



* NOTE: Load 1 and Load 2 to be relocated from main panel to the control relay. New 30A breaker installed on the main panel as a power source for Load1 and Load 2 under normal conditions. As a result, no new load has been added to Main Panel. Load 1 and Load 2 identified below.

**NOTE: New Control relay installed to isolate the 30A power source on the Main Panel from the battery backup power source. Similar to an Automatic Transfer Switch, this relay is designed transfer load from the main panel to the battery back-up system preventing backfeed into the Utility Grid during emergency conditons.

***NOTE: Installed for isolation purposes.

EQUIPMENT TABLE			
TAG	ITEM	DESCRIPTION	QTY
A	PV MODULE	SUNSPARK SMX-250P	2
B	BATTERY UNIT	LI-MAX TECHNOLOGY BMT - ES5000R	32
C	INVERTER	LI-MAX TECHNOLOGY BMT - CU2000R	1
D	JUNCTION BOX	6" X 6" X 4" UL LISTED, STEEL WATER - TIGHT NEMA TYPE 3	1
E	CONTROL RELAY	SQUARE D - 50A CONTROL RELAY	1
F			1

EMERGENCY LOADS		
LOAD	EXISTING BREAKER SIZE IN MAIN PANEL	DESCRIPTION
LOAD 1	15A	
LOAD 2	15A	

CONDUIT AND CABLE SCHEDULE																
TAG	FROM	TO	CABLE TYPE	CU WIRE GAUGE	CU GROUND WIRE GAUGE	CABLE AMP	# OF PARALLEL CABLE CIRCUITS	# OF CABLES	DERATING FACTOR PER NEC 310.15(B)(2)(a)	TEMP CORRECTION PER NEC 310.16 & 310.15(B)(2)(c)	ADJUSTED CABLE AMP	AMPS PER CIRCUIT	MULTIPLIER PER NEC 690.8 (A)(1) & (B)(1)	REQUIRED AMPS	CONDUIT TYPE	CONDUIT SIZE
DIRECT CURRENT																
1	MODULE	J-BOX	PV WIRE	#10 AWG	#6	40.00	1	2	1.00	0.65	26.00	8.90	1.25	11	N/A	N/A
2	J-BOX	INVERTER	THWN - 2	#10 AWG	#8	40.00	1	2	1.00	0.65	26.00	8.90	1.25	11	EMT	3/4"
3	BATTERY	INVERTER	THWN - 2	#6 AWG	#8	75.00	1	2	1.00	0.80	60.00	40.00	1.25	50	EMT	3/4"
ALTERNATING CURRENT																
4	INVERTER	RELAY	THWN-2	#10 AWG	#8	40.00	1	3	1.00	0.80	32.00	15.00	1.25	19	EMT	3/4"
5	MAIN PANEL	RELAY	THWN-2	#8 AWG	#8	55.00	1	3	1.00	0.80	44.00	30.00	1.25	38	EMT	3/4"
6	RELAY	LOAD	THWN-2	#10 AWG	#8	40.00	1	3	1.00	0.80	32.00	15.00	1.25	19	EMT	3/4"

A PV MODULE SPECIFICATIONS

MAKE		SUNSPARK	
MODEL		SMX-255P	
STC	Watts	255	
MAX POWER POINT VOLTAGE (Vmp)	Volts	30.5	
OPEN CIRCUIT VOLTAGE (Voc)	Volts	37.8	
MAX POWER-POINT CURRENT (Imp)	Amps	8.37	
SHORT CIRCUIT CURRENT (Isc)	Amps	8.90	
MAX SERIES FUSE (OCPD)	Amps	15	
MAX VOLTAGE	Volts	600	
Voc TEMPERATURE COEFFICIENT	%/C	-0.30	

B BATTERY SPECIFICATIONS

MAKE		LI-MAX TECHNOLOGY	
MODEL		BMT - ES5000R	
NOMINAL VOLTAGE	Vdc	51.2	
MAXIMUM CAPACITY	Ah	100	
TOTAL BATTERY POWER CAPACITY	Wh	5120	
OVER VOLTAGE PROTECTION	Vdc	54.25	
UNDER VOLTAGE PROTECTION	Vdc	47.25	
MAX CHARGING CURRENT	Amps	30	
MAX DISCHARGE CURRENT	Amps	40	

C INVERTER SPECIFICATIONS

MAKE		LI-MAX TEHCNOLOGY	
MODEL		BMT-CU2000R	
CEC EFFICIENCY	%	93	
DC MAXIMUM INPUT CURRENT	Amps	--	
AC OPERATING VOLTAGE	Volts	120	
CONTINUOUS MAX OUTPUT CURRENT	Amps	15	
CONTINUOUS OUTPUT POWER	W	1600	