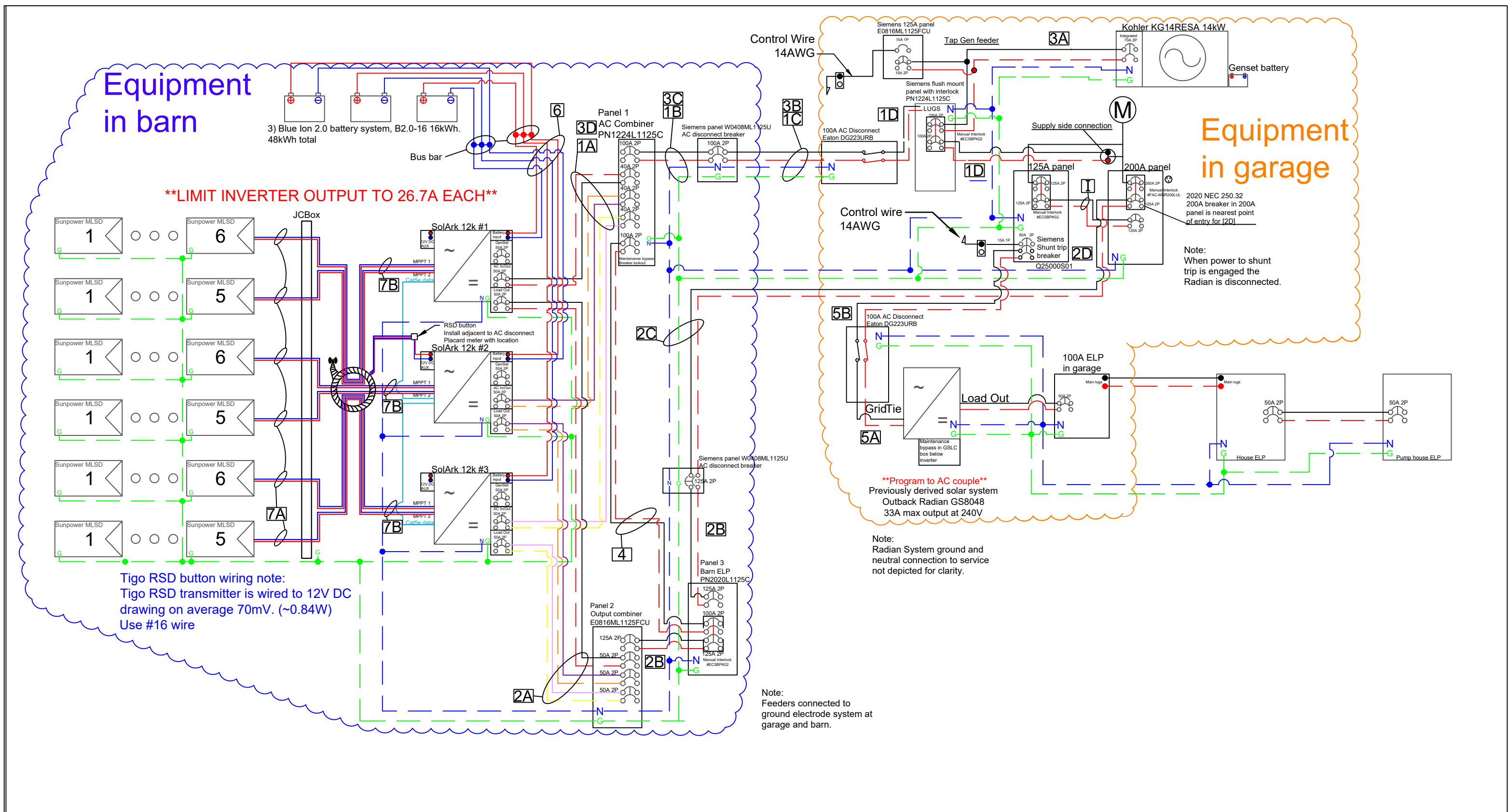




VOLTAGE DROP CALCULATIONS									
VD = ((2KLI)/CMA)									
WIRE RUN	VMP	IMP	K	L	CMA	VD	%VD	WIRE SIZE	
Inverters to Panel 1 Panel 1 to Ac disco Underground AC disco to MTS, MTS to Tap GRID TIE	1A, 3E (AC)	240V	26.7A	12.9	10'	26240	0.3	0.10%	#6 C
	1B, 3D (AC)	240V	80A	12.9	50'	83690	1.2	0.50%	#1 C
	1C, 3C (AC)	240V	80A	12.9	200'	211600	2.0	0.80%	4/0 C
	1D (AC)	240V	80A	12.9	20'	66360	0.6	0.30%	#2 C
	WIRE RUN 1 (AC) TOTAL %VDROP							1.7%	
Inverters to Panel 2 Panel 2 to Panel 3, Panel 3 to Disco Underground Jbox to 200A Panel LOAD OUT SOL-ARK AC COUPLED RADIAN	2A (AC)	240V	33A	12.9	10'	26240	0.3	0.10%	#6 C
	2B (AC)	240V	100A	12.9	56'	83690	1.7	0.70%	#1 C
	2C (AC)	240V	100A	12.9	200'	211600	1.7	1%	4/0 C
	2D (AC)	240V	100A	21.2	10'	133100	0.3	0.10%	2/0 AL
	WIRE RUN 2 (AC) TOTAL %VDROP							1.9%	
NOTE: K=12.9 circular mil ohms per foot for copper 21.2 for Aluminum (assumes 75 deg C) The multiplier is 1.0 for single phase and DC, 0.5 for 3-phase 4-wire and 0.866 for 3-phase 3-wire									

VOLTAGE DROP CALCULATIONS									
VD = ((2KLI)/CMA)									
WIRE RUN	VMP	IMP	K	L	CMA	VD	%VD	WIRE SIZE	
3A (AC)	240V	58A	12.9	60'	83690	1.1	0.50%	#1 C	
3B, 1C (AC)	240V	58A	21.2	200'	211600	1.4	0.60%	4/0 C	
3C, 1B (AC)	240V	58A	21.2	50'	83690	0.9	0.40%	#1 C	
3D, 1A (AC)	240V	19.33A	12.9	10'	26240	0.2	0.10%	#6 C	
WIRE RUN 1 (AC) TOTAL %VDROP							1.60%		
4 (AC)	240V	80A	12.9	10'	52620	0.4	0.20%	#3 C	
5A (AC)	240V	33A	12.9	60'	873690	0.7	0.30%	1/0 AL	
5B (AC)	240V	33A	12.9	20'	26240	0.6	0.30%	#6 C	
6 Battery (DC)	48V	185A	12.9	10'	211600	0.2	0.4%	4/0 C	
7A (DC)	216.65V	9.14A	12.9	40'	10380	1.24	0.41%	#10 C	
7B (DC)	216.65V	18.28A	12.9	30'	10380	1.24	0.54%	#10 C	
WIRE RUN 4 (DC) TOTAL %VDROP							0.95%		

ASHRAE data McMinnville Municipal
Low temp -6.7 deg C
0.4% Average High temp 35.6 deg C

Power - 4840 W
Vmp ASHRAE High Temp - 225.96 V
Rated ISC - 10.9 A
Voc at ASHRAE Low Temp- 335.12 V
Rated Max Power Voltage - 260.4 V
Max Short Circuit Current - 13.63 A
Rated Max Power Current - 10.2 A

MPPT 1 (6 Modules)	MPPT 2 (5 Modules)
2,640 W	2,200 W
225.96 V	188.3 V
10.9 A	10.9 A
335.12 V	279.26 V
260.4 V	217 V
13.63 A	13.63 A
10.2 A	10.2 A

Note: conduit sized to NEC fill requirements
Conductors upsized for Vdrop.
Equipment ground sized to NEC 250.122
and size of feeder breaker.

CONDUIT & CONDUCTOR SCHEDULE					
TAG	DESCRIPTION OR CONDUCTOR TYPE	COND. GAUGE	NUMBER OF CONDUCTORS	CONDUIT TYPE	CONDUIT SIZE
1A, 3D	THWN COPPER	#6, #10 GND	(4) L1, L2, N, GND	Wireway	10"
1B, 3C	THWN COPPER	#1 C, #8 GND	(4) L1, L2, N, GND	PVC40	1 1/2"
1C, 3B	THWN COPPER	4/0, 2/0 N, #8 GND	(4) L1, L2, N, GND	PVC40	2"
1D	THWN COPPER	#2, #6 GND	(4) L1, L2, N, GND	FMC	1 1/4"
2A	THWN COPPER	#6, #10 GND	(4) L1, L2, N, GND	Wireway	10"
2B	THWN COPPER	#1, #6 GND	(4) L1, L2, N, GND	Wireway, PVC40	6", 1 1/2" PVC
2C	THWN COPPER	4/0, 2/0 N, #6 GND	(4) L1, L2, N, GND	PVC40	2"
2D	THWN COPPER	2/0 AL, #1 GND	(4) L1, L2, N, GND	Inside wall	
3A	THWN COPPER	#1 C, #8 GND	(4) L1, L2, N, GND	EMT	1 1/4"
I	THWN COPPER	2/0 AL, #1 GND	(4) L1, L2, N, GND	Inside wall	
4	THWN COPPER	#3, #6 GND	(4) L1, L2, N, GND	Wireway	6"
5A	EXISTING ALUMINUM SER	1/0 AL, #6 GND	(4) L1, L2, N, GND	Inside Wall	
5B	MN-B THWN COPPER	#6, #10 GND	(4) L1, L2, N, GND	Inside Wall	
6	USE-2 STR COPPER OR MTW BATTERY CABLE	4/0, #4 GND	(6) POS, NEG, GND		
7A	PV WIRE	#10, #6 GND	(13) POS, NEG, GND	Open Air	
7B	THWN COPPER	#10, #10 GND	(13) POS, NEG, GND	EMT	1"