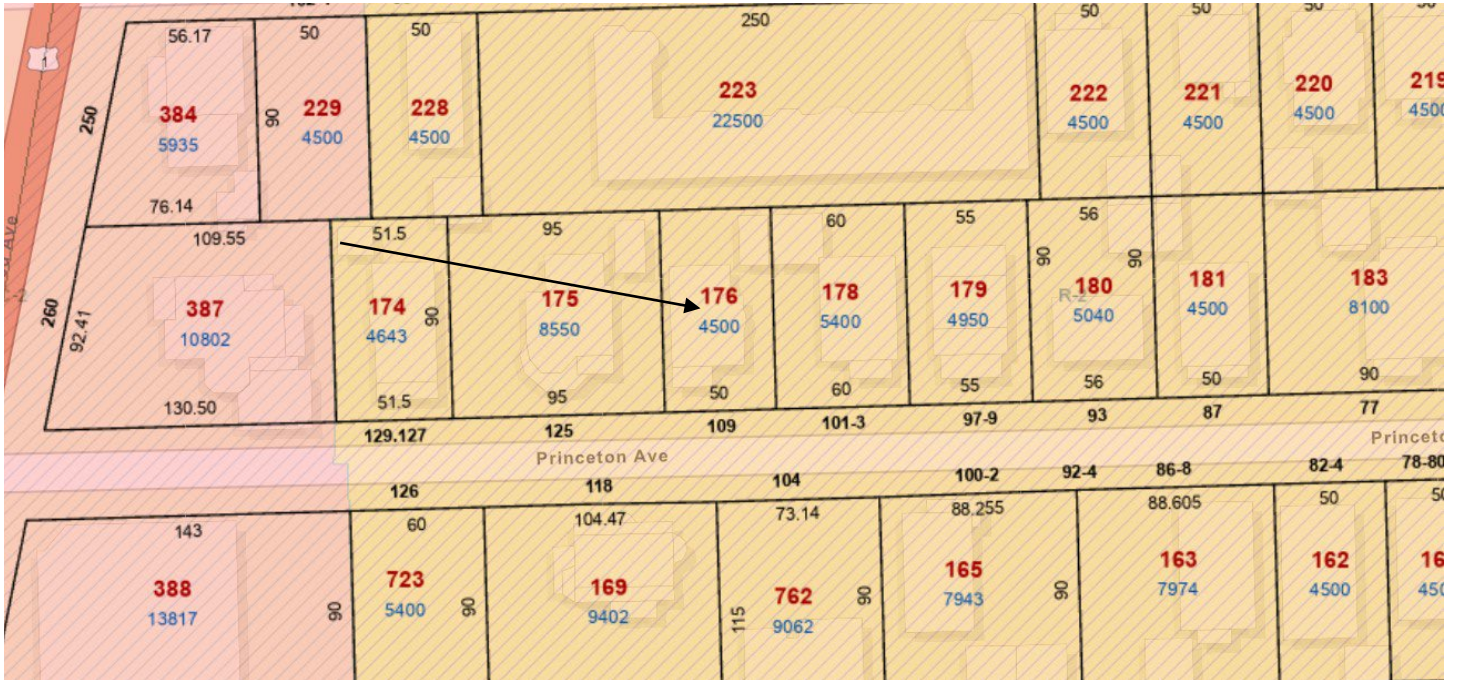


**9. CASE 24.144, 109 PRINCETON AVENUE, Robert Grieve House, 1899 (NORTH ELMWOOD)**

Unpretentious 2½-story end-gable Colonial-Revival house. Grieve 1855-1924, a printer and reporter who came to the United States-from Scotland in 1866, obtained a measure of fame as the historian of the textile industry in Rhode Island. He wrote a number of books and pamphlets, including The Cotton Centennial, 1790-1890; An Illustrated History of Pawtucket and The Commercial Opportunities and Possibilities of Providence.

CONTRIBUTING



Arrow indicates 109 Princeton Avenue.



Arrow indicates project location, looking north.

**Applicant/Contractor:** Kai R. Hadley, Portside Renewables, 77 N. Water St, New Bedford, MA 02740

**Owner:** Avishai Mallinger, 109 Princeton Avenue, Providence, RI 02907

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

- installation of 38 solar panels to the north and south slopes of the gable-end roof.

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

- The application as submitted will be minimally 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:

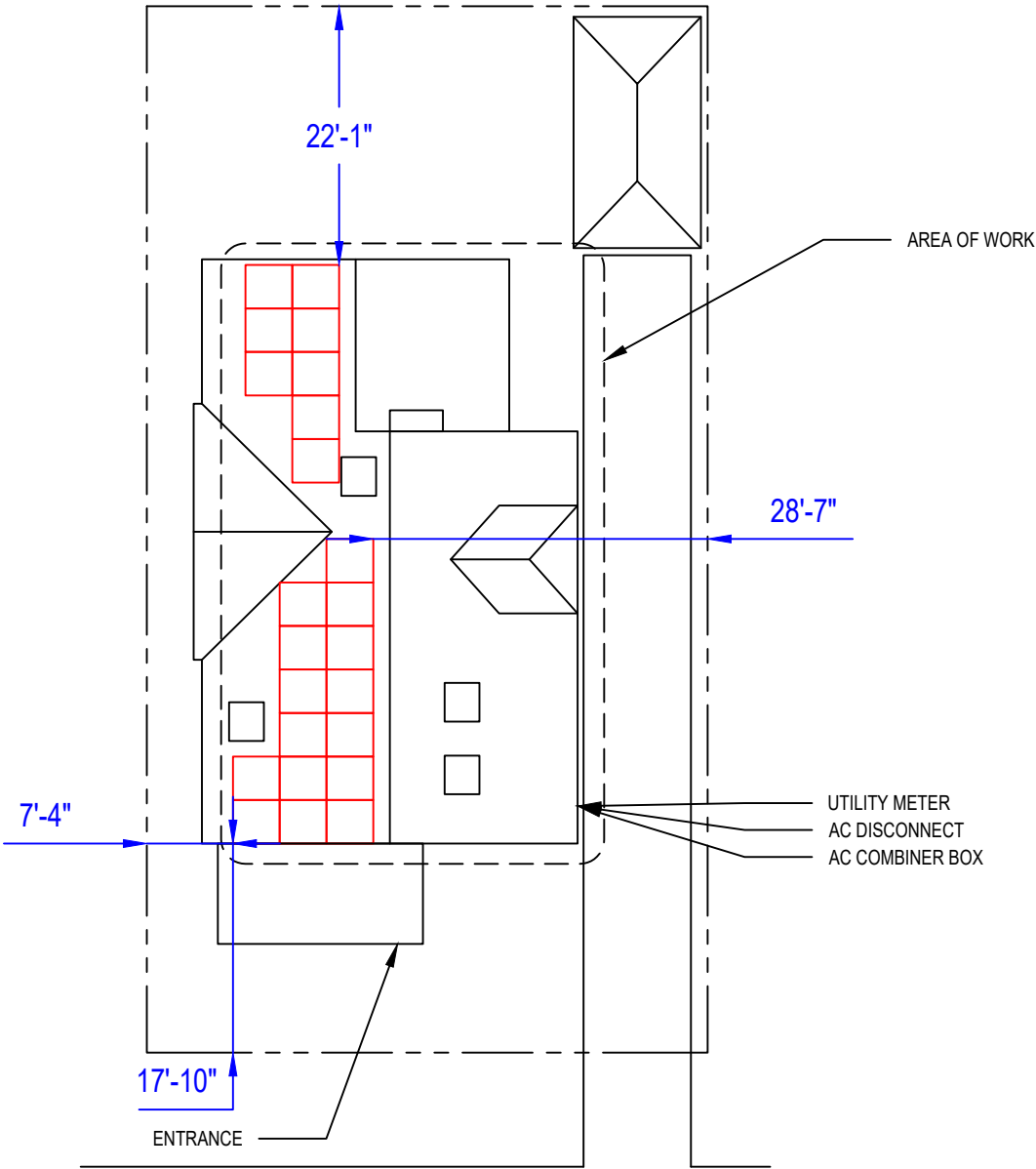
- a) 109 Princeton Avenue is a structure of historical and architectural significance that contributes to the significance of the North Elmwood local historic district, having been recognized as a contributing structure to the Elmwood National Register Historic District;
- b) The modifications as proposed 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 as they are not on the primary elevation and will be minimally 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. 109 Princeton Avenue is a structure of historical and architectural significance that contributes to the significance of the North Elmwood 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. The proposed alteration meets Minor Alterations: Solar Energy Systems Guidelines, Section 2, is reversible and will not have an adverse effect on the property or district as they will be minimally visible from the public rights-of-way (Standards 8 & 9), and the recommendations in the staff report, with staff to review any additional required details.**

**GENERAL NOTES**

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

--- PROPERTY LINE

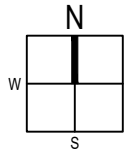
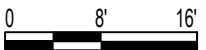


PRINCETON AVE

01

**SITE PLAN**

1/16" = 1'-0"



**CONTRACTOR**

PORTSIDE RENEWABLES, LLC

PHONE: 508-470-1467  
 ADDRESS: 77 N.WATER ST, NEW BEDFORD, MA 02740

LIC. NO.: GC-48542  
 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: 9.890 kWp

**MALLINGER RESIDENCE**

109 PRINCETON AVE,  
 PROVIDENCE, RI 02907

APN: 440176

**ENGINEER OF RECORD**

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

**SITE PLAN**

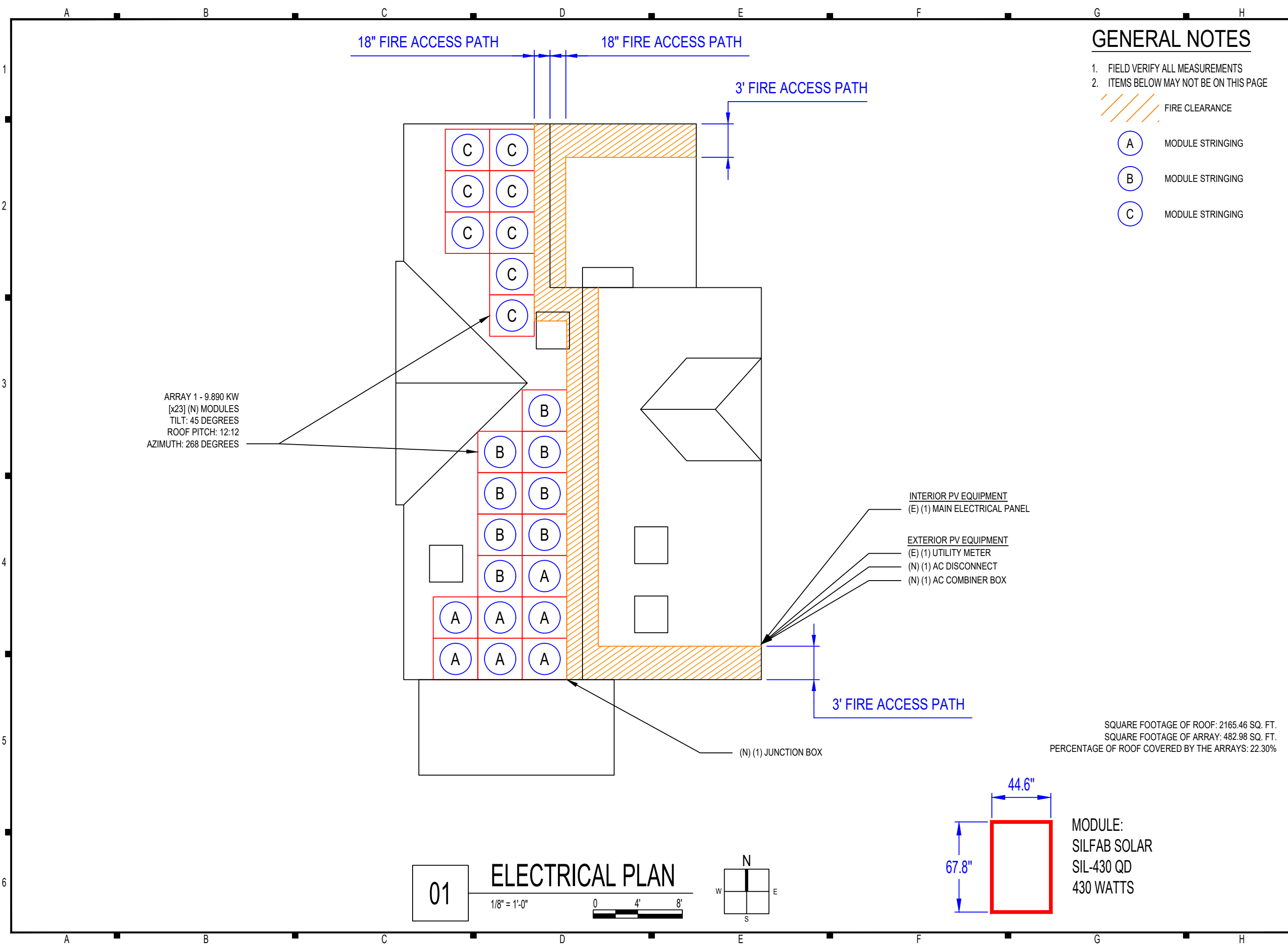
DATE: 09.24.2023

DESIGN BY: S.B.

CHECKED BY: M.M.

REVISIONS

A-101.00



ARRAY 1 - 9.890 KW  
 [x23] (N) MODULES  
 TILT: 45 DEGREES  
 ROOF PITCH: 12:12  
 AZIMUTH: 268 DEGREES

INTERIOR PV EQUIPMENT  
 (E) (1) MAIN ELECTRICAL PANEL

EXTERIOR PV EQUIPMENT  
 (E) (1) UTILITY METER  
 (N) (1) AC DISCONNECT  
 (N) (1) AC COMBINER BOX

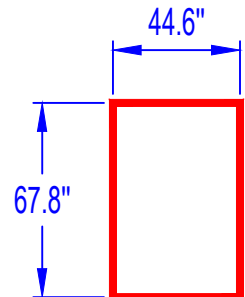
(N) (1) JUNCTION BOX

**GENERAL NOTES**

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

- FIRE CLEARANCE
- MODULE STRINGING
- MODULE STRINGING
- MODULE STRINGING

SQUARE FOOTAGE OF ROOF: 2165.46 SQ. FT.  
 SQUARE FOOTAGE OF ARRAY: 482.98 SQ. FT.  
 PERCENTAGE OF ROOF COVERED BY THE ARRAYS: 22.30%

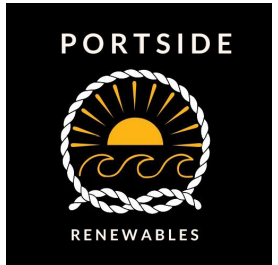
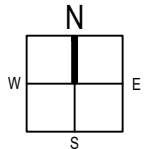


MODULE:  
 SILFAB SOLAR  
 SIL-430 QD  
 430 WATTS

01

**ELECTRICAL PLAN**

1/8" = 1'-0"  
 0 4' 8'



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 PROVIDENCE, RI 02907  
 APN: 440176

**ENGINEER OF RECORD**

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

**ELECTRICAL PLAN**

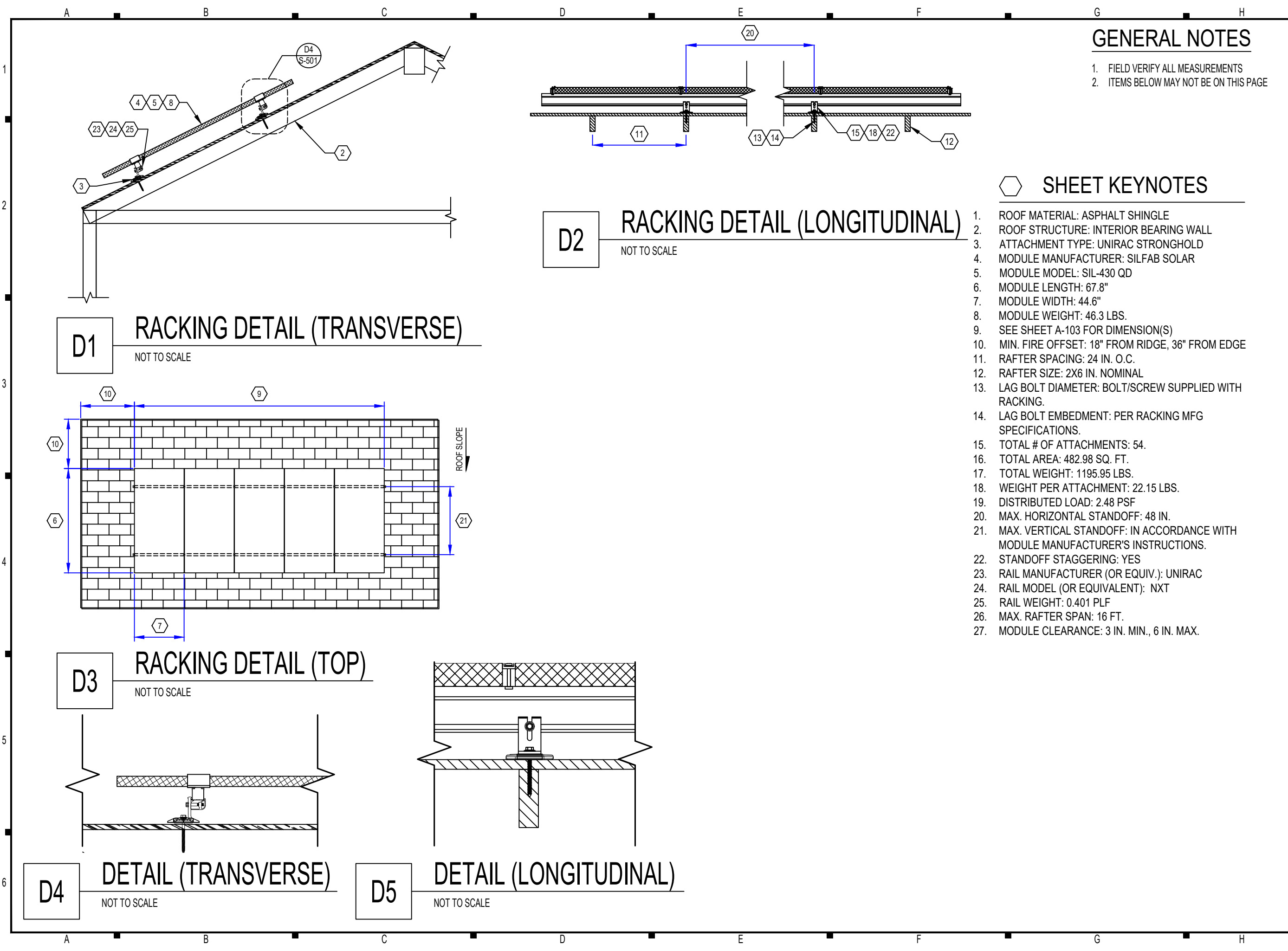
DATE: 09.24.2023

DESIGN BY: S.B.

CHECKED BY: M.M.

REVISIONS

A-102.00

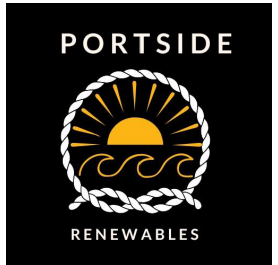


**GENERAL NOTES**

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

**SHEET KEYNOTES**

1. ROOF MATERIAL: ASPHALT SHINGLE
2. ROOF STRUCTURE: INTERIOR BEARING WALL
3. ATTACHMENT TYPE: UNIRAC STRONGHOLD
4. MODULE MANUFACTURER: SILFAB SOLAR
5. MODULE MODEL: SIL-430 QD
6. MODULE LENGTH: 67.8"
7. MODULE WIDTH: 44.6"
8. MODULE WEIGHT: 46.3 LBS.
9. SEE SHEET A-103 FOR DIMENSION(S)
10. MIN. FIRE OFFSET: 18" FROM RIDGE, 36" FROM EDGE
11. RAFTER SPACING: 24 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: 54.
16. TOTAL AREA: 482.98 SQ. FT.
17. TOTAL WEIGHT: 1195.95 LBS.
18. WEIGHT PER ATTACHMENT: 22.15 LBS.
19. DISTRIBUTED LOAD: 2.48 PSF
20. MAX. HORIZONTAL STANDOFF: 48 IN.
21. MAX. VERTICAL STANDOFF: IN ACCORDANCE WITH MODULE MANUFACTURER'S INSTRUCTIONS.
22. STANDOFF STAGGERING: YES
23. RAIL MANUFACTURER (OR EQUIV.): UNIRAC
24. RAIL MODEL (OR EQUIVALENT): NXT
25. RAIL WEIGHT: 0.401 PLF
26. MAX. RAFTER SPAN: 16 FT.
27. MODULE CLEARANCE: 3 IN. MIN., 6 IN. MAX.



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PROVIDENCE, RI 02907  
APN: 440176

**ENGINEER OF RECORD**

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

**ASSEMBLY DETAILS**

DATE: 09.24.2023

DESIGN BY: S.B.

CHECKED BY: M.M.

REVISIONS

**S-501.00**

# SILFAB PRIME NTC

SIL-430 QD



## INTRODUCING NEXT-GENERATION N-TYPE CELL TECHNOLOGY

- Improved Shade Tolerance
- Improved Low-Light Performance
- Increased Performance in High Temperatures
- Enhanced Durability
- Reduced Degradation Rate
- Industry-Leading Warranty



SILFABSOLAR.COM



ELECTRICAL SPECIFICATIONS		430	
Test Conditions		STC	NOCT
Module Power (Pmax)	Wp	430	321
Maximum power voltage (Vpmax)	V	33.25	31.02
Maximum power current (Ipmax)	A	12.93	10.33
Open circuit voltage (Voc)	V	38.91	36.58
Short circuit current (Isc)	A	13.87	11.15
Module efficiency	%	22.1%	20.6%
Maximum system voltage (VDC)	V	1000	
Series fuse rating	A	25	
Power Tolerance	Wp	0 to +10	

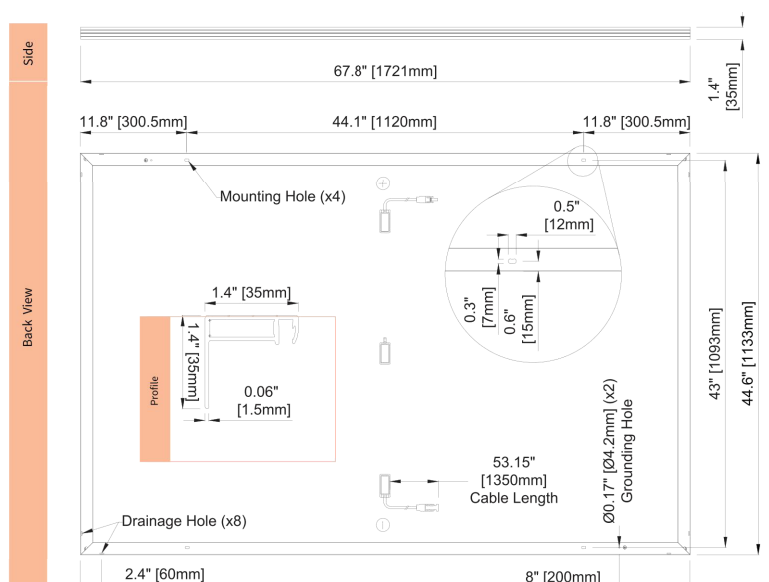
Measurement conditions: STC 1000 W/m<sup>2</sup> • AM 1.5 • Temperature 25 °C • NOCT 800 W/m<sup>2</sup> • AM 1.5 • Measurement uncertainty ≤ 3%  
Sun simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by 0 to +10 W.

MECHANICAL PROPERTIES / COMPONENTS	METRIC	IMPERIAL
Module weight	21 kg ± 0.2 kg	46.3 lbs ± 0.4 lbs
Dimensions (H x L x D)	1721 mm x 1133 mm x 35 mm	67.8 in x 44.6 in x 1.37 in
Maximum surface load (wind/snow)*	4000 Pa rear load / 5400 Pa front load	83.5 lb/ft <sup>2</sup> rear load / 112.8 lb/ft <sup>2</sup> front load
Hail impact resistance	ø 25 mm at 83 km/h	ø 1 in at 51.6 mph
Cells	108 Half cells - N-Type Silicon solar cell 182 mm x 91 mm	108 Half cells - N-Type Silicon solar cell 7.16 in x 3.58 in
Glass	3.2 mm high transmittance, tempered, antireflective coating	0.126 in high transmittance, tempered, antireflective coating
Cables and connectors (refer to installation manual)	1350 mm, ø 5.7 mm, MC4 from Staubli	53.1 in, ø 0.22 in (12 AWG), MC4 from Staubli
Backsheet	High durability, superior hydrolysis and UV resistance, multi-layer dielectric film, fluorine-free PV backsheet	
Frame	Anodized aluminum (Black)	
Junction Box	UL 3730 Certified, IEC 62790 Certified, IP68 rated, 3 diodes	

TEMPERATURE RATINGS	WARRANTIES		
Temperature Coefficient Isc	0.04 %/°C	Module product workmanship warranty	25 years**
Temperature Coefficient Voc	-0.24 %/°C	Linear power performance guarantee	30 years
Temperature Coefficient Pmax	-0.29 %/°C		
NOCT (± 2 °C)	45 °C		
Operating temperature	-40/+85 °C		

CERTIFICATIONS	SHIPPING SPECS	
Product	UL 61215, UL 61730, CSA C22.2#61730, IEC 61215, IEC 61730, IEC 61701 (Salt Mist Corrosion), IEC 62716 (Ammonia Corrosion), CEC Listed, UL Fire Rating: Type 2	Modules Per Pallet: 26 or 26 (California)
Factory	ISO9001:2015	Pallets Per Truck: 32 or 30 (California)
		Modules Per Truck: 832 or 780 (California)

\* ⚠ Warning. Read the Safety and Installation Manual for mounting specifications and before handling, installing and operating modules.  
\*\* 12 year extendable to 25 years subject to registration and conditions outlined under "Warranty" at [silfab.com](http://silfab.com).  
PAN files generated from 3rd party performance data are available for download at: [silfab.com/downloads](http://silfab.com/downloads).



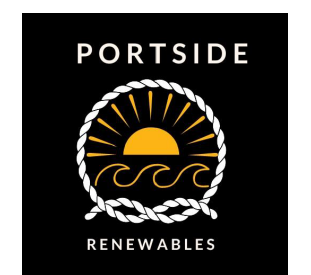
### SILFAB SOLAR INC.

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Burlington WA 98233 USA  
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info@silfab.com  
SILFABSOLAR.COM

7149 Logistics Lane  
Fort Mill SC 29715 USA  
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Mississauga ON L5T 2Y3 Canada  
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NEW PV SYSTEM: 9.890 kWp

# MALLINGER RESIDENCE

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PROVIDENCE, RI 02907  
APN: 440176  
**ENGINEER OF RECORD**

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

## RESOURCE DOCUMENT

DATE: 09.24.2023  
DESIGN BY: S.B.  
CHECKED BY: M.M.

REVISIONS

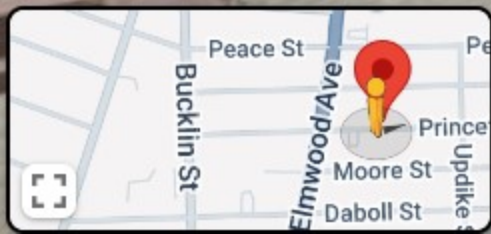
R-001.00

125 Princeton Ave

Providence, Rhode Island

Google Street View

Jul 2019 See more dates



Google

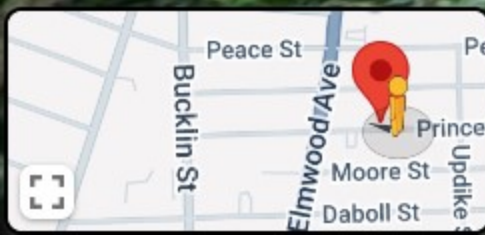
Princeton Ave

101 Princeton Ave

Providence, Rhode Island

Google Street View

Jul 2019 See more dates



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