



MODULES										
REF.	QTY.	MAKE AND MODEL	PMAX	PTC	ISC	IMP	VOC	VMP	TEMP. COEFF. OF VOC	FUSE RATING
PM1-32	32	SILFAB SIL-370 NX	370W	342W	10.20A	9.60A	47.6V	38.9V	-0.143V/°C (-0.3%/°C)	20A

INVERTERS									
REF.	QTY.	MAKE AND MODEL	AC VOLTAGE	GROUND	RATED POWER	MAX OUTPUT CURRENT	MAX INPUT CURRENT	MAX INPUT VOLTAGE	WEIGHTED EFFICIENCY
I1	1	SOLAR EDGE SE3800A-US (240V)	240V	NOT SOLIDLY GROUNDED	3,800W	16.0A	13.0A	500V	97.5%

OPTIMIZERS							
REF.	QTY.	MODEL	RATED INPUT POWER	MAX OUTPUT CURRENT	MAX INPUT ISC	MAX DC VOLTAGE	WEIGHTED EFFICIENCY
PO1-32	32	SOLAR EDGE P401	401W	15A	11.75A	60V	98.8%

DISCONNECTS				OCPDS				
REF.	QTY.	MAKE AND MODEL	RATED CURRENT	MAX RATED VOLTAGE	REF.	QTY.	RATED CURRENT	MAX VOLTAGE
SW1	1	EATON DP221NRB OR EQUIV.	30A	240VAC	F1-2	2	20A	0VAC

SYSTEM SUMMARY	
DC SOURCE CIRCUIT CURRENT	15A
NUMBER OF OPTIMIZERS	12
NOMINAL STRING VOLTAGE	350V
ARRAY OPERATING CURRENT	12.7A
ARRAY STC POWER	4,440W
ARRAY PTC POWER	4,107W
MAX AC CURRENT	16A
MAX AC POWER OUTPUT	3,800W
DERATED AC POWER OUTPUT	3,800W

- ### NOTES
- ⚠ SOLAR EDGE SYSTEM MEETS REQUIREMENTS FOR PHOTOVOLTAIC RAPID SHUTDOWN SYSTEM (PVRSS), AS PER NEC 690.12(B).
  - ⚠ MATING CONNECTORS SHALL COMPLY WITH NEC 690.33.
  - ⚠ THE SPECIFIED OPTIMIZER CAN BE SUBSTITUTED WITH A P505, P401, OR P485. THESE OPTIMIZERS HAVE AN INPUT VOLTAGE WINDOW WIDE ENOUGH TO ACCOMMODATE THE OUTPUT VOLTAGE RANGE OF THE MODULE AT THE DESIGN TEMPERATURES, HAVE A MAX INPUT CURRENT RATING THAT IS ABOVE THE MAX OUTPUT CURRENT OF THE MODULE, AND A MAX POWER INPUT THAT IS ABOVE THE RATED POWER OUTPUT OF THE MODULE.
  - ⚠ DC PV CONDUCTORS ARE NOT SOLIDLY-GROUNDED. NO DC PV CONDUCTOR SHALL BE WHITE- OR GRAY-COLORED
  - ⚠ ALL METAL ENCLOSURES, RACEWAYS, CABLES AND EXPOSED NONCURRENT-CARRYING METAL PARTS OF EQUIPMENT SHALL BE GROUNDED TO EARTH AS REQUIRED BY NEC 250.4(A) AND PART III OF ARTICLE 250 AND EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED ACCORDING TO NEC 690.45. THE GROUNDING ELECTRODE SYSTEM SHALL ADHERE TO NEC 690.47(A) AND NEC 250.169. THE DC GROUNDING ELECTRODE SHALL BE SIZED ACCORDING TO NEC 250.166 AND INSTALLED IN COMPLIANCE WITH NEC 250.64.
  - ⚠ MAX DC VOLTAGE OF ARRAY FIXED BY THE INVERTER AT 350V REGARDLESS OF TEMPERATURE. THE MAX DC VOLTAGE OF THE MODULE AT 0°C IS 51.2V (0°C - 25°C) X -0.143V/C + 47.6V = 51.2V).
  - ⚠ POINT-OF-CONNECTION IS ON THE SUPPLY SIDE OF SERVICE DISCONNECT, AT METER BASE TERMINALS THAT ARE SUITABLE FOR DOUBLE LUGGING OR USING ANOTHER LOCALLY-APPROVED METHOD, IN COMPLIANCE WITH NEC 705.12(A).
  - ⚠ PV SYSTEM DISCONNECT SHALL BE A VISIBLE KNIFE-BLADE TYPE DISCONNECT THAT IS ACCESSIBLE AND LOCKABLE BY THE UTILITY. THE DISCONNECT SHALL BE LOCATED WITHIN 10 FT OF UTILITY METER. DISCONNECT SHALL BE GROUNDED IN ACCORDANCE WITH NEC 230.72. GROUNDED CONDUCTOR SHALL BE BONDED INSIDE DISCONNECT PER NEC 250.24(B) AND NEC 250.24(C)

CONDUCTOR AND CONDUIT SCHEDULE W/ELECTRICAL CALCULATIONS														
ID	TYPICAL	CONDUCTOR	CONDUIT / CABLE	CURRENT-CARRYING CONDUCTORS IN CONDUIT / CABLE	OCPD	EGC	TEMP. CORR. FACTOR	FILL FACTOR	CONT. CURRENT	MAX. CURRENT (125%)	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	AMP. @ TERM. TEMP. RATING
1	1	10 AWG PV WIRE, COPPER	FREE AIR	N/A	N/A	6 AWG BARE, COPPER	0.76 (54°C)	1.0	15A	18.75A	55A	41.8A	75°C	50A
2	1	8 AWG THWN-2, COPPER	0.5" DIA. EMT	2	N/A	12 AWG THWN-2, COPPER	0.96 (32°C)	1.0	15A	18.75A	55A	52.8A	90°C	55A
3	1	12 AWG THWN-2, COPPER	0.5" DIA. EMT	2	20A	12 AWG THWN-2, COPPER	0.96 (32°C)	1.0	16A	20A	30A	28.8A	75°C	25A
4	1	6 AWG THWN-2, COPPER	0.75" DIA. EMT	2	20A	N/A	0.96 (32°C)	1.0	16A	20A	75A	72A	75°C	65A

## GENERAL ELECTRICAL NOTES

- 1 UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AT THE SERVICE ENTRANCE.
- 2 CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC ARTICLE 300.6 (C) (1) AND ARTICLE 310.10 (D).
- 3 CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC ARTICLE 310.10 (C).

## GROUNDING NOTES

- 1 ALL EQUIPMENT SHALL BE PROPERLY GROUNDED PER THE REQUIREMENTS OF NEC ARTICLES 250 & 690
- 2 PV MODULES SHALL BE GROUNDED TO MOUNTING RAILS USING MODULE LUGS OR RACKING INTEGRATED GROUNDING CLAMPS AS ALLOWED BY LOCAL JURISDICTION. ALL OTHER EXPOSED METAL PARTS SHALL BE GROUNDED USING UL-LISTED LAY-IN LUGS.
- 3 INSTALLER SHALL CONFIRM THAT MOUNTING SYSTEM HAS BEEN EVALUATED FOR COMPLIANCE WITH UL 2703 "GROUNDING AND BONDING" WHEN USED WITH PROPOSED PV MODULE.
- 4 IF THE EXISTING MAIN SERVICE PANEL DOES NOT HAVE A VERIFIABLE GROUNDING ELECTRODE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE.
- 5 AC SYSTEM GROUNDING ELECTRODE CONDUCTOR (GEC) SHALL BE A MINIMUM SIZE #8AWG WHEN INSULATED, #6AWG IF BARE WIRE.
- 6 EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED ACCORDING TO NEC ARTICLE 690.45, AND BE A MINIMUM OF #10AWG WHEN NOT EXPOSED TO DAMAGE, AND #6AWG SHALL BE USED WHEN EXPOSED TO DAMAGE
- 7 GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLOR CODED GREEN, OR MARKED GREEN IF #4AWG OR LARGER



11.84 SE SILFAB 370

GRID-TIED SOLAR POWER SYSTEM

## SINGLE-LINE DIAGRAM

PROJECT ID:  
DATE: 11/8/2021  
CREATED BY: Jesus F.  
CHECKED BY:

## REVISIONS

1 SINGLE-LINE DIAGRAM  
PV-2 SCALE: NTS