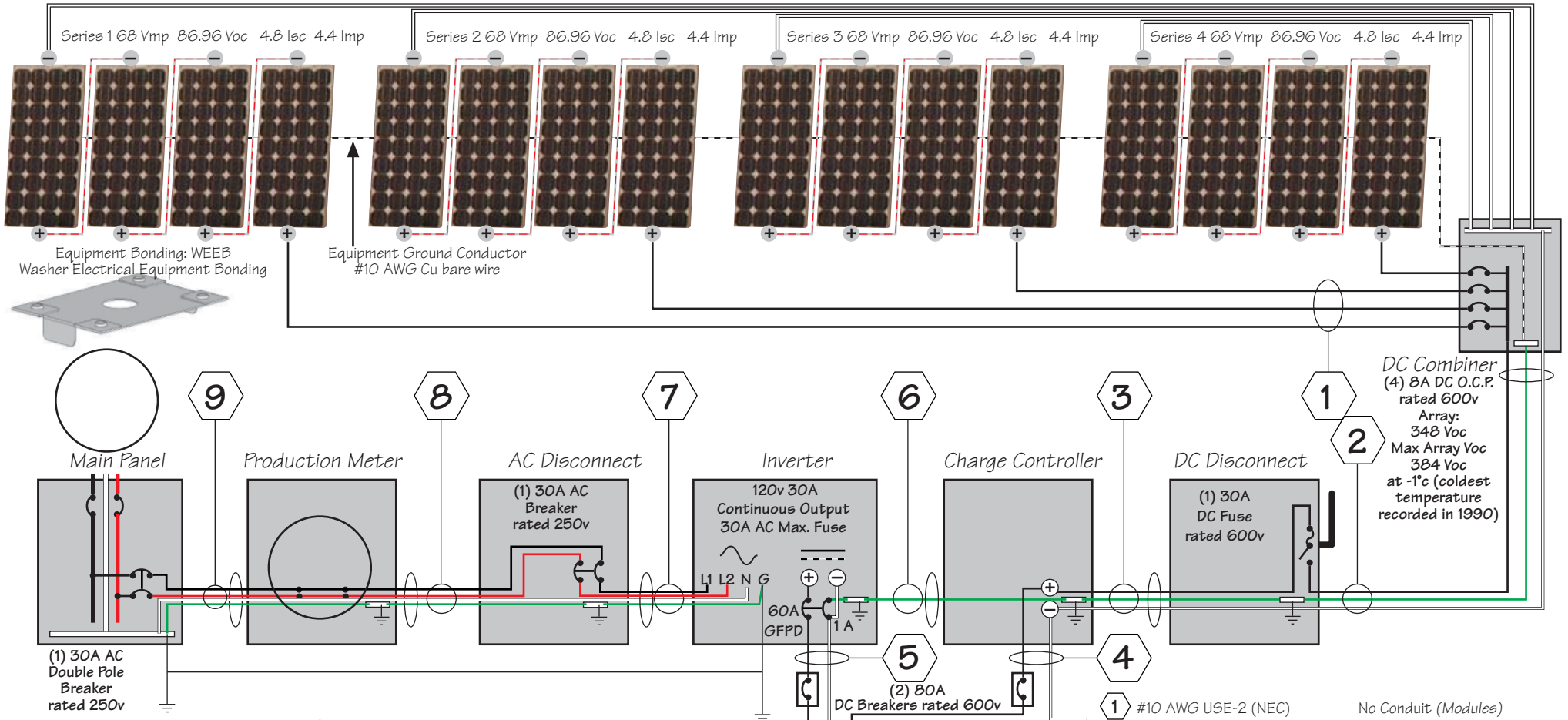

Roof Area (useable space): ***244ft²***

Module Area: ***6.08ft²*** *Array Area:* ***102ft²***

Array Weight: ***522 lbs.***

Array info: ***4 parallel source circuits of 4 modules per circuit***

Module Info: ***Siemens SP75*** *21.74 Voc 4.8 Isc*
17 Vmp 4.4 Imp

Inverter Info: **Outback GVFX 3648** *40 - 66v Input*
120v 30A Output Continuous

Distances: Array to Inverter = ***25'****; Inverter to Main =* ***45'***

Voltage Drop Calculations for 1, 2, 3:

$\frac{4.8A \times 25'}{2 \times 48Vmp} = \frac{440}{96} =$ **4.58 VDI** Chart says #10 AWG

Voltage Drop Calculations for 7, 8, 9:

$\frac{30A \times 45'}{2 \times 120v} = \frac{1350}{240} =$ **5.62 VDI** Chart says #8 AWG

4.8 Isc x 1.56 = 7.5 Safety Amps, so ..... (4) 8A DC Fuses rated 600v

19.2 Array Isc x 1.56 = 30 Safety Amps, so ..... 30A DC Fuse rated 600v

1	#10 AWG USE-2 (NEC)	No Conduit (Modules)
2	(3) #10 AWG THWN-2 (NEC)	½" EMT Conduit
3	(3) #10 AWG THWN-2 (NEC)	½" EMT Conduit
4	(2) #2 AWG THWN-2 (NEC)	1¼" EMT Conduit
5	(2) #2 AWG THWN-2 (NEC)	1¼" EMT Conduit
6	(1) #8 AWG THWN-2 (NEC)	1" EMT Conduit
7	(4) #8 AWG THWN-2 (NEC)	1" EMT Conduit
8	(4) #8 AWG THWN-2 (NEC)	1" EMT Conduit
9	(4) #8 AWG THWN-2 (NEC)	1" EMT Conduit

CBL PRODUCTIONS	
Title: Electrical Drawing, Grid-Tied PV System with Battery Back-up	
Drawn by: Craig Lund	Date: July 26, 2009
Checked by:	Related Drawings:
Scale: N/A	
Material:	DWG No.