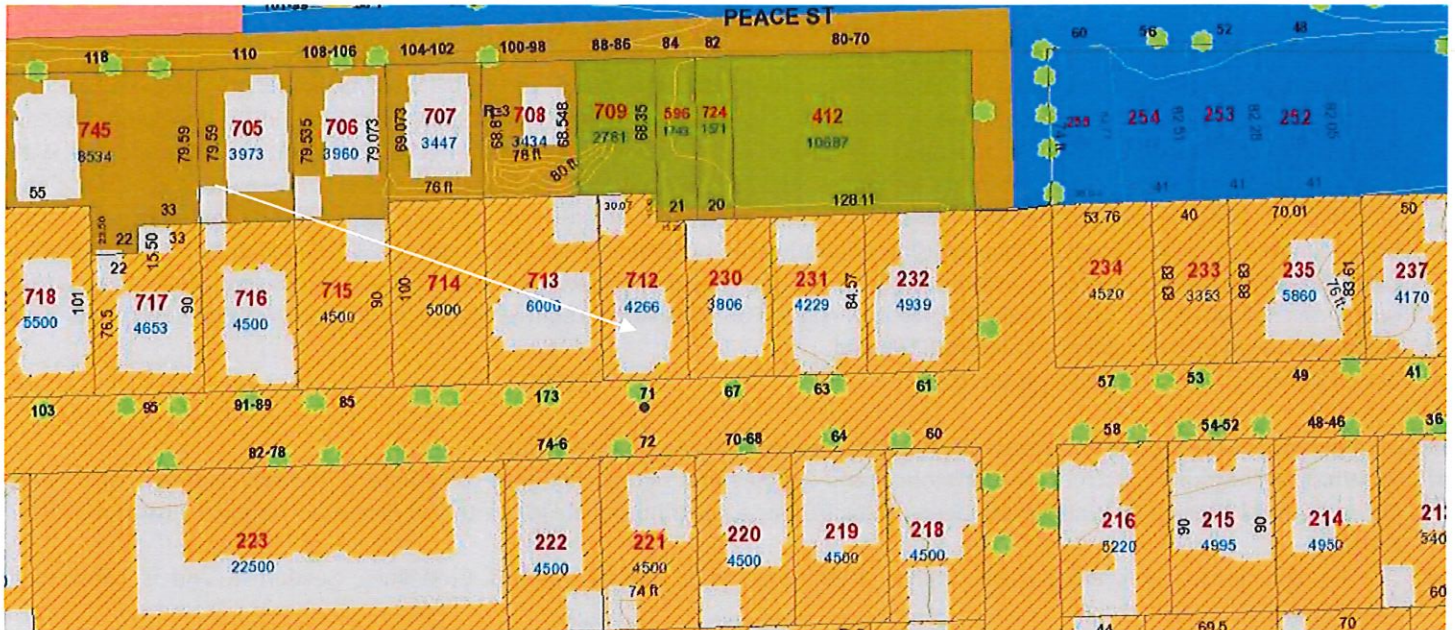


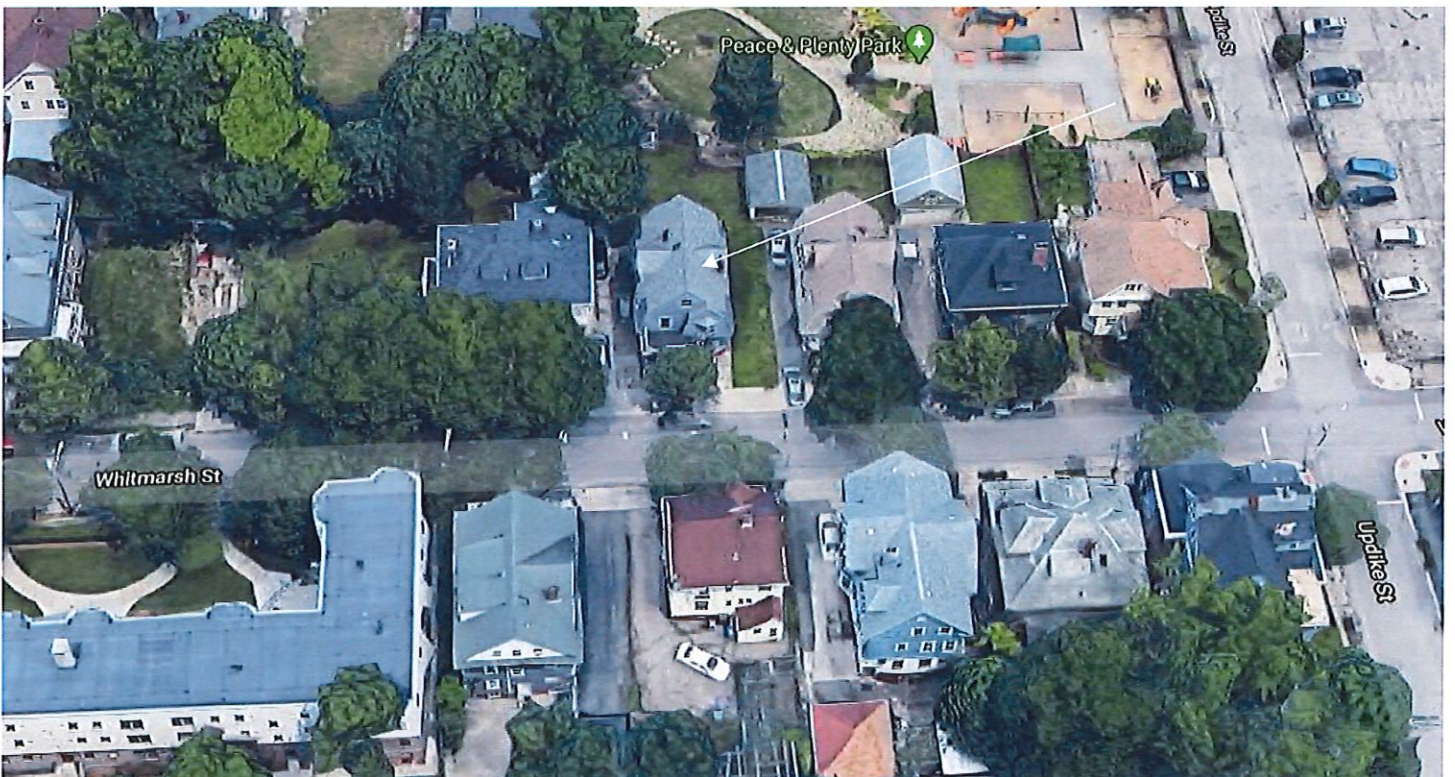
4. CASE 20.053, 71 WHITMARSH STREET, William D. Wright House, ca1902 (NORTH ELMWOOD)

Similar to the Connet house at No. 67, this cross-gambrel dwelling features a Tuscan-column front porch and a first-floor bay window crowned by a subsidiary gambrel-roofed front gable.

CONTRIBUTING



Arrow indicates 71 Whitmarsh Street.



Arrow indicates project location.

Applicant/Contractor: Newport Electric, 200 Highpoint Avenue, B12, Portsmouth, RI 02871

Owner: Ashely Hogan, 71 Whitmarsh Street, providence, RI 02907

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

- The applicant is requesting the installation of 13 solar panels to the southern slope of the gambrel roof.

Issues: The following issues are relevant to this application:

- The modifications as proposed will be visible from the public rights-of-way, but the visibility will be limited;
- 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,
- Drawings and pictures have been submitted.

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

- a) 71 Whitmarsh Street is a structure of historical and architectural significance that contribute to the significance of the North Elmwood local historic district, having been recognized as a contributing structure to the Elmwood National Historic Register District;
- b) The modifications as proposed meets Minor Alterations: Solar Energy Systems Guidelines, Section 2, and 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. 71 Whitmarsh Street is a structure of historical and architectural significance that contribute to the significance of the North Elmwood local historic district, having been recognized as a contributing structure to the Elmwood National Historic Register 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 is aesthetically compatible with the property and district as the proposed alteration is of limited-to-no visibility 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.



SCOPE OF WORK


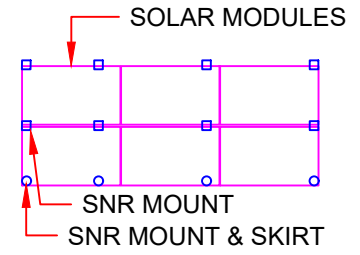




















- **SYSTEM SIZE:** 4030W DC, 3120W AC
- **MODULES:** (13) REC SOLAR: REC310TP2M BLK
- **INVERTER(S):** (13) ENPHASE ENERGY: IQ7-60-X-US
- **RACKING:** SNAPRACK RLU; RL UNIVERSAL, MOUNT KIT, SEE DETAIL SNR-DC-00369

B2

GENERAL NOTES

- ALL WORK SHALL COMPLY WITH IBC 2015, MUNICIPAL CODE, AND ALL MANUFACTURERS' LISTINGS AND INSTALLATION INSTRUCTIONS.
- PHOTOVOLTAIC SYSTEM WILL COMPLY WITH NEC 2017.
- ELECTRICAL SYSTEM GROUNDING WILL COMPLY WITH NEC 2017.
- PHOTOVOLTAIC SYSTEM IS UNGROUNDED. NO CONDUCTORS ARE SOLIDLY GROUNDED IN THE INVERTER. SYSTEM COMPLIES WITH 690.35.
- MODULES CONFORM TO AND ARE LISTED UNDER UL 1703.
- INVERTER CONFORMS TO AND IS LISTED UNDER UL 1741.
- RACKING CONFORMS TO AND IS LISTED UNDER UL 2703.
- SNAPRACK RACKING SYSTEMS, IN COMBINATION WITH TYPE I, OR TYPE II MODULES, ARE CLASS A FIRE RATED.
- RAPID SHUTDOWN REQUIREMENTS MET WHEN INVERTERS AND ALL CONDUCTORS ARE WITHIN ARRAY BOUNDARIES PER NEC 690.12(1).
- CONSTRUCTION FOREMAN TO PLACE CONDUIT RUN PER 690.31(G).
- ARRAY DC CONDUCTORS ARE SIZED FOR DERATED CURRENT.
- 10.07 AMPS MODULE SHORT CIRCUIT CURRENT.
- 15.73 AMPS DERATED SHORT CIRCUIT CURRENT [690.8 (a) & 690.8 (b)].
- PV INSTALLATION COMPLIES WITH THE NEC 2017 ARTICLE 690.12(B)(2). CONTROLLED CONDUCTORS LOCATED INSIDE THE ARRAY BOUNDARY ARE LIMITED TO 80 VOLTS WITHIN 30 SECOND OF A RAPID SHUTDOWN INITIATION

LEGEND AND ABBREVIATIONS

	SERVICE ENTRANCE		
	MAIN PANEL		
	SUB-PANEL		
	PV LOAD CENTER		
	SUNRUN METER		
	DEDICATED PV METER		CHIMNEY
	INVERTER(S)		ATTIC VENT
	AC DISCONNECT(S)		FLUSH ATTIC VENT
	DC DISCONNECT(S)		PVC PIPE VENT
	COMBINER BOX		METAL PIPE VENT
	INTERIOR EQUIPMENT SHOWN AS DASHED		T-VENT
			SATELLITE DISH
			FIRE SETBACKS
			HARDSCAPE
			PROPERTY LINE

SCALE: NTS

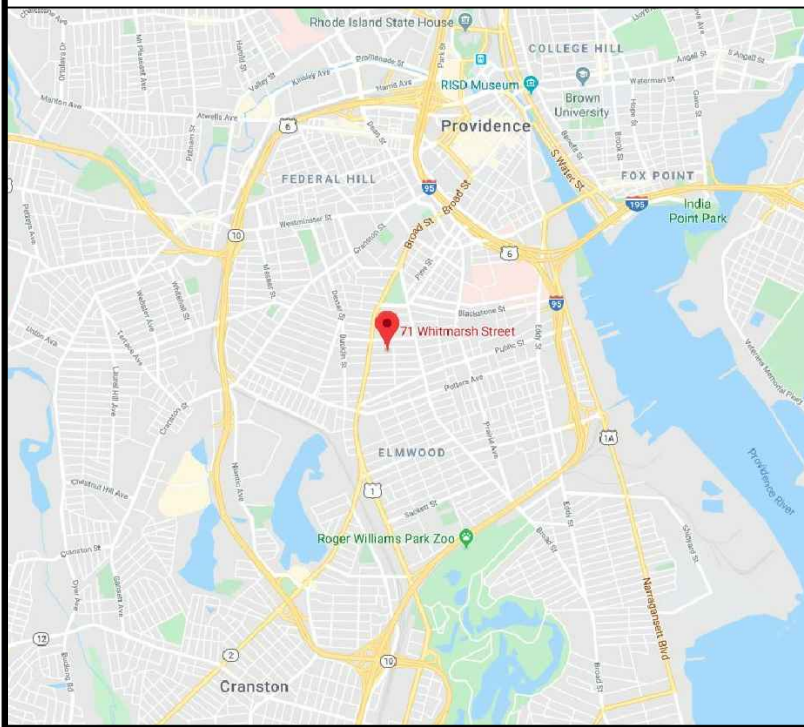
A	AMPERE
AC	ALTERNATING CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AZIM	AZIMUTH
COMP	COMPOSITION
DC	DIRECT CURRENT
(E)	EXISTING
EXT	EXTERIOR
FRM	FRAMING
INT	INTERIOR
LBW	LOAD BEARING WALL
MAG	MAGNETIC
MSP	MAIN SERVICE PANEL
(N)	NEW
NTS	NOT TO SCALE
OC	ON CENTER
PRE-FAB	PRE-FABRICATED
PSF	POUNDS PER SQUARE FOOT
PV	PHOTOVOLTAIC
TL	TRANSFORMERLESS
TYP	TYPICAL
V	VOLTS
W	WATTS

REV	NAME	DATE	COMMENTS
B	WESLEY HASE	2/3/2020	DOWNSIZED SYSTEM
B1	WESLEY HASE	2/11/2020	UPDATED METER NUMBER
B2	WESLEY HASE	2/18/20	UPDATED MODULE NUMBER

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PAGE #	DESCRIPTION
PV-1.0	COVER SHEET
PV-2.0	SITE PLAN
PV-3.0	LAYOUT
PV-4.0	ELECTRICAL
PV-5.0	SIGNAGE

VICINITY MAP



CL# A-004998 B-014272

19 BONAZZOLI AVE UNIT 1 HUDSON MA 01749
PHONE 0
FAX 0

CUSTOMER RESIDENCE:
ASHLEY HOGAN
71 WHITMARSH ST,
PROVIDENCE, RI, 02907

TEL. (413) 654-6574
APN #: PROV-000044-000000-000712

PROJECT NUMBER:
261R-071HOGA

DESIGNER: (415) 580-6920 ex3
WESLEY HASE

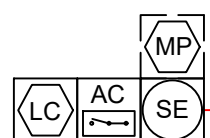
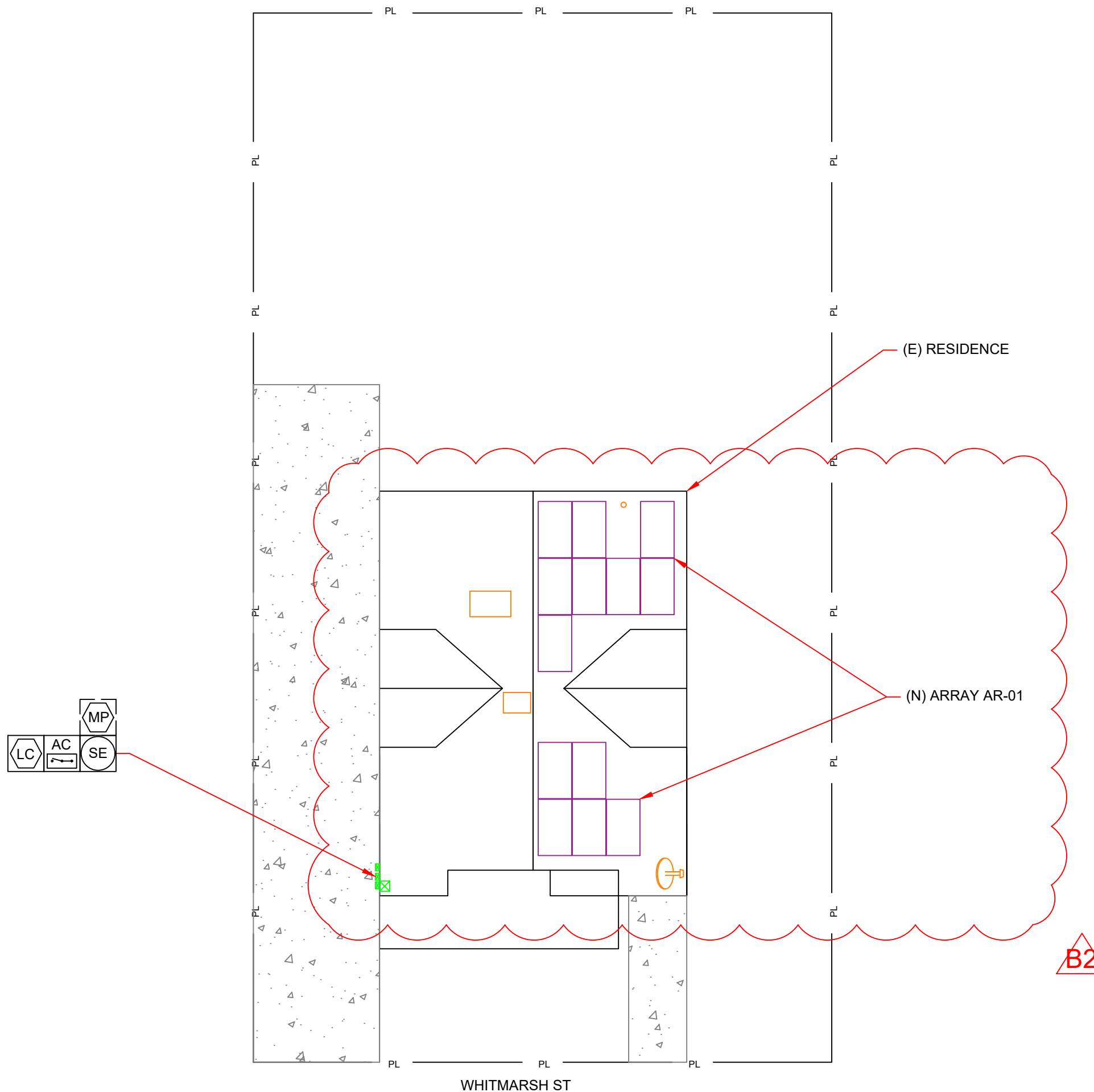
SHEET
COVER SHEET

REV: B2 2/18/2020

PAGE
PV-1.0



	ARRAY PITCH	TRUE AZIM	MAG AZIM	PV AREA (SQFT)
AR-01	42°	90°	104°	233.7



NOTE: MICRO-INVERTERS INSTALLED UNDER EACH MODULE

SUNRUN

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WESLEY HASE

SHEET
SITE PLAN

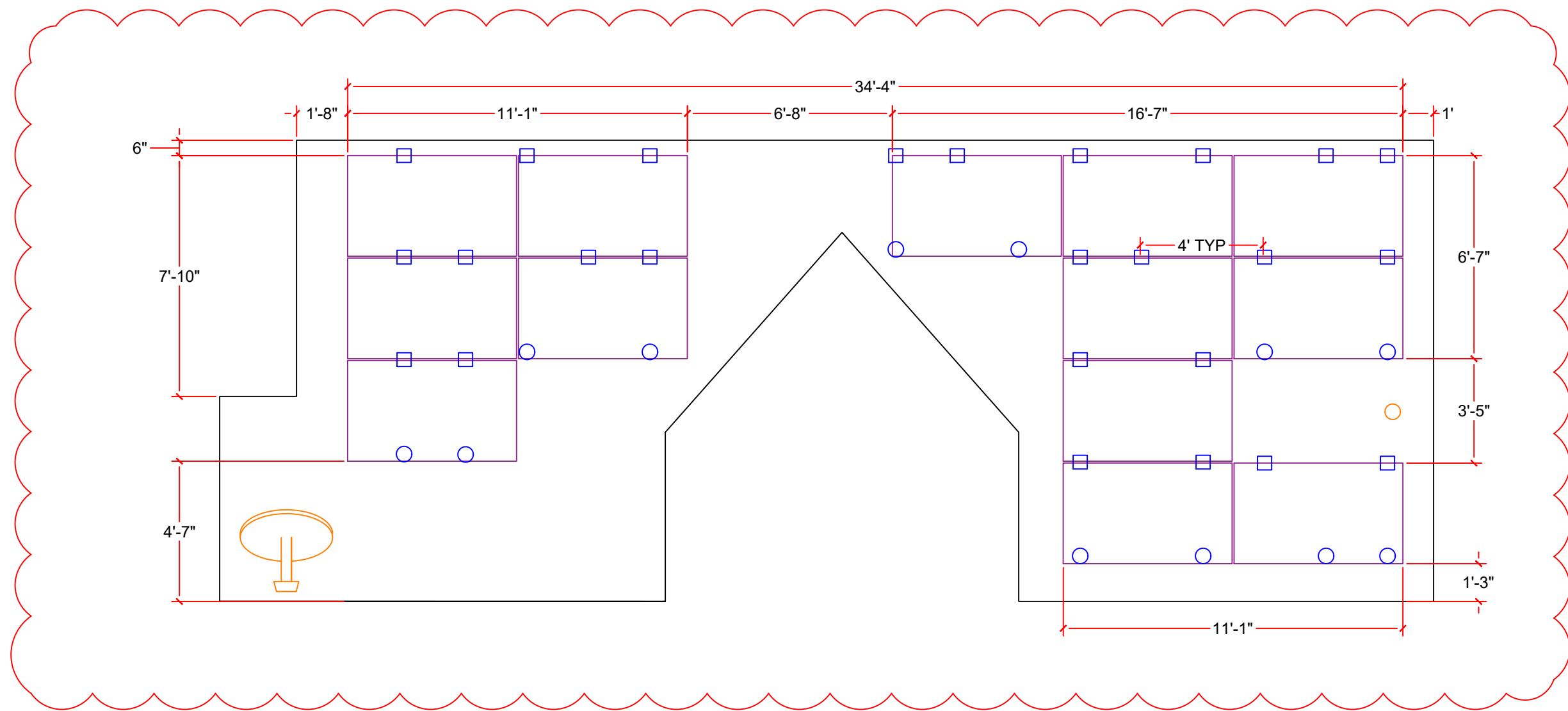
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PV-2.0

	ROOF TYPE	MOUNTING DETAIL	ROOF HEIGHT	ROOF EXPOSURE	FRAME MATERIAL	FRAME TYPE	MAX FRAME SPAN	OC SPACING	ROOF EDGE ZONE	MAX PEN SPACING	MAX MOD. OVERHANG
AR-01	COMP SHINGLE - RLU	RL UNIVERSAL, MOUNT KIT, SEE DETAIL SNR-DC-00369	2 STORY	VAULTED	WOOD	2X8 RAFTERS	16' - 5"	16"	3'	4' - 0"	1' - 4"

D1 - AR-01 - SCALE: 1/4" = 1'-0"
PITCH: 42°
AZIM: 90°

B2



DESIGN CRITERIA

MODULES:
REC SOLAR: REC310TP2M BLK

MODULE DIMS:
65.94" x 39.25" x 1.49" (38mm)

MODULE CLAMPS:
Portrait: 8.2" - 16.4"
Landscape: 0" - 9.75"

MAX DISTRIBUTED LOAD: 3 PSF

SNOW LOAD: 30 PSF

WIND SPEED:
134 MPH 3-SEC GUST.

S.S. LAG SCREWS:
5/16"x4.0": 2.5" MIN EMBEDMENT

NOTE:
INSTALLERS TO VERIFY RAFTER SIZE, SPACING AND SLOPED SPANS, AND NOTIFY E.O.R. OF ANY DISCREPANCIES BEFORE PROCEEDING.

PENETRATION SPACING:
FULLY STAGGERED

ROW SPACING:
0.75" BETWEEN ROWS

COLUMN SPACING:
0.75" BETWEEN COLUMNS

SUNRUN

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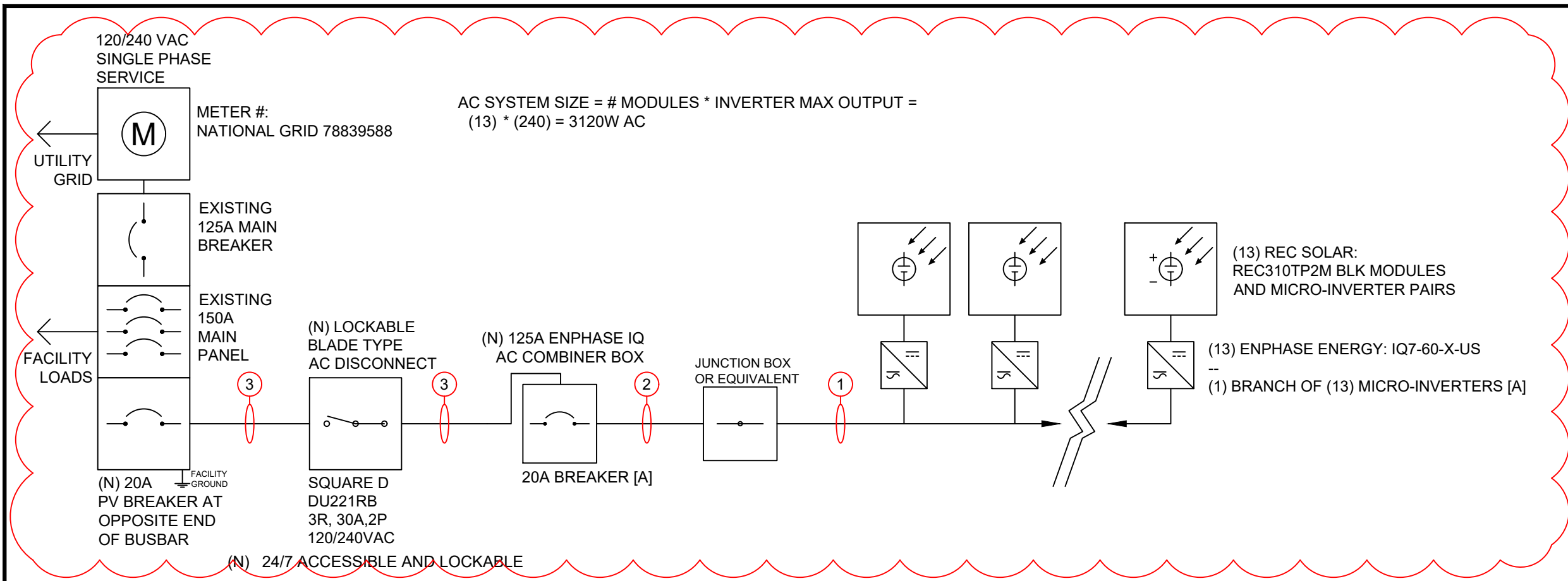
DESIGNER: (415) 580-6920 ex3
WESLEY HASE

SHEET
LAYOUT

REV: B2 2/18/2020

PAGE **PV-3.0**

SEE SITE PLAN FOR NORTH ARROW



B2

CONDUIT SCHEDULE

#	CONDUIT	CONDUCTOR	NEUTRAL	GROUND
1	NONE	(2) 12 AWG PER ENPHASE Q CABLE BRANCH	NONE	(1) 6 AWG BARE COPPER
2	3/4" EMT OR EQUIV.	(2) 10 AWG THHN/THWN-2	NONE	(1) 8 AWG THHN/THWN-2
3	3/4" EMT OR EQUIV.	(2) 10 AWG THHN/THWN-2	(1) 10 AWG THHN/THWN-2	(1) 8 AWG THHN/THWN-2

NOTES TO INSTALLER:

- ADD 20 AMP PV BREAKER TO MAIN PANEL.
- 10 MODULES MAX SUB-BRANCH SIZE FOR STRING [A]

MODULE CHARACTERISTICS

REC SOLAR: REC310TP2M BLK:	310 W
OPEN CIRCUIT VOLTAGE:	39.1 V
MAX POWER VOLTAGE:	33.5 V
SHORT CIRCUIT CURRENT:	10.07 A

SUNRUN

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DESIGNER: (415) 580-6920 ex3
WESLEY HASE

SHEET
ELECTRICAL

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PV-4.0

! WARNING
ELECTRICAL SHOCK HAZARD
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): NEC 2017: 690.13(B), NEC 2014: 690.17(E), NEC 2011: 690.17(4)

! 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): NEC 2017: 690.5(C), NEC 2014: 690.5(C), NEC 2011: 690.5(C)

! 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 2017: 705.12(B)(2)(3)(b), NEC 2014: 705.12(D)(3), NEC 2011: 705.12(D)(4)

! WARNING
PHOTOVOLTAIC SYSTEM COMBINER PANEL
DO NOT ADD LOADS

LABEL LOCATION:
PHOTOVOLTAIC AC COMBINER (IF APPLICABLE).
PER CODE(S): NEC 2017: 705.12(B)(2)(3)(b), NEC 2014: 705.12(D)(2)(3)(c), NEC 2011: 705.12(D)(4)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION:
UTILITY SERVICE ENTRANCE/METER, INVERTER/DC DISCONNECT IF REQUIRED BY LOCAL AHJ, OR OTHER LOCATIONS AS REQUIRED BY LOCAL AHJ.
PER CODE(S): NEC 2017: 690.12, NEC 2014: 690.12, NEC 690.56, IFC 2012: 605.11.1

! WARNING
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
ADJACENT TO PV BREAKER (IF APPLICABLE).
PER CODE(S): NEC 2017: 705.12(B)(2)(3)(b), NEC 2014: 705.12(D)(2)(3)(b), NEC 2011: 705.12(D)(7)

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): NEC 2017: 690.31(G)(3), 690.31(G)(4), NEC 2014: 690.31(G)(3), 690.31(G)(4), NEC 2011: 690.31(E)(3), 690.31(E)(4), IFC 2012: 605.11.1.4

PHOTOVOLTAIC AC DISCONNECT
MAXIMUM AC OPERATING CURRENT: 13.00 AMPS
NOMINAL OPERATING AC VOLTAGE: 240 VAC

LABEL LOCATION:
AC DISCONNECT(S), PHOTOVOLTAIC SYSTEM POINT OF INTERCONNECTION.
PER CODE(S): NEC 2017: 690.54, NEC 2014: 690.54, NEC 2011: 690.54

6"

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

3.5"

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

SOLAR ELECTRIC PV PANELS

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)

- NOTES AND SPECIFICATIONS:
- SIGNS AND LABELS SHALL MEET THE REQUIREMENTS OF THE NEC 2017 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.

SUNRUN

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SHEET
SIGNAGE

REV: B2 2/18/2020

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PV-5.0