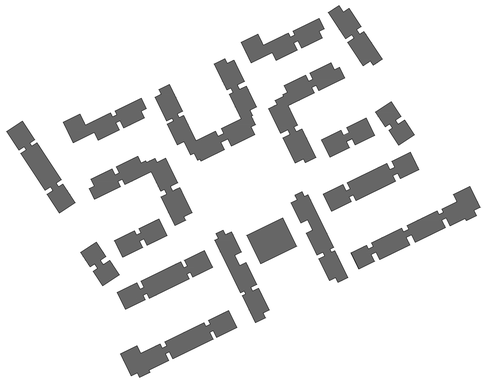
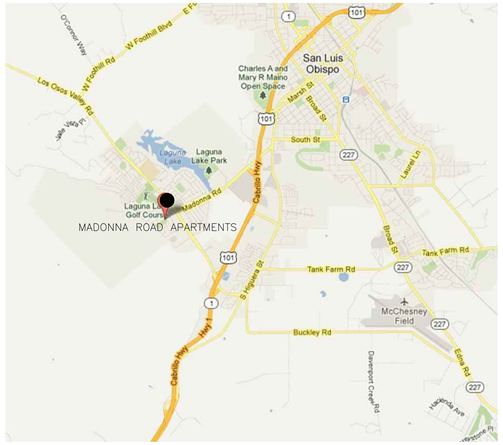
PHOTOVOLTAIC SYSTEM INSTALLATION PLAN
MADONNA ROAD APARTMENTS, SAN LUIS OBISPO, CALIFORNIA

ARRAY VIEW:



AERIAL VIEW:

VICINITY MAP:



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SCOPE OF WORK:

THE FOLLOWING PROJECT CALLS FOR THE INSTALLATION OF (18) ROOFTOP SOLAR PHOTOVOLTAIC POWER SYSTEMS (SPVPS) ON (1) RESIDENTIAL PROPERTY LOCATED AT 1550 MADONNA ROAD, SAN LUIS OBISPO, CALIFORNIA.

THE SPVPS WILL CONSIST OF THE INSTALLATION OF (855) PHOTOVOLTAIC MODULES AND (29) INVERTERS. THE MOUNTING METHOD WILL UTILIZE AN PANEL CLAW PRE-ENGINEERED ROOF MOUNTING SYSTEM THAT WILL BE STRUCTURALLY AND MECHANICALLY FASTENED WITH A 10-DEGREE SLOP TO THE FLAT ROOF. THE SPVPS' WILL BE INSTALLED ON THE EXISTING BUILDING FOOTPRINT AND WILL NOT ENCROACH ON ANY EXISTING SITE BOUNDARIES. PANEL CLAW'S ATTACHMENT SYSTEMS IS DESIGNED TO WITHSTAND WIND AND SEISMIC LOADS ON THE EXISTING ROOF.

PV SYSTEM COMPONENTS:

1. (855) 250-WATT PV MODULES
2. (1) 11.4-kW INVERTERS W/ INTEGRATED DC DISCONNECT
3. (5) 10-kW INVERTERS W/ INTEGRATED DC DISCONNECT
4. (8) 7.5-kW INVERTERS W/ INTEGRATED DC DISCONNECT
5. (11) 6-kW INVERTER W/ INTEGRATED DC DISCONNECT
6. (4) 3-kW INVERTER W/ INTEGRATED DC DISCONNECT
5. (19) DATA ACQUISITION SYSTEMS

ARRAY INFORMATION:

1.	ARRAY TILT:	10°
2.	ARRAY AZIMUTH:	154°, 237°, 244°
3.	PV PANEL AREA:	14,535 FT²
4.	STC WATTS:	213,750kW
5.	PTC WATTS:	194.512kW
6.	CEC-AC WATTS:	185.759kW
7.	METER #:	(19) MULTIPLE
8.	UTILITY ACCOUNT #:	2199678306-0

SITE PLAN:

PROJECT CONTACTS:

SYSTEM OWNER:
MADONNA ROAD PARTNERS, LP
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93401

(760) 557-1478

ELECTRICAL CONTRACTOR:
EVERYDAY ENERGY
5865 AVENIDA ENCINAS, SUITE 142A
CARLSBAD, CA 92008
PHONE: (760) 607-7200
LICENSE # C-10 949535

PROJECT ENGINEERING:
SUSTINEO CORPORATION
6977 NAVAJO ROAD, SUITE 139
SAN DIEGO, CA 92119
ENGINEERING MANAGER: DAVE HANDMAN
ENGINEER: ROBERTO RIVERA, P.E. (ELECTRICAL)
PHONE: (858) 270-9333
ENGINEER: DON ORIE, P.E., S.E. (STRUCTURAL)
PHONE: (858) 335-7643

PROJECT MANAGEMENT:
EVERYDAY ENERGY
5865 AVENIDA ENCINAS, SUITE 142A
CARLSBAD, CA 92008
PROJECT MANAGER: SKY SEALS
PHONE: (619) 205-2801

SITE INFORMATION:

APPROX. GROUND AREA:	268,036 FT²
APPROX. ROOF AREA:	64,317 FT²
LATITUDE:	35.255°
LONGITUDE:	-120.693°
STANDARD MERIDIAN:	120.0
APN:	153-102-025
ZONING DESIGNATION:	RESIDENTIAL

WEATHER INFORMATION:

RECORD LOW AMBIENT TEMPERATURE:	12° (DECEMBER)
AVERAGE LOW AMBIENT TEMPERATURE:	43° (DECEMBER)
EXPECTED DAYTIME LOW TEMPERATURE:	24° (DECEMBER)*
RECORD HIGH AMBIENT TEMPERATURE:	112° (SEPTEMBER)
AVERAGE HIGH AMBIENT TEMPERATURE:	77° (SEPTEMBER)
SOLAR RESOURCE:	5.742 kWh/m²/DAY

* USED FOR MAXIMUM SYSTEM VOLTAGE CALCULATION

CODE COMPLIANCE:

ANALYSIS ITEMS	CODE REFERENCE:
FIRE:	CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION 2008
BUILDING:	CALIFORNIA BUILDING CODE 2010
STRUCTURAL:	CALIFORNIA BUILDING CODE 2010
PLUMBING:	N/A
ELECTRICAL:	CALIFORNIA ELECTRIC CODE 2010

STORIES: 2

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12
ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV.	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

SUSTINEO
6977 NAVAJO RD., SUITE 139
SAN DIEGO, CA 92119
PHONE: 858.270.9333
FAX: 858.270.9334

OWNER/CLIENT:

MADONNA ROAD APARTMENTS
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

Everyday Energy
SAVE MONEY. SAVE THE PLANET

EVERYDAY ENERGY
5865 AVENIDA ENCINAS,
SUITE 142A
CARLSBAD, CA, 92008
P: (760) 607-7200

TITLE:
TITLE SHEET
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: T1.1
1 OF 30

100% CONSTRUCTION DRAWINGS

GENERAL SAFTEY NOTES:

S1 SAFETY IS OUR NUMBER ONE PRIORITY. PLEASE FOLLOW ALL APPLICABLE SAFETY RULES AND REGULATIONS.

S2 TAKE EXTRA CARE WHEN PLACING PV MODULE CRATES ON THE ROOF. PLACE PLYWOOD ON THE SURFACE TO PROTECT THE MEMBRANE.

S3 WHEN LIFTING PV MODULE CRATES ONTO THE ROOF, BE SURE THAT THE ROOF IS CAPABLE OF SUPPORTING THE ADDITIONAL DEAD WEIGHT LOAD OF THESE CRATES AND THAT THE LOAD IS DISTRIBUTED EVENLY.

S4 BE SURE THAT THE CRANE OPERATOR IS IN CONTINUOUS COMMUNICATIONS WITH THE REPRESENTATIVES ON THE ROOF WHEN PLACING CRATES. DURING THIS OPERATIONS ALL WORKERS MUST BE WEARING OSHA APPROVED HEAD PROTECTION AND STEEL TOED SHOES.

S5 WHEN LANDING CRATES ON THE ROOF, MAKE SURE THAT THE CRATE IS FACING THE RIGHT DIRECTION FOR PANEL REMOVAL.

S6 EACH PV MODULE WEIGHS 43.0 LBS. AS A REMINDER, USE YOUR LEGS WHEN LIFTING.

S7 REMEMBER THAT DURING DAYLIGHT HOURS THE MODULES WILL BE PRODUCING VOLTAGE. IF THE MODULE IS DAMAGED THERE IS A CHANCE THAT YOU COULD BE EXPOSED TO THE FULL VOLTAGE AND CURRENT BEING GENERATED. IF A MODULE IS SHIPPED DAMAGED OR BECOMES DAMAGED AT THE JOBSITE, CAREFULLY HANDLE THE MODULE AND PLACE IT OUT OF THE SUNLIGHT.

S8 EVEN IF THE MODULE IS NOT DAMAGED, KEEP IN MIND THAT WHENEVER THE MODULE OR SYSTEM IS EXPOSED TO SUNLIGHT IT CAN GENERATE UP TO 600VDC AND AS HIGH AS 240VAC. WHEN WORKING WITH THIS EQUIPMENT, MAKE SURE THAT YOU TAKE EVERY PRECAUTION TO AVOID CONTACT WITH ANY ELECTRICAL TERMINAL OR WIRE UNLESS SYSTEM VOLTAGE IS TESTED, LOCKED OUT, AND DEEMED SAFE FOR WORK.

S9 IF YOU HAVE ANY QUESTIONS PERTAINING TO THE INSTALLATION, OPERATION, OR FUNCTION OF ANY COMPONENTS THAT MAKE UP THIS PV SYSTEM, CONTACT THE CONTRACTOR OR PROJECT MANAGER AND THEY WILL ASSIST YOU.

S10 VERIFY SETBACK DISTANCE IS SAFE FOR ROOF WORKERS

S11 WHEN INVERTERS ARE LOCATED IN PUBLIC AREAS AND PERSONNEL CAN COME IN CONTACT WITH EQUIPMENT, PROVIDE A GATE OR SECURED ENCLOSURE TO PREVENT UNAUTHORIZED ACCESS.

S12 WHEN WORKING ON THE ROOF, PERSONNEL SHALL TAKE CARE IN WORKING NEAR SKYLIGHTS. PROPER OSHA WARNING SIGNAGE AND ABATEMENT STRATEGIES SHALL BE UTILIZED AT ALL TIMES.

GENERAL NOTES:

1 CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND LIABILITY FOR COMPLIANCE WITH REGULATIONS PER FEDERAL OSHA, CAL/OSHA, AND LOCAL REGULATIONS PERTAINING TO WORK PRACTICES, PROTECTION, OR WORKERS AND VISITORS TO THE SITE.

2 CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT SITE BEFORE COMMENCING WORK.

3 CONTRACTOR SHALL VERIFY (E) CONDITIONS AND NOTIFY PRIMARY CONTRACTOR OF DESCREPANCIES REQUIRING FURTHER CLARIFICATION BEFORE PROCEEDING WITH WORK.

4 WORK REQUIRED UNDER THIS CONTRACT INCLUDES ALL LABOR AND MATERIALS, EQUIPMENT, ETC. NECESSARY AND RESONABLY INCIDENTAL TO COMPLETE THIS PROJECT. ALL MATERIALS SHALL BE IN NEW AND UNUSED CONDITION AND OF HIGH QUALITY IN EVERY ASPECT.

5 MANUFACTURER'S MATERIAL, EQUIPMENT, ETC. SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.

6 THE CONTRACTOR SHALL BECOME FAMILIAR WITH ALL UTILITY AS-BUILT PLANS AND THE LOCATIONS OF ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES, STRUCTURES, PAVEMENT, OR IMPROVEMENTS.

7 ALL WORK SHALL BE INSTALLED IN CONFORMANCE WITH ALL APPLICABLE LOCAL CODES AND ORDINANCES BY EXPERIENCED WORKERS AND A LICENSED CONTRACTOR WHO SHALL OBTAIN ALL NECESSARY PERMITS AND PAY ALL LOCAL FEES.

8 INSTALL ALL ASPECTS OF THIS CONTRACT IN ACCORDANCE WITH THE CALIFORNIA SOLAR INITIATIVE (CSI).

9 INSTALL ALL ASPECTS OF THIS CONTRACT IN ACCORDANCE WITH OWNERS PREREQUISITES.

10 MAINTAIN QUALITY CONTROL AND INSPECT ALL WORK UNDER THE CONTRACT.

11 FALL HAZARD PROTECTION AND PREVENTION PROGRAM SHALL BE IN PLACE AT ALL TIMES WHEN PERFORMING WORK ABOVE 6 FEET.

12 COMPLY WITH ALL SAFETY REQUIREMENTS. ALL WORK SHALL BE PERFORMED IN A SAFE MANNER IN ACCORDANCE WITH ALL APPLICABLE SAFETY AND HEALTH REGULATIONS.

13 WORK HOURS SHALL BE NORMALLY FROM 0700 THROUGH 1700 MONDAY THROUGH FRIDAY.

ELECTRICAL NOTES:

E1 REFER TO THE ONE-LINE AND DC WIRING DETAILS SCHEMATIC FOR CONDUCTOR SIZE BETWEEN MAJOR POWER COMPONENTS OF THE ELECTRICAL SYSTEM.

E2 NEW CONDUIT ROUTING SHOWN IS ESSENTIALLY DIAGRAMMATIC. SUBCONTRACTOR SHALL LAY OUT RUNS TO SUIT FIELD CONDITIONS AND THE COORDINATION REQUIREMENTS OF OTHER TRADES.

E3 ALL CONDUIT CROSSING EXPANDING AND SEISMIC SEPARATION JOINTS SHALL BE PROVIDED WITH EXPANSION/DEFLECTION FITTINGS. PROVIDE FITTINGS AND SEAL TIGHT FLEXIBLE METAL CONDUIT RACEWAYS AS REQUIRED TO ACCOMODATE BUILDING MOVEMENT.

E4 ALL SEAL TIGHT FLEXIBLE METAL CONDUIT (OR EQUIV.) TO BE BONDED TO GROUND AT COUPLINGS ON BOTH ENDS.

E5 ALL CONDUIT BEND RADII TO CONFORM TO NEC MINIMUM BEND RADII STANDARDS.

E6 ALL CONDUIT RUNS SHALL BE SECURELY FASTENED AT INTERVALS OF 10 FT. MIN. AND 3 FT. MIN FROM EQUIPMENT OR STRUCTURE PENETRATIONS PER NEC ARTICLE 358.30.

E7 MINIMUM CLEARANCE BETWEEN ALL NEW EQUIPMENT TO BE INSTALLED AND ANY NEW EXISTING ADJACENT EQUIPMENT SHALL BE 48" FACE TO FACE ON ALL EQUIPMENT PANELS INTENDED FOR MAINTANENCE ACCESS.

E8 CONDUIT ENTRY/CONNECTION TO ELECTRICAL ENCLOSURES SHALL BE SUITABLE FOR GROUNDING AND SHALL BE SEALED AGAINST ENVIRONMENT.

E9 ALL EMT OR RIGID COUPLINGS TO BE LISTED AS "RAIN TIGHT".

E10 ALL CONDUCTORS SHALL BE COPPER WITH 90°C INSULATION.

E11 VERIFY ON-SITE UTILITIES AND HAVE THEM MARKED OUT BY UTILITY LOCATOR SERVICE PRIOR TO THE START OF CONSTRUCTION.

E12 FOLLOW ELECTRICAL SAFETY CRITERIA SPECIFIED IN NFPA 70E AND NEC DURING THE CONDUCT OF OF ALL WORK.

E13 THE SPVPS WILL SUPPLY RATED AC POWER OUTPUT AS SPECIFIED BY THE MANUFACTURER AND THE CSI PROGRAM.

E14 ALL CONDUIT RUNS EXPOSED IN ELECTRICAL ROOMS, MECHANICAL ROOMS, SHELTERS, PARKING LOT AREAS, AND OUTDOOR INSTALLATION SHALL BE ELECTRICAL METAL TUBING.

E15 ALL FLEX AND SEAL TYPE CONDUIT SHALL HAVE A GROUND CONDUCTOR.

E16 PROVIDE GROUND WIRE IN ALL CIRCUITS AND AS REQUIRED EVEN THOUGH NOT SHOWN ON DRAWINGS. FIELD VERIFY EXACT LOCATIONS.

E17 CONTRACTOR SHALL MAINTAIN AS-BUILT SETS OF DRAWINGS REFLECTING ALL CHANGES MADE DURING CONSTRUCTION. THIS SET OF DRAWINGS SHALL BE KEPT ON THE JOB SITE AND SHALL BE USED AS A RECORD SET ONLY. ALL CHANGES AS NOTED ON THE RECORD SET SHALL BE INCORPORATED INTO A REPRODUCIBLE CONTRACT DRAWING. ALL CHANGES SHALL BE INDICATED IN RED INK IN A NEAT, LEGIBLE, PROFESSIONAL AND UNDERSTANDABLE MANNER.

MADONNA ROAD HOURLY GENERATION PROFILE (kWh)

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	SUMMER	SPRING	REST
1:00																
2:00																
3:00																
4:00																
5:00																
6:00																
7:00					49	72	43						164	116	49	
8:00	7	154	158	245	538	598	472	264	105	19	169	15	2,746	1,440	941	364
9:00	714	826	742	1,199	1,521	1,516	1,264	1,095	925	562	965	789	12,120	4,800	3,463	3,857
10:00	1,507	1,622	1,587	2,276	2,639	2,576	2,414	2,247	2,069	1,440	1,877	1,693	23,947	9,306	6,502	8,139
11:00	2,244	2,202	2,193	3,396	3,692	3,407	3,583	3,350	3,013	2,334	2,451	2,362	34,228	13,354	9,282	11,593
12:00	2,611	2,448	2,601	4,447	4,402	4,318	4,371	4,269	3,817	2,917	2,862	2,879	41,943	16,775	11,451	13,717
13:00	2,867	2,422	3,047	4,834	5,045	4,881	4,946	4,746	4,172	3,314	2,826	3,096	46,197	18,745	12,926	14,525
14:00	2,692	2,382	3,170	5,095	5,160	5,064	5,207	4,925	4,443	3,687	2,789	2,891	47,506	19,639	13,425	14,441
15:00	2,439	2,135	2,799	4,861	4,793	5,019	5,159	4,771	4,298	3,408	2,330	2,378	44,389	19,247	12,453	12,690
16:00	1,896	1,475	2,481	4,321	4,332	4,547	4,680	4,315	3,670	2,756	1,681	1,681	37,835	17,212	11,134	9,489
17:00	364	788	1,686	3,429	3,635	3,882	4,030	3,640	2,947	2,091	487	250	27,230	14,499	8,750	3,981
18:00		100	987	2,461	2,533	2,849	2,930	2,590	1,879	843			17,172	10,248	5,981	943
19:00			333	1,233	1,417	1,681	1,652	1,432	312	10			8,072	5,078	2,984	10
20:00				11	63	222	127	68					493	418	75	
21:00																
22:00																
23:00																
0:00																
TOTALS	**17,341**	**16,554**	**21,784**	**37,808**	**39,819**	**40,632**	**40,878**	**37,712**	**31,650**	**23,381**	**18,437**	**18,034**	***344,042***	***150,877***	***99,416***	***93,749***

BILL OF MATERIALS - ELECTRICAL

Item	Quantity	Description	Manufacturer	Model #
1	855	PV Module 250 Watts Trina	Trina	TSM-PA05
2	25	Compact Combiner Box, 4 Ckt, 15 Amp Fused	SolarBos	CCS-04-15-4XP
3	2	Junction Box, NEMA-3R	TBD	TBD
4	4	Inverter, 240V, Grid Connected with DC Connecting Distributor	Fronius	IG Plus V 3.0-240
5	11	Inverter, 240V, Grid Connected with DC Connecting Distributor	Fronius	IG Plus V 6.0-240
6	8	Inverter, 240V, Grid Connected with DC Connecting Distributor	Fronius	IG Plus V 7.5-240
7	5	Inverter, 240V, Grid Connected with DC Connecting Distributor	Fronius	IG Plus V 10.0-240
8	1	Inverter, 240V, Grid Connected with DC Connecting Distributor	Fronius	IG Plus V 11.4-240
9	9	AC Sub-Panel, 100A, 240V, 1 Phase, 3 wire	TBD	TBD
10	2	AC Sub-Panel, 150A, 240V, 1 Phase, 3 wire	TBD	TBD
11	18	AC DISCONNECT SWITCH, FUSED, 100/200A, 240VAC, 2 POLE, VISIBLE BLADE DISCONNECT	TBD	TBD
12	2	AC DISCONNECT FUSE, 20 AMP		
13	2	AC DISCONNECT FUSE, 35 AMP		
14	3	AC DISCONNECT FUSE, 40 AMP		
15	2	AC DISCONNECT FUSE, 50 AMP		
17	3	AC DISCONNECT FUSE, 70 AMP		
18	2	AC DISCONNECT FUSE, 80 AMP		
19	2	AC DISCONNECT FUSE, 100 AMP		
20	2	AC DISCONNECT FUSE, 110 AMP		

REBATE INFORMATION

SITE SPECIFICATIONS:

PROJECT NAME: MADONNA ROAD
ZIP CODE: 93405
UTILITY: PG&E
CUSTOMER TYPE: RESIDENTIAL
INCENTIVE TYPE: EPBB

DESIGN BASIS (10 PANEL STRINGS):

MAXIMUM PV SYSTEM VOLTAGE:

V_{MAX} = STRING SIZE X (V_{OC} + (T_{COEFF} X (25−T_{EXP})))
V_{MAX} = 10 X (37.4V + (0.11968 X (25−−4.4)))
V_{MAX} = 10 X (37.4V + 3.524V)
V_{MAX} = 10 X 40.92V
V_{MAX} = 409.2V

DESIGN BASIS (11 PANEL STRINGS):

MAXIMUM PV SYSTEM VOLTAGE:

V_{MAX} = STRING SIZE X (V_{OC} + (T_{COEFF} X (25−T_{EXP})))
V_{MAX} = 11 X (37.4V + (0.11968 X (25−−4.4)))
V_{MAX} = 11 X (37.4V + 3.524V)
V_{MAX} = 11 X 40.92V
V_{MAX} = 450.2V

DESIGN BASIS (12 PANEL STRINGS):

MAXIMUM PV SYSTEM VOLTAGE:

V_{MAX} = STRING SIZE X (V_{OC} + (T_{COEFF} X (25−T_{EXP})))
V_{MAX} = 12 X (37.4V + (0.11968 X (25−−4.4)))
V_{MAX} = 12 X (37.4V + 3.524V)
V_{MAX} = 12 X 40.92V
V_{MAX} = 491.1V

DESIGN BASIS (13 PANEL STRINGS):

MAXIMUM PV SYSTEM VOLTAGE:

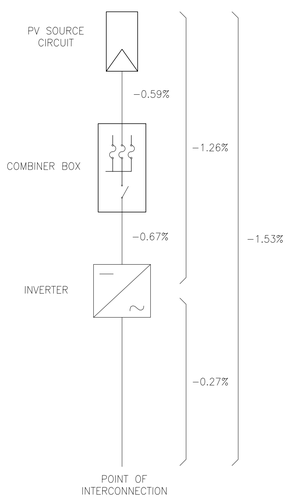
V_{MAX} = STRING SIZE X (V_{OC} + (T_{COEFF} X (25−T_{EXP})))
V_{MAX} = 13 X (37.4V + (0.11968 X (25−−4.4)))
V_{MAX} = 13 X (37.4V + 3.524V)
V_{MAX} = 13 X 40.92V
V_{MAX} = 532.0V

DESIGN BASIS (14 PANEL STRINGS):

MAXIMUM PV SYSTEM VOLTAGE:

V_{MAX} = STRING SIZE X (V_{OC} + (T_{COEFF} X (25−T_{EXP})))
V_{MAX} = 14 X (37.4V + (0.11968 X (25−−4.4)))
V_{MAX} = 14 X (37.4V + 3.524V)
V_{MAX} = 14 X 40.92V
V_{MAX} = 572.9V

VOLTAGE LOSS DIAGRAM



ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AF	AMP (FRAMED)
AIR	AIR HANDLING UNIT
AL	ALUMINUM
ARRA	AMERICAN RECOVERY & REINVESTMENT ACT
AWG	AMERICAN WIRE GAUGE
BKBD	BACKBOARD
CB	CIRCUIT BREAKER
CKT	CIRCUIT
COND	CONDUCTOR
COR	CONTRACTING OFFICER REPRESENTATIVE
COM	CONTRACTOR QUALITY MANAGEMENT
CSI	CALIFORNIA SOLAR INITIATIVE
CT	CURRENT TRANSFORMER
CU	COPPER
DAS	DATA ACQUISITION SYSTEM
DC	DIRECT CURRENT
DOR	DESIGNER OF RECORD
DSC	DISCONNECT SWITCH
DN	DOWN
DP	DOUBLE POLE
(E)	EXISTING
EC	ELECTRICAL CONTRACTOR
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ER	EXISTING TO BE REMOVED
G/GND	GROUND
FS	FUSIBLE SWITCH
FU	FUSE
GFI	GROUND FAULT INTERRUPTER
GS	GROUND SHOT (ELEVATION)
HZ	FREQUENCY (CYCLES PER SECOND)
JB	JUNCTION BOX
K	KEY OPERATED
KO	CONTRACTING OFFICER
KVA	KILOVOLT AMPHERE
KW	KILOWATT(S)
KWH	KILOWATT HOUR
L	LINE
mA	MILLIAMP
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MLO	MAIN LUGS ONLY
MCM	THOUSAND CIRCULAR MIL(S)
MSDS	MATERIAL SAFETY DATA SHEET
N	NEUTRAL
(N)	NEW
NAWS	NAVAL AIR WEAPONS STATION
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NF	NON FUSED
NO	NORMALLY OPEN
OCP	OVER CURRENT PROTECTION
PB	PANEL BOARD
PH	PHASE
P.O.C.	POINT OF CONNECTION
P.O.D.	POINT OF DISCONNECTION
PRI	PRIMARY
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
QA	QUALITY ASSURANCE
QC	QUALITY CONTROL
(R)	EXISTING RELOCATED
RECPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RMC	RIGID METAL CONDUIT
SL	SKY LIGHT
SN	SOLID NEUTRAL
SPVPS	SOLAR PHOTOVOLTAIC POWER SYSTEM
SW	SWITCH
SWBD	SWITCH BOARD
T	TELEPHONE
TB	TERMINAL BLOCK
TEFC	TOTALLY ENCLOSED FAN COOLED
TRANS	TRANSFORMER
TYP	TYPICAL
V	VOLT(S)
VA	VOLT AMPHERE(S)
VTA	VENT TO ATMOSPHERE
W	WATT
WA	WATT HOUR
WP	WEATHERPROOF

SYMBOLS:

TYPICAL PV ARRAY (PORTRAIT)
TYPICAL PV ARRAY
(E) CONDUIT RUNS EXPOSED ON ROOF OR WALL
(N) CONDUIT RUN EXPOSED ON ROOF OR WALL
(N) CONDUIT RUN UNDERGROUND
CONDUIT TURNED DOWN
CONDUIT TURNED UP
FUSED COMBINER BOX W/DISCONNECT
COMBINER BOX
AC OR DC DISCONNECT SWITCH
FUSE
FUSE
FUSED SWITCH
FUSED SWITCH

DC/AC POWER CONDITIONING SYSTEM (INVERTER)
CIRCUIT BREAKER
EARTH GROUND
CHASIS GROUND
POWER TRANSFORMER
DELTA Y TRANSFORMER
DELTA DELTA TRANSFORMER

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ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER ROBERTO RIVERA NO. 16743 Exp. 9/30/12 ELECTRICAL STATE OF CALIFORNIA

ROBERTO RIVERA, P.E. NO. 16743 — DATE: 09/10/12

REV.	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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6977 NAVAJO RD., SUITE 139
SAN DIEGO, CA 92119
PHONE: 858.270.9333
FAX: 858.270.9334

OWNER/CLIENT:

MADONNA ROAD APARTMENTS
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

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SAVE MONEY. SAVE THE PLANET.

EVERYDAY ENERGY
5865 AVENIDA ENCINAS,
SUITE 142A
CARLSBAD, CA, 92008
P: (760) 607-7200

TITLE: GENERAL ABBREVIATIONS, NOTES & SYMBOLS
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION: 1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 - 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: G2.1
2 OF 30

100% CONSTRUCTION DRAWINGS

PV EQUIPMENT STAGING PLAN

SCALE: 1"=40'

AERIAL VIEW

NOT TO SCALE

SITE STAGING NOTES:

1. TAKE EXTRA CARE WHEN PLACING PV MODULE CRATES ON THE ROOF. PLACE PLYWOOD ON THE SURFACE TO PROTECT THE MEMBRANE.
2. WHEN LIFTING PV MODULE CRATES ONTO THE ROOF, BE SURE THAT THE ROOF IS CAPABLE OF SUPPORTING THE ADDITIONAL DEAD WEIGHT LOAD OF THESE CRATES AND THAT THE LOAD IS DISTRIBUTED EVENLY.
3. PLEASE SEE PANEL CLAW STRUCTURAL SHEETS AND STRUCTURAL CALCULTIONS FOR ADDITIONAL NOTES ON ROOF DEAD LOADS AND STAGING MATERIALS.
4. BE SURE THAT THE CRANE OPERATOR IS IN CONTINUOUS COMMUNICATIONS WITH THE REPRESENTATIVES ON THE ROOF WHEN PLACING CRATES. DURING THIS OPERATION, ALL WORKERS MUST BE WEARING OSHA APPROVED HEAD PROTECTION AND STEEL TOED SHOES.
5. WHEN LANDING CRATES ON THE ROOF, MAKE SURE THAT THE CRATE IS FACING THE CORRECT DIRECTION FOR PANEL REMOVAL.
6. WHEN ROOF SLOPES ARE GREATER THAN 20°, TAKE NECESSARY PRECAUTIONS WHEN STAGING ROOFTOP EQUIPMENT IN LANDING AREA LOCATIONS.
7. COORDINATE CRANE LIFT LOCATIONS WITH FACILITIES MANAGER AND VERIFY THAT THESE LOCATINS ARE SAFE.

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
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TITLE:
PV EQUIPMENT STAGING PLAN
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

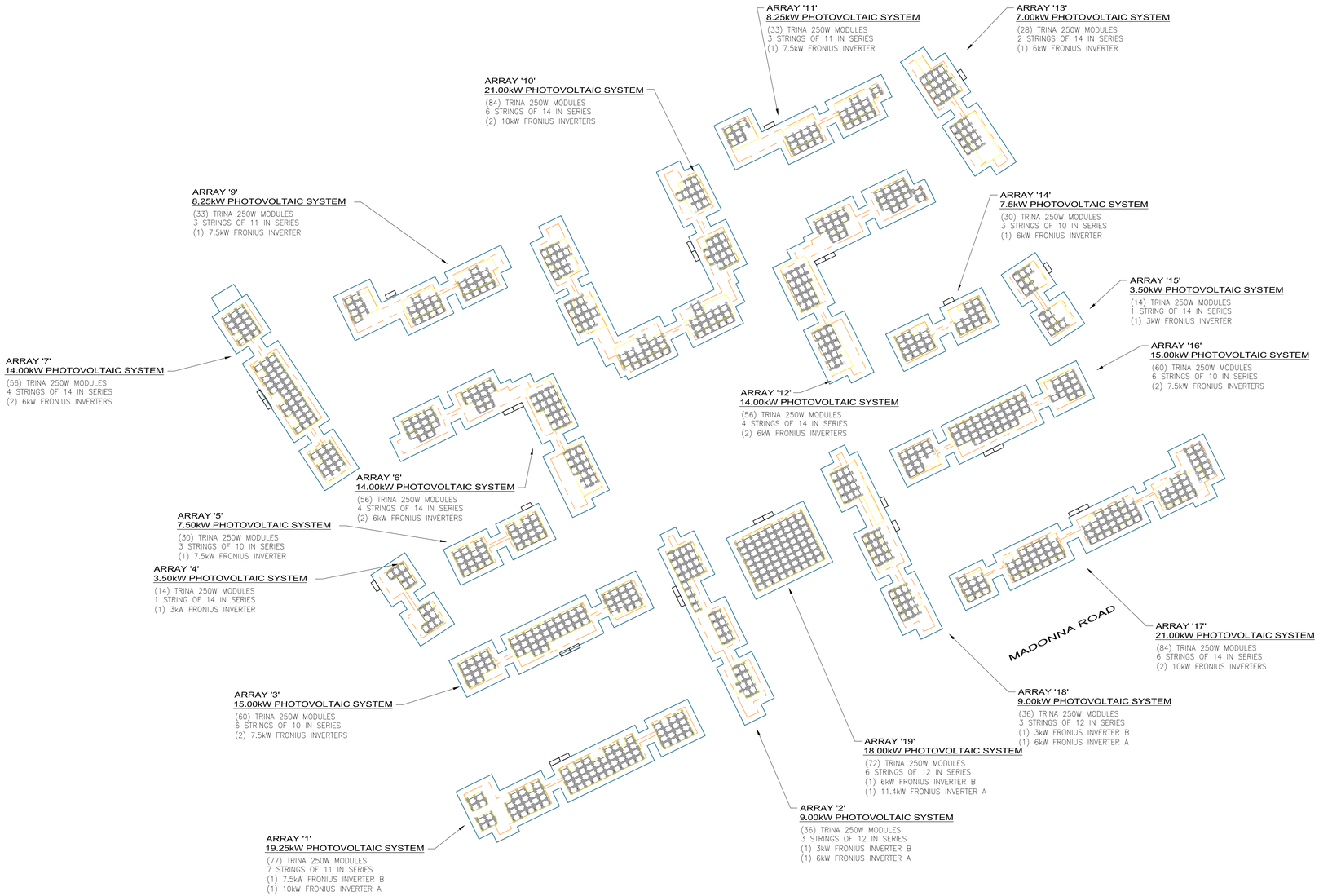
PROJECT NO.: 038 – 108

APN: 140-040-003

DATE: SEPTEMBER 10, 2012

SHEET NO.: G2.2

100% CONSTRUCTION DRAWINGS



OVERALL PV SITE PLAN

SCALE: 1"=40'

AERIAL VIEW

NOT TO SCALE

ARRAY MOUNTING NOTES:

1. THE INSTALLATION CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS TO MAINTAIN THE ROOF WARRANTY AS SPECIFIED BY CURRENT ROOFING MATERIAL MANUFACTURER. ALL ROOFTOP PENETRATIONS SHALL BE OF AN APPROVED METHOD.
2. WHEN LOADING THE ROOF WITH CONSTRUCTION MATERIALS, THE INSTALLATION CONTRACTOR WILL BE RESPONSIBLE FOR PLACING AN APPROVED MEANS OF PROTECTION BELOW EACH PALLET OF MATERIALS TO PREVENT DAMAGE AND/OR INADVERTENT PENETRATIONS. ANY DAMAGE THAT OCCURS FROM IMPROPERLY PROTECTED MATERIALS WILL BE THE RESPONSIBILITY OF THE INSTALLATION CONTRACTOR TO REPAIR.
3. THE INSTALLATION CONTRACTOR WILL BE RESPONSIBLE FOR FOLLOWING ALL PROVIDED ROOFING LOADING DIAGRAMS. THE CONTRACTOR MUST VERIFY WITH CONSTRUCTION MANAGER FOR ALL LOCATIONS WHERE MATERIALS ARE TO BE STORED.
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GENERAL NOTES:

1. THE GENERAL LAYOUT OF ROOFTOP PV EQUIPMENT SHOWN MAY BE SLIGHTLY ADJUSTED TO SUIT EXISTING CONDITIONS.
2. VARIABLE ROOF SLOPES AND EXISTING DRAINAGE AREAS WILL REQUIRE FIELD VERIFICATION OF IIRONRIDGE RACKING ROOF PENETRATION LOCATIONS PRIOR TO INSTALLATION OF PHOTOVOLTAIC SYSTEM.
3. EXISTING ROOFTOP AREA WHERE PHOTOVOLTAIC SYSTEM WILL BE INSTALLED IS APPROXIMATELY (64,317) FT².
4. CONTRACTOR TO COVER EXISTING SKYLIGHTS WITH MATCHING CORREGATED ROOFING MATERIAL.

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ELECTRICAL
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P: (760) 607-7200

TITLE: OVERALL PV SITE PLAN

PHOTOVOLTAIC SYSTEM

PROJECT LOCATION: 1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108

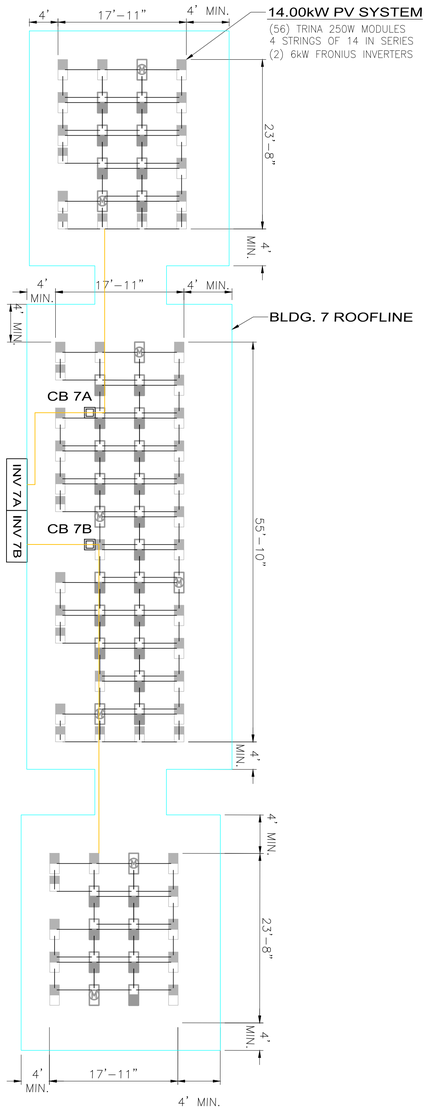
APN: 140-040-003

DATE: SEPTEMBER 10, 2012

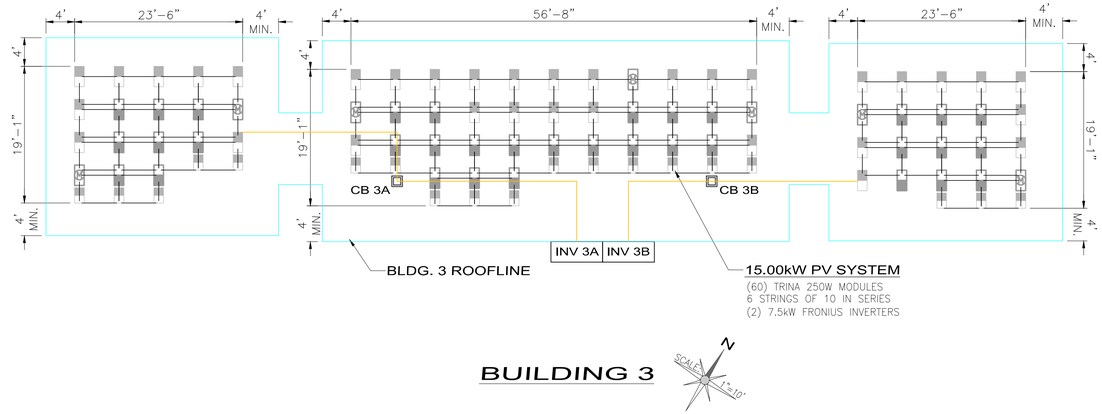
SHEET NO.: E3.1

4 OF 30

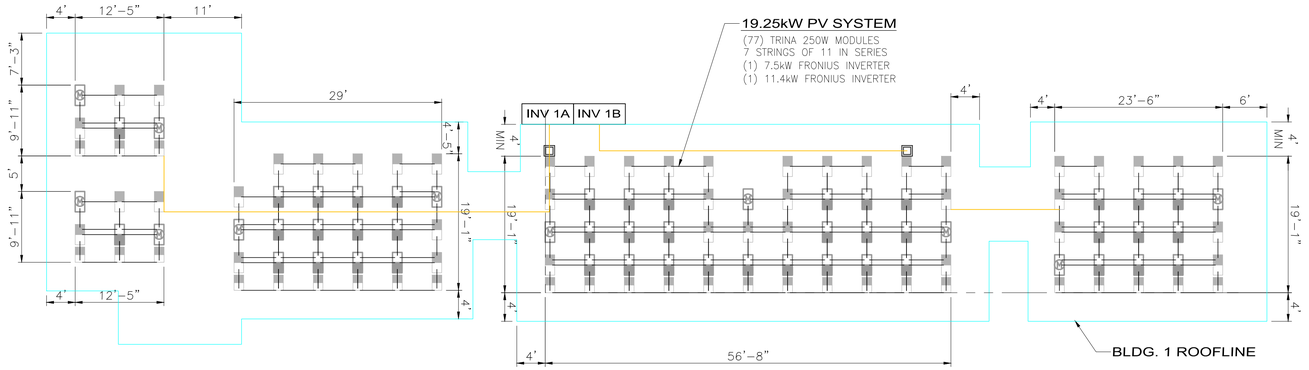
100% CONSTRUCTION DRAWINGS



BUILDING 7



BUILDING 3



BUILDING 1

AERIAL VIEW

NOT TO SCALE

ARRAY MOUNTING NOTES:

1. THE INSTALLATION CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS TO MAINTAIN THE ROOF WARRANTY AS SPECIFIED BY CURRENT ROOFING MATERIAL MANUFACTURER. ALL ROOFTOP PENETRATIONS SHALL BE OF AN APPROVED METHOD.
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GENERAL NOTES:

1. THE GENERAL LAYOUT OF ROOFTOP PV EQUIPMENT SHOWN MAY BE SLIGHTLY ADJUSTED TO SUIT EXISTING CONDITIONS.
2. VARIABLE ROOF SLOPES AND EXISTING DRAINAGE AREAS WILL REQUIRE FIELD VERIFICATION OF PANEL CLAW RACKING ROOF PENETRATION LOCATIONS PRIOR TO INSTALLATION OF PHOTOVOLTAIC SYSTEM.
3. EXISTING ROOFTOP AREA WHERE PHOTOVOLTAIC SYSTEM WILL BE INSTALLED IS APPROXIMATELY (64,317) FT².

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

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TITLE: PV ROOFTOP LAYOUT
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION: 1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108

APN: 140-040-003

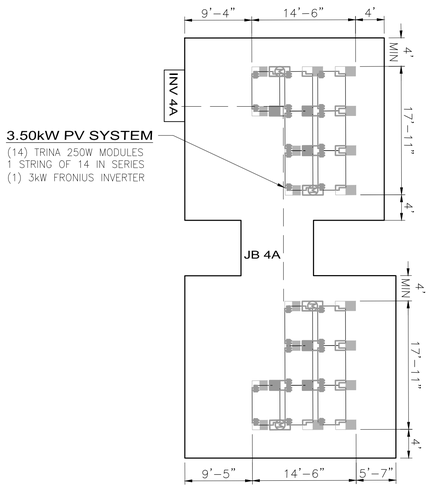
DATE: SEPTEMBER 10, 2012

SHEET NO.: E3.2

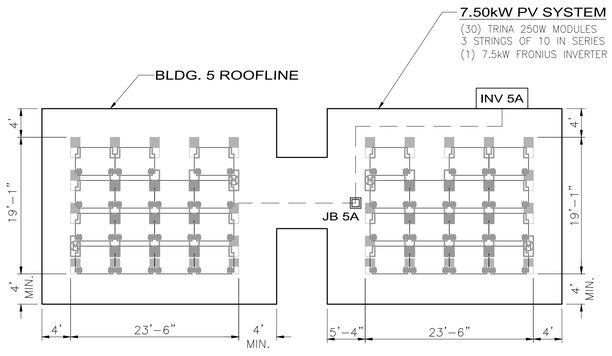
5 OF 30

100% CONSTRUCTION DRAWINGS

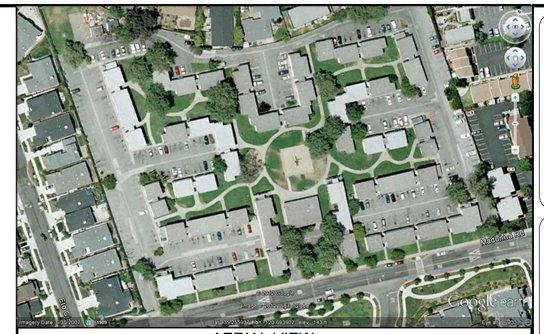
PV ROOFTOP LAYOUT - BUILDINGS 1, 3, & 7
SCALE: 1"=10'



BUILDING 4



BUILDING 5



AERIAL VIEW

NOT TO SCALE

ARRAY MOUNTING NOTES:

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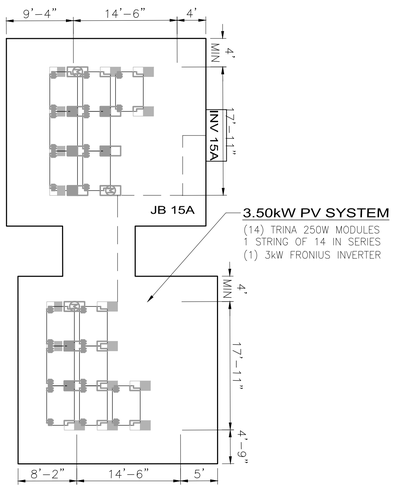
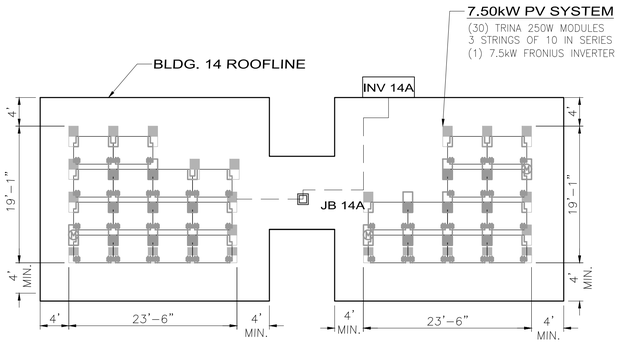
3. EXISTING ROOFTOP AREA WHERE PHOTOVOLTAIC SYSTEM WILL BE INSTALLED IS APPROXIMATELY (64,317) FT².



BUILDING 15



BUILDING 14

PV ROOFTOP LAYOUT - BUILDINGS 4, 5, 14, 15

SCALE: 1"=10'

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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OWNER/CLIENT:

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P: (760) 607-7200

TITLE: PV ROOFTOP LAYOUT PHOTOVOLTAIC SYSTEM

PROJECT LOCATION: 1550 MADONNA ROAD SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108

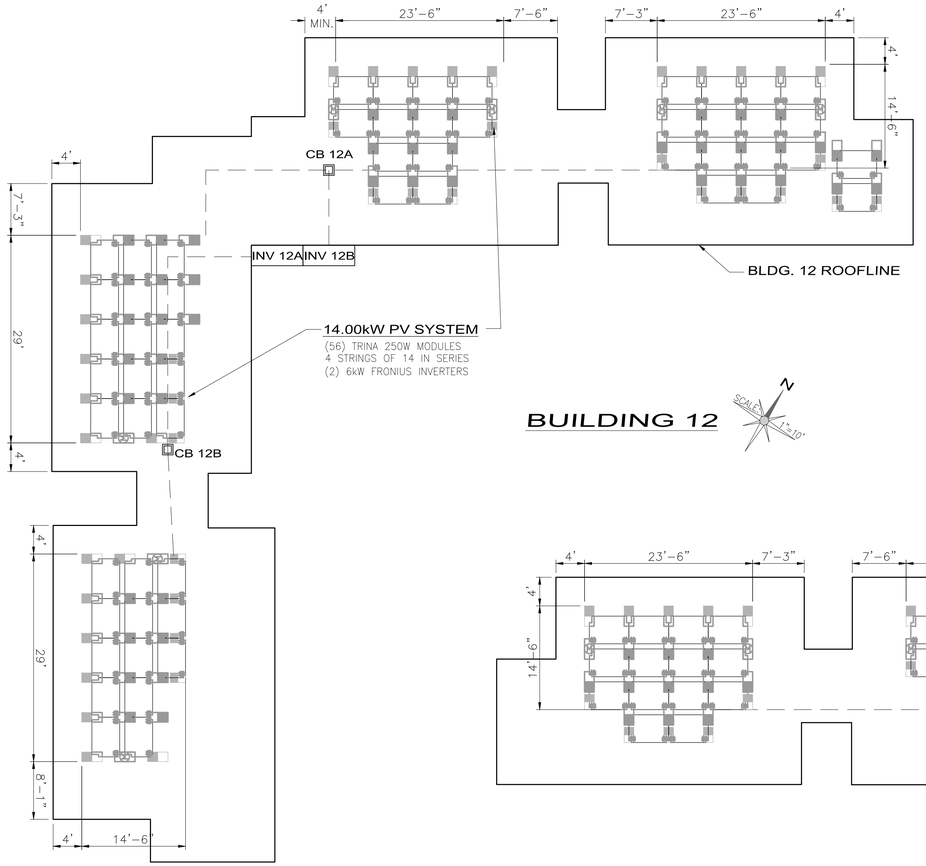
APN: 140-040-003

DATE: SEPTEMBER 10, 2012

SHEET NO.: E3.3

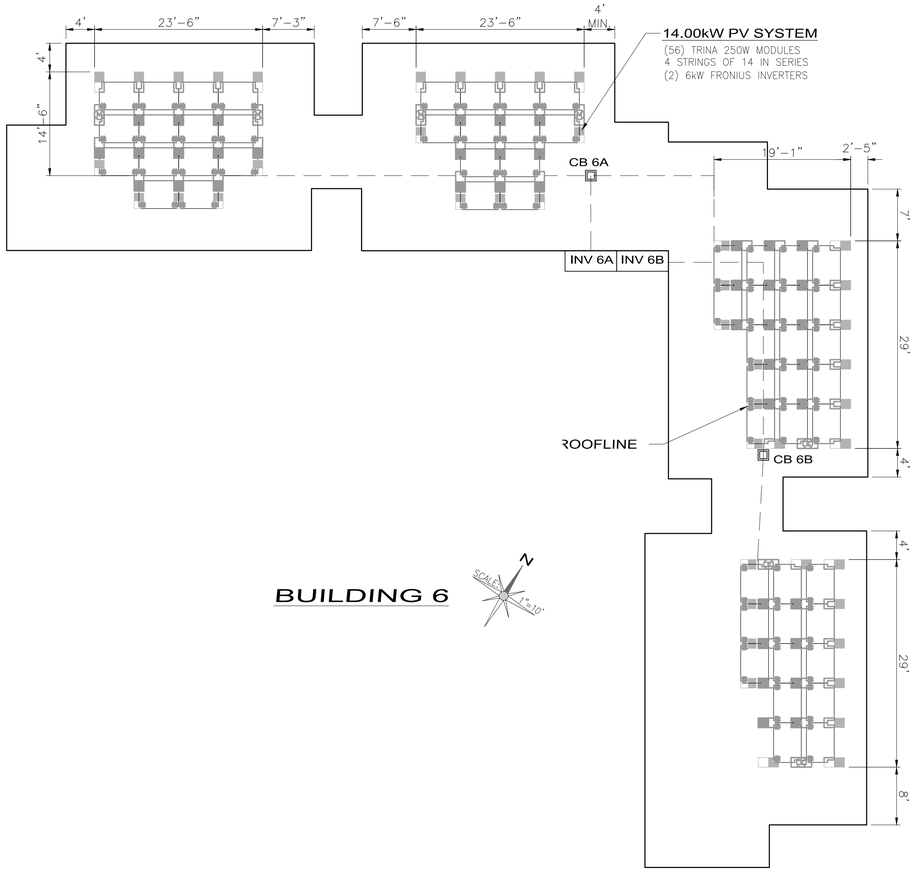
6 OF 30

100% CONSTRUCTION DRAWINGS



BUILDING 12

SCALE: 1"=10'



BUILDING 6

SCALE: 1"=10'

PV ROOFTOP LAYOUT - BUILDINGS 6 & 12

SCALE: 1"=10'

AERIAL VIEW

NOT TO SCALE

ARRAY MOUNTING NOTES:

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GENERAL NOTES:

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2. VARIABLE ROOF SLOPES AND EXISTING DRAINAGE AREAS WILL REQUIRE FIELD VERIFICATION OF PANEL CLAW RACKING ROOF PENETRATION LOCATIONS PRIOR TO INSTALLATION OF PHOTOVOLTAIC SYSTEM.
3. EXISTING ROOFTOP AREA WHERE PHOTOVOLTAIC SYSTEM WILL BE INSTALLED IS APPROXIMATELY (64,317) FT².

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
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ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

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TITLE: PV ROOFTOP LAYOUT
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

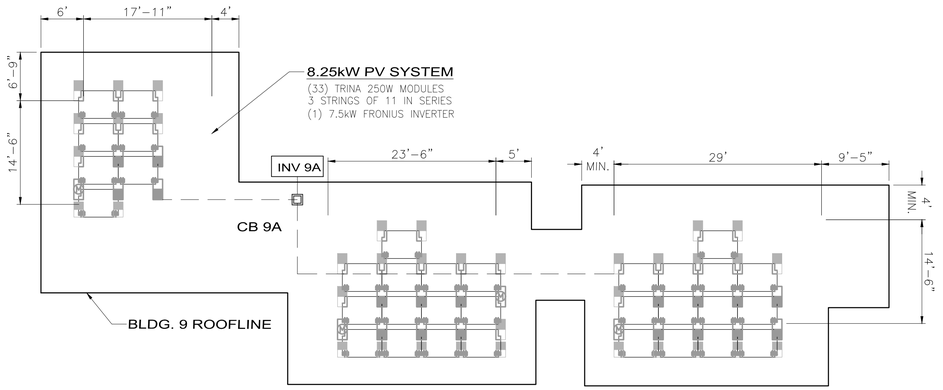
PROJECT NO.: 038 – 108

APN: 140-040-003

DATE: SEPTEMBER 10, 2012

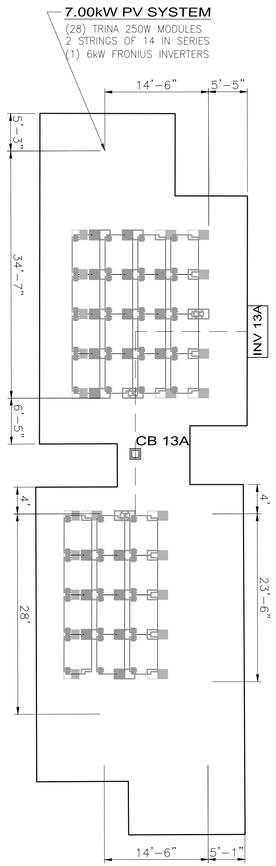
SHEET NO.: E3.4

100% CONSTRUCTION DRAWINGS



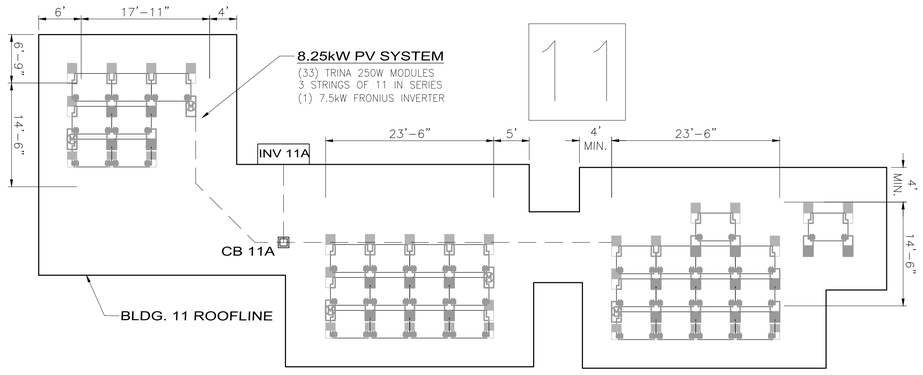
BUILDING 9

SCALE: 1"=10'



BUILDING 13

SCALE: 1"=10'



BUILDING 11

SCALE: 1"=10'

PV ROOFTOP LAYOUT - BUILDINGS 9, 11, & 13

SCALE: 1"=10'

AERIAL VIEW

NOT TO SCALE

ARRAY MOUNTING NOTES:

1. THE INSTALLATION CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS TO MAINTAIN THE ROOF WARRANTY AS SPECIFIED BY CURRENT ROOFING MATERIAL MANUFACTURER. ALL ROOFTOP PENETRATIONS SHALL BE OF AN APPROVED METHOD.
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3. EXISTING ROOFTOP AREA WHERE PHOTOVOLTAIC SYSTEM WILL BE INSTALLED IS APPROXIMATELY (64,317) FT².

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P: (760) 607-7200

TITLE:
PV ROOFTOP LAYOUT
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

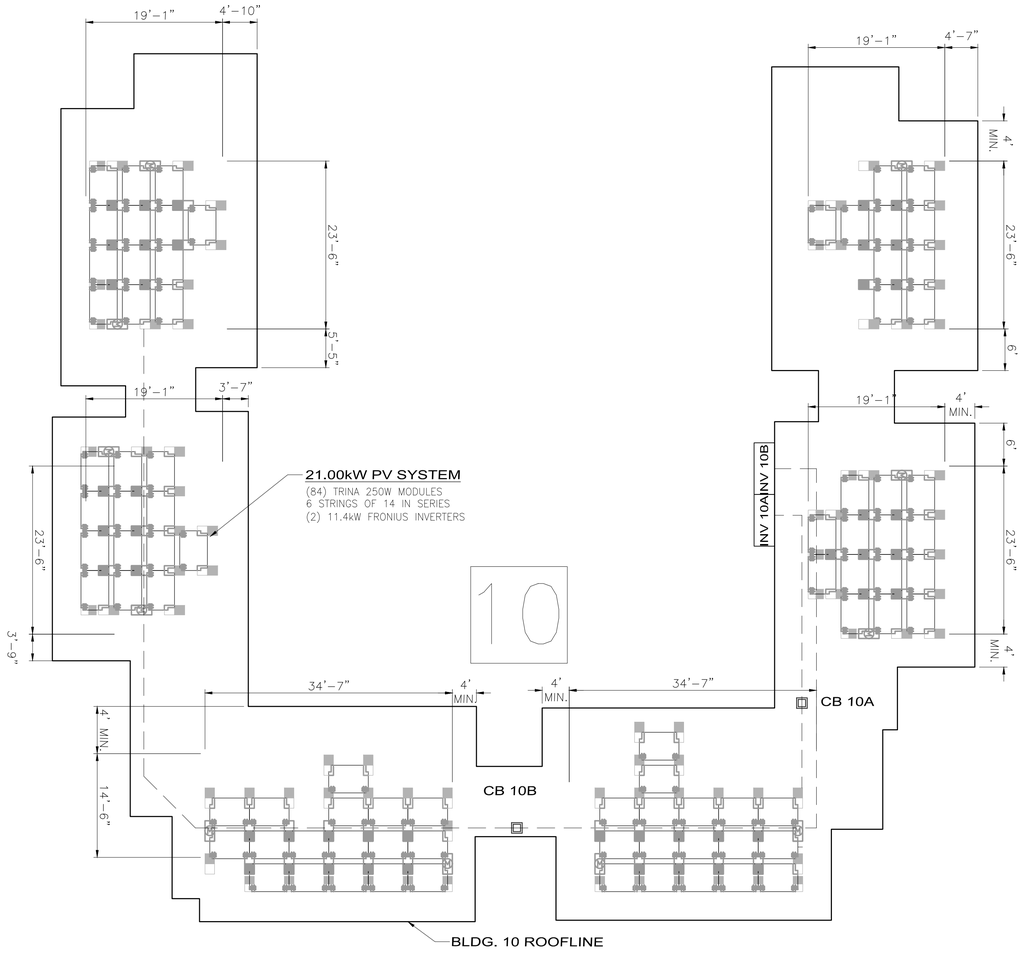
PROJECT NO.: 038 – 108

APN: 140-040-003

DATE: SEPTEMBER 10, 2012

SHEET NO.: E3.5

100% CONSTRUCTION DRAWINGS



BUILDING 10

SCALE: 1"=10'

PV ROOFTOP LAYOUT - BUILDING 10

SCALE: 1"=10'

AERIAL VIEW

NOT TO SCALE

ARRAY MOUNTING NOTES:

1. THE INSTALLATION CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS TO MAINTAIN THE ROOF WARRANTY AS SPECIFIED BY CURRENT ROOFING MATERIAL MANUFACTURER. ALL ROOFTOP PENETRATIONS SHALL BE OF AN APPROVED METHOD.
2. WHEN LOADING THE ROOF WITH CONSTRUCTION MATERIALS, THE INSTALLATION CONTRACTOR WILL BE RESPONSIBLE FOR PLACING AN APPROVED MEANS OF PROTECTION BELOW EACH PALLET OF MATERIALS TO PREVENT DAMAGE AND/OR INADVERTENT PENETRATIONS. ANY DAMAGE THAT OCCURS FROM IMPROPERLY PROTECTED MATERIALS WILL BE THE RESPONSIBILITY OF THE INSTALLATION CONTRACTOR TO REPAIR.
3. THE INSTALLATION CONTRACTOR WILL BE RESPONSIBLE FOR FOLLOWING ALL PROVIDED ROOFING LOADING DIAGRAMS. THE CONTRACTOR MUST VERIFY WITH CONSTRUCTION MANAGER FOR ALL LOCATIONS WHERE MATERIALS ARE TO BE STORED.
4. WHEN WORKING ON THE ROOF, CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A MEANS OF FALL PROTECTION WHEN WORKING IN AREAS WITHIN 6' OF THE ROOFS EDGES OR A 3' CHANGE IN ELEVATION. THIS FALL PROTECTION EQUIPMENT MUST MEET OR EXCEED THE REQUIREMENTS OF OSHA AND CONSTELLATION AS SPECIFIED IN THEIR FALL PROTECTION REGULATIONS.

GENERAL NOTES:

1. THE GENERAL LAYOUT OF ROOFTOP PV EQUIPMENT SHOWN MAY BE SLIGHTLY ADJUSTED TO SUIT EXISTING CONDITIONS.
2. VARIABLE ROOF SLOPES AND EXISTING DRAINAGE AREAS WILL REQUIRE FIELD VERIFICATION OF PANEL CLAW RACKING ROOF PENETRATION LOCATIONS PRIOR TO INSTALLATION OF PHOTOVOLTAIC SYSTEM.
3. EXISTING ROOFTOP AREA WHERE PHOTOVOLTAIC SYSTEM WILL BE INSTALLED IS APPROXIMATELY (64,317) FT².

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1.	9/10/12	100% CONSTRUCTION DRAWINGS

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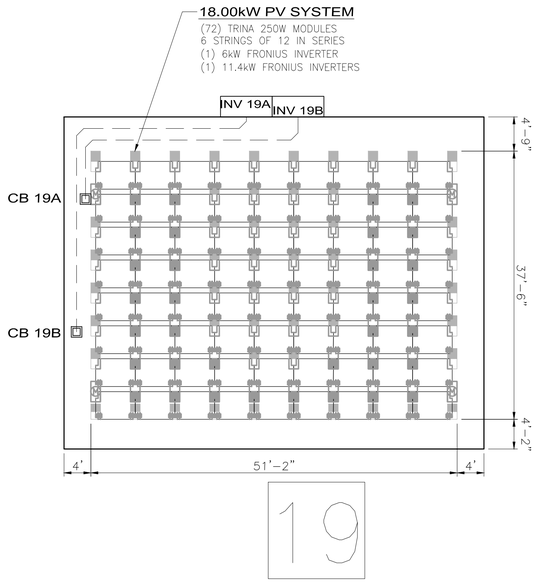
TITLE: PV ROOFTOP LAYOUT
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E3.6

100% CONSTRUCTION DRAWINGS



BUILDING 19 SCALE: 1"=10'

PV ROOFTOP LAYOUT - BUILDING 19
SCALE: 1"=10'

AERIAL VIEW
NOT TO SCALE

ARRAY MOUNTING NOTES:

1. THE INSTALLATION CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS TO MAINTAIN THE ROOF WARRANTY AS SPECIFIED BY CURRENT ROOFING MATERIAL MANUFACTURER. ALL ROOFTOP PENETRATIONS SHALL BE OF AN APPROVED METHOD.
2. WHEN LOADING THE ROOF WITH CONSTRUCTION MATERIALS, THE INSTALLATION CONTRACTOR WILL BE RESPONSIBLE FOR PLACING AN APPROVED MEANS OF PROTECTION BELOW EACH PALLET OF MATERIALS TO PREVENT DAMAGE AND/OR INADVERTENT PENETRATIONS. ANY DAMAGE THAT OCCURS FROM IMPROPERLY PROTECTED MATERIALS WILL BE THE RESPONSIBILITY OF THE INSTALLATION CONTRACTOR TO REPAIR.
3. THE INSTALLATION CONTRACTOR WILL BE RESPONSIBLE FOR FOLLOWING ALL PROVIDED ROOFING LOADING DIAGRAMS. THE CONTRACTOR MUST VERIFY WITH CONSTRUCTION MANAGER FOR ALL LOCATIONS WHERE MATERIALS ARE TO BE STORED.
4. WHEN WORKING ON THE ROOF, CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A MEANS OF FALL PROTECTION WHEN WORKING IN AREAS WITHIN 6' OF THE ROOFS EDGES OR A 3' CHANGE IN ELEVATION. THIS FALL PROTECTION EQUIPMENT MUST MEET OR EXCEED THE REQUIREMENTS OF OSHA AND CONSTELLATION AS SPECIFIED IN THEIR FALL PROTECTION REGULATIONS.

GENERAL NOTES:

1. THE GENERAL LAYOUT OF ROOFTOP PV EQUIPMENT SHOWN MAY BE SLIGHTLY ADJUSTED TO SUIT EXISTING CONDITIONS.
2. VARIABLE ROOF SLOPES AND EXISTING DRAINAGE AREAS WILL REQUIRE FIELD VERIFICATION OF PANEL CLAW RACKING ROOF PENETRATION LOCATIONS PRIOR TO INSTALLATION OF PHOTOVOLTAIC SYSTEM.
3. EXISTING ROOFTOP AREA WHERE PHOTOVOLTAIC SYSTEM WILL BE INSTALLED IS APPROXIMATELY (64,317) FT².

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
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Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12
ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

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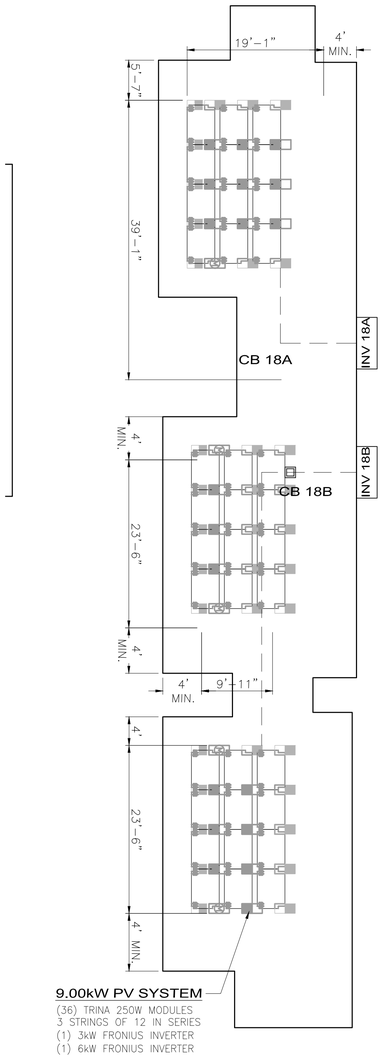
TITLE:
PV ROOFTOP LAYOUT
PHOTOVOLTAIC SYSTEM

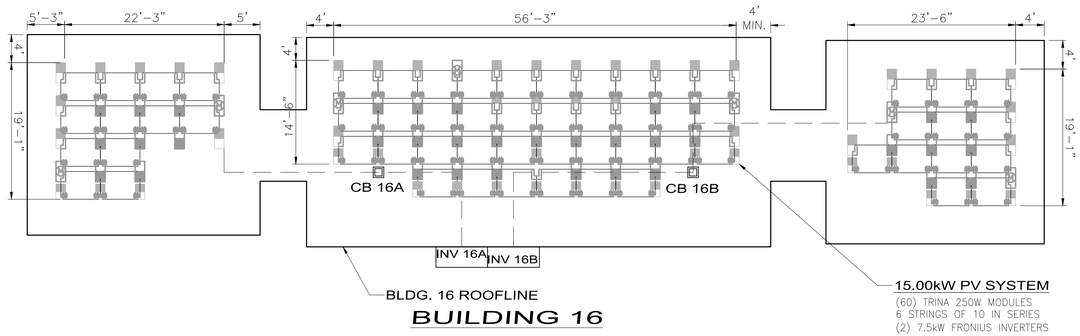
PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108
APN: 140–040–003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E3.7

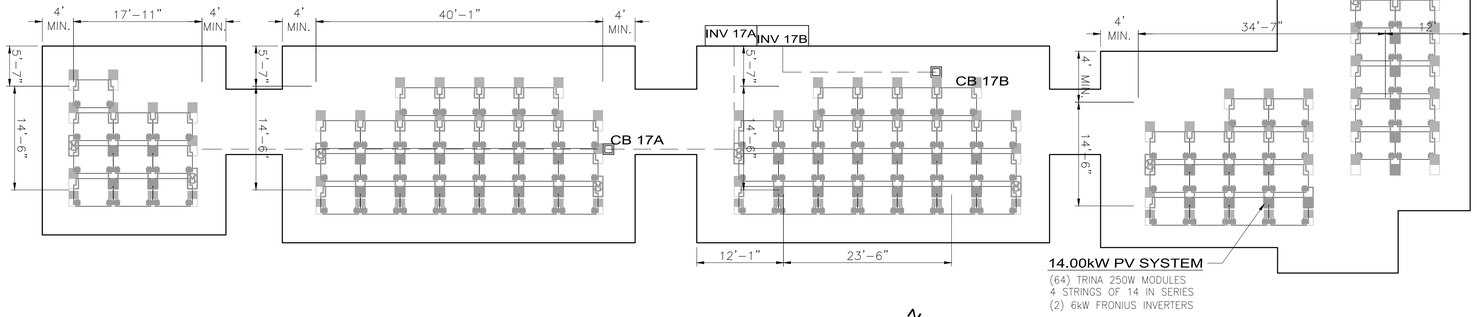
100% CONSTRUCTION DRAWINGS



BUILDING 18



BUILDING 16



BUILDING 17

AERIAL VIEW

NOT TO SCALE

ARRAY MOUNTING NOTES:

1. THE INSTALLATION CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS TO MAINTAIN THE ROOF WARRANTY AS SPECIFIED BY CURRENT ROOFING MATERIAL MANUFACTURER. ALL ROOFTOP PENETRATIONS SHALL BE OF AN APPROVED METHOD.
2. WHEN LOADING THE ROOF WITH CONSTRUCTION MATERIALS, THE INSTALLATION CONTRACTOR WILL BE RESPONSIBLE FOR PLACING AN APPROVED MEANS OF PROTECTION BELOW EACH PALLET OF MATERIALS TO PREVENT DAMAGE AND/OR INADVERTENT PENETRATIONS. ANY DAMAGE THAT OCCURS FROM IMPROPERLY PROTECTED MATERIALS WILL BE THE RESPONSIBILITY OF THE INSTALLATION CONTRACTOR TO REPAIR.
3. THE INSTALLATION CONTRACTOR WILL BE RESPONSIBLE FOR FOLLOWING ALL PROVIDED ROOFING LOADING DIAGRAMS. THE CONTRACTOR MUST VERIFY WITH CONSTRUCTION MANAGER FOR ALL LOCATIONS WHERE MATERIALS ARE TO BE STORED.
4. WHEN WORKING ON THE ROOF, CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A MEANS OF FALL PROTECTION WHEN WORKING IN AREAS WITHIN 6' OF THE ROOFS EDGES OR A 3' CHANGE IN ELEVATION. THIS FALL PROTECTION EQUIPMENT MUST MEET OR EXCEED THE REQUIREMENTS OF OSHA AND CONSTELLATION AS SPECIFIED IN THEIR FALL PROTECTION REGULATIONS.

GENERAL NOTES:

1. THE GENERAL LAYOUT OF ROOFTOP PV EQUIPMENT SHOWN MAY BE SLIGHTLY ADJUSTED TO SUIT EXISTING CONDITIONS.
2. VARIABLE ROOF SLOPES AND EXISTING DRAINAGE AREAS WILL REQUIRE FIELD VERIFICATION OF PANEL CLAW RACKING ROOF PENETRATION LOCATIONS PRIOR TO INSTALLATION OF PHOTOVOLTAIC SYSTEM.
3. EXISTING ROOFTOP AREA WHERE PHOTOVOLTAIC SYSTEM WILL BE INSTALLED IS APPROXIMATELY (64,317) FT².

PV ROOFTOP LAYOUT - BUILDINGS 16, 17, 18

SCALE: 1"=10'

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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TITLE: PV ROOFTOP LAYOUT
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108

APN: 140-040-003

DATE: SEPTEMBER 10, 2012

SHEET NO.: E3.8

11 OF 30

100% CONSTRUCTION DRAWINGS

INVERTER LOCATION PLAN

SCALE: 1"=30'

AERIAL VIEW

NOT TO SCALE

GENERAL NOTES:

1. THE INSTALLATION CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS TO MAINTAIN EXISTING ACCESS WITH FORKLIFTS AND FACILITY EQUIPMENT. REMOVEABLE BOLLARDS SHALL BE UTILIZED IN LOCATIONS THAT ENCROACH UPON MOTORIZED EQUIPMENT AREAS.
2. THE INSTALLATION CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO HOUSE KEEPING PAD AND INVERTER INSTALLATION. PLEASE COORDINATE FINAL INVERTER LOCATIONS WITH FACILITY ENGINEERING MANAGEMENT.
3. THE INSTALLATION CONTRACTOR WILL BE RESPONSIBLE FOR HAVING FINAL INVERTER LOCATIONS APPROVED BY FACILITY PERSONNEL PRIOR TO INSTALLATION.
4. INSTALLATION CONTRACTOR SHALL VERIFY ALL EQUIPMENT ACCESS CLEARANCES PER 2008 NEC.
5. INSTALL AC DISCONNECTING MEANS WITHIN 25' OF POCC.

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

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TITLE: INVERTER LOCATION PLAN
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E3.9

100% CONSTRUCTION DRAWINGS

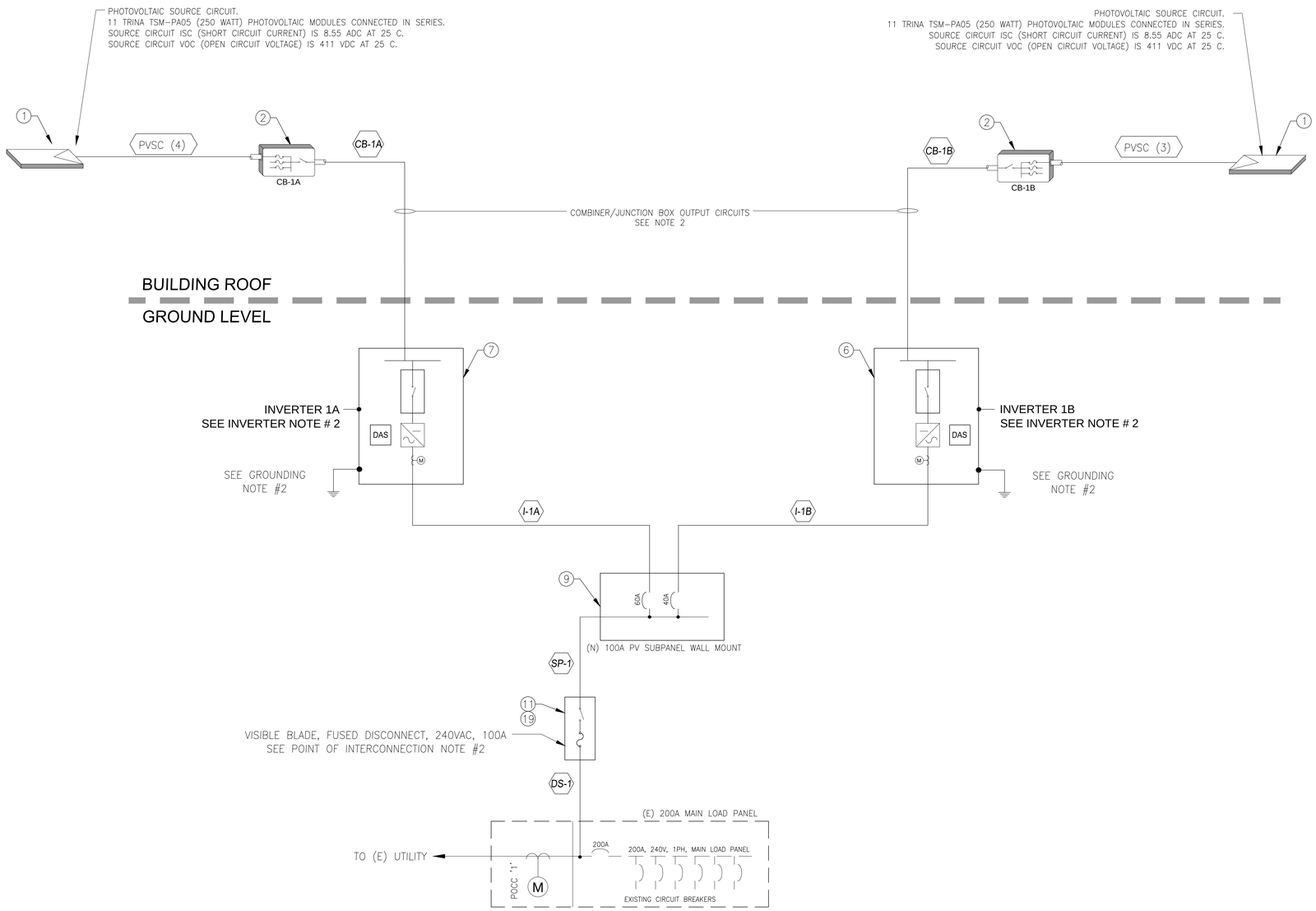

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.64%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-1A	CBOC	1	35	6	THWN/THHN-2	0.35%	#10	THWN/THHN-2 (GREEN)	-	-	Fuse	1" EMT	40
CB-1B	CBOC	1	77	6	THWN/THHN-2	0.58%	#10	THWN/THHN-2 (GREEN)	-	-	Fuse	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-1A	IOC	3	10	6	THWN/THHN-2	0.16%	8	THWN/THHN-2	EGC	60	CB	1" EMT	40
I-1B	IOC	3	10	8	THWN/THHN-2	0.19%	8	THWN/THHN-2	EGC	40	CB	1" EMT	40
SP-1	IOC	3	25	3	THWN/THHN-2	0.35%	8	THWN/THHN-2	EGC	100	CB	1-1/2" EMT	40
DS-1	IOC	3	25	3	THWN/THHN-2	0.35%	8	THWN/THHN-2	EGC	100	CB	1-1/2" EMT	40

SINGLE LINE WIRING DIAGRAM - UNIT 1

SINGLE LINE DIAGRAM NOTES:

1. ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH ALL LOCAL AND ELECTRICAL BUILDING CODES. THE INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE SEISMIC REGULATIONS.
2. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED WITH THE AC GROUNDING ELECTRODE.
3. COMBINER BOXES SHALL BE NEMA-4 ENCLOSURES OR BETTER.
4. ALL PV SOURCE CIRCUIT WIRES SHALL BE RHW/USE-2 SUNLIGHT RESISTANT OR XHHW-2.
5. #10-AWG BARE COPPER GROUND SHALL BE USED AS AN EQUIPMENT GROUND TO BOND THE MOUNTING SYSTEM TO THE OTHER PV SYSTEM EQUIPMENT AND TERMINATE IN THE COMBINER BOX. COMBINER BOX EQUIPMENT GROUND SHALL BE RUN IN SERIES AND TERMINATED IN THE INVERTER(S).

GROUNDING NOTES:

1. ALL BARE COPPER GROUND WIRING RUNNING BETWEEN ARRAYS SHALL BE PROTECTED FROM INADVERTENT DAMAGE BY BEING ROUTED INSIDE ACCEPTABLE CONDUIT OR WIREWAY. ALL CONDUITS OR WIREWAYS MUST BE NEATLY INSTALLED AND ATTACHED SECURELY TO THE MOUNTING SYSTEM.
2. THE GROUNDING ELECTRODE CONDUCTOR (GEC) ON THE AC SIDE OF THE SYSTEM SHALL BE TIED TO A CODE COMPLIANT GROUND ROD NEXT TO THE INVERTER OR AN EXISTING GEC POINT AT THE POCC.

GENERAL EQUIPMENT NOTES:

1. CIRCLE CALL-OUTS INDICATE BILL OF MATERIALS ITEM NUMBER AND IDENTIFY THE EQUIPMENT USED:
   - (2) INDICATES ITEM 2, COMBINER BOX
   - (3) INDICATES ITEM 3, JUNCTION BOX
   - (4) THRU (8) INDICATES ITEMS 4-8, INVERTER
   - PVSC (3) INDICATES CIRCUIT TYPE AND NUMBER OF STRINGS
2. COMBINER/JUNCTION BOX OUTPUT CIRCUITS: EQUAL NUMBER OF CONDUCTORS FOR POSITIVE AND NEGATIVE COMBINER TERMINALS (1) 10-AWG GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) REFER TO TABLE 1A FOR OUTPUT CONDUCTOR AND CONDUIT SIZING
3. ALL CONDUCTORS ARE COPPER.
4. ALL ENCLOSURES ARE NEMA-4 UNLESS OTHERWISE NOTED.
5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRICAL UTILITY COMPANY AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
6. COMBINER/JUNCTION BOXES ARE IDENTIFIED BY INVERTER DESIGNATION:
   INVERTER 1A: CB-1A
   INVERTER 1B: CB-1B
7. WHEN TRANSITIONING FROM RHW/USE-2 IN THE PV SOURCE CIRCUIT TO THHN/THWN-2, CONTRACTOR SHALL UTILIZE WATERTIGHT (NEMA-3R) JUNCTION BOX AND POLARIS CONNECTOR.

INVERTER NOTES:

1. INSTALLATION CONTRACTOR SHALL INSTALL COMBINER BOX OUTPUT CIRCUIT ON THE "COMBINED" INPUT CIRCUIT OF THE INVERTER. CONSULT INVERTER MANUAL FOR PROPER INSTALLATION OF REQUIRED CONNECTING DISTRIBUTORS.
2. INVERTERS ARE IDENTIFIED BY UNIT NUMBER AND LETTER. FOR UNIT 1 INVERTER DESIGNATIONS ARE: INV 1A AND 1B

POINT OF INTERCONNECTION NOTES:

1. CONNECT FUSED DISCONNECT TO BUS BAR ON LINE SIDE OF SERVICE PANEL. THIS IS A LINE SIDE TAP.
2. ATTACH PLACARDS PER APPLICABLE PLACARD SHEET INSTRCUCTIONS.

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12
ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

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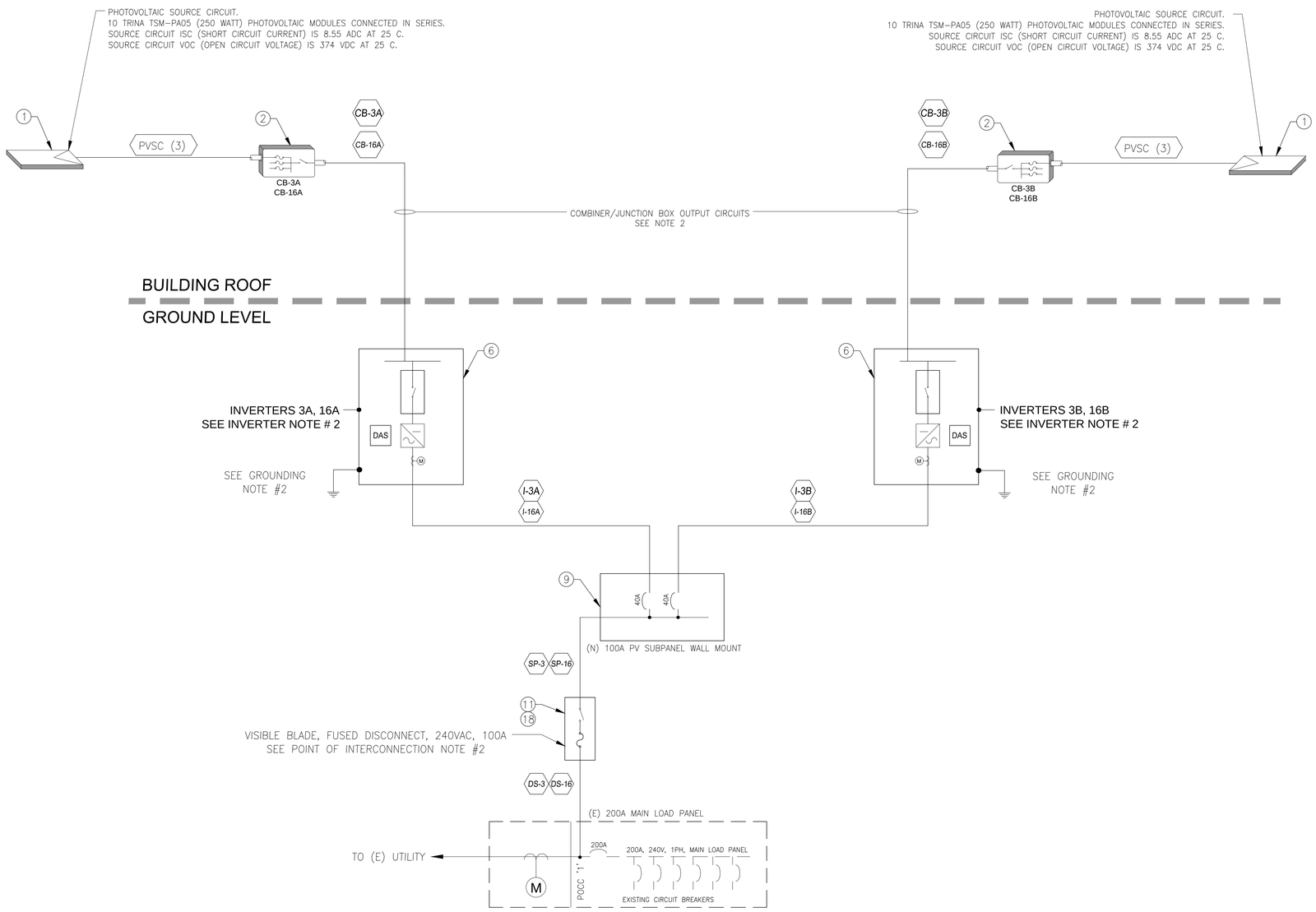
TITLE:
SINGLE LINE DIAGRAM - UNIT 1
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 - 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E4.1
13 OF 30

100% CONSTRUCTION DRAWINGS



SINGLE LINE DIAGRAM NOTES:

1. ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH ALL LOCAL AND ELECTRICAL BUILDING CODES. THE INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE SEISMIC REGULATIONS.
2. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED WITH THE AC GROUNDING ELECTRODE.
3. COMBINER BOXES SHALL BE NEMA-4 ENCLOSURES OR BETTER.
4. ALL PV SOURCE CIRCUIT WIRES SHALL BE RHW/USE-2 SUNLIGHT RESISTANT OR XHHW-2.
5. #10-AWG BARE COPPER GROUND SHALL BE USED AS AN EQUIPMENT GROUND TO BOND THE MOUNTING SYSTEM TO THE OTHER PV SYSTEM EQUIPMENT AND TERMINATE IN THE COMBINER BOX. COMBINER BOX EQUIPMENT GROUND SHALL BE RUN IN SERIES AND TERMINATED IN THE INVERTER(S).

GROUNDING NOTES:

1. ALL BARE COPPER GROUND WIRING RUNNING BETWEEN ARRAYS SHALL BE PROTECTED FROM INADVERTENT DAMAGE BY BEING ROUTED INSIDE ACCEPTABLE CONDUIT OR WIREWAY. ALL CONDUITS OR WIREWAYS MUST BE NEATLY INSTALLED AND ATTACHED SECURELY TO THE MOUNTING SYSTEM.
2. THE GROUNDING ELECTRODE CONDUCTOR (GEC) ON THE AC SIDE OF THE SYSTEM SHALL BE TIED TO A CODE COMPLIANT GROUND ROD NEXT TO THE INVERTER OR AN EXISTING GEC POINT AT THE POCC.

GENERAL EQUIPMENT NOTES:

1. CIRCLE CALL-OUTS INDICATE BILL OF MATERIALS ITEM NUMBER AND IDENTIFY THE EQUIPMENT USED:
   - (2) INDICATES ITEM 2, COMBINER BOX
   - (3) INDICATES ITEM 3, JUNCTION BOX
   - (4) THRU (8) INDICATES ITEMS 4-8, INVERTER
   - PVSC (3) INDICATES CIRCUIT TYPE AND NUMBER OF STRINGS
2. COMBINER/JUNCTION BOX OUTPUT CIRCUITS: EQUAL NUMBER OF CONDUCTORS FOR POSITIVE AND NEGATIVE COMBINER TERMINALS (1) 10-AWG GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) REFER TO TABLE 1A FOR OUTPUT CONDUCTOR AND CONDUIT SIZING
3. ALL CONDUCTORS ARE COPPER.
4. ALL ENCLOSURES ARE NEMA-4 UNLESS OTHERWISE NOTED.
5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRICAL UTILITY COMPANY AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
6. COMBINER/JUNCTION BOXES ARE IDENTIFIED BY INVERTER DESIGNATION:
   INVERTER 3A & 16A: CB-3A & CB-16A
   INVERTER 3B & 16B: CB-3B & CB-16B
7. WHEN TRANSITIONING FROM RHW/USE-2 IN THE PV SOURCE CIRCUIT TO THHN/THWN-2, CONTRACTOR SHALL UTILIZE WATERTIGHT (NEMA-3R) JUNCTION BOX AND POLARIS CONNECTOR.

INVERTER NOTES:

1. INSTALLATION CONTRACTOR SHALL INSTALL COMBINER BOX OUTPUT CIRCUIT ON THE "COMBINED" INPUT CIRCUIT OF THE INVERTER. CONSULT INVERTER MANUAL FOR PROPER INSTALLATION OF REQUIRED CONNECTING DISTRIBUTORS.
2. INVERTERS ARE IDENTIFIED BY UNIT NUMBER AND LETTER FOR UNITS 3 AND 16 INVERTER DESIGNATIONS ARE: INV 3A/3B AND 16A/16B

POINT OF INTERCONNECTION NOTES:

1. CONNECT FUSED DISCONNECT TO BUS BAR ON LINE SIDE OF SERVICE PANEL. THIS IS A LINE SIDE TAP.
2. ATTACH PLACARDS PER APPLICABLE PLACARD SHEET INSTRCUCTIONS.

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.70%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-3A	CBOC	1	70	6	THWN/THHN-2	0.58%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40
CB-3B	CBOC	1	70	6	THWN/THHN-2	0.58%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.70%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-16A	CBOC	1	60	6	THWN/THHN-2	0.50%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40
CB-16B	CBOC	1	70	6	THWN/THHN-2	0.58%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-3A	IOC	3	10	8	THWN/THHN-2	0.19%	8	THWN/THHN-2	EGC	40	CB	1" EMT	40
I-3B	IOC	3	10	8	THWN/THHN-2	0.19%	8	THWN/THHN-2	EGC	40	CB	1" EMT	40
SP-3	IOC	3	25	4	THWN/THHN-2	0.38%	8	THWN/THHN-2	EGC	80	CB	1-1/2" EMT	40
DS-3	IOC	3	25	4	THWN/THHN-2	0.38%	8	THWN/THHN-2	EGC	80	CB	1-1/2" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-16A	IOC	3	10	8	THWN/THHN-2	0.19%	8	THWN/THHN-2	EGC	40	CB	1" EMT	40
I-16B	IOC	3	10	8	THWN/THHN-2	0.19%	8	THWN/THHN-2	EGC	40	CB	1" EMT	40
SP-16	IOC	3	25	4	THWN/THHN-2	0.38%	8	THWN/THHN-2	EGC	80	CB	1-1/2" EMT	40
DS-16	IOC	3	25	4	THWN/THHN-2	0.38%	8	THWN/THHN-2	EGC	80	CB	1-1/2" EMT	40

SINGLE LINE WIRING DIAGRAM - UNITS 3, & 16

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

SUSTINEO
6977 NAVAJO RD., SUITE 139
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PHONE: 858.270.9333
FAX: 858.270.9334

OWNER/CLIENT:

MADONNA ROAD APARTMENTS
1550 MADONNA ROAD
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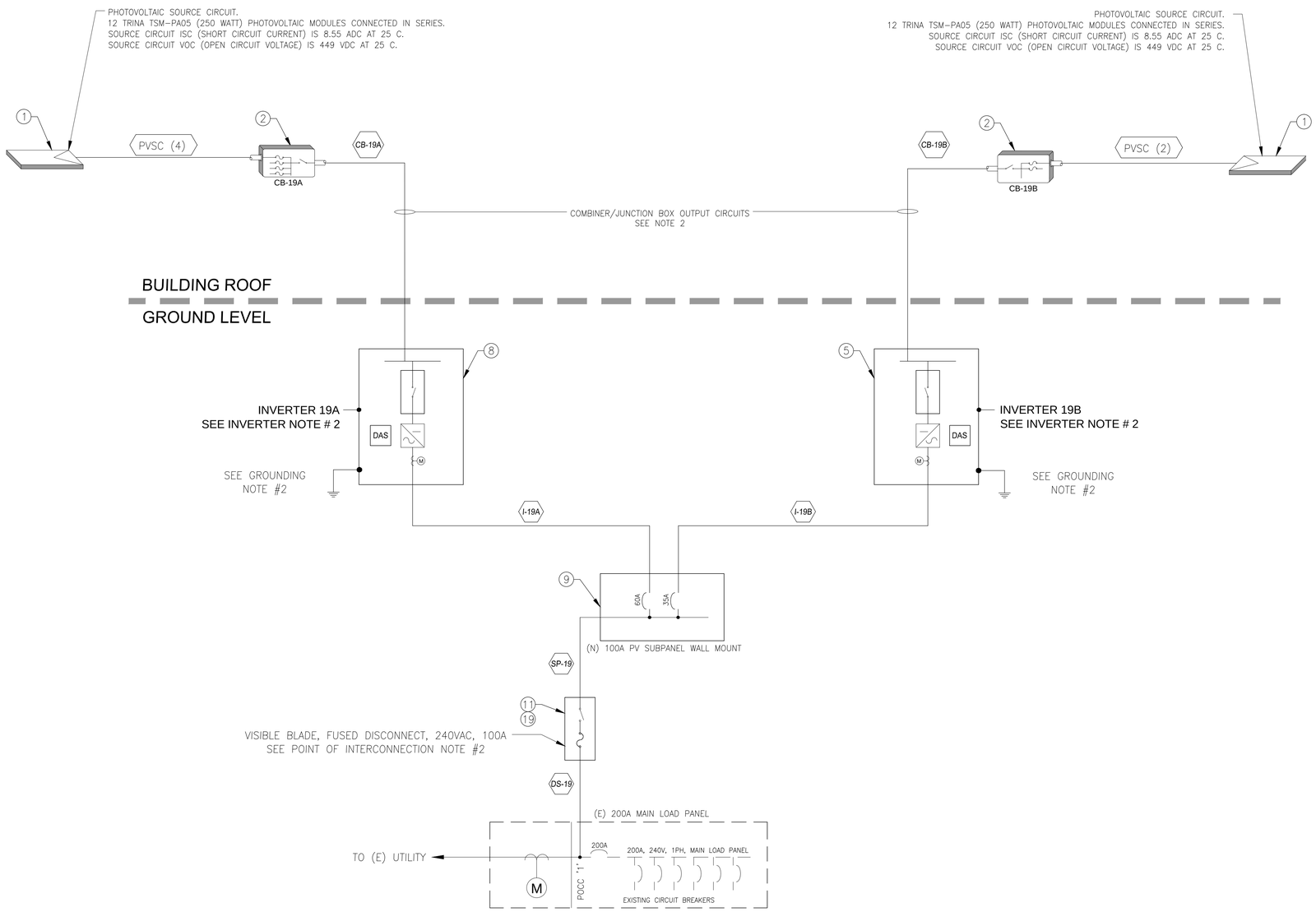
TITLE: SINGLE LINE DIAGRAM - UNITS 3 & 16
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 - 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E4.2
14 OF 30

100% CONSTRUCTION DRAWINGS



SINGLE LINE DIAGRAM NOTES:

1. ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH ALL LOCAL AND ELECTRICAL BUILDING CODES. THE INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE SEISMIC REGULATIONS.
2. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED WITH THE AC GROUNDING ELECTRODE.
3. COMBINER BOXES SHALL BE NEMA-4 ENCLOSURES OR BETTER.
4. ALL PV SOURCE CIRCUIT WIRES SHALL BE RHW/USE-2 SUNLIGHT RESISTANT OR XHHW-2.
5. #10-AWG BARE COPPER GROUND SHALL BE USED AS AN EQUIPMENT GROUND TO BOND THE MOUNTING SYSTEM TO THE OTHER PV SYSTEM EQUIPMENT AND TERMINATE IN THE COMBINER BOX. COMBINER BOX EQUIPMENT GROUND SHALL BE RUN IN SERIES AND TERMINATED IN THE INVERTER(S).

GROUNDING NOTES:

1. ALL BARE COPPER GROUND WIRING RUNNING BETWEEN ARRAYS SHALL BE PROTECTED FROM INADVERTENT DAMAGE BY BEING ROUTED INSIDE ACCEPTABLE CONDUIT OR WIREWAY. ALL CONDUITS OR WIREWAYS MUST BE NEATLY INSTALLED AND ATTACHED SECURELY TO THE MOUNTING SYSTEM.
2. THE GROUNDING ELECTRODE CONDUCTOR (GEC) ON THE AC SIDE OF THE SYSTEM SHALL BE TIED TO A CODE COMPLIANT GROUND ROD NEXT TO THE INVERTER OR AN EXISTING GEC POINT AT THE POCC.

GENERAL EQUIPMENT NOTES:

1. CIRCLE CALL-OUTS INDICATE BILL OF MATERIALS ITEM NUMBER AND IDENTIFY THE EQUIPMENT USED:
   - (2) INDICATES ITEM 2, COMBINER BOX
   - (3) INDICATES ITEM 3, JUNCTION BOX
   - (4) THRU (8) INDICATES ITEMS 4-8, INVERTER
   - PVSC (3) INDICATES CIRCUIT TYPE AND NUMBER OF STRINGS
2. COMBINER/JUNCTION BOX OUTPUT CIRCUITS: EQUAL NUMBER OF CONDUCTORS FOR POSITIVE AND NEGATIVE COMBINER TERMINALS (1) 10-AWG GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) REFER TO TABLE 1A FOR OUTPUT CONDUCTOR AND CONDUIT SIZING
3. ALL CONDUCTORS ARE COPPER.
4. ALL ENCLOSURES ARE NEMA-4 UNLESS OTHERWISE NOTED.
5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRICAL UTILITY COMPANY AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
6. COMBINER/JUNCTION BOXES ARE IDENTIFIED BY INVERTER DESIGNATION:
   INVERTER 19A: CB-19A
   INVERTER 19B: CB-19B
7. WHEN TRANSITIONING FROM RHW/USE-2 IN THE PV SOURCE CIRCUIT TO THHN/THWN-2, CONTRACTOR SHALL UTILIZE WATERTIGHT (NEMA-3R) JUNCTION BOX AND POLARIS CONNECTOR.

INVERTER NOTES:

1. INSTALLATION CONTRACTOR SHALL INSTALL COMBINER BOX OUTPUT CIRCUIT ON THE "COMBINED" INPUT CIRCUIT OF THE INVERTER. CONSULT INVERTER MANUAL FOR PROPER INSTALLATION OF REQUIRED CONNECTING DISTRIBUTORS.
2. INVERTERS ARE IDENTIFIED BY UNIT NUMBER AND LETTER. FOR UNIT 19 INVERTER DESIGNATIONS ARE: INV 19A AND 19B

POINT OF INTERCONNECTION NOTES:

1. CONNECT FUSED DISCONNECT TO BUS BAR ON LINE SIDE OF SERVICE PANEL. THIS IS A LINE SIDE TAP.
2. ATTACH PLACARDS PER APPLICABLE PLACARD SHEET INSTRCUCTIONS.

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.59%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB19A-1	CBOC	1	90	6	THWN/THHN-2	0.83%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40
CB19B-1	CBOC	1	70	8	THWN/THHN-2	0.51%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-19A	IOC	3	11	6	THWN/THHN-2	0.20%	8	THWN/THHN-2	EGC	60	CB	1" EMT	40
I-19B	IOC	3	11	10	THWN/THHN-2	0.27%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40
SP-19	IOC	3	25	3	THWN/THHN-2	0.35%	8	THWN/THHN-2	EGC	100	CB	1-1/2" EMT	40
DS-19	IOC	3	25	3	THWN/THHN-2	0.35%	8	THWN/THHN-2	EGC	100	CB	1-1/2" EMT	40

SINGLE LINE WIRING DIAGRAM - UNIT 19

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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Everyday Energy
SAVE MONEY SAVE THE PLANET

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CARLSBAD, CA, 92008
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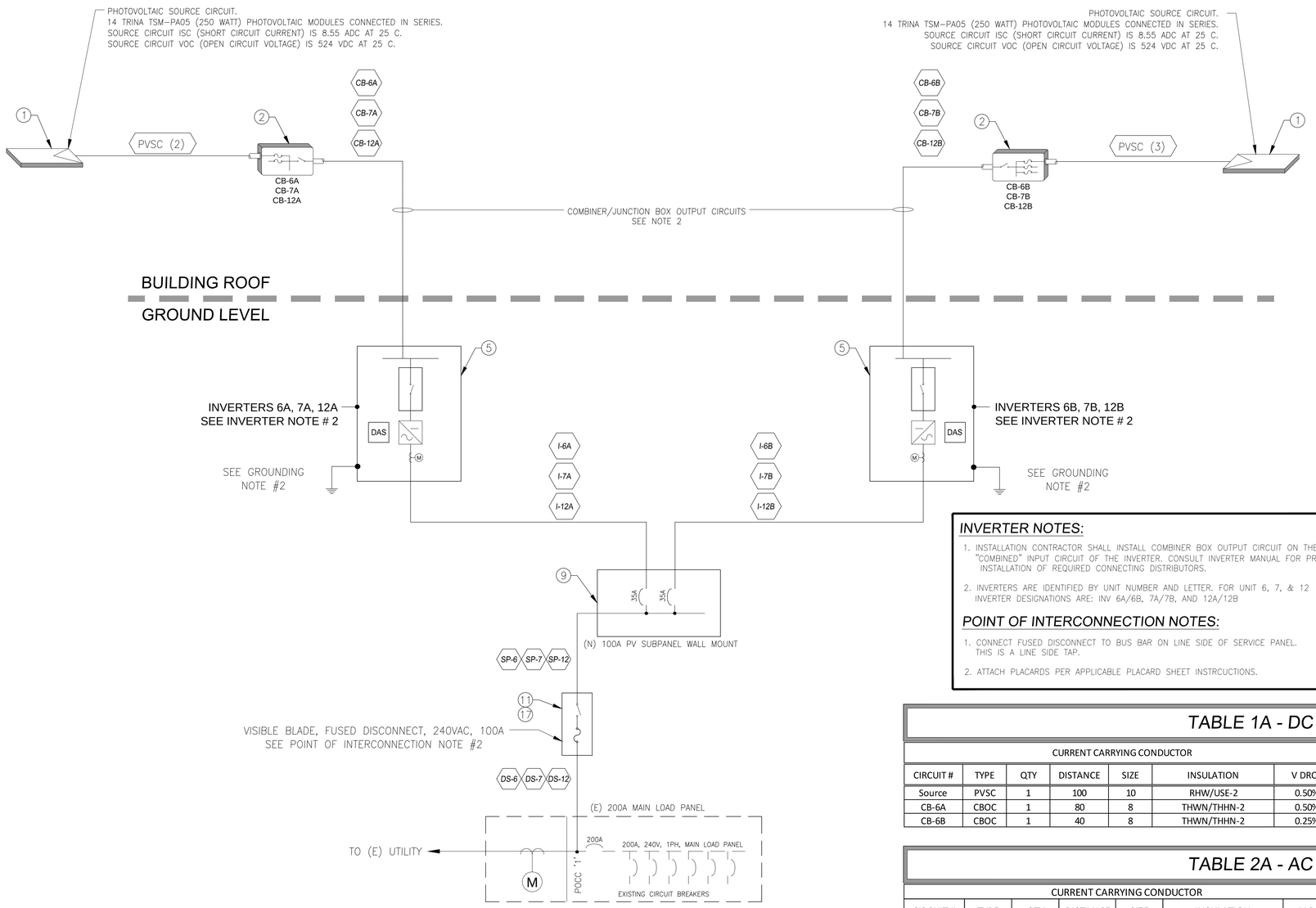
TITLE:
SINGLE LINE DIAGRAM - UNIT 19
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 - 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E4.3
15 OF 30

100% CONSTRUCTION DRAWINGS



SINGLE LINE DIAGRAM NOTES:

1. ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH ALL LOCAL AND ELECTRICAL BUILDING CODES. THE INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE SEISMIC REGULATIONS.
2. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED WITH THE AC GROUNDING ELECTRODE.
3. COMBINER BOXES SHALL BE NEMA-4 ENCLOSURES OR BETTER.
4. ALL PV SOURCE CIRCUIT WIRES SHALL BE RHW/USE-2 SUNLIGHT RESISTANT OR XHHW-2.
5. #10-AWG BARE COPPER GROUND SHALL BE USED AS AN EQUIPMENT GROUND TO BOND THE MOUNTING SYSTEM TO THE OTHER PV SYSTEM EQUIPMENT AND TERMINATE IN THE COMBINER BOX. COMBINER BOX EQUIPMENT GROUND SHALL BE RUN IN SERIES AND TERMINATED IN THE INVERTER(S).

GROUNDING NOTES:

1. ALL BARE COPPER GROUND WIRING RUNNING BETWEEN ARRAYS SHALL BE PROTECTED FROM INADVERTENT DAMAGE BY BEING ROUTED INSIDE ACCEPTABLE CONDUIT OR WIREWAY. ALL CONDUITS OR WIREWAYS MUST BE NEATLY INSTALLED AND ATTACHED SECURELY TO THE MOUNTING SYSTEM.
2. THE GROUNDING ELECTRODE CONDUCTOR (GEC) ON THE AC SIDE OF THE SYSTEM SHALL BE TIED TO A CODE COMPLIANT GROUND ROD NEXT TO THE INVERTER OR AN EXISTING GEC POINT AT THE POCC.

GENERAL EQUIPMENT NOTES:

1. CIRCLE CALL-OUTS INDICATE BILL OF MATERIALS ITEM NUMBER AND IDENTIFY THE EQUIPMENT USED:
   - (2) INDICATES ITEM 2, COMBINER BOX
   - (3) INDICATES ITEM 3, JUNCTION BOX
   - (4) THRU (8) INDICATES ITEMS 4-8, INVERTER
   - PVSC (3) INDICATES CIRCUIT TYPE AND NUMBER OF STRINGS
2. COMBINER/JUNCTION BOX OUTPUT CIRCUITS: EQUAL NUMBER OF CONDUCTORS FOR POSITIVE AND NEGATIVE COMBINER TERMINALS (1) 10-AWG GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) REFER TO TABLE 1A FOR OUTPUT CONDUCTOR AND CONDUIT SIZING
3. ALL CONDUCTORS ARE COPPER.
4. ALL ENCLOSURES ARE NEMA-4 UNLESS OTHERWISE NOTED.
5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRICAL UTILITY COMPANY AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
6. COMBINER/JUNCTION BOXES ARE IDENTIFIED BY INVERTER DESIGNATION:
   INVERTER 6A, 7A, 12A: CB-6A, CB-7A, CB-12A
   INVERTER 6B, 7B, 12B: CB-6B, CB-7B, CB-12B
7. WHEN TRANSITIONING FROM RHW/USE-2 IN THE PV SOURCE CIRCUIT TO THHN/THWN-2, CONTRACTOR SHALL UTILIZE WATERTIGHT (NEMA-3R) JUNCTION BOX AND POLARIS CONNECTOR.

INVERTER NOTES:

1. INSTALLATION CONTRACTOR SHALL INSTALL COMBINER BOX OUTPUT CIRCUIT ON THE "COMBINED" INPUT CIRCUIT OF THE INVERTER. CONSULT INVERTER MANUAL FOR PROPER INSTALLATION OF REQUIRED CONNECTING DISTRIBUTORS.
2. INVERTERS ARE IDENTIFIED BY UNIT NUMBER AND LETTER. FOR UNIT 6, 7, & 12 INVERTER DESIGNATIONS ARE: INV 6A/6B, 7A/7B, AND 12A/12B

POINT OF INTERCONNECTION NOTES:

1. CONNECT FUSED DISCONNECT TO BUS BAR ON LINE SIDE OF SERVICE PANEL. THIS IS A LINE SIDE TAP.
2. ATTACH PLACARDS PER APPLICABLE PLACARD SHEET INSTRCUCTIONS.

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.50%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-6A	CBOC	1	80	8	THWN/THHN-2	0.50%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40
CB-6B	CBOC	1	40	8	THWN/THHN-2	0.25%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-6A	IOC	3	10	10	THWN/THHN-2	0.24%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40
I-6B	IOC	3	10	10	THWN/THHN-2	0.24%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40
SP-6	IOC	3	25	6	THWN/THHN-2	0.48%	8	THWN/THHN-2	EGC	70	CB	1" EMT	40
DS-6	IOC	3	25	6	THWN/THHN-2	0.48%	8	THWN/THHN-2	EGC	70	CB	1" EMT	40

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.50%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-7A	CBOC	1	40	8	THWN/THHN-2	0.25%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40
CB-7B	CBOC	1	50	8	THWN/THHN-2	0.32%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-7A	IOC	3	10	10	THWN/THHN-2	0.24%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40
I-7B	IOC	3	10	10	THWN/THHN-2	0.24%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40
SP-7	IOC	3	25	6	THWN/THHN-2	0.48%	8	THWN/THHN-2	EGC	70	CB	1" EMT	40
DS-7	IOC	3	25	6	THWN/THHN-2	0.48%	8	THWN/THHN-2	EGC	70	CB	1" EMT	40

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.50%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-12A	CBOC	1	80	8	THWN/THHN-2	0.50%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40
CB-12B	CBOC	1	50	8	THWN/THHN-2	0.32%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-12A	IOC	3	10	10	THWN/THHN-2	0.24%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40
I-12B	IOC	3	10	10	THWN/THHN-2	0.24%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40
SP-12	IOC	3	25	6	THWN/THHN-2	0.48%	8	THWN/THHN-2	EGC	70	CB	1" EMT	40
DS-12	IOC	3	25	6	THWN/THHN-2	0.48%	8	THWN/THHN-2	EGC	70	CB	1" EMT	40

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV.	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

SUSTINEO
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Everyday Energy
SAVE MONEY SAVE THE PLANET
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CARLSBAD, CA, 92008
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TITLE: SINGLE LINE DIAGRAM - UNITS 6, 7, 12

PHOTOVOLTAIC SYSTEM

PROJECT LOCATION: 1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 - 108

APN: 140-040-003

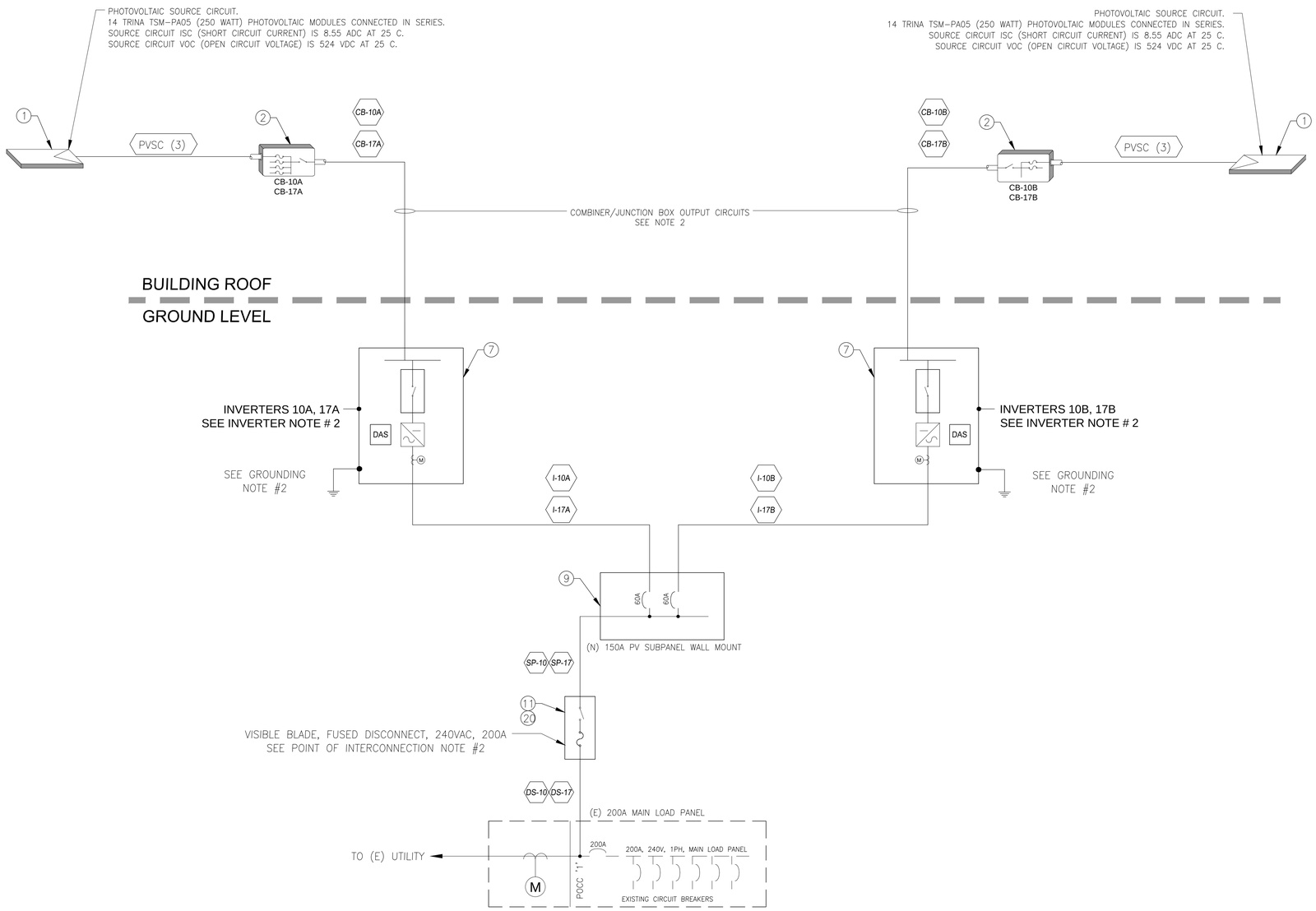
DATE: SEPTEMBER 10, 2012

SHEET NO.: E4.4

16 OF 30

100% CONSTRUCTION DRAWINGS

SINGLE LINE WIRING DIAGRAM - UNITS 6, 7, 12



SINGLE LINE DIAGRAM NOTES:

1. ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH ALL LOCAL AND ELECTRICAL BUILDING CODES. THE INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE SEISMIC REGULATIONS.
2. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED WITH THE AC GROUNDING ELECTRODE.
3. COMBINER BOXES SHALL BE NEMA-4 ENCLOSURES OR BETTER.
4. ALL PV SOURCE CIRCUIT WIRES SHALL BE RHW/USE-2 SUNLIGHT RESISTANT OR XHHW-2.
5. #10-AWG BARE COPPER GROUND SHALL BE USED AS AN EQUIPMENT GROUND TO BOND THE MOUNTING SYSTEM TO THE OTHER PV SYSTEM EQUIPMENT AND TERMINATE IN THE COMBINER BOX. COMBINER BOX EQUIPMENT GROUND SHALL BE RUN IN SERIES AND TERMINATED IN THE INVERTER(S).

GROUNDING NOTES:

1. ALL BARE COPPER GROUND WIRING RUNNING BETWEEN ARRAYS SHALL BE PROTECTED FROM INADVERTENT DAMAGE BY BEING ROUTED INSIDE ACCEPTABLE CONDUIT OR WIREWAY. ALL CONDUITS OR WIREWAYS MUST BE NEATLY INSTALLED AND ATTACHED SECURELY TO THE MOUNTING SYSTEM.
2. THE GROUNDING ELECTRODE CONDUCTOR (GEC) ON THE AC SIDE OF THE SYSTEM SHALL BE TIED TO A CODE COMPLIANT GROUND ROD NEXT TO THE INVERTER OR AN EXISTING GEC POINT AT THE POCC.

GENERAL EQUIPMENT NOTES:

1. CIRCLE CALL-OUTS INDICATE BILL OF MATERIALS ITEM NUMBER AND IDENTIFY THE EQUIPMENT USED:
   - (2) INDICATES ITEM 2, COMBINER BOX
   - (3) INDICATES ITEM 3, JUNCTION BOX
   - (4) THRU (8) INDICATES ITEMS 4-8, INVERTER
   - PVSC (3) INDICATES CIRCUIT TYPE AND NUMBER OF STRINGS
2. COMBINER/JUNCTION BOX OUTPUT CIRCUITS: EQUAL NUMBER OF CONDUCTORS FOR POSITIVE AND NEGATIVE COMBINER TERMINALS (1) 10-AWG GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) REFER TO TABLE 1A FOR OUTPUT CONDUCTOR AND CONDUIT SIZING
3. ALL CONDUCTORS ARE COPPER.
4. ALL ENCLOSURES ARE NEMA-4 UNLESS OTHERWISE NOTED.
5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRICAL UTILITY COMPANY AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
6. COMBINER/JUNCTION BOXES ARE IDENTIFIED BY INVERTER DESIGNATION:
   INVERTER 10A & 17A: CB-10A & CB-17A
   INVERTER 10B & 17B: CB-10B & CB-17B
7. WHEN TRANSITIONING FROM RHW/USE-2 IN THE PV SOURCE CIRCUIT TO THHN/THWN-2, CONTRACTOR SHALL UTILIZE WATERTIGHT (NEMA-3R) JUNCTION BOX AND POLARIS CONNECTOR.

INVERTER NOTES:

1. INSTALLATION CONTRACTOR SHALL INSTALL COMBINER BOX OUTPUT CIRCUIT ON THE "COMBINED" INPUT CIRCUIT OF THE INVERTER. CONSULT INVERTER MANUAL FOR PROPER INSTALLATION OF REQUIRED CONNECTING DISTRIBUTORS.
2. INVERTERS ARE IDENTIFIED BY UNIT NUMBER AND LETTER. FOR UNITS 10 & 17 INVERTER DESIGNATIONS ARE: INV 10A/10B AND 17A/17B

POINT OF INTERCONNECTION NOTES:

1. CONNECT FUSED DISCONNECT TO BUS BAR ON LINE SIDE OF SERVICE PANEL. THIS IS A LINE SIDE TAP.
2. ATTACH PLACARDS PER APPLICABLE PLACARD SHEET INSTRCUCTIONS.

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.50%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-10A	CBOC	1	140	6	THWN/THHN-2	0.83%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40
CB-10B	CBOC	1	70	6	THWN/THHN-2	0.42%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.50%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-17A	CBOC	1	70	8	THWN/THHN-2	0.66%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40
CB-17B	CBOC	1	60	8	THWN/THHN-2	0.57%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-10A	IOC	3	10	6	THWN/THHN-2	0.16%	8	THWN/THHN-2	EGC	60	CB	1" EMT	40
I-10B	IOC	3	10	6	THWN/THHN-2	0.16%	8	THWN/THHN-2	EGC	60	CB	1" EMT	40
SP-10	IOC	3	25	2	THWN/THHN-2	0.32%	8	THWN/THHN-2	EGC	110	CB	1-1/2" EMT	40
DS-10	IOC	3	25	2	THWN/THHN-2	0.32%	8	THWN/THHN-2	EGC	110	CB	1-1/2" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-17A	IOC	3	10	6	THWN/THHN-2	0.16%	8	THWN/THHN-2	EGC	60	CB	1" EMT	40
I-17B	IOC	3	10	6	THWN/THHN-2	0.16%	8	THWN/THHN-2	EGC	60	CB	1" EMT	40
SP-17	IOC	3	25	2	THWN/THHN-2	0.32%	8	THWN/THHN-2	EGC	110	CB	1-1/2" EMT	40
DS-17	IOC	3	25	2	THWN/THHN-2	0.32%	8	THWN/THHN-2	EGC	110	CB	1-1/2" EMT	40

SINGLE LINE WIRING DIAGRAM - UNITS 10 & 17

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12
ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV.	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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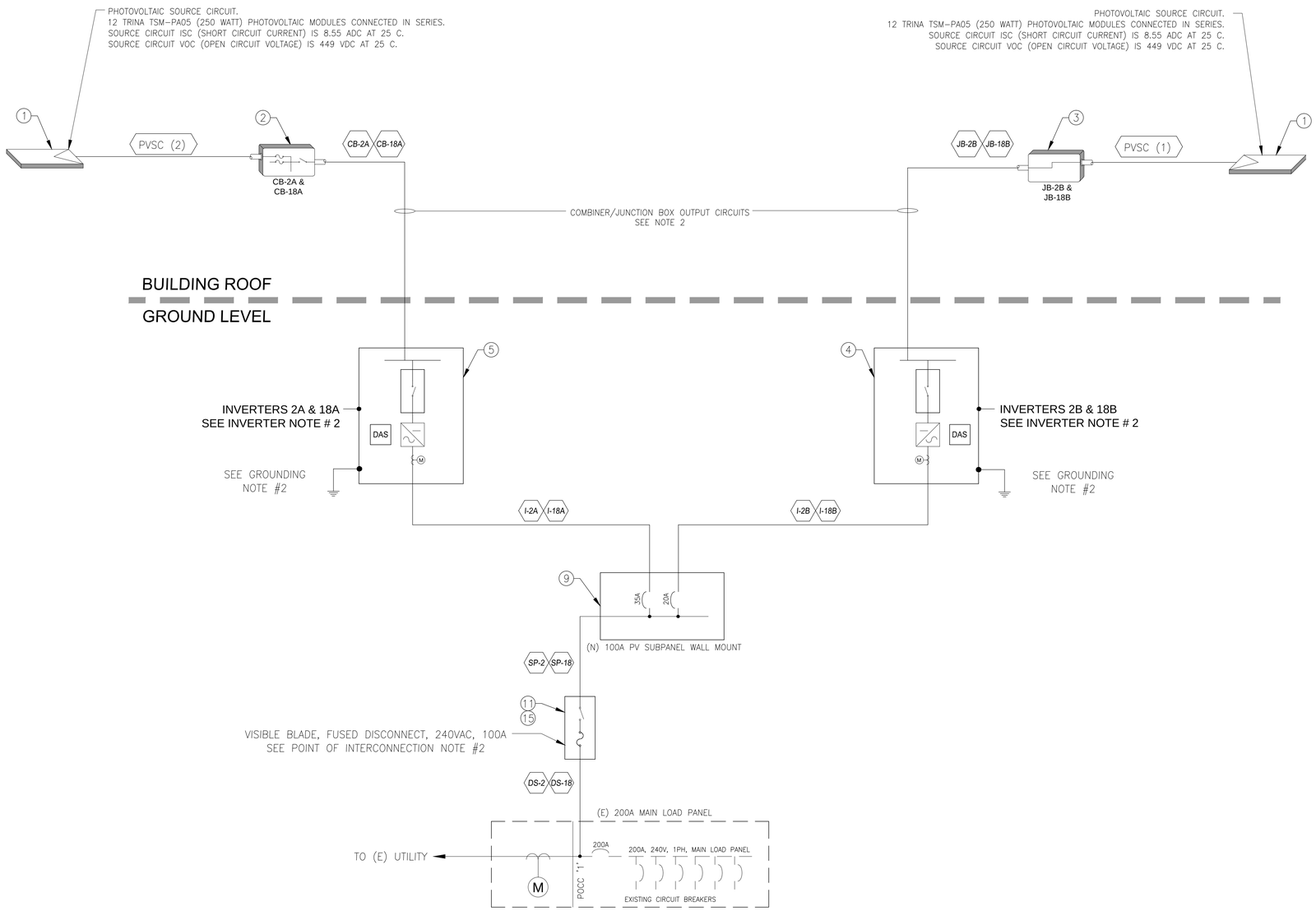
P: (760) 607-7200

TITLE:
SINGLE LINE DIAGRAM - UNITS 10 & 17
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 - 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E4.5
17 OF 30

100% CONSTRUCTION DRAWINGS



SINGLE LINE DIAGRAM NOTES:

1. ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH ALL LOCAL AND ELECTRICAL BUILDING CODES. THE INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE SEISMIC REGULATIONS.
2. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED WITH THE AC GROUNDING ELECTRODE.
3. COMBINER BOXES SHALL BE NEMA-4 ENCLOSURES OR BETTER.
4. ALL PV SOURCE CIRCUIT WIRES SHALL BE RHW/USE-2 SUNLIGHT RESISTANT OR XHHW-2.
5. #10-AWG BARE COPPER GROUND SHALL BE USED AS AN EQUIPMENT GROUND TO BOND THE MOUNTING SYSTEM TO THE OTHER PV SYSTEM EQUIPMENT AND TERMINATE IN THE COMBINER BOX. COMBINER BOX EQUIPMENT GROUND SHALL BE RUN IN SERIES AND TERMINATED IN THE INVERTER(S).

GROUNDING NOTES:

1. ALL BARE COPPER GROUND WIRING RUNNING BETWEEN ARRAYS SHALL BE PROTECTED FROM INADVERTENT DAMAGE BY BEING ROUTED INSIDE ACCEPTABLE CONDUIT OR WIREWAY. ALL CONDUITS OR WIREWAYS MUST BE NEATLY INSTALLED AND ATTACHED SECURELY TO THE MOUNTING SYSTEM.
2. THE GROUNDING ELECTRODE CONDUCTOR (GEC) ON THE AC SIDE OF THE SYSTEM SHALL BE TIED TO A CODE COMPLIANT GROUND ROD NEXT TO THE INVERTER OR AN EXISTING GEC POINT AT THE POCC.

GENERAL EQUIPMENT NOTES:

1. CIRCLE CALL-OUTS INDICATE BILL OF MATERIALS ITEM NUMBER AND IDENTIFY THE EQUIPMENT USED:
   - (2) INDICATES ITEM 2, COMBINER BOX
   - (3) INDICATES ITEM 3, JUNCTION BOX
   - (4) THRU (8) INDICATES ITEMS 4-8, INVERTER
   - PVSC (3) INDICATES CIRCUIT TYPE AND NUMBER OF STRINGS
2. COMBINER/JUNCTION BOX OUTPUT CIRCUIT: EQUAL NUMBER OF CONDUCTORS FOR POSITIVE AND NEGATIVE COMBINER TERMINALS (1) 10-AWG GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) REFER TO TABLE 1A FOR OUTPUT CONDUCTOR AND CONDUIT SIZING
3. ALL CONDUCTORS ARE COPPER.
4. ALL ENCLOSURES ARE NEMA-4 UNLESS OTHERWISE NOTED.
5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRICAL UTILITY COMPANY AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
6. COMBINER/JUNCTION BOXES ARE IDENTIFIED BY INVERTER DESIGNATION:
   INVERTER 2A: CB-2A
   INVERTER 2B: JB-2B
   INVERTER 18A: CB-18A
   INVERTER 18B: JB-18B
7. WHEN TRANSITIONING FROM RHW/USE-2 IN THE PV SOURCE CIRCUIT TO THHN/THWN-2, CONTRACTOR SHALL UTILIZE WATERTIGHT (NEMA-3R) JUNCTION BOX AND POLARIS CONNECTOR.

INVERTER NOTES:

1. INSTALLATION CONTRACTOR SHALL INSTALL COMBINER BOX OUTPUT CIRCUIT ON THE "COMBINED" INPUT CIRCUIT OF THE INVERTER. CONSULT INVERTER MANUAL FOR PROPER INSTALLATION OF REQUIRED CONNECTING DISTRIBUTORS.
2. INVERTERS ARE IDENTIFIED BY UNIT NUMBER AND LETTER. FOR UNITS 2 AND 18 INVERTER DESIGNATIONS ARE: INV 2A, 2B, 18A, AND 18B.

POINT OF INTERCONNECTION NOTES:

1. CONNECT FUSED DISCONNECT TO BUS BAR ON LINE SIDE OF SERVICE PANEL. THIS IS A LINE SIDE TAP.
2. ATTACH PLACARDS PER APPLICABLE PLACARD SHEET INSTRCUCTIONS.

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.59%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-2A	CBOC	1	45	8	THWN/THHN-2	0.33%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40
JB-2B	CBOC	1	70	10	THWN/THHN-2	0.41%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.50%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-10A	CBOC	1	140	6	THWN/THHN-2	0.83%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40
CB-10B	CBOC	1	70	6	THWN/THHN-2	0.42%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-2A	IOC	3	10	10	THWN/THHN-2	0.24%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40
I-2B	IOC	3	10	10	THWN/THHN-2	0.12%	8	THWN/THHN-2	EGC	20	CB	1" EMT	40
SP-2	IOC	3	25	8	THWN/THHN-2	0.57%	8	THWN/THHN-2	EGC	50	CB	1" EMT	40
DS-2	IOC	3	25	8	THWN/THHN-2	0.57%	8	THWN/THHN-2	EGC	50	CB	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-10A	IOC	3	10	6	THWN/THHN-2	0.16%	8	THWN/THHN-2	EGC	60	CB	1" EMT	40
I-10B	IOC	3	10	6	THWN/THHN-2	0.16%	8	THWN/THHN-2	EGC	60	CB	1" EMT	40
SP-10	IOC	3	25	2	THWN/THHN-2	0.32%	8	THWN/THHN-2	EGC	110	CB	1-1/2" EMT	40
DS-10	IOC	3	25	2	THWN/THHN-2	0.32%	8	THWN/THHN-2	EGC	110	CB	1-1/2" EMT	40

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12
ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV.	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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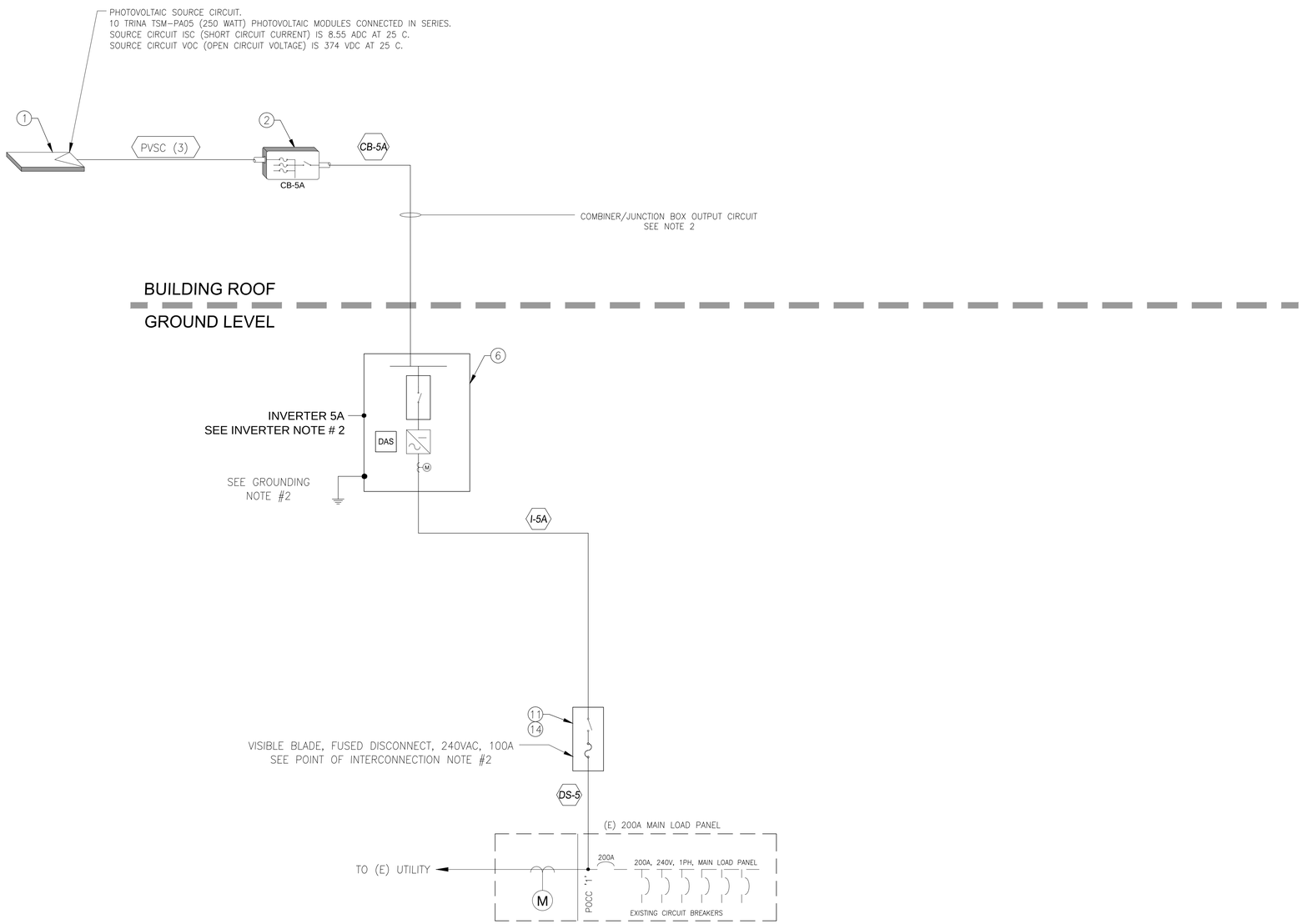
TITLE: SINGLE LINE DIAGRAM - UNITS 2 & 18
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 - 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E4.6
18 OF 30

100% CONSTRUCTION DRAWINGS



SINGLE LINE DIAGRAM NOTES:

1. ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH ALL LOCAL AND ELECTRICAL BUILDING CODES. THE INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE SEISMIC REGULATIONS.
2. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED WITH THE AC GROUNDING ELECTRODE.
3. COMBINER BOXES SHALL BE NEMA–4 ENCLOSURES OR BETTER.
4. ALL PV SOURCE CIRCUIT WIRES SHALL BE RHW/USE–2 SUNLIGHT RESISTANT OR XHHW–2.
5. #10–AWG BARE COPPER GROUND SHALL BE USED AS AN EQUIPMENT GROUND TO BOND THE MOUNTING SYSTEM TO THE OTHER PV SYSTEM EQUIPMENT AND TERMINATE IN THE COMBINER BOX. COMBINER BOX EQUIPMENT GROUND SHALL BE RUN IN SERIES AND TERMINATED IN THE INVERTER(S).

GROUNDING NOTES:

1. ALL BARE COPPER GROUND WIRING RUNNING BETWEEN ARRAYS SHALL BE PROTECTED FROM INADVERTENT DAMAGE BY BEING ROUTED INSIDE ACCEPTABLE CONDUIT OR WIREWAY. ALL CONDUITS OR WIREWAYS MUST BE NEATLY INSTALLED AND ATTACHED SECURELY TO THE MOUNTING SYSTEM.
2. THE GROUNDING ELECTRODE CONDUCTOR (GEC) ON THE AC SIDE OF THE SYSTEM SHALL BE TIED TO A CODE COMPLIANT GROUND ROD NEXT TO THE INVERTER OR AN EXISTING GEC POINT AT THE POCC.

GENERAL EQUIPMENT NOTES:

1. CIRCLE CALL–OUTS INDICATE BILL OF MATERIALS ITEM NUMBER AND IDENTIFY THE EQUIPMENT USED:
   - (2) INDICATES ITEM 2, COMBINER BOX
   - (3) INDICATES ITEM 3, JUNCTION BOX
   - (4) THRU (8) INDICATES ITEMS 4–8, INVERTER
   - PVSC (3) INDICATES CIRCUIT TYPE AND NUMBER OF STRINGS
2. COMBINER/JUNCTION BOX OUTPUT CIRCUITS: EQUAL NUMBER OF CONDUCTORS FOR POSITIVE AND NEGATIVE COMBINER TERMINALS (1) 10–AWG GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) REFER TO TABLE 1A FOR OUTPUT CONDUCTOR AND CONDUIT SIZING
3. ALL CONDUCTORS ARE COPPER.
4. ALL ENCLOSURES ARE NEMA–4 UNLESS OTHERWISE NOTED.
5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRICAL UTILITY COMPANY AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
6. COMBINER/JUNCTION BOXES ARE IDENTIFIED BY INVERTER DESIGNATION:
   INVERTER 5A: CB–5A
   INVERTER 5B: CB–5B
7. WHEN TRANSITIONING FROM RHW/USE–2 IN THE PV SOURCE CIRCUIT TO THHN/THWN–2, CONTRACTOR SHALL UTILIZE WATERTIGHT (NEMA–3R) JUNCTION BOX AND POLARIS CONNECTOR.

INVERTER NOTES:

1. INSTALLATION CONTRACTOR SHALL INSTALL COMBINER BOX OUTPUT CIRCUIT ON THE "COMBINED" INPUT CIRCUIT OF THE INVERTER. CONSULT INVERTER MANUAL FOR PROPER INSTALLATION OF REQUIRED CONNECTING DISTRIBUTORS.
2. INVERTERS ARE IDENTIFIED BY UNIT NUMBER AND LETTER. FOR UNIT 5 INVERTER DESIGNATION IS: INV 5A

POINT OF INTERCONNECTION NOTES:

1. CONNECT FUSED DISCONNECT TO BUS BAR ON LINE SIDE OF SERVICE PANEL. THIS IS A LINE SIDE TAP.
2. ATTACH PLACARDS PER APPLICABLE PLACARD SHEET INSTRCUCTIONS.

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.70%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-5A	CBOC	1	70	6	THWN/THHN-2	0.58%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-5A	IOC	3	10	8	THWN/THHN-2	0.19%	8	THWN/THHN-2	EGC	40	CB	1" EMT	40
DS-5	IOC	3	10	8	THWN/THHN-2	0.19%	8	THWN/THHN-2	EGC	40	CB	1" EMT	40

SINGLE LINE WIRING DIAGRAM - UNIT 5

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

SUSTINEO

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OWNER/CLIENT:

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SAN LUIS OBISPO, CA 93405

Everyday Energy
SAVE MONEY. SAVE THE PLANET.

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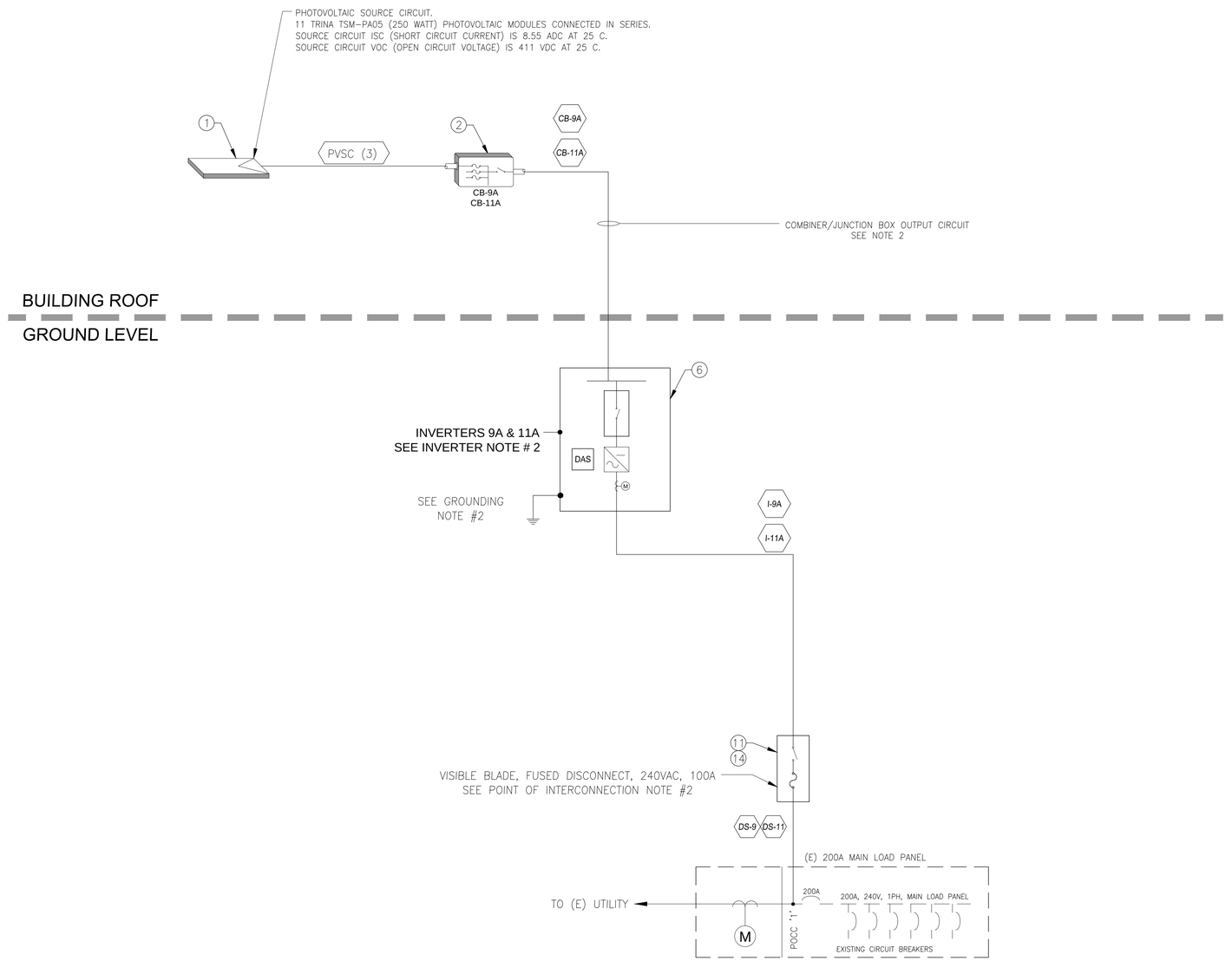
P: (760) 607-7200

TITLE:
SINGLE LINE DIAGRAM - UNIT 5
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108
APN: 140–040–003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E4.7

100% CONSTRUCTION DRAWINGS



SINGLE LINE DIAGRAM NOTES:

1. ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH ALL LOCAL AND ELECTRICAL BUILDING CODES. THE INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE SEISMIC REGULATIONS.
2. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED WITH THE AC GROUNDING ELECTRODE.
3. COMBINER BOXES SHALL BE NEMA-4 ENCLOSURES OR BETTER.
4. ALL PV SOURCE CIRCUIT WIRES SHALL BE RHW/USE-2 SUNLIGHT RESISTANT OR XHHW-2.
5. #10-AWG BARE COPPER GROUND SHALL BE USED AS AN EQUIPMENT GROUND TO BOND THE MOUNTING SYSTEM TO THE OTHER PV SYSTEM EQUIPMENT AND TERMINATE IN THE COMBINER BOX. COMBINER BOX EQUIPMENT GROUND SHALL BE RUN IN SERIES AND TERMINATED IN THE INVERTER(S).

GROUNDING NOTES:

1. ALL BARE COPPER GROUND WIRING RUNNING BETWEEN ARRAYS SHALL BE PROTECTED FROM INADVERTENT DAMAGE BY BEING ROUTED INSIDE ACCEPTABLE CONDUIT OR WIREWAY. ALL CONDUITS OR WIREWAYS MUST BE NEATLY INSTALLED AND ATTACHED SECURELY TO THE MOUNTING SYSTEM.
2. THE GROUNDING ELECTRODE CONDUCTOR (GEC) ON THE AC SIDE OF THE SYSTEM SHALL BE TIED TO A CODE COMPLIANT GROUND ROD NEXT TO THE INVERTER OR AN EXISTING GEC POINT AT THE POCC.

GENERAL EQUIPMENT NOTES:

1. CIRCLE CALL-OUTS INDICATE BILL OF MATERIALS ITEM NUMBER AND IDENTIFY THE EQUIPMENT USED:
   - (2) INDICATES ITEM 2, COMBINER BOX
   - (3) INDICATES ITEM 3, JUNCTION BOX
   - (4) THRU (8) INDICATES ITEMS 4-8, INVERTER
   - PVSC (3) INDICATES CIRCUIT TYPE AND NUMBER OF STRINGS
2. COMBINER/JUNCTION BOX OUTPUT CIRCUITS: EQUAL NUMBER OF CONDUCTORS FOR POSITIVE AND NEGATIVE COMBINER TERMINALS (1) 10-AWG GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) REFER TO TABLE 1A FOR OUTPUT CONDUCTOR AND CONDUIT SIZING
3. ALL CONDUCTORS ARE COPPER.
4. ALL ENCLOSURES ARE NEMA-4 UNLESS OTHERWISE NOTED.
5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRICAL UTILITY COMPANY AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
6. COMBINER/JUNCTION BOXES ARE IDENTIFIED BY INVERTER DESIGNATION:
   INVERTERS 9A AND 11A: CB-9A AND CB-11A
   INVERTER 9B AND 11B: CB-9B AND CB-11B
7. WHEN TRANSITIONING FROM RHW/USE-2 IN THE PV SOURCE CIRCUIT TO THHN/THWN-2, CONTRACTOR SHALL UTILIZE WATERTIGHT (NEMA-3R) JUNCTION BOX AND POLARIS CONNECTOR.

INVERTER NOTES:

1. INSTALLATION CONTRACTOR SHALL INSTALL COMBINER BOX OUTPUT CIRCUIT ON THE "COMBINED" INPUT CIRCUIT OF THE INVERTER. CONSULT INVERTER MANUAL FOR PROPER INSTALLATION OF REQUIRED CONNECTING DISTRIBUTORS.
2. INVERTERS ARE IDENTIFIED BY UNIT NUMBER AND LETTER. FOR UNITS 9 & 11 INVERTER DESIGNATION IS: INV 9A AND 11A

POINT OF INTERCONNECTION NOTES:

1. CONNECT FUSED DISCONNECT TO BUS BAR ON LINE SIDE OF SERVICE PANEL. THIS IS A LINE SIDE TAP.
2. ATTACH PLACARDS PER APPLICABLE PLACARD SHEET INSTRCUCTIONS.

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.64%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-9A	CBOC	1	40	8	THWN/THHN-2	0.48%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.64%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-11A	CBOC	1	50	8	THWN/THHN-2	0.60%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-9A	IOC	3	10	8	THWN/THHN-2	0.19%	8	THWN/THHN-2	EGC	40	CB	1" EMT	40
DS-9	IOC	3	10	8	THWN/THHN-2	0.19%	8	THWN/THHN-2	EGC	40	CB	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-11A	IOC	3	10	8	THWN/THHN-2	0.19%	8	THWN/THHN-2	EGC	40	CB	1" EMT	40
DS-11	IOC	3	10	8	THWN/THHN-2	0.19%	8	THWN/THHN-2	EGC	40	CB	1" EMT	40

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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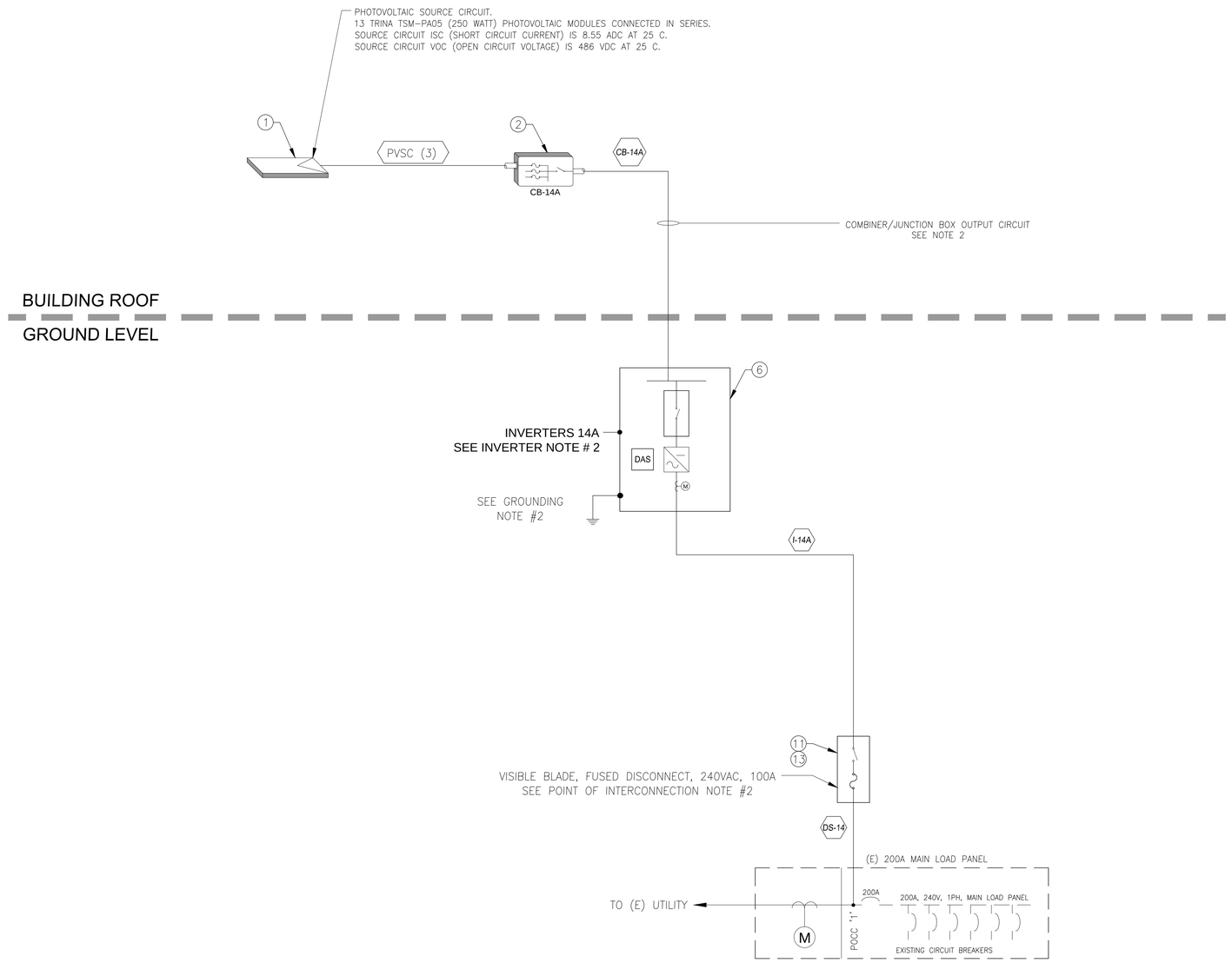
TITLE: SINGLE LINE DIAGRAM - UNITS 9 & 11
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 - 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E4.8
20 OF 30

100% CONSTRUCTION DRAWINGS



SINGLE LINE DIAGRAM NOTES:

1. ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH ALL LOCAL AND ELECTRICAL BUILDING CODES. THE INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE SEISMIC REGULATIONS.
2. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED WITH THE AC GROUNDING ELECTRODE.
3. COMBINER BOXES SHALL BE NEMA-4 ENCLOSURES OR BETTER.
4. ALL PV SOURCE CIRCUIT WIRES SHALL BE RHW/USE-2 SUNLIGHT RESISTANT OR XHHW-2.
5. #10-AWG BARE COPPER GROUND SHALL BE USED AS AN EQUIPMENT GROUND TO BOND THE MOUNTING SYSTEM TO THE OTHER PV SYSTEM EQUIPMENT AND TERMINATE IN THE COMBINER BOX. COMBINER BOX EQUIPMENT GROUND SHALL BE RUN IN SERIES AND TERMINATED IN THE INVERTER(S).

GROUNDING NOTES:

1. ALL BARE COPPER GROUND WIRING RUNNING BETWEEN ARRAYS SHALL BE PROTECTED FROM INADVERTENT DAMAGE BY BEING ROUTED INSIDE ACCEPTABLE CONDUIT OR WIREWAY. ALL CONDUITS OR WIREWAYS MUST BE NEATLY INSTALLED AND ATTACHED SECURELY TO THE MOUNTING SYSTEM.
2. THE GROUNDING ELECTRODE CONDUCTOR (GEC) ON THE AC SIDE OF THE SYSTEM SHALL BE TIED TO A CODE COMPLIANT GROUND ROD NEXT TO THE INVERTER OR AN EXISTING GEC POINT AT THE POCC.

GENERAL EQUIPMENT NOTES:

1. CIRCLE CALL-OUTS INDICATE BILL OF MATERIALS ITEM NUMBER AND IDENTIFY THE EQUIPMENT USED:
   - (2) INDICATES ITEM 2, COMBINER BOX
   - (3) INDICATES ITEM 3, JUNCTION BOX
   - (4) THRU (8) INDICATES ITEMS 4-8, INVERTER
   - PVSC (3) INDICATES CIRCUIT TYPE AND NUMBER OF STRINGS
2. COMBINER/JUNCTION BOX OUTPUT CIRCUITS: EQUAL NUMBER OF CONDUCTORS FOR POSITIVE AND NEGATIVE COMBINER TERMINALS (1) 10-AWG GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) REFER TO TABLE 1A FOR OUTPUT CONDUCTOR AND CONDUIT SIZING
3. ALL CONDUCTORS ARE COPPER.
4. ALL ENCLOSURES ARE NEMA-4 UNLESS OTHERWISE NOTED.
5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRICAL UTILITY COMPANY AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
6. COMBINER/JUNCTION BOXES ARE IDENTIFIED BY INVERTER DESIGNATION: INVERTER 14A: CB-14A
7. WHEN TRANSITIONING FROM RHW/USE-2 IN THE PV SOURCE CIRCUIT TO THHN/THWN-2, CONTRACTOR SHALL UTILIZE WATERTIGHT (NEMA-3R) JUNCTION BOX AND POLARIS CONNECTOR.

INVERTER NOTES:

1. INSTALLATION CONTRACTOR SHALL INSTALL COMBINER BOX OUTPUT CIRCUIT ON THE "COMBINED" INPUT CIRCUIT OF THE INVERTER. CONSULT INVERTER MANUAL FOR PROPER INSTALLATION OF REQUIRED CONNECTING DISTRIBUTORS.
2. INVERTERS ARE IDENTIFIED BY UNIT NUMBER AND LETTER. FOR UNIT 14 INVERTER DESIGNATION IS: INV 14A

POINT OF INTERCONNECTION NOTES:

1. CONNECT FUSED DISCONNECT TO BUS BAR ON LINE SIDE OF SERVICE PANEL. THIS IS A LINE SIDE TAP.
2. ATTACH PLACARDS PER APPLICABLE PLACARD SHEET INSTRCUCTIONS.

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.54%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-14A	CBOC	1	70	8	THWN/THHN-2	0.47%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-14A	IOC	3	10	8	THWN/THHN-2	0.15%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40
DS-14	IOC	3	10	8	THWN/THHN-2	0.15%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40

SINGLE LINE WIRING DIAGRAM - UNIT 14

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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FAX: 858.270.9334

OWNER/CLIENT:

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1550 MADONNA ROAD
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5865 AVENIDA ENCINAS,
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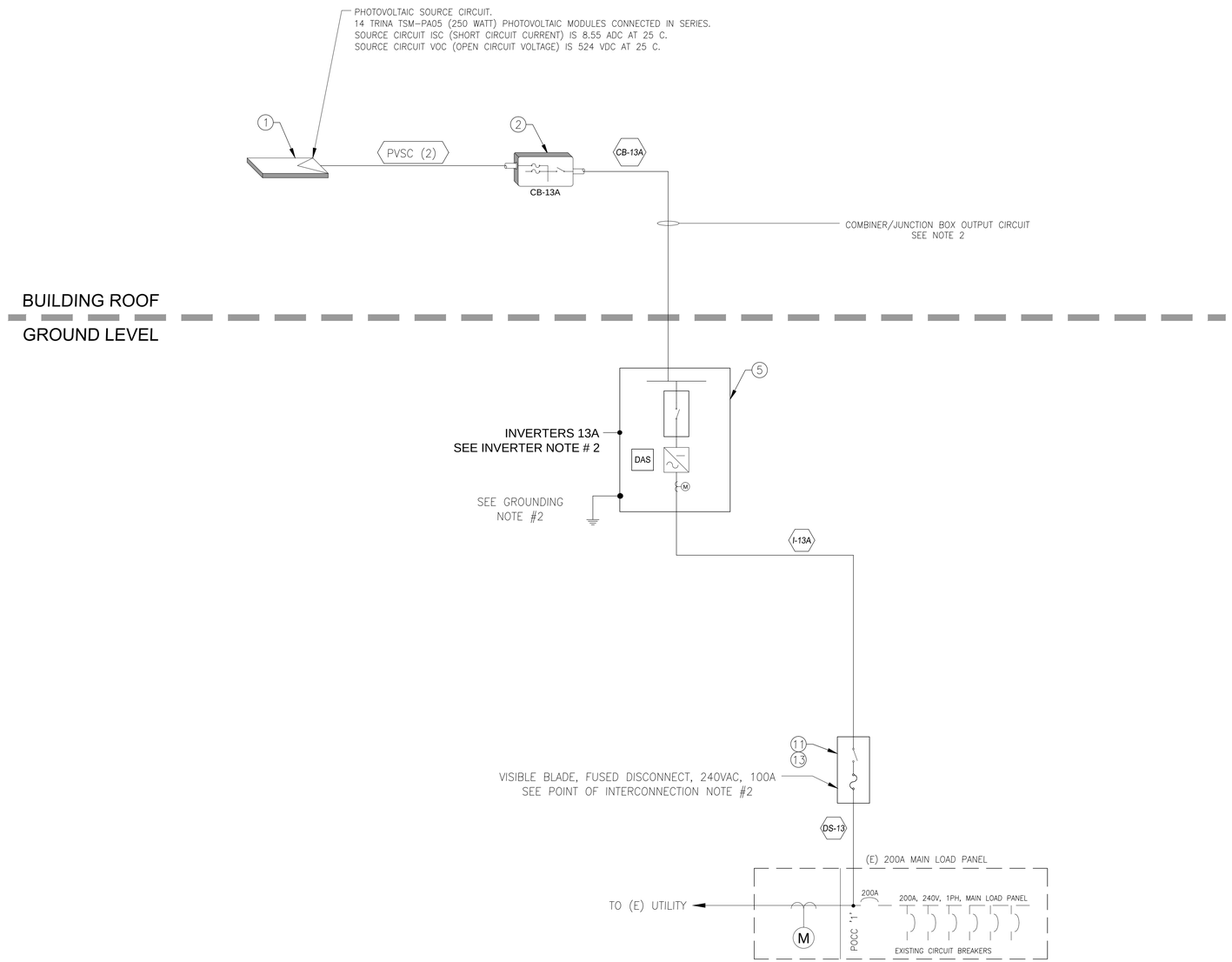
CARLSBAD, CA, 92008
P: (760) 607-7200

TITLE:
SINGLE LINE DIAGRAM - UNIT 14
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 - 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E4.9
21 OF 30

100% CONSTRUCTION DRAWINGS



SINGLE LINE DIAGRAM NOTES:

1. ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH ALL LOCAL AND ELECTRICAL BUILDING CODES. THE INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE SEISMIC REGULATIONS.
2. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED WITH THE AC GROUNDING ELECTRODE.
3. COMBINER BOXES SHALL BE NEMA-4 ENCLOSURES OR BETTER.
4. ALL PV SOURCE CIRCUIT WIRES SHALL BE RHW/USE-2 SUNLIGHT RESISTANT OR XHHW-2.
5. #10-AWG BARE COPPER GROUND SHALL BE USED AS AN EQUIPMENT GROUND TO BOND THE MOUNTING SYSTEM TO THE OTHER PV SYSTEM EQUIPMENT AND TERMINATE IN THE COMBINER BOX. COMBINER BOX EQUIPMENT GROUND SHALL BE RUN IN SERIES AND TERMINATED IN THE INVERTER(S).

GROUNDING NOTES:

1. ALL BARE COPPER GROUND WIRING RUNNING BETWEEN ARRAYS SHALL BE PROTECTED FROM INADVERTENT DAMAGE BY BEING ROUTED INSIDE ACCEPTABLE CONDUIT OR WIREWAY. ALL CONDUITS OR WIREWAYS MUST BE NEATLY INSTALLED AND ATTACHED SECURELY TO THE MOUNTING SYSTEM.
2. THE GROUNDING ELECTRODE CONDUCTOR (GEC) ON THE AC SIDE OF THE SYSTEM SHALL BE TIED TO A CODE COMPLIANT GROUND ROD NEXT TO THE INVERTER OR AN EXISTING GEC POINT AT THE POCC.

GENERAL EQUIPMENT NOTES:

1. CIRCLE CALL-OUTS INDICATE BILL OF MATERIALS ITEM NUMBER AND IDENTIFY THE EQUIPMENT USED:
   - (2) INDICATES ITEM 2, COMBINER BOX
   - (3) INDICATES ITEM 3, JUNCTION BOX
   - (4) THRU (8) INDICATES ITEMS 4-8, INVERTER
   - PVSC (3) INDICATES CIRCUIT TYPE AND NUMBER OF STRINGS
2. COMBINER/JUNCTION BOX OUTPUT CIRCUITS: EQUAL NUMBER OF CONDUCTORS FOR POSITIVE AND NEGATIVE COMBINER TERMINALS (1) 10-AWG GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) REFER TO TABLE 1A FOR OUTPUT CONDUCTOR AND CONDUIT SIZING
3. ALL CONDUCTORS ARE COPPER.
4. ALL ENCLOSURES ARE NEMA-4 UNLESS OTHERWISE NOTED.
5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRICAL UTILITY COMPANY AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
6. COMBINER/JUNCTION BOXES ARE IDENTIFIED BY INVERTER DESIGNATION: INVERTER 13A: CB-13A
7. WHEN TRANSITIONING FROM RHW/USE-2 IN THE PV SOURCE CIRCUIT TO THHN/THWN-2, CONTRACTOR SHALL UTILIZE WATERTIGHT (NEMA-3R) JUNCTION BOX AND POLARIS CONNECTOR.

INVERTER NOTES:

1. INSTALLATION CONTRACTOR SHALL INSTALL COMBINER BOX OUTPUT CIRCUIT ON THE "COMBINED" INPUT CIRCUIT OF THE INVERTER. CONSULT INVERTER MANUAL FOR PROPER INSTALLATION OF REQUIRED CONNECTING DISTRIBUTORS.
2. INVERTERS ARE IDENTIFIED BY UNIT NUMBER AND LETTER FOR UNIT 13 INVERTER DESIGNATION IS: INV 13A

POINT OF INTERCONNECTION NOTES:

1. CONNECT FUSED DISCONNECT TO BUS BAR ON LINE SIDE OF SERVICE PANEL. THIS IS A LINE SIDE TAP.
2. ATTACH PLACARDS PER APPLICABLE PLACARD SHEET INSTRCUCTIONS.

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.50%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
CB-13A	CBOC	1	70	8	THWN/THHN-2	0.44%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-13A	IOC	3	10	10	THWN/THHN-2	0.24%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40
DS-13	IOC	3	10	10	THWN/THHN-2	0.24%	8	THWN/THHN-2	EGC	35	CB	1" EMT	40

SINGLE LINE WIRING DIAGRAM - UNIT 13

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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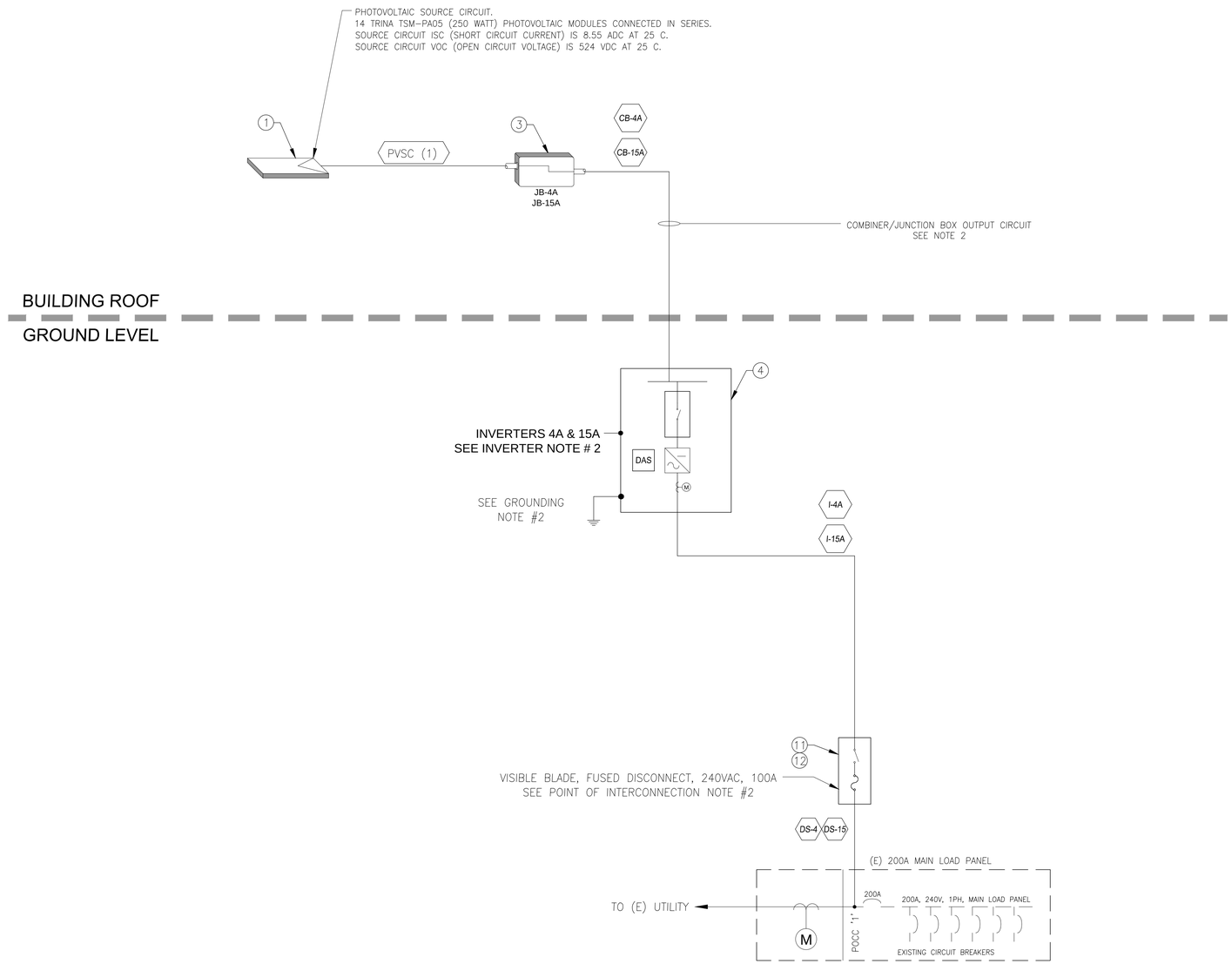
TITLE:
SINGLE LINE DIAGRAM - UNIT 13
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 - 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E4.10

100% CONSTRUCTION DRAWINGS



SINGLE LINE DIAGRAM NOTES:

1. ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH ALL LOCAL AND ELECTRICAL BUILDING CODES. THE INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE SEISMIC REGULATIONS.
2. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED WITH THE AC GROUNDING ELECTRODE.
3. COMBINER BOXES SHALL BE NEMA-4 ENCLOSURES OR BETTER.
4. ALL PV SOURCE CIRCUIT WIRES SHALL BE RHW/USE-2 SUNLIGHT RESISTANT OR XHHW-2.
5. #10-AWG BARE COPPER GROUND SHALL BE USED AS AN EQUIPMENT GROUND TO BOND THE MOUNTING SYSTEM TO THE OTHER PV SYSTEM EQUIPMENT AND TERMINATE IN THE COMBINER BOX. COMBINER BOX EQUIPMENT GROUND SHALL BE RUN IN SERIES AND TERMINATED IN THE INVERTER(S).

GROUNDING NOTES:

1. ALL BARE COPPER GROUND WIRING RUNNING BETWEEN ARRAYS SHALL BE PROTECTED FROM INADVERTENT DAMAGE BY BEING ROUTED INSIDE ACCEPTABLE CONDUIT OR WIREWAY. ALL CONDUITS OR WIREWAYS MUST BE NEATLY INSTALLED AND ATTACHED SECURELY TO THE MOUNTING SYSTEM.
2. THE GROUNDING ELECTRODE CONDUCTOR (GEC) ON THE AC SIDE OF THE SYSTEM SHALL BE TIED TO A CODE COMPLIANT GROUND ROD NEXT TO THE INVERTER OR AN EXISTING GEC POINT AT THE POCC.

GENERAL EQUIPMENT NOTES:

1. CIRCLE CALL-OUTS INDICATE BILL OF MATERIALS ITEM NUMBER AND IDENTIFY THE EQUIPMENT USED:
   - (2) INDICATES ITEM 2, COMBINER BOX
   - (3) INDICATES ITEM 3, JUNCTION BOX
   - (4) THRU (8) INDICATES ITEMS 4-8, INVERTER
   - PVSC (3) INDICATES CIRCUIT TYPE AND NUMBER OF STRINGS
2. COMBINER/JUNCTION BOX OUTPUT CIRCUITS: EQUAL NUMBER OF CONDUCTORS FOR POSITIVE AND NEGATIVE COMBINER TERMINALS (1) 10-AWG GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) REFER TO TABLE 1A FOR OUTPUT CONDUCTOR AND CONDUIT SIZING
3. ALL CONDUCTORS ARE COPPER.
4. ALL ENCLOSURES ARE NEMA-4 UNLESS OTHERWISE NOTED.
5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRICAL UTILITY COMPANY AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
6. COMBINER/JUNCTION BOXES ARE IDENTIFIED BY INVERTER DESIGNATION:
   INVERTER 4A: JB-4A
   INVERTER 15A: JB-15A
7. WHEN TRANSITIONING FROM RHW/USE-2 IN THE PV SOURCE CIRCUIT TO THHN/THWN-2, CONTRACTOR SHALL UTILIZE WATERTIGHT (NEMA-3R) JUNCTION BOX AND POLARIS CONNECTOR.

INVERTER NOTES:

1. INSTALLATION CONTRACTOR SHALL INSTALL COMBINER BOX OUTPUT CIRCUIT ON THE "COMBINED" INPUT CIRCUIT OF THE INVERTER. CONSULT INVERTER MANUAL FOR PROPER INSTALLATION OF REQUIRED CONNECTING DISTRIBUTORS.
2. INVERTERS ARE IDENTIFIED BY UNIT NUMBER AND LETTER. FOR UNITS 4 & 15 INVERTER DESIGNATION IS: INV 4A AND 15A

POINT OF INTERCONNECTION NOTES:

1. CONNECT FUSED DISCONNECT TO BUS BAR ON LINE SIDE OF SERVICE PANEL. THIS IS A LINE SIDE TAP.
2. ATTACH PLACARDS PER APPLICABLE PLACARD SHEET INSTRCUCTIONS.

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.50%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
JB-4A	CBOC	1	75	10	THWN/THHN-2	0.38%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 1A - DC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPE		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
Source	PVSC	1	100	10	RHW/USE-2	0.50%	#10	BARE	EGC	15	Fuse	BACK OF MODULE	
JB-15A	CBOC	1	50	10	THWN/THHN-2	0.25%	#10	THWN/THHN-2 (GREEN)	EGC	-	-	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-4A	IOC	3	10	10	THWN/THHN-2	0.12%	8	THWN/THHN-2	EGC	20	CB	1" EMT	40
DS-4	IOC	3	10	10	THWN/THHN-2	0.12%	8	THWN/THHN-2	EGC	20	CB	1" EMT	40

TABLE 2A - AC CIRCUIT SCHEDULE

CURRENT CARRYING CONDUCTOR							GROUNDING			OCPD		CONDUIT/RACEWAY	
CIRCUIT #	TYPE	QTY	DISTANCE	SIZE	INSULATION	V DROP	SIZE	INSULATION	TYPE	RATING	TYPE	SIZE /TYPE	%FILL
I-15A	IOC	3	10	10	THWN/THHN-2	0.12%	8	THWN/THHN-2	EGC	20	CB	1" EMT	40
DS-15	IOC	3	10	10	THWN/THHN-2	0.12%	8	THWN/THHN-2	EGC	20	CB	1" EMT	40

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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CARLSBAD, CA, 92008
P: (760) 607-7200

TITLE: SINGLE LINE DIAGRAM - UNITS 4 & 15

PHOTOVOLTAIC SYSTEM

PROJECT LOCATION: 1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 - 108

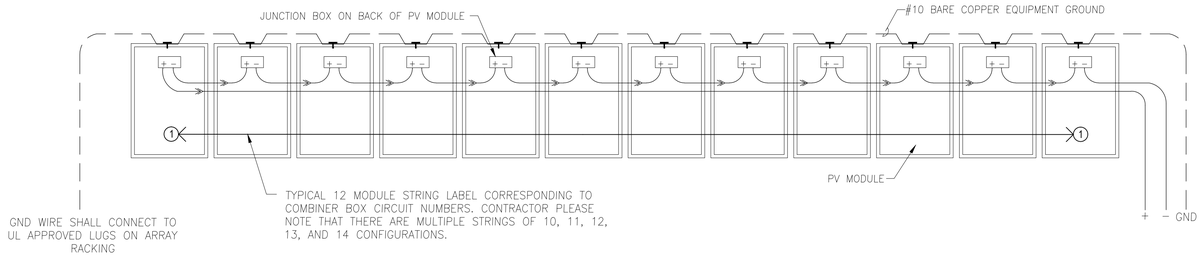
APN: 140-040-003

DATE: SEPTEMBER 10, 2012

SHEET NO.: E4.11

23 OF 30

100% CONSTRUCTION DRAWINGS

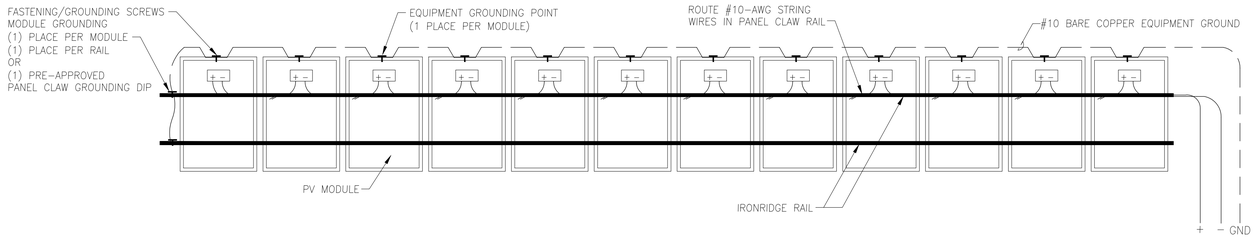


TYPICAL 12 STRING WIRING DETAIL
NOT TO SCALE

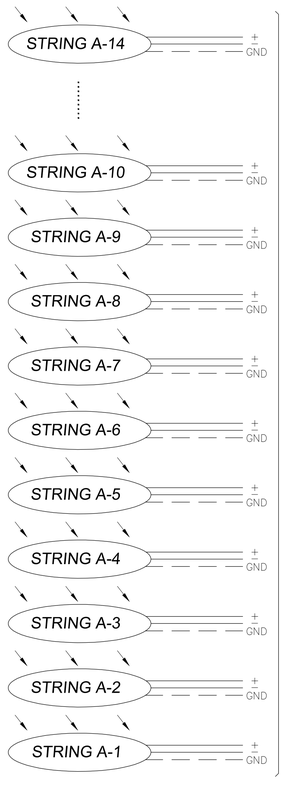
GROUNDING NOTES:

1. A SCREW IS ADDED TO EACH MODULE ALONG THE ARRAY.
2. (1) ADDITIONAL GROUNDING POINT IS TO BE ADDED TO THE RAILS TO PROVIDE EQUIPMENT GROUNDING OF THE ARRAY.
3. REFER TO PANEL CLAW ASSEMBLY INSTRUCTIONS FOR EQUIPMENT GROUNDING.
4. GROUNDING ELECTRODE SYSTEM SHALL BE PROVIDED IN ACCORDANCE WITH NEC 250.166 AND GROUNDING ELECTRODE CONDUCTOR SHALL BE INSTALLED IN ACCORDANCE WITH NEC 250.64.

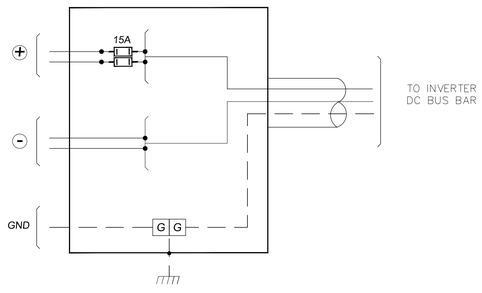
5. PANEL CLAW HAS A UL LISTED GROUND SYSTEM INTEGRATED INTO ITS RACKING SYSTEM. MODULE AND RACKING GROUNDING SYSTEM SHALL BE INSTALLED TO MANUFACTURER SPECIFICATIONS.



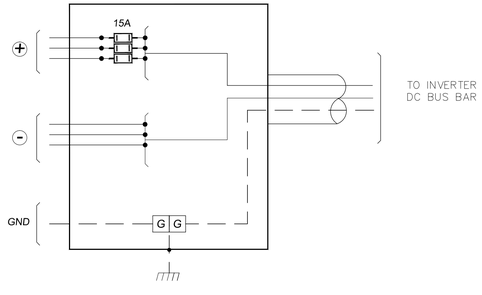
TYPICAL MODULE GROUNDING DETAIL
NOT TO SCALE



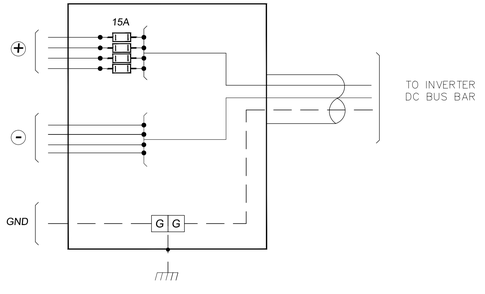
TYPICAL 10, 11, 12, 13, 14 STRING WIRING DETAIL
NOT TO SCALE



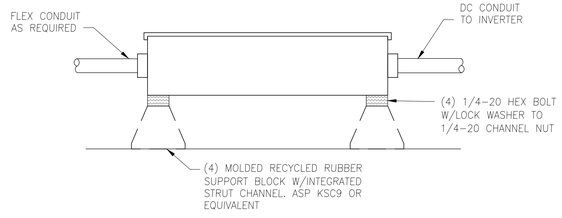
TYPICAL 2-CIRCUIT COMBINER BOX DETAIL
NOT TO SCALE



TYPICAL 3-CIRCUIT COMBINER BOX DETAIL
NOT TO SCALE



TYPICAL 4-CIRCUIT COMBINER BOX DETAIL
NOT TO SCALE



TYPICAL DC COMBINER BOX SUPPORT DETAIL
NOT TO SCALE

DC WIRING DETAILS
NOT TO SCALE

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12
ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV.	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS
4	04/08/11	AS–BUILTS

PREPARED BY:

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TITLE: DC WIRING DETAILS
PHOTOVOLTAIC SYSTEM

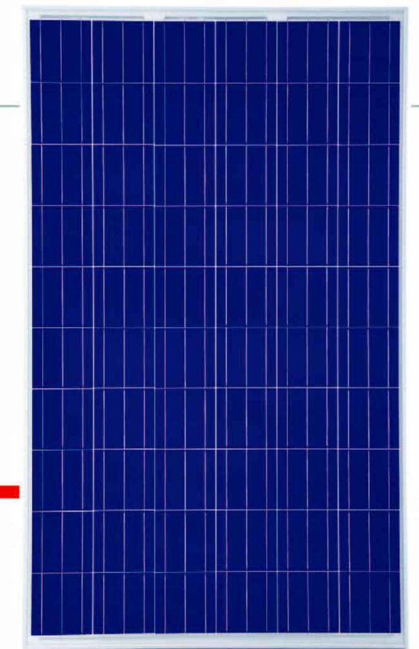
PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108
APN: 140–040–003
DATE: SEPTEMBER 10, 2012
SHEET NO.: E4.12
24 OF 30

100% CONSTRUCTION DRAWINGS

Mono | Multi | Solutions

TSM-PC05
TSM-PA05
THE UNIVERSAL SOLUTION



15.3%
MAX EFFICIENCY

250W
MAX POWER OUTPUT

10 YEAR
PRODUCT WARRANTY

25 YEAR
LINEAR POWER WARRANTY

Module can bear snow loads up to 5400Pa and wind loads up to 2400Pa

Guaranteed power output 0~+3%

High performance under low light conditions
Cloudy days, mornings and evenings

Independently certified by international certification bodies
IEC61215, IEC61730, UL1703, TUV Safety Class II, CE

Manufactured according to International Quality and Environment Management System Standards
ISO9001, ISO14001

Founded in 1997, Trina Solar is a vertically integrated PV manufacturer, involved in the production of ingots, wafers and cells to the assembly of high quality modules, using both mono and multicrystalline technologies. As of July 2011, the Company has already achieved an annualized nameplate module capacity of approximately 1.9GW. Trina Solar's wide range of products are used in residential, commercial, industrial and public utility applications throughout the world.

Only by matching an efficient cost-structure with proven performance will we as an industry achieve grid parity. And at Trina Solar, we have both.

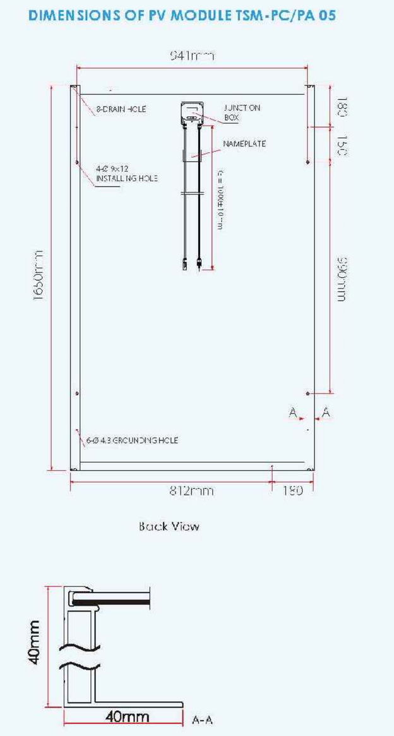
Trina Solar Limited
www.trinasolar.com

Trinasolar
The power behind the panel

LINEAR PERFORMANCE WARRANTY — NEW
10 Year Product Warranty • 25 Year Linear Power Warranty

TSM-PC05 / TSM-PA05 THE UNIVERSAL SOLUTION

DIMENSIONS OF PV MODULE TSM-PC/PA 05



ELECTRICAL DATA @ STC	TSM-230 PC/PA05	TSM-235 PC/PA05	TSM-240 PC/PA05	TSM-245 PC/PA05	TSM-250 PC/PA05
Peak Power Watts-P_{MAX} (Wp)	230	235	240	245	250
Power Output Tolerance-P_{MAX} (%)	0/+3	0/+3	0/+3	0/+3	0/+3
Maximum Power Voltage-V_{MP} (V)	29.8	30.1	30.4	30.7	31.0
Maximum Power Current-I_{MPP} (A)	7.72	7.81	7.89	7.98	8.06
Open Circuit Voltage-V_{OC} (V)	37.0	37.1	37.2	37.3	37.4
Short Circuit Current-I_{SC} (A)	8.26	8.31	8.37	8.47	8.55
Module Efficiency η_m (%)	14.1	14.4	14.7	15.0	15.3

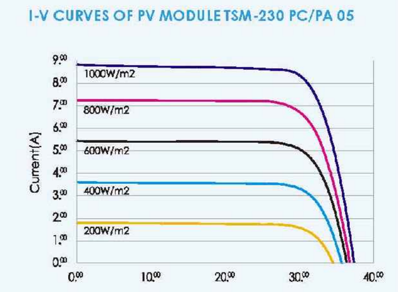
Values at Standard Test Conditions STC (Air Mass AM1.5, Irradiance 1000W/m², Cell Temperature 25°C).

ELECTRICAL DATA @ NOCT	TSM-230 PC/PA05	TSM-235 PC/PA05	TSM-240 PC/PA05	TSM-245 PC/PA05	TSM-250 PC/PA05
Maximum Power (W)	168	172	175	178	182
Maximum Power Voltage (V)	27.1	27.4	27.7	27.8	28.0
Maximum Power Current (A)	6.20	6.27	6.32	6.41	6.50
Open Circuit Voltage (V)	33.9	34.0	34.1	34.2	34.5
Short Circuit Current (A)	6.68	6.70	6.75	6.83	6.90

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1M/s.

MECHANICAL DATA	
Solar cells	Multicrystalline 156 × 156mm (6 inches)
Cell orientation	60 cells (6 × 10)
Module dimension	1650 × 992 × 40mm (64.95 × 39.05 × 1.57 inches)
Weight	19.5kg (43.0 lb)
Glass	High transparancy solar glass 3.2mm (0.13 inches)
Frame	Anodized aluminium alloy
J-Box	IP 65 rated
Cables / Connector	Photovoltaic Technology cable 4.0mm² (0.006 inches²), 1000mm (39.4 inches), MC4 / H4

I-V CURVES OF PV MODULE TSM-230 PC/PA 05



Average efficiency reduction of 4.5% at 200W/m² according to EN 60904-1.

TEMPERATURE RATINGS	
Nominal Operating Cell Temperature (NOCT)	46°C (±2°C)
Temperature Coefficient of P_{MAX}	- 0.43%/°C
Temperature Coefficient of V_{OC}	- 0.32%/°C
Temperature Coefficient of I_{SC}	0.047%/°C

MAXIMUM RATINGS	
Operational Temperature	-40~+85°C
Maximum System Voltage	1000V DC(IEC)/ 600V DC(UL)
Max Series Fuse Rating	15A

WARRANTY
10 year workmanship warranty
25 year linear performance warranty
(Please refer to product warranty for details)

PACKAGING CONFIGURATION
Modules per box: 24 pcs
Modules per 40' container: 672 pcs

CERTIFICATION

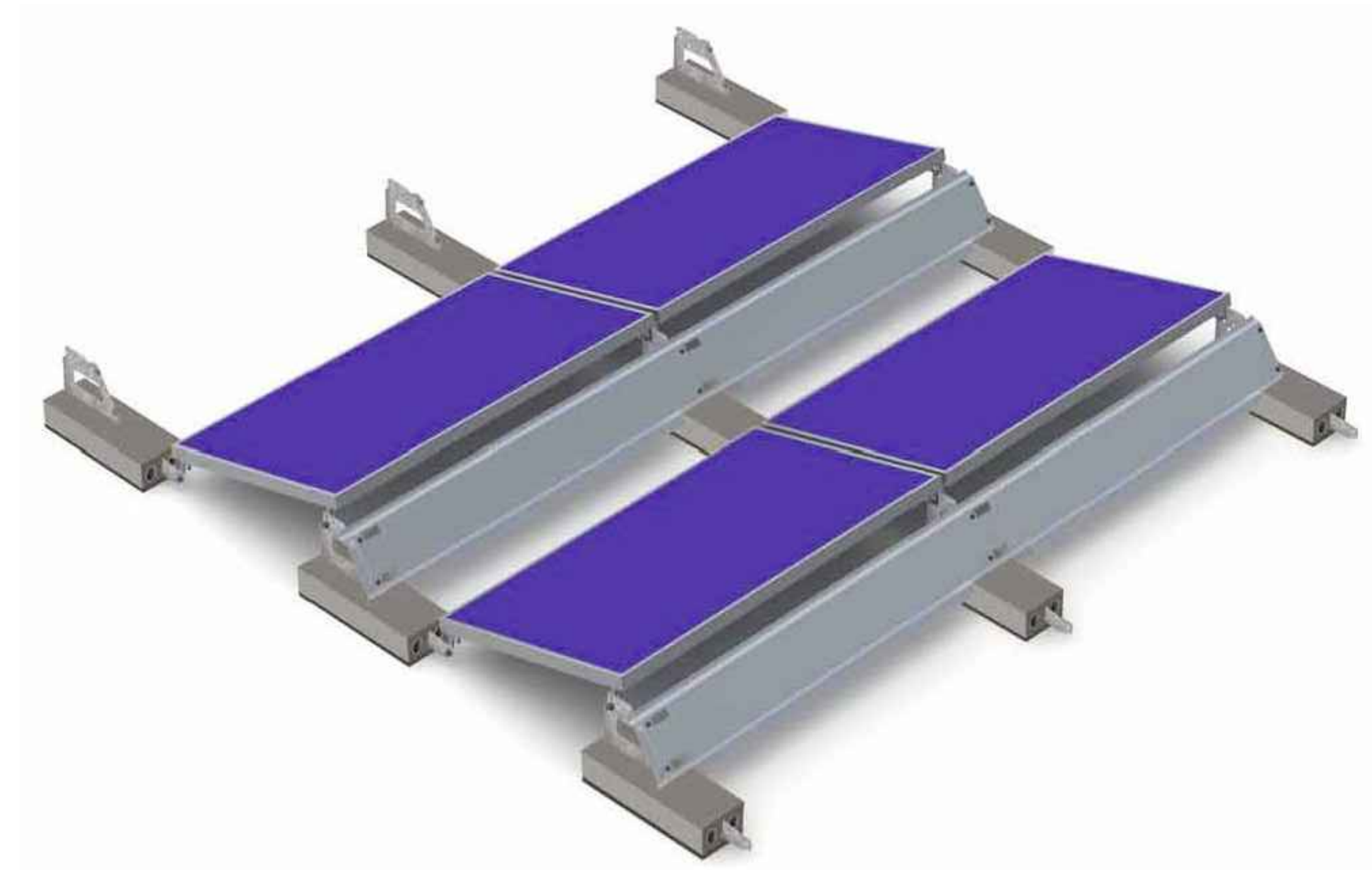
TSM EN Feb 2012

Trinasolar
The power behind the panel

MODULE DATA SHEET

panel claw
Securing a Brighter Future

LOWEST LIFE-CYCLE COST
CUTTING-EDGE ENGINEERING
WORLD-CLASS SERVICE
ENVIRONMENTAL RESPONSIBILITY



GRIZZLY BEAR® FR *Gen II*
10 Degree

PanelClaw delivers mounting and balance-of-system solutions to accelerate the adoption of photovoltaics worldwide.

panel claw
Securing a Brighter Future

Grizzly Bear *Gen II*
10 Degree
Flat Roof Mounting System

Grizzly Bear FR *Gen II* is an eco-friendly, integrated ballast mounting solution for commercial flat roofs. Its innovative 3-component design overcomes common roof installation challenges, enabling integrators to maximize array construction speed. Grizzly Bear offers the lowest life-cycle system costs of any product in its class.

3 Grizzly Bear Components

Support
- Universal, module-independent design
- Integrated ballast and wire-management chases
- Integrated recycled rubber roof protection pad for rapid installation
- Multiple mounting holes for wavy roof friendliness
- Inter-row spacing flexibility for optimal array design
- Multi-purpose tab for enhanced wire management or integrated electrical ground lug (when necessary)
- Integrated PEM® studs for easy Wind Deflector installation
- Stainless steel fastener kit with just two nut and bolt sizes
- Mechanical attachment option

Wind Deflector
- A-thermalized design for enhanced roof protection
- Chamfered edges and lightweight construction facilitate easy handling and safe installation
- Common Deflector for Polar Bear and Grizzly Bear 10 Degree products
- Available in aluminum or G90 steel

Claw
- Universal to all PanelClaw mounting systems
- UL 2703 certified for electric bonding and grounding
- Factory-installed module-mounting stainless steel screw
- Serrated design to increase clamping power

Application
Flat Roof
(max slope 5 degrees)

Installation Speed
190-210 modules per day
(3-person crew)

Module Tilt Angle
10-12 degrees
(dependent on module width)

Module Orientation
Landscape

Basic Wind Speed
Up to 100 mph *(161 km/h)*

Wind Exposure Category
B and C (D upon request)

Array Platform Load
~4 psf *(~19 kg/m²)*
(racking, ballast, and modules)

Building Height
Up to 60 feet *(18.3 meters)*
(custom upon request)

Standard Warranty
10 years

FOR PRODUCT AND SALES INFORMATION, CONTACT:
978.688.4900
sales@panelclaw.com
www.panelclaw.com

WASI Solar — Enterprise Partner

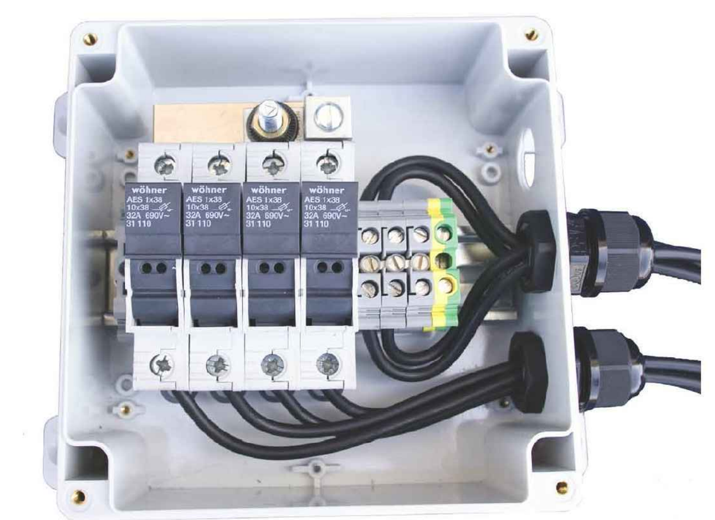
Printed on Recycled Paper

RACKING DATA SHEET

SOLAR BOS
310 Stealth Court, Livermore, CA 94551
925.456.7744 | www.solarbos.com

Compact Combiners, Fuse Boxes and Junction Boxes

SolarBOS Compact Solutions can be configured as combiners, pass-through fuse boxes or junction boxes. All three products are ETL listed to UL 1741 for 600 VDC photovoltaic systems and use compact NEMA-4X polycarbonate enclosures. They provide a low-cost and space-saving solution for residential and small commercial solar systems and can be shipped with pre-installed Multi-Contact or Tyco solar connectors.



SolarBOS Compact Combiner with Multi-Contact leads
CCS-04-15-4XP

PRODUCT FEATURES:
- ETL listed to UL-1741
- 2 to 6 input circuits
- NEMA-4X Polycarbonate Enclosures
- Rated for 600 VDC and continuous duty
- Touch-safe fuse holders
- Can be configured with pre-installed MC or Tyco connectors
- Can be configured as combiners, pass through fuse boxes, or junction boxes
- Ground blocks included
- External mounting feet included

Made in California
SolarBOS products are designed and manufactured with the system integrator in mind, using the highest quality components to ensure long-term field reliability. All products are assembled in our ETL certified facility in Livermore, California, and we guarantee customer satisfaction.

Configure your BOS Solutions Online:
www.solarbos.com

BALANCE OF SYSTEM PRODUCTS FOR THE SOLAR INDUSTRY

SOLAR BOS
310 Stealth Court, Livermore, CA 94551
925.456.7744 | www.solarbos.com

Compact Solutions Specifications

SolarBOS Compact Solutions offer many configuration options, including number of input circuits, number of output terminals and enclosure type. These options can be a bit overwhelming for the new customer, but they are, in fact, fairly straighforward.

A common top level part number is a CCS-04-15-4XP. This "reads" as a 4-circuit, single output, compact combiner with 15-amp fuses and NEMA-4X polymer enclosure. For the compact combiners, SolarBOS offers a range of 2 to 6 input circuits as well as options for pre-installed MultiContact or Tyco cable assemblies.

Please refer to the following table for specific product information.

Product Type	Combiner		Fuse Box		Junction Box	
Number of Input Circuits	2 to 4	5 to 6	2 to 4	5 to 6	2 to 4	5 to 6
Input Conductor Size Range (AWG)	#14 to 6		#14 to 6		#14 to 6	
Max Fuse Size (Amps)	30		30		30	
Max Rated Current (ADC Continuous)	76		76		76	
Number of Output Conductors	1		1		1	
Output Conductor Size Range (AWG)	#14 to 6		N/A		N/A	
Enclosure Dimensions (inches)	6.5x6.5x4	6.5x9.5x4	6.5x6.5x4	6.5x9.5x4	6.5x6.5x4	6.5x9.5x4
Approx. Weight *	4 lbs		4 lbs		4 lbs	
Enclosure NEMA Ratings	4X		4X		4X	

*Weights do not include solar cable leads.

SolarBOS Part Numbers
Due to the flexibility of SolarBOS products, part numbers reflect the specific construction of the combiners. Please contact SolarBOS directly for help specifying a combiner for your application. Example part numbers are explained below:

CCS-04-15-4XP: Compact Combiner, 4 circuit, single output terminals with15-amp fuses and NEMA-4X enclosure

CFB-06-08-4XP: Compact Fuse Box, 6 circuit, with 8-amp fuses and NEMA-4X enclosure

Configure your BOS Solutions Online: www.solarbos.com

COMBINER BOX DATA SHEET

ENGINEER APPROVAL:
REGISTERED PROFESSIONAL ENGINEER — ROBERTO RIVERA — NO. 16743 — Exp. 9/30/12 — ELECTRICAL — STATE OF CALIFORNIA
ROBERTO RIVERA, P.E. NO. 16743 — DATE: 09/10/12

REV.	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:
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OWNER/CLIENT:
MADONNA ROAD APARTMENTS
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Everyday Energy
SAVE MONEY · SAVE THE PLANET
EVERYDAY ENERGY
5865 AVENIDA ENCINAS,
SUITE 142A
CARLSBAD, CA, 92008
P: (760) 607-7200

TITLE:
PV SYSTEM DATA SHEETS
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: D5.1

100% CONSTRUCTION DRAWINGS

INVERTER DATA SHEETS

Fronius **IG Plus** PV Inverter

The first complete solution. Reliable. Proven. Smart.

An outstanding addition to the family: The next generation Fronius IG Plus inverter builds on a successful model with multiple enhancements, including maximum power harvest, a built-in six circuit string combiner, integrated, lockable DC Disconnect, significantly improved efficiency, and unbeatable reliability. New, larger power stages expand the proven Fronius IG family from 2 to 12 kW in a single inverter.

POWERING YOUR FUTURE

INPUT DATA — Fronius IG Plus		3.0-1 UNI	3.8-1 UNI	5.0-1 UNI	6.0-1 UNI	7.5-1 UNI	10.0-1 UNI*	11.4-1 UNI	11.4-3 Delta	12.0-3 WYE277
Recommended PV-Power (Wp)		2500-3450	3200-4400	4250-5750	5100-6900	6350-8600	8500-11500	9700-13100	9700-13100	10200-13800
MPPT-Voltage Range		230 ... 500 V								
DC Startup Voltage		245 V								
Max. Input Voltage (at 1000 W/m² 14°F (-10°C) in open circuit operation)		600 V								
Nominal Input Current		8.3 A	10.5 A	13.8 A	16.6 A	20.7 A	27.6 A	31.4 A	31.4 A	33.1 A
Max. usable Input Current		14.0 A	17.8 A	23.4 A	28.1 A	35.1 A	46.7 A	53.3 A	53.3 A	56.1 A
Admissible conductor size (DC)		No. 14 - 6 AWG								
Number of DC Input Terminals		6								
Max. Current per DC Input Terminal		20 A; Bus bar available for higher input currents								

OUTPUT DATA — Fronius IG Plus		3.0-1 UNI	3.8-1 UNI	5.0-1 UNI	6.0-1 UNI	7.5-1 UNI	10.0-1 UNI*	11.4-1 UNI	11.4-3 Delta	12.0-3 WYE277
Nominal output power ($P_{AC\,nom}$)		3000 W	3800 W	5000 W	6000 W	7500 W	9995 W	11400 W	11400 W	12000 W
Max. continuous output power 104°F (40°C) 208 V / 240 V / 277 V		3000 W	3800 W	5000 W	6000 W	7500 W	9995 W	11400 W	11400 W	12000 W
Nominal AC output voltage		208 V / 240 V / 277 V							208 V / 240 V	277 V
Operating AC voltage range (default)	208 V	183 - 229 V (-12 / +10 %)								
	240 V	211 - 264 V (-12 / +10 %)								
	277 V	244 - 305 V (-12 / +10 %)								
Max. continuous output current	208 V	14.4 A	18.3 A	24.0 A	28.8 A	36.1 A	48.1 A	54.8 A	31.6 A**	n.a.
	240 V	12.5 A	15.8 A	20.8 A	25.0 A	31.3 A	41.7 A	47.5 A	27.4 A**	n.a.
	277 V	10.8 A	13.7 A	18.1 A	21.7 A	27.1 A	36.1 A	41.2 A	n.a.	14.4 A**
Admissible conductor size (AC)		No. 14 - 4 AWG								
Max. continuous utility back feed current		0 A								
Nominal output frequency		60 Hz								
Operating frequency range		59.3 - 60.5 Hz								
Total harmonic distortion		< 3 %								
Power factor		1								

GENERAL DATA — Fronius IG Plus		3.0-1 UNI	3.8-1 UNI	5.0-1 UNI	6.0-1 UNI	7.5-1 UNI	10.0-1 UNI*	11.4-1 UNI	11.4-3 Delta	12.0-3 WYE277
Max. Efficiency		96.2 %								
CEC Efficiency	208 V	95.0 %	95.0 %	95.5 %	95.5 %	95.0 %	95.0 %	95.5 %	95.0 %	n.a.
	240 V	95.5 %	95.5 %	95.5 %	96.0 %	95.5 %	95.5 %	96.0 %	95.5 %	n.a.
	277 V	95.5 %	95.5 %	96.0 %	96.0 %	96.0 %	96.0 %	96.0 %	n.a.	96.0 %
Consumption in standby (night)		< 1 W								
Consumption during operation		8 W		15 W			22 W			
Cooling		Controlled forced ventilation, variable fan speed								
Enclosure Type		NEMA 3R								
Unit Dimensions (W x H x D)		17.1 x 24.8 x 9.6 in.		17.1 x 36.4 x 9.6 in.			17.1 x 48.1 x 9.6 in.			
Power Stack Weight		31 lbs. (14 kg)		57 lbs. (26 kg)			82 lbs. (37 kg)			
Wiring Compartment Weight		24 lbs. (11 kg)		26 lbs. (12 kg)			26 lbs. (12 kg)			
Admissible ambient operating temperature		-4 ... 122°F (-20 ... +50°C)								
Compliance		UL 1741-2005, IEEE 1547-2003, IEEE 1547.1, ANSI/IEEE C62.41, FCC Part 15 A & B, NEC Article 690, C22. 2 No. 107.1-01 (Sept. 2001)								

PROTECTION DEVICES — Fronius IG Plus	3.0-1 UNI	3.8-1 UNI	5.0-1 UNI	6.0-1 UNI	7.5-1 UNI	10.0-1 UNI*	11.4-1 UNI	11.4-3 Delta	12.0-3 WYE277
Ground fault protection	Internal GFDI (Ground Fault Detector/Interrupter); in accordance with UL 1741-2005 and NEC Art. 690								
DC reverse polarity protection	Internal diode								
Islanding protection	Internal; in accordance with UL 1741-2005, IEEE 1547-2003 and NEC								
Over temperature	Output power derating / active cooling								

* Complies with Canadian standard C22.2 No. 107.1-01 (Sept. 2001).

** per Phase

Fronius USA LLC Solar Electronic Division
10421 Citation Drive, Suite 1100, Brighton, Michigan, 48116
E-Mail: pv-us@fronius.com
www.fronius-usa.com

40,0006,2981,AE v01 2010

INVERTER CONNECTOR W/ COMBINER BOX

Connecting combined solar module strings using connecting distributors

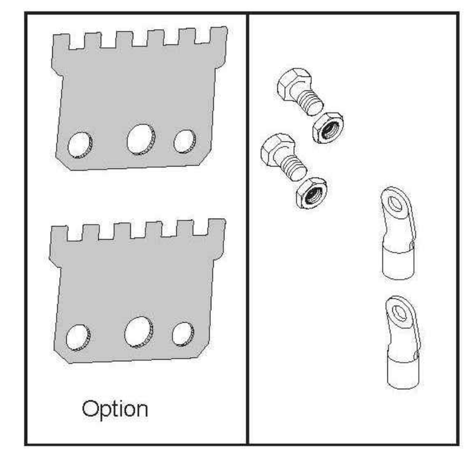
General

If several solar module strings are combined outside of the inverter into one solar module string, the current of the solar module string can be higher than the current permitted for a DC terminal (20 A).

In this case, you have the option of connecting the DC cables to the inverter using a connecting distributor.

Additional components required

The following components are required for connecting DC cables via a connecting distributor:



- 2 connecting distributors (available from Fronius as an option)
- Cable lugs

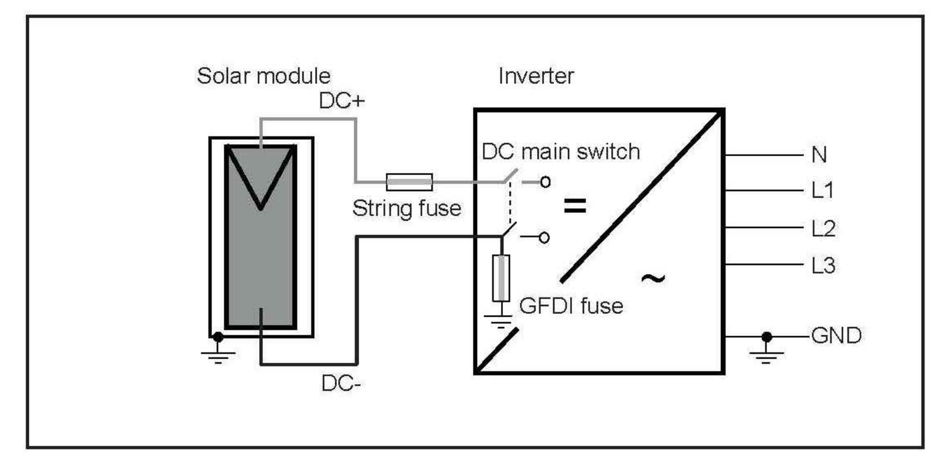
  Select the cable lugs according to the available DC cables
- Hexagon screws
- Hexagon nuts

  that fit the cable lugs

Solar module ground

The inverter is designed for a solar module ground at the negative pole. The solar module ground is carried out via a fuse in the inverter.

Solar module ground at negative pole with fuse:



DAS MONITORING DATA SHEETS

Locus ENERGY

Product Datasheet

LGate 50

RESIDENTIAL SOLAR MONITORING SOLUTION

Locus Energy's LGate 50 is a web-enabled datalogger for monitoring residential solar photovoltaic and thermal systems. It is designed to collect, store and upload a wide array of energy data allowing both system installers and owners to efficiently manage solar assets.

The LGate 50 can be configured to monitor nearly any type of solar energy system. It has a variety of digital and analog inputs enabling direct communication with third-party devices such as inverters and solar hot water controllers/sensors. Additionally, the LGate 50 features two energy meters which measure electric loads as well as non-revenue grade AC solar generation. Performance data is aggregated and uploaded automatically to the Locus Energy Smart Monitoring website which provides custom tools and analytics to all project stakeholders.

DATA COLLECTION

The LGate measures data from up to 15 third-party devices which is collected via RS232/485 and Modbus RTU protocols. The datalogger's energy meters measure power through feeds from current transformers combined with an inferred voltage reference from its power supply. For thermal systems, there are 6 temperature sensor inputs. All data feeds are stored in non-volatile memory and then uploaded with unique identifiers to provide maximum flexibility as to how the data is presented online.

NETWORK CONNECTIVITY

The LGate 50 is a plug and play device supporting a multitude of connectivity options. It can communicate over Ethernet, powerline carrier, or cellular networks. Data is transmitted only in outbound sessions over open ports requiring no additional network or firewall configuration. The connection and commissioning process is further simplified by the LGate's LED lights which indicate communication status without installers having to log in or call home.

ABOUT LOCUS

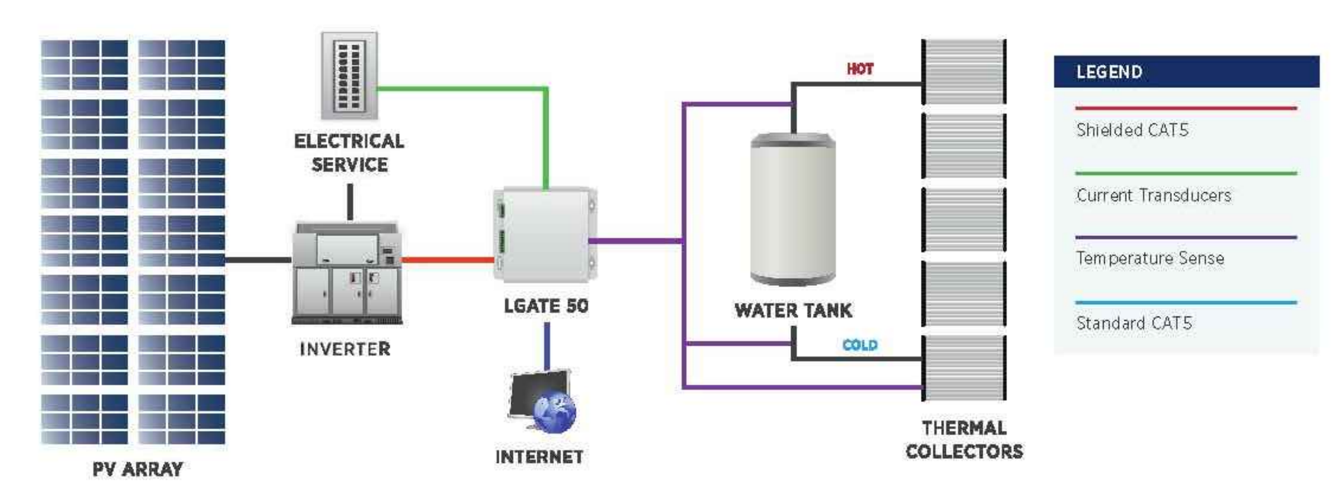
Locus Energy develops web-based asset management software for renewable energy systems. We provide monitoring, analytics and data services for deployments of solar photovoltaic and solar thermal technology. By leveraging Locus' products, renewable finance companies and integrators can drive down the cost and complexity of energy monitoring while making it much easier to maintain and service an installed client base. Founded in 2007, Locus is based in New York City and serves clientele across the world.

SOLUTIONS

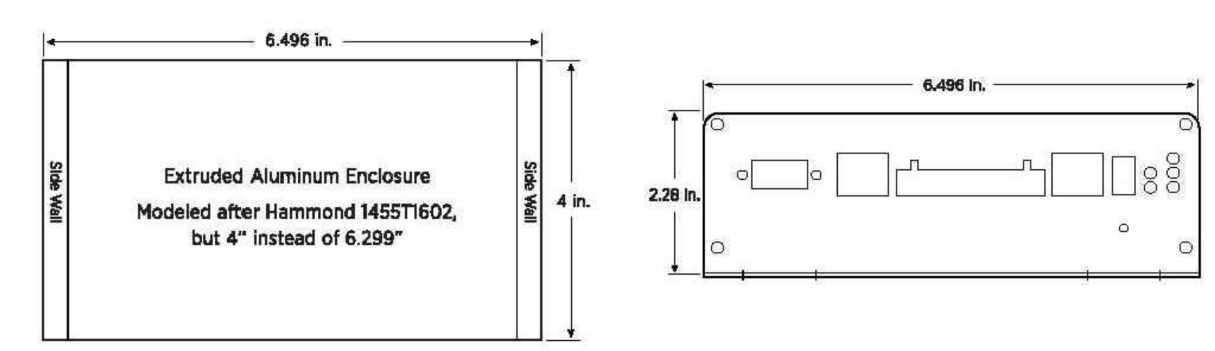
Locus Energy offers Smart Monitoring software services tailored to the following groups to help maximize the performance of renewable assets:

- Installers
- Financiers
- Utilities
- OEMs
- Regulators

DIAGRAM – TYPICAL CONFIGURATION



DIMENSIONS



SPECIFICATIONS

DATALOGGER	
Processor	ARM9 embedded CPU
OS	Custom version of Linux 2.6, OTA firmware updates
Memory	128 MB RAM
Logging interval	1 to 60 minutes, user selectable (default 5 minutes)
Display	USB-based handheld LCD (optional)

I/O
RS485 2 wire and 4 wire terminals
Modbus
RS232 serial port
USB
KYZ Pulse
4-20 mA analog

COMMUNICATIONS	
LAN	RJ45 10/100 Ethernet, full half duplex, auto polarity
Cellular	GSM/CDMA
WLAN	802.11 a/b/g/n, Zigbee
Networking	DHCP or static IP

POWER METER	
Voltage Inputs	120 VAC
Phases	Single phase, Split phase at 50 or 60 Hz
Current Inputs	mV full scale output CTs, mA output solid/split core CTs

COMPLIANCE
IEC 61010 (Safety)
FCC 15 Part B

PHYSICAL	
Enclosure	NEMA 3R Type (optional)
Weight	2 lbs 12 oz
Dimensions	6.5" L x 4" W x 2.3" H
Environment	-20 to 60C, 95% RH, non-condensing

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER ROBERTO RIVERA NO. 16743 Exp. 9/30/12 ELECTRICAL STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV.	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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6977 NAVAJO RD., SUITE 139
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FAX: 858.270.9334

OWNER/CLIENT:

MADONNA ROAD APARTMENTS
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

Everyday Energy — SAVE MONEY · SAVE THE PLANET

EVERYDAY ENERGY
5865 AVENIDA ENCINAS,
SUITE 142A
CARLSBAD, CA, 92008
P: (760) 607-7200

TITLE: PV SYSTEM DATA SHEETS — PHOTOVOLTAIC SYSTEM

PROJECT LOCATION: 1550 MADONNA ROAD, SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108

APN: 140–040–003

DATE: SEPTEMBER 10, 2012

SHEET NO.: D5.2

100% CONSTRUCTION DRAWINGS

DC COMBINER BOX IDENTIFICATION PLACARDS

PLACARD & 2011 NEC IDENTIFICATION NOTES:

1 - 19 INSTALL ON CORRESPONDING COMBINER BOXES – NEC 690.17 & 690.53

4 - 6 INSTALL ON CORRESPONDING INVERTER ASSEMBLIES – NEC 690.17 & 690.53

7 MANUFACTURE THREE PLACARDS. INSTALL ONE ON EACH AC/UTILITY DISCONNECT SWITCH CORRESPONDING TO EACH INVERTER.

8 MANUFACTURE THREE PLACARDS.
INSTALL NEXT TO GROUND FAULT INDICATOR – NEC 690.5 (C)

9 MANUFACTURE THREE PLACARDS.
INSTALL ON MAIN LOAD PANEL ADJACENT TO INTERCONNECTION POINT – NEC 690.4 (B)4

10 MANUFACTURE THREE PLACARDS.
INSTALL ON OUTSIDE OF BUILDING ADJACENT TO UTILITY OWNED EQUIPMENT OR INTERCONNECTION POINT – NEC 690.56

11 MANUFACTURE THREE PLACARDS.
INSTALL ON VISIBLE BLADE DISCONNECT – NEC 690.4 (B)7

12 MANUFACTURE THREE PLACARDS.
INSTALL ON INVERTER ASSEMBLY

GENERAL EQUIPMENT NOTES:

1. THE PLACARDS SHALL BE METAL OR PLASTIC WITH ENGRAVED OR MACHINE PRINTED LETTERS OR ELECTRO-PHOTO PLATING IN A CONSTRASTING COLOR TO THE PLAQUE.
2. PLAQUES SHALL BE ATTACHED TO THE EXTERIOR OF THE EQUIPMENT ENCLOSURE WITH POP RIVETS, MACHINE SCREWS, OR OTHER FASTENERS ACCEPTABLE TO THE AHJ.

iNVERTER ASSEMBLY IDENTIFICATION PLACARDS

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12

ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV.	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

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SAN LUIS OBISPO, CA 93405

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SAVE MONEY SAVE THE PLANET

EVERYDAY ENERGY
5865 AVENIDA ENCINAS,
SUITE 142A
CARLSBAD, CA, 92008
P: (760) 607-7200

TITLE: PV IDENTIFICATION PLACARDS
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: P6.1
27 OF 30

100% CONSTRUCTION DRAWINGS

INVERTER ASSEMBLY
'11A'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 31 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 7.5 kW

INVERTER ASSEMBLY
'12A'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 25 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 6.0 kW

INVERTER ASSEMBLY
'12B'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 25 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 6.0 kW

INVERTER ASSEMBLY
'13A'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 25 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 6.0 kW

INVERTER ASSEMBLY
'14A'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 25 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 6.0 kW

INVERTER ASSEMBLY
'15A'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 13 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 3.0 kW

INVERTER ASSEMBLY
'16A'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 31 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 7.5 kW

INVERTER ASSEMBLY
'16B'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 31 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 7.5 kW

INVERTER ASSEMBLY
'17A'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 42 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 10.0 kW

INVERTER ASSEMBLY
'17B'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 42 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 10.0 kW

INVERTER ASSEMBLY
'18A'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 25 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 6.0 kW

INVERTER ASSEMBLY
'18B'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 13 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 3.0 kW

INVERTER ASSEMBLY
'19A'

DANGER

HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 48 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 11.4 kW

INVERTER ASSEMBLY
'19B'

DANGER

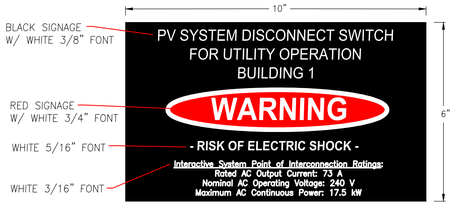
HIGH VOLTAGE
RISK OF ELECTRIC SHOCK
Authorized Service Personnel Only.

Interactive System Point of Interconnection:
Rated AC Output Current: 25 A
Nominal Operating AC Voltage: 240 V
Maximum AC Continuous Power: 6.0 kW

iNVERTER ASSEMBLY IDENTIFICATION PLACARDS

GENERAL EQUIPMENT NOTES:

1. THE PLACARDS SHALL BE METAL OR PLASTIC WITH ENGRAVED OR MACHINE PRINTED LETTERS OR ELECTRO–PHOTO PLATING IN A CONSTRASTING COLOR TO THE PLAQUE.
2. PLAQUES SHALL BE ATTACHED TO THE EXTERIOR OF THE EQUIPMENT ENCLOSURE WITH POP RIVETS, MACHINE SCREWS, OR OTHER FASTENERS ACCEPTABLE TO THE AHJ.



PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 2

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 38 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 9.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 3

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 62 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 15.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 4

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 13 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 3.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 5

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 31 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 7.5 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 6

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 50 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 12.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 7

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 50 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 12.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 9

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 31 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 7.5 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 10

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 84 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 20.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 11

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 31 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 7.5 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 12

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 50 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 12.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 13

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 25 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 6.0 kW

UTILITY DISCONNECT PLACARDS

PLACARD & 2011 NEC IDENTIFICATION NOTES:

1 – 3 INSTALL ON CORRESPONDING COMBINER BOXES – NEC 690.17 & 690.53

4 – 6 INSTALL ON CORRESPONDING INVERTER ASSEMBLIES – NEC 690.17 & 690.53

7 MANUFACTURE THREE PLACARDS. INSTALL ONE ON EACH AC/UTILITY DISCONNECT SWITCH CORRESPONDING TO EACH INVERTER.

8 MANUFACTURE THREE PLACARDS.
INSTALL NEXT TO GROUND FAULT INDICATOR – NEC 690.5 (C)

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INSTALL ON MAIN LOAD PANEL ADJACENT TO INTERCONNECTION POINT – NEC 690.4 (B)4

10 MANUFACTURE THREE PLACARDS.
INSTALL ON OUTSIDE OF BUILDING ADJACENT TO UTILITY OWNED EQUIPMENT OR INTERCONNECTION POINT – NEC 690.56

11 MANUFACTURE THREE PLACARDS.
INSTALL ON VISIBLE BLADE DISCONNECT – NEC 690.4 (B)7

12 MANUFACTURE THREE PLACARDS.
INSTALL ON INVERTER ASSEMBLY

ENGINEER APPROVAL:

REGISTERED PROFESSIONAL ENGINEER
ROBERTO RIVERA
NO. 16743
Exp. 9/30/12
ELECTRICAL
STATE OF CALIFORNIA

09/10/12
ROBERTO RIVERA, P.E. NO. 16743 — DATE:

REV:	DATE:	DESCRIPTION:
1	9/10/12	100% CONSTRUCTION DRAWINGS

PREPARED BY:

SUSTINEO

6977 NAVAJO RD., SUITE 139
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PHONE: 858.270.9333
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OWNER/CLIENT:

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1550 MADONNA ROAD
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5865 AVENIDA ENCINAS,
SUITE 142A
CARLSBAD, CA, 92008
P: (760) 607-7200

TITLE:
PV IDENTIFICATION PLACARDS

PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: P6.2
28 OF 30

100% CONSTRUCTION DRAWINGS

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 14

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 25 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 6.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 15

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 13 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 3.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 16

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 62 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 15.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 17

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 84 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 20.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 18

WARNING

- RISK OF ELECTRIC SHOCK -

Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 39 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 9.0 kW

PV SYSTEM DISCONNECT SWITCH
FOR UTILITY OPERATION
BUILDING 19

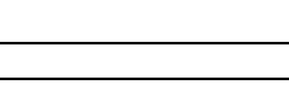
WARNING

- RISK OF ELECTRIC SHOCK -

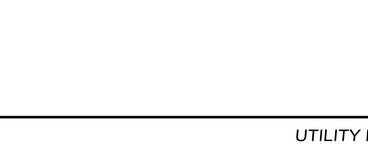
Interactive System Point of Interconnection Ratings:
Rated AC Output Current: 73 A
Nominal AC Operating Voltage: 240 V
Maximum AC Continuous Power: 17.4 kW

UTILITY DISCONNECT PLACARDS

11 GROUND FAULT WARNING PLACARD



10 PV SYSTEM BREAKER PLACARD



12 PARALLEL GENERATION WARNING PLACARD

15 WARRANTY PLACARD

PLACARD & 2011 NEC IDENTIFICATION NOTES:

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UTILITY DISCONNECT PLACARDS

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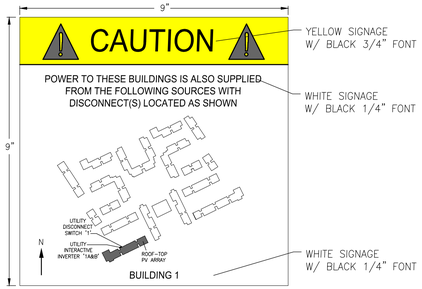
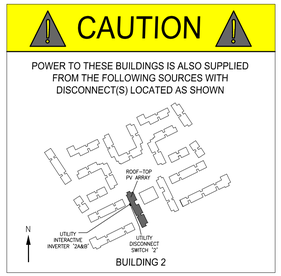
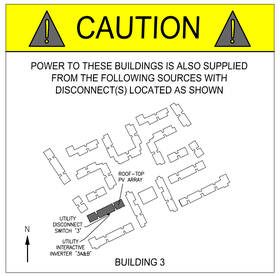
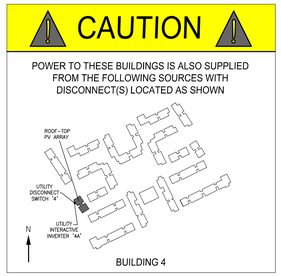
SHEET NO.: P6.3
29 OF 30

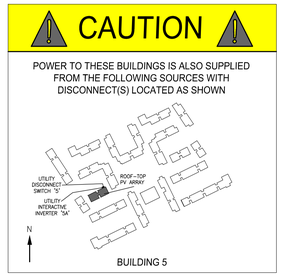
100% CONSTRUCTION DRAWINGS

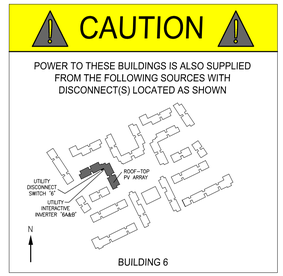


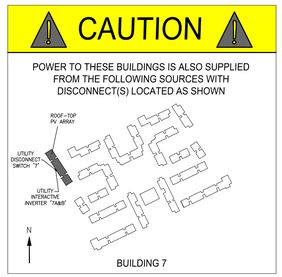


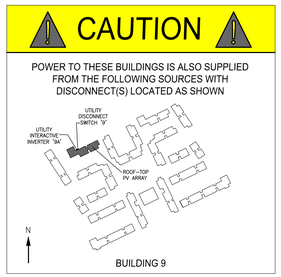


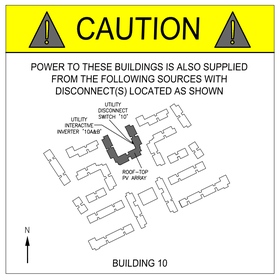


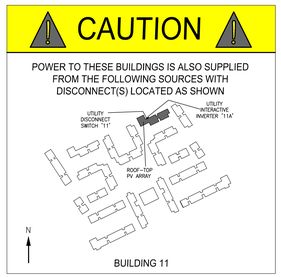


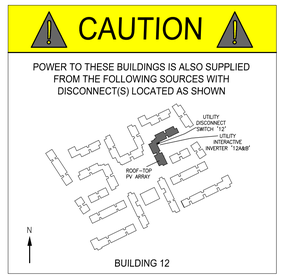


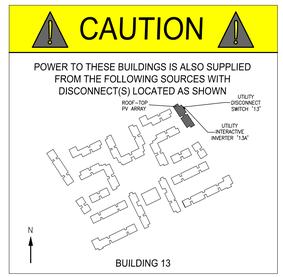


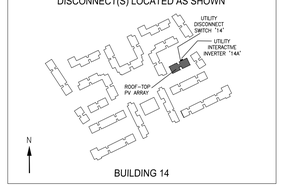


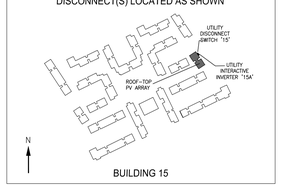


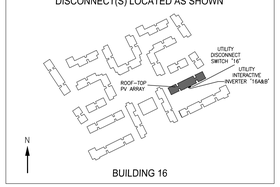


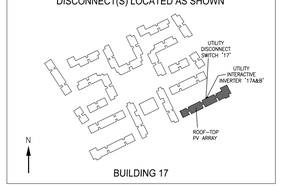


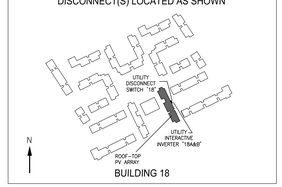


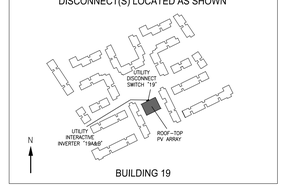












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TITLE: PV IDENTIFICATION PLACARDS
PHOTOVOLTAIC SYSTEM

PROJECT LOCATION:
1550 MADONNA ROAD
SAN LUIS OBISPO, CA 93405

PROJECT NO.: 038 – 108
APN: 140-040-003
DATE: SEPTEMBER 10, 2012
SHEET NO.: P6.4
30 OF 30

100% CONSTRUCTION DRAWINGS