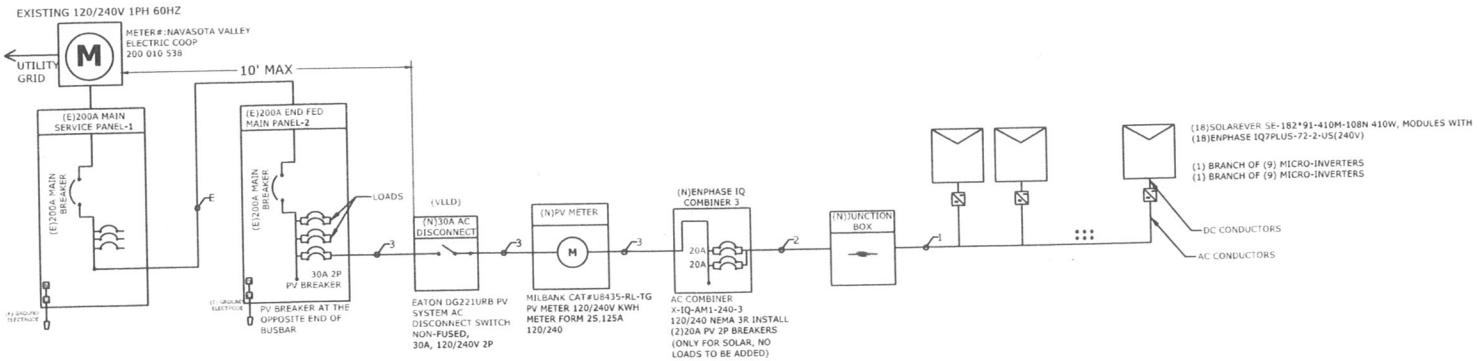
SINGLE LINE DIAGRAM: DC SYSTEM SIZE - 7380W, AC SYSTEM SIZE - 5220W

MODULE SPECIFICATION	
MODEL	SOLAREVER SE-182*91-410M-108N 410W
MODULE POWER @ STC	410W
OPEN CIRCUIT VOLTAGE:**Voc**	37.12V
MAX POWER VOLTAGE:**Vmp**	31.35V
SHORT CIRCUIT CURRENT:**Isc**	13.96A
MAX POWER CURRENT:**Imp**	13.08A

MICRO INVERTER SPECIFICATIONS	
MODEL	ENPHASE IQ7PLUS-72-2-US(240V)
POWER RATING	290W
MAX OUTPUT CURRENT	1.21A
CEC WEIGHTED EFFICIENCY	97%
MAX NO OF MICRO INVERTERS/BRANCH	13
MAX DC VOLTAGE	60V

NOTE: EACH MICRO INVERTER IS RAPID SHUTDOWN COMPLIANT

NOTE:
THE VISIBLE LOCKABLE, LABELED DISCONNECT (VLLD) IS LOCATED ON A ACCESSIBLE EXTERIOR WALL WITHIN 10FT OF UTILITY METER.



ELECTRICAL NOTES

1.CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC 310.10(D).
2.CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC 310.10(C).
3.MAXIMUM DC/AC VOLTAGE DROP SHALL BE NO MORE THAN 2%.
4.ALL CONDUCTORS SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED.
5.BREAKER/FUSE SIZES PER NEC 240.
6.AC EQUIPMENT GROUNDING CONDUCTOR SIZED PER NEC 250.122.
7.AMBIENT TEMPERATURE CORRECTION FACTOR IS BASED ON NEC 690.31(A).
8.AMBIENT TEMPERATURE ADJUSTMENT FACTOR IS BASED ON NEC 310.15(B)(2).
9. MAX SYSTEM VOLTAGE CORRECTION IS PER NEC 690.7.
10.CONDUCTORS ARE SIZED PER NEC TABLE 310.15(B)(16).

CUSTOMER INFORMATION

UTILITY:NAVASOTA VALLEY ELECTRIC COOP

CONDUIT SCHEDULE				
TAG ID	CONDUIT SIZE	CONDUCTOR	NEUTRAL	GROUND
1	NONE	(2) 12AWG ENPHASE Q CABLE PER BRANCH CIRCUIT	NONE	(1) 10AWG BARE COPPER
2	3/4"EMT	(4) 10AWG THHN/THWN-2	NONE	(1) 10AWG THHN/THWN-2
3	3/4"EMT	(2) 10AWG THHN/THWN-2	(1)10AWG THHN/THWN-2	(1) 10AWG THHN/THWN-2

NOTE:
MAIN PANEL-2 RATING:200A, MAIN PANEL-2 BREAKER RATING:200A
100% RULE: (200AX1.2)-200A=40A =>ALLOWABLE BACKFEED IS 40A

OCPD CALCULATIONS:
INVERTER OVERCURRENT PROTECTION=
INVERTER O/P I X CONTINUOUS LOAD(1.25)X #OF INVERTERS
=1.21x1.25x18=27.23 A =>PV BREAKER = 30A
ALLOWABLE BACKFEED 40A =>30A PV BREAKER
THE DESIGNED INTERCONNECTION MEETS THE 705.12(B)(2) REQUIREMENTS.

AC WIRE SIZING CALCULATIONS BASED OF FOLLOWING EQUATIONS >>

- REQUIRED CONDUCTOR AMPACITY: INVERTER OUTPUT CURRENT X #OF INVERTERS = MAX CURRENT PER 690.8(A)(3) X 125% = MAX CURRENT PER 690.8(B)(1)
- CORRECTED AMPACITY CALCULATIONS: AMPACITY X TEMPERATURE DERATE FACTOR X CONDUIT FILL DERATE = DERATED CONDUCTOR AMPACITY PER 690.8(B)(2)
- DERATED CONDUCTOR AMPACITY CHECK: MAX CURRENT PER 690.8(A)(3) < DERATED CONDUCTOR AMPACITY

AC WIRE CALCULATIONS:- MATERIAL:COPPER & TEMPERATURE RATING:90°C

TAG ID	REQUIRED CONDUCTOR AMPACITY									CORRECTED AMPACITY CALCULATION							DERATED CONDUCTOR AMPACITY CHECK			
1	1.21	X	9	=	10.89	X	1.25	=	13.61A	30	X	0.87	X	1	=	26.10A	13.61A	<	26.10A
2	1.21	X	9	=	10.89	X	1.25	=	13.61A	40	X	0.87	X	0.8	=	27.84A	13.61A	<	27.84A
3	1.21	X	18	=	21.78	X	1.25	=	27.23A	40	X	0.87	X	1	=	34.80A	27.23A	<	34.80A

SINGLE LINE DIAGRAM

DRAFTED BY: D.KRISHNA QC'ED BY:A.WAHAB	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:B
DATE:9/10/2022	E-01