SHEET INDEX

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

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AFC	ARC FAULT CIRCUIT INTERUPTER
AZIM	AZIMUTH
COMP	COMPOSITION
DC	DIRECT CURRENT
(E)	EXISTING
ESS	ENERGY STORAGE SYSTEM
EXT	EXTERIOR
INT	INTERIOR
MSP	MAIN SERVICE PANEL
(N)	NEW
NTS	NOT TO SCALE
OC	ON CENTER
PRE-FAB	PRE-FABRICATED
PSF	POUNDS PER SQUARE FOOT
PV	PHOTOVOLTAIC
RSD	RAPID SHUTDOWN DEVICE
TL	TRANSFORMERLESS
TYP	TYPICAL
V	VOLTS
W	WATTS
LAN	LANDSCAPE
POR	PORTRAIT

LEGEND

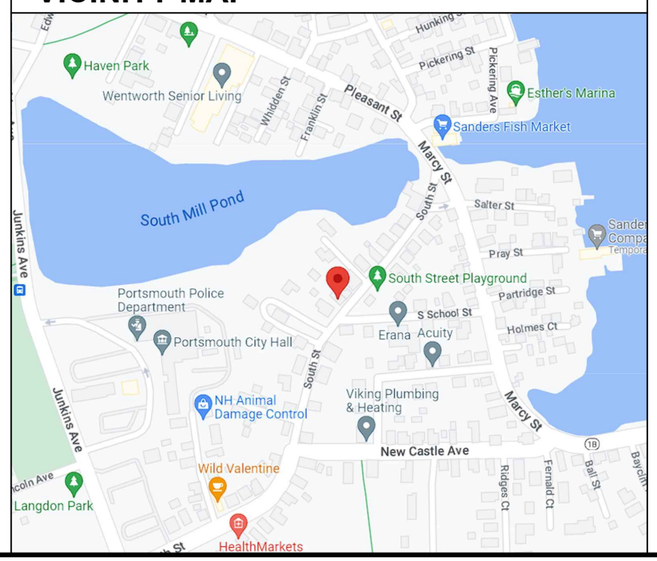
- SE — SERVICE ENTRANCE
- MP — MAIN PANEL
- SP — SUB-PANEL
- LC — PV LOAD CENTER
- SM — SUNRUN METER
- PM — DEDICATED PV METER
- INV — INVERTER(S)
- AC — AC DISCONNECT(S)
- DC — DC DISCONNECT(S)
- CB — IQ COMBINER BOX
- INTERIOR EQUIPMENT SHOWN AS DASHED
- CHIMNEY
- ATTIC VENT
- FLUSH ATTIC VENT
- PVC PIPE VENT
- METAL PIPE VENT
- T-VENT
- SATELLITE DISH
- FIRE SETBACKS
- HARDSCAPE
- — PL— PROPERTY LINE
- SOLAR MODULES
- TOPSPEED MOUNT

SCALE: NTS

SCOPE OF WORK

• SYSTEM SIZE: 4680W DC, 3800W AC
• MODULES: (12) TRINA SOLAR: TSM-390DE09C.07
• INVERTERS: (1) SOLAREDGE TECHNOLOGIES: SE3800H-USSN
• RACKING: TOPSPEED, SEE DETAIL SNR-DC-30004
• SERVICE ENTRANCE CONDUCTORS TO BE REPLACED.

VICINITY MAP



GENERAL NOTES

• ALL WORK SHALL COMPLY WITH 2018 IRC/IBC/IEBC, MUNICIPAL CODE, AND ALL MANUFACTURERS' LISTINGS AND INSTALLATION INSTRUCTIONS.
• PHOTOVOLTAIC SYSTEM WILL COMPLY WITH NEC 2020.

• ELECTRICAL SYSTEM GROUNDING WILL COMPLY WITH NEC 2020.

• 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.

• SNAPNRACK 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.

• 13.35 AMPS MODULE SHORT CIRCUIT CURRENT.

• 20.85 AMPS DERATED SHORT CIRCUIT CURRENT [690.8 (A) & 690.8 (B)].

REV	NAME	DATE	COMMENTS

sunrun

#180120

200 RESEARCH DR, WILMINGTON, MA 01887
PHONE 888.657.6527
FAX 805.528.9701

CUSTOMER RESIDENCE:
GARY LOWE
105 SOUTH ST, PORTSMOUTH, NH, 03801

TEL. (603) 496-2850
APN: PRSM-000110-000011

PROJECT NUMBER:
222R-105LOWE

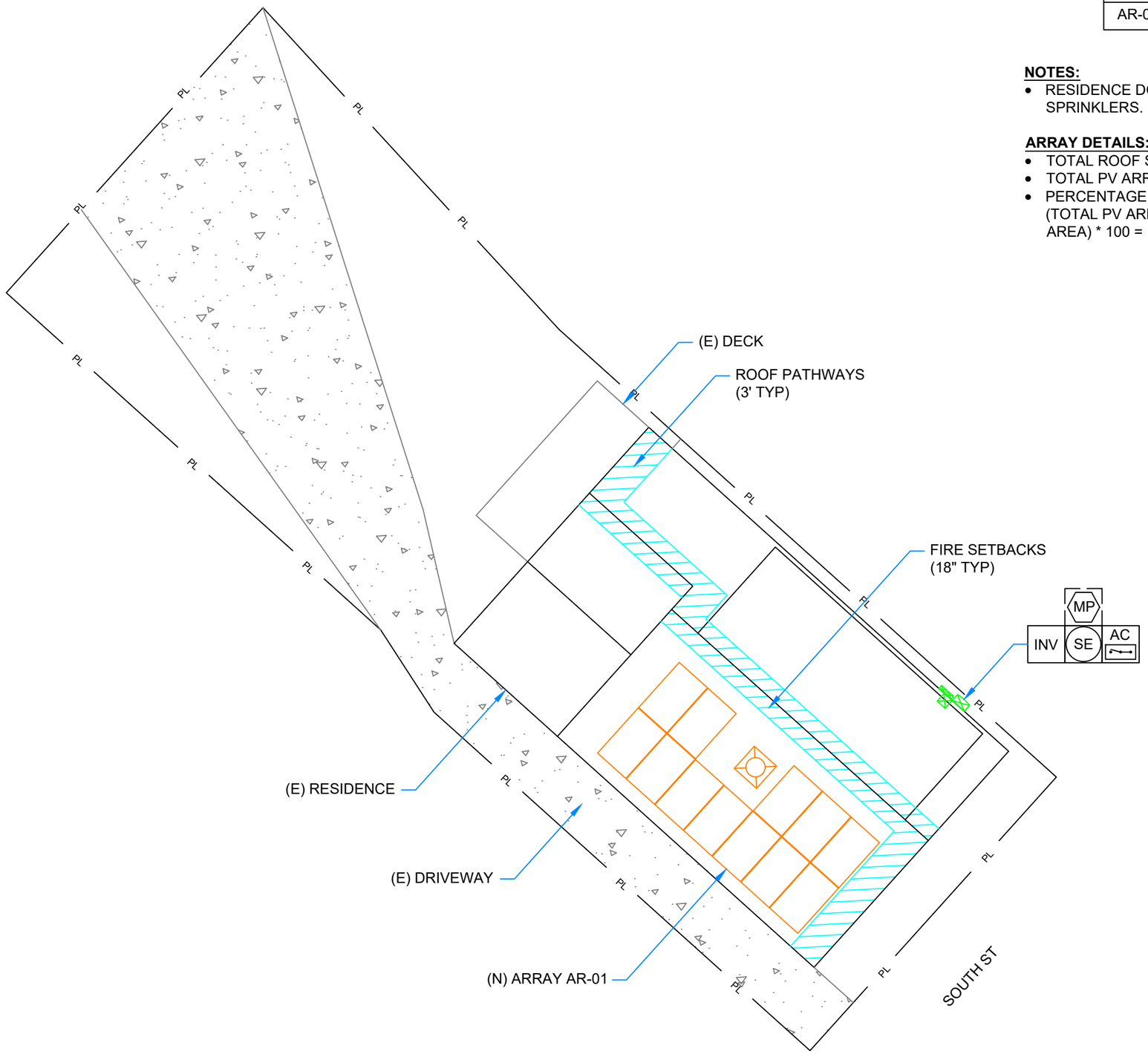
DESIGNER: (415) 580-6920 ex3
RIA CAPISTRANO

SHEET
COVER SHEET

REV: A1 3/11/2023

PAGE PV-1.0

SITE PLAN - SCALE = 3/32" = 1'-0"



	ARRAY PITCH	TRUE AZIM	MAG AZIM	PV AREA (SQFT)
AR-01	44°	222°	236°	248.3

NOTES:

- RESIDENCE DOES NOT CONTAIN ACTIVE FIRE SPRINKLERS.

ARRAY DETAILS:

- TOTAL ROOF SURFACE AREA: 1301 SQFT.
- TOTAL PV ARRAY AREA: 248.3 SQ FT.
- PERCENTAGE PV COVERAGE: (TOTAL PV ARRAY AREA/TOTAL ROOF SURFACE AREA) * 100 = 19.1%

sunrun

#180120

200 RESEARCH DR, WILMINGTON, MA 01887
PHONE 888.657.6527
FAX 805.528.9701

CUSTOMER RESIDENCE:
GARY LOWE
105 SOUTH ST, PORTSMOUTH, NH, 03801

TEL. (603) 496-2850
APN: PRSM-000110-000011

PROJECT NUMBER:
222R-105LOWE

DESIGNER: (415) 580-6920 ex3
RIA CAPISTRANO

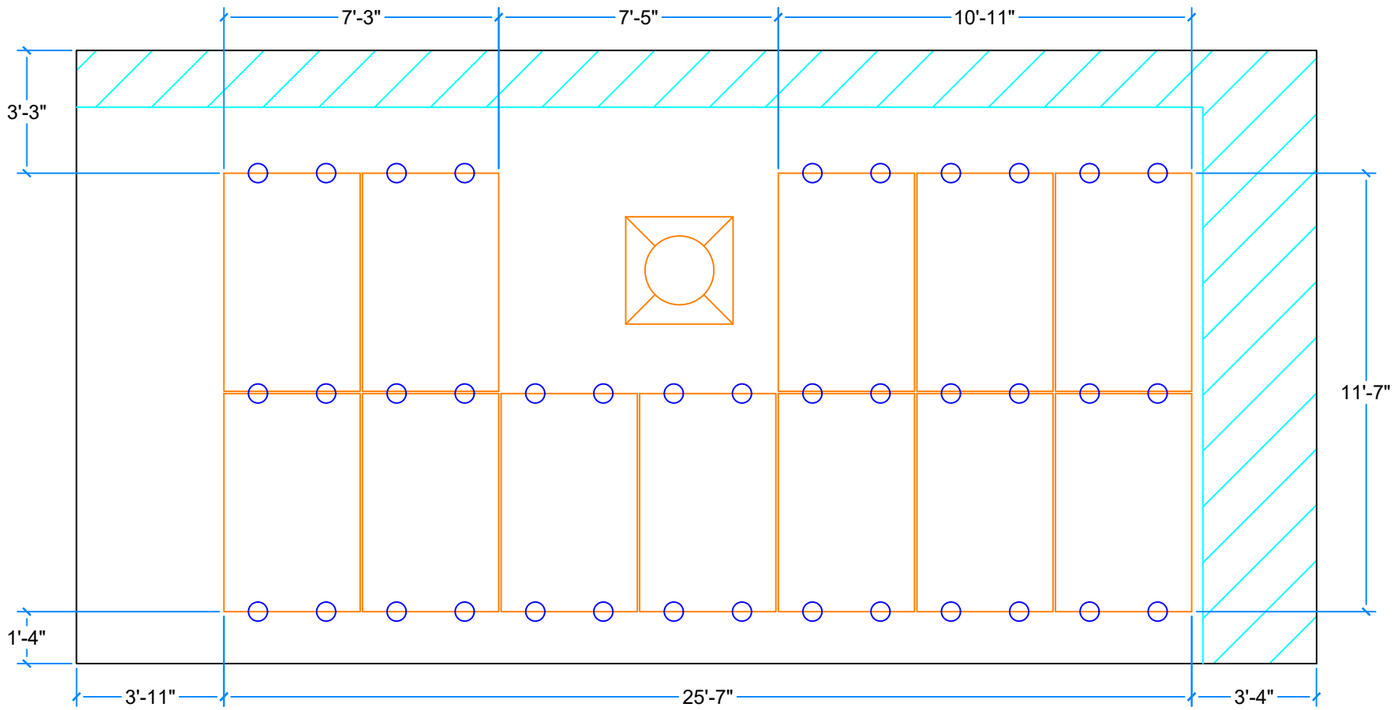
SHEET
SITE PLAN

REV: A1 3/11/2023

PAGE
PV-2.0

ROOF INFO			FRAMING INFO			ATTACHMENT INFORMATION			
Name	Type	Height	Type	Max Span	OC Spacing	Detail	Minimum Number of Mounts per Up-Slope	Max Landscape Overhang	Max Portrait Overhang
AR-01	COMP SHINGLE - TOPSPEED	2-Story	2X8 RAFTERS	8' - 3"	24"	TOPSPEED, SEE DETAIL SNR-DC-30004	2	1' - 5"	0' - 10"

D1 - AR-01 - SCALE: 1/4" = 1'-0"
AZIM: 222°
PITCH: 44°



STRUCTURAL NOTES:
INSTALLERS SHALL NOTIFY ENGINEER OF ANY POTENTIAL STRUCTURAL ISSUES OBSERVED PRIOR TO PROCEEDING W/ INSTALLATION.

MOUNT NUMBER FOR LEADING DOWNSLOPE EDGE SHALL MATCH REQUIREMENTS LISTED ABOVE INSTALL PER TOPSPEED™ INSTALLATION MANUAL.
CONTRACTOR MAY SUBSTITUTE SNAPNRACK DECKTRACK MOUNTS (SNR DETAIL SNR-DC-00453) WITH A MAX OVERHANG OF 6”

DESIGN CRITERIA

MAX DISTRIBUTED LOAD: 3 PSF
SNOW LOAD: 50 PSF
WIND SPEED:
115 MPH 3-SEC GUST.
S.S. LAG SCREW
(4) #14 X 2.25" SS SEALING WASHER WOOD SCREWS FULLY PENETRATING THROUGH WOOD DECK

sunrun

#180120

200 RESEARCH DR, WILMINGTON, MA 01887
PHONE 888.657.6527
FAX 805.528.9701

CUSTOMER RESIDENCE:
GARY LOWE
105 SOUTH ST, PORTSMOUTH, NH, 03801

TEL. (603) 496-2850
APN: PRSM-000110-000011

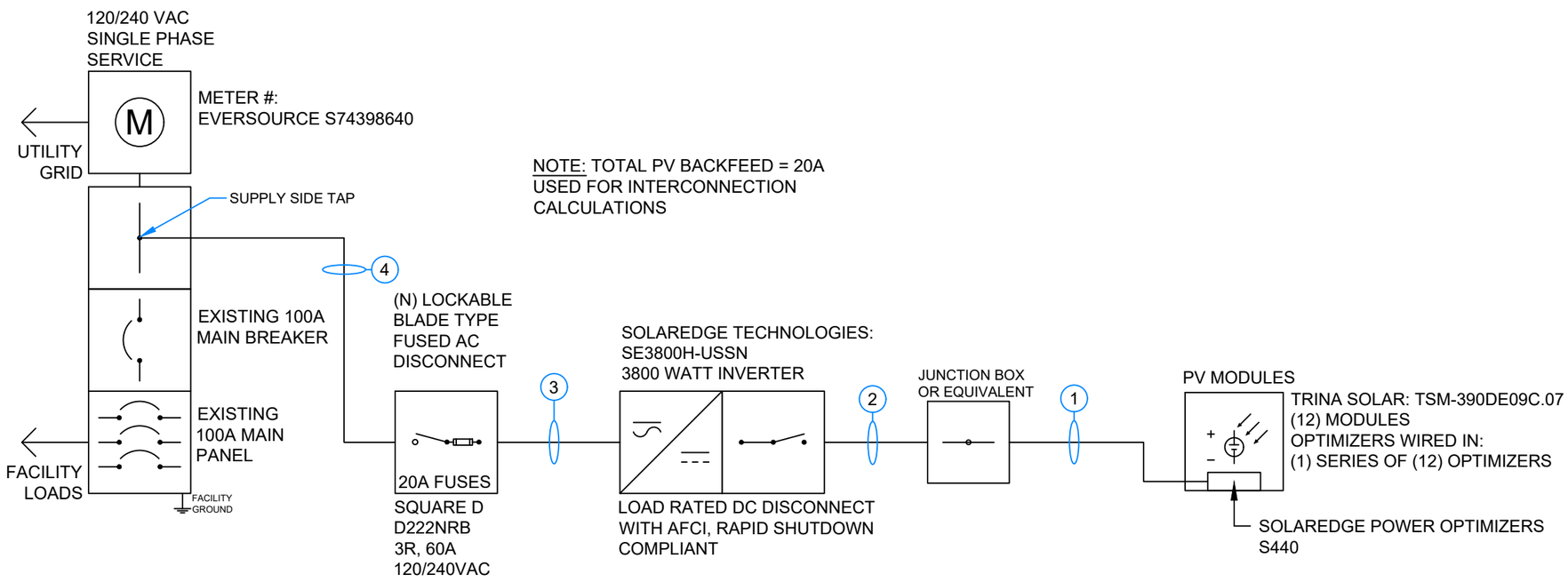
PROJECT NUMBER:
222R-105LOWE

DESIGNER: (415) 580-6920 ex3
RIA CAPISTRANO

SHEET
LAYOUT

REV: A1 3/11/2023

PAGE
PV-3.0



CONDUIT SCHEDULE

#	CONDUIT	CONDUCTOR	NEUTRAL	GROUND
1	NONE	(2) 10 AWG PV WIRE	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
4	3/4" EMT OR EQUIV.	(2) 6 AWG THHN/THWN-2	(1) 8 AWG THHN/THWN-2	(1) 8 AWG THHN/THWN-2

MODULE CHARACTERISTICS

TRINA SOLAR: TSM-390DE09C.07:	390 W
OPEN CIRCUIT VOLTAGE:	40.8 V
MAX POWER VOLTAGE:	33.8 V
SHORT CIRCUIT CURRENT:	13.35 A

S440 OPTIMIZER CHARACTERISTICS:

MIN INPUT VOLTAGE:	8 VDC
MAX INPUT VOLTAGE:	60 VDC
MAX INPUT ISC:	14.5 ADC
MAX OUTPUT CURRENT:	15 ADC

SYSTEM CHARACTERISTICS - INVERTER 1

SYSTEM SIZE:	4680 W
SYSTEM OPEN CIRCUIT VOLTAGE:	12 V
SYSTEM OPERATING VOLTAGE:	380 V
MAX ALLOWABLE DC VOLTAGE:	480 V
SYSTEM OPERATING CURRENT:	12.32 A
SYSTEM SHORT CIRCUIT CURRENT:	15 A

sunrun

#180120

200 RESEARCH DR, WILMINGTON, MA 01887
PHONE 888.657.6527
FAX 805.528.9701

CUSTOMER RESIDENCE:
GARY LOWE
105 SOUTH ST, PORTSMOUTH, NH, 03801

TEL. (603) 496-2850
APN: PRSM-000110-000011

PROJECT NUMBER:
222R-105LOWE

DESIGNER: (415) 580-6920 ex3
RIA CAPISTRANO

SHEET
ELECTRICAL

REV: A1 3/11/2023

PAGE 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/DC DISCONNECT(S), AC COMBINER PANEL (IF APPLICABLE).
PER CODE(S): NEC 2020: 690.13(B), CEC 2022: 690.13(B)

⚠ 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 2020: 705.12(C), CEC 2022: 705.12(C)

⚠ WARNING

POWER SOURCE OUTPUT CONNECTION

DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
ADJACENT TO PV BREAKER AND ESS OCPD (IF APPLICABLE).
PER CODE(S): NEC 2020: 705.12(B)(3)(2), CEC 2022: 705.12(B)(3)(2)

⚠ WARNING

THIS EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE SHALL NOT EXCEED AMPACITY OF BUSBAR

LABEL LOCATION:
PV LOAD CENTER (IF APPLICABLE) AND ANY PANEL THAT UTILIZES "THE SUM OF BREAKERS RULE".
PER CODE(S): NEC 2020: 705.12 (B)(3)(3), CEC 2022: 705.12 (B)(3)(3)

PV SYSTEM DISCONNECT

MAXIMUM AC OPERATING CURRENT: 16 AMPS

NOMINAL OPERATING AC VOLTAGE: 240 VAC

LABEL LOCATION:
AC DISCONNECT(S), PHOTOVOLTAIC SYSTEM POINT OF INTERCONNECTION.
PER CODE(S): NEC 2020: 690.54, CEC 2022: 690.54

INVERTER 1

PHOTOVOLTAIC DC DISCONNECT

MAXIMUM SYSTEM VOLTAGE: 480 VDC

LABEL LOCATION:
INVERTER(S), DC DISCONNECT(S).
PER CODE(S): NEC 2020: 690.53, CEC 2022: 690.53

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 2020: 690.31(D)(2), CEC 2022: 690.31(D)(2)

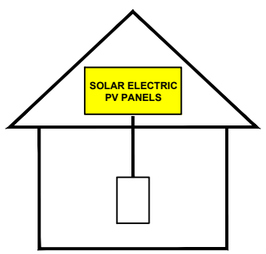
RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION:
INSTALLED WITHIN 3' OF RAPID SHUT DOWN SWITCH PER CODE(S): NEC 2020: 690.56(C)(2), CEC 2022: 690.56(C)(2), IFC 2018: 1204.5.3

4" × 3"

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.

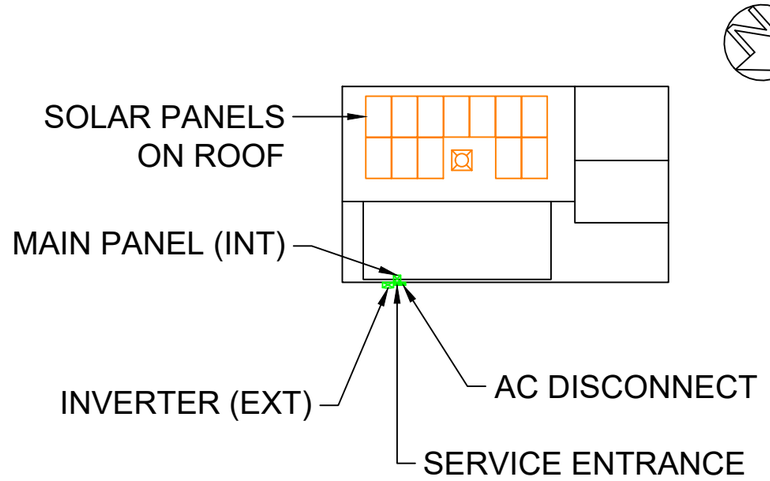


LABEL LOCATION:
ON OR NO MORE THAT 1 M (3 FT) FROM THE SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED.
PER CODE(S): NEC 2020: 690.56(C), CEC 2022: 690.56(C)

NOTES AND SPECIFICATIONS:
- SIGNS AND LABELS SHALL MEET THE REQUIREMENTS OF THE NEC 2020 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.

CAUTION:

MULTIPLE SOURCES OF POWER



105 SOUTH ST, PORTSMOUTH, NH, 03801

PER CODE(S): NEC 2020 : 705.10, 710.10, CEC 2022: 705.10, 710.10

sunrun

#180120

200 RESEARCH DR, WILMINGTON, MA 01887
PHONE 888.657.6527
FAX 805.528.9701

CUSTOMER RESIDENCE:
GARY LOWE
105 SOUTH ST, PORTSMOUTH, NH, 03801

TEL. (603) 496-2850
APN: PRSM-000110-000011

PROJECT NUMBER:
222R-105LOWE

DESIGNER: (415) 580-6920 ex3
RIA CAPISTRANO

SHEET
SIGNAGE

REV: A1 3/11/2023

PAGE
PV-5.0