

# ELECTRICAL SINGLE LINE DIAGRAM

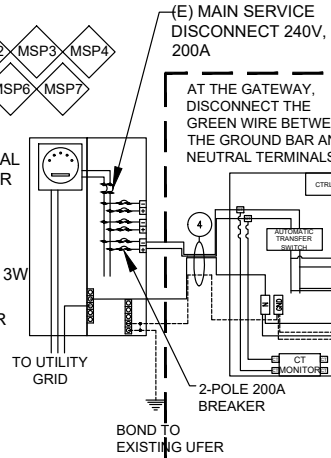
SCALE: N.T.S.

7.480kW DC STC, 6.789 kW  
CEC-AC SOLAR ARRAY  
17 LG Electronics 440W MODULES  
TOTAL  
STRINGS CONNECTED IN PARALLEL

SEE PV-3A FOR ELECTRICAL NOTES



BI-DIRECTIONAL  
UTILITY METER  
(E) 200A MAIN  
SERVICE  
PANEL  
1PH, 120/240V, 3W  
NO CENTER  
MAIN BREAKER



MODULES ARE CONNECTED IN PARALLEL  
NOT IN SERIES.  
EACH MICROINVERTER IS EQUIPPED WITH  
RAPID SHUTDOWN CAPABILITIES.

BRANCH CIRCUIT	# OF PANELS	TILT, AZIMUTH
1	9	20°, 128° & 20°, 308°
2	8	20°, 308°
TOTAL # OF PANELS 17		

INTERCONNECTION METHOD PER  
705.12(B)(2)(3)(C):  
200A FEEDER BREAKER  
200A <= 200A MAIN & BUS RATING, OK

	LOW MEAN TEMP PER ASHRAE HANDBOOK	MFR VOLTAGE TEMP COEFFICIENT (oC)	VOLTAGE LOW TEMP. CORR. (oC)	HIGH AMBIENT TEMP (oC)	CONDUIT HEIGHT (in)	ROOF TOP ADDED TEMP PER Table 310.15(B)(3) (oC)	ADJUSTED TEMP	TEMP CORRECTION
ROOF	0			31	ABOVE 7/8" MIN.	0	31	.96
WALL	0	-0.24	1.06	31	N/A	0	31	.96

(E) PV BREAKER  
240 V, 50A, 2P  
PV BREAKER  
240 V, 40A, 2P  
(E) BATTERY BREAKER  
240 V, 30A, 2P  
(E) BATTERY BREAKER  
240 V, 30A, 2P

MONITOR BREAKER  
240 V, 15A, 2P  
PV BREAKER  
240 V, 20A, 2P  
PV BREAKER  
240 V, 20A, 2P  
PV BREAKER  
240 V, 20A, 2P

(N) 150A MAIN BREAKER

MONITOR BREAKER  
240 V, 15A, 2P  
PV BREAKER  
240 V, 20A, 2P  
PV BREAKER  
240 V, 20A, 2P

EXISTING 42.5A PV METER  
34 - LG310N1C-G4 SOLAR PANELS  
34 - IQ7-60-2-US MICRO INVERTERS  
1 - ENPHASE AC COMBINER BOX  
1 - 200A PROTECTED LOAD PANEL  
1 - TESLA BACKUP GATEWAY  
2 - TESLA POWERWALL 2 BATERIES  
AC OUTPUT = 34A

- ELECTRICAL EQUIPMENT CALLOUTS
- A JUNCTION BOX  
600 V, NEMA 3R W/  
EUROSTRIP OR POLARIS IT CONNECTORS
  - B 0.349kW INVERTER UNGROUNDED  
ENPHASE ENERGY IQ7A-72-2-US  
(S11-JUN20) (240V) (240V) INVERTER 240  
VAC, 1.45 A NEMA 3R, UL LISTED, (WITH  
INTEGRATED DC DISCONNECT)
  - E ENPHASE COMBINER BOX, 125A  
ENPHASE IQ COMBINER 3 X-IQ-AM1-240-3  
240V, NEMA 3R, UL 1741
  - H 200A GENERATION LOAD CENTER,  
NEMA 3R

Enphase Energy IQ7A-72-2-US (S11-JUN20) (240V)  
INVERTER  
MAX DC VOLTAGE: 58V  
DC VOLTAGE INPUT RANGE: 18-58V @240V  
PEAK POWER TRACKING VOLTAGE: 18-58V  
@240V  
AC NOMINAL VOLTAGE/RANGE: 211-264V @240V  
MAX AC OUTPUT CURRENT: 1.45A  
CEC WEIGHTED EFFICIENCY: 97% @240V

PANEL DECAL  
LG Electronics LG440QAC-A6 440W  
Vmp= 41.4V Voc= 48.2V  
Isc= 11.2A Imp= 10.64A  
CEC PTC POWER=411.7W

# = CORRESPONDING SIGN/LABEL  
TO BE ON EQUIPMENT. SEE PV-4 &  
4A FOR CORRESPONDING NUMBER.

WIRE TAG #	CONDUIT	WIRE QTY (CARRY CURRENT)	WIRE GAUGE (AWG)	WIRE TYPE	WIRE LENGTH (FEET)	TEMP RATING:	WIRE LOCATION	ADJUSTED WIRE TEMP	WIRE AMP	TEMP CORRECTION PER TABLE 310.15(B)(2)(a):	CONDUIT FILL PER TABLE 310.15(B)(3)(a):	WIRE OCP:	TERMINAL 75oC RATING	INVERTER QTY:	AC OUTPUT CURRENT	CEC 690.8(A)	STRING AMPS	GROUND SIZE	GROUND TYPE	OCPD CHECK
1	NONE	2	12	TRUNK CABLE	15	90°C	ROOF	31	30	X 0.96	X 1	= 28.8	25	9	X 1.45	X 1.25 = 16.31	#6	SBC	NONE	
2	3/4" EMT	4	10	THWN-2	80	90°C	ROOF	31	40	X 0.96	X 0.8	= 30.72	35	9	X 1.45	X 1.25 = 16.31	#8	THWN-2	20A 2P	
														8	X 1.45	X 1.25 = 14.5	#8	THWN-2	20A 2P	
3	3/4" EMT	3	8	THWN-2	5	90°C	WALL	31	55	X 0.96	X 1	= 52.8	50	17	X 1.45	X 1.25 = 30.81	#8	THWN-2	40A 2P	
4	1 1/4" EMT	3	1/0	THWN-2	5	90°C	WALL	31	170	X 0.96	X 1	= 163.2	150	((34X1)+(17X1.45)+(2X20.8)) = 125.31		#6	THWN-2	150A 2P		

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CandiceYeung@barasolar.com

*Candice Cabanela*

Solar Photovoltaic System

**CANDICE YEUNG**  
1036 WILMINGTON WAY  
EMERALD HILLS, CA 94062  
(831) 325-9493

ISSUED FOR: PERMIT

DATE: 2/2/2022

SINGLE LINE DIAGRAM

PV-3