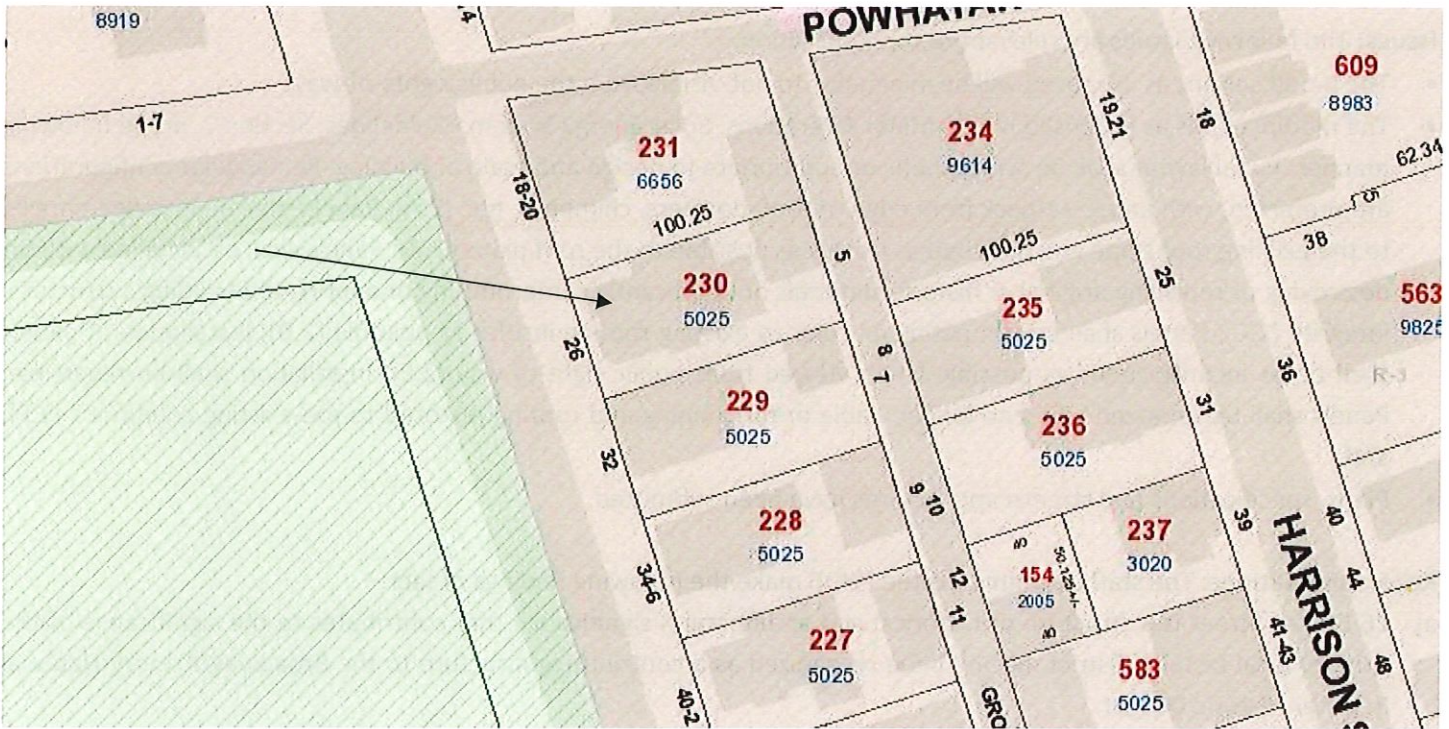


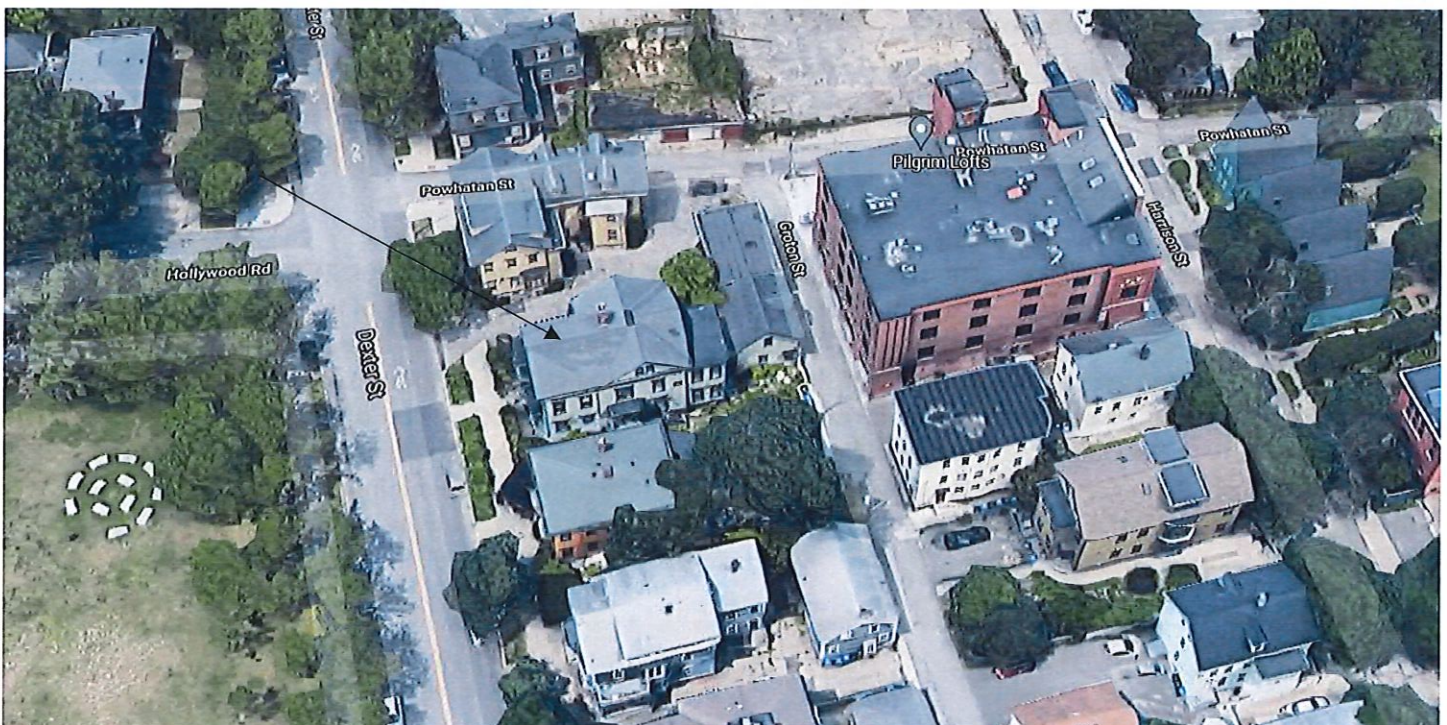
6. CASE 21.140, 26 DEXTER STREET, Nicholas A. Fenner House II, 1874 (ARMORY)

2½-story; pedimented cross-gable; clapboard; large Italianate house; with modillion and dentil cornice, elaborate bay with fluted pilasters and a Doric entry portico crowned with a square oriel. Fenner lived next door at 18-20 Dexter Street before moving here. While living here, he served on the City Council and Board of Aldermen as well as in the General Assembly. 1-story, gable-roof, frame, bracketed 19th C. carriage house, rear, on Groton Street.

CONTRIBUTING



Arrow indicates 26 Dexter Street



Arrow indicates project location, looking north.

Applicant/Contractor: Daniel Kelly, Freedom Forever Solar, 135 Robert Treat Palen Drive, Taunton, MA 02780
Owner: Rose Siegel, 26 Dexter Street, Providence, RI 02909

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

- the installation of 35 solar panels to multiple slopes of the roof.

Issues: The following issues are relevant to this application:

- The modifications as proposed will be minimally- to not-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 streetscape pictures have been submitted.

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

- a) 26 Dexter Street is a structure of historical and architectural significance that contributes to the significance of the Armory local historic district, having been recognized as a contributing structure to the Broadway/Armory 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; 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. 26 Dexter Street is a structure of historical and architectural significance that contributes to the significance of the Armory local historic district, having been recognized as a contributing structure to the Broadway/Armory 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 reversible and be minimally- to not-visible from the public rights-of-way, and the recommendations in the staff report, with staff to review any additional required details.

PHOTOVOLTAIC ROOF MOUNT SYSTEM

35 MODULES-ROOF MOUNTED - 12.25 kWDC, 10.00 kWAC
 26 DEXTER STREET, PROVIDENCE, RI 02909 USA

SYSTEM SUMMARY:

SYSTEM SIZE (DC) : STC: 35 X 350 = 12250.00W DC
 : PTC: 35 X 326.8 = 11438.00W DC

SYSTEM SIZE (AC) : 10000W AC

MODULES : 35 X LONGI SOLAR LR4-60HPB-350M (350W)

OPTIMIZERS : 35 X SOLAREEDGE P401

INVERTER : SOLAREEDGE SE10000H-USRGM

ROOF : COMP SHINGLE

TILT : 30° PITCH

AZIMUTH : 162°, 252°, 162°, 72°, 72°

RAFTER/TRUSS SIZE : 2"X10" RAFTERS @ 24" O.C.

ATTACHMENT TYPE : UNIRAC SFM INFINITY

MAIN SERVICE PANEL : (E) 200A MSP WITH (E) 200A
 MAIN BREAKER ON END FED

INTERCONNECTION : LINE SIDE TAP

FUSES RATING : 60 AMPS

UTILITY : NATIONAL GRID

WEATHER LOADING:

WIND SPEED : 135MPH

GROUND SNOW LOAD : 35PSF

GOVERNING CODES:

THIS PROJECT COMPLIES WITH THE FOLLOWING:
 2019 RHODE ISLAND BUILDING CODE (RIBC)
 2019 RHODE ISLAND RESIDENTIAL CODE (RIRC)
 2019 RHODE ISLAND MECHANICAL CODE (RIMC)
 2019 RHODE ISLAND PLUMBING CODE (RIPC)
 2019 RHODE ISLAND FIRE CODE (RIFC)
 2019 RHODE ISLAND ENERGY CODE (RIEC)
 2019 RHODE ISLAND ADMINISTRATIVE CODE (RIAC)
 2017 NATIONAL ELECTRICAL CODE (NEC)
 AS ADOPTED BY **CITY OF PROVIDENCE**

CONDUIT AND CONDUCTOR SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING AS REQUIRED BY FIELD CONDITIONS.

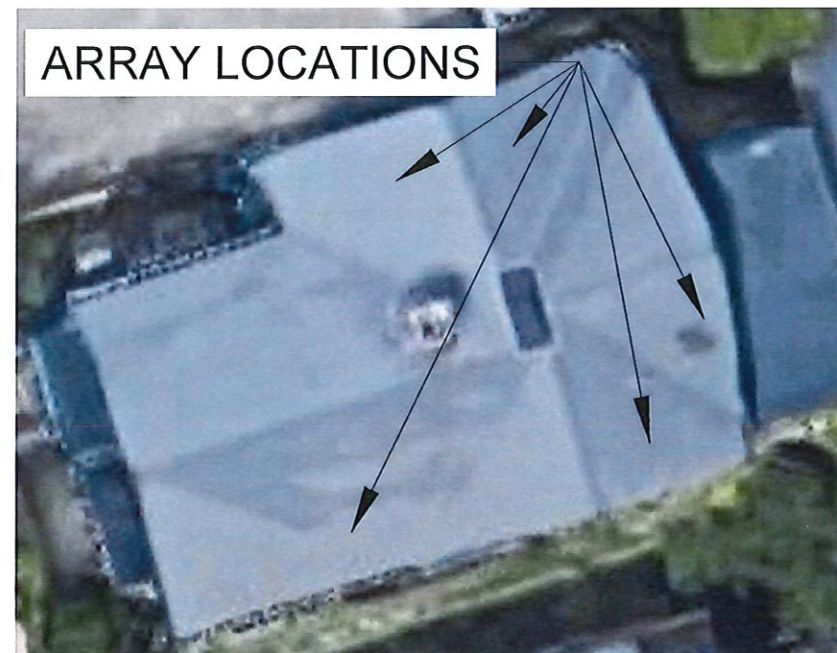
ALL SOLAR ENERGY SYSTEM EQUIPMENT SHALL BE SCREENED TO THE MAXIMUM EXTENT POSSIBLE.

INSTALLATION NOTES:

- PV WIRE SHALL BE USED ON DC RUNS FOR UNGROUNDED/TRANSFORMERLESS INVERTERS.
- INSTALL CREW TO VERIFY ROOF STRUCTURE PRIOR TO COMMENCING WORK.
- EMT CONDUIT ATTACHED TO THE ROOF USING CONDUIT MOUNTS
- DIG ALERT TO BE CONTACTED AND COMPLIANCE WITH EXCAVATION SAFETY PRIOR TO ANY EXCAVATION TAKING PLACE



SITE LOCATION:



HOUSE AERIAL VIEW:

TABLE OF CONTENTS	
PV-1	SITE LOCATION AND HOUSE AERIAL VIEW
PV-2	SITE PLAN
PV-2A	ROOF PLAN WITH MODULES LAYOUT
PV-3	ROOF MOUNTING DETAILS
PV-3	ROOF MOUNTING DETAILS
PV-4	ELECTRICAL LINE DIAGRAM
PV-5	NOTES AND EQUIPMENT LIST
PV-6	WARNING LABELS & PLACARD
PV-7	OPTIMIZER CHART
PV-8	SAFETY PLAN
PV-9	JOB HAZARD ANALYSIS

ARASH ZANDIEH
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 REGISTERED PROFESSIONAL ENGINEER CIVIL
 Exp. 06/30/2023

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 DR. TAUTON, MA 02780
 TEL: (800) 385-1075

VERSION		
DESCRIPTION	DATE	REV
INITIAL RELEASE	08/10/2021	UR
POI CHANGE	10/18/2021	GJ

ELECTRICAL CONTRACTOR NO:
 EC-AC005036
 REPC-199
 GC-44187
 GREG ALBRIGHT

JOB ID: F092143

PROJECT NAME
 SIEGEL, ROSE
 26 DEXTER STREET,
 PROVIDENCE, RI 02909 USA
 APN# PROV:32L:230
 AHJ: CITY OF PROVIDENCE

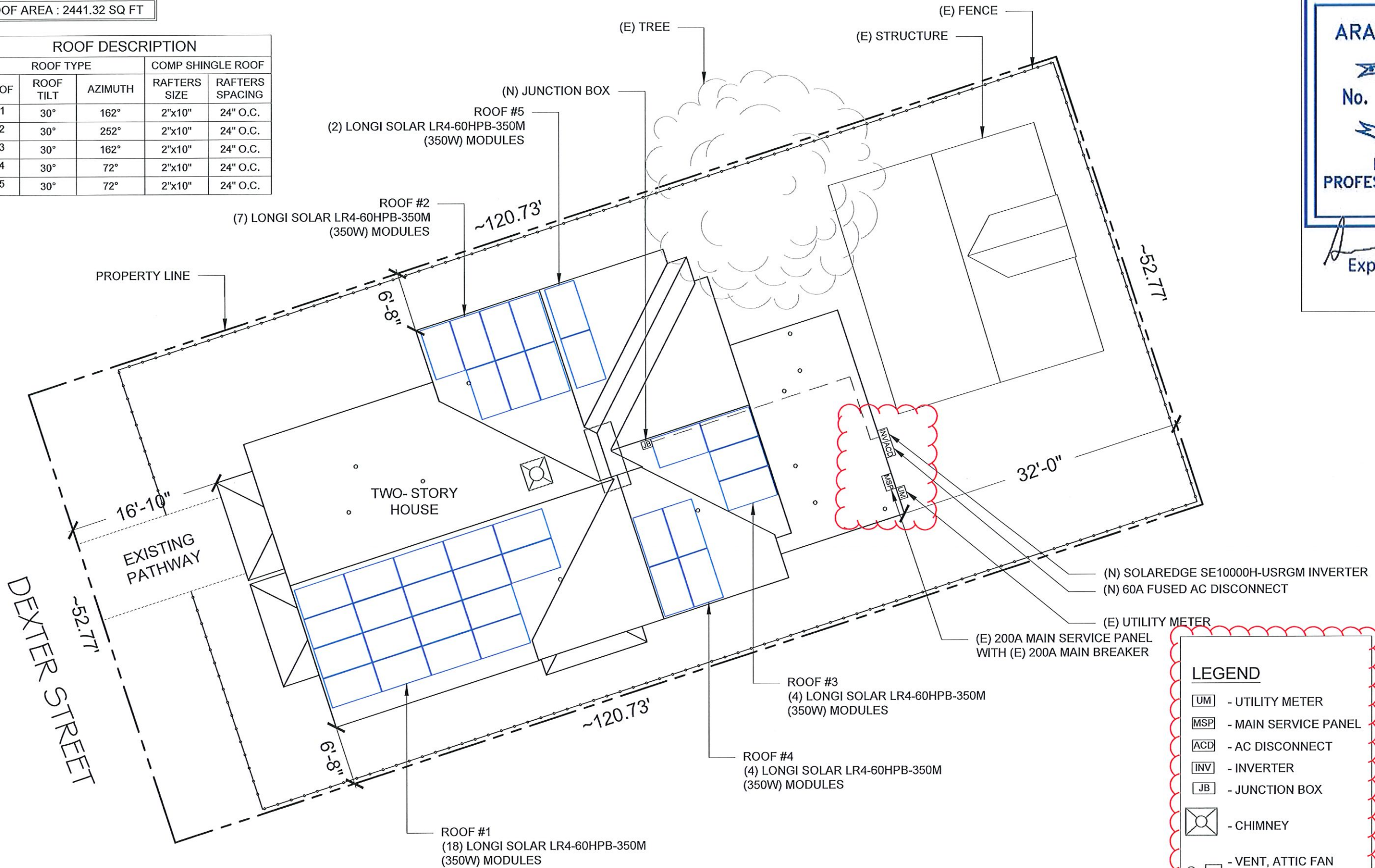
SHEET NAME
 SITE LOCATION AND HOUSE AERIAL VIEW

SHEET SIZE
 ANSI B 11" X 17"

SHEET NUMBER
 PV-1

ROOF AREA : 2441.32 SQ FT

ROOF DESCRIPTION				
ROOF TYPE			COMP SHINGLE ROOF	
ROOF	ROOF TILT	AZIMUTH	RAFTERS SIZE	RAFTERS SPACING
#1	30°	162°	2"x10"	24" O.C.
#2	30°	252°	2"x10"	24" O.C.
#3	30°	162°	2"x10"	24" O.C.
#4	30°	72°	2"x10"	24" O.C.
#5	30°	72°	2"x10"	24" O.C.



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PROJECT NAME
**SIEGEL, ROSE
26 DEXTER STREET,
PROVIDENCE, RI 02909 USA
APN# PROV:32L:230
AHJ: CITY OF PROVIDENCE**

SHEET NAME
SITE PLAN

SHEET SIZE
ANSI B 11" X 17"

SHEET NUMBER
PV-2

LEGEND

- UM - UTILITY METER
- MSP - MAIN SERVICE PANEL
- ACD - AC DISCONNECT
- INV - INVERTER
- JB - JUNCTION BOX
- ◻ - CHIMNEY
- ◻ - VENT, ATTIC FAN (ROOF OBSTRUCTION)
- - CONDUIT
- - FENCE

SITE PLAN

SCALE: 3/32" = 1'-0"

N

ROOF AREA : 2441.32 SQ FT

ROOF DESCRIPTION				
ROOF TYPE		COMP SHINGLE ROOF		
ROOF	ROOF TILT	AZIMUTH	RAFTERS SIZE	RAFTERS SPACING
#1	30°	162°	2"x10"	24" O.C.
#2	30°	252°	2"x10"	24" O.C.
#3	30°	162°	2"x10"	24" O.C.
#4	30°	72°	2"x10"	24" O.C.
#5	30°	72°	2"x10"	24" O.C.

ARRAY AREA & ROOF AREA CALC'S				
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)	ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)
#1	18	352.88	499.05	70.71
#2	7	137.23	232.33	59.07
#3	4	78.42	134.16	58.45
#4	4	78.42	178.99	43.81
#5	2	39.21	129.19	30.35

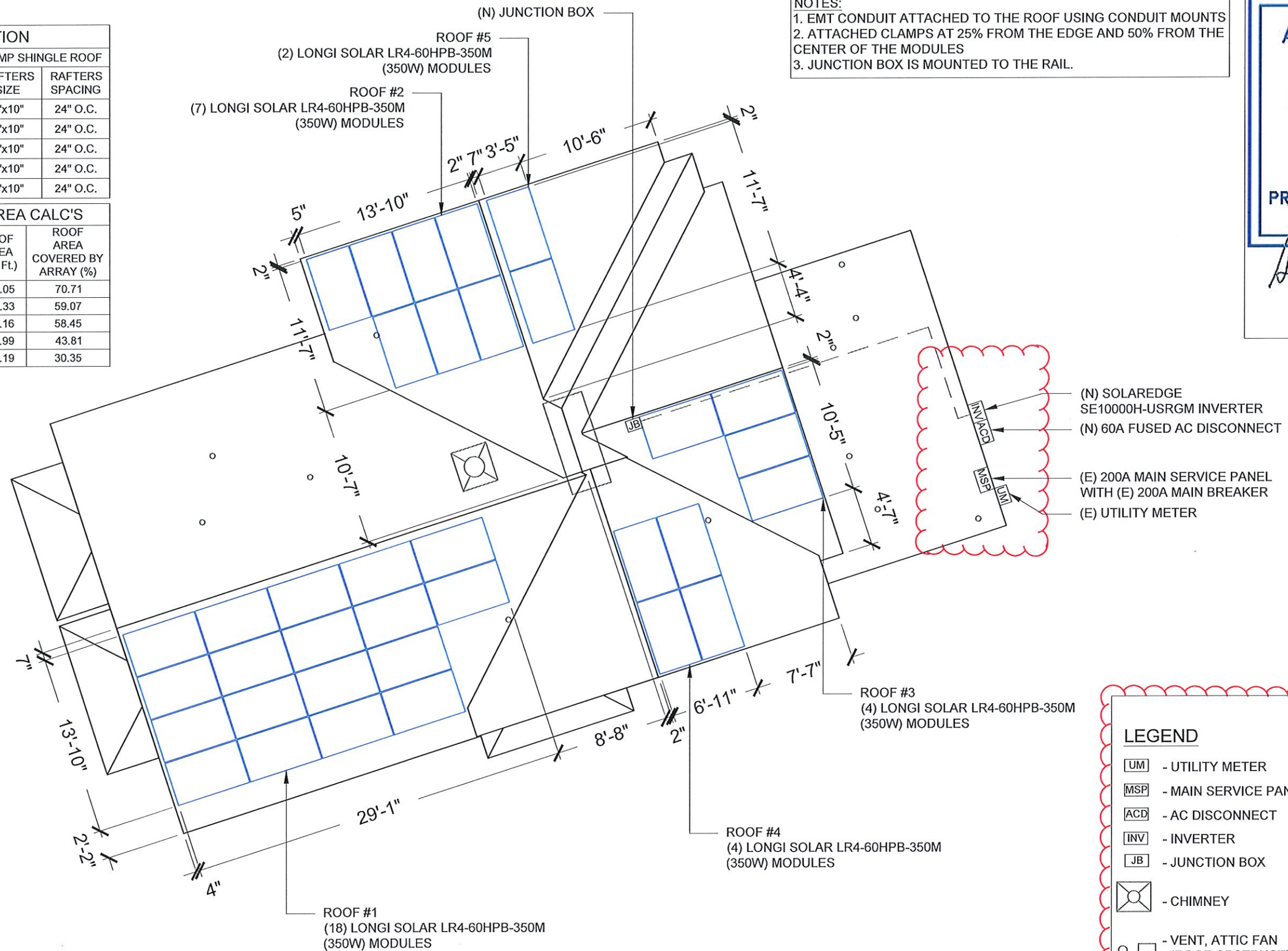
NOTES:
 1. EMT CONDUIT ATTACHED TO THE ROOF USING CONDUIT MOUNTS
 2. ATTACHED CLAMPS AT 25% FROM THE EDGE AND 50% FROM THE CENTER OF THE MODULES
 3. JUNCTION BOX IS MOUNTED TO THE RAIL.

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 26 DEXTER STREET,
 PROVIDENCE, RI 02909 USA
 APN# PROV:32L:230
 AHJ: CITY OF PROVIDENCE

SHEET NAME
 ROOF PLAN WITH
 MODULES LAYOUT

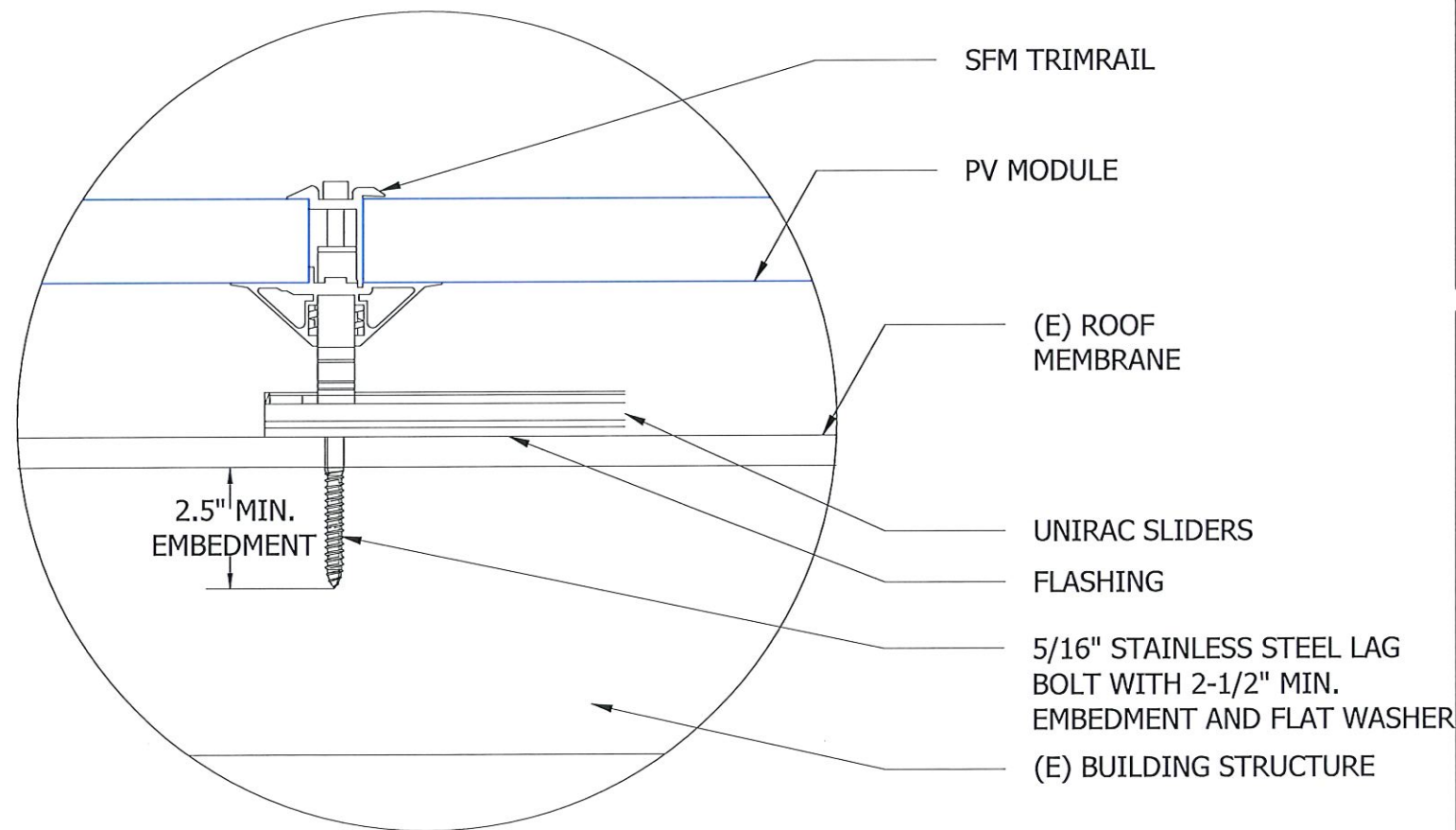
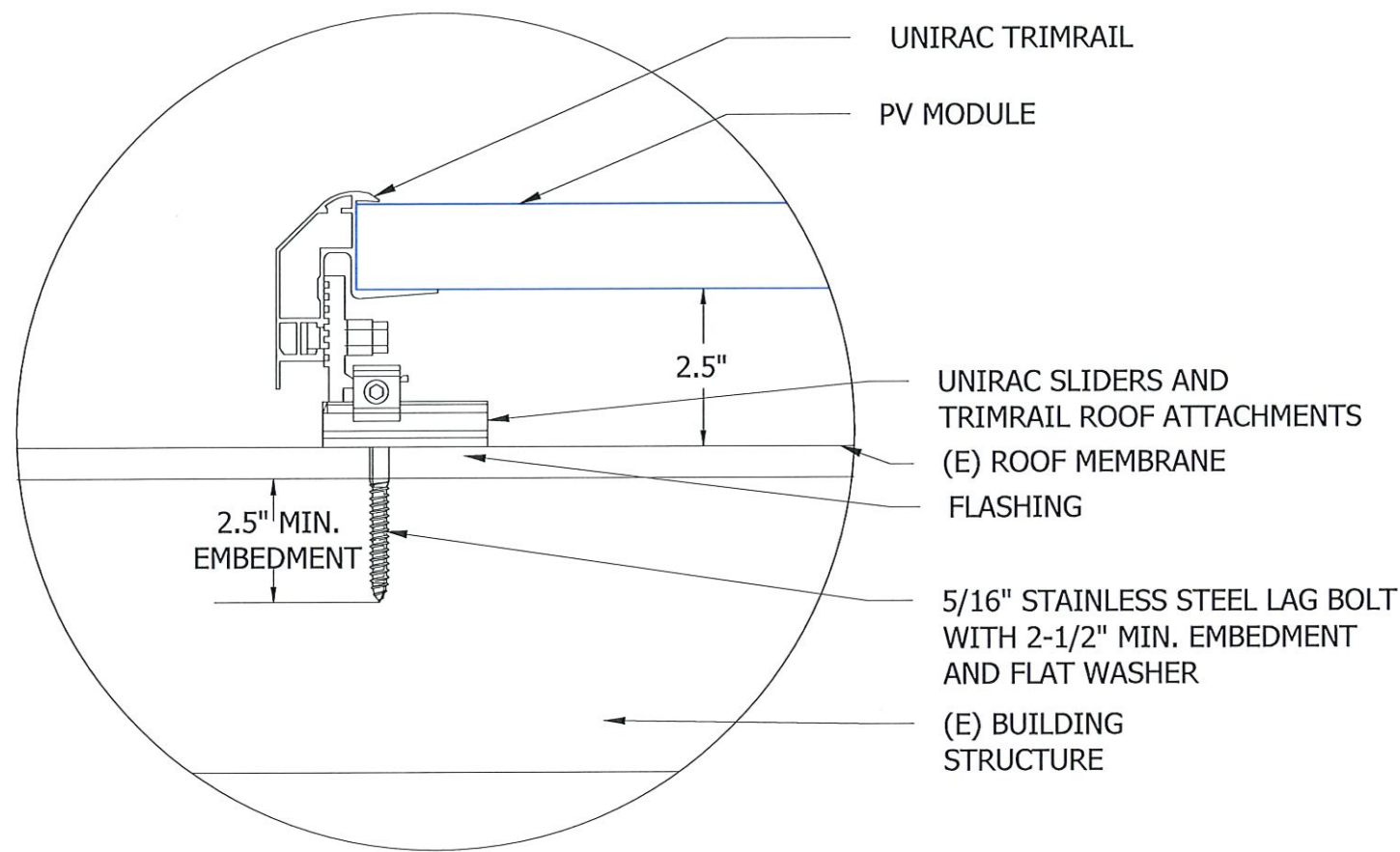
SHEET SIZE
 ANSI B 11" X 17"

SHEET NUMBER
 PV-2A

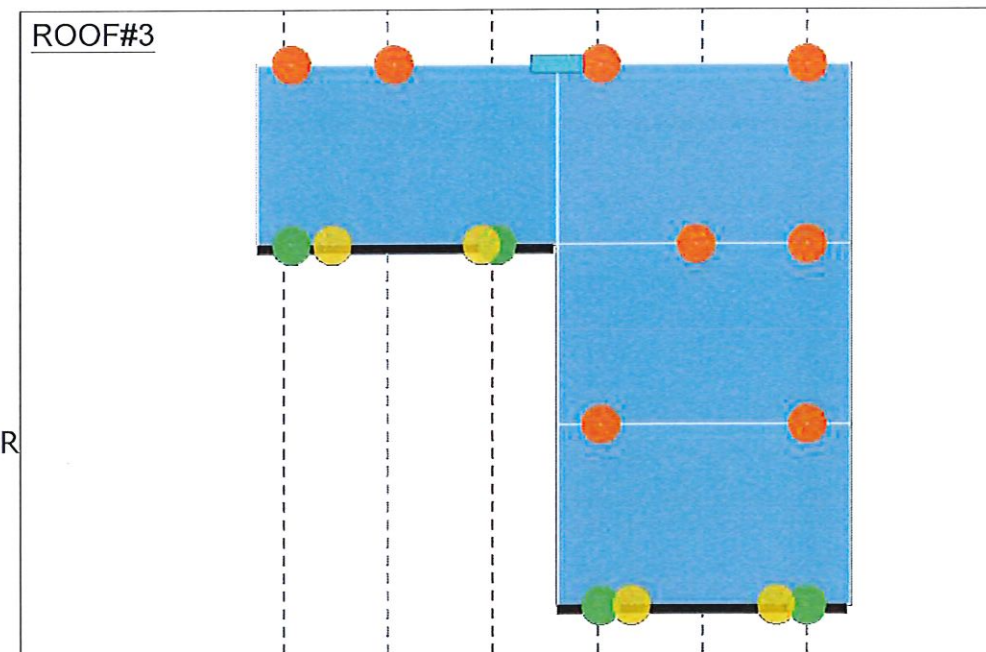
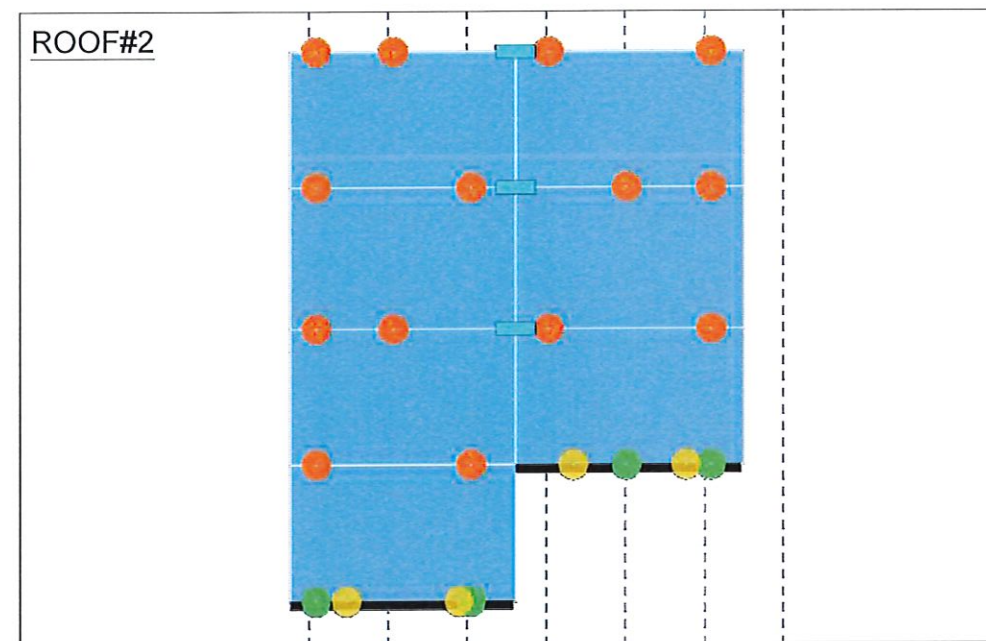
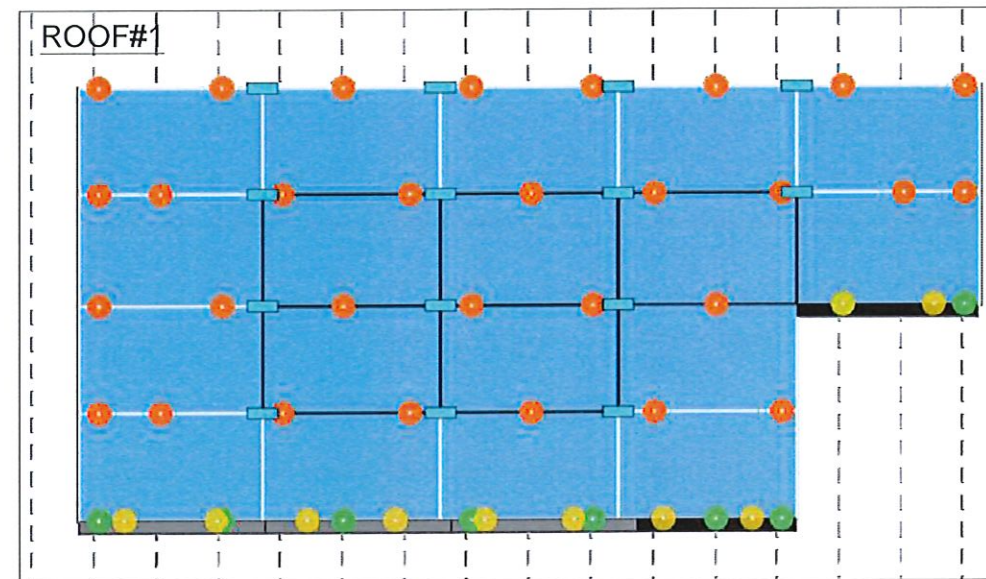
ROOF PLAN WITH MODULES LAYOUT

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





ROOF MOUNTING DETAILS
SCALE: NTS.



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PROJECT NAME

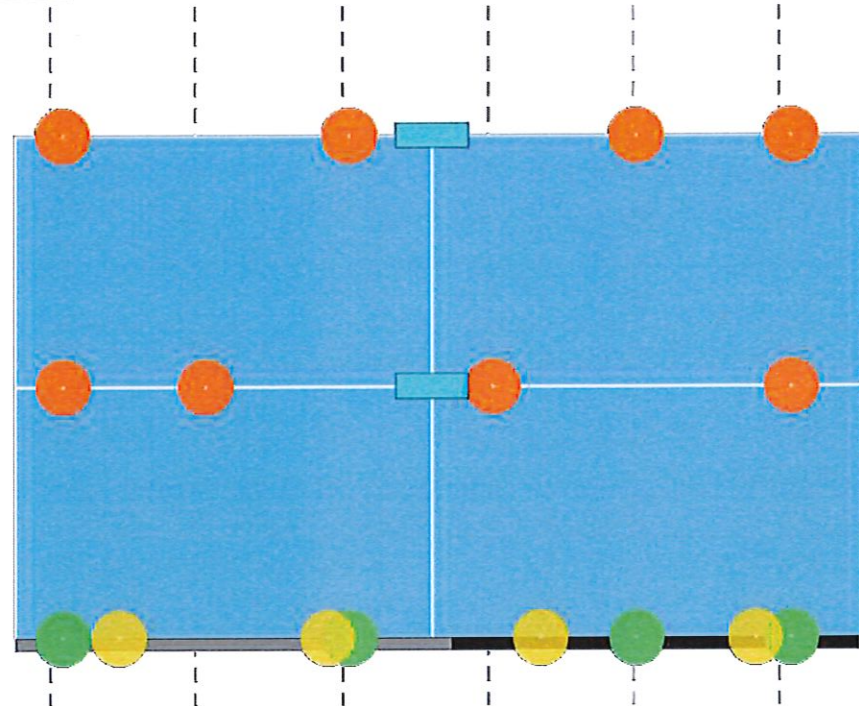
SIEGEL, ROSE
26 DEXTER STREET,
PROVIDENCE, RI 02909 USA
APN# PROV.M:32L:230
AHJ: CITY OF PROVIDENCE

SHEET NAME
MOUNTING DETAIL

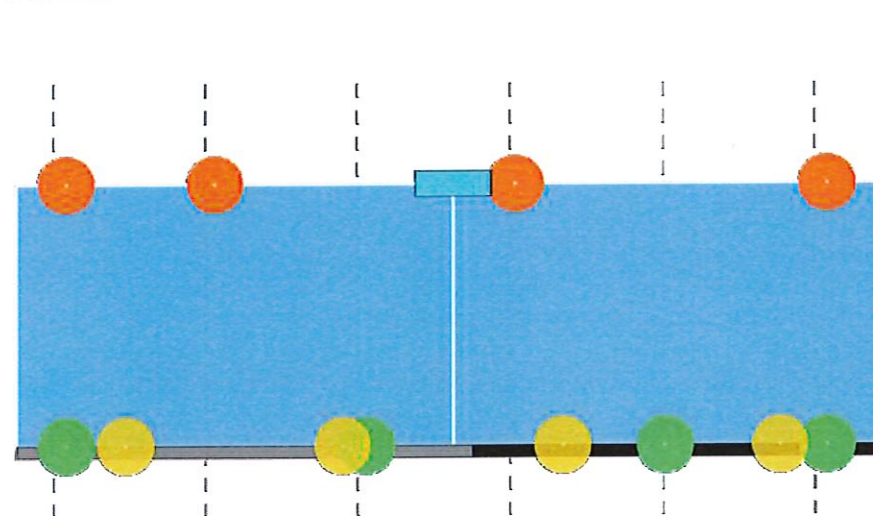
SHEET SIZE
ANSI B 11" X 17"

SHEET NUMBER
PV-3

ROOF#4



ROOF#5






MAX ATTACHMENT SPAN 4' STAGGERED








LEGEND

Module (Roof Zones)


Exposed / Non-Exposed

-  /  1, 2e, 2r
-  /  2n, 3r
-  /  3e

SFM Components

-  SFM Microrail 2"
-  SFM Splice 6.5"
-  SFM Attached Splice 8"
-  SFM Trim Attachment
-  SFM Trim Univ Clip
-  Full Trim Section
-  Cut Trim Section

ROOF MOUNTING DETAILS
SCALE: NTS.

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 GREG ALBRIGHT
Greg Albright

JOB ID: F092143

PROJECT NAME
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 PROVIDENCE, RI 02909 USA
 APN# PROV.M:32L:230
 AHJ: CITY OF PROVIDENCE

SHEET NAME
 MOUNTING DETAIL

SHEET SIZE
 ANSI B 11" X 17"

SHEET NUMBER
 PV-3A

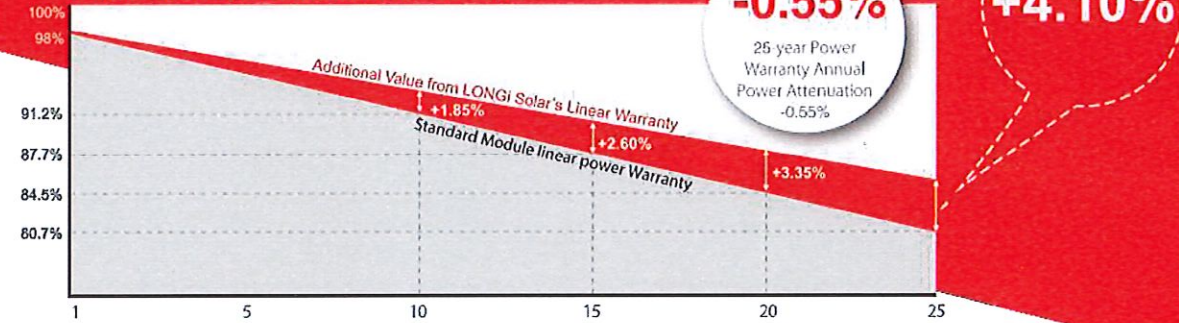
LR4-60HPB 345~370M

Hi-MO 4m
(Black)
NEW



High Efficiency
Low LID Mono PERC with
Half-cut Technology

12-year Warranty for Materials and Processing;
25-year Warranty for Extra Linear Power Output



Complete System and Product Certifications
IEC 61215, IEC 61730, UL 61730
ISO 9001:2008: ISO Quality Management System
ISO 14001: 2004: ISO Environment Management System
TS62941: Guideline for module design qualification and type approval
OHSAS 18001: 2007 Occupational Health and Safety



* Specifications subject to technical changes and tests.
LONGI Solar reserves the right of interpretation.

- Positive power tolerance (0 ~ +5W) guaranteed
- High module conversion efficiency (up to 20.3%)
- Slower power degradation enabled by Low LID Mono PERC technology: first year <2%, 0.55% year 2-25
- Solid PID resistance ensured by solar cell process optimization and careful module BOM selection
- Reduced resistive loss with lower operating current
- Higher energy yield with lower operating temperature
- Reduced hot spot risk with optimized electrical design and lower operating current

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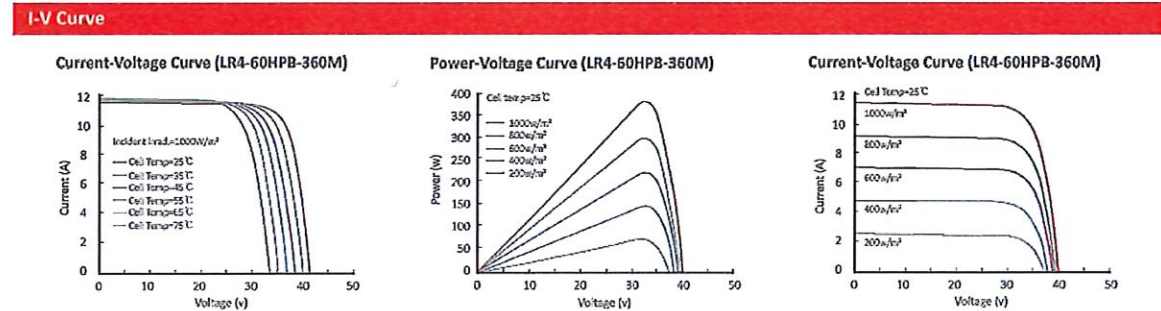
20200414V11 for EU DG only

LR4-60HPB 345~370M

Design (mm)	Mechanical Parameters	Operating Parameters
	Cell Orientation: 120 (6x20) Junction Box: IP68, three diodes Output Cable: 4mm ² , 1200mm in length (for EU DG) Glass: Single glass 3.2mm coated tempered glass Frame: Anodized aluminum alloy frame Weight: 19.5kg Dimension: 1755x1038x35mm Packaging: 30pcs per pallet 180pcs per 20'GP 720pcs per 40'HC	Operational Temperature: -40 C ~ +65 C Power Output Tolerance: 0 ~ +5 W Voc and Isc Tolerance: ±3% Maximum System Voltage: DC1000V (IEC/UL) Maximum Series Fuse Rating: 20A Nominal Operating Cell Temperature: 45±2 C Safety Class: Class II Fire Rating: UL type 1 or 2

Electrical Characteristics	Test uncertainty for Pmax: ±3%											
	LR4-60HPB-345M		LR4-60HPB-350M		LR4-60HPB-355M		LR4-60HPB-360M		LR4-60HPB-365M		LR4-60HPB-370M	
Model Number	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	345	257.6	350	261.4	355	265.1	360	268.8	365	272.6	370	276.3
Open Circuit Voltage (Voc/V)	40.2	37.7	40.4	37.9	40.6	38.1	40.8	38.2	41.0	38.4	41.2	38.6
Short Circuit Current (Isc/A)	11.06	8.95	11.16	9.02	11.25	9.09	11.33	9.16	11.41	9.23	11.50	9.30
Voltage at Maximum Power (Vmp/V)	34.2	31.8	34.4	32.0	34.6	32.2	34.8	32.4	35.0	32.6	35.2	32.8
Current at Maximum Power (Imp/A)	10.09	8.09	10.18	8.16	10.27	8.23	10.35	8.30	10.43	8.36	10.52	8.43
Module Efficiency(%)	18.9		19.2		19.5		19.8		20.0		20.3	
STC (Standard Testing Conditions): Irradiance 1000W/m ² , Cell Temperature 25 C, Spectra at AM1.5												
NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m ² , Ambient Temperature 20 C, Spectra at AM1.5, Wind at 1m/s												

Temperature Ratings (STC)	Mechanical Loading		
Temperature Coefficient of Isc	+0.048%/C	Front Side Maximum Static Loading	5400Pa
Temperature Coefficient of Voc	-0.270%/C	Rear Side Maximum Static Loading	2400Pa
Temperature Coefficient of Pmax	-0.350%/C	Hailstone Test	25mm Hailstone at the speed of 23m/s



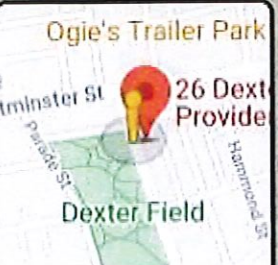
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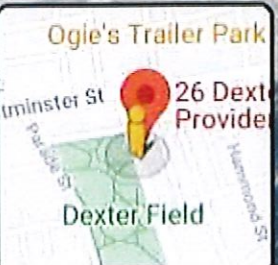
26 Dexter St
Providence, Rhode Island
Google
Street View - Jul 2019



Google



32 Dexter St
Providence, Rhode Island
Google
Street View - Jul 2019



Google

