GLENN COUNTY
Planning & Community Development Services Agency

225 North Tehama Street
Willows, CA 95988
530.934.6540
www.countyofglenn.net

Mardy Thomas, Director

REQUEST FOR REVIEW

COUNTY DEPARTMENTS/DISTRICTS

- ☒ Glenn County Agricultural Commissioner
- ☒ Glenn County Air Pollution Control District/CUPA
- ☒ Glenn County Assessor
- ☒ Glenn County Building Inspector
- ☒ Glenn County Engineering & Surveying Division
- ☒ Glenn County Environmental Health Department
- ☒ Glenn County Sheriff's Department
- ☐ Glenn County Board of Supervisors
- ☐ Glenn County Counsel
- ☐ Glenn County Planning Commission
- ☐ Glenn LAFCO

FEDERAL AGENCIES

- ☐ U.S. Army Corps of Engineers
- ☐ U.S. Fish and Wildlife Service
- ☐ U.S. Department of Agriculture
- ☐ U.S. Bureau of Reclamation – Willows

STATE AGENCIES

- ☐ Central Valley Flood Protection Board
- ☒ Central Valley Regional Water Quality Control Board (RWQCB)
- ☐ State Water Resources Control Board – Division of Drinking Water
- ☐ Department of Alcoholic Beverage Control (ABC)
- ☐ Department of Conservation, Division of Land Resource Protection
- ☐ Department of Conservation, Office of Mine Reclamation (OMR)
- ☒ Dept. of Conservation, Division of Oil, Gas, and Geothermal Resources
- ☐ Department of Fish and Wildlife
- ☐ Department of Food and Agriculture
- ☐ Department of Forestry and Fire Protection (Cal Fire)
- ☐ Department of Housing and Community Development (HCD)
- ☐ Department of Public Health
- ☐ Department of Toxic Substances Control (DTSC)
- ☐ Department of Transportation (Caltrans)
- ☐ Department of Water Resources (DWR)
- ☐ Office of the State Fire Marshall
- ☐ CalRecycle

OTHER

- ☐ Western Area Power Administration
- ☐ Sacramento River National Wildlife Refuge
- ☐ City of:
- ☐ Community Services District:
- ☒ Pacific Gas and Electric Company (PG&E)
- ☒ Fire Protection District: Artois
- ☐ Glenn County Resource Conservation District
- ☐ School District:
- ☐ NE Center of the CA Historical Resources Information System
- ☐ Railroad:
- ☐ Reclamation District:
- ☐ Water/Irrigation District:
- ☐ Special District:
- ☒ Tehama-Colusa Canal Authority
- ☐ UC Cooperative Extension Office

DATE: December 27, 2023

PROPOSAL: **Site Plan Review 2023-010, CCE Construction, Solar**

PLANNER: Courtney Paget, Assistant Planner
cpaget@countyofglenn.net

APPLICANT: CCE Construction, Inc.
668 N Coast Highway #272
Laguna Beach, CA 92651
(949) 632-8894
ben@conceptcleanenergy.com

LANDOWNER: Alcatraz Farming, Inc.
PO Box 875
Kentfield, CA 94914

ENGINEER: Mayfield Renewables
(315) 796-6567
nick@mayfield.energy

PROPOSAL: **Site Plan Review 2023-010, CCE Construction Inc., Solar**
CCE Construction Inc. has applied for SPR2023-0010 to install a 501.43 DC grid tied solar photovoltaic system at the Violich Farms Inc. This is a ground mount solar array with 1223 PV modules, will be servicing an existing well pump, and be 42,077 square feet in total.

LOCATION: The project is located west of County Road M, north of County Road 30, south of County Road 27, and east of County Road 99 within the unincorporated area of Glenn County, California.

APN: 024-100-017; (273.07± Acres)

ZONING: "AE-40," Exclusive Agricultural Zone

GENERAL PLAN: "Intensive Agriculture"

FLOOD ZONE: The project is located within Flood Zone "X" (unshaded). 06021C0400D, dated August 4, 2010 issued by the Federal Emergency Management Agency (FEMA). Flood Zone "X" (unshaded) consists of areas of minimal risk outside the 1-percent and 0.2-percent annual chance floodplains. No base flood elevations or base flood depths are shown within this zone.

The Glenn County Planning Division is requesting comments on this proposal for determination of completeness, potential constraints, and/or proposed Compliance Requirement. If comments are not received by **Tuesday, January 9, 2024,** it is assumed that there are no specific comments to be included in the analysis of the project. Comments submitted by e-mail are acceptable. Thank you for considering this matter.

AGENCY COMMENTS:

Please consider the following:

1. Is the information in the application complete enough to analyze impacts and conclude review?

2. Comments may include project-specific code requirements unique to the project. Cite code section and document (i.e., General Plan, Subdivision Map Act, etc.).

3. What are the recommended Compliance Requirements for this project and justification for each Requirement? When should each Compliance Requirement be accomplished (i.e., prior to any construction at the site, prior to recording the parcel map, filing the Final Map, or issuance of a Certificate of Occupancy, etc.)?

Date Submitted: _____

GLENN COUNTY
PLANNING AND COMMUNITY
DEVELOPMENT SERVICES AGENCY

225 North Tehama Street
Willows, CA 95988
(530) 934-6540
planning@countyofglenn.net

APPLICATION FOR SITE PLAN REVIEW

NOTE: FAILURE TO ANSWER APPLICABLE QUESTIONS AND REQUIRED ATTACHMENTS COULD DELAY THE PROCESSING OF YOUR APPLICATION.

1. Applicant(s):

   Name: CCE CONSTRUCTION INC

   Address: 668 N COAST HIGHWAY #272. LAGUNA BEACH, CA 92651

   Phone: 949-632-8894 E-Mail ben@conceptcleanenergy.com

2. Property Owner(s):

   Name: ALCATRAZ FARMING INC

   Address: PO BOX 875 KENTFIELD, CA. 94914

   Phone: 949-632-8894 E-Mail ben@conceptcleanenergy.com

3. Engineer/Person who Prepared Site Plan (if applicable):

   Name: MAYFIELD RENEWABLES. (NICK KIRK & BRIAN BRUGGEMAN)

   Address: _____

   Phone: 315-796-5657 E-Mail nick@mayfield.energy

4. Name and address of property owner's duly authorized agent (if applicable) who is to be furnished with notice of hearing (§65091 California Government Code).

   Name: CCE CONSTRUCTION INC.

   Mailing Address: 668 N COAST HIGHWAY #272. LAGUNA BEACH, CA 92651

5. Existing Use of Property: AGRICULTURAL

6. Request or Proposal:
INSTALLATIO N OF A 501.43 DC GRID TIED SOLAR PHOTOVOLTAIC (PV) SYSTEM AT THE VIOLICH FARMS INC AGRICULTURAL PROPERTY. THIS IS A GROUNDMOUNT SOLAR ARRAY WITH (1223) PV MODULES. THIS SOLAR ARRAY WILL BE SERVICING AN EXISTING WELL PUMP IN THE AG FIELD.

7. Address and Location of Project: 6569/6571 COUNTY RD 27 ORLAND, CA 95963

8. Current Assessor's Parcel Number(s): 024-100-017-000

9. Existing Zoning (http://gis.gcppwa.net/zoning/): AG

10. Provide any additional information that may be helpful in evaluating your proposal. *Example - number of employees, hours of operation, number of truck deliveries/loadings per day:*
THIS IS A PASSIVE SOLAR ARRAY WITH NO EMPLOYEES AND NO TRUCK DELIVERIES.

11. Setback Dimensions (Distance from property line to proposed structure):

North: NA ft. South: NA ft.

East: NA ft. West: NA ft.

Other Setback/s: NA ft.

12. Provide the following information:

Size of Assessor Parcel: NA sq.ft. NA acres

Mean height of structure: NA ft. Peak height of structure: NA ft.

Dimensions of proposed including overhangs: NA ft. x NA ft.

Total Square Footage (Existing): NA sq.ft.

Total Square Footage (Proposed): NA sq.ft.

DECLARATION UNDER PENALTY OF PERJURY

(Must be signed by Applicant(s) and Property Owner(s))
(Additional sheets may be necessary)

The Applicant(s) and/or Property Owner(s), by signing this application, shall be deemed to have agreed to defend, indemnify, release and hold harmless the County, its agents, officers, attorneys, employees, boards and commissions from any claim, action or proceeding brought against the foregoing individuals or entities, the purpose of which is to attack, set aside, void or null the approval of this development entitlement or approval or certification of the environmental document which accompanies it, or to obtain damages relating to such action(s). This indemnification agreement shall include, but not be limited to, damages, costs expenses, attorney fees or expert witness fees that may be asserted by any person or entity, including the applicant, arising out of or in connection with the approval of the entitlement whether or not there is concurrent passive or active negligence on the part of the County.

Applicant(s):

Signed: Benjamin R. Earl

Print: BEN EARL FOR CCE CONSTRUCTION INC.

Date: 12-12-23

Address: 668 N COAST HIGHWAY #272 LAGUNA BEACH, CA 92651

I am (We are) the owner(s) of property involved in this application and I (We) have completed this application and all other documents required.

I am (We are) the owner(s) of the property involved in this application and I (We) acknowledge the preparation and submission of this application.

I (We) declare under penalty of perjury that the foregoing is true and correct.

Property Owner(s):

Signed: _____

Print: _____

Date: _____

Address: _____

VIOLICH FARMS INC.
GREENWOOD, NORTHSTATE SERVICE
501.430kW DC GRID-TIE SOLAR ELECTRIC SYSTEM
6545-6540 CO RD 27
ORLAND, CA 95963

SCOPE OF WORK

THE PROJECT SCOPE INCLUDES THE INSTALLATION OF A GRID-TIED SOLAR PHOTOVOLTAIC SYSTEM AT THE VIOLICH FARMS INC. AGRICULTURAL PROPERTY IN ORLAND, CA.

THE INSTALLATION CONSISTS OF A TILT UP GROUND MOUNT SOLAR ARRAY, 7 STRING-INVERTER(S), AND RELATED ELECTRICAL METERING AND SAFETY EQUIPMENT. ALL EQUIPMENT WILL BE INSTALLED AS REQUIRED BY APPLICABLE CODES AND THE LOCAL UTILITY COMPANY. DURING DAYLIGHT HOURS THIS PHOTOVOLTAIC SYSTEM (SOLAR ELECTRIC) WILL PROVIDE ELECTRICITY IN PARALLEL WITH THE LOCAL UTILITY SERVICE PROVIDER.

SYSTEM DESCRIPTION

FACILITY SERVICE VOLTAGE: 480Y/277V, 3 PHASE, 4 WIRE
(1223) AUXIN, AXN10M410W, 410WDC, MONOCRYSTALLINE, CEC PTC RATING: 385.5WDC
(7) YASKAWA SOLECTRIA SOLAR, PVI-60TL-480, 60kVA, STRING-INVERTER(S), 480VAC, 3ϕ

501.430kW DC
420.000kW AC
464.395kW AC CEC

GENERAL NOTES

ALL ELECTRICAL WORK TO BE INSTALLED BY A QUALIFIED AND LICENSED ELECTRICAL CONTRACTOR.

ALL SOLAR MODULES SHALL BE UL LISTED 1703 & CEC APPROVED. ALL INVERTERS SHALL BE UL LISTED 1741 CERTIFIED & CEC APPROVED. ALL ELECTRICAL COMPONENTS AND MATERIALS SHALL BE LISTED FOR ITS PURPOSE AND INSTALLED IN A WORKMAN LIKE MANNER. ALL OUTDOOR EQUIPMENT SHALL MEET APPROPRIATE NEMA STANDARDS.

THE ELECTRICAL CONTRACTOR IS ADVISED THAT ALL DRAWINGS AND COMPONENT MANUALS ARE TO BE UNDERSTOOD PRIOR TO INSTALLATION. THE CONTRACTOR IS ADVISED TO HAVE ALL SWITCHES IN THE "OFF" POSITION AND FUSES REMOVED PRIOR TO INSTALLATION OF FUSE-BEARING COMPONENTS.

THIS SYSTEM IS INTENDED TO BE OPERATED IN PARALLEL WITH THE UTILITY SERVICE PROVIDER. ANTI-ISLANDING PROTECTION IS A REQUIREMENT OF UL 1741 AND IS INTENDED TO PREVENT THE OPERATION OF THE PV SYSTEM WHEN THE UTILITY GRID IS NOT OPERATIONAL.

PERMISSION TO OPERATE THE SYSTEM IS NOT AUTHORIZED UNTIL FINAL INSPECTIONS AND APPROVALS ARE OBTAINED FROM THE LOCAL AUTHORITY HAVING JURISDICTION AND THE LOCAL UTILITY SERVICE PROVIDER.

ALL FASTENERS SHALL BE CORROSION RESISTANT APPROPRIATE FOR SITE CONDITIONS. CONNECTORS SHALL BE TORQUED PER DEVICE LISTING OR ENGINEERING RECOMMENDATIONS.

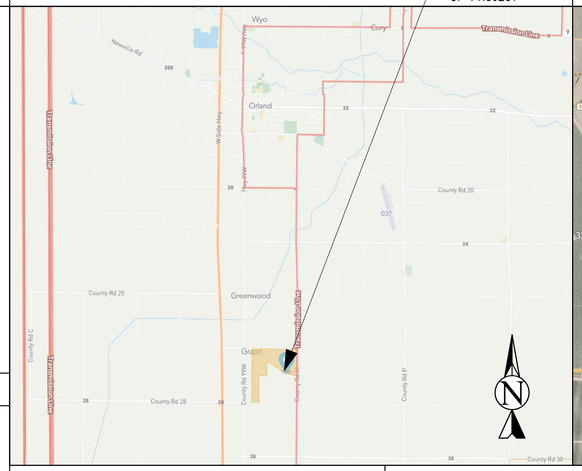
ALL LAYOUT DIMENSIONS ARE SHOWN TO THE NEAREST 1 INCH U.O.N.

APPLICABLE CODES

CALIFORNIA BUILDING CODE, 2022
CALIFORNIA ELECTRICAL CODE, 2022
CALIFORNIA FIRE CODE, 2022

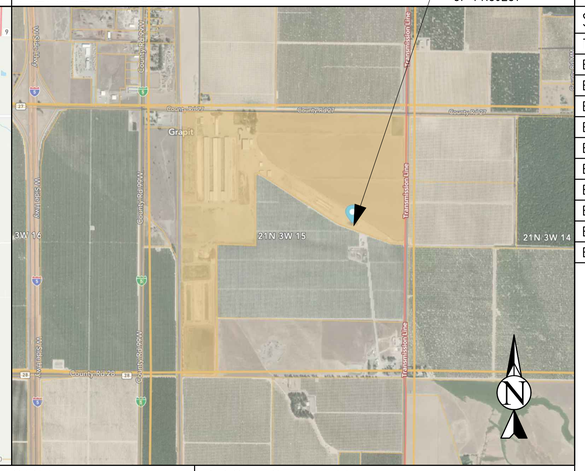
VICINITY MAP

PROPOSED LOCATION OF PROJECT



AERIAL IMAGE

PROPOSED LOCATION OF PROJECT



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GENERAL ABBREVIATIONS

(E)	EXISTING
AHJ	AUTHORITY HAVING JURISDICTION
AL	ALUMINUM
APPROX	APPROXIMATE
ARY	ARRAY
ASHRAE	AMERICAN SOCIETY OF HEATING REFRIGERATING AND AIR CONDITIONING ENGINEERS
BLDG	BUILDING
CL	CENTERLINE
DAS	DATA ACQUISITION SYSTEM
DIA	DIAMETER
DO	DITTO
EW	EAST-WEST
FBO	FURNISHED BY OTHERS
FF	FORWARD FACING
GALV	GALVANIZED
HDG	HOT DIP GALVANIZED
HVAC	HEATING VENTILATION AND AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
MFR	MANUFACTURER
MOD	SOLAR MODULE
NEC	NATIONAL ELECTRICAL CODE
NS	NORTH-SOUTH
NTS	NOT TO SCALE
OAE	OR APPROVED EQUIVALENT
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
PV	PHOTOVOLTAIC
PVC	POLY VINYL CHLORIDE
SCH	SCHEDULE
SS	STAINLESS STEEL
SSS	SOLAR SUPPORT STRUCTURE
STC	STANDARD TEST CONDITIONS
TBD	TO BE DETERMINED
TOF	TILT AND ORIENTATION FACTOR
TP	TAMPER PROOF
TSRF	TOTAL SOLAR RESOURCE FACTOR
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
VIF	VERIFY IN FIELD
WP	WEATHER PROOF

PROJECT DIRECTORY

OWNER
VIOLICH FARMS INC.

AUTHORITY HAVING JURISDICTION
GLENN COUNTY PLANNING & COMMUNITY DEVELOPMENT SERVICES
225 N TEHAMA ST
WILLOWS, CA 95988

UTILITY
PG&E

PROJECT TEAM

CONTRACTOR
FIRM: CONCEPT CLEAN ENERGY
CONTACT: ELLIOT JARAMILLO
PHONE: (510)-813-0935

SYSTEM DESIGNER
FIRM: MAYFIELD RENEWABLES
CONTACT: NICK KIRK
PHONE: (541)-754-2001

ELECTRICAL ENGINEER
FIRM: MAYFIELD RENEWABLES
CONTACT: BRIAN BRUGGEMAN
PHONE: (541)-754-2001

CONCEPT CLEAN ENERGY
668 N. COAST HWY., STE 272
LAGUNA BEACH, CA 92651
L#: 1042800

STAMP:

GRID-TIE SOLAR ELECTRIC SYSTEM
VIOLICH FARMS INC.
GREENWOOD, NORTHSTATE SERVICE
6545-6540 CO RD 27
ORLAND, CA 95963

PROJECT NUMBER: 23-3639C

SCALE
NTS
ORIGINAL SIZE 24"X36"
SHEET SIZE ARCH "D"
0 ½" 1"

REV	ISSUED	BY	DESCRIPTION
	8/17/23	RH	UTILITY INTERCONNECTION SET
	9/26/23	NK	CD IFR - ISSUED FOR REVIEW
	10/27/23	BB	CD IFC - ISSUED FOR CONSTRUCTION

SHEET NO. & NAME:
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ELECTRICAL SPECIFICATIONS

GENERAL: (GRID-TIE, CEC 2022)

1. THIS PROPOSED SOLAR ELECTRIC SYSTEM IS INTENDED TO OPERATE IN PARALLEL WITH POWER RECEIVED FROM THE UTILITY SERVICE PROVIDER.
2. THE INVERTER FOR THE PROPOSED SOLAR ELECTRIC SYSTEM SHALL BE IDENTIFIED AND LISTED AS A UTILITY INTERACTIVE INVERTER FOR USE IN SOLAR PHOTOVOLTAIC SYSTEMS.
3. THIS SYSTEM IS INTENDED TO CONNECT TO THE EXISTING FACILITY POWER SYSTEM AT ONE POINT, POINT OF CONNECTION (POC). THIS CONNECTION SHALL BE IN COMPLIANCE WITH EITHER CEC ARTICLE 705.11 "SUPPLY-SIDE SIDE SOURCE CONNECTIONS" OR 705.12 "LOAD-SIDE SOURCE CONNECTIONS."
4. ALL SOURCE CIRCUITS SHALL HAVE INDIVIDUAL SOURCE CIRCUIT PROTECTION FOR TESTING AND ISOLATION.
5. ALL DISCONNECTS AND COMBINERS SHALL BE SECURED FROM UNAUTHORIZED/UNQUALIFIED PERSONNEL BY LOCK OR LOCATION.
6. ALL DISCONNECTS, COMBINERS, PULL/SPLICE BOXES, AND ENCLOSURES SHALL BE LISTED FOR ITS PURPOSE.
7. EQUIPMENT SHALL BE INSTALLED IN A SECURE AREA. INVERTER PERFORMANCE MAY BE AFFECTED IF INSTALLED IN DIRECT SUNLIGHT.
8. THE INVERTER TO POINT OF CONNECTION (POC) HAS BEEN DESIGNED FOR NO MORE THAN 2% VOLTAGE RISE BASED ON NOMINAL VOLTAGE AND CURRENT VALUES.

WIRING METHODS:

1. ALL WIRING METHODS AND INSTALLATION PRACTICES SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (CEC), LOCAL STATE CODES, AND OTHER APPLICABLE LOCAL CODES. THE INTERIOR OF RACEWAYS INSTALLED BELOW GRADE AND IN WET LOCATIONS ABOVE GRADE SHALL BE CONSIDERED WET LOCATIONS, CEC 300.5(B) AND 300.9.
2. EXPOSED PV SOURCE CIRCUIT WIRING SHALL BE USE-2 OR PV WIRE, 90 DEGREE C, WET RATED AND UV RESISTANT. ALL EXPOSED CABLES, SUCH AS MODULE LEADS SHALL BE SECURED WITH MECHANICAL OR OTHER SUNLIGHT RESISTANT MEANS.
3. FOR ALL FUNCTIONALLY GROUNDED PV SYSTEMS, ALL PV SOURCE AND OUTPUT CIRCUIT CONDUCTORS SHALL BE RED FOR POSITIVE, BLACK FOR NEGATIVE AND GREEN FOR GROUND.
4. ALL FIELD WIRING THAT IS NOT COLOR CODED SHALL BE MARKED AT BOTH ENDS WITH PERMANENT WIRE MARKERS TO IDENTIFY POLARITY, INVERTER NUMBER AND CIRCUIT IDENTIFICATION. SOURCE CIRCUITS SHALL BE IDENTIFIED AT ALL POINTS OF TERMINATION, CONNECTION AND SPLICES.
5. CONDUIT TYPES USED IN THE PV INSTALLATION SHALL BE APPROVED FOR THEIR SPECIFIC APPLICATION AND SUPPORTED PROPERLY PER CEC.
6. STRAIGHT CONDUIT RUNS SHALL HAVE EXPANSION FITTINGS PER CEC 300.7, IF EXPOSED TO WEATHER AND MORE THAN ¼" OF EXPANSION AND CONTRACTION IS EXPECTED.
7. IF USED, ALL WIRENUTS ARE TO BE INSTALLED PER LOCATION REQUIREMENTS AND MANUFACTURERS SPECIFICATIONS BY A QUALIFIED/CERTIFIED PERSON. WIRENUTS SHALL NOT BE USED ON DC CONDUCTORS.
8. FUSES AND WIRES SUBJECT TO TRANSFORMER INRUSH CURRENT SHALL BE SIZED ACCORDINGLY.
9. ALL DC MATERIALS SHALL BE LISTED WITH A DC VOLTAGE RATING GREATER THAN OR EQUAL TO THE MAXIMUM PV SYSTEM VOLTAGE.
10. ALL INTERCONNECT WIRING AND POWER CONDUCTORS INTERFACING THE UNIT MUST BE IN ACCORDANCE WITH THE CEC ANSI/NFPA 70 AND ANY APPLICABLE LOCAL CODES. CONDUCTORS MUST CONFORM TO THE MINIMUM BEND RADIUS SPECIFIED IN THE SPECIFIC CEC ARTICLE. KEEP ALL WIRE BUNDLES AWAY FROM ANY SHARP EDGES TO AVOID DAMAGE TO WIRE INSULATION. ALL CONDUCTORS SHOULD BE MADE OF COPPER AND RATED FOR 90 DEGREE C MINIMUM UNLESS OTHERWISE NOTED. FOR OUTDOOR INSTALLATIONS, ALL INTERCONNECT CONDUITS AND FITTINGS MUST BE PROPERLY NEMA RATED AS REQUIRED BY THE CEC.
11. CONNECTORS TO BE TORQUED PER DEVICE LISTING OR MANUFACTURERS RECOMMENDATIONS.
12. ALL AC WIRING SHALL BE COPPER WIRE, RATED AT 90 DEGREE CELSIUS, AND RATED FOR 600 VAC UNLESS OTHERWISE NOTED.
13. PROPERLY SUPPORT ALL EXPOSED PV SOURCE CIRCUITS TO MAINTAIN THE INTEGRITY OF THE CONDUCTOR'S INSULATION.
14. ALL CONDUIT THAT IS MOUNTED ON THE ROOF SHALL BE MOUNTED WITH FLASHED CONDUIT SUPPORTS PER CEC 386.30.
15. ALL WIRING MUST BE PROPERLY SUPPORTED BY DEVICES OR MECHANICAL MEANS DESIGNATED AND LISTED FOR SUCH USE, AND MUST BE PERMANENTLY AND COMPLETELY HELD OFF OF THE ROOF SURFACE PER CEC 110.2, 110.3(A), 110.3(B)
16. CONDUCTORS SHALL BE SUPPORTED PER CEC 300.19 AS REQUIRED.
17. ALL FIELD MADE CONNECTORS FOR PV QUICK CONNECTS SHALL BE THE SAME TYPE AND MANUFACTURER AS THE PV MODULES AND USE THE MANUFACTURER SPECIFIED CRIMPING TOOL.
18. WHERE MATING CONNECTORS ARE NOT OF THE IDENTICAL TYPE AND BRAND, THEY SHALL BE LISTED AND IDENTIFIED FOR INTERMATEABILITY, AS DESCRIBED IN THE MANUFACTURER'S INSTRUCTIONS.

GROUNDING:

1. ONLY ONE CONNECTION TO DC CIRCUITS AND ONE CONNECTION TO AC CIRCUITS WILL BE USED FOR SYSTEM GROUNDING (REFERENCED TO THE SAME POINT). THIS WILL NORMALLY BE LOCATED AT THE INVERTER.
2. EQUIPMENT GROUNDING CONDUCTORS AND SYSTEM GROUNDING CONDUCTORS WILL HAVE AS SHORT A DISTANCE TO GROUND AS POSSIBLE AND A MINIMUM NUMBER OF TURNS.
3. NON-CURRENT CARRYING METAL PARTS SHALL BE CHECKED FOR PROPER EQUIPMENT GROUNDING; NOTING THAT TERMINAL LUGS BOLTED ON AN ENCLOSURE'S FINISHED SURFACE MAY BE INSULATED BECAUSE OF PAINT/FINISH. PAINT/FINISH AT POINT OF CONTACT SHALL BE PROPERLY REMOVED.
4. MODULES SHALL BE BONDED WITH EQUIPMENT GROUNDING CONDUCTORS BONDED TO A LOCATION APPROVED BY THE MANUFACTURER WITH A MEANS OF BONDING LISTED FOR THIS PURPOSE. RACKING SYSTEMS THAT COMPLY WITH UL2703 SHALL BE USED TO BOND MODULES TO RACKING SYSTEMS.
5. GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, INCLUDING BUT NOT LIMITED TO GROUND RODS, GROUNDING LUGS, GROUNDING CLAMPS, ETC.

GROUND FAULT PROTECTION:

1. PHOTOVOLTAIC SYSTEM DC CIRCUITS THAT EXCEED 30 VOLTS OR 8 AMPERES SHALL BE PROVIDED WITH DC GROUND FAULT PROTECTION MEETING THE REQUIREMENTS OF 690.41(B)(1) AND (B)(2) TO REDUCE FIRE HAZARDS.

DISCONNECTING MEANS:

1. MEANS SHALL BE PROVIDED TO DISCONNECT THE PV SYSTEM FROM ALL WIRING SYSTEMS INCLUDING POWER SYSTEMS, ENERGY STORAGE SYSTEMS, AND UTILIZATION EQUIPMENT AND ITS ASSOCIATED PREMISES WIRING.
2. THE DISCONNECTING MEANS SHALL NOT BE REQUIRED TO BE SUITABLE AS SERVICE EQUIPMENT AND SHALL BE RATED IN ACCORDANCE WITH ARTICLE 690 PART III, DISCONNECTING MEANS.
3. A SINGLE DISCONNECTING MEANS SHALL BE PERMITTED FOR THE COMBINED AC OUTPUT OF ONE OR MORE INVERTERS IN AN INTERACTIVE SYSTEM.

REQUIRED SAFETY SIGNS AND LABELS:

1. THE MARKING SHALL ADEQUATELY WARN OF THE HAZARD USING EFFECTIVE WORDS AND/OR COLORS AND/OR SYMBOLS. CEC 110.21
2. THE LABEL SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT OR WIRING METHOD AND SHALL NOT BE HAND WRITTEN. CEC 110.21
3. THE LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. CEC 110.21
4. LABELS AND MARKINGS SHALL BE APPLIED TO THE APPROPRIATE COMPONENTS IN ACCORDANCE WITH THE CEC.
5. SOLAR MODULES AND INVERTERS ARE SUPPLIED FROM THE MANUFACTURER WITH MARKINGS PRE-APPLIED TO MEET THE REQUIREMENTS OF CEC 690.51 & 690.41(B)(1).
6. DESIGN REQUIREMENTS FOR CEC REQUIRED LABELS, WHERE COLOR IS INDICATED, ARE SHOWN ON THE LABELS AND MARKINGS SHEET.
7. UNLESS OTHERWISE STATED ON LABEL SPECIFIC NOTES (SEE NOTE 6), OSHA 1910.145 AND ANSI Z535 RECOMMENDED SPECIFICATIONS ARE AS FOLLOWS:
   a. ROUNDED OR BLUNT CORNERS FREE OF SHARP EDGES.
   b. VISIBLE AT A MINIMUM DISTANCE OF 5ft OR GREATER.
   c. "DANGER" HEADER; RED BACKGROUND WITH WHITE LETTERING.
   d. "WARNING" HEADER; ORANGE BACKGROUND WITH BLACK LETTERING.
   e. "CAUTION" HEADER; YELLOW BACKGROUND WITH BLACK LETTERING.
   f. "NOTICE" LABEL HEADER TO BE IN BLUE WITH WHITE LETTERING.
   g. ALL OTHER TEXT TO BE BLACK ON A WHITE BACKGROUND.

GENERAL NOTES FOR TRANSFORMERLESS INVERTERS:

1. TRANSFORMERLESS (NON-ISOLATED) INVERTERS ARE NOT SUPPLIED WITH AN INTEGRAL HIGH EFFICIENCY ISOLATION TRANSFORMER AS PART OF THE INVERTER ASSEMBLY.
2. TRANSFORMERLESS INVERTERS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR BONDED TO THE EXISTING GROUNDING SYSTEM. A GROUND CONNECTION FOR THE INVERTER MUST BE INSTALLED AND CONNECTED TO THE UNIT AS DESCRIBED IN THE INSTALLATION MANUAL. THE AC AND DC GROUND BUS BARS ARE CONNECTED TO THE MAIN INVERTER ENCLOSURE. THE GROUND FAULT PROTECTION IS MONITORED AND THE INVERTER IS DISCONNECTED FROM THE GRID IN THE EVENT OF A GROUND FAULT. EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED PER CEC 250.122.
3. INVERTER OPERATING CONDITIONS ARE DESIGNED TO BE INSTALLED IN EITHER AN INDOOR OR OUTDOOR ENVIRONMENT. ALLOWABLE OPERATING TEMPERATURE RANGE AND CLEARANCE REQUIREMENTS FOR PROPER AIR FLOW FOR THE UNITS ARE SPECIFIED BY THE MANUFACTURER.

ELECTRICAL SAFETY FEATURES:

1. THE UNIT HAS ONLY ONE MODE OF OPERATION, LINE LINKAGE MODE (GRID EXPORT MODE). THE OUTPUT VOLTAGES AND CURRENTS ARE SINUSOIDAL WITH LOW TOTAL HARMONIC DISTORTION MEETING IEEE 1547 HARMONIC STANDARDS. THE ANTI-ISLANDING TRIP TIME IS LESS THAN (2) SECONDS AS PER UL 1741 STANDARDS. THE INVERTER UNIT WILL AUTOMATICALLY DISCONNECT FROM THE UTILITY.

RACEWAY LEGEND

- FIBER CABLE
- CAT-5 ETHERNET
- RS-485 DATACOM
- DC CONDUCTOR/CONDUIT
- MEDIUM VOLTAGE CONDUCTOR/CONDUIT
- AC CONDUCTOR/CONDUIT
- COMMUNICATION CONDUCTOR/CONDUIT
- OVER HEAD WIRE

POWER LEGEND

- STRING OF SOLAR MODULES
- INVERTER
- DC SIDE OF INVERTER
- AC SIDE OF INVERTER
- EQUIPMENT GROUNDING LOCATION
- GROUND OR GROUNDING ELECTRODE
- SPLICE OR TAP
- CIRCUIT BREAKER
- FUSE
- SWITCH
- RELAY OR CONTACT N.O.
- RELAY OR CONTACT N.C.
- CURRENT TRANSFORMER
- TRANSFORMER
- METER
- HANDHOLE
- CAMERA
- TELEPHONE OR DATA OUTLET
- DUPLEX CONVENIENCE OUTLET, 120V, 20A, GROUNDING TYPE SPECIFICATION GRADE
- JUNCTION-BOX
- OMITTED MODULE
- SPARE MODULE
- NON-ACTIVE MODULE
- DATA AQUISITION SYSTEM
- THERMO COUPLE TEMPERATURE SENSOR
- PYRANOMETER - SOLAR RADIATION
- CELL/ MODULE TEMPERATURE SENSOR
- ANEMOMETER
- BAROMETRIC PRESSURE SENSOR
- HUMIDITY SENSOR
- RAIN GAUGE

ABBREVIATIONS

A	AMPERE(S)		CONDITIONING	POC	POINT OF CONNECTION
AC	ALTERNATING CURRENT	IMC	INTERMEDIATE METAL CONDUIT	PT	POTENTIAL TRANSFORMER
ACSW	AC SWITCH	IMP	MAXIMUM POWER CURRENT	PTC	PVUSA TEST CONDITIONS
AF	AMPERE FRAME, AMP FUSE	INV	INVERTER	PVCB	PHOTOVOLTAIC CIRCUIT BREAKER
AFCI	ARC FAULT CIRCUIT INTERRUPTER	ISC	SHORT CIRCUIT CURRENT (AVAILABLE)	PWR	POWER
AIC	AMPERE INTERRUPTING CAPACITY	JB	JUNCTION BOX	RCBR	RE-COMBINER BOX
AL	ALUMINUM	K	THOUSAND	RCL	RECLOSER
AS	AMPERE SWITCH	LA	LIGHTNING ARRESTER	RECT	RECTIFIER
AT	AMP TRIP	LB	LOAD BREAK	RGS	RIGID GALVANIZED STEEL
ATS	AUTOMATIC TRANSFER SWITCH	LFMC	LIQUID-TIGHT FLEXIBLE METAL CONDUIT	RMC	RIGID METAL CONDUIT
AWG	AMERICAN WIRE GAUGE			RPVT	REMOTE PV TIE
BOS	BALANCE OF SYSTEM	LI	LOAD INTERRUPTER	RSD	RAPID SHUTDOWN DEVICE/SWITCH
C	CONDUIT	LTG	LIGHTING	RTU	REMOTE TERMINAL UNIT
CB	CIRCUIT BREAKER	M	MILLION	SBJ	SYSTEM SIDE BONDING JUMPER
CBR	COMBINER BOX	MBJ	MAIN BONDING JUMPER	SCH	SCHEDULE
CBSS	CIRCUIT BREAKER SAFETY SWITCH	MC4	MULTI-CONTACT TYPE 4 (SOLARLINE2)	SPD	SURGE PROTECTIVE DEVICE
CMIL	CIRCULAR MIL	MCB	MAIN CIRCUIT BREAKER	SS	STAINLESS STEEL
COM	COMMUNICATIONS	MDSS	MULTIPLE DISCONNECT SAFETY SWITCH	SSBJ	SUPPLY-SIDE BONDING JUMPER
CT	CURRENT TRANSFORMER			STR	STRING
CU	COPPER	MFR	MANUFACTURER	SWBD	SWITCHBOARD
DC	DIRECT CURRENT	MLO	MAIN LUG ONLY	SWGR	SWITCHGEAR
DCCT	DC CONTACTOR	MPC	MINI POWER CENTER	TBD	TO BE DETERMINED
DCSW	DC SWITCH	MPPT	MAXIMUM POWER POINT TRACKING	TEL	TELEPHONE CABLE
EC	ELECTRICAL SUBCONTRACTOR	MSD	MAIN SERVICE DISCONNECT	TP	TAMPER PROOF
EGC	EQUIPMENT GROUNDING CONDUCTOR	MTR	METER	TYP	TYPICAL
EMT	ELECTRICAL METALLIC TUBING	MV	MEDIUM VOLTAGE	UON	UNLESS OTHERWISE NOTED
FMC	FLEXIBLE METAL CONDUIT	N	NEUTRAL	UPS	UNINTERRUPTIBLE POWER SUPPLY
FO	FIBER-OPTIC CABLE	NEC	NATIONAL ELECTRIC CODE	V	VOLT(S)
GE	GROUNDING ELECTRODE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	VA	VOLT-AMP
GEC	GROUNDING ELECTRODE CONDUCTOR			VD	VOLTAGE DROP
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	NGR	NEUTRAL GROUNDING REACTOR	VIF	VERIFY IN FIELD
GFDI	GROUND FAULT DETECTION AND INTERRUPTION	OCPD	OVER CURRENT PROTECTION DEVICE	VMP	MAXIMUM POWER VOLTAGE
GND	GROUND	P	POLE	VOC	OPEN CIRCUIT VOLTAGE
GOAB	GROUP OPERATED AIR BREAK	PB	PULL BOX	W	WATT(S)
HH	HANDHOLE	PH	PHASE	WH	WATT-HOUR
HVAC	HEATING VENTILATION AND AIR	PME	PAD MOUNTED ENCLOSURE	WP	WEATHER PROOF
		PNL	PANEL BOARD	XFMR	TRANSFORMER

CONCEPT CLEAN ENERGY
668 N. COAST HWY., STE 272
LAGUNA BEACH, CA 92651
L#: 1042800

STAMP:

REGISTERED PROFESSIONAL ENGINEER
BRIAN BRUGGEMAN
E24135
Exp. 9/30/24
ELECTRICAL
STATE OF CALIFORNIA

GRID-TIE SOLAR ELECTRIC SYSTEM
VIOLICH FARMS INC.
GREENWOOD, NORTHSTATE SERVICE
6545-6540 CO RD 27
ORLAND, CA 95963

PROJECT NUMBER: 23-3639C

SCALE: NTS

ORIGINAL SIZE 24"X36"
SHEET SIZE ARCH "D"
0 ½" 1"

REV	ISSUED	BY	DESCRIPTION
	8/17/23	RH BB	UTILITY INTERCONNECTION SET
	9/26/23	NK BB	CD IFR - ISSUED FOR REVIEW
	10/27/23	NK BB	CD IFC - ISSUED FOR CONSTRUCTION

SHEET NO. & NAME:

E-0.0
ELECTRICAL NOTES

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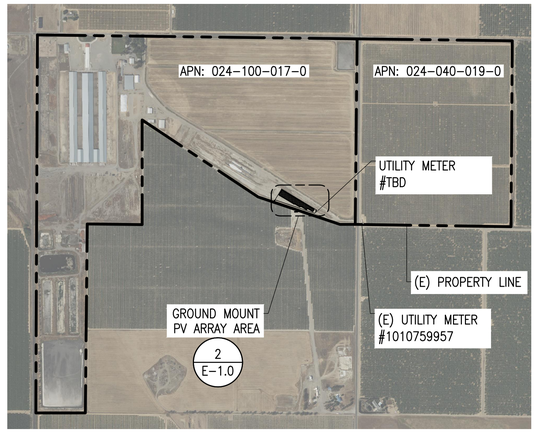
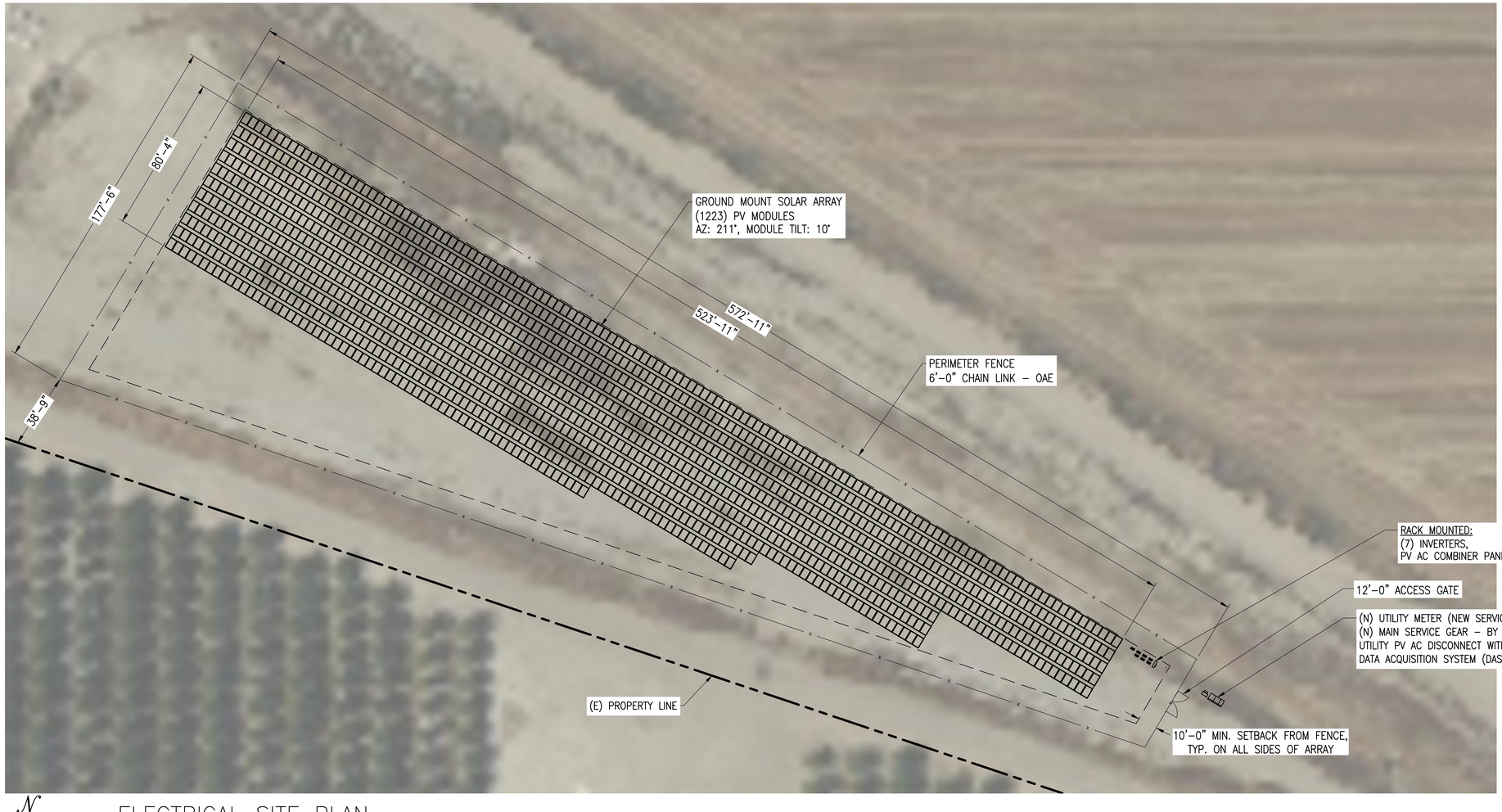


N

1 PLOT PLAN

SCALE: 1" = 1000'



N

2 ELECTRICAL SITE PLAN

SCALE: 1" = 30'

0 30' 60'

SHEET NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND UTILITIES MARKED PRIOR TO CONSTRUCTION
2. ALL DIMENSIONS ARE FOR REFERENCE ONLY. PLEASE REFER TO MANUFACTURERS DRAWINGS TO CONFIRM ALL DIMENSIONS. ALL DIMENSIONS DISPLAYED ON THIS SHEET ARE ROUNDED TO THE NEAREST 1" U.O.N.

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0 ½" 1"

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SHEET NO. & NAME:
E-1.0
ELECTRICAL SITE PLAN

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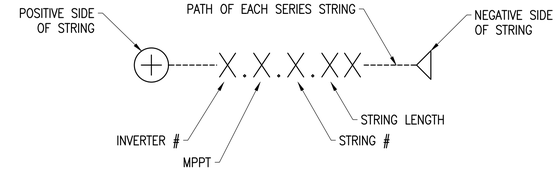
LEGEND



SOURCE CIRCUIT HOME RUN SCHEDULE OPTIONS

REF LETTER	NUMBER OF CONDUCTORS	EMT	FILL %
B1	(2) #10 PVWIRE 2KV; (1) #10 EGC	3/4"	30.1%
B2	(4) #10 PVWIRE 2KV; (1) #10 EGC	1"	31.0%
B3	(6) #10 PVWIRE 2KV; (1) #10 EGC	1-1/4"	25.0%
B4	(8) #10 PVWIRE 2KV; (1) #10 EGC	1-1/4"	32.2%

PV WIRE USED FOR CONDUIT FILL HAS OD = 0.2610", IN^2 = 0.0535 IN^2 FIELD VERIFY ACTUAL PV WIRE OD/IN^2 AND ADJUST CONDUIT SIZE/FILL ACCORDINGLY.

DO NOT EXCEED (8) #10 PV WIRE BUNDLED OR IN CONDUIT EXCEPT IN SCENARIOS THAT COMPLY WITH 310.15(C)(1)(b) EXCEPTION.

SHEET NOTES

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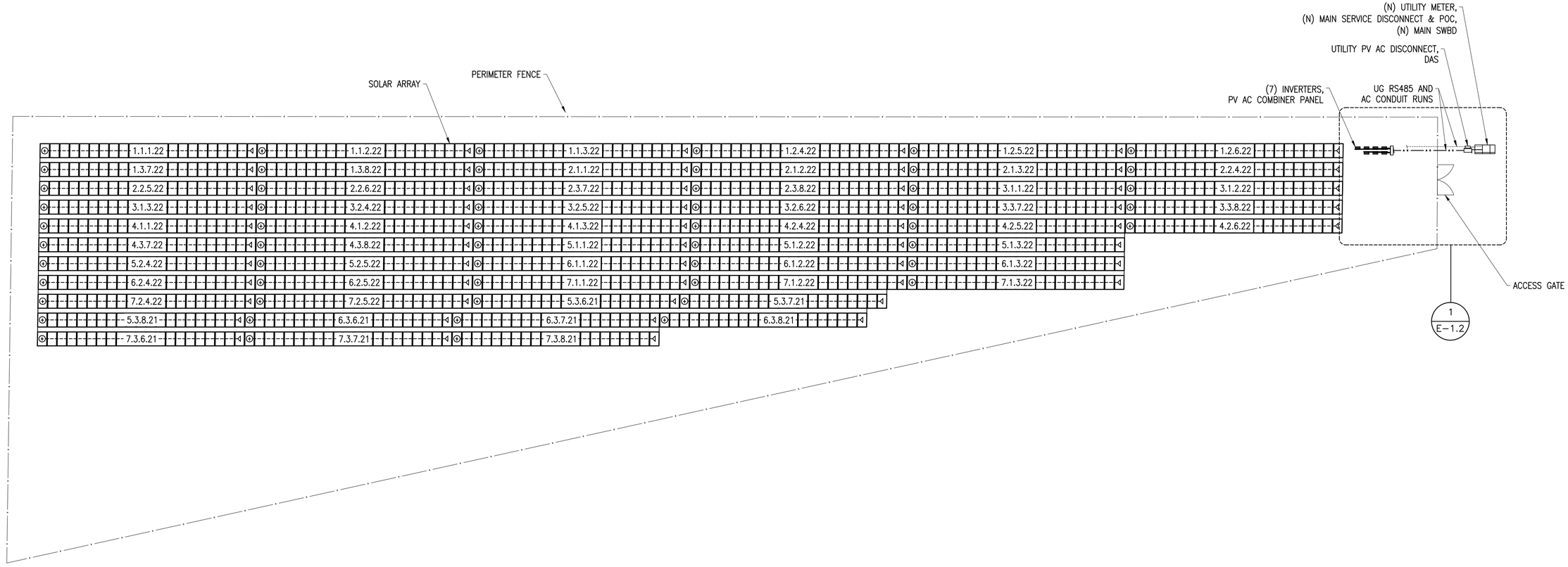
3. CONDUIT RUNS SHOWN ARE INDICATIVE OF PATH AND CONVEY ORIGIN AND TERMINATION. CONTRACTOR TO DETERMINE BEST ROUTE PER FIELD CONDITIONS. FINAL CONDUIT PATH SHALL BE APPROVED WITH CONTRACTOR SITE SUPERVISOR PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL ENSURE THE EXACT OUTER DIAMETER OF THE PROVIDED HOME RUN WIRING MEETS CONNECTOR SPECIFICATIONS.
5. EXSPOSING THE INVERTERS TO DIRECT SUNLIGHT CAN IMPACT SYSTEM PERFORMANCE. SUN COVERS OR A SHADE STRUCTURE SHOULD BE CONSIDERED PRIOR TO INSTALLATION.



ELECTRICAL GROUND PLAN

SCALE: 1" = 20'

0 20' 40'

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AS SHOWN
ORIGINAL SIZE 24"X36"
SHEET SIZE ARCH "D"
0 ½" 1"

v.1.9

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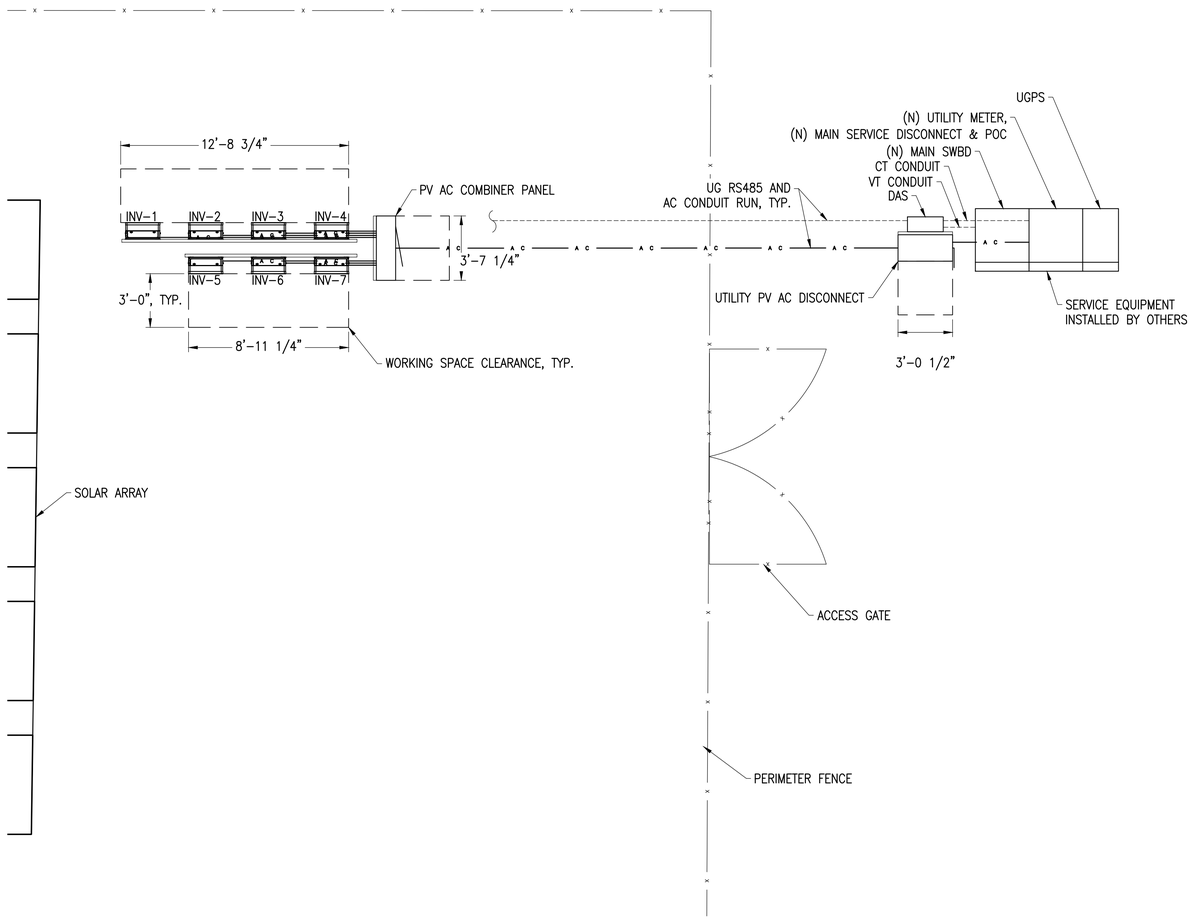
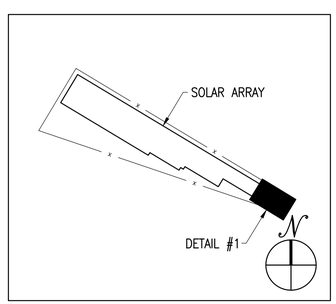
SHEET NO. & NAME:
E-1.1
ELECTRICAL GROUND PLAN



1 EQUIPMENT AREA – PLAN DETAIL

SCALE: 1/4" = 1'-0"



SITE KEY

SHEET NOTES

1. ALL EQUIPMENT DIMENSIONS ARE APPROXIMATE, VERIFY ALL DIMENSIONS WITH APPROVED EQUIPMENT RECORD DRAWINGS PRIOR TO POURING CONCRETE PADS.
2. CONDUIT ROUTES SHOWN ARE DIAGRAMMATIC AND DO NOT REFLECT ALL OBSTRUCTIONS. SUBCONTRACTOR TO DETERMINE EXACT ROUTING BASED ON SITE CONDITIONS.
3. CONTRACTOR TO COORDINATE ALL PLANNED CONDUIT ROUTES PRIOR TO INSTALLATION.
4. ALL UNDERGROUND CONDUIT TO BE MARKED PRIOR TO CONSTRUCTION

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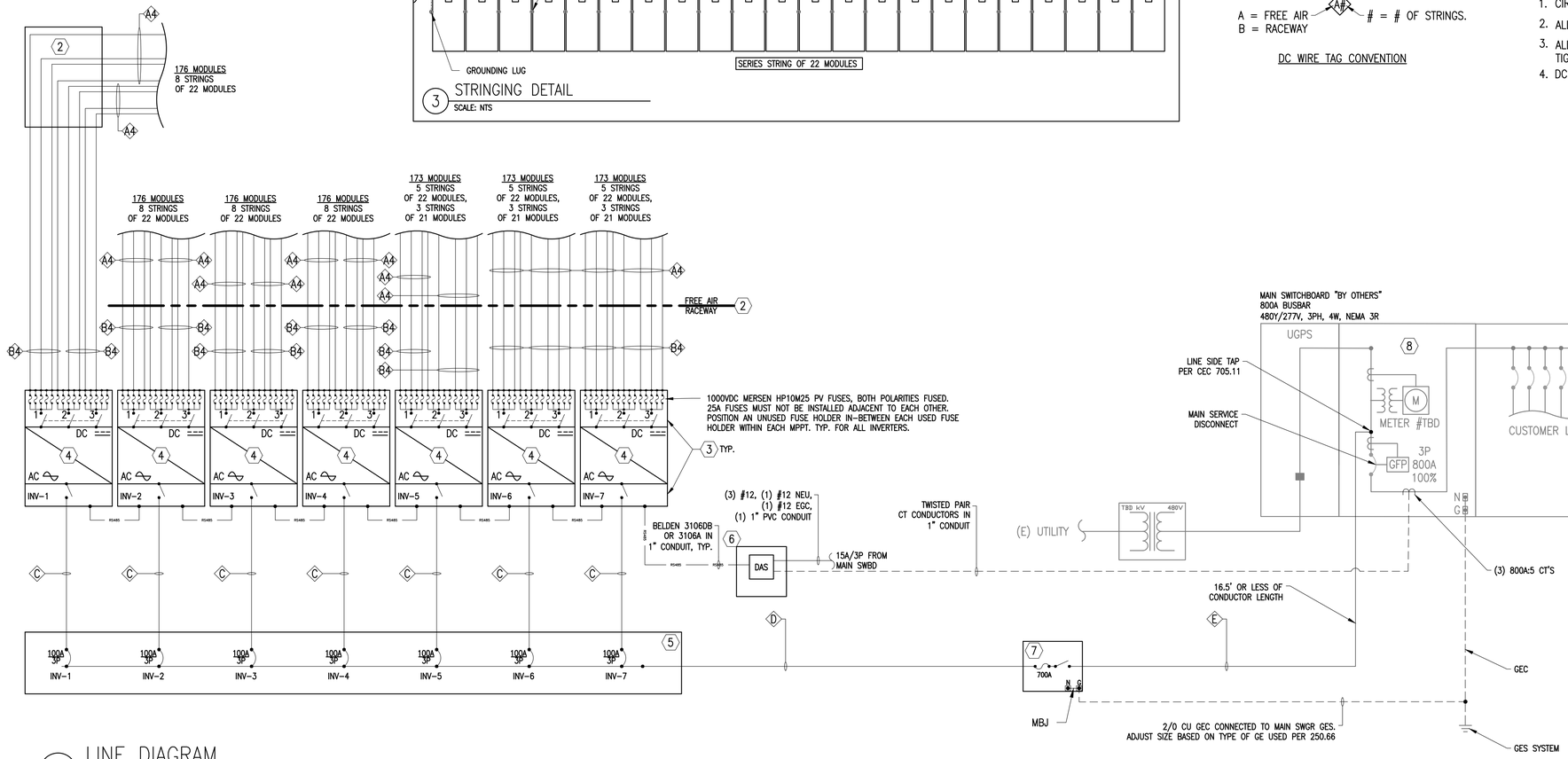
SHEET NO. & NAME:

E-1.2
PLAN DETAILS



1 LINE DIAGRAM
SCALE: NTS

A = FREE AIR
B = RACEWAY
A# # = # OF STRINGS.

DC WIRE TAG CONVENTION

SHEET NOTES

1. CIRCUIT CALCULATIONS ARE SHOWN FOR THE WORST CASE SCENARIO.
2. ALL CONDUCTORS TO BE COPPER (CU) UNLESS NOTED OTHERWISE.
3. ALL CONDUIT TO BE EMT, SCHD 40/80 PVC OR RIGID METAL. EXTERIOR FITTINGS TO BE WATER TIGHT.
4. DC & AC VOLTAGE DROP PERCENTAGE IS SHOWN FOR THE WORST CASE SCENARIO.

5 PV COMBINER PANELBOARD SIZE
NEC 705.12(B)(3)(3)

	MAX AMPS	125%	OCPD
INVERTER 1	72.2A	90.3A	100A
INVERTER 2	72.2A	90.3A	100A
INVERTER 3	72.2A	90.3A	100A
INVERTER 4	72.2A	90.3A	100A
INVERTER 5	72.2A	90.3A	100A
INVERTER 6	72.2A	90.3A	100A
INVERTER 7	72.2A	90.3A	100A
SUBTOTAL	505.4A	632.1A	700A
MIN. BUS SIZE	800A	--	--

CONDUCTOR CALCULATION SUMMARY

TAG	DESCRIPTION	VOLTAGE	CIRCUIT AMPERAGE	MIN. OCPD AMPACITY	STD OCPD SIZE	PARALLEL SETS	CCC SIZE	NEU SIZE	EGC SIZE	CONDUCTOR MATERIAL	WIRE TEMP RATING	TYPE	CONDUIT SIZE OR BUNDLED	TYPE	FILL %	AMPACITY (75 DEG C)	LENGTH (FT)	AMPACITY (90 DEG C)	QTY CCC	QTY NEU	QTY EGC	FILL DERATE NEC 310.15(C)(1)	TEMP DERATE NEC 310.15(B)(1)	DERATED AMPACITY	VOLTAGE DROP
A4	PV SOURCE CIRCUIT	881VDC	13.86	21.62	25	1	#10	N/A	#6	CU	90	PV WIRE	FREE AIR	FREE AIR	–	50	580	55	8	0	1	0.7	0.91	35.04	2.69%
B4	PV SOURCE CIRCUIT	881VDC	13.86	21.62	25	1	#10	N/A	#10	CU	90	PV WIRE	1-1/2"	EMT/PVC	28.15%	35	20	40	8	0	1	0.7	0.91	25.48	0.09%
C	INVERTER OUTPUT CIRCUIT	480VAC	72.2	90.25	100	1	#3	N/A	#8	CU	90	THWN-2	1-1/2"	EMT/PVC	19.20%	100	20	115	3	0	1	1	0.91	104.65	0.13%
D	COMBINED OUTPUT CIRCUIT	480VAC	505.4	631.75	700	3	300	3/0	3/0	AL	90	XHHW-2	3"	EMT/PVC	29.78%	690	40	780	3	1	1	1	0.91	709.8	0.17%
E	PV DISCONNECT OUTPUT CIRCUIT	480VAC	505.4	631.75	700	3	300	300	N/A	AL	90	XHHW-2	3"	EMT/PVC	28.62%	690	10	780	3	1	1	1	0.91	709.8	0.06%

WIRING SCHEDULE

TAG	CIRCUIT TYPE	DESCRIPTION	CONDUIT TYPE	FILL %
A4	PV SOURCE CIRCUIT (DC, CU, 2KV PVWIRE)	(8) #10, (1) #6 EGC, FREE AIR	FREE AIR	–
B4	PV SOURCE CIRCUIT (DC, CU, 2KV PVWIRE)	(8) #10, (1) #10 EGC, (1) 1-1/2" CONDUIT	PVC	28.15%
C	INVERTER OUTPUT CIRCUIT (AC, CU, THWN-2)	(3) #3, (1) #8 EGC, (1) 1-1/2" CONDUIT	PVC	19.20%
D	COMBINED OUTPUT CIRCUIT (AC, AL, XHHW-2)	3X PARALLEL SETS, 1 SET PER RACEWAY: (3) 300, (1) 3/0 NEU, (1) 3/0 EGC, (1) 3" CONDUIT	PVC	29.78%
E	PV DISCONNECT OUTPUT CIRCUIT (AC, AL, XHHW-2)	3X PARALLEL SETS, 1 SET PER RACEWAY: (3) 300, (1) 300 NEU, (1) 3" CONDUIT	PVC	28.62%

ELECTRICAL EQUIPMENT SCHEDULE

TAG	QTY.	DESCRIPTION
1	1223	AUXIN AXN10M410W 410WDC SOLAR MODULE
2	VARIES	NEMA 3R/4 JUNCTION BOX
3	7	INTEGRATED AC & DC DISCONNECT WITH STRING COMBINER, 25A FUSES PER STRING INPUT (BOTH +/- POLARITIES)
4	7	YASKAWA SOLECTRIA SOLAR PVI-60TL-480 STRING-INVERTER, 480VAC, 72.20AAC, 3PH, 3W, NEMA 4X
5	1	PV AC COMBINER PANEL, 480Y/277V, 3 PHASE, 4 WIRE, 800A, MLO, NEMA 3R, XXkAIC
6	1	DAS PROVIDED BY CONTRACTOR, HUFF COMMUNICATIONS, VITALITY DAS
7	1	UTILITY PV AC DISCONNECT, SQUARE D H367NR, LOCKABLE & VISIBLE LOAD-BREAK DISCONNECT, 600VAC, HD, 3 POLE, 800A, (3) 700A CLASS L FUSES, NEMA 3R, 200kAIC, WITHIN 10' OF UTILITY METER
8	1	MAIN SWITCHGEAR WITH UTILITY CT METER, 480Y/277V, 3 PHASE, 4 WIRE, 800A, 800A MAIN BREAKER, NEMA 3R

2 SCHEDULES
SCALE: NTS

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ORIGINAL SIZE 24"X36"
SHEET SIZE ARCH "D"
0 ½" 1"

v.1.9

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SHEET NO. & NAME:
E-2.0
POC SINGLE LINE DIAGRAM

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SITE SPECIFIC INFORMATION:
SITE LOCATION: ORLAND, CA 95963
TEMPERATURE DESIGN LOCATION: OROVILLE
ASHRAE 2% HIGH TEMPERATURE: 37.7°C
ASHRAE LOWEST EXPECTED TEMPERATURE: −2.2°C

MODULE INFORMATION:
AUXIN, AXN10M410W, 410WDC (STC)
CELL TYPE: MONOCRYSTALLINE
WDC (CEC): 385.5WDC
Voc: 37.54VDC (40.03VDC AT −2.2°C)
Vmp: 31.55VDC (27.25VDC AT 37.7°C)
Isc: 13.86ADC
Imp: 13.00ADC
SERIES FUSE RATING: 30ADC
Voc CORRECTION (%/°C): −0.244%
Vmp CORRECTION (%/°C): −0.319%
MODULE DIMENSIONS: 67.80" X 44.65" X 1.38"

INVERTER INFORMATION:
YASKAWA SOLECTRIA SOLAR, PVI−60TL−480, STRING−INVERTER, 480V, 3ϕ
CEC WEIGHTED EFFICIENCY (PTC): 98.5%
START VOLTAGE: 330VDC
MPPT MINIMUM VOLTAGE: 540VDC
MPPT MAXIMUM VOLTAGE: 850VDC
MAXIMUM DC INPUT VOLTAGE: 1000VDC
NOMINAL POWER INPUT: 90000WDC
MAXIMUM POWER OUTPUT: 60000WAC
MAXIMUM CURRENT OUTPUT: 72.20AAC
AC NOMINAL VOLTAGE OUTPUT: 480VAC
MAX. AC OVERCURRENT PROTECTION ALLOWED: 125AAC

ARRAY SPECIFICATIONS
MODULES: 1223
INVERTERS: 7

INV−1 THRU INV−4
(8) SOURCE CIRCUITS OF 22 MODULES

INV−5 THRU INV−7
(5) SOURCE CIRCUITS OF 22 MODULES &
(3) SOURCE CIRCUITS OF 21 MODULES

ARRAY ELECTRICAL SPECIFICATIONS
(VALUES BASED ON 22 MODULES PER STRING MAX., 1 STRING(S) IN PARALLEL MAX.)
MAXIMUM SYSTEM VOLTAGE: 880.69VDC @ −2.2°C
RATED MAX POWER POINT VOLTAGE: 694.10VDC
ADJ. VMP OF ARRAY AT 37.7°C HIGH TEMP (BASED ON 21 MODULES IN SERIES): 572.30VDC
RATED ISC OF ARRAY: 13.86ADC
MAXIMUM SHORT CIRCUIT CURRENT: 17.33ADC
RATED MAX POWER POINT CURRENT: 13.00ADC

VOLTAGE CALCULATIONS: NEC 690.7
LOW TEMPERATURE FOR DESIGN (ASHRAE LOW TEMP) = −2.2°C
ARRAY Voc AT STC: 37.54VDC X 22 MODULE IN SERIES = 825.88VDC
TEMPERATURE ADJUSTED Voc:
[825.88VDC X (1 + ((−2.2°C − 25°C) X (−0.244%)))] = 880.69VDC
MAX. Voc PER INVERTER MANUFACTURER REQ. = 1000VDC
880.69VDC ≤ 1000VDC (OK)

1 ELECTRICAL SPECIFICATIONS
SCALE: NTS

INVERTER STRING SCHEDULE

PVI−60TL−480 INV−1,2,3,4				PVI−60TL−480 INV−5,6,7			
MPPT #	STR #	MOD QTY	WATTS	MPPT #	STR #	MOD QTY	WATTS
1	1	22	9,020	1	1	22	9,020
	2	0	0		2	0	0
	3	22	9,020		3	22	9,020
	4	0	0		4	0	0
	5	22	9,020		5	22	9,020
MPPT TOTAL	2	66	27,060	MPPT TOTAL	2	66	27,060
2	6	22	9,020	2	6	22	9,020
	7	0	0		7	0	0
	8	22	9,020		8	22	9,020
	9	0	0		9	0	0
	10	22	9,020		10	0	0
MPPT TOTAL	2	66	27,060	MPPT TOTAL	1	44	18,040
3	11	22	9,020	3	11	21	8,610
	12	0	0		12	0	0
	13	22	9,020		13	21	8,610
	14	0	0		14	0	0
	15	0	0		15	21	8,610
MPPT TOTAL	1	44	18,040	MPPT TOTAL	2	63	25,830
	# OF STR	MOD QTY	WATTS/INV		# OF STR	MOD QTY	WATTS/INV
INV TOTALS	5	176	72,160	INV TOTALS	5	173	70,930
			120.27%				118.22%

3 INVERTER STRING SCHEDULE
SCALE: NTS

PANELBOARD SCHEDULE

PV AC COMBINER PANEL, 800AMP — MAIN LUG ONLY (MLO) — 480VAC, 3ϕ, 4W & GND

LOAD DESCRIPTION	KVA LOAD ϕA	ϕB	ϕC	CB/ PHASE	CKT. NO.	ϕ	CKT. NO.	CB/ PHASE	KVA LOAD ϕA	ϕB	ϕC	LOAD DESCRIPTION
INV−1	20			100/3P	7	A	8	100/3P	20			INV−2
		20			9	B	10			20		
			20		11	C	12				20	
INV−3	20			100/3P	13	A	14	100/3P	20			INV−4
		20			15	B	16			20		
			20		17	C	18				20	
INV−5	20			100/3P	19	A	20	100/3P	20			INV−6
		20			21	B	22			20		
			20		23	C	24				20	
INV−7	20			100/3P	25	A	26					SPARE
		20			27	B	28					
			20		29	C	30					
	80	80	80	SUB−TOTAL					60	60	60	

PHASE A 140 KVA
PHASE B 140 KVA TOTAL LOAD 420 KVA
PHASE C 140 KVA

2 ELECTRICAL PANELBOARD/SWITCHBOARD SCHEDULES
SCALE: NTS

CONCEPT CLEAN ENERGY
668 N. COAST HWY., STE 272
LAGUNA BEACH, CA 92651
L#: 1042800

STAMP:
REGISTERED PROFESSIONAL ENGINEER
BRIAN BRUGGEMAN
E24135
Exp. 9/30/24
ELECTRICAL
STATE OF CALIFORNIA

GRID−TIE SOLAR ELECTRIC SYSTEM
VIOLICH FARMS INC.
GREENWOOD, NORTHSTATE SERVICE
6545−6540 CO RD 27
ORLAND, CA 95963

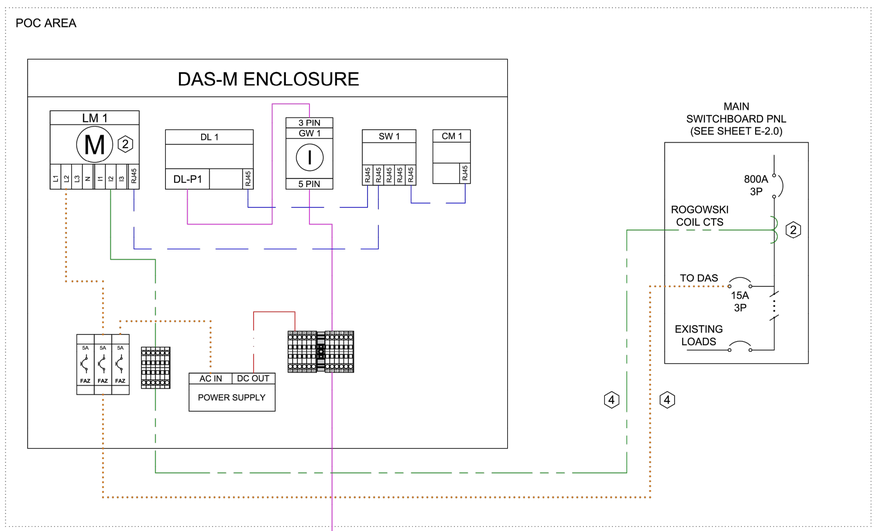
PROJECT NUMBER: 23−3639C

SCALE
NTS
ORIGINAL SIZE 24"X36"
SHEET SIZE ARCH "D"
0 ½" 1"

v.1.9

REV	ISSUED	BY	DESCRIPTION
	8/17/23	RH	UTILITY INTERCONNECTION SET
	9/26/23	BB	CD IFR − ISSUED FOR REVIEW
	10/27/23	NK	BB CD IFC − ISSUED FOR CONSTRUCTION

SHEET NO. & NAME:
E−2.1
ELECTRICAL SPECIFICATIONS



WIRE LEGEND

1	RS485 -
	CAT5E -
	24V DC -
	277/480V AC -
	CTS -

NOTES:

1. FOR UNDERGROUND RUNS USE BELDEN 3106DB, ABOVE GROUND USE BELDEN 3106A
2. LOAD METER CTS TO BE CONFIGURED TO MONITOR LOAD CURRENT ONLY
3. 1" CONDUIT MINIMUM, DOWNSIZING TO 3/4" AT INVERTER PENETRATION OK
4. 1" CONDUIT MINIMUM, CT SECONDARIES AND VOLTAGE TAPS TO BE INSTALLED IN SEPERATE CONDUITS

NETWORK SCHEDULE

ID	TYPE	MANUF.	MODEL	DEVICE NAME	IP ADDRESS	MODBUS ADDRESS	RS-485 PORT/TERMINAL	LOCATION	NOTES
CM 1	CELL MODEM	SIERRA WIRELESS	RV50	CELL MODEM	192.168.13.1	-	-	DAS-M	SUBNET MASK: 255.255.255.0 DHCP RANGE: 192.168.13.225-.254
DL 1	DATA LOGGER	OBVIUS	A8810	DATA LOGGER	192.168.13.2	-	-	DAS-M	
LM 1	LOAD METER	ACCUENERGY	ACUVIM II	LOAD METER	192.168.13.70			DAS-M	
SW 1	ETHERNET SWITCH	MOXA	EDS-2005-EL-T	SWITCH	-	-	-	DAS-M	
GW 1	INVERTER GATEWAY	SOLECTRIA	FLEX GATEWAY	GATEWAY	DHCP	-	PORT 1	DAS-M	
INV 1-7	INVERTER	SOLECTRIA	PVI-60TL-480	INV 1....INV 7	-	1-7	PORT 1	INVERTER AREA	

HUFF COMMUNICATIONS
7340 MORRO ROAD
ATASCADERO, CA 93422
PH (805) 816-4007

CLIENT

CONCEPT CLEAN ENERGY

PROJECT

C.F. VIOLICH WEST RANCH - NORTH WELL SOLAR TUB

39.676285, -122.182412
GREENWOOD, CA

REV	DATE	DESCRIPTION
0		-

DESIGN ENGINEER: JON HUFF

SHEET TITLE

NETWORK MONITORING DIAGRAM

SHEET NUMBER

001

CONCEPT CLEAN ENERGY
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SHEET NO. & NAME:

E-2.2
NETWORK MONITORING DIAGRAM

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CEC 2022 690.31(G)(3)

WARNING: PHOTOVOLTAIC POWER SOURCE

1/2" MIN.

RED BACKGROUND

LABEL SHALL BE LOCATED ON ALL EXPOSED RACEWAYS, CABLE TRAYS, OTHER WIRING METHODS, COVERS OR ENCLOSURES OF PULL BOXES AND JUNCTION BOXES AND ON CONDUIT BODIES IN WHICH ANY OF THE AVAILABLE CONDUIT OPENINGS ARE UNUSED. LABEL SHALL BE REFLECTIVE, AND ALL LETTERS CAPITALIZED AND SHALL BE MINIMUM HEIGHT OF 3/8" IN WHITE ON A RED BACKGROUND. SPACING BETWEEN LABELS OR MARKINGS, OR BETWEEN A LABEL AND MARKING, SHALL NOT BE MORE THAN 10FT.

CEC 2022 690.53

MAXIMUM DC VOLTAGE OF PV SYSTEM

MAXIMUM VOLTAGE: 880.7VDC

LABEL TO BE LOCATED ON COVER OF DC DISCONNECTING MEANS. (7) TOTAL

CEC 2022 705.12(B)(3)(3)

⚠ WARNING

THIS EQUIPMENT FED BY MULTIPLE SOURCES

TOTAL RATING OF ALL OVERCURRENT DEVICES, EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE, SHALL NOT EXCEED AMPACITY OF BUSBAR.

PERMANENT WARNING LABEL SHALL BE APPLIED TO DISTRIBUTION EQUIPMENT WHERE THE PV SYSTEM INTERCONNECTS. (1) TOTAL

CEC 2022 690.13(B), 690.54

NOTICE

PHOTOVOLTAIC SYSTEM AC DISCONNECT AND POWER SOURCE

RATED OUTPUT CURRENT: 505.4AAC

NOMINAL OPERATING VOLTAGE: 480VAC

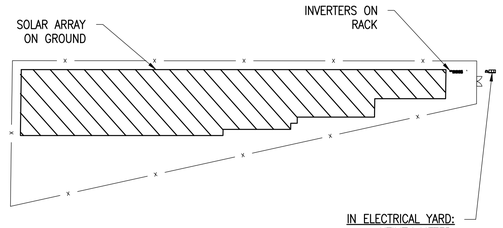
LABEL TO BE LOCATED ON THE PV SYSTEM AC DISCONNECT. (1) TOTAL

CEC 2022 690.4(D), 705.10

CAUTION

MULTIPLE SOURCES OF POWER

DISCONNECTS SHOWN AS LOCATED



LABEL TO BE APPLIED AT SERVICE EQUIPMENT LOCATION OR ON ALL POWER PRODUCTION SOURCES CAPABLE OF BEING INTERCONNECTED. LOCATED AT UTILITY METER #30183589 (1) TOTAL

SHEET NOTES

1. SEE ELECTRICAL NOTES E-0.0 SHEET "REQUIRED SAFETY SIGNS AND LABELS" FOR ADDITIONAL INFORMATION.
2. THE LABELS AND MARKINGS ARE FOR REFERENCE ONLY AND THE FINAL DESIGN AND CONTENT MAY VARY FROM WHAT IS SHOWN. LABELS PROVIDED BY HELERMANNTYTON OR PV LABELS MAY VARY IN DESIGN, CONTENT AND QUANTITY REQUIRMENTS FROM WHAT IS SHOWN ON THIS SHEET. IT IS UP TO THE CONTRACTOR TO VERIFY FINAL LABEL SELECTION MEETS OR EXCEEDS THE DESIGN AND CONTENT AS SHOWN.
3. HELERMANNTYTON AND PV LABELS PART NUMBERS INCLUDING THE WORDS "CUSTOM" INDICATE THAT THEY ARE ONLY PROVIDING THE LABEL MATERIAL BUT NOT THE DESIGN AS SHOWN.
4. THE MARKING OR LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. CEC 110.21(A)
5. THE MARKING SHALL ADEQUATELY WARN OF THE HAZARD USING EFFECTIVE WORDS AND/OR COLORS AND/OR SYMBOLS. CEC 110.21(B)(1)
6. THE LABEL SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT OR WIRING METHOD AND SHALL NOT BE HAND WRITTEN. CEC 110.21(B)(2).
7. LABELS AND MARKINGS SHALL BE APPLIED TO THE APPROPRIATE COMPONENTS IN ACCORDANCE WITH THE CEC.
8. SOLAR MODULES ARE SUPPLIED FROM THE MANUFACTURER WITH MARKINGS PRE-APPLIED TO MEET THE REQUIREMENTS OF CEC 690.51.
9. UNLESS OTHERWISE STATED ON LABEL SPECIFIC NOTES, OSHA 1910.145 AND ANSI Z535 RECOMMENDED SPECIFICATIONS ARE AS FOLLOWS:

   A. ROUNDED OR BLUNT CORNERS FREE OF SHARP EDGES.
   B. VISIBLE AT A MINIMUM DISTANCE OF 5FT OR GREATER.
   C. "DANGER" HEADER; RED BACKGROUND WITH WHITE LETTERING.
   D. "WARNING" HEADER; ORANGE BACKGROUND WITH BLACK LETTERING.
   E. "CAUTION" HEADER; YELLOW BACKGROUND WITH BLACK LETTERING.
   F. "NOTICE" LABEL HEADER TO BE IN BLUE WITH WHITE LETTERING.
   G. ALL OTHER TEXT TO BE BLACK ON A WHITE BACKGROUND.

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SHEET NO. & NAME:
E-3.0
LABELS & MARKINGS

SOLECTRIA®
PVI-50TL-480 / PVI-60TL-480

3-PHASE TRANSFORMERLESS
COMMERCIAL STRING INVERTERS

FEATURES

- Wirebox models with built-in SunSpec compliant transmitters for Module-Level Rapid Shutdown for simple, safe NEC compliance
- UL Listed as PV Rapid Shutdown Systems with APsmart, Northern Electric Power (NEP), and Tigo Energy
- Dual rated listing allows selection of either 50/60 kVA (factory default) or 55/66 kVA (allowing full rated power down to ±0.91 PF)
- Integrated UL-listed Arc-Fault protection
- 15 - 90° mounting angle allows low-profile rooftop installations
- 3 MPPTs with 5 fused inputs each for PV array flexibility
- Industry-leading DC/AC ratios of 1.8 (50TL) and 1.5 (60TL)
- Integrated AC and DC disconnects
- Remote firmware upgrades and diagnostics
- NEMA 4X outdoor rated enclosure, with proven performance
- Certified to IEEE 1547-2018 and UL 1741SB
- Compatible with Bifacial PV Modules

OPTIONS

- Shade cover
- DC fuse bypass
- Web-based monitoring

Yaskawa Solectria Solar's PVI 50TL-480 and PVI 60TL-480 are transformerless 3-phase inverters, ideal for rooftops, carports and ground-mount PV systems

The PVI-50TL-480 and PVI-60TL-480 come standard with AC and DC disconnects, three MPPTs, and a wiring box with 15 fuse positions.

For rooftop PV systems, both Module-Level Rapid shutdown (MLRSD) wirebox models provide PV Rapid Shutdown System (PVRSS) compliance and include a built-in SunSpec compliant powerline communication transmitter.

One wirebox model is Tigo Enhanced for rapid shutdown and the other two wirebox models are compatible with APsmart or NEP rapid shutdown devices.

Yaskawa Solectria Solar's family of PVI-50/60TL-480 inverters, including standard wireboxes and the rapid-shutdown ready wirebox models, provides flexibility and convenience unmatched in the industry.

Standard Wirebox

- 20A fuses, both polarities
- No built-in PVRSS transmitter

Module-Level Rapid Shutdown Wireboxes

- 20A fuses; positive polarity only
- Built-in PVRSS transmitter
- 3 models for compatibility with APsmart, NEP and Tigo module-level rapid shutdown devices

Tigo Enhanced · APsmart ALTENERGY POWER · NEP NORTHERN ELECTRIC

YASKAWA SOLECTRIA SOLAR

Yaskawa Solectria Solar 1-978-683-9700 | Email: sales@solectria.com | solectria.com
Document No. FLPVI5060TL.01 | 02/15/2023 | © 2021 Yaskawa America, Inc.

PVI 50TL-480 / PVI 60TL-480 TECHNICAL DATA

SPECIFICATIONS

Inverter Model		PVI-50TL-480	PVI-60TL-480
DC Input	Maximum PV Power	90 kW (33 kW per MPPT)	90 kW (33 kW per MPPT)
	Maximum Input Voltage	1000 VDC	1000 VDC
	DC Voltage Ranges; Operating/Max. Power (MPPT)	200-950 VDC / 480-850 VDC	200-950 VDC / 540-850 VDC
	Start-up DC Input Voltage/Power	330 V / 80 W	330 V / 80 W
	Number of MPPT Trackers/Inputs	3 Trackers / 5 Fused-inputs each	3 Trackers / 5 Fused-inputs each
	Maximum Available PV Current (Isc x 1.25)	204 A (68 A per MPPT)	204 A (68 A per MPPT)
	Maximum Operating Input Current (clipping point)	108 A (36 A per MPPT)	114 A (38 A per MPPT)
	DC Surge Protections	Type II MOV, 2800 V_{oc}, 20 kA I_{nn} (8/20 µs)	
AC Output	Rated AC Real Power/Apparent Power/Output Current	50 kW / 50 kVA / 60.2 A	60 kW 60kVA / 72.2 A
	Overload Mode; Real Power/Apparent Power/Output Current	50 kW / 55 kVA / 66.2 A	60 kW / 66 kVA / 79.4 A
	Nominal Output Voltage/Range	480 VAC / -12% to +10%	480 VAC / -12% to +10%
	Nominal Output Frequency/Range	60 Hz / 57-63 Hz	60 Hz / 57-63 Hz
	Power Factor	Unity, >0.99 (Adjustable 0.8 leading to 0.8 lagging)	Unity, >0.99 (Adjustable 0.8 leading to 0.8 lagging)
	Fault Current Contribution (1 Cycle RMS)	64.1 A	64.1 A
	Total Harmonic Distortion (THD) @ Rated Load	< 3%	< 3%
	Grid Connection Type	3-Ph/PE/N (neutral conductor optional)	3-Ph/PE/N (neutral conductor optional)
	Maximum OCPD Device	110 A	125 A
	AC Surge Protection	Type II MOV, 1240 V_{oc}, 15 kA I_{nn} (8/20 µs)	
Efficiency	Peak Efficiency	98.8%	98.8%
	CEC Efficiency	98.5%	98.5%
	Tare Loss	< 1 W	< 1 W
Environment	Ambient Temperature Range	-22°F to +140°F (-30°C to +60°C); Derating occurs over +113°F (+45°C)	
	Storage Temperature Range	No low temp minimum to +158°F (+70°C)	
	Relative Humidity (non-condensing)	0-100%	
	Operating Altitude	13,123 ft (4,000 m) Derating occurs from 9,842.5 ft (3,000 m)	
Communications	Modbus Protocol	Proprietary / SunSpec	
	SolrenView Web-Based Monitoring Service	Optional	
	Revenue Grade Metering	Optional, External	
	Communication Interface	RS-485 Modbus RTU	
	Remote Firmware Upgrades	Ethernet Network Card required	
	Remote Diagnostics	Ethernet Network Card required	
Safety	Certifications and Standards	IEEE 1547-2018, UL 1741-SB, UL 1741SA-2016, UL1699B, UL1998, CSA-C22.2 No. 107.1-01, FCC Part 15 (Subpart B, Class A)	
	Selectable Grid Standards	IEEE 1547, CA Rule 21, ISO-NE, HECO	
	Smart Grid Features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-Var, Freq-Watt, Volt-Watt, Watt-Var	
Warranty	Standard Limited Warranty	10 Years	
Mechanical	Acoustic Noise Rating	< 60 dBA @ 1 m and 25°C	
	AC/DC Disconnect	Standard, fully-integrated, load break rated	
	Mounting Angle*	15° - 90° from horizontal	
	Weight	Inverter: 123.5 lbs (56 kg); Wiring Box: 33 lbs (15 kg)	
	Enclosure Rating and Finish	NEMA Type 4X; Polyester Powder Coated Aluminum	
	Dimensions (H x W x D)	Power Head: 22.7" x 23.6" x 10.24" (576 mm x 600 mm x 260 mm)	
		Wirebox: 16.7" x 23.6" x 10.24" (424 mm x 600 mm x 260 mm)	
		Overall: 39.4" x 23.6" x 10.24" (1000 mm x 600 mm x 260 mm)	

Wirebox Specifications			
Wirebox	Fused Inputs	15 Fused Positions (5 Positions per MPPT) 20 A Standard (25, 30 A accepted)**	
Wirebox Versions	Standard	PVI-50-60TL-BX-S20 (both polarities fused); No MLRSD transmitter needed	
	APsmart Transmitter Built-in	PVI-50-60TL-WB-APS (only positive polarity fused)	MLRSD compatibility: APSmart RSD-S and RSD-D
	NEP Transmitter Built-in	PVI-50-60TL-WB-NEP (only positive polarity fused)	MLRSD compatibility: NEP PVG-2
	Tigo Transmitter Built-in	PVI-50-60TL-WB-TGO (only positive polarity fused)	MLRSD compatibility: Tigo TS4-A-F (ver 0.7+) and TS4-A-2F

* Shade cover accessory required for installation of 75° or less
** Yaskawa Solectria Solar does not supply optional fuses sizes

ETL LISTED

IT'S PERSONAL

YASKAWA SOLECTRIA SOLAR

Yaskawa Solectria Solar 1-978-683-9700 | Email: sales@solectria.com | solectria.com
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Auxin® Solar
TOWARDS THE SUN

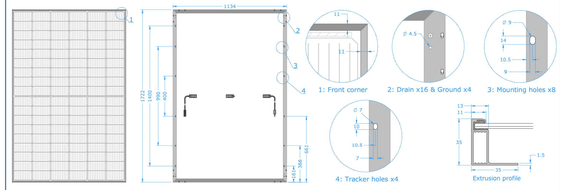
410W
Framed mono-facial single glass

Model Name	AXN10M395z	AXN10M400z	AXN10M405z	AXN10M410z
Maximum Power (+3%)	395	400	405	410
Voc (V)	37.03	37.20	37.36	37.54
Isc (A)	13.59	13.68	13.78	13.86
Vmp (V)	31.00	31.17	31.36	31.55
Imp (A)	12.75	12.84	12.92	13.00
Module Efficiency (%)	20.2%	20.5%	20.8%	21.0%
Series Fuse Rating	30A			
Junction Box Protection	IP68			
Maximum System Voltage	VDC1500			
Operating Temperature	-40°C to 85°C			
Module type	Mono or Bi-Facial			
Connector type	MC4 Compatible[i]			
Cable length	12AWG 1200mm[ii]			
Maximum snow/wind load	5400Pa(snow)/2400Pa(wind)			
Certification/Fire Type	UL61730[iii]; UL1703 Fire Type 1			

i) Staubli MC4 connectors available upon request, ii) Cable length may be customized, iii) Additional certifications available upon request
"z" in the model name can be 'B' for black backsheet or 'W' for white backsheet
All models with black backsheet ('B') are CEC listed

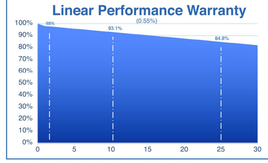
Key Features

35mm frame thickness
Low light performance
1500 VDC
Positive tolerance
2x Electro-luminescence
Light weight bi-facial
30 years power output warranty
25 years product guarantee
0.55% Linear power degradation
Additional certification upon request



(Units provided in mm)

Linear Performance Warranty



Mechanical Characteristics	
Frame	Anodized Aluminum (Silver and Black)
Dimension (L x W x D)	67.80" x 44.65" x 1.38"
	1722mm x 1134mm x 35mm
Weight	21.76 kg/47.84 lbs
Pallet	28 pcs
Container	728pcs/40', 840pcs/53'
Wind/Snow load	5400Pa(front)/2400Pa(rear)

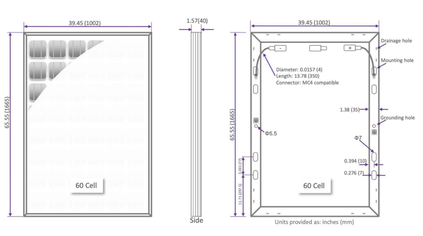
Temperature Coefficients		Standard Test Conditions (STC)	
NOCT	45 °C	Irradiance	1000W/m²
Short circuit current	+0.040%/C	Module Temperature	25 °C
Open circuit voltage	-0.244%/C	AM	1.50
Max power output	-0.319%/C		

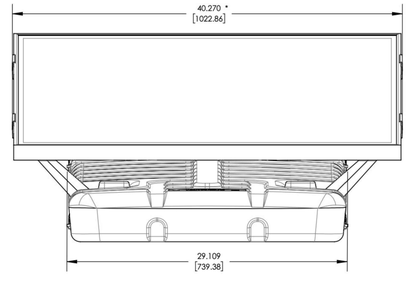
Specifications subject to change without notice

Auxin Solar, 6835 Via Del Oro, San Jose, CA 95119, USA
+1 408 225-4380(office)
salesusa@auxinsolar.com
www.auxinsolar.com

c UL us LISTED · TÜVRheinland CERTIFIED · CE · MADE IN THE USA With Domestic and Global Materials

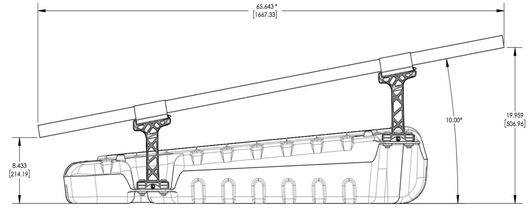
SOLAR TUB®
Simple. Fast.





Technical Data	LBS	Material
SolarTub - Empty	19.8	HPDE (Base) + BASF Ultra-Mid Glass Filled Nylon (Legs)
Water (Max Fill) 36.5 US Gallons	303.0	US Gallons, Water
PV Panel Weight (est. 50 LBS)	50.0	Typical for 60 cell solar panel
Max Weight: SolarTub Assembly	**372.8**	

Max Wind Speed	**110**	**MPH, Category C**
Min Fill Required for 110 MPH	31.5	Gallons of Water Ballast
Max Site Grade (slope)	**10 degrees**	**gravel, asphalt, base rock, etc.**
Recommended Panel Spacing:		**3 inches between modules**
Recommended Row Spacing		**1.5 to 2 feet between rows**



MODULAR BALLASTED

Fixed-Tilt Ground Mount Photovoltaic System

www.SolarTub.com

MADE IN USA

SolarTub LLC.
668 N. Coast Highway, Suite 272
Laguna Beach, CA 92651

Manager:
Elliot Jaramillo
(510) 183-0935

Spec Sheet: 3.2.2023

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DATA SHEETS

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