIZED ELECTRICAL TESTING LABORATORY.

E3. AN INVERTER IN AN INTERACTIVE SOLAR PV SYSTEM SHALL AUTOMATICALLY DE-ENERGIZE ITS OUTPUT TO THE CONNECTED ELECTRICAL PRODUCTION AND DISTRIBUTION NETWORK UPON LOSS OF VOLTAGE IN THAT SYSTEM AND SHALL REMAIN IN THAT STATE UNTIL THE ELECTRICAL PRODUCTION AND DISTRIBUTION NETWORK VOLTAGE HAS BEEN RESTORED.

E4. ALL PV ARRAYS SHALL BE EQUIPPED WITH DC GROUND FAULT PROTECTION BY INVERTER(S), AND ARC FAULT PROTECTION IS INVERTER-INTEGRATED.

E5. ANY AC COMPONENT SHALL MEET OR EXCEED THE AVAILABLE FAULT CURRENT CALCULATED AT THAT COMPONENT.

E6. ALL MODULES AND ANY RELATED ROOF MOUNTED METALLIC EQUIPMENT SHALL BE PROPERLY BONDED AND GROUNDED.

E7. ALL WIRE, VOLTAGES, AMPERAGES AND EQUIPMENT IS SIZED ACCORDING TO TEMPERATURE DERATING AND LOCATION.

E8. ONLY COPPER (CU) CONDUCTORS SHALL BE USED FOR NEW WIRING. CONDUCTORS SHALL BE STRANDED OR SOLID WITH PROPERLY RATED CONNECTORS.

E9. ALL MODULES AND RACKING SHALL BE GROUNDED VIA UL2703-LISTED RACKING SYSTEM'S INTEGRATED GROUNDING (PLEASE SEE DATA SHEET) OR WITH TIN PLATED DIRECT BURIAL RATED LAY IN LUGS USING STAINLESS STEEL HARDWARE, STAR WASHERS, AND THREAD FORMING BOLTS.



1 HOUSE PHOTO
PV-0 SCALE: NTS

PROJECT DESCRIPTION:

(38x360) REC REC360TP4 BLACK MODULES
ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES
SYSTEM SIZE: 13.680kW DC / 10.00kW AC

EQUIPMENT SUMMARY

38 REC REC360TP4 BLACK MODULES
01 SOLAREEDGE SE 10000H -US
38 SOLAREEDGE POWER OPTIMIZER P401

SHEET INDEX

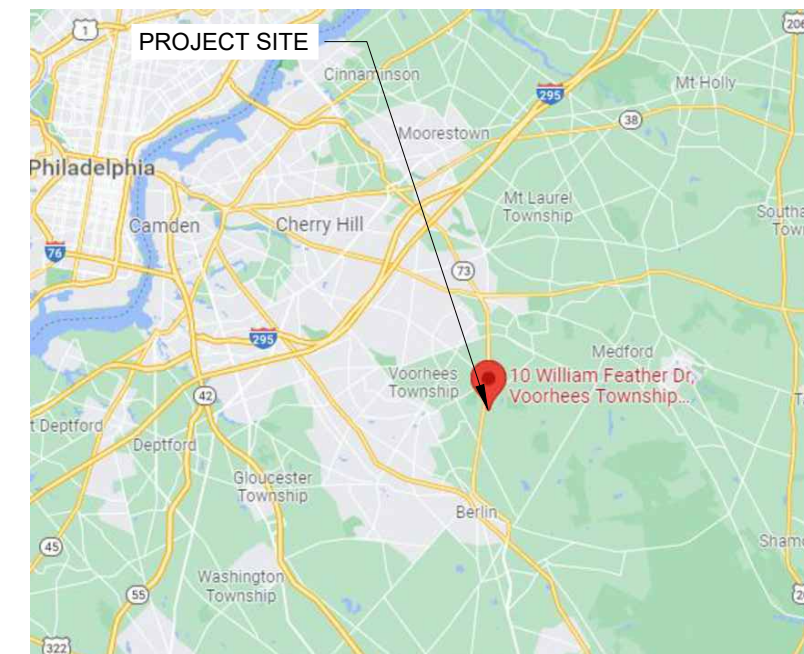
PV-0 COVER SHEET
PV-1 SITE PLAN
PV-2 ROOF PLAN & MODULES
PV-3 ATTACHMENT DETAIL
PV-3.1 TRUSS FRAMING DETAIL
PV-4 ELECTRICAL LINE DIAGRAM & WIRING CALCULATIONS
PV-5 PLACARDS
PV-6 OPTIMIZER CHART
PV-7+ EQUIPMENT SPECIFICATION

GOVERNING CODES

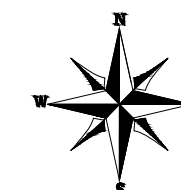
2017 NATIONAL ELECTRIC CODE
2018 INTERNATIONAL RESIDENTIAL CODE FOR NEW JERSEY EDITION
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL FIRE CODE
NJ UCC REHABILITATION SUBCODE.

SCOPE OF WORK

INSTALLATION OF A SAFE AND CODE-COMPLIANT GRID-TIED SOLAR PV SYSTEM ON AN EXISTING RESIDENTIAL ROOF TOP.



2 VICINITY MAP
PV-0 SCALE: NTS



REVISIONS		
DESCRIPTION	DATE	REV

Signature with Seal

PROJECT NAME

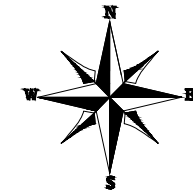
FAY NEWMAN
10 WILLIAM FEATHER DR,
VOORHEES TOWNSHIP, NJ
08043

COVER SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-0

● **ROOF ACCESS POINT** SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION IN LOCATIONS WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREE LIMBS, WIRES OR SIGNS.

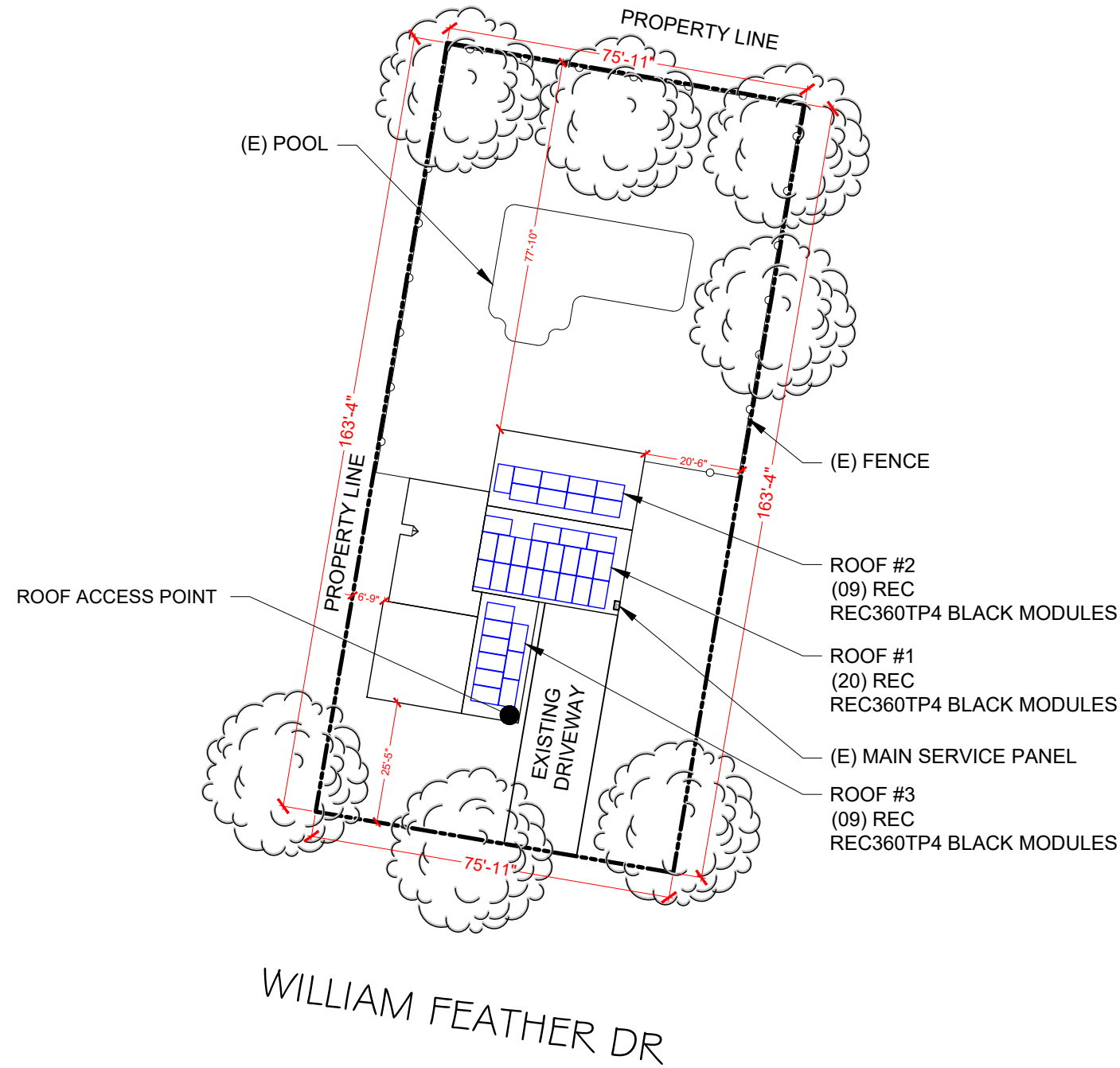


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1 | **SITE PLAN**
 PV-1 | SCALE: 1/32" = 1'

SITE PLAN

SHEET SIZE
ANSI B
 11" X 17"

SHEET NUMBER
PV-1

ROOF DESCRIPTION				
ROOF TYPE		COMPOSITION SHINGLE		
ROOF	ROOF TILT	AZIMUTH	TRUSS SIZE	TRUSS SPACING
#1	31°	190°	2X4"	24" o.c.
#2	31°	10°	2X4"	24" o.c.
#3	40°	100°	2X4"	24" o.c.

ARRAY AREA				
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)	ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)
#1	20	394.00	558.24	70.58
#2	9	177.30	501.55	35.35
#3	9	177.30	311.73	56.88

ROOF ARRAY AREA				
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)	ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)
#1-3	38	748.60	1371.52	54.58

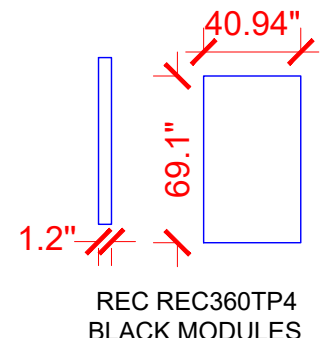
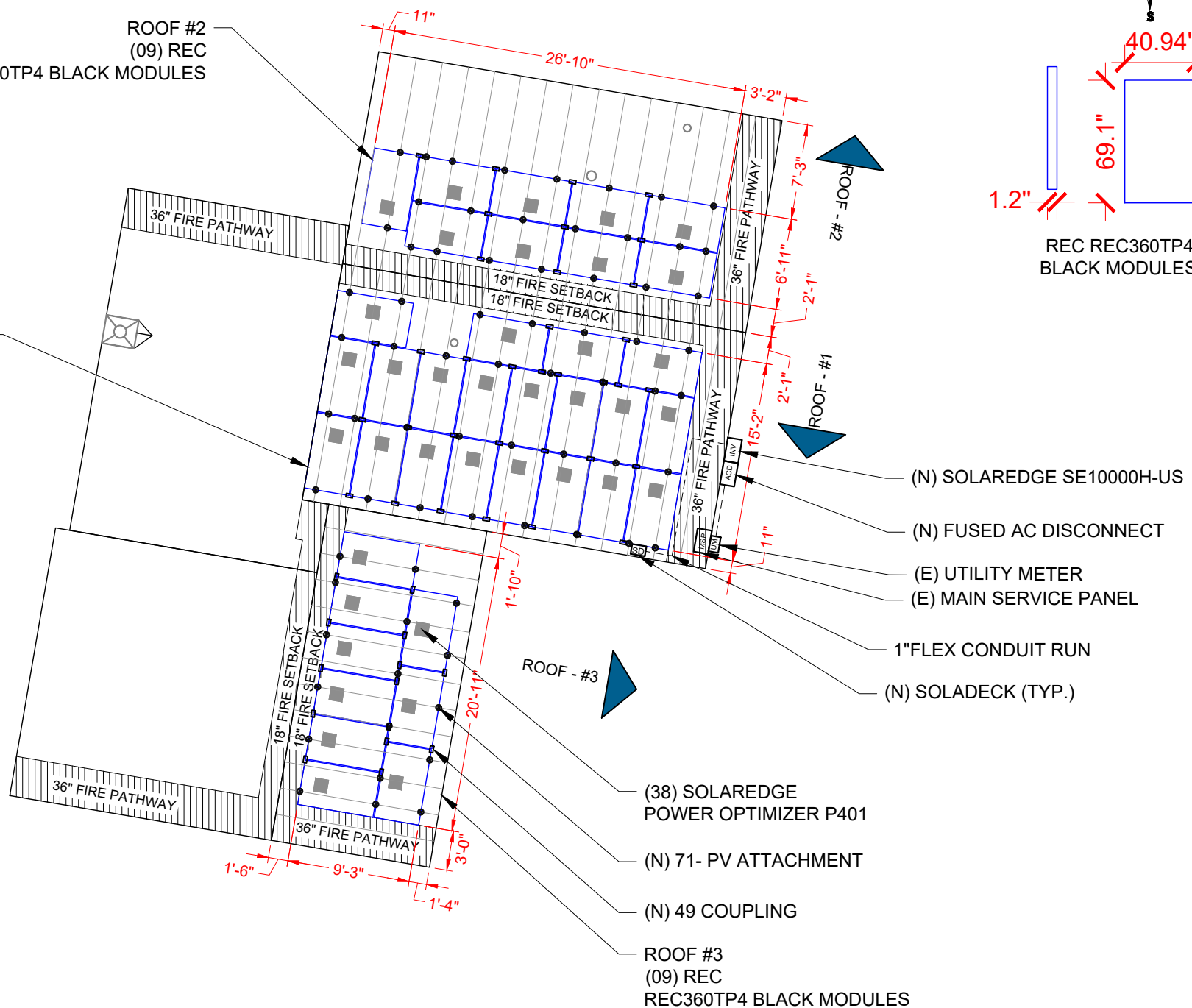
ARRAY SPECIFICATION	
MODULE LENGTH (inch)	69.10
MODULE WIDTH (inch)	40.94
MODULE AREA (sqft)	19.70
MODULE WEIGHT	44.00
NUMBER OF MODULE	38
TOTAL MODULE WEIGHT (lbs)	1672.00
RACKING WEIGHT (lbs)	194.47
TOTAL ARRAY WEIGHT (lbs)	1866.47
ARRAY AREA (sqft)	748.60
ARRAY DEAD LOAD (lbs/sqft)	2.49
NUMBER OF MOUNTS	71
LOAD PER MOUNT (lbs)	26.29

MAX ATTACHMENT SPACING=48"

ROOF #1
(20) REC
REC360TP4 BLACK MODULES

ROOF #2
(09) REC
REC360TP4 BLACK MODULES

ROOF #3
(09) REC
REC360TP4 BLACK MODULES



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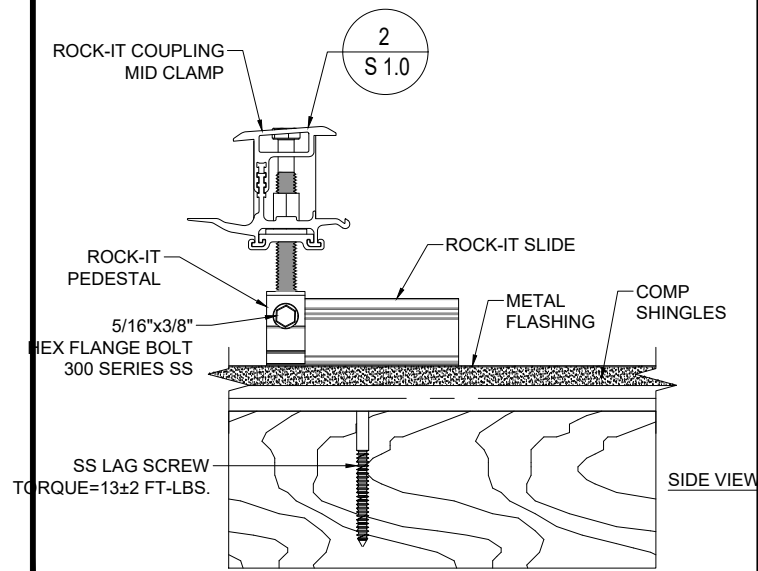
ROOF PLAN &
MODULES

SHEET SIZE
ANSI B
11" X 17"

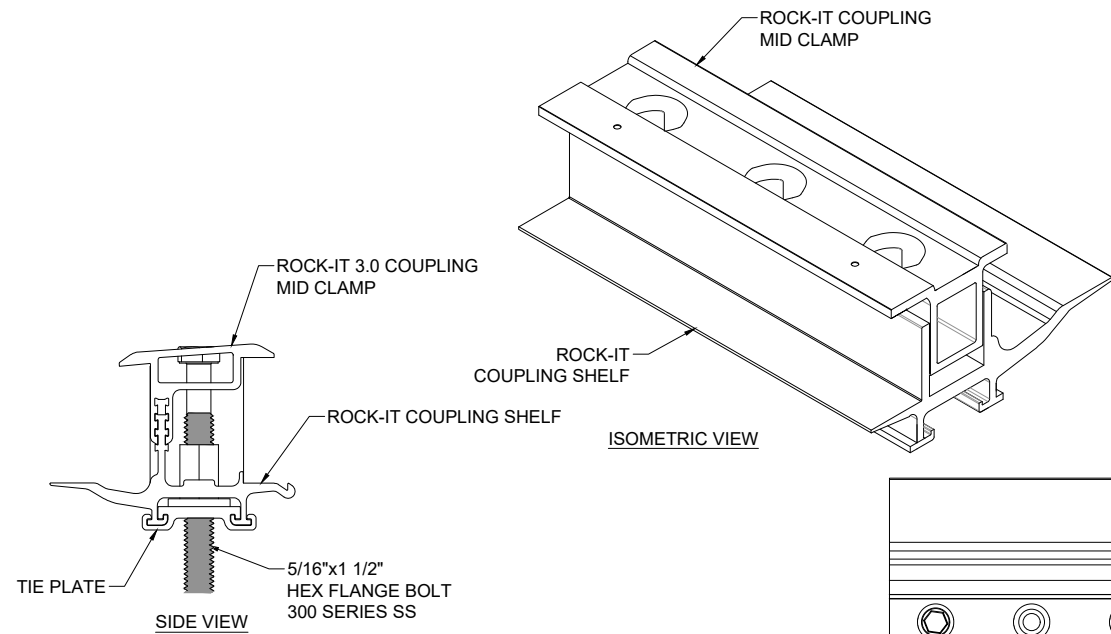
SHEET NUMBER
PV-2

(E) FRONT YARD
WILLIAM FEATHER DR

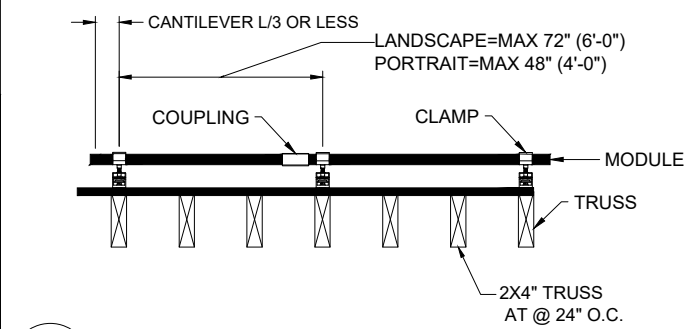
(E) BACKYARD



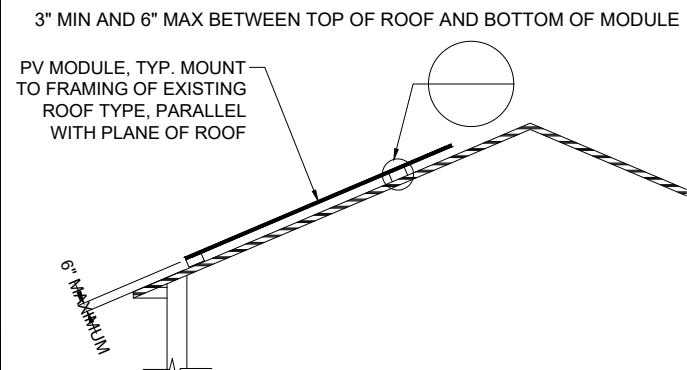
1 ROCK-IT MOUNT DETAIL
S 1.0 NOT TO SCALE



2 ROCK-IT COUPLING ASSEMBLY
S 1.0 NOT TO SCALE

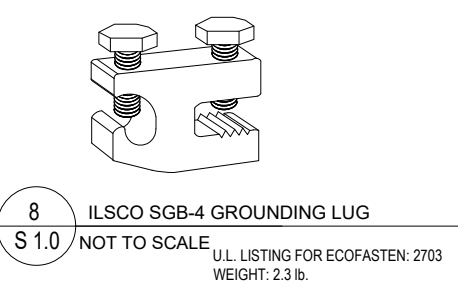


4 PV SYSTEM MOUNTING DETAIL
S 1.0 NOT TO SCALE

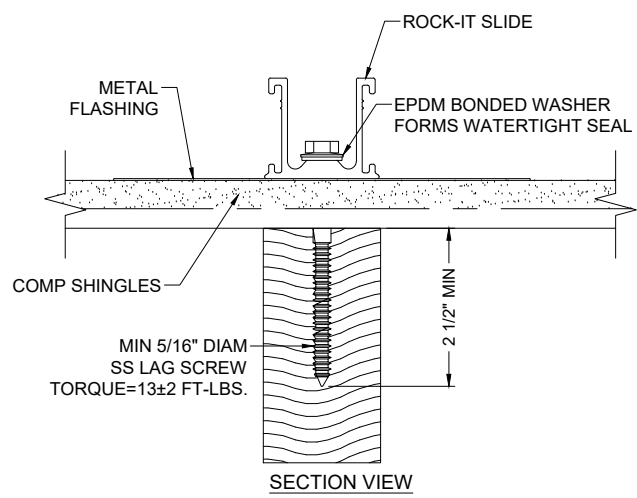


6 PV ARRAY TYP. ELEVATION
S 1.0 NOT TO SCALE

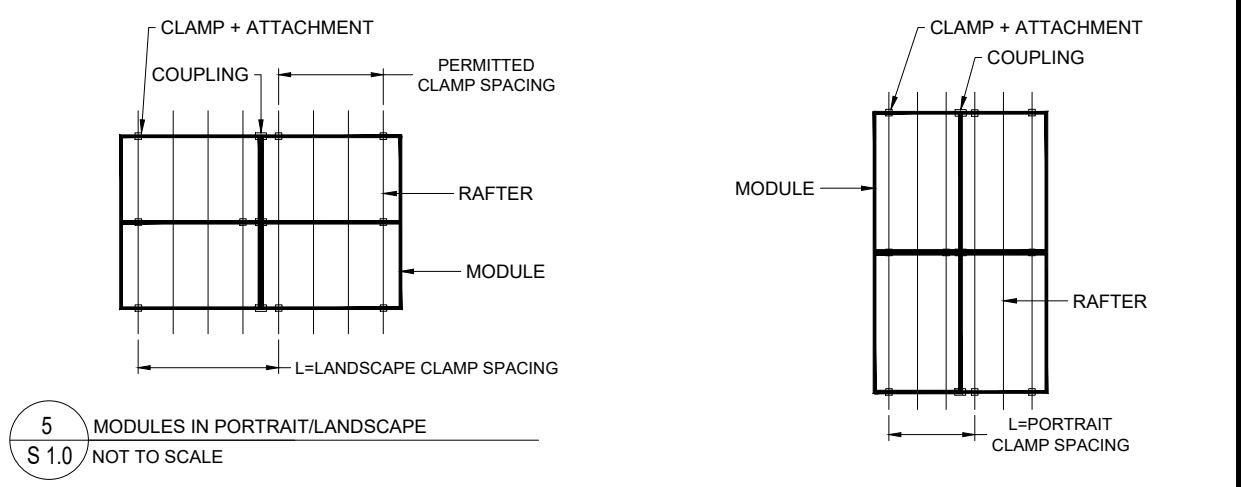
1 ATTACHMENT DETAIL
PV-3 SCALE: NTS



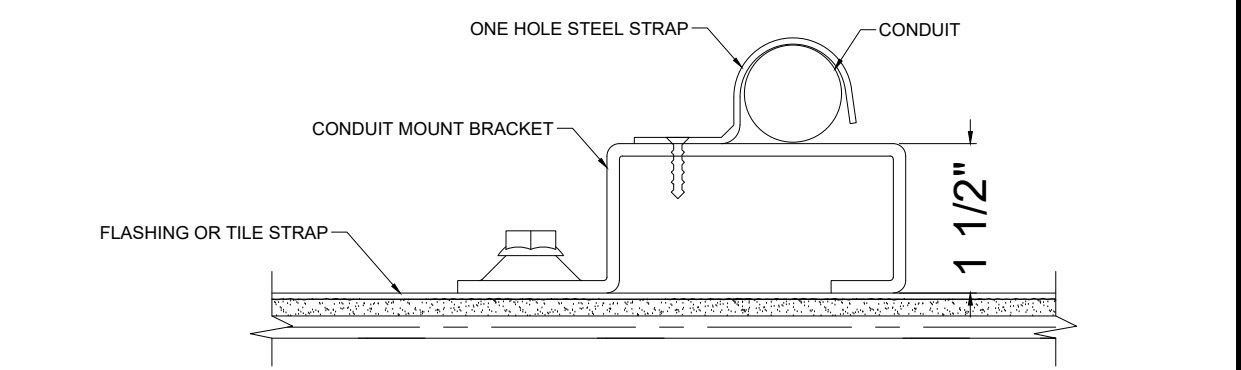
8 ILSCO SGB-4 GROUNDING LUG
S 1.0 NOT TO SCALE
U.L. LISTING FOR ECOFASTEN: 2703
WEIGHT: 2.3 lb.



3 SECTION VIEW
S 1.0 NOT TO SCALE



5 MODULES IN PORTRAIT/LANDSCAPE
S 1.0 NOT TO SCALE



7 CONDUIT MOUNTING DETAIL
S 1.0 NOT TO SCALE

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ATTACHMENT
DETAIL

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-3

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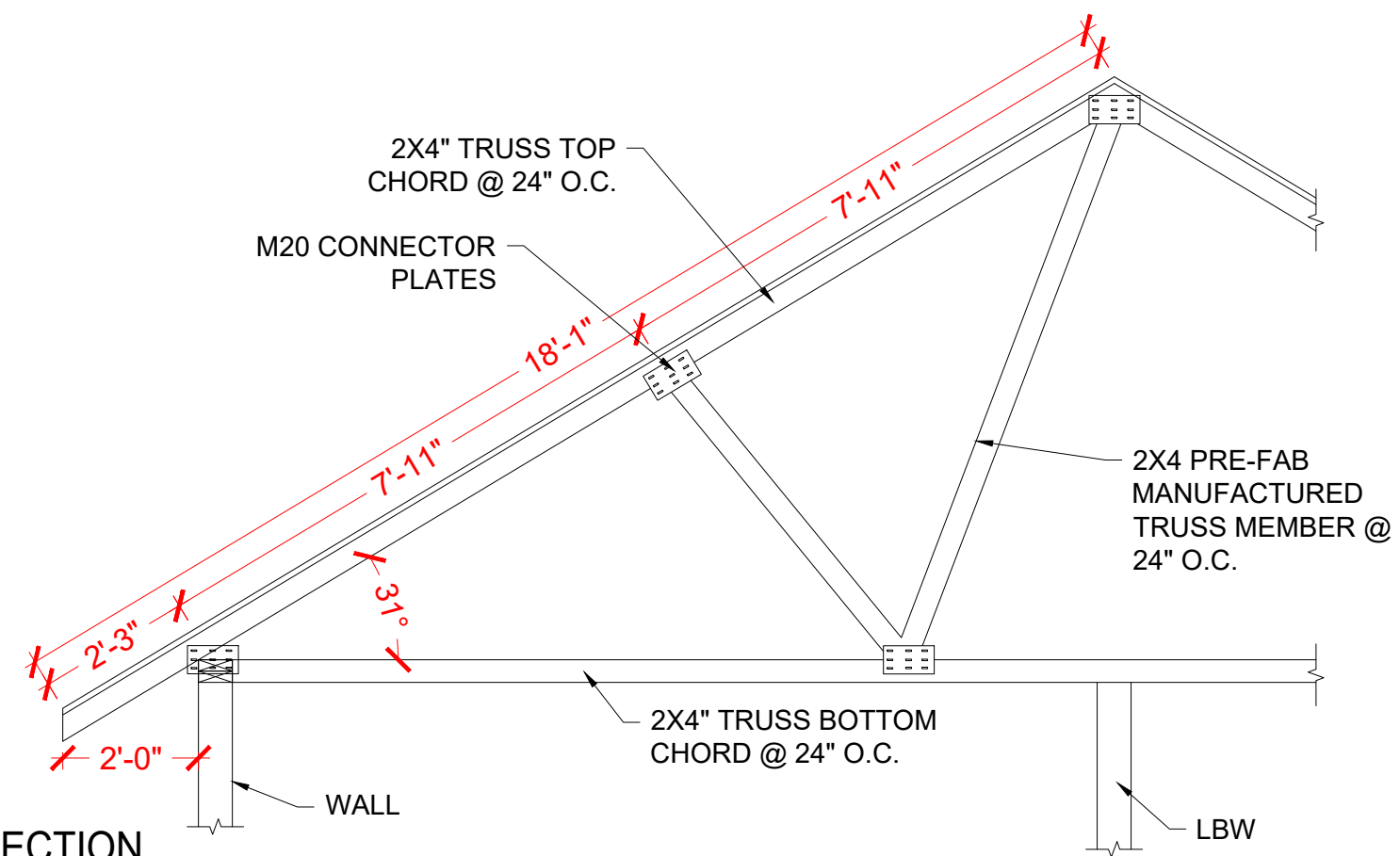
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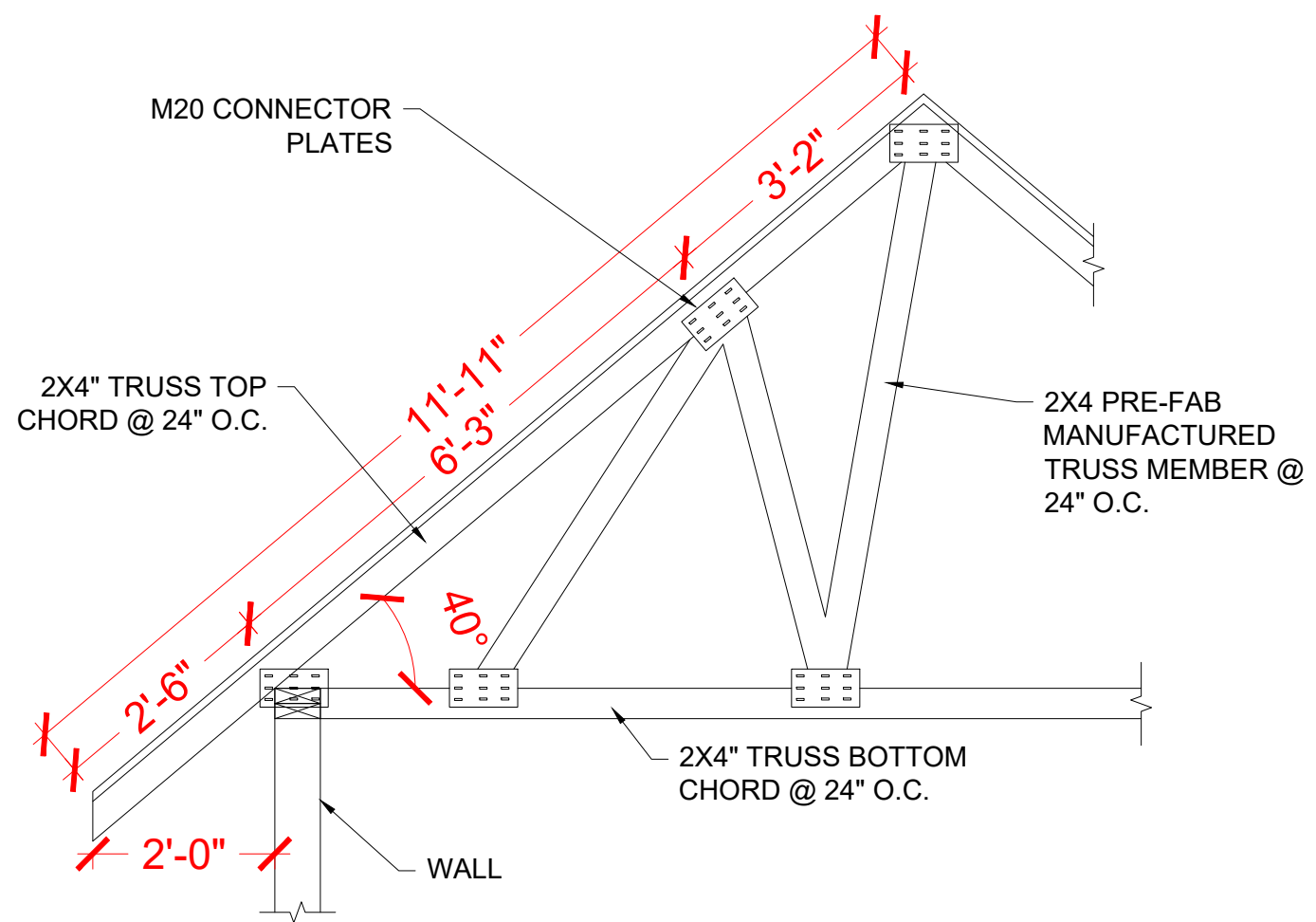
TRUSS FRAMING DETAIL

SHEET SIZE
ANSI B
 11" X 17"

SHEET NUMBER
PV-3.1



1 | ROOF #1 & 2 SECTION
 PV-3.1 | SCALE: 3/8"=1'-0"



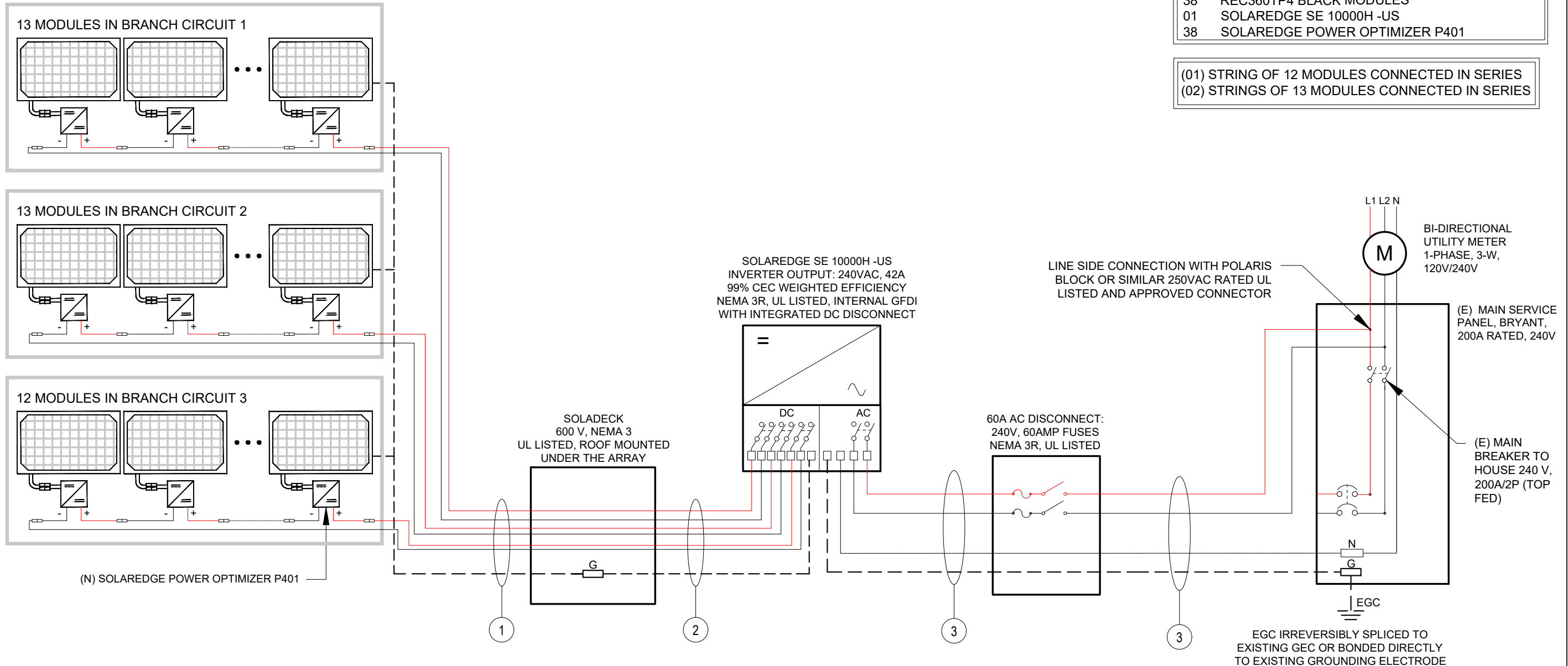
2 | ROOF #3 SECTION
 PV-3.1 | SCALE: 1/2"=1'-0"

WIRE TAG #	WIRE FROM --	CONDUIT	WIRE QTY	WIRE GAUGE:	WIRE TYPE	TEMP RATING:	WIRE AMP	TEMP DE-RATE:	CONDUIT FILL:	WIRE OCP:	TERMINAL 75°C RATING:	STRING WATTAGE / OPERATING VOLTAGE =	STRING AMPS x NEC =	MAX AMPS	MAX SYSTEM VOLTAGE	GRND SIZE	GRND WIRE TYPE
①	ARRAY TO SOLAR DECK	OPEN AIR	6	#10	PV WIRE	90°	40A x 0.96A	x 0.80A	= 30.72A		35A	4680 / 400	= 11.7 x 1.25	= 14.63A	480	#10	SBC
②	SOLAR DECK TO INVERTER	1"FLEX	6	#10	THWN-2	90°	40A x 0.76A	x 0.80A	= 24.32A		35A	4680 / 400	= 11.7 x 1.25	= 14.63A	480	#10	THWN-2
③	INVERTER TO MSP	1"FLEX	3	#6	THWN-2	75°	65A x 0.94A	x 1.0A	= 61.1A		65A	/	= 42.0 x 1.25	= 52.5A	240	#8	THWN-2

SYSTEM SIZE: 13.680kW DC / 10.00kW AC

- 38 REC360TP4 BLACK MODULES
- 01 SOLAREDEGE SE 10000H-US
- 38 SOLAREDEGE POWER OPTIMIZER P401

- (01) STRING OF 12 MODULES CONNECTED IN SERIES
- (02) STRINGS OF 13 MODULES CONNECTED IN SERIES



OPTIMIZER SPECIFICATIONS	
MANUFACTURER	SOLAREDEGE P401
DC INPUT POWER	400 W
DC MAX INPUT VOLTAGE	60V
DC MAX INPUT CURRENT	14.65A
DC MAX OUTPUT CURRENT	15A
MAX INPUT VOLTAGE	480A

INVERTER CHARACTERISTICS - SOLAREDEGE SE 10000H-US			
MAX OUTPUT POWER	10000	W	
SYSTEM OPERATING VOLTAGE	400	V	
MAX CONTINUOUS OUTPUT CURRENT	42	A	
MAX INPUT VOLTAGE	480	V	
SYSTEM SHORT CIRCUIT CURRENT	15	A	
MAX EFFICIENCY	99	%	

PV MODULE RATING @ STC	
MANUFACTURER	REC360TP4 BLACK
MAX. POWER-POINT CURRENT (IMP)	10.62 AMPS
MAX. POWER-POINT VOLTAGE (VMP)	33.9 VOLTS
OPEN-CIRCUIT VOLTAGE (VOC)	40.6VOLTS
SHORT-CIRCUIT CURRENT (ISC)	11.26 AMPS
NOM. MAX. POWER AT STC (P _{MAX})	360 WATT
MAX. SYSTEM VOLTAGE	1000V
VOC TEMPERATURE COEFFICIENT	-0.26° %/°C

NOTE: PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN.

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ELECTRICAL LINE DIAGRAM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4

! WARNING
ELECTRICAL SHOCK HAZARD
DO NOT TOUCH TERMINALS. TERMINALS ON LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL LOCATION:
INVERTER(S), AC DISCONNECT(S), AC COMBINER PANEL (IF APPLICABLE).
PER CODE(S): CEC 2019: 690.17(B).

! WARNING
ELECTRICAL SHOCK HAZARD
IF GROUND FAULT IS INDICATED ALL NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED

LABEL LOCATION:
INVERTER(S), ENPHASE ENVOY ENCLOSURE (IF APPLICABLE).
PER CODE(S): CEC 2019: 690.15.

! WARNING
ELECTRICAL SHOCK HAZARD
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

LABEL LOCATION:
INVERTER(S), DC DISCONNECTS.
PER CODE(S): CEC 2019: 690.35(F).

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

LABEL LOCATION:
UTILITY SERVICE METER AND MAIN SERVICE PANEL.
PER CODE(S): NEC 2014: 705.12(D)(3),
NEC 2011: 705.12(D)(4)

! WARNING
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
ADJACENT TO PV BREAKER (IF APPLICABLE).
PER CODE(S): CEC 2019: 705.12(B).

! WARNING
PHOTOVOLTAIC SYSTEM COMBINER PANEL
DO NOT ADD LOADS

LABEL LOCATION:
PHOTOVOLTAIC AC COMBINER (IF APPLICABLE).
PER CODE(S): CEC 2019:
705.12(D)(2)(3)(c).

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION:
INTERIOR AND EXTERIOR DC CONDUIT EVERY 10 FT, AT EACH TURN, ABOVE AND BELOW PENETRATIONS, ON EVERY JB/PULL BOX CONTAINING DC CIRCUITS.
PER CODE(S): CEC 2019: 690.13.

**PHOTOVOLTAIC SYSTEM AC DISCONNECT
RATED AC OPERATING CURRENT 42 AMPS
AC NOMINAL OPERATING VOLTAGE 240 VOLTS**

LABEL LOCATION:
AC DISCONNECT, POINT OF INTERCONNECTION
(PER CODE: CEC690.54)

INVERTER 1

PHOTOVOLTAIC DC DISCONNECT	
RATED MAXIMUM POWER-POINT CURRENT:	11.7 ADC
RATED MAXIMUM POWER-POINT VOLTAGE:	400 VDC
MAXIMUM SYSTEM VOLTAGE:	480 VDC
MAXIMUM SHORT CIRCUIT CURRENT:	15 ADC

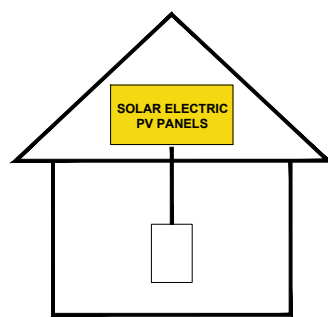
LABEL LOCATION:
INVERTER(S), DC DISCONNECT(S).
PER CODE(S): CEC 2019: 690.53.

NOTES AND SPECIFICATIONS:

- SIGNS AND LABELS SHALL MEET THE REQUIREMENTS OF THE CEC 2019 ARTICLE 110.21(B), UNLESS SPECIFIC INSTRUCTIONS ARE REQUIRED BY SECTION 690, OR IF REQUESTED BY THE LOCAL AHJ.
- SIGNS AND LABELS SHALL ADEQUATELY WARN OF HAZARDS USING EFFECTIVE WORDS, COLORS AND SYMBOLS.
- LABELS SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT OR WIRING METHOD AND SHALL NOT BE HAND WRITTEN.
- LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.
- SIGNS AND LABELS SHALL COMPLY WITH ANSI Z535.4-2011, PRODUCT SAFETY SIGNS AND LABELS, UNLESS OTHERWISE SPECIFIED.
- DO NOT COVER EXISTING MANUFACTURER LABELS.

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

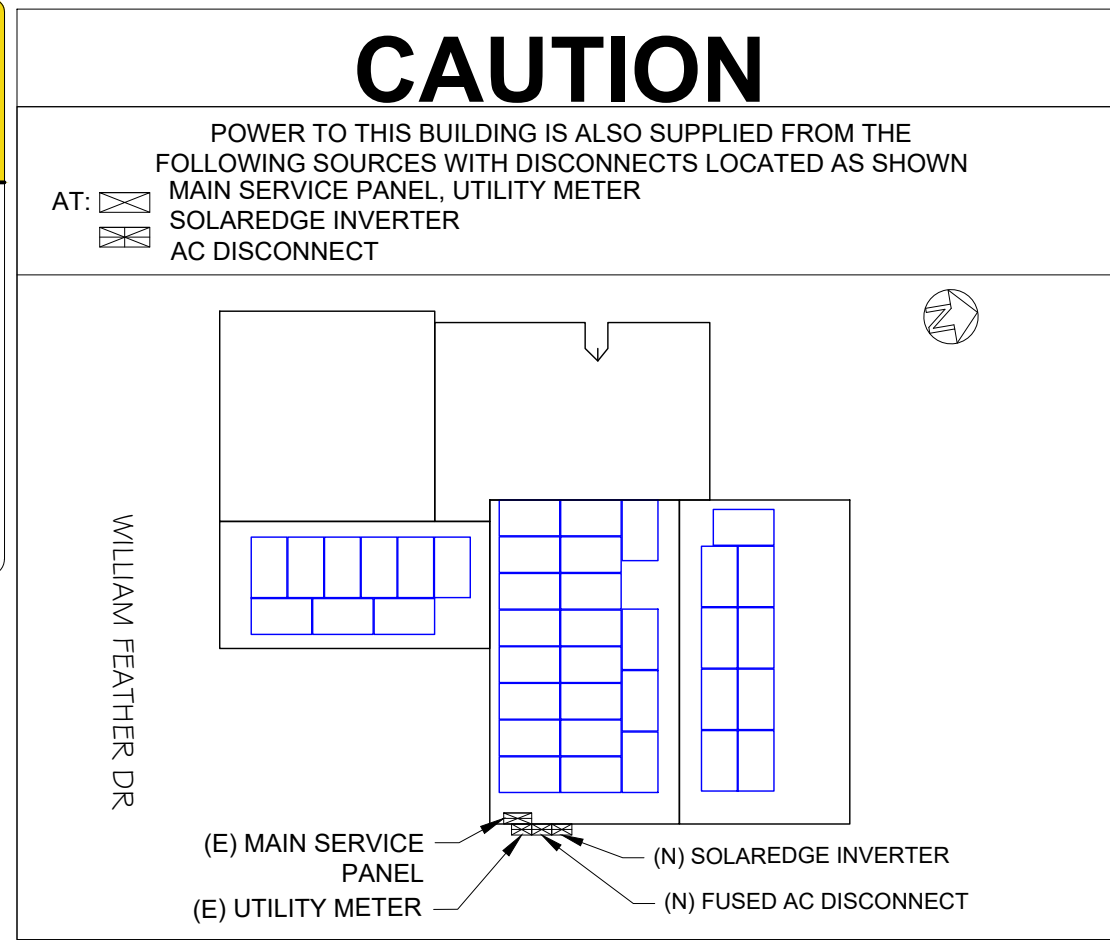
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY.



LABEL LOCATION:
ON OR NO MORE THAN 1 M (3 FT) FROM THE SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED.
PER CODE(S): NEC 2017: 690.56(C)(1)(a)

**PHOTOVOLTAIC SYSTEM
EQUIPPED WITH RAPID SHUTDOWN**

LABEL LOCATION:
WEATHER RESISTANT MATERIAL, DURABLE PLAQUE, UL969 AS STANDARD TO WEATHER RATING (UL LISTING OF MARKINGS NOT REQUIRED), MIN 3/8" LETTER HEIGHT ARIAL OR SIMILAR FONT NON-BOLD, PLACED WITHIN THE MAIN SERVICE DISCONNECT, PLACED ON THE OUTSIDE OF THE COVER WHEN DISCONNECT IS OPERABLE WITH SERVICE PANEL CLOSED. (PER CODE: CEC690.12, 690.56(C))



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PLACARDS

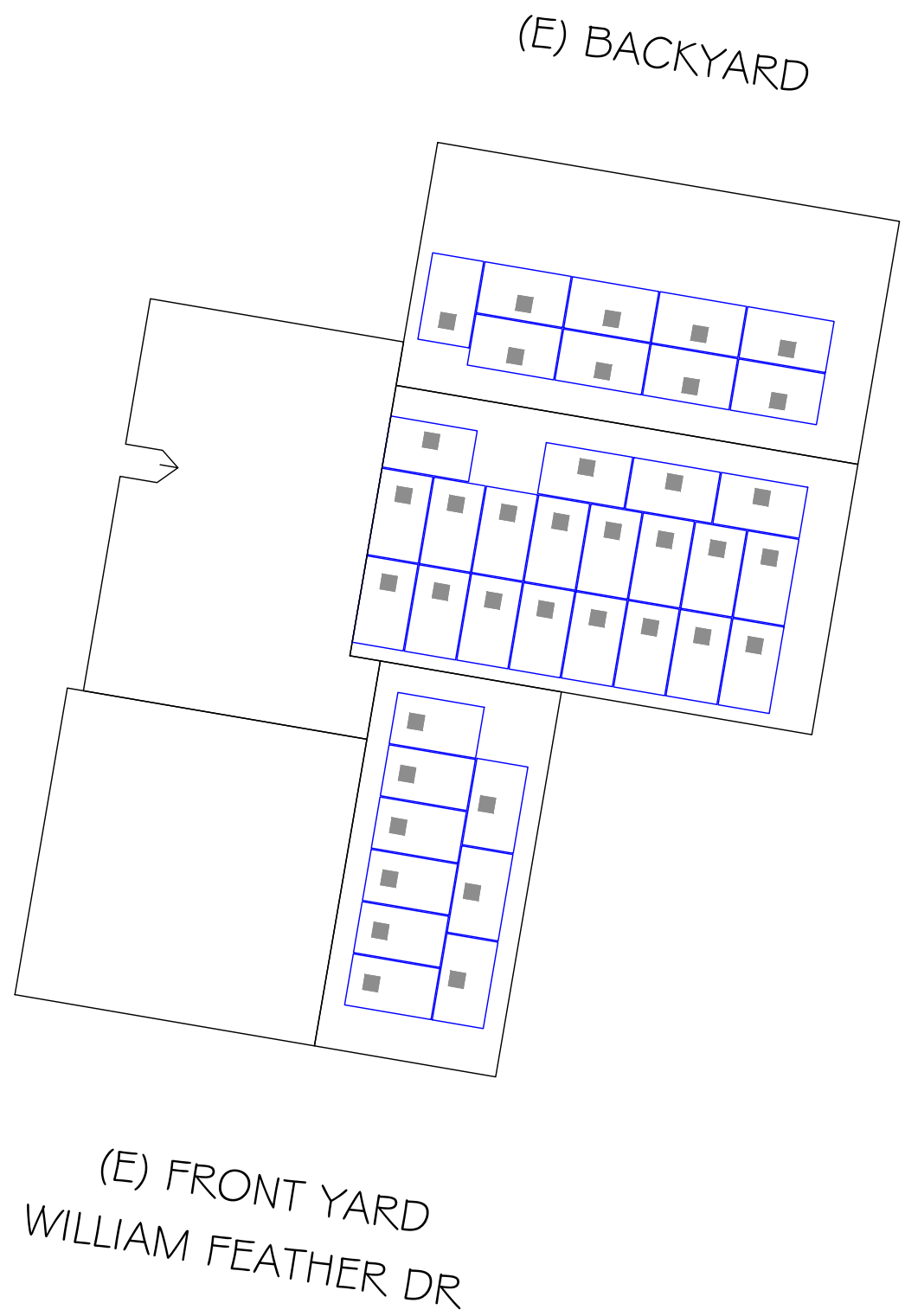
SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-5

1-10 11-20 21-30 31-40 41-50 51-60

SOLAREEDGE OPTIMIZER CHART

1
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10



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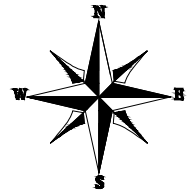
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SOLAREEDGE
 OPTIMIZER
 CHART

SHEET SIZE
 ANSI B
 11" X 17"

SHEET NUMBER
PV-6



SOLAR'S MOST TRUSTED

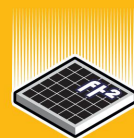
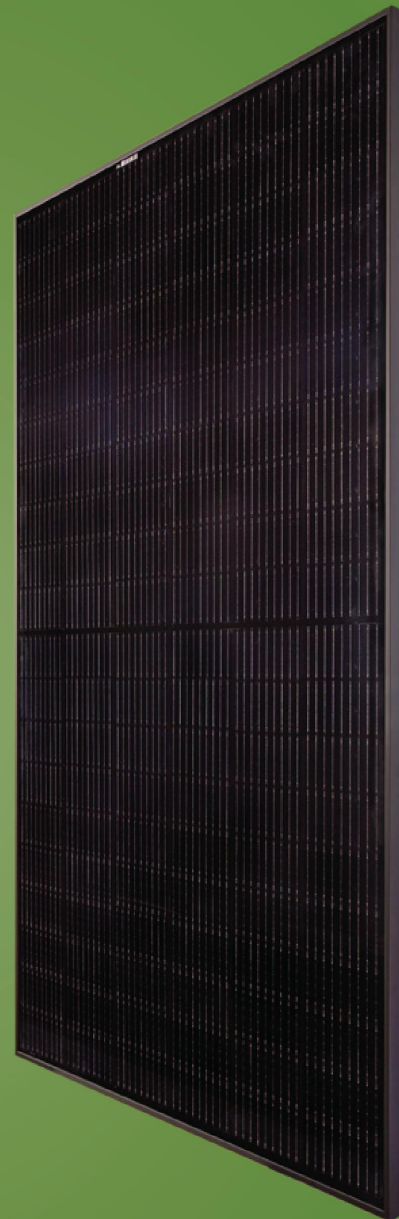


REC TWINPEAK 4 BLACK SERIES

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

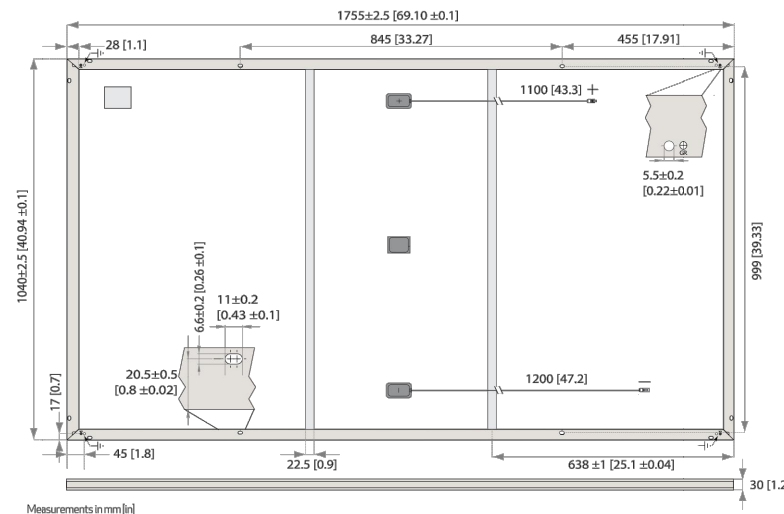


SUPER-STRONG FRAME



ELIGIBLE

REC TWINPEAK 4 BLACK SERIES



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 AM1.5, 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 AM1.5, irradiance 800 W/m², temperature 20°C, windspeed 1m/s). *Where xxx indicates the nominal power class (P_{MAX}) at STC indicated above.

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
System Size	Any	≤25 kW 25-500 kW
Product Warranty (yrs)	20	25
Power Warranty (yrs)	25	25
Labor Warranty (yrs)	0	25
Power in Year 1	98%	98%
Annual Degradation	0.5%	0.5%
Power in Year 25	86%	86%

See warranty documents for details. Conditions apply.

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 (4mm ²) PV wire, 43 + 47" (1.1m + 1.2m) in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/KST4, 12 AWG (4 mm ²) 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 m ²)
Weight:	44.0 lbs (20.0 kg)

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)

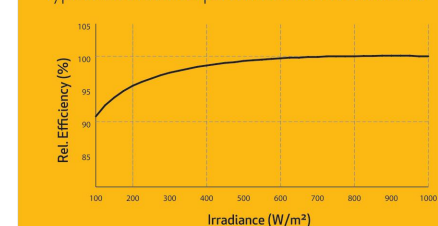
TEMPERATURE RATINGS*

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

TEMPERATURE RATINGS

Typical low irradiance performance of module at STC.



Ref: PM-05-07-29 Rev.-A 05-21



REVISIONS

DESCRIPTION	DATE	REV

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PROJECT NAME

FAY NEWMAN
10 WILLIAM FEATHER DR,
VOORHEES TOWNSHIP, NJ
08043

EQUIPMENT SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-7

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.



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.com



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	340	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	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 SOLAREEDGE INVERTER)									
Maximum Output Current					15			Adc	
Maximum Output Voltage					60	85		Vdc	
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE 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			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 ⁽⁵⁾					-40 - +85 / -40 - +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) 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 ⁽⁶⁾⁽⁷⁾	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 P405, P485, P505	8	10	18	
Maximum String Length (Power Optimizers)		6	8	14	
Maximum Power per String		25	25	50 ⁽⁸⁾	
Maximum Power per String	5700 (6000 with SE7600-US - SE11400-US)	5250	6000 ⁽⁹⁾	12750 ⁽¹⁰⁾	W
Parallel Strings of Different Lengths or Orientations					Yes

(6) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
 (7) It is not allowed to mix P405/P485/P505 with P320/P340/P370/P400/P401 in one string
 (8) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
 (9) 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
 (10) 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

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DESCRIPTION	DATE	REV

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PROJECT NAME

FAY NEWMAN
 10 WILLIAM FEATHER DR,
 VOORHEES TOWNSHIP, NJ
 08043

EQUIPMENT SPECIFICATION

SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-8

Single Phase Inverter with HD-Wave Technology

for North America

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



INVERTERS

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking efficiency
- 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.com



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		
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	
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							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	600k Ω Sensitivity								
Maximum Inverter Efficiency	99	99.2							%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%	
Nighttime Power Consumption	< 2.5							W	
ADDITIONAL FEATURES									
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)								
Revenue Grade Data, ANSI C12.20	Optional ^③								
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 (H)								
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	-13 to +140 / -25 to +60 ^④ (-40°F / -40°C option) ^⑤							°F / °C	
Protection Rating	NEMA 4X (Inverter with Safety Switch)								

^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
^③ Revenue grade inverter P/N: SExxxxH-US000NNCZ
^④ For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>
^⑤ -40 version P/N: SExxxxH-US000NNU4

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RoHS



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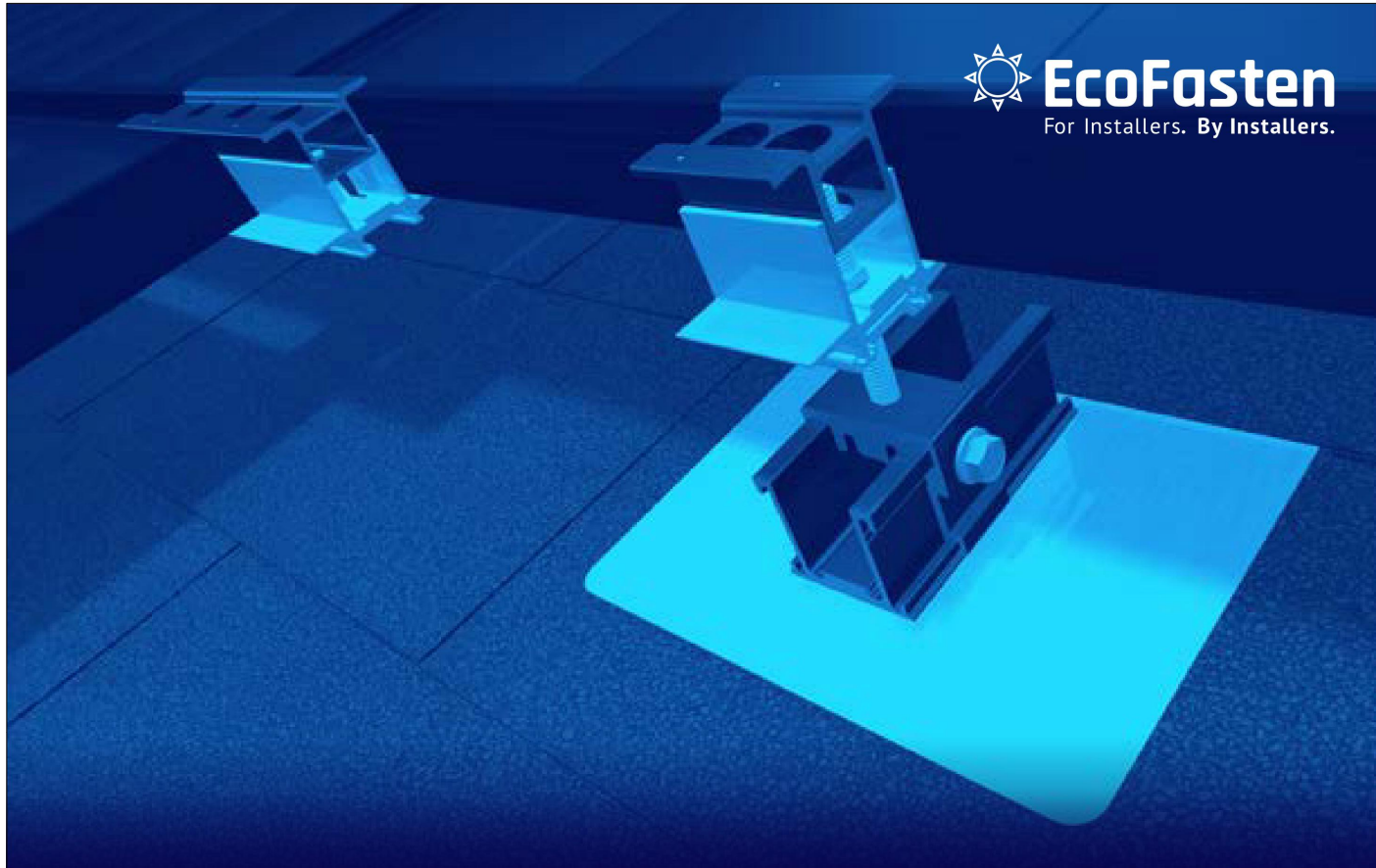
PROJECT NAME

FAY NEWMAN
 10 WILLIAM FEATHER DR,
 VOORHEES TOWNSHIP, NJ
 08043

EQUIPMENT SPECIFICATION

SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-9



ROCKIT

COMPLETE RAIL-LESS RACKING SYSTEM

INSTALLATION GUIDE

REVISION DATE: 12/09/20

VERSION: v2.4

ECOFASTENSOLAR.COM

ROCKIT

The RockIt 3.0 system is the industry's premier rail-less PV racking system for composition shingle, tile, and metal pitched rooftops. Designed in conjunction with installers, RockIt quickly & easily installs with a single tool. It features an easy-to-position slide alignment and a top-down leveling system. Logistically smart, no need to ship or transport long rails. Components are available in a black finish that compliments both commercial and residential applications. UL 2703 certified.

FEATURES

- Patented Watertight Technology
- Fully integrated bonding
- Top-down leveling system
- North-South adjustability
- Single tool install

FEATURES+ BENEFITS

PAGE 02

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08043

EQUIPMENT SPECIFICATION

SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-10