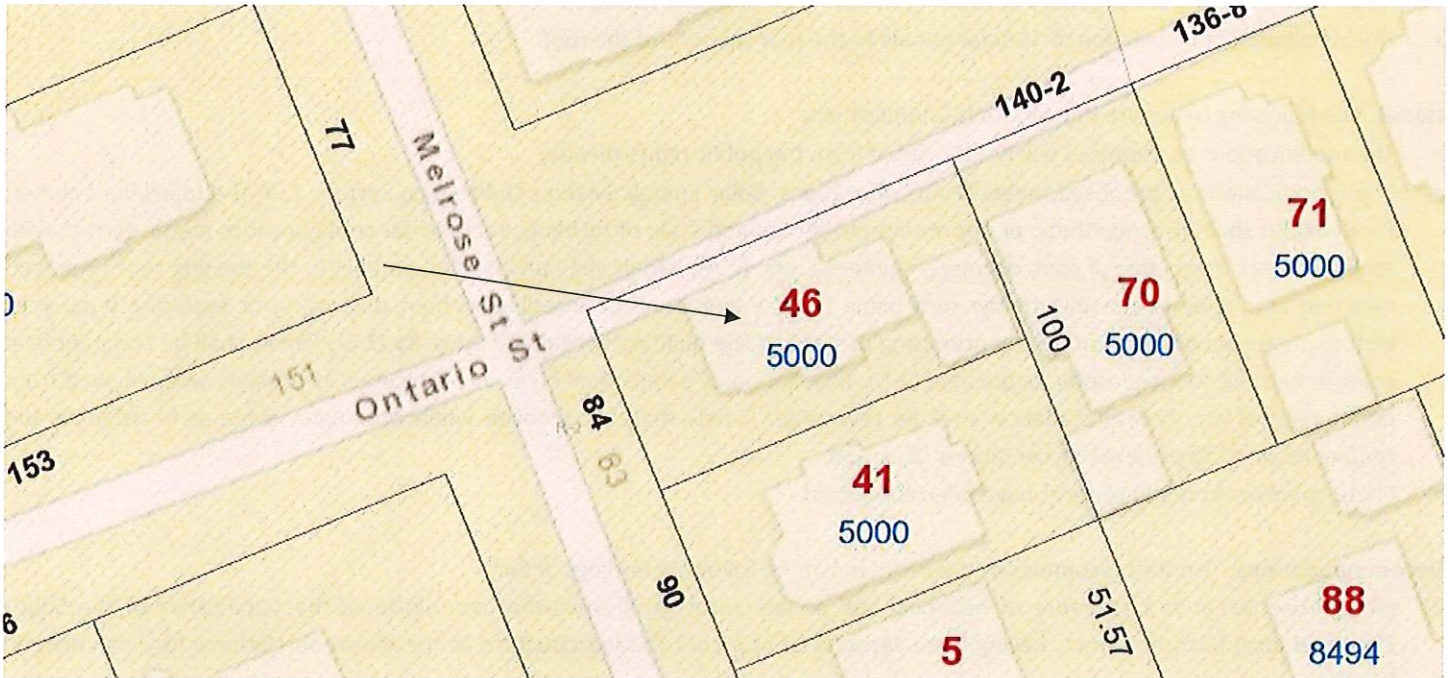
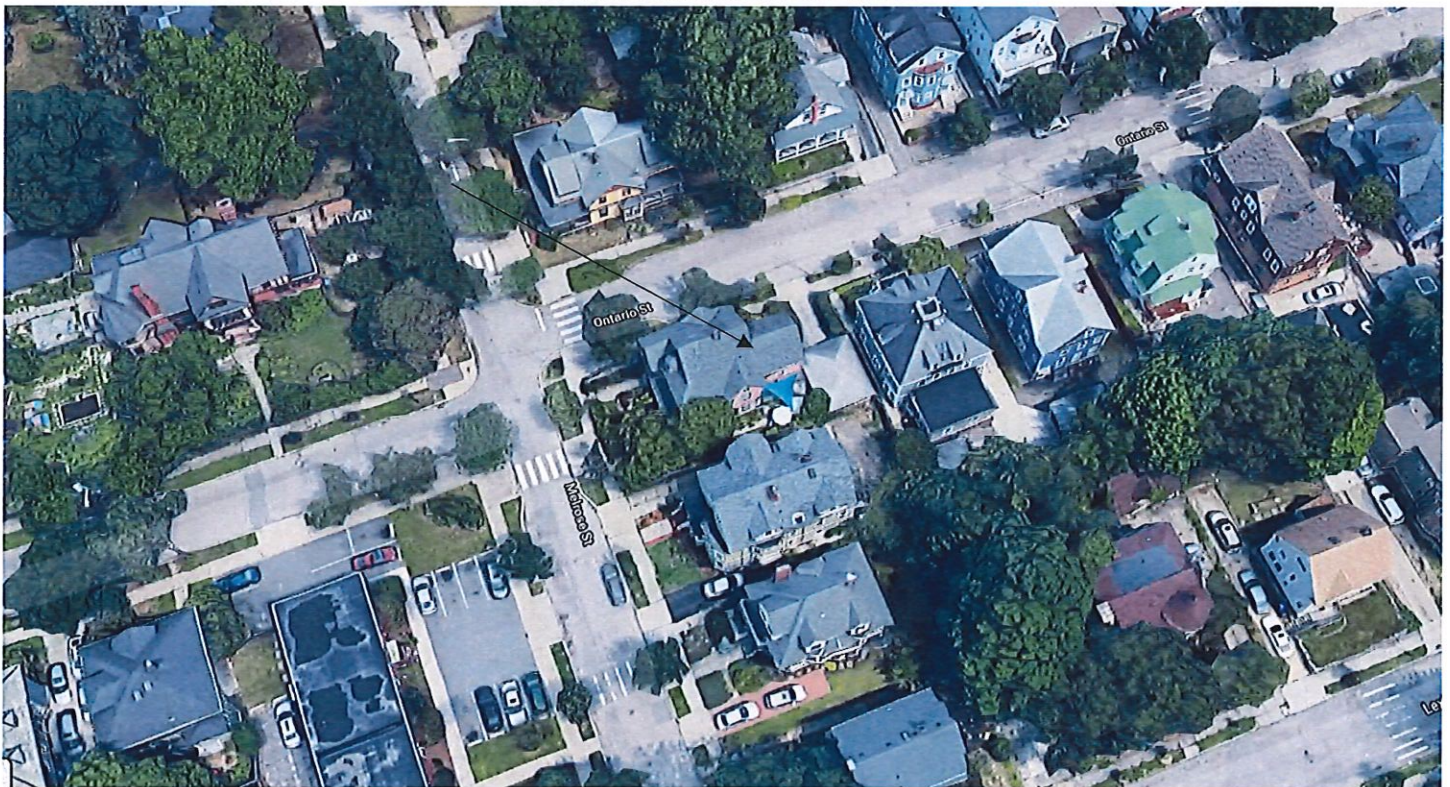


4. **CASE 21.070, 84 MELROSE STREET, House, c1891 (SOUTH ELMWOOD)**

The first occupant of this 2½-story cross-gabled dwelling, with its spindle work-decorated second-story porch, was Charles T. Main, a mill engineer. The original owner was George H. Miner.  
CONTRIBUTING



Arrow indicates 84 Melrose Street.



Arrow indicates project location, looking north.

**Applicant:** Jocelyn Neves, Second Generation Energy LLC, 85 S Bow Street, Milford, MA 01757

**Owner:** Jim Barnes, 84 Melrose Street, Providence, RI 02907

**Contractor:** Matthew Sorrentino, Second Generation Energy LLC, 85 S Bow Street, Milford, MA 01757

**Proposal:** The scope of work proposed consists of Minor Alterations and includes

- the installation of installation of 18 solar panels to the rear sections of the roof.

**Issues:** The following issues are relevant to this application:

- The modifications as proposed will not be visible from the public rights-of-way;
- The modifications as proposed meets Minor Alterations: Solar Energy Systems Guidelines, Section 2, in the following manner: Panel layout shall be sympathetic or appropriate to design and scale of building. Rectangular configurations are preferred, with ample setback from edge of roof, dormers, chimneys, etc. (2.A); Panels shall be installed parallel to the existing roof slope and matched as closely as possible to the roof plane (2.B); Panels shall be installed without destroying or replacing original or historic materials or significantly compromising or altering the building's structural integrity (2.C); Panels shall be compatible in color to existing roofing insofar as possible (2.D); Installation of panels shall be as inconspicuous as possible when viewed from public right-of-way (2.E); Installation shall be reversible. Panels shall be removed when no longer viable or functioning and roofing restored to pre-existing conditions (2.F); and,
- Plans, specifications and pictures have been submitted.

**Recommendations:** The staff recommends the PHDC make the following findings of fact:

- a) 84 Melrose Street is a structure of historical and architectural significance that contribute to the significance of the South Elmwood local historic district, having been recognized as a contributing structure to the Elmwood National Register Historic District;
- b) The modifications as proposed meets Minor Alterations: Solar Energy Systems Guidelines, Section 2, and the application is considered complete; and,
- c) The work as proposed is in accord with PHDC Standards 8 & 9 as follows: 8) the work will be done so that it does not destroy the historic character of the property or the district being not visible from the public rights-of-way; and, 9) Whenever possible... alterations to structures shall be done in such a manner that if removed in the future, the essential form and integrity of the structure and the site will be unimpaired.

**Staff recommends a motion be made stating that:** The application is considered complete. 84 Melrose Street is a structure of historical and architectural significance that contribute to the significance of the South Elmwood Hill local historic district, having been recognized as a contributing structure to the Elmwood National Register Historic District. The Commission grants Final Approval of the proposal as submitted as the proposed alteration is appropriate having determined that the proposed alteration does not destroy the historic character of the property or the district and are historically and architecturally compatible with the property and district as the proposed alteration meets Minor Alterations: Solar Energy Systems Guidelines, Section 2, is not visible from the public rights-of-way, is reversible and will not have an adverse effect on the property or district, and the recommendations in the staff report, with staff to review any additional required details.



84 Melrose St, from Ontario St, looking West



84 Melrose St , East elevation

## GENERAL NOTES

### 1.1.1 PROJECT NOTES:

- 1.1.2 THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 690, ALL MANUFACTURERS'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION'S (AHJ) APPLICABLE CODES.
- 1.1.3 THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION
- 1.1.4 GROUND FAULT DETECTION AND INTERRUPTION (GFDI) DEVICE IS INTEGRATED WITH THE MICROINVERTER IN ACCORDANCE WITH NEC 690.41(B)
- 1.1.5 ALL PV SYSTEM COMPONENTS; MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PHOTOVOLTAIC SYSTEMS AS REQUIRED BY NEC 690.4:  
 PV MODULES: UL1703, IEC61730, AND IEC61215, AND NFPA 70 CLASS C FIRE  
 INVERTERS: UL 1741 CERTIFIED, IEEE 1547, 929, 519  
 COMBINER BOX(ES): UL 1703 OR UL 1741 ACCESSORY
- 1.1.6 MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC. IF UNAVAILABLE, MAX DC VOLTAGE CALCULATED ACCORDING TO NEC 690.7.
- 1.1.7 ALL INVERTERS, PHOTOVOLTAIC MODULES, PHOTOVOLTAIC PANELS, AND SOURCE CIRCUIT COMBINERS INTENDED FOR USE IN A PHOTOVOLTAIC POWER SYSTEM WILL BE IDENTIFIED AND LISTED FOR THE APPLICATION PER 690.4 (D). SHALL BE INSTALLED ACCORDING TO ANY INSTRUCTIONS FROM LISTING OR LABELING [NEC 110.3].
- 1.1.8 ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.

### 1.2.1 SCOPE OF WORK:

- 1.2.2 PRIME CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE GRID-TIED PHOTOVOLTAIC SYSTEM RETROFIT. PRIME CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTING EXISTING ONSITE REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE EXTERIOR ROOF-MOUNTED PORTION OF THE PHOTOVOLTAIC SYSTEMS DETAILED IN THIS DOCUMENT.

### 1.3.1 WORK INCLUDES:

- 1.3.2 PV ROOF ATTACHMENTS - SNAP-N-RACK ULTRA RAIL COMP KIT
- 1.3.3 PV RACKING SYSTEM INSTALLATION - SNAPRACK UR-40
- 1.3.4 PV MODULE AND INVERTER INSTALLATION - REC REC365AA BLACK / ENPHASE IQ7PLUS-72-2-US
- 1.3.5 PV EQUIPMENT GROUNDING
- 1.3.6 PV SYSTEM WIRING TO A ROOF-MOUNTED JUNCTION BOX
- 1.3.7 PV LOAD CENTERS (IF INCLUDED)
- 1.3.8 PV METERING/MONITORING (IF INCLUDED)
- 1.3.9 PV DISCONNECTS
- 1.3.10 PV GROUNDING ELECTRODE & BONDING TO (E) GEC
- 1.3.11 PV FINAL COMMISSIONING
- 1.3.12 (E) ELECTRICAL EQUIPMENT RETROFIT FOR PV
- 1.3.13 SIGNAGE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE

### SCOPE OF WORK

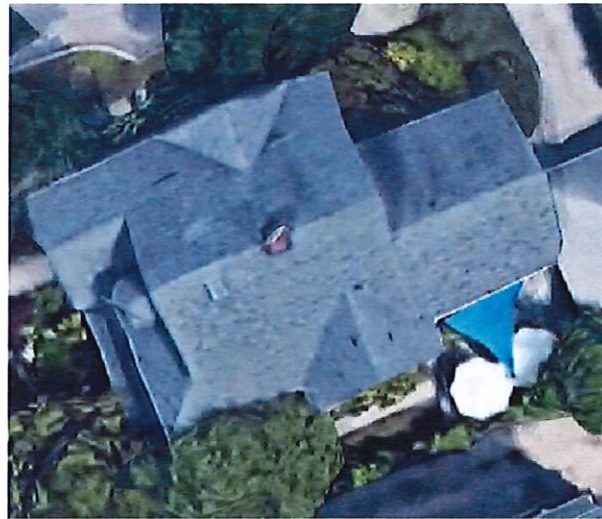
SYSTEM SIZE: STC: 18 X 365W = 6.570KW  
 PTC: 18 X 345.2W = 6.214KW  
 (18) REC REC365AA BLACK  
 (18) ENPHASE IQ7PLUS-72-2-US

ATTACHMENT TYPE: SNAP-N-RACK ULTRA RAIL COMP KIT

MSP UPGRADE: NO

# NEW PV SYSTEM: 6.570 kWp BARNES-WILSON RESIDENCE

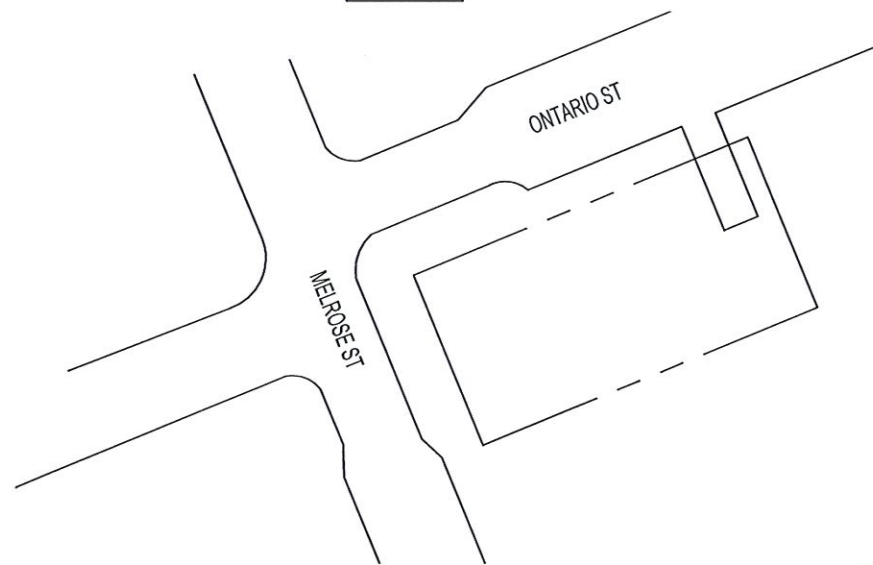
84 MELROSE ST  
 PROVIDENCE, RI 02907  
 ASSESSOR'S #: PROV:M:52L:46



01

## AERIAL PHOTO

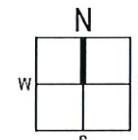
SCALE: NOT TO SCALE



02

## PLAT MAP

SCALE: NOT TO SCALE



## SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
T-001	COVER PAGE
G-001	NOTES
A-101	SITE PLAN
A-102	ELECTRICAL PLAN
A-103	SOLAR ATTACHMENT PLAN
S-501	ASSEMBLY DETAILS
E-601	LINE DIAGRAM
E-602	DESIGN TABLES
E-603	PLACARDS
R-001	RESOURCE DOCUMENT
R-002	RESOURCE DOCUMENT
R-003	RESOURCE DOCUMENT
R-004	RESOURCE DOCUMENT
R-005	RESOURCE DOCUMENT

## PROJECT INFORMATION

**OWNER**  
 NAME: JIM BARNES

**PROJECT MANAGER**  
 NAME:  
 PHONE:

**CONTRACTOR**  
 NAME: SGE SOLAR  
 PHONE: 508-377-4037

**AUTHORITIES HAVING JURISDICTION**  
 BUILDING: PROVIDENCE  
 ZONING: PROVIDENCE  
 UTILITY: NATIONAL GRID - RHODE ISLAND (THE NARRAGANSETT ELECTRIC CO) - RESIDENTIAL

**DESIGN SPECIFICATIONS**  
 OCCUPANCY: II  
 CONSTRUCTION: SINGLE-FAMILY  
 ZONING: RESIDENTIAL GRID-TIED  
 GROUND SNOW LOAD: 30 PSF  
 WIND EXPOSURE: B  
 WIND SPEED: 134 MPH

**APPLICABLE CODES & STANDARDS**  
 BUILDING: 2019 RISBC-1, IBC 2015  
 2019 RISBC-2, IRC 2015  
 ELECTRICAL: 2019 RISBC-5, NEC 2017  
 FIRE: 2019 RISRC-1



## CONTRACTOR

SGE SOLAR  
 PHONE: 508-377-4037  
 ADDRESS: 85 S BOW STREET  
 MILFORD, MA 01757

LIC. NO.: 41998  
 HIC. NO.:  
 ELE. NO.:

UNAUTHORIZED USE OF THIS DRAWING SET WITHOUT WRITTEN PERMISSION FROM CONTRACTOR IS IN VIOLATION OF U.S. COPYRIGHT LAWS AND WILL BE SUBJECT TO CIVIL DAMAGES AND PROSECUTIONS.

NEW PV SYSTEM: 6.570 kWp

## BARNES-WILSON RESIDENCE

84 MELROSE ST  
 PROVIDENCE, RI 02907  
 APN: PROV:M:52L:46

## ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)



## COVER PAGE

DATE: 03.31.2021

DESIGN BY: K.A.

CHECKED BY: M.M.

REVISIONS

T-001.00

(SHEET 1)



**GENERAL NOTES**

1. FIELD VERIFY ALL MEASUREMENTS
  2. ITEMS BELOW MAY NOT BE ON THIS PAGE
- PROPERTY LINE



**CONTRACTOR**

SGE SOLAR  
 PHONE: 508-377-4037  
 ADDRESS: 85 S BOW STREET  
 MILFORD, MA 01757  
 LIC. NO.: 41998  
 HIC. NO.:  
 ELE. NO.:

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NEW PV SYSTEM: 6.570 kWp

**BARNES-WILSON  
 RESIDENCE**

84 MELROSE ST  
 PROVIDENCE, RI 02907  
 APN: PROV:M:52L:46

**ENGINEER OF RECORD**

PAPER SIZE: 11" x 17" (ANSI B)



**SITE PLAN**

DATE: 03.31.2021

DESIGN BY: K.A.

CHECKED BY: M.M.

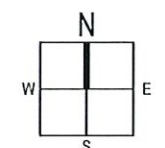
REVISIONS

**A-101.00**  
 (SHEET 3)

01

**SITE PLAN**

1/16" = 1'





**CONTRACTOR**

SGE SOLAR  
PHONE: 508-377-4037  
ADDRESS: 85 S BOW STREET  
MILFORD, MA 01757

LIC. NO.: 41998  
HIC. NO.:  
ELE. NO.:

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AND WILL BE SUBJECT TO CIVIL  
DAMAGES AND PROSECUTIONS.

NEW PV SYSTEM: 6.570 kWp

**BARNES-WILSON  
RESIDENCE**

84 MELROSE ST  
PROVIDENCE, RI 02907  
APN: PROV:M:52L:46

**ENGINEER OF RECORD**

PAPER SIZE: 11" x 17" (ANSI B)



**SOLAR ATTACHMENT PLAN**

DATE: 03.31.2021

DESIGN BY: K.A.

CHECKED BY: M.M.

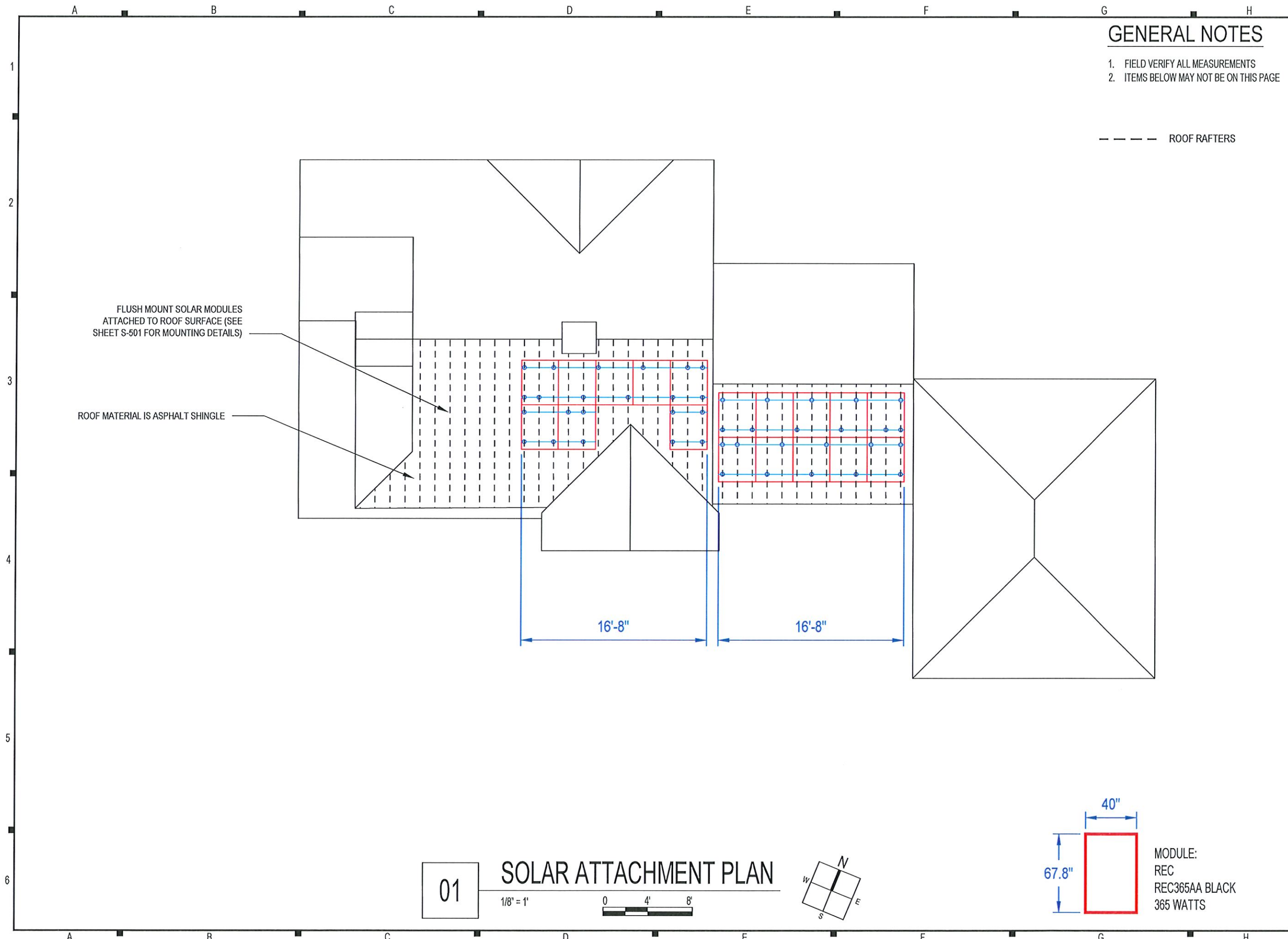
REVISIONS

**A-103.00**  
(SHEET 5)

**GENERAL NOTES**

- 1. FIELD VERIFY ALL MEASUREMENTS
- 2. ITEMS BELOW MAY NOT BE ON THIS PAGE

--- ROOF RAFTERS

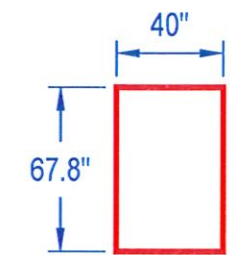


FLUSH MOUNT SOLAR MODULES  
ATTACHED TO ROOF SURFACE (SEE  
SHEET S-501 FOR MOUNTING DETAILS)

ROOF MATERIAL IS ASPHALT SHINGLE

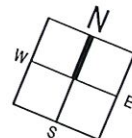
16'-8"

16'-8"



MODULE:  
REC  
REC365AA BLACK  
365 WATTS

**01** **SOLAR ATTACHMENT PLAN**  
1/8" = 1'  
0 4' 8'

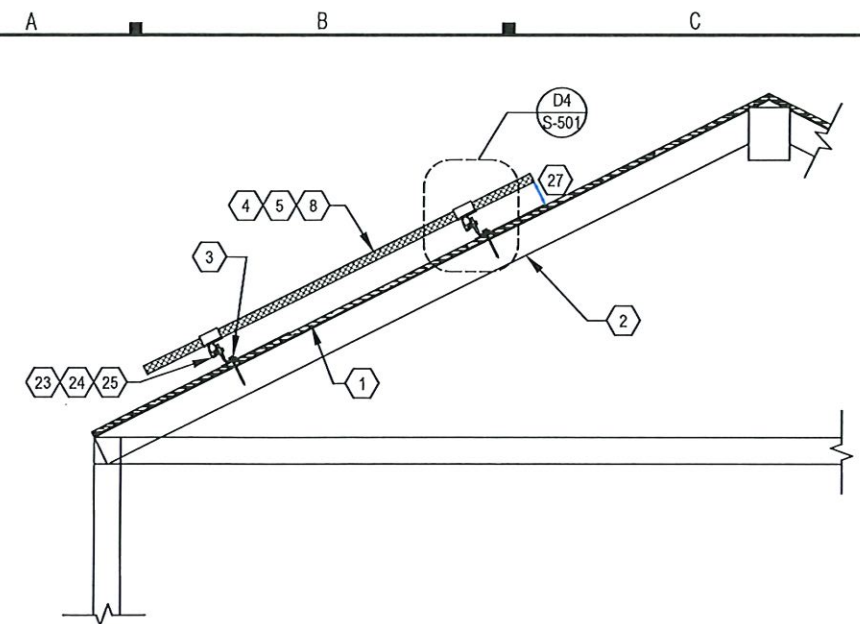


## GENERAL NOTES

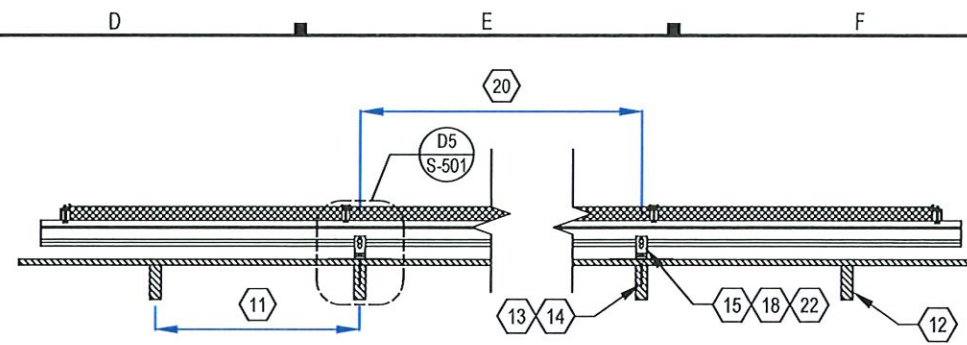
1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE

## SHEET KEYNOTES

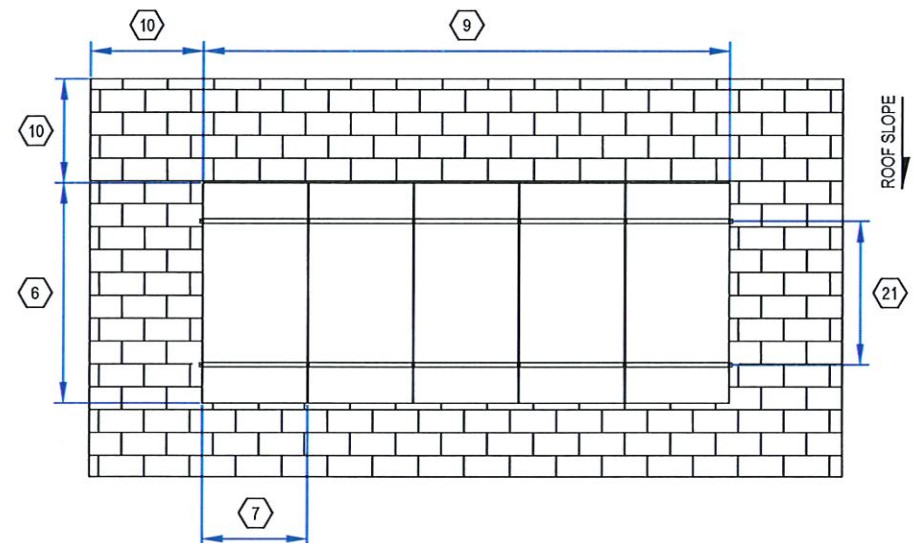
1. ROOF MATERIAL: ASPHALT SHINGLE
2. ROOF STRUCTURE: SINGLE SPAN RAFTER
3. ATTACHMENT TYPE: SNAP-N-RACK ULTRA RAIL COMP KIT
4. MODULE MANUFACTURER: REC
5. MODULE MODEL: REC365AA BLACK
6. MODULE LENGTH: 67.8"
7. MODULE WIDTH: 40"
8. MODULE WEIGHT: 43 LBS.
9. SEE SHEET A-103 FOR DIMENSION(S)
10. MIN. FIRE OFFSET: NO FIRE CODE ENFORCED
11. RAFTER SPACING: 16 IN. O.C.
12. RAFTER SIZE: 2X6 IN. NOMINAL
13. LAG BOLT DIAMETER: BOLT/SCREW SUPPLIED WITH RACKING
14. LAG BOLT EMBEDMENT: PER RACKING MFG SPECIFICATIONS
15. TOTAL # OF ATTACHMENTS: 44
16. TOTAL AREA: 339 SQ. FT.
17. TOTAL WEIGHT: 867.24 LBS.
18. WEIGHT PER ATTACHMENT: 19.71 LBS.
19. DISTRIBUTED LOAD: 2.56 PSF
20. MAX. HORIZONTAL STANDOFF: 48 IN.
21. MAX. VERTICAL STANDOFF: LANDSCAPE: 20 IN., PORTRAIT: 34 IN.
22. STANDOFF STAGGERING: YES
23. RAIL MANUFACTURER (OR EQUIV.): SNAP-N-RACK
24. RAIL MODEL (OR EQUIVALENT): UR-40
25. RAIL WEIGHT: 0.42 PLF.
26. MAX. RAFTER SPAN: N/A
27. MODULE CLEARANCE: 3 IN. MIN., 6 IN. MAX.



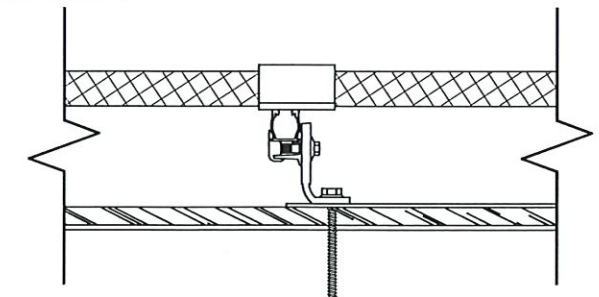
**D1** RACKING DETAIL (TRANSVERSE)  
SCALE: NOT TO SCALE



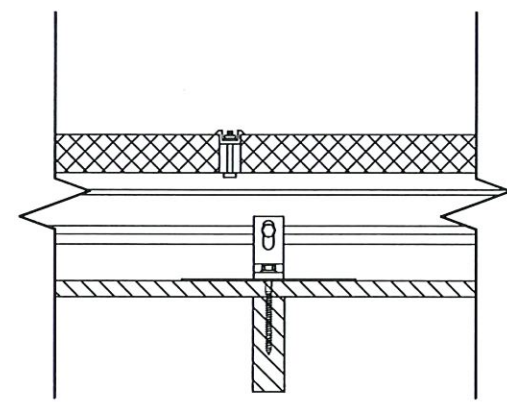
**D2** RACKING DETAIL (LONGITUDINAL)  
SCALE: NOT TO SCALE



**D3** RACKING DETAIL (TOP)  
SCALE: NOT TO SCALE



**D4** DETAIL (TRANSVERSE)  
SCALE: NOT TO SCALE



**D5** DETAIL (LONGITUDINAL)  
SCALE: NOT TO SCALE



### CONTRACTOR

SGE SOLAR  
PHONE: 508-377-4037  
ADDRESS: 85 S BOW STREET  
MILFORD, MA 01757

LIC. NO.: 41998  
HIC. NO.:  
ELE. NO.:

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NEW PV SYSTEM: 6.570 kWp

## BARNES-WILSON RESIDENCE

84 MELROSE ST  
PROVIDENCE, RI 02907  
APN: PROV.M:52L:46

### ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)



### ASSEMBLY DETAILS

DATE: 03.31.2021

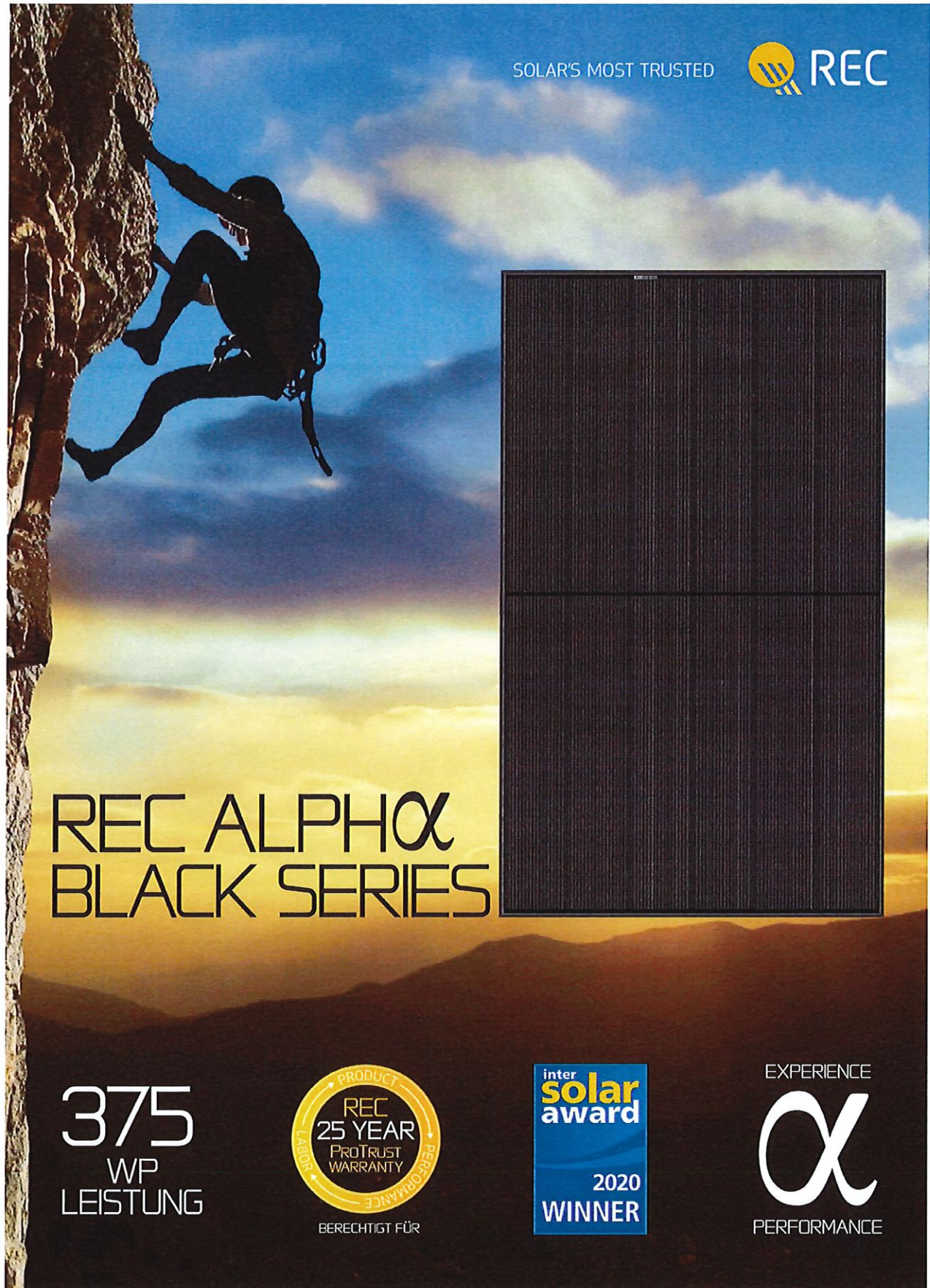
DESIGN BY: K.A.

CHECKED BY: M.M.

REVISIONS

**S-501.00**  
(SHEET 6)





SOLAR'S MOST TRUSTED **REC**

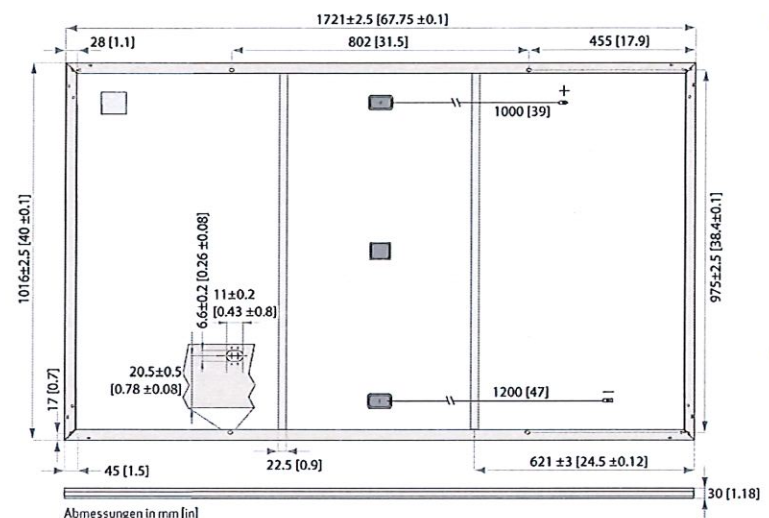
# REC ALPHA BLACK SERIES

**375**  
WP  
LEISTUNG



EXPERIENCE  
**α**  
PERFORMANCE

## REC ALPHA BLACK SERIES PRODUKTDATENBLATT



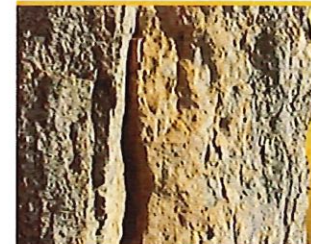
### ALLGEMEINE DATEN

Zelltyp:	120 n-type mono c-Si Halbzellen mit REC Heterojunction Technologie 6 Stränge mit 20 Zellen in Serie	Stecker:	Stäubli MC4 PV-KBT4/KST4 (4 mm <sup>2</sup> ) konform zu IEC 62852 IP68 bei geschlossener Steckverbindung
Glas:	3,2 mm Solarglas mit antireflektiver Oberflächenbehandlung	Kabel:	4 mm <sup>2</sup> Solarkabel, 1,0 m + 1,2 m konform zu EN 50618
Rückseitenfolie:	Hochbeständige Polymerkonstruktion (schwarz)	Maße:	1721 x 1016 x 30 mm (1,75 m <sup>2</sup> )
Rahmen:	Eloxiertes Aluminium (schwarz)	Gewicht:	19,5 kg
Anschlussdose:	3-teilig, 3 Bypassdioden, IP67 konform, konform zu IEC 62790	Herkunft:	Hergestellt in Singapur

### ELEKTRISCHE DATEN

	Produktbezeichnung: RECxxxAA Black				
	355	360	365	370	375
<b>STC</b>					
Nennleistung - P <sub>max</sub> (Wp)	355	360	365	370	375
Leistungstoleranz - (W)	-0/+5	-0/+5	-0/+5	-0/+5	-0/+5
Nennspannung im MPP - U <sub>MPP</sub> (V)	36,4	36,7	37,1	37,4	37,8
Nennstrom im MPP - I <sub>MPP</sub> (A)	9,77	9,82	9,85	9,9	9,94
Leerlaufspannung - V <sub>OC</sub> (V)	43,6	43,9	44,0	44,1	44,2
Kurzschlussstrom - I <sub>SC</sub> (A)	10,47	10,49	10,52	10,55	10,58
Leistungsdichte (W/m <sup>2</sup> )	202,85	205,71	208,57	211,42	214,28
Modulwirkungsgrad (%)	20,3	20,6	20,9	21,2	21,4
<b>NMOT</b>					
Nennleistung - P <sub>max</sub> (Wp)	271	274	278	282	286
Nennspannung im MPP - U <sub>MPP</sub> (V)	34,3	34,6	35,0	35,2	35,6
Nennstrom im MPP - I <sub>MPP</sub> (A)	7,89	7,93	7,96	8,00	8,03
Leerlaufspannung - V <sub>OC</sub> (V)	41,1	41,4	41,5	41,6	41,6
Kurzschlussstrom - I <sub>SC</sub> (A)	8,46	8,47	8,50	8,52	8,55

Werte unter Standardtestbedingungen (STC: Luftmasse AM1,5, Einstrahlung 1000 W/m<sup>2</sup>, Umgebungstemperatur 25°C) ermittelt über die gesamte Verteilung der Produktion mit einer Toleranz für P<sub>max</sub>, U<sub>MPP</sub> & I<sub>SC</sub> von ±3% innerhalb einer Watti-Klasse.  
Nennbetriebstemperatur des Moduls (NMOT): Luftmasse AM1,5, Einstrahlung 800 W/m<sup>2</sup>, Umgebungstemperatur 20°C, Windgeschw. 1 m/s  
\*xxx bezieht sich auf die angegebene Leistung (P<sub>max</sub>)@STC



Die REC Group ist ein international führendes Solarenergieunternehmen, das es sich zur Aufgabe gemacht hat, Verbrauchern den Zugang zu sauberer und erschwinglicher Solarenergie zu ermöglichen und damit die globale Energiewende zu unterstützen. REC fertigt hochwertige Photovoltaikmodule, wobei das besondere Engagement für Qualität und Innovation durch eine außergewöhnlich niedrige Reklamationsrate von unter 100 ppm bestätigt wird. Das 1996 in Norwegen gegründete Unternehmen beschäftigt 2.000 Mitarbeiter und hat eine Kapazität von 1,8 GW an Solarmodulen jährlich. Mit über 10 GW installierter Leistung weltweit versorgt REC mehr als 16 Millionen Menschen mit sauberer Solarenergie. Die REC Group ist ein Unternehmen von BlueStar Elkem mit Hauptsitz in Norwegen, einem operativen Geschäftssitz in Singapur und regionalen Zentralen in Nordamerika, Europa und im asiatisch-pazifischen Raum.



www.recgroup.com



### ZERTIFIZIERUNGEN

- IEC 61215:2016, IEC 61730:2016, UL 1703, UL 61730
- IEC 62804 PID
- IEC 61701 Salznebelkorrosion
- IEC 62716 Ammoniakbeständigkeit
- IEC 61215-2:2016 Hageltest (35mm)
- ISO 11925-2 (Klasse E) Entflammbarkeit
- IEC 62782 Dynamische Mechanische Last
- AS4040.2 NCC 2016 Zyklische Windlast
- ISO 14001:2004, ISO 9001:2015, OHSAS 18001:2007, IEC 62941



### GARANTIE

	Standard		REC ProTrust	
	Nein	Ja	Ja	Ja
Installiert von einem REC Certified Solar Professional				
Systemgröße	Alle	<25 kW	25-500 kW	
Produktgarantie (Jahre)	20	25	25	
Leistungsgarantie (Jahre)	25	25	25	
Garantie für Reparaturarbeiten (Jahre)	0	25	10	
Leistung im Jahr 1	98%	98%	98%	
Jährliche Degradation	0,25%	0,25%	0,25%	
Leistung im Jahr 25	92%	92%	92%	

Weitere Informationen finden Sie in den Garantieunterlagen. Es gelten Bedingungen.

### MAXIMALWERTE

Betriebstemperatur:	-40 ... +85°C
Maximale Systemspannung:	1000 V
Auslegungslast (+): schnee	4666 Pa (475 kg/m <sup>2</sup> )*
Maximale Prüflast (+):	7000 Pa (713 kg/m <sup>2</sup> )*
Auslegungslast (-): wind	2666 Pa (272 kg/m <sup>2</sup> )*
Maximum Prüflast(-):	4000 Pa (407 kg/m <sup>2</sup> )*
Max. Vorsicherungswert:	25 A
Max. Rückstrom:	25 A

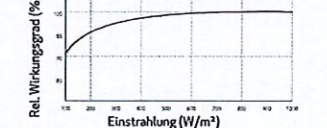
### TEMPERATUREIGENSCHAFTEN\*

Nennbetriebstemperatur des Moduls:	44°C (±2°C)
Temperaturkoeffizient P <sub>max</sub> :	-0,26%/°C
Temperaturkoeffizient V <sub>OC</sub> :	-0,24%/°C
Temperaturkoeffizient I <sub>SC</sub> :	0,04%/°C

\*Die angegebenen Temperaturkoeffizienten sind lineare Werte

### SCHWACHLICHTVERHALTEN

Typische Leistung eines Moduls unter niedrigen Einstrahlungsbedingungen (bei STC):



### CONTRACTOR

SGE SOLAR  
PHONE: 508-377-4037  
ADDRESS: 85 S BOW STREET  
MILFORD, MA 01757  
LIC. NO.: 41998  
HIC. NO.:  
ELE. NO.:

UNAUTHORIZED USE OF THIS DRAWING SET WITHOUT WRITTEN PERMISSION FROM CONTRACTOR IS IN VIOLATION OF U.S. COPYRIGHT LAWS AND WILL BE SUBJECT TO CIVIL DAMAGES AND PROSECUTIONS.

NEW PV SYSTEM: 6.570 kWp

## BARNES-WILSON RESIDENCE

84 MELROSE ST  
PROVIDENCE, RI 02907  
APN: PROVM:52L:46

### ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)



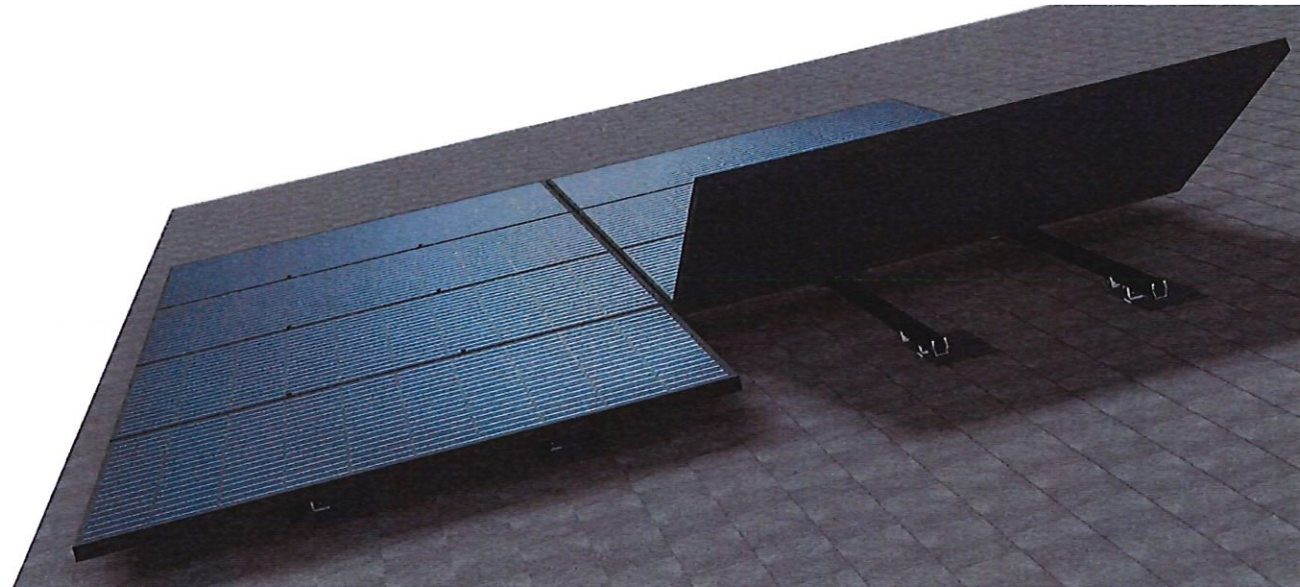
### RESOURCE DOCUMENT

DATE: 03.31.2021  
DESIGN BY: KA.  
CHECKED BY: M.M.

REVISIONS

R-001.00  
(SHEET 10)

# Ultra Rail



## The Ultimate Value in Rooftop Solar

Industry leading Wire Management Solutions

Mounts available for all roof types

An install experience unlike any other

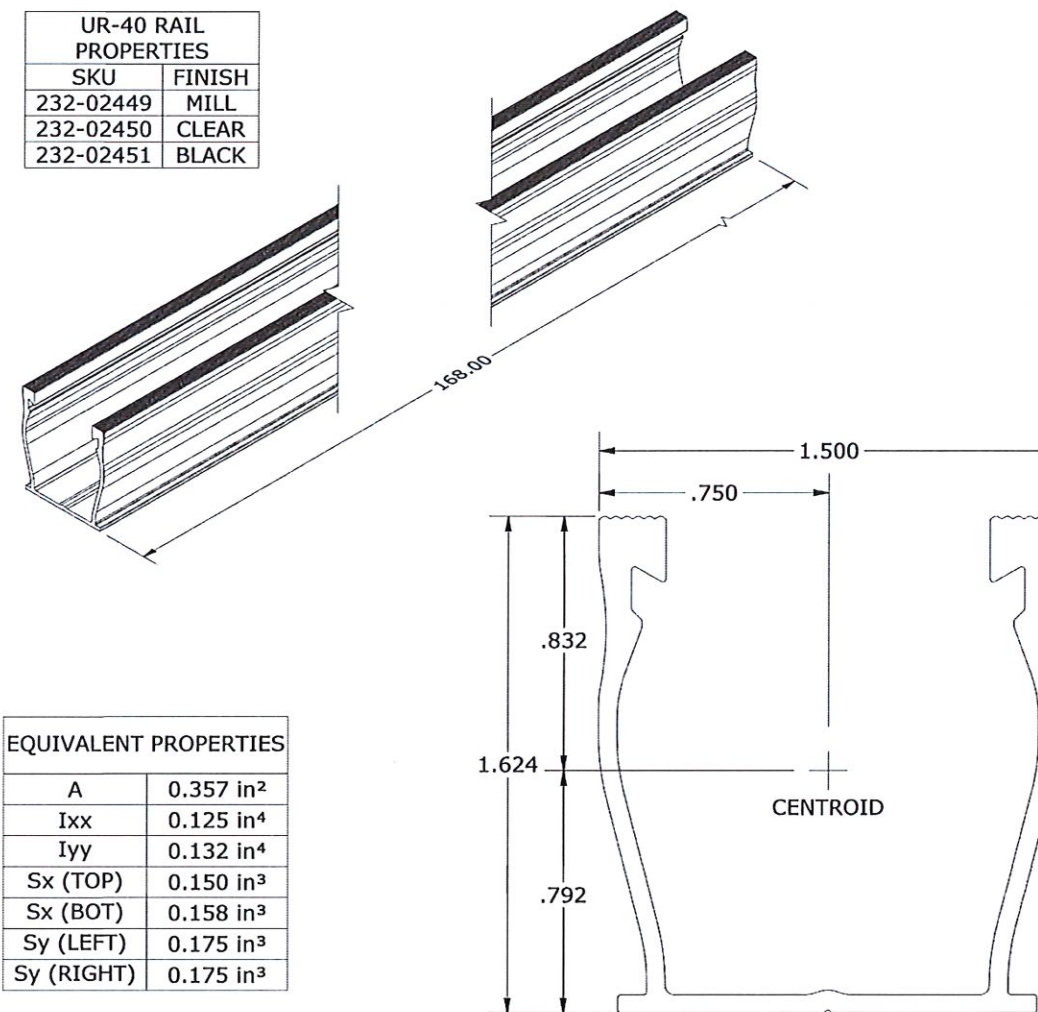
Compatible with all Series 100 Module Clamps & Accessories

**Start Installing Ultra Rail Today**

**RESOURCES** [snapnrack.com/resources](http://snapnrack.com/resources)  
**DESIGN** [snapnrack.com/configurator](http://snapnrack.com/configurator)  
**WHERE TO BUY** [snapnrack.com/where-to-buy](http://snapnrack.com/where-to-buy)

DESCRIPTION: SNAPNRACK, UR-40 RAIL	DRAWN BY: mwatkins	 555 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA PHONE (415) 580-4900 • FAX (415) 580-4902 <small>THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC.</small>
PART NUMBER(S): 232-02449, 232-02450, 232-02451	REVISION: <b>B</b>	

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



EQUIVALENT PROPERTIES	
A	0.357 in <sup>2</sup>
Ixx	0.125 in <sup>4</sup>
Iyy	0.132 in <sup>4</sup>
Sx (TOP)	0.150 in <sup>3</sup>
Sx (BOT)	0.158 in <sup>3</sup>
Sy (LEFT)	0.175 in <sup>3</sup>
Sy (RIGHT)	0.175 in <sup>3</sup>

ALL DIMENSIONS IN INCHES

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

**CONTRACTOR**

SGE SOLAR  
PHONE: 508-377-4037  
ADDRESS: 85 S BOW STREET  
MILFORD, MA 01757

LIC. NO.: 41998  
HIC. NO.:  
ELE. NO.:

UNAUTHORIZED USE OF THIS DRAWING SET WITHOUT WRITTEN PERMISSION FROM CONTRACTOR IS IN VIOLATION OF U.S. COPYRIGHT LAWS AND WILL BE SUBJECT TO CIVIL DAMAGES AND PROSECUTIONS.

NEW PV SYSTEM: 6.570 kWp

## BARNES-WILSON RESIDENCE

84 MELROSE ST  
PROVIDENCE, RI 02907  
APN: PROV.M:52L:46

**ENGINEER OF RECORD**

PAPER SIZE: 11" x 17" (ANSI B)

POWERED BY  
 GREENLANCER  
[www.greenlancer.com](http://www.greenlancer.com)

**RESOURCE DOCUMENT**

DATE: 03.31.2021

DESIGN BY: K.A.

CHECKED BY: M.M.

REVISIONS

**R-005.00**  
(SHEET 14)



**CONTRACTOR**

SGE SOLAR  
 PHONE: 508-377-4037  
 ADDRESS: 85 S BOW STREET  
 MILFORD, MA 01757

LIC. NO.: 41998  
 HIC. NO.:  
 ELE. NO.:

UNAUTHORIZED USE OF THIS  
 DRAWING SET WITHOUT WRITTEN  
 PERMISSION FROM CONTRACTOR IS IN  
 VIOLATION OF U.S. COPYRIGHT LAWS  
 AND WILL BE SUBJECT TO CIVIL  
 DAMAGES AND PROSECUTIONS.

NEW PV SYSTEM: 6.570 kWp

**BARNES-WILSON  
 RESIDENCE**

84 MELROSE ST  
 PROVIDENCE, RI 02907  
 APN: PROV.M:52L:46

**ENGINEER OF RECORD**

PAPER SIZE: 11" x 17" (ANSI B)



**RESOURCE DOCUMENT**

DATE: 03.31.2021

DESIGN BY: K.A.

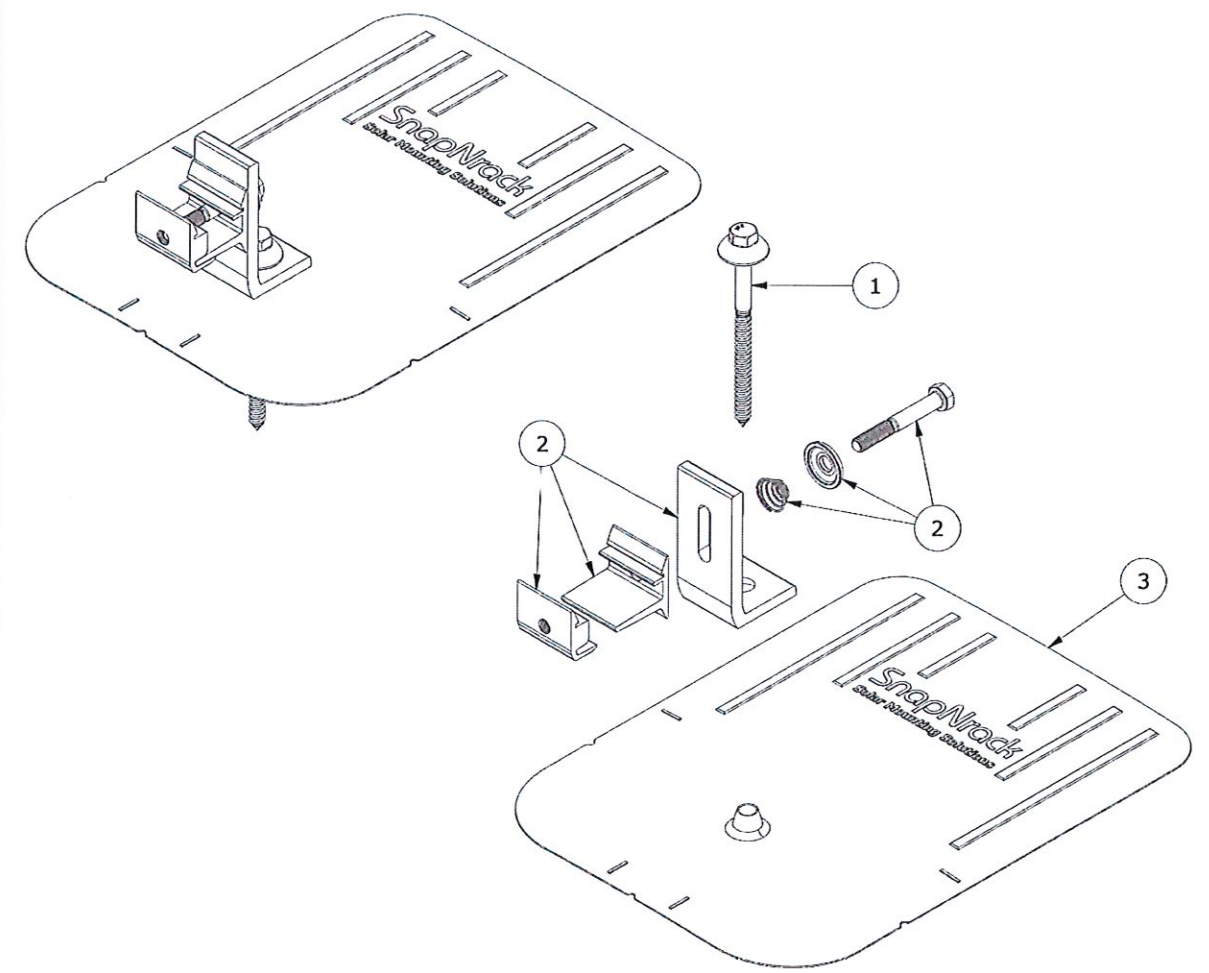
CHECKED BY: M.M.

REVISIONS

**R-006.00**

(SHEET 15)

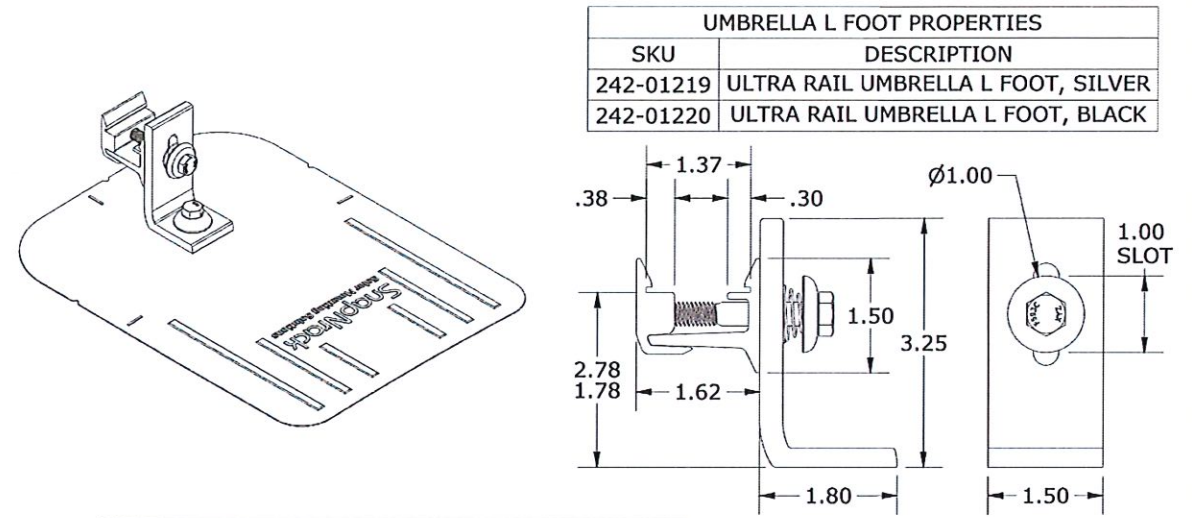
DESCRIPTION: SNAPNRACK, ULTRA RAIL COMP KIT	DRAWN BY: mwatkins	
PART NUMBER(S): SEE BELOW	REVISION: <b>B</b>	



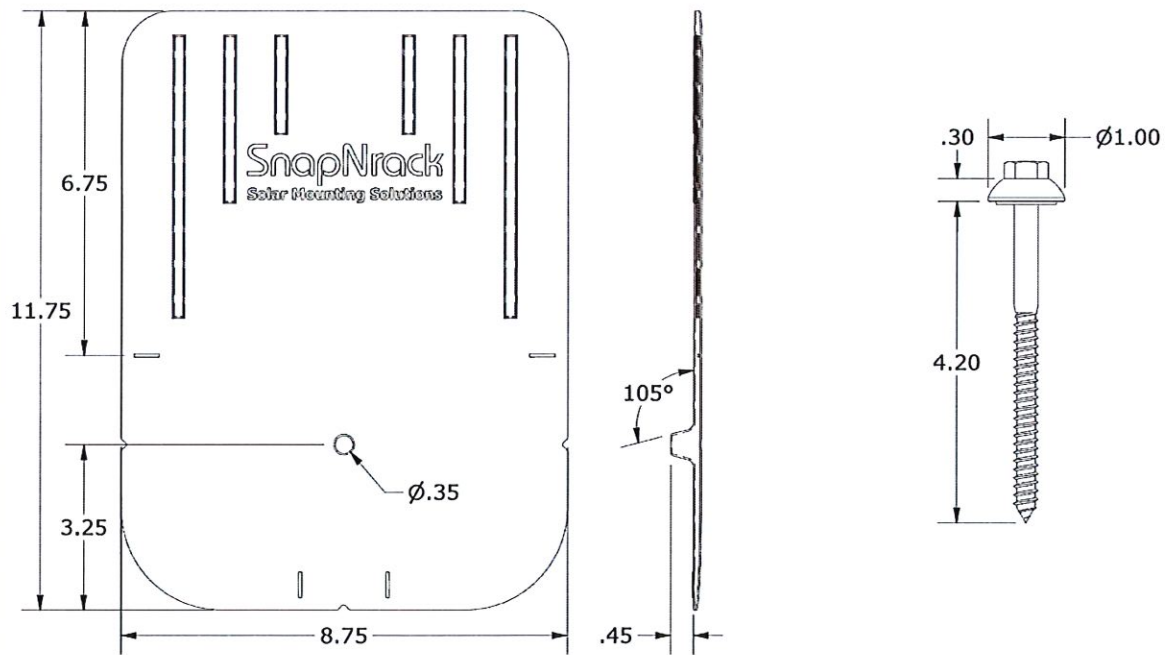
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	242-92266	SNAPNRACK, UMBRELLA LAG, TYPE 3, 4IN, SS
2	1	242-01219, 242-01220	SNAPNRACK, ULTRA FOOT FOR U FLASHING, SILVER / BLACK
3	1	232-01375, 232-01376	SNAPNRACK, COMP FLASHING, 9IN X 12IN, SILVER / BLACK ALUM

MATERIALS:	6000 SERIES ALUMINUM, STAINLESS STEEL, RUBBER
DESIGN LOAD (LBS):	405 UP, 788 DOWN, 236 SIDE
ULTIMATE LOAD (LBS):	2006 UP, 4000 DOWN, 1070 SIDE
TORQUE SPECIFICATION:	12 LB-FT
CERTIFICATION:	UL 2703, FILE E359313
WEIGHT (LBS):	0.80

DESCRIPTION: SNAPNRACK, ULTRA RAIL COMP KIT	DRAWN BY: mwatkins	
PART NUMBER(S): SEE BELOW	REVISION: <b>B</b>	



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



ALL DIMENSIONS IN INCHES