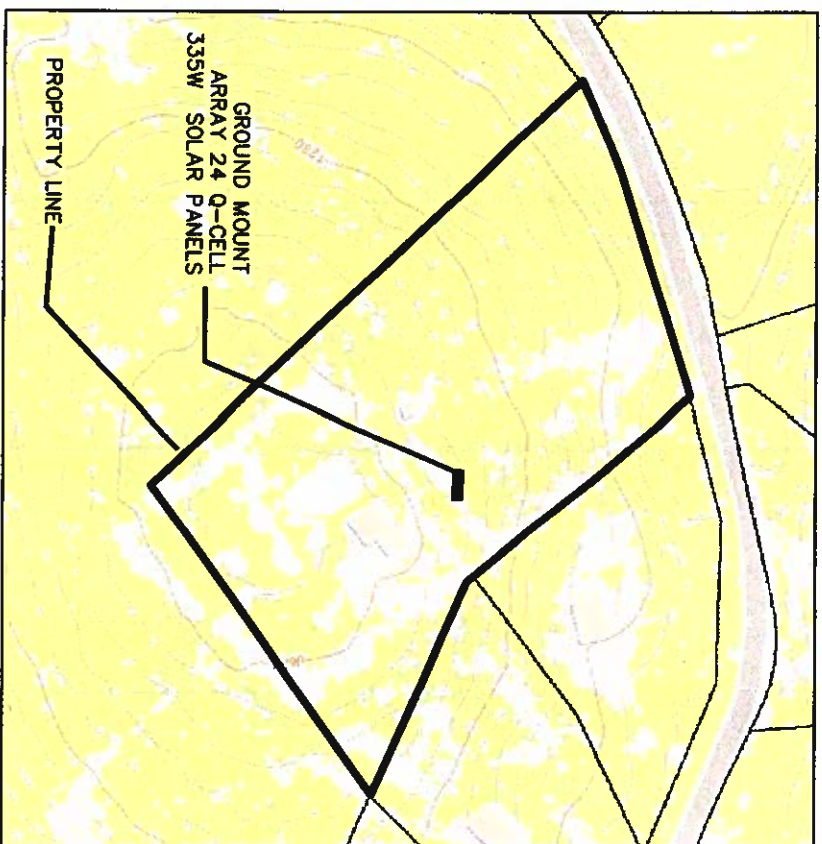


OVERALL AREA MAP:
NTS
LOCATION OF POTENTIAL WETLANDS, >2000' AWAY FROM PROPERTY



COUNTY G.I.S MAP:
NTS



ARRAY LOCATION MAP:
NTS
SEPTIC LOCATION BASED ON MAP PROVIDED BY TOWN OF DEERPARK
ELECTRIC METER, INVERTER & MAIN DISCONNECT SWITCH

PROJECT DESIGN DATA:

WORK SHALL BE COMPLETED AS PER THE 2015 INTERNATIONAL RESIDENTIAL CODE, 2016 UNIFORM CODE SUPPLEMENT, 2014 NATIONAL ELECTRICAL CODE AND 2001 WOOD FRAME CONSTRUCTION MANUAL.
LOAD CRITERIA AS FOLLOWS
EXPOSURE CATEGORY: "B"
GROUND SNOW LOAD: 40.0 PSF
WIND SPEED: 120 MPH

GENERAL NOTES:

1. ALL SOLAR MODULES TO BE 0-CELL 335W ALL BLACK AND SHALL BE INSTALLED AS PER 0-CELL INSTALLATION MANUAL.
2. ALL INVERTERS TO BE SOLAR EDGE INVERTERS ALL RACKING AS PER DETAILS FOR GROUND MOUNT INSTALLATION

ARRAY NOTES:

THERE IS (1) GROUND MOUNT ARRAY, FOR A TOTAL OF 455 SQ.FT.

SURVEY NOTES:

SURVEY IS BASED ON AN ORANGE COUNTY G.I.S. DATA AND FIELD MEASUREMENTS
ARRAY SHALL BE STAKED BY A LICENSED LAND SURVEYOR PRIOR TO INSTALLATION TO INSURE ALL REQUIRED SETBACKS ARE MET.

RESIDENTIAL GROUND MOUNT SOLAR PANEL INSTALLATION
LOCATED AT - 176 BOEHLER ROAD, SPARROW BUSH, NY 12780
TOWN OF DEERPARK, ORANGE COUNTY, NEW YORK



SOLAR PANEL INSTALLATION BRACE RESIDENCE
176 BOEHLER ROAD
SPARROW BUSH
NEW YORK 12780

REVISIONS NOTES:

DATE	BY	DESCRIPTION
FEBRUARY 3, 2020	MEM	AS-NOTED

SYSTEM NOTES:

TOTAL SYSTEM SIZE:	8.04KW DC SYSTEM
PANEL TYPE:	0-CELL 335W
# OF PANELS:	24
INVERTER TYPE:	SOLAR EDGE 7.600A-US
OF INVERTERS:	1
ARRAY AZIMUTH:	#1 180
TILT:	35
# OF PANELS	24

PROFESSIONAL NOTES:

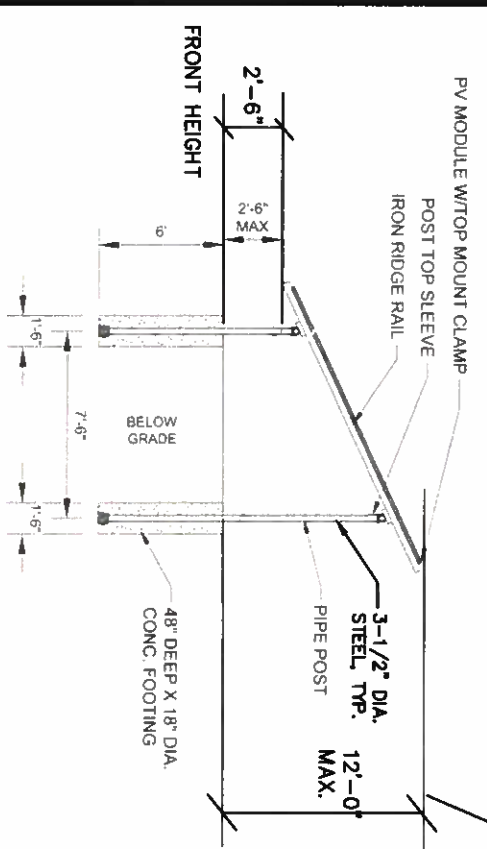
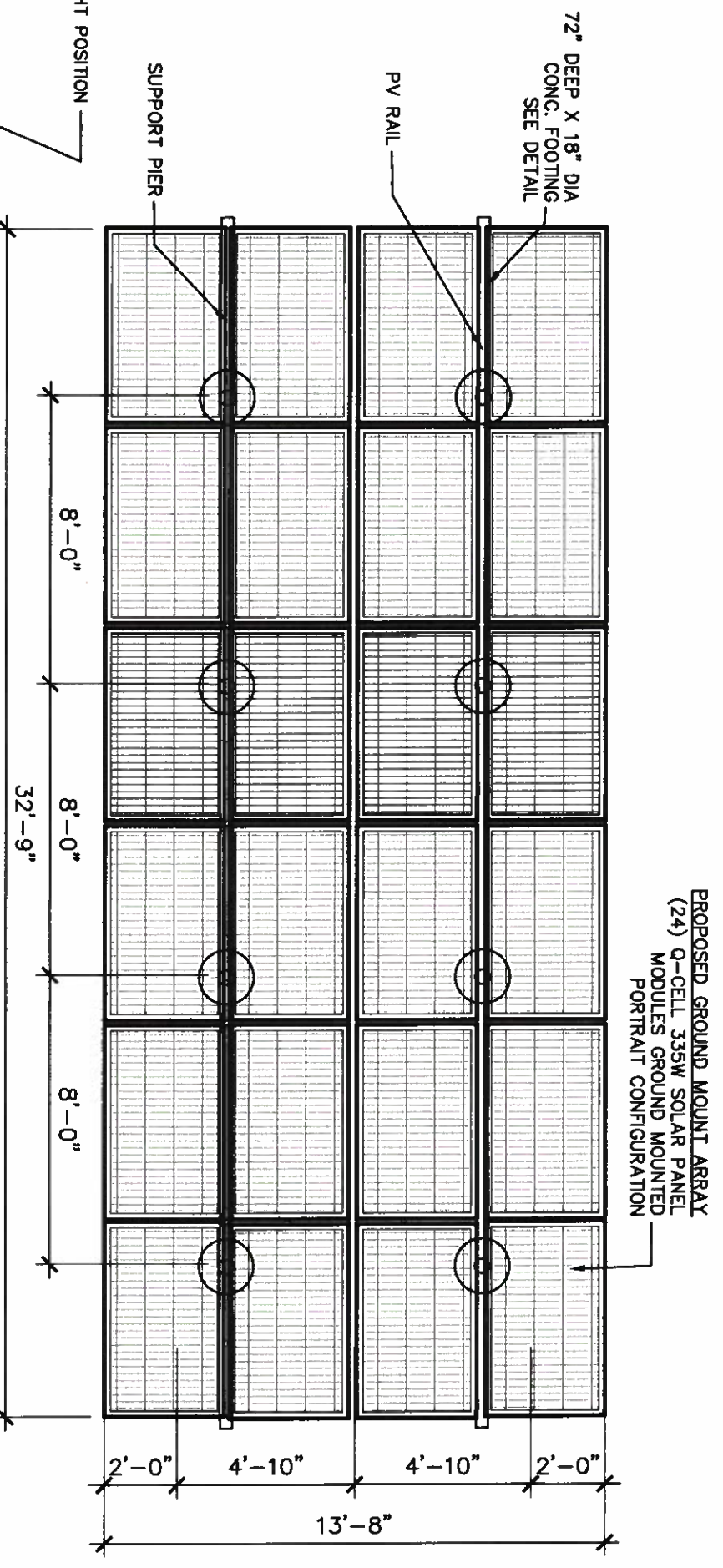
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SEAL & SIGNATURE



DWG# **S-1**

PROJECT SITE PLAN AND NOTES

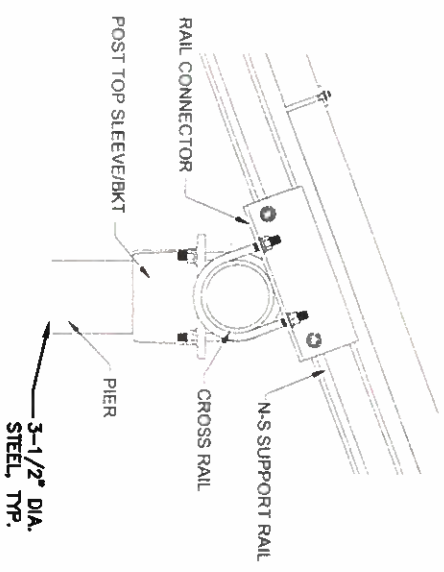


SOLAR PANEL ASSEMBLY:

NTS

GROUND MOUNT LAYOUT:

PIER AND RAIL ASSEMBLY:



**SOLAR PANEL
INSTALLATION
BRACE
RESIDENCE**
176 BOEHMLER ROAD
SPARROW BUSH
NEW YORK 12780

REVISIONS NOTES

NO.	DATE	BY	DESCRIPTION

SYSTEM NOTES:

TOTAL SYSTEM SIZE: 8.04KW DC SYSTEM

PANEL TYPE: 0-CELL 335W

OF PANELS: 24

INVERTER TYPE: SOLAR EDGE 7600A-US

OF INVERTERS: 1

ARRAY AZIMUTH: 180

TILT: 35

OF PANELES: 24

PROFESSIONAL NOTES:

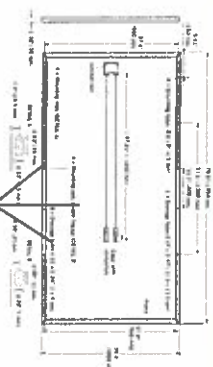
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DWG# **S-2**
SOLAR PANEL LAYOUT PLAN
DWG: **2 OF 5**

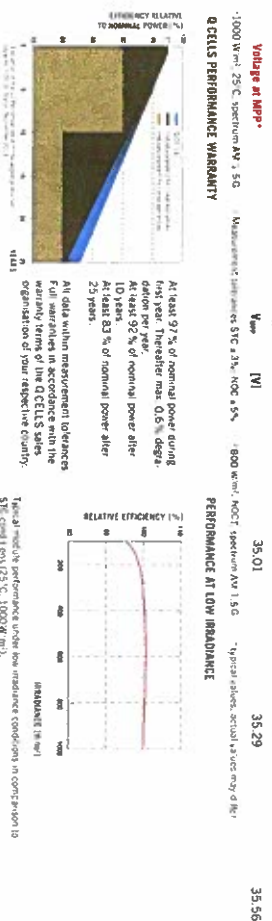
MECHANICAL SPECIFICATION

Format 78.5in x 39.4in x 1.38in (including frame)
 (1994 mm x 1000 mm x 35 mm)
Weight 52.9 lb (24kg)
Front Cover 0.13in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover Composite film
Frame Anodized aluminum
Cell 6 x 12 QUANTUM solar cells
Junction box 3.5x4.13in x 2.36x5.15in x 0.59x0.67in (89x105 mm x 60x80 mm x
 15.17 mm), Protection class zIP67 with bypass diodes
Cable 4 mm² Solar cable: (+) ≥ 47.24in (1200 mm), (-) ≥ 47.24in (1200 mm)
Connector Amphiprod HA VTX-IP68



ELECTRICAL CHARACTERISTICS

POWER CLASS	330	335	340
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC (POWER TOLERANCE +5W / -0W)			
Power at MPPT*	P_{max}	330	340
Short Circuit Current*	I_{sc}	9.49	9.59
Open Circuit Voltage*	V_{oc}	46.55	47.07
Minimum Current at MPPT*	I_{mppt}	8.91	8.97
Voltage at MPPT*	V_{mppt}	37.02	37.33
Efficiency†	η	≥16.5	≥16.8



TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{sc} : (%/K) -0.04
 Temperature Coefficient of V_{oc} : (%/K) +0.29
 Normal Operating Cell Temperature (NOCT) [°F]: 113 ± 5.4 (45 ± 3°C)
 NOCT [°C]: 113 ± 5.4 (45 ± 3°C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V_{max} [V]: 1500 (IEC) / 1000 (UL)
 Maximum Series Fuse Rating [Inch²]: 15
 Max Lead (ULV) [Inch²]: 75 (3600 Pa)
 Lead Rating (ULV) [Inch²]: 33 (1600 Pa)

QUALIFICATIONS AND CERTIFICATES

IEC 61215 (Ed.2), IEC 61730 (Ed.1), Installation class A
 This data sheet complies with DIN EN 50520
 TÜV SÜD
 CE
 DE
 RoHS

PACKAGING INFORMATION

Number of Modules per Panel: 22
 Number of Panels per 48' Container: 81.3 ± 4.5.3 x 46.9in (2065 ± 1150 x 1190mm)
 Panel Weight: 167.1 lbs (75.8kg)



Single Phase Inverters for North America

	SE3000A-US	SE3800A-US	SE5000A-US	SE6000A-US	SE7600A-US	SE10000A-US	SE11400A-US
OUTPUT							
Nominal AC Power Output	3000	3800	5000	6000	7600	9980 @ 208V 10000 @ 240V	11400
Max. AC Power Output	3300	4150	5400 @ 208V 5450 @ 240V	6000	8350	10800 @ 208V 10900 @ 240V	12000
AC Output Voltage Min./Nom./Max.†	183 - 208 - 229 VAC	✓	✓	✓	✓	✓	✓
AC Output Voltage Min./Nom./Max.‡	211 - 240 - 264 VAC	✓	✓	✓	✓	✓	✓
AC Frequency Min./Nom./Max.	59.3 - 60 - 60.5	✓	✓	✓	✓	✓	✓
Max. Continuous Output Current	12.5	16	24 @ 208V 21 @ 240V	25	32	48 @ 208V 42 @ 240V	47.5
GFLO Threshold	1	1	1	1	1	1	1
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INPUT							
Maximum DC Power (STC)	4050	5100	6750	8100	10350	13500	15350
Transformers, Ungrounded	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Max. Input Voltage	500	500	500	500	500	500	500
Nom. DC Input Voltage	325 @ 208V / 350 @ 240V	325 @ 208V / 350 @ 240V	325 @ 208V / 350 @ 240V	325 @ 208V / 350 @ 240V	325 @ 208V / 350 @ 240V	325 @ 208V / 350 @ 240V	325 @ 208V / 350 @ 240V
Max. Input Current	9.5	13	16.5 @ 208V 15.5 @ 240V	18	23	33 @ 208V 30.5 @ 240V	34.5
Max. Input Short Circuit Current	45	45	45	45	45	45	45
Max. Input Fault Isolation Detection	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reverse Polarity Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ground Fault Isolation Detection	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Inverter Efficiency	97.7	98.2	98.3	98.3	98	97 @ 208V 97.5 @ 240V	98
CEC Weighted Efficiency	97.5	98	98 @ 208V 98 @ 240V	97.5	97.5	97.5 @ 208V 97.5 @ 240V	97.5
Nighttime Power Consumption	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
ADDITIONAL FEATURES	RS485, RS232, Ethernet, ZigBee (optional)	Optional	Optional	Optional	Optional	Optional	Optional
Supported Communication Interfaces	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Revenue Grade Data, ANSI C12.20	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rapid Shutdown - NEC 2014 690.12	Yes	Yes	Yes	Yes	Yes	Yes	Yes
STANDARD COMPLIANCE	UL1741, UL1741 SA, UL1699B, UL1998, CSA 22.2, IEC61547, IEC61547	UL1741, UL1741 SA, UL1699B, UL1998, CSA 22.2, IEC61547, IEC61547	UL1741, UL1741 SA, UL1699B, UL1998, CSA 22.2, IEC61547, IEC61547	UL1741, UL1741 SA, UL1699B, UL1998, CSA 22.2, IEC61547, IEC61547	UL1741, UL1741 SA, UL1699B, UL1998, CSA 22.2, IEC61547, IEC61547	UL1741, UL1741 SA, UL1699B, UL1998, CSA 22.2, IEC61547, IEC61547	UL1741, UL1741 SA, UL1699B, UL1998, CSA 22.2, IEC61547, IEC61547
INSTALLATION SPECIFICATIONS							
AC output conduit size / AWG range	3/4" minimum / 16-6 AWG	3/4" minimum / 16-6 AWG	3/4" minimum / 16-6 AWG	3/4" minimum / 16-6 AWG	3/4" minimum / 16-6 AWG	3/4" minimum / 16-6 AWG	3/4" minimum / 16-6 AWG
DC input conduit size / # of strings / AWG range	3/4" minimum / 1.3 strings / 16-6 AWG	3/4" minimum / 1.3 strings / 16-6 AWG	3/4" minimum / 1.3 strings / 16-6 AWG	3/4" minimum / 1.3 strings / 16-6 AWG	3/4" minimum / 1.3 strings / 16-6 AWG	3/4" minimum / 1.3 strings / 16-6 AWG	3/4" minimum / 1.3 strings / 16-6 AWG
Dimensions with Safety Switch (HxWxD)	30.5 x 12.5 x 2.7 / 7.75 x 3.15 x 184	30.5 x 12.5 x 2.7 / 7.75 x 3.15 x 184	30.5 x 12.5 x 2.7 / 7.75 x 3.15 x 184	30.5 x 12.5 x 2.7 / 7.75 x 3.15 x 184	30.5 x 12.5 x 2.7 / 7.75 x 3.15 x 184	30.5 x 12.5 x 2.7 / 7.75 x 3.15 x 184	30.5 x 12.5 x 2.7 / 7.75 x 3.15 x 184
Weight with Safety Switch	51.2 / 23.2	54.7 / 24.7	54.7 / 24.7	54.7 / 24.7	54.7 / 24.7	54.7 / 24.7	54.7 / 24.7
Cooling	Natural Convection	Natural Convection	Natural Convection	Natural Convection	Natural Convection and internal fan (user replaceable)	Natural Convection and internal fan (user replaceable)	Natural Convection and internal fan (user replaceable)
Noise	< 25	< 25	< 25	< 25	< 25	< 25	< 25
Min./Max. Operating Temperature Range	-13 to +140 / -25 to +60 (-40 to -60 version available) †	-13 to +140 / -25 to +60 (-40 to -60 version available) †	-13 to +140 / -25 to +60 (-40 to -60 version available) †	-13 to +140 / -25 to +60 (-40 to -60 version available) †	-13 to +140 / -25 to +60 (-40 to -60 version available) †	-13 to +140 / -25 to +60 (-40 to -60 version available) †	-13 to +140 / -25 to +60 (-40 to -60 version available) †
Protection Rating	IP65	IP65	IP65	IP65	IP65	IP65	IP65

RoHS

Q CELLS USA Corp.
 300 Spectrum Center Drive, Suite 1250, Irvine, CA 92618, USA TEL: +1 949 748 99 96 FAX: +1 949 748 99 80
 www.q-cells-usa.com



SOLAR PANEL INSTALLATION BRACE RESIDENCE

176 BOEHLER ROAD
 SPARROW BUSH
 NEW YORK 12780



Engineered in Germany

REVISIONS NOTES

NO.	DATE	BY	DESCRIPTION
1	FEBRUARY 3, 2020	MEM	AS NOTED

SYSTEM NOTES:

TOTAL SYSTEM SIZE: 8.04KW DC SYSTEM

PANEL TYPE: Q-CELL 335W

OF PANELS: 24

INVERTER TYPE: SOLAR EDGE 7.600A-US

OF INVERTERS: 1

ARRAY AZIMUTH: 180

TILT: 35

OF PANELS: 24

PROFESSIONAL NOTES:

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DWG# S-3
SOLAR PANEL & INVERTER SPECIFICATIONS
 3 OF 5

WARNING
ELECTRIC SHOCK HAZARD !
 THE DIRECT CURRENT CIRCUIT CONDUCTORS OF THIS PHOTOVOLTAIC POWER SYSTEM ARE UNGROUNDING BUT MAY BE ENERGIZED WITH RESPECT TO GROUND DUE TO LEAKAGE PATHS AND/OR GROUND FAULTS

WARNING
 INVERTER OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

CAUTION
 SOLAR ELECTRIC SYSTEM CONNECTED

DC WARNING LABEL

UTILITY DISCONNECT LABEL

AC PANELS

PHOTOVOLTAIC INVERTER INPUT DC DISCONNECT

WARNING
 ELECTRIC SHOCK HAZARD !

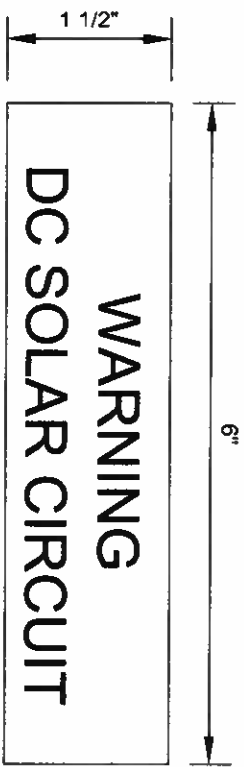
DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

INTERACTIVE SOLAR PV SYSTEM RATING

RATED DC CURRENT	AMP
RATED DC VOLTAGE	VDC
MAXIMUM SYSTEM VOLTAGE	VDC
SHORT CIRCUIT CURRENT	AMP

SYSTEM INSTALLER: _____
 FOR SERVICE CALL: _____

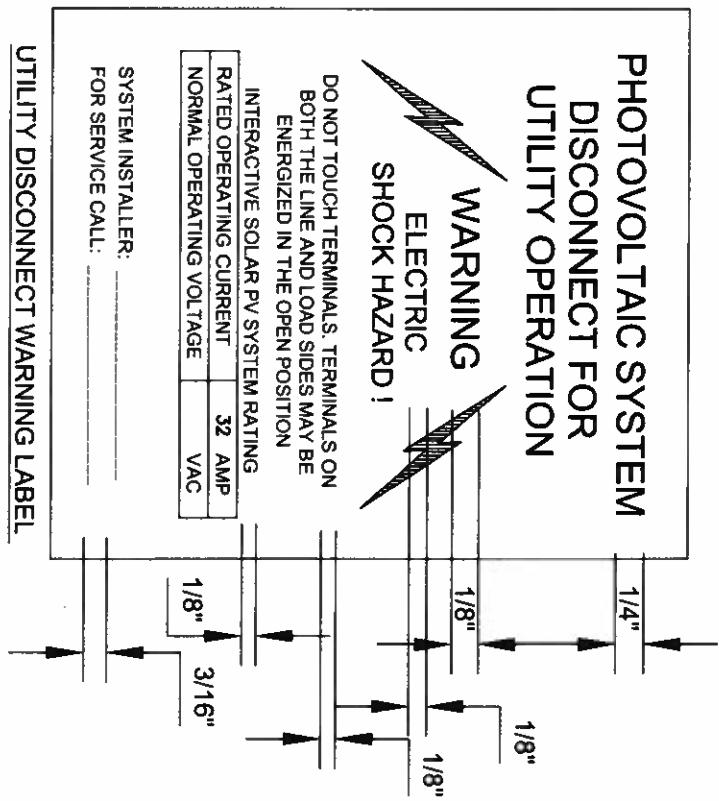
DC INPUT WARNING LABEL #1
 INVERTER 1



DC CIRCUIT LABEL

WARNING
 THIS METER IS ALSO SERVED BY A PHOTOVOLTAIC SYSTEM

PV CIRCUITS ONLY
 NO OTHER LOADS SHALL BE APPLIED TO THIS PANEL OTHER THAN PV COMPONENTS AS PER NEC ARTICLE 690



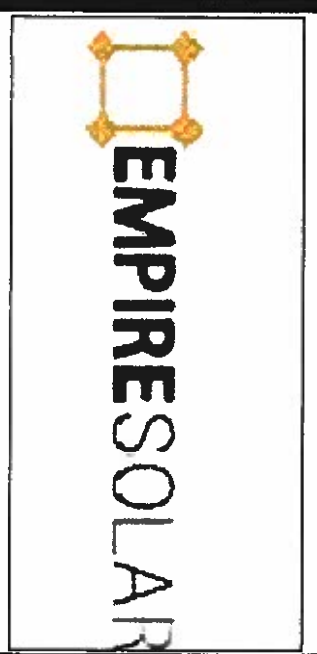
UTILITY DISCONNECT WARNING LABEL

GROUND MOUNT NOTES:

ARRAY RACK ASSEMBLY
 SOLAR GROUND MOUNT RACKING SHOWN FOR ARRANGEMENT ONLY
 RACKING MANUFACTURER TO PROVIDE SEALED SHOP DRAWINGS OF FINAL RACKING ASSEMBLY.
 INSTALL AS PER MANUFACTURER STANDARD INSTALLATION DETAILS.
 POST SUPPORTED RACKING FOUNDATION AS SHOWN
 18" Ø X 48" DEEP CONCRETE FOUNDATION WITH EMBEDDED POST.

INSTALLATION NOTES:
 BRACKET TO POST INSTALLATION HEIGHT MAY VARY WITH SITE GRADING. IT IS NOT NECESSARY FOR ALL POST TOP BRACKETS TO ALIGN AT A COMMON ELEVATION FOR EACH ROW (+/-2")
 INSTALLATION CONTRACTOR SHALL ENSURE THAT ALL GRADING AND COMPACTON OF SITE IS COMPLETED PRIOR TO INSTALLATION OF THE RACKING SYSTEM TO AVOID POTENTIAL DISTURBANCE OF FOUNDATION AND ALIGNMENT.

SEALED SHOP DRAWINGS SHALL BE PROVIDED BY RACKING MANUFACTURER PRIOR TO THE INSTALLATION OF THE PV ARRAY.
 THIS DRAWING IS DIAGRAMATIC FOR THE MODULE/RACK ARRANGEMENT. FINAL RACKING DETAILS AND ASSEMBLY MAY VARY WITH FINAL INSTALLATION.



SOLAR PANEL INSTALLATION BRACE RESIDENCE
 176 BOEHLER ROAD
 SPARROW BUSH
 NEW YORK 12780

REVISIONS NOTES

NO.	DATE	BY	DESCRIPTION
1	FEBRUARY 3, 2020	MEM	AS-NOTED

DATE: FEBRUARY 3, 2020
 PROJECT #: ES-0831-20
 SHEET #: 24-2-96
 MUNICIPALITY: TOWN OF DEERPARK
 COUNTY: ORANGE

SYSTEM NOTES:

TOTAL SYSTEM SIZE: 8.04KW DC SYSTEM

PANEL TYPE: Q-CELL 335W

OF PANELS: 24

INVERTER TYPE: SOLAR EDGE 7.600A-US

OF INVERTERS: 1

ARRAY AZIMUTH: 180

TLT: 35

OF PANELS: 24

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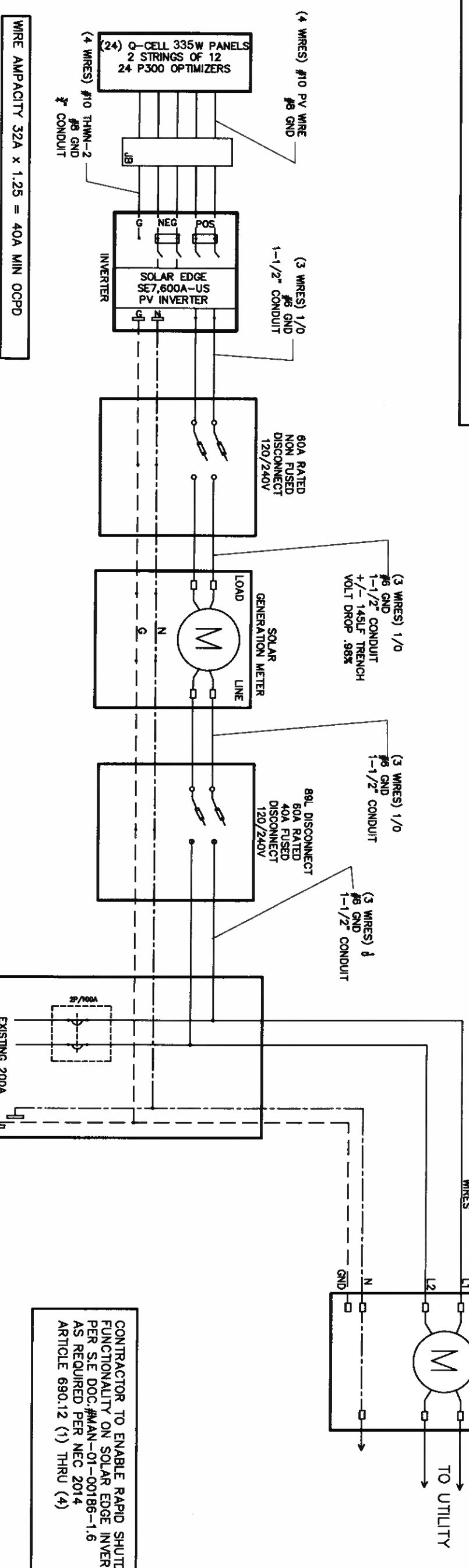


POWER OUTPUT = PTC RATING X # OF MODULES X INV EFF.
 INVERTER #1=305.2W x 24 x 0.98 =7,178.30W
 TOTAL= 7,178.30W

ALL EXTERIOR MOUNTED COMBINERS, JUNCTION BOXES, TROUGHS, DISCONNECTS, ETC. SHALL BE NEMA 3R RATED.

WIRE AMPACITY
 NEC TABLE 310.15(B)(16)
 #10 THWN CU 35A RATED
 #8 THWN CU 50A RATED
 #6 THWN CU 65A RATED
 #4 THWN CU 85A RATED

ALL CONDUCTORS ARE TO BE COPPER UNLESS NOTED OTHERWISE



DC CONDUITS MAY BE RUN ABOVE OR BELOW ROOF. PROVIDE SOLAIDECK JUNCTION/FLASHING WHEN PENETRATING THE ROOF WITH DC CONDUCTORS
 ALL DC CONDUCTORS WITHIN THE BUILDING ENVELOPE MUST BE IN METALLIC CONDUIT.
 DC CONDUCTORS MUST BE 90° RATED.

CONFIRM LINE SIDE VOLTAGE AT ELECTRIC UTILITY SERVICE ENTRANCE BEFORE CONNECTING INVERTER AND ENSURE PROPER OPERATIONAL RANGE REQUIRED BY SYSTEM INVERTER.

AC & DC GROUNDING CONDUCTORS PER NEC ARTICLE 690.47(c)(2) AND 690.64(c)(2)

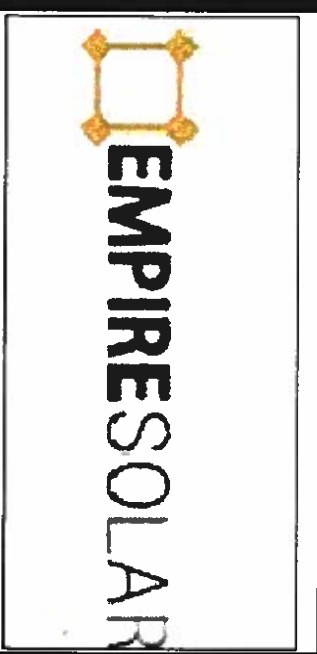
INTERCONNECTION TO UTILITY AND SYSTEM GROUNDING PER NEC-2014 ARTICLE 690
 PROVIDE SIGNAGE AS REQUIRED BY NEC-2014 ARTICLE 690.
 ALL OUTDOOR EQUIPMENT SHALL BE A MINIMUM OF NEMA-3R RATED.

CONTRACTOR TO ENABLE RAPID SHUTDOWN FUNCTIONALITY ON SOLAR EDGE INVERTER PER S.E. DOC. #MAN-01-00186-1.6 AS REQUIRED PER NEC 2014 ARTICLE 690.12 (1) THRU (4)

ELECTRICAL CONTRACTOR TO VERIFY INTERCONNECTION REQUIREMENTS WITH ELECTRICAL UTILITY FOR CONNECTION LOCATION AND STANDARDS

ELECTRICAL CONTRACTOR TO PROVIDE EXPANSION JOINTS AND ANCHORING OF ALL CONDUIT RUNS AS PER NEC REQUIREMENTS

PROVIDE LABEL/PLACARD AT EXISTING UTILITY CONNECTION WITH "WARNING - CUSTOMER OWNED ELECTRIC GENERATION EQUIPMENT CONNECTED" WITH APPROPRIATE HAZARD AND OUTPUT RATING OF PV SYSTEM



SOLAR PANEL INSTALLATION
BRACE RESIDENCE
 176 BOEHMLER ROAD
 SPARROW BUSH
 NEW YORK 12780

REVISIONS NOTES

CHKD. BY:	MEM	SCALE:	AS-NOTED
CHECKED BY:	MEM	PROJECT #:	ES-0831-20
DATE:	FEBRUARY 3, 2020	SCH. #:	24-2-98
MUNICIPALITY:	TOWN OF DEERPARK	COUNTY:	ORANGE

SYSTEM NOTES:

TOTAL SYSTEM SIZE:	8.04KW DC SYSTEM
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DWG.# **S-5**
SOLAR 3-LINE DIAGRAM
 DWG. 5 OF 5