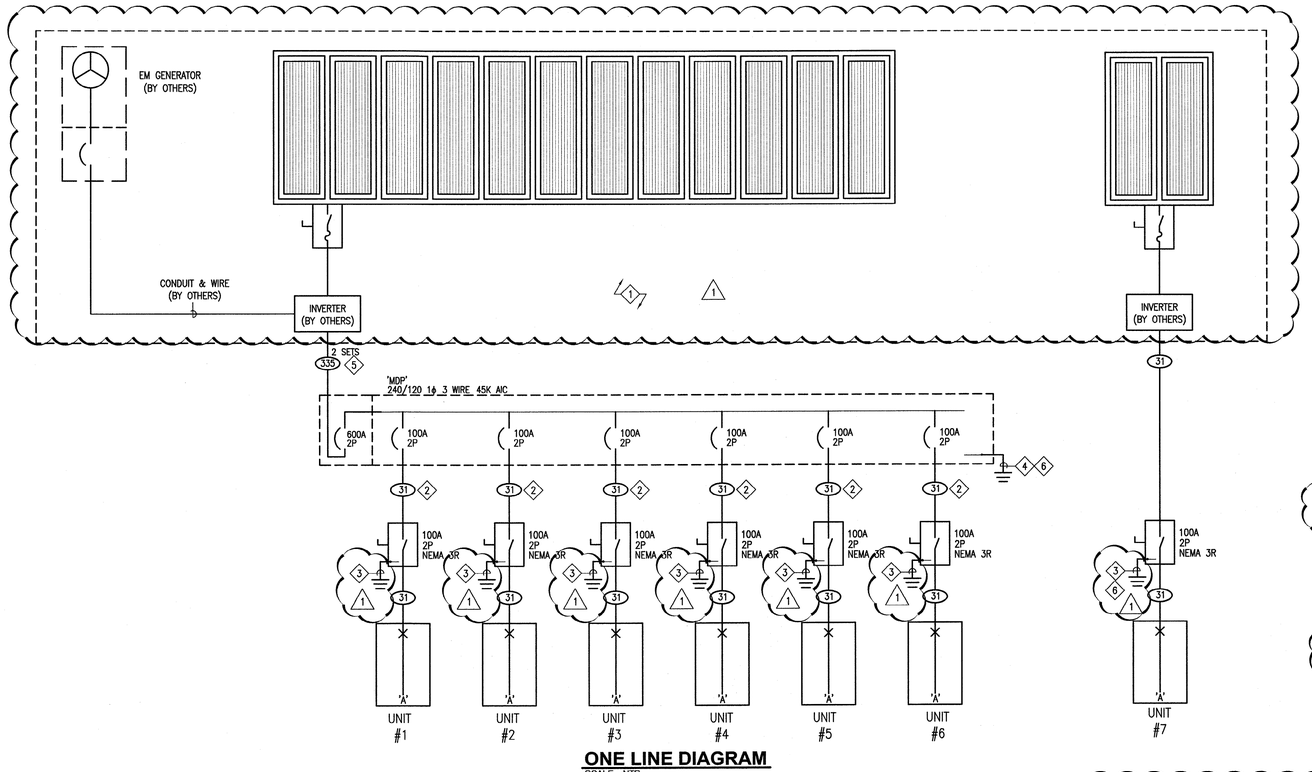


ONE LINE DIAGRAM

SCALE: NTS

GENERAL NOTES:

1. CONTRACTOR TO PROVIDE ALL TRENCHING AND BACKFILL.
2. PROVIDE AND INSTALL GROUNDING CONDUCTOR(S) IN ALL FEEDER CONDUITS REGARDLESS OF CONDUIT TYPE AS PER ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE. CONDUIT GROUNDING IS PROHIBITED, NO EXCEPTIONS TAKEN.
3. ALL FEEDERS ARE COPPER UNLESS NOTED OTHERWISE.

KEYED NOTES

1. ALL EQUIPMENT, CONDUCTORS, CONDUIT, ETC. IN THIS AREA TO BE PROVIDED AND INSTALLED BY OTHERS.
2. NEW UNDERGROUND FEEDER PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. PROVIDE ALL TRENCHING AND BACKFILL.
3. #6 AWG COPPER TO GROUND AS PER ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE, SEE SERVICE GROUNDING DETAIL.
4. #2/0 AWG COPPER GROUND RECOMMENDED, VERIFY EXACT GROUND SIZE WITH SOLAR EQUIPMENT SUPPLIER/CONTRACTOR. GROUNDING SHALL BE AS PER ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE, SEE SERVICE GROUNDING DETAIL.
5. RECOMMENDED CONDUIT AND WIRE SIZE. CONDUIT, WIRE, AND FINAL CONNECTION TO BE BY THE SOLAR ARRAY EQUIPMENT SUPPLIER/CONTRACTOR. SHOWN HERE FOR REFERENCE ONLY.
6. LOCATION OF MAIN BONDING JUMPER.

FEEDER SCHEDULE

TYPE	CONDUIT SIZE PVC	CONDUIT SIZE EMT	CONDUCTORS QTY.	CONDUCTORS SIZE	75°C AMP RATING
212	¾"	¾"	2	#12	25
312	¾"	¾"	3	#12	
412	¾"	¾"	4	#12	
20	¾"	¾"	2	#10	35
30	¾"	¾"	3	#10	
40	¾"	¾"	4	#10	
28	¾"	¾"	2	#8	50
38	¾"	¾"	3	#8	
48	¾"	¾"	4	#8	
26	¾"	¾"	2	#6	65
36	¾"	¾"	3	#6	
46	1"	1"	4	#6	
24	¾"	¾"	2	#4	85
34	1"	1"	3	#4	
44	1¼"	1¼"	4	#4	
23	1"	1"	2	#3	100
33	1"	1"	3	#3	
43	1¼"	1¼"	4	#3	
22	1"	1"	2	#2	115
32	1¼"	1¼"	3	#2	
42	1¼"	1¼"	4	#2	
21	1¼"	1¼"	2	#1	130
31	1¼"	1¼"	3	#1	
41	1½"	1½"	4	#1	

TYPE	CONDUIT SIZE PVC	CONDUIT SIZE EMT	CONDUCTORS QTY.	CONDUCTORS SIZE	75°C AMP RATING
21X	1¼"	1¼"	2	1/0	150
31X	1½"	1½"	3	1/0	
41X	1½"	1½"	4	1/0	
22X	1¼"	1¼"	2	2/0	175
32X	1½"	1½"	3	2/0	
42X	2"	2"	4	2/0	
23X	1½"	1¼"	2	3/0	200
33X	2"	2"	3	3/0	
43X	2"	2"	4	3/0	
24X	1½"	1½"	2	4/0	230
34X	2"	2"	3	4/0	
44X	2½"	2½"	4	4/0	
225	2"	2"	2	250 KCMIL	255
325	2"	2"	3	250 KCMIL	
425	3"	2½"	4	250 KCMIL	
230	2"	2"	2	300 KCMIL	285
330	2½"	2½"	3	300 KCMIL	
430	3"	2½"	4	300 KCMIL	
235	2"	2"	2	350 KCMIL	310
335	2½"	2½"	3	350 KCMIL	
435	3"	2½"	4	350 KCMIL	
240	2"	2"	2	400 KCMIL	335
340	2½"	2½"	3	400 KCMIL	
440	3"	3"	4	400 KCMIL	

TYPE	CONDUIT SIZE PVC	CONDUIT SIZE EMT	CONDUCTORS QTY.	CONDUCTORS SIZE	75°C AMP RATING
250	2½"	2½"	2	500 KCMIL	380
350	3"	2½"	3	500 KCMIL	
450	4"	3½"	4	500 KCMIL	
260	2½"	2½"	2	600 KCMIL	420
360	3½"	3½"	3	600 KCMIL	
460	4"	4"	4	600 KCMIL	
270	2½"	2½"	2	700 KCMIL	460
370	3"	3"	3	700 KCMIL	
470	4"	4"	4	700 KCMIL	
275	3"	3"	2	750 KCMIL	475
375	4"	4"	3	750 KCMIL	
475	4"	4"	4	750 KCMIL	

EQUIPMENT GROUNDING CONDUCTORS SCHEDULE

OVERCURRENT DEVICE	COPPER
15	14
20	12
30	10
40	10
60	10
100	8
200	6
300	4
400	3
500	2
600	1
800	1/0
1000	2/0
1200	3/0
1600	4/0
2000	250KCMIL
2500	350KCMIL
3000	400KCMIL
4000	500KCMIL

NOTE:
1. SEE EQUIPMENT GROUND CONDUCTOR SCHEDULES OR SERVICE GROUNDING DETIAIL FOR GROUND CONDUCTORS RATING.
2. ALL INSULATION SHALL BE THHN UNLESS NOTED OTHERWISE.
3. PVC CONDUIT SIZE IS BASED ON SCHEDULE 40 PVC. PVC IS APPROVED FOR UNDERGROUND FEEDERS ONLY.

FAULT CURRENT CALCULATION SCHEDULE

SOLAR ARRAY	ARRAY VOLTAGE	AVAILABLE FAULT CURRENT
	240	45,000 AIC

FEEDER FROM	FEEDER TO	FEEDER DISTANCE	FEEDER AVAILABLE FAULT CURRENT	FEEDER CONDUIT TYPE	FEEDER SIZE	FEEDERS PER PHASE	VOLTAGE LINE TO LINE VOLTS	VOLTAGE XFMR PRIMARY VOLTS	VOLTAGE XFMR SECONDARY VOLTS	FAULT CURRENT AT EQUIPMENT	FULL OR SERIES RATED	MINIMUM SYMMETRICAL EQUIPMENT AIC RATING
MDP	UNIT 1 PNL	110'-0"	10,000 AIC	PVC	#1 AWG	1	240	---	---	6,205 AIC	FULL	10,000 AIC
MDP	UNIT 2 PNL	75'-0"	10,000 AIC	PVC	#1 AWG	1	240	---	---	7,057 AIC	FULL	10,000 AIC
MDP	UNIT 3 PNL	75'-0"	10,000 AIC	PVC	#1 AWG	1	240	---	---	7,057 AIC	FULL	10,000 AIC
MDP	UNIT 4 PNL	100'-0"	10,000 AIC	PVC	#1 AWG	1	240	---	---	6,426 AIC	FULL	10,000 AIC
MDP	UNIT 5 PNL	125'-0"	10,000 AIC	PVC	#1 AWG	1	240	---	---	5,899 AIC	FULL	10,000 AIC
MDP	UNIT 6 PNL	150'-0"	10,000 AIC	PVC	#1 AWG	1	240	---	---	5,452 AIC	FULL	10,000 AIC
MDP	UNIT 7 PNL	50'-0"	10,000 AIC	PVC	#1 AWG	1	240	---	---	7,824 AIC	FULL	10,000 AIC

DISTRIBUTION PANELBOARD SCHEDULE

PANEL:	MDP	BUS AMPS:	600
VOLTAGE:	240/ 120	MAIN DEVICE:	MLO
PHASE: 1	WIRE: 3	MAIN BUS BRACING (AMPS RMS SYM):	10,000
ENCLOSURE:	NEMA 3R		
MOUNTING:	SURFACE		
REMARKS:	I-LINE SERVICE RATED TYPE		

CKT. #	DESCRIPTION	LOAD DESIGN KVA	LOAD DESIGN FLA	LOAD DEMAND KVA	LOAD DEMAND FLA	OVERCURRENT DEVICE BREAKER AMP TRIP	BREAKER POLE	BREAKER AMP FRAME
1	UNIT #1	23.0	96.0	23.0	96.0	100	2	150
2	UNIT #2	23.0	96.0	23.0	96.0	100	2	150
3	UNIT #3	23.0	96.0	23.0	96.0	100	2	150
4	UNIT #4	23.0	96.0	23.0	96.0	100	2	150
5	UNIT #5	23.0	96.0	23.0	96.0	100	2	150
6	UNIT #6	23.0	96.0	23.0	96.0	100	2	150

DESIGN KVA:	138.2	DESIGN FLA:	575.8
DEMAND KVA:	138.2	DEMAND FLA:	575.8

PLANCHECK BY: JMS
May 02, 2012
(A,S,P,M,E,F/P,E/N)

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Registered Professional Engineer (Electrical)
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STEVEN R. GRIFFITHS
Date Signed
ARIZONA U.S.A.
EXPIRES: 12/31/13

DESIGNED BY: KJH
CHECKED BY: SRG
ROYAL ENGINEERING PROJECT NO. #11245.00
DATE PLOTTED: 01.05.2012

REVISIONS	DATE	JOB NO.
1 PLAN REVIEW 4.6.2012	11-28-2011	11-028

GUEST HOGANS
FOR N.A.T.I.V.E.
KAYENTA, ARIZONA 86033

ELECTRICAL ONE LINE DIAGRAM

E2.1