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 San Rafael, CA 94903
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MANAGEMENT TEAM
 Interim General Manager, Chris DeGabriele
 Plant Operations, Mel Liebmann
 Collections/Safety/Maintenance, Greg Pease
 Engineering, Michael P. Cortez
 Administrative Services, Dale McDonald

DISTRICT BOARD
 Megan Clark
 Ronald Ford
 Craig K. Murray
 Judy Schriebman
 Crystal J. Yezman

CONTRACT DOCUMENTS REQUEST FOR PROPOSALS

Project Name: SOLAR PHOTOVOLTAIC SYSTEM REPLACEMENT (Job No. 22500-04)

Description: Energy retrofit of the existing Solar Photovoltaic (PV) System up to approximately 1 MW pursuant to California Government Code Section 4217.10 to 4217.18, through capital purchase or optional Power Purchase Agreement. The scope of work includes the removal of existing PV equipment, the reuse of existing infrastructure as appropriate, and construction of the new PV system.

Bid Opening Time, Date & Location: **11:00 AM, June 15, 2022**
101 Lucas Valley Rd, Suite 300
San Rafael, CA 94903

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 - Exhibit A – As-Built Drawing
 - Exhibit B – Preliminary Design for Interconnection Application



The anticipated schedule for the project is:

- | | |
|--|---------------|
| 1. Request for Proposals Published | May 12, 2022 |
| 2. Prebid meeting | May 25, 2022 |
| 3. Questions on the RFP no later than: | June 1, 2022 |
| 4. Response to Questions | June 8, 2022 |
| 5. Proposal Deadline: | June 15, 2022 |
| 6. Award of a Contract: | July 7, 2022 |
| 7. Contract Duration | ~9 Months |

Responses to this invitation from bidders must be received by the District no later than the date and time and at the place shown above for consideration. Electronic copies are acceptable if followed by a phone call to the District at 415-472-1734 confirming receipt prior to the bid opening time. Email to: Michael P. Cortez at mcortez@lgsd.org and cc: Irene Huang at ihuang@lgsd.org with project name on the subject line.

Note: “Bid” and “Proposal” are terms used interchangeably in the contract documents.

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NOTICE INVITING PROPOSALS

1. The Las Gallinas Valley Sanitary District (District) is seeking proposals for the **SOLAR PHOTOVOLTAIC SYSTEM REPLACEMENT** Project pursuant to the California Government Code Section 4217.10 to 4217.18 and other applicable law, and the following:
2. All proposals must be delivered to the **Las Gallinas Valley Sanitary District temporary office located at 101 Lucas Valley Rd, Suite 300, San Rafael, California 94903** on or before **11:00 AM, June 15, 2022**. Proposals must be made on the proposal forms included in the RFP. Proposals that are submitted late according to the official time kept by the District Engineer or a designee will be rejected. Proposals that are incomplete or that otherwise do not conform to the requirements specified in the proposal package may be deemed non-responsive. Electronic copies are acceptable if **followed by a phone call** to the District at 415-472-1734 confirming receipt prior to the proposal opening time. Email to: Michael P. Cortez at mcortez@lgsd.org and cc: Irene Huang at ihuang@lgsd.org with project name on the subject line no later than the date and time shown above for consideration.
3. A **non-mandatory** pre-proposal meeting and site visit will be held on **May 25, 2022, at 1:00 p.m. at 300 Smith Ranch Rd, San Rafael, CA 94903**. The meeting will observe all COVID-19 best management practices. Protective personal equipment (e.g., face masks) and social distancing will be required. **Please call or email to RSVP**. Alternatively, a second virtual meeting using Zoom software will be available **at 2:00 p.m.** for bidders who cannot or do not wish to attend in person. Bidders who wish to attend the virtual meeting must email Irene Huang at ihuang@lgsd.org for the meeting information and RSVP. Special site visits to the job site may be scheduled 24 hours in advance a minimum of five (5) working days before proposal deadline.
4. **SCOPE OF WORK.** Energy retrofit of the existing Solar Photovoltaic System up to approximately 1 MW pursuant to California Government Code Section 4217.10 to 4217.18, through capital purchase or optional Power Purchase Agreement. The scope of work includes the removal of existing PV equipment, the reuse of existing infrastructure as appropriate, and the construction of the new PV system.
5. Questions regarding the RFP should be directed in writing as soon as possible (but no later than five (5) working days prior to the proposal deadline to: Irene Huang, PE at ihuang@lgsd.org or 415-472-1734. Where appropriate, the District may respond to such questions by addenda transmitted to all RFP recipients.
6. The Project Contractor shall furnish all tools, equipment, apparatus, facilities, labor and material necessary to perform and complete in a good and workmanlike manner the construction of the **SOLAR PHOTOVOLTAIC SYSTEM REPLACEMENT** Project as shown in the Project Technical Specifications and Drawings and in accordance with the Contract Documents within **270 calendar days** of the Project commencement date specified in the Notice to Proceed for the Project.

Las Gallinas Valley Sanitary District

By: /s/ Michael P. Cortez
Michael P. Cortez, P.E., District Engineer
Date: May 11, 2022

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BIDDER'S CHECKLIST

Name of Bidder: _____
(Contractor's Legal Name)

Did You:

- ___ Send a properly completed Acknowledgement form immediately after receiving the Contract Documents and before bid opening when applicable.

- ___ Include with your bid the following properly completed, accurate copies of the following documents in the following order using the forms included in the Contract Documents:
 - ___ Bidder's Check List
 - ___ Proposal and Bid Schedule
 - ___ Acknowledgement of each addendum issued by the District, if any, with signed and dated acknowledgement page.
 - ___ Non-Collusion Affidavit
 - ___ Executed Bidder's Signature Page

- ___ Arrange to have the bid delivered to the Las Gallinas Valley Sanitary District offices at 101 Lucas Valley Rd, Suite 300, California 94903, or emailed to: Michael P. Cortez at mcortez@lgvsd.org and cc: Irene Huang at ihuang@lgvsd.org, before the time and day specified on the RFP.

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PROPOSAL AND BID SCHEDULE

TO THE BOARD OF DIRECTORS OF THE LAS GALLINAS VALLEY SANITARY DISTRICT:

Pursuant to the RFP for the **SOLAR PHOTOVOLTAIC SYSTEM REPLACEMENT**, the person signing the bidder's signature page contained in this proposal binds the entity listed on the bidder's signature page to submit complete, executed copy of the CONTRACTOR AGREEMENT within seven (7) calendar days of receiving written Notice of Award of the Project, and to fully perform the Project by the time for completion specified in the Contract Documents for the price specified in the bid schedule below in accordance with the terms of the Contract Documents and applicable law. This proposal cover page and bid schedule will be included as part of the CONTRACTOR AGREEMENT in accordance with the Contract Documents.

This bid includes properly completed, accurate copies of all the documents listed in the Bidder's Check List included in the Contract Documents in the order listed in the Bidder's Check List and using the forms included in the Contract Documents. This bid includes copies of each of the following addenda issued by the District. Each addendum has been signed and dated to confirm receipt on behalf of the entity listed on the bidder's signature page.

Addendum No. 1 dated _____

Addendum No. 2 dated _____

Addendum No. 3 dated _____

Addendum No. 4 dated _____

Addendum No. 5 dated _____

Addendum No. 6 dated _____

BASE BID: DESCRIPTION OF LUMP SUM BID ITEMS AND BID SCHEDULE, CAPITAL PURCHASE:

1. For the construction of the **SOLAR PHOTOVOLTAIC SYSTEM REPLACEMENT** Project consisting of the retrofit and upgrade of the existing system up 1 MW PV system, complete in-place as shown and specified, and according to the following Capital Purchase Pricing Sheet (attach separate sheet as necessary):

Item No.	Description	Make and Model	QTY	Unit Price	Total Price
1	PV Panels				\$
2	Inverters				\$
3	Balance of Materials				\$
4	Racking				\$
5	Labor				\$
6	1 st Year of O&M				\$
7	Other:				\$
8	Tax				\$
				Total:	

BASIS OF AWARD, TOTAL BASE BID, CAPITAL PURCHASE PRICE, Sum of Extended Totals:

\$ _____ (In figures)

BID ALTERNATE

The undersigned Bidder offers to make, at the following Bid Alternate price, the change in the Work covered by the Total Base Bid that is specified in the Bid Alternate priced below.

It is understood that:

1. The Bid Alternate price must be filled in.
2. The acceptance or rejection of the Bid Alternate is at the option of the District.
3. Acceptance or rejection of the Bid Alternate will not necessarily be made on the basis of price alone.
4. The acceptance or rejection of the Bid Alternate will not affect the Total Base Bid or other conditions of this Bid.
5. The original Total Base Bid, without Bid Alternate price shown herein, would be the basis of award.

Bid Alternate: For the construction of the **SOLAR PHOTOVOLTAIC SYSTEM REPLACEMENT** Project consisting of the retrofit and upgrade of the existing system up 1 MW PV system, complete in-place as shown and specified, and according to the following Power Purchase Agreement pricing and term of up to 25 years:

(The PPA pricing applies to the PV system only. The District prefers all costs to be included in the kWh unit price. All costs must be included. No costs will be allowed if they are not included in this pricing sheet. Describe Other Costs. Include multiple PPA options if desired. Attach separate sheet as necessary.)

Year	\$/kWh	Other Cost - \$	Early Purchase - \$/Watt	Estimated kWh Output
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
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Description of Other Costs:

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NON-COLLUSION AFFIDAVIT

TO BE EXECUTED BY BIDDER
AND SUBMITTED WITH BID

STATE OF CALIFORNIA)
)
COUNTY OF _____)

_____, being first duly sworn, deposes and says that he or she is _____ of _____, the party making the foregoing bid, that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Signature of Bidder

(Acknowledgement)
Subscribed and sworn before me by _____, this _____
day of _____, _____.

(SEAL) _____
Notary Public

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BIDDER'S SIGNATURE PAGE

By my signature on this proposal I certify, under penalty of perjury under the laws of the State of California, that the information submitted with this proposal for the **SOLAR PHOTOVOLTAIC SYSTEM REPLACEMENT** project, which information includes, but is not limited to, the Bidder's Check List, Proposal and Bid Schedule, Acknowledgement of Bid Addenda, Bid Bond, and Non-Collusion Affidavit, are accurate, true and correct, and are submitted in accordance with the requirements of the Contract Documents issued by the Las Gallinas Valley Sanitary District concerning the **SOLAR PHOTOVOLTAIC SYSTEM REPLACEMENT** project, and applicable law. By my signature on this proposal, I further certify that I am legally authorized to bind the bidder in accordance with the requirements of the Contract Documents.

Date: _____

Typed or Printed Name: _____

Signature: _____

Bidder: _____

Bidder Business Address (Street, City, State and Zip Code)

Bidder Business Phone No.: _____

Bidder Business Fax No.: _____

Bidder Email Address: _____

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SAMPLE POWER PURCHASE AGREEMENT

(SIMILAR ATTACHED FORM MUST BE SIGNED BY AN AUTHORIZED OFFICIAL AFTER THE AWARD OF A CONTRACT BY THE DISTRICT FOR THE PPA OPTION.)

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POWER PURCHASE AGREEMENT

THIS POWER PURCHASE AGREEMENT (this “PPA”) is made and entered into as of this _____ day of _____ (the “Effective Date”), by and between the _____ (“Host Customer”) and _____ (“Owner”). Owner and Host Customer are sometimes hereinafter referred to individually as a “Party” and collectively as the “Parties.”

RECITALS

A. Owner intends to build, finance, own and operate a solar energy facility (the “SEF”) as more particularly defined in Exhibit A hereto on the premises (the “Premises”) described in Exhibit C hereto

B. Owner desires to sell to Host Customer, and Host Customer desires to purchase from Owner, pursuant to Government Code section 4217.10 *et seq.*, all of the Energy Output, as defined in Exhibit E, generated by the SEF during the Term, as defined in Exhibit E, and otherwise in accordance with the terms of this PPA.

AGREEMENT

In consideration of the foregoing recitals, the mutual agreements, representations, warranties and covenants set forth in this PPA and the Exhibits hereto, and other good and valuable consideration, the receipt of which is hereby acknowledged, Owner and Host Customer agree as follows:

ARTICLE 1.

DEFINED TERMS; RULES OF INTERPRETATION

1.1 Defined Terms. Capitalized terms used in this PPA shall have the meanings ascribed to them in Exhibit E, the *Schedule of Definitions and Rules of Interpretation*, attached hereto and made a part of this PPA by this reference, or elsewhere in this PPA.

1.2 Rules of Interpretation. The rules of interpretation in Exhibit E, the *Schedule of Definitions and Rules of Interpretation*, shall apply to this PPA unless expressly provided otherwise.

ARTICLE 2.

TERM

2.1 Term.

(a) The initial term of this PPA (the “Initial Term”) shall commence on the Effective Date and shall be in effect until 11:59pm Pacific Time on the twentieth (20th) anniversary of the Commercial Operation Date.

(b) The Initial Term may be extended upon the mutual agreement of the Parties for up to three (3) consecutive periods of five years each (each such extension, an “Extension Term”), with each such Extension Term expiring at 11:59pm Pacific Time on the respective anniversary of the Commercial Operation Date. If either Party seeks to extend this Term of this PPA, that Party shall notify the other Party not less than one hundred eighty (180) days prior to the end of the Initial Term or the respective Extension Term.

(c) Without constituting a default under this PPA, and without liability of either Party to the other Party (except for such amounts then due and owing under this PPA as of the date of such termination), Owner shall have the right, but not the obligation, to terminate this PPA prior to expiration of the Term upon the occurrence of:

(i) an unstayed order of a court or administrative agency having the effect of subjecting the sales of Energy Output to federal or state regulation of prices and/or services; or

(ii) elimination or alteration of one or more Environmental Incentives or other change in law that results in a material adverse economic impact on Owner, unless the Parties have agreed to amend this PPA as provided in Section 7.6 below.

(d) Removal of SEF. Except as otherwise provided herein or in the Lease, Owner shall, within one hundred and fifty (150) days following the end of the Term, at Owner’s sole cost and expense, remove the SEF from the Premises and

restore the Premises to its original condition, normal wear and tear excluded. Owner and its agents, consultants and representatives shall have access at all reasonable times to the Premises and the SEF for purposes of such removal.

2.2 Conditions Precedent. The respective rights and obligations of the Parties under this PPA (other than those contained in this Article 2 and Articles 8 (Events of Default; Remedies), 10 (Representations and Warranties; Host Customer Acknowledgement), 11 (Indemnity; Limitations), 13 (Confidentiality; Publicity), 14 (Dispute Resolution and Arbitration), 15 (Notices), 16 (Assignment; Financing) and 17 (Miscellaneous), which are binding upon the Parties as of the Effective Date) are conditioned upon the satisfaction in full, or in respects to subsection (a) & (b) below waiver by Owner, of the following:

(a) Owner and Owner's Financing Parties shall have satisfied or waived all conditions precedent to the effectiveness of any and all Financing Documents and the initial drawdown of funds thereunder.

(b) Owner shall have received and accepted the Financial Statements of Host Customer.

(c) Owner shall have obtained all consents, permits, approvals, authorizations, qualifications and orders of all Governmental Entities required in connection with this PPA and the transactions contemplated hereby (collectively, "**Governmental Approvals**"), or the applicable Government Entities shall have waived the requirement for such Governmental Approval(s).

(d) Owner and/or Host Customer shall have entered into all contracts and delivered all other documents required by the Utility in connection with this PPA and the transactions contemplated hereby (collectively, "**Utility Documents**"), or the Utility shall have waived the requirement for such Utility Documents.

(e) Owner and/or Host Customer shall have received confirmation from the Utility of a reservation under the California Solar Initiative Program for the payment of performance based incentives to the Owner "**the CSI PBI**").

If any of the foregoing conditions precedent is not satisfied by June 30, 2011, Owner or Host Customer shall have the option to terminate the Agreement, and upon such termination neither Party shall have any further liability under this Agreement. To the extent that a Party becomes aware that one of these conditions precedent will not be able to be met prior to the June 30, 2011, that Party shall provide the other Party with notice and within fifteen (15) days of the date of such notice either Party may opt to terminate this Agreement without any liability to the other Party.

2.3 Notice of Commercial Operation. Subject to the remaining provisions of this PPA, Owner shall notify Host Customer in writing when the SEF has achieved Commercial Operation ("**Notice of Commercial Operation**"), and shall in such notice state the Commercial Operation Date.

2.4 Survival. Effective as of any expiration or termination of this PPA, the Parties will no longer be bound by the terms and conditions of this PPA, except (a) to the extent necessary to enforce any rights and obligations of the Parties, including payment obligations, arising under this PPA prior to termination of this PPA and (b) as provided in Section 2.1(d), Sections 8.3 through 8.8, Section 9.3, Articles 11, 12 (as necessary to give effect to its terms), 13, 14, 15 and 17, and the Exhibits as may be referenced in those Sections.

ARTICLE 3. PURCHASE AND SALE; DELIVERY; GOVERNMENTAL CHARGES

3.1 Purchase and Sale of Energy Output.

(a) Commencing on the Commercial Operation Date and continuing throughout the remainder of the Term, Owner shall make available to Host Customer, and Host Customer shall take delivery of, at the Delivery Point, all of the Energy Output produced by the SEF.

(b) Host Customer shall be responsible for arranging delivery of Energy Output from the Delivery Point to Host Customer and any installation and operation of equipment on Host Customer's side of the Delivery Point necessary for acceptance and use of the Energy Output. The Parties acknowledge that (1) the Energy Output from the SEF is intermittent, as available energy product, (2) Owner guarantees a level of Energy Output in accordance with Exhibit F, attached hereto, and (3) Host Customer is solely responsible for meeting any and all of its energy needs not met from SEF generated-energy at Host Customer's cost and expense.

3.2 Price for Energy Output. Host Customer shall pay Owner for the Energy Output, as metered at the Metering Device, at the applicable Energy Payment Rate in accordance with Exhibit B hereto. The payment to be made by Host Customer to Owner shall equal the Energy Output for the relevant period multiplied by the Energy Payment Rate for such period.

3.3 Energy Payment Rate.

(a) Initial Term. The Energy Payment Rate for the first Contract Year of the Initial Term shall be as stated in Exhibit B hereof. On the first anniversary of the Commercial Operation Date and each anniversary of the Commercial Operation Date thereafter during the Initial Term, the Energy Payment Rate shall be increased by the Energy Payment Rate Increase Factor applicable to the Initial Term stated in Exhibit B hereto.

(b) Extension Terms. The Energy Payment Rate during any Extension Term shall be as mutually agreed upon by the Parties.

(c) Adjustments to Energy Payment Rate. In all cases, any adjustments in the Energy Payment Rate shall be made to the nearest hundredth of a cent.

3.4 Title and Risk of Loss of Energy Output. Title to and risk of loss of the Energy Output will pass from Owner to Host Customer at the Delivery Point. Owner warrants that it will deliver the Energy Output to Host Customer at the Delivery Point free and clear of all liens, security interests, claims and other encumbrances.

3.5 Governmental Charges.

(a) Owner is responsible for local, state and federal income taxes attributable to Owner for income received under this PPA.

(b) Each Party shall be responsible for the timely payment of all Governmental Charges attributable to the sale of Energy Output from Owner to Host Customer customarily charged by the electric utility serving Host Customer or imposed specifically upon the production of renewable and/or distributed electrical energy. Both Parties shall use reasonable efforts to administer this PPA and implement its provisions so as to minimize Governmental Charges. In the event any of the sales of Energy Output hereunder are to be exempted from or not subject to one or more Governmental Charges, the applicable Party shall, promptly upon the other Party's request therefore, provide the applicable Party with all necessary documentation to evidence such exemption or exclusion.

ARTICLE 4.

ENVIRONMENTAL ATTRIBUTES; ENVIRONMENTAL INCENTIVES; REPORTING RIGHTS

4.1 Title to Environmental Attributes, Environmental Incentives and Reporting Rights. Notwithstanding the SEF's presence on the Premises, Owner shall own, and may assign or sell in its sole discretion, all right, title and interest associated with or resulting from the development and installation of the SEF or the production, sale, purchase or use of the Energy Output (except for the Environmental Attributes) including, without limitation (a) all Environmental Incentives, and (b) the Reporting Rights. Owner shall own and may assign or sell in its sole discretion, all right, title and interest in all Environmental Attributes generated by the SEF.

4.2 Further Assurances. At Owner's request and expense, Host Customer shall execute all such documents and instruments reasonably necessary or desirable to effect or evidence Owner's right, title and interest in and to the Environmental Attributes, Environmental Incentives and Reporting Rights. If the standards used to qualify the Environmental Attributes, Environmental Incentives or Reporting Rights to which Owner is entitled under this PPA are changed or modified, Host Customer shall, at Owner's request and expense, use all reasonable efforts to cause the Environmental Attributes, Environmental Incentives or Reporting Rights to comply with new standards as changed or modified.

ARTICLE 5.

CONSTRUCTION, MAINTENANCE AND MONITORING

5.1 Construction, Maintenance and Monitoring of SEF by Owner.

(a) Owner shall, at its sole cost and expense, (i) design, specify and construct the SEF substantially in accordance with the General SEF Description set forth in Exhibit A attached hereto and applicable Laws, (ii) maintain the SEF in good condition and repair and in accordance with applicable Laws, requirements of applicable insurance policies and the terms of this PPA and (iii) reasonably monitor the SEF's performance in an effort to minimize any loss of Energy Output caused by a SEF malfunction. Owner shall contract with _____ for the construction and maintenance of the SEF. Owner may only substitute another contractor for _____ with the written consent of the Host Customer, which may not be unreasonably withheld.

(b) Owner and its sub-contractors, agents, consultants, and representatives shall have reasonable access at all reasonable times to the Premises for the purpose of planning, constructing, operating, inspecting, maintaining, repairing and removing the SEF, and to any documents, materials and records of Host Customer relating to the Premises that Owner reasonably requests in conjunction with these activities. Owner shall comply with all reasonable access and notice procedures agreed upon between Host Customer and Owner from time to time in writing relating to activities conducted by or on behalf of Owner on the Premises relating to the SEF. During any such activities, Owner, and its sub-contractors,

agents, consultants and representatives, shall comply with Host Customer's reasonable safety and security procedures (as may be promulgated from time to time and communicated to Owner), and Owner and its sub-contractors, agents, consultants and representatives shall conduct such activities in such a manner and such a time and day as to minimize interference with Host Customer's activities to the extent reasonably practicable. Notwithstanding anything to the contrary in this Section 5.1(b), Owner shall be allowed immediate access to the Premises and the SEF in connection with any emergency condition then existing with respect to the SEF that could reasonably be expected to pose an imminent threat to the safety of persons or property.

5.2 Host Customer's Maintenance.

(a) Nothing in this PPA shall limit Host Customer's ability to maintain the Premises in a reasonable manner consistent with Host Customer's current and past practices and Host Customer shall only be obligated to maintain the Premises as may be further provided in the Lease. In the event that Host Customer's maintenance of the Premises prevents or limits deliveries of Energy Output to Host Customer, Host Customer shall pay all damages, costs and expenses arising in connection with such maintenance, including, without limitation, lost revenues under this PPA, loss of Environmental Incentives, Environmental Attributes and Reporting Rights in respect of deemed amounts of Energy Output as calculated in accordance with Section 6.2.

(b) Notwithstanding Section 5.3(a) above, Host Customer acknowledges, agrees and accepts that activities conducted by or on behalf of Owner on the Premises relating to the SEF may interfere with Host Customer's maintenance of the Premises or Host Customer's conduct of business thereon. Owner agrees to take all commercially reasonable measures to minimize such interference.

**ARTICLE 6.
METERING DEVICE AND METERING**

6.1 Metering Equipment. The Parties acknowledge and agree that the Owner will engage a Third Party Production Monitoring and Reporting Service, and that the Metering Device used will, at a minimum, be certified by the Energy Commission and be accurate to within +/- 1%.

6.2 Measurements. Readings of the Metering Device shall be conclusive as to the amount of Energy Output. If the Metering Device is out of service, is discovered to be inaccurate pursuant to Section 6.3, or registers inaccurately, measurements of Energy Output shall be determined by Owner in a commercially reasonable manner by reference to quantities of Energy Output measured during periods of similar conditions when the Metering Device was registering accurately. If no reliable information exists as to the period of time during which such Metering Device was registering inaccurately, it shall be assumed that the period of such inaccuracy was equal to one-half of the period from the date of the last previous test of such Metering Device (or if no such test had been conducted, from the Commercial Operation Date) through the date the inaccuracy of the Metering Device has been discovered; *provided, however*, that the period covered by the correction under Section 6.3 shall not exceed six months. If, for calculation purposes, no time period of similar conditions, during which the Metering Device registered accurately, can be determined, measurements of Energy Output shall be calculated in good faith by Owner with reference to applicable solar production modeling and solar insolation data generally accepted in the solar industry.

6.3 Testing and Correction.

(a) Right to Conduct Tests. Owner shall test the accuracy of the Metering Device at least once every other year following the Commercial Operation Date. In addition, each Party and its consultants and representatives shall have the right to witness each test conducted by or under the supervision of the Third Party Monitoring and Reporting Service Provider, or the Metering Device's manufacturer or other certified testing authority to verify the accuracy of the measurements and recordings of the Metering Device. Either Party shall provide at least ten (10) Business Days prior written notice to the other Party of the date upon which any such test is to occur. The Party requesting the test shall prepare a written report setting forth the results of each such test, and shall provide the other Party with copies of such written report not later than twenty (20) Business Days after completion of such test. The Party requesting the test shall bear the cost of the testing of the Metering Device and the preparation of the Metering Device test reports.

(b) Owner shall maintain the Metering Device in accordance with the Metering Device manufacturer's specifications and requirements, and those of the California Energy Commission. .

(c) Standard of Metering Device Accuracy; Resolution of Disputes as to Accuracy. The following steps shall be taken to resolve any disputes regarding the accuracy of the Metering Device:

(i) If either Party disputes the accuracy or condition of the Metering Device, such Party shall so advise the other Party in writing, stating in reasonable detail the basis for such dispute.

(ii) The non-disputing Party shall, within fifteen (15) days of receiving such notice from the disputing Party, advise the disputing Party in writing as to its position concerning the accuracy of such Metering Device and state reasons for taking such position.

(iii) If the Parties are unable to agree to the accuracy or condition of the Metering Device, either Party may request additional testing of the Metering Device by the Third Party Monitoring and Reporting Service Provider, or the Metering Device's manufacturer or other certified testing authority.

(iv) If the Metering Device is found to be inaccurate by 2% or less, any previous recordings of the Metering Device shall be deemed accurate, and the Party disputing the accuracy or condition of the Metering Device under Section 6.3(c)(i) shall bear the cost of inspection and testing of the Metering Device as described in Section 6.3(c)(iii).

(v) If the Metering Device is found to be inaccurate by more than 2% or if such Metering Device is for any reason out of service or fails to register, then (A) Owner shall promptly cause any Metering Device found to be inaccurate to be replaced or adjusted to correct, to the extent practicable, such inaccuracy, (B) the Parties shall estimate the correct amounts of Energy Output delivered during the periods affected by such inaccuracy, service outage or failure to register in accordance with Section 6.2 and (C) Owner shall bear the cost of inspection and testing of the Metering Device as described in Section 6.3(c)(iii). If as a result of such adjustment the quantity of Energy Output for any period is decreased (such quantity, the "**Energy Deficiency Quantity**"), in addition to remedies which may be applicable under Exhibit F Owner shall reimburse Host Customer for the amount paid by Host Customer in consideration for the Energy Deficiency Quantity by crediting such amount against Host Customer's payment obligations under this PPA. If as a result of such adjustment the quantity of Energy Output for any period is increased (such quantity, the "**Energy Surplus Quantity**"), Owner shall separately invoice for, and Host Customer shall pay for the Energy Surplus Quantity at the Energy Payment Rate applicable during the applicable Contract Year in accordance with Article 9 below.

ARTICLE 7.

SEF OWNERSHIP; RISK OF LOSS; INSURANCE; FORCE MAJEURE; CHANGE IN LAW

7.1 SEF Ownership.

(a) Notwithstanding the SEF's presence and operation on the Premises, Owner shall at all times retain title to and be the legal and beneficial owner of the SEF and all alterations, additions or improvements made thereto by Owner, and the SEF shall remain the property of Owner or Owner's assigns. In no event shall anyone claiming by, through or under Host Customer (including but not limited to any present or future mortgagee of the Premises) have any rights in or to the SEF at any time. Host Customer acknowledges and agrees that Owner may be required to grant or cause to be granted to Owner's Financing Parties a security interest in the SEF and Host Customer expressly disclaims, waives and agrees not to assert any lien, security interest or any other rights it may have in the SEF, from time to time, pursuant to this PPA, at law or in equity.

(b) The Parties specifically acknowledge and agree that Owner shall be the owner of the SEF for federal income tax purposes, and in that connection, Owner and/or Owner's Financing Parties shall be entitled to all depreciation deductions associated with the SEF and to any and all tax credits or other tax benefits associated with the SEF, including any such tax credits or tax benefits under the Code.

(c) Nothing in this PPA shall be construed to convey to Host Customer a license or other right to trademarks, copyrights, technology or other intellectual property of Owner or associated with the SEF.

7.2 SEF Loss.

(a) Owner shall bear the risk of any SEF Loss, including SEF Loss caused or arising from activities of invitees or trespassers on property adjacent to the Premises, such as errant golf balls, but excluding, however, any SEF Loss caused totally or partially by the gross negligence or intentional misconduct of Host Customer or Host Customer's agents, representatives, vendors, or employees, (collectively, "**Host Customer Misconduct**").

(b) In the event of any SEF Loss that, in the reasonable judgment of Owner, results in less than total damage, destruction or loss of the SEF, this PPA will remain in full force and effect and Owner will, at Owner's sole cost and expense, repair or replace the SEF as quickly as practicable. Notwithstanding the foregoing, to the extent that such SEF Loss has been caused by Host Customer Misconduct, Host Customer shall, promptly upon demand from Owner, pay all damages, costs and expenses arising in connection with such SEF Loss, including, without limitation, cost of repair, lost revenues under this PPA, loss of Environmental Incentives, Environmental Attributes and Reporting Rights, if any. The calculation of losses described in the preceding sentence shall be based upon Energy Output calculated as provided in Section 6.2 above.

(c) In the event of any SEF Loss that, in the reasonable judgment of Owner, results in total damage, destruction or loss of the SEF, Owner shall, within twenty (20) Business Days following the occurrence of such SEF Loss, notify Host Customer whether Owner is willing, notwithstanding such SEF Loss, to repair or replace the SEF.

(i) In the event that Owner notifies Host Customer that Owner is not willing to repair or replace the SEF, this PPA will terminate automatically upon the effectiveness of such notice and Owner shall promptly remove the SEF from the Premises in accordance with Section 2.1(d) above. If such SEF Loss has been caused by Host Customer Misconduct, Host Customer shall, within thirty (30) calendar days following such termination, pay to Owner, as liquidated damages, the Termination Payment applicable as of such termination date.

(ii) In the event that Owner notifies Host Customer that Owner is willing to repair or replace the SEF, the following shall occur: (A) this PPA will remain in full force and effect; (B) Owner will repair or replace the SEF as quickly as practicable; and (C) if such SEF Loss has been caused, totally or partially, by Host Customer Misconduct, Host Customer shall, promptly upon demand from Owner, pay all damages, costs and expenses arising in connection with such SEF Loss, including, without limitation, cost of repair, lost revenues under this PPA, loss of Environmental Incentives, Environmental Attributes and Reporting Rights, if any. The calculation of losses described in the preceding sentence shall be based upon Energy Output calculated as provided in Section 6.2 above. Within ten (10) Business Days after written demand from Owner, Host Customer shall pre-pay or post security acceptable to Owner for any repair expenses reasonably estimated by Owner.

7.3 Insurance.

(a) The Parties agree to provide insurance in accordance with Exhibit H attached hereto.

(b) The provisions of this PPA shall not be construed so as to relieve any insurer of its obligation to pay any insurance proceeds in accordance with the terms and conditions of valid and collectible insurance policies.

7.4 Performance Excused by Force Majeure. To the extent either Party is prevented by Force Majeure from carrying out, in whole or part, its obligations under this PPA and such Party (the "**Claiming Party**") gives notice and details of the Force Majeure to the other Party as soon as practicable (and in any event within five (5) Business Days after the Force Majeure first prevents performance by the Claiming Party), then the Claiming Party will be excused from the performance of its obligations under this PPA (other than the obligation to make payments then due or becoming due with respect to performance prior to the Force Majeure). The Claiming Party will use commercially reasonable efforts to eliminate or avoid the Force Majeure and resume performing its obligations under this PPA; *provided, however*, that neither Party is required to settle any strikes, lockouts or similar disputes except on terms acceptable to such Party, in its sole discretion. The non-Claiming Party will not be required to perform or resume performance of its obligations to the Claiming Party corresponding to the obligations of the Claiming Party excused by Force Majeure for so long as the claim of Force Majeure continues.

7.5 Termination due to Force Majeure. If a Claiming Party claims a Force Majeure for a consecutive period of nine (9) months or longer, then either Party may terminate this PPA, in whole or in part, without any liability to the Claiming Party as a result of such termination and Owner shall promptly remove the SEF from the Premises at its expense.

7.6 Change in Law. The Parties acknowledge and agree that the Energy Payment Rate is based on assumptions related to the availability to Owner of the Environmental Incentives. In the event of the elimination or alteration of one or more Environmental Incentives or any other change in Law that results in a material adverse economic impact on Owner in respect of this PPA (including due to a Law that increases Owner's cost of compliance with this PPA), the Parties shall work in good faith to amend the provisions of this PPA within twenty (20) business days after such elimination or alteration, as may be reasonably necessary to restore the allocation of economic benefits and burdens contemplated by this PPA as of the Effective Date. If the Parties fail to enter into such an amendment by the end of that period, Owner may terminate this PPA. Should the Owner terminate the PPA pursuant to this provision, neither Party shall bear any liability to the other Party and Owner shall remove the SEF within 180 days of the date of such termination.

ARTICLE 8. EVENTS OF DEFAULT; REMEDIES

8.1 Events of Default. An "**Event of Default**" means, with respect to a Party (a "**Defaulting Party**"), the occurrence of any of the following:

(a) such Party's failure to make, when due, any payment required under this PPA if such failure is not remedied within ten (10) Business Days after actual receipt of written notice from the other Party (the "**Non-Defaulting Party**");

(b) any representation or warranty made by such Party in this PPA or the Lease is false or misleading in any material respect when made or when deemed made or repeated if such breach is not cured or remedied (including by payment of money to the Non-Defaulting Party) within twenty (20) Business Days after receipt of written notice from the Non-Defaulting Party;

(c) the failure to perform any material covenant or obligation set forth in this PPA or the Lease (except to the extent constituting a separate Event of Default), if such failure is not remedied within twenty (20) Business Days after receipt of

written notice from the Non-Defaulting Party (provided that so long as the Non-Defaulting Party has initiated and is diligently attempting to effect a cure, such cure period shall be extended for an additional period not to exceed forty (40) Business Days;

(d) Host Customer becomes Bankrupt;

(e) such Party fails to provide or maintain in full force and effect any required insurance, if such failure is not remedied within five (5) Business Days after receipt of written notice from the Non-Defaulting Party;

(f) with respect to Host Customer, Host Customer consolidates or amalgamates with, or merges with or into, or transfers all or substantially all of its assets to, another entity, and (i) the resulting, surviving or transferee entity fails to assume, effective immediately upon the effectiveness of such consolidation, amalgamation, merger or transfer, each and all of the obligations of Host Customer under this PPA, the Lease and any existing agreements required for the continued receipt of Environmental Incentives, Environmental Attributes or Reporting Rights by Owner (or to otherwise reasonably cooperate with Owner with respect to any additional agreements or other documentation or actions in connection therewith), either by operation of law or pursuant to an agreement reasonably satisfactory to Owner and (ii) the resulting or transferee entity's Credit Rating is not reasonably acceptable to Owner;

(g) with respect to Host Customer, a Downgrade Event occurs with respect to Host Customer and Host Customer fails to provide Performance Assurance in an amount determined by Owner in a commercially reasonable manner, within ten (10) Business Days of receipt of notice from Owner, that such Performance Assurance will be required;

(h) any Performance Assurance previously provided by Host Customer is amended, modified or terminated without the prior written consent of Owner;

(i) with respect to Host Customer, a "Landlord Event of Default" shall have occurred and be continuing under the Lease; and;

(j) with respect to Owner, a "Tenant Event of Default" shall have occurred and be continuing under the Lease.

8.2 Remedies for Event of Default. If at any time an Event of Default has occurred and is continuing, the Non-Defaulting Party may (a) pursue applicable remedies or damages at law or equity, or (b) with notice to the Defaulting Party, designate a date, not earlier than twenty (20) Business Days after the date such notice is effective, an early termination date in respect of this PPA (an "**Early Termination Date**") and the Non-Defaulting Party shall have the right as of the date of such notice to (i) withhold any payments due to the Defaulting Party under this PPA and (ii) suspend performance due to the Defaulting Party under this PPA.

8.3 Host Customer Rights Upon Termination for Default. In the event that Host Customer is the Non-Defaulting Party, and Host Customer elects to terminate this PPA as provided in Section 8.2, Host Customer will be entitled, at its sole and exclusive option and in its sole and absolute discretion, to (a) require Owner to remove the SEF as provided in Section 2.1(d) above, or (b) if such Event of Default occurs after the sixth (6th) anniversary of the Commercial Operation Date, exercise the Purchase Option provided in Section 12.1. In the event that Host Customer elects either of the foregoing remedies, such express remedy shall be the sole and exclusive remedy available to Host Customer as a result of termination of this PPA subject, however, to Section 8.8 below. Owner's liability shall be limited as set forth in such provision and all other remedies or damages at law or in equity are waived by Host Customer.

8.4 Owner Rights Upon Termination for Default. In the event that Owner is the Non-Defaulting Party, and Owner elects to terminate this PPA as provided in Section 8.2, Owner will be entitled to remove the SEF and require that Host Customer pay the Termination Payment to Owner. In the event that Owner elects the foregoing remedy, such express remedy shall be the sole and exclusive remedy available to Owner as a result of termination of this PPA subject, however, to Section 8.8 below. Host Customer's liability shall be limited as set forth herein and all other remedies or damages at law or in equity are waived by Owner.

8.5 Termination Payment Notice. In the event that the Termination Payment is owed to Owner as provided in Section 8.4, then, as soon as practicable after calculation of the Termination Payment by Owner, Owner will notify Host Customer of the amount of the Termination Payment and any amount otherwise due and outstanding under this PPA or the Lease. Such notice will include a written statement explaining in reasonable detail the calculation of such amount. Host Customer shall be required to pay the Termination Payment and any amount otherwise due and outstanding under this PPA or the Lease to Owner within five (5) Business Days after the receipt of such notice.

8.6 Closeout Setoffs. The Non-Defaulting Party will be entitled, at its option, and in its discretion, to set off against any amounts due and owing to the Defaulting Party any amounts due and owing by the Defaulting Party to the Non-Defaulting Party under this PPA or the Lease.

8.7 Remedies Cumulative. Except as provided in Sections 8.3 and 8.4, the rights and remedies contained in this Article 8 are cumulative with the other rights and remedies available under this PPA or at law or in equity. The Non-Defaulting Party shall be under no obligation to prioritize the order with respect to which it exercises any one or more rights and remedies available under this PPA.

8.8 Unpaid Obligations. Notwithstanding anything to the contrary herein, the Defaulting Party shall in all events remain liable to the Non-Defaulting Party for any amount payable by the Defaulting Party in respect of any of its obligations remaining outstanding after any such exercise of rights or remedies.

ARTICLE 9. INVOICING AND PAYMENT

9.1 Invoicing and Payment. All invoices under this PPA will be due and payable not later than twenty (20) Business Days after receipt of the applicable invoice (or, if such day is not a Business Day, then on the next Business Day). Each Party will make payment by electronic funds transfer, or by other mutually agreeable method(s), to the account designated by the other Party. Any amounts not paid by the applicable due date will accrue interest at the Late Payment Interest Rate until paid in full.

9.2 Disputed Amounts. A Party may in good faith dispute the correctness of any invoice (or any adjustment to any invoice) under this PPA at any time within three (3) months following the date the invoice (or invoice adjustment) was rendered. In the event that either Party disputes any invoice or invoice adjustment, such Party will nonetheless be required to pay the full amount of the applicable invoice or invoice adjustment (except any portions thereof that are manifestly inaccurate or are not reasonably supported by documentation, payment of which amounts may be withheld subject to adjustment as hereinafter set forth) on the applicable payment due date, except as otherwise expressly provided in this PPA, and to give notice of the objection to the other Party. Any required payment will be made within five (5) Business Days after resolution of the applicable dispute, together with interest accrued at the Late Payment Interest Rate from the due date to the date paid.

9.3 Netting and Setoff. The Parties will net any and all mutual debts and payment obligations that are due and owing under this PPA or the Lease. Accordingly, all amounts owed by each Party to the other Party under this PPA or the Lease, including any related damages and any applicable interest, payments or credits, will be netted such that only the excess amount remaining due will be paid by the Party that owes it. Each Party shall have the right to set off any undisputed amount due and owing to such Party from the other Party under this PPA or the Lease against any undisputed amount due and owing from such Party to the other Party under this PPA or the Lease.

9.4 Records and Audits. Each Party will keep, for a period not less than two (2) years, records sufficient to permit verification of the accuracy of billing statements, invoices, charges, computations and payments relating to this PPA. During such period each Party may, at its sole cost and expense, and upon reasonable notice to the other Party, examine the other Party's records pertaining to this PPA during such other Party's normal business hours.

9.5 Currency. All pricing offered, payments made and amounts referenced hereunder are and will be in U.S. dollars.

ARTICLE 10. REPRESENTATIONS AND WARRANTIES; HOST CUSTOMER ACKNOWLEDGEMENT

10.1 Representations and Warranties. Each Party represents and warrants to the other Party that:

- (a) the execution, delivery and performance of this PPA are within its corporate power and authority, have been duly authorized by all necessary action and do not violate any of the terms and conditions in its governing documents, any contracts to which it is a party or any applicable Law;
- (b) this PPA and each other document executed and delivered in accordance with this PPA constitutes its legally valid and binding obligation enforceable against it in accordance with its terms, subject to any bankruptcy, insolvency, reorganization and other Laws affecting creditors' rights generally, and with regard to equitable remedies, the discretion of the applicable court;
- (c) it is acting for its own account, and has made its own independent decision to enter into this PPA, and is not relying upon the advice or recommendations of the other Party in so doing;
- (d) it is capable of assessing the merits of and understanding, and understands and accepts, the terms, conditions and risks of this PPA;
- (e) it understands that the other Party is not acting as a fiduciary for or an adviser to it or its Affiliates;
- (f) except as previously disclosed in writing to the other Party there is no pending or, to its knowledge, threatened litigation, action or proceeding against it which could reasonably be expected to have a material adverse effect on it or its ability to

perform its obligations under this PPA or the Lease or which purports to affect the legality, validity or enforceability of this PPA or the transactions contemplated hereby;

(g) except as previously disclosed in writing to the other Party there is no pending bankruptcy, reorganization, debt arrangement or other case or proceeding under any bankruptcy or insolvency law, or any dissolution, winding up or liquidation proceeding, in respect to it;

(h) except as previously disclosed in writing to the other Party, to its knowledge there are no facts, circumstances or other matters that may interfere with or delay the construction and installation of the SEF;

(i) this Agreement constitutes a “forward contract” as defined in the United States Bankruptcy Code, and therefore, not subject to rejection by trustee in a bankruptcy proceeding.

10.2 Host Customer Acknowledgement Regarding Inapplicability of Bankruptcy Code Section 366. Host Customer acknowledges and agrees that, for purposes of this PPA, Owner is not a “utility” as such term is used in Section 366 of the United States Bankruptcy Code, and Host Customer agrees to waive and not to assert the applicability of the provisions of Section 366 in any bankruptcy proceeding wherein Host Customer is a debtor.

ARTICLE 11. INDEMNITY; LIMITATIONS

11.1 Indemnity. To the fullest extent permitted by applicable Law, each Party (the “*Indemnitor*”) hereby indemnifies and agrees to defend and hold harmless the other Party and its Affiliates, respective officers, directors, officers, employees and agents (the “*Indemnitee*”) from and against any and all Indemnity Claims, whether or not involving a third-party claim, caused by, resulting from, relating to or arising out of any breach of this PPA or the Lease by the Indemnitor or any of its directors, officers, employees or agents or any negligence or intentional misconduct on the part of the Indemnitor or any of its directors, officers, employees or agents; *provided, however*, that the Indemnitor will not have any obligation to indemnify the Indemnitee from or against any Indemnity Claims to the extent caused by, resulting from, relating to or arising out of the negligence or intentional misconduct of the Indemnitee or any of its directors, officers, employees or agents.

11.2 Limitation of Remedies, Liability and Damages. The Parties confirm that the express remedies and measures of damages provided in this PPA satisfy the essential purposes hereof. For breach of any provision for which an express remedy or measure of damages is provided, such express remedy or measure of damages will be the sole and exclusive remedy, the obligor’s liability will be limited as set forth in such provision and all other remedies or damages at law or in equity are waived. If no remedy or measure of damages is expressly provided herein, the obligor’s liability will be limited to direct actual damages only, such direct actual damages will be the sole and exclusive remedy and all other remedies or damages at law or in equity are waived. Without prejudice to the calculation of the amount of any Termination Payment or Purchase Price, neither Party will be liable for consequential, incidental, punitive, special, exemplary or indirect damages, lost profits, lost savings or other business interruption damages, by statute, in tort or under contract, under any indemnity provision or otherwise; *provided, however*, that notwithstanding the foregoing, in no event will the foregoing limitations of liability be applied to limit the extent of the liability of either Party to the other for intentional misconduct or for or with respect to any third party Indemnity Claims.

11.3 Contribution. Notwithstanding the above, neither Owner nor Host Customer shall be required to defend, indemnify and hold the other harmless for the latter’s own negligent acts, omissions or willful misconduct. It is the intent of the Parties that where negligence is determined to have been joint or contributory, principles of comparative negligence will be followed, and each Party shall bear the proportionate cost of any loss damage, expense or liability attributable to that Party’s negligence.

ARTICLE 12. SEF PURCHASE OPTION

12.1 Grant of Purchase Option. For and in consideration of the payments made by Host Customer under this PPA, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by the Parties, Owner hereby grants Host Customer the option to purchase all of Owner’s right, title and interest in and to the SEF Assets on the terms set forth in this PPA (the “*Purchase Option*”). The Purchase Option shall be irrevocable by Owner and may be exercised by Host Customer during the Exercise Period (as defined below) following a Final Determination (as defined below) related to a valuation performed pursuant to this Article 12.

12.2 Host Customer Request for Appraisal of SEF Value. Host Customer shall have the right to provide a notice to Owner requiring a determination of the Fair Market Value of the SEF in accordance with Section 12.4 (a) at any time within the period that is at least 180 days prior to the end of the Initial Term or any Extension Term but no more than 270 days prior to the end of the Initial Term or any Extension term or (b) in the notice under Section 8.2 following an Event of Default with respect to Owner (subject to Section 8.3(b)).

12.3 Selection of Independent Appraiser. Within twenty (20) Business Days of Owner's receipt of a notice provided under Section 12.2, Owner and Host Customer shall mutually agree upon an Independent Appraiser. If Owner and Host Customer do not agree upon the appointment of an Independent Appraiser within such twenty (20) Business Day period, then at the end of such twenty (20) Business Day period Owner and Host Customer shall notify each other in writing of their respective designation of three proposed Independent Appraisers. Owner and Host Customer shall, within five (5) Business Days of receipt of such notice, strike two of the proposed Independent Appraisers designated by Owner and Host Customer, respectively, and shall provide notice thereof to the other Party. The remaining two proposed Independent Appraisers shall, within two (2) Business Days of each Party's notice, select a third Independent Appraiser and such third Independent Appraiser shall perform the duties of the Independent Appraiser as set forth herein.

12.4 Determination of Fair Market Value.

(a) The Independent Appraiser shall, within twenty (20) Business Days of appointment, make a preliminary determination of the Fair Market Value of the SEF (the "**Preliminary Determination**").

(b) Upon making such Preliminary Determination, the Independent Appraiser shall provide such Preliminary Determination to Owner and Host Customer, together with all supporting documentation that details the calculation of the Preliminary Determination. Owner and Host Customer shall have the right to object to the Independent Appraiser with respect to the Preliminary Determination within twenty (20) Business Days of receiving such Preliminary Determination; provided that the objecting Party provides a written explanation documenting the reasons for its objection. Within ten (10) Business Days after the expiration of such twenty (20) Business Day period, the Independent Appraiser shall issue the Independent Appraiser's final determination (the "**Final Determination**") to Owner and Host Customer, which shall specifically address the objections received by the Independent Appraiser and whether such objections were taken into account in making the Final Determination. Except in the case of fraud or manifest error, the Final Determination of the Independent Appraiser shall be final and binding on the Parties.

12.5 Calculation of Purchase Price. The purchase price (the "**Purchase Price**") payable by Host Customer for the SEF Assets shall be equal to the Fair Market Value as determined by the Independent Appraiser.

12.6 Costs and Expenses of Independent Appraiser. Owner and Host Customer shall each be responsible for payment of one half of the costs and expenses of the Independent Appraiser.

12.7 Exercise of Purchase Option.

(a) Host Customer shall have twenty (20) Business Days from the date of the Final Determination (such period, the "**Exercise Period**"), to exercise the Purchase Option, at the Purchase Price. Host Customer must exercise its Purchase Option during the Exercise Period by providing a notice (an "**Exercise Notice**") to Owner. Once Host Customer delivers its Exercise Notice to Owner, such exercise shall be irrevocable.

(b) Promptly following receipt of Host Customer's notice pursuant to Section 12.2, Owner shall make the SEF Assets, including records relating to the operations, maintenance, and warranty repairs, available to Host Customer for its inspection during normal business hours.

12.8 Terms of SEF Purchase. On the Transfer Date (a) Owner shall surrender and transfer to Host Customer on an as-is, where-is basis all of Owner's right, title and interest in and to all SEF Assets and shall retain all liabilities arising from or related to the SEF Assets prior to the Transfer Date, (b) Host Customer shall pay the Purchase Price, by certified check, bank draft or wire transfer and shall assume all liabilities arising from or related to the SEF Assets from and after the Transfer Date, and (c) both Parties shall (i) execute and deliver a bill of sale and assignment of contract rights, together with such other conveyance and transaction documents as are reasonably required to fully transfer and vest title to the SEF Assets in Host Customer, including but not limited to any applicable SEF warranty documents, and (ii) deliver ancillary documents, including releases, resolutions, certificates, third person consents and approvals and such similar documents as may be reasonably necessary to complete the sale of the SEF Assets to Host Customer.

12.9 Transfer Date. The closing of any sale of the SEF (the "**Transfer Date**") pursuant to this Article 12 will occur no later than thirty (30) Business Days following the date on which the Independent Appraiser issues the Final Determination.

ARTICLE 13. CONFIDENTIALITY, PUBLICITY

13.1 Confidentiality.

(a) Neither Party will use any Confidential Information for any purpose except such Party's performance under this PPA. Furthermore, neither Party will disclose any Confidential Information to any third party (other than (and then only for purposes permitted by this PPA) the Party's or the its Affiliates' officers, employees, lenders, counsel, accountants or advisors (collectively, "**Representatives**") who have a need to know such information for the purposes permitted by this

section and who have agreed to keep such terms confidential or are otherwise bound by confidentiality obligations at least as restrictive as those contained herein) except in order to comply with the requirements of any applicable Law or any exchange, control area or independent system operator rule, tariff or agreement or in connection with any judicial or regulatory proceeding or request by a Governmental Entity; *provided, however*, that each Party will use reasonable efforts to prevent or limit any such disclosure. **“Confidential Information”** means information provided by one Party to the other in connection with the negotiation or performance of this Agreement that is clearly labeled or designated by the disclosing party as “confidential” or “proprietary” or with words of like meaning or, if disclosed orally, clearly identified as confidential with that status confirmed promptly thereafter in writing.

(b) Notwithstanding anything to the contrary contained herein, in order for the transactions contemplated by this Agreement not to be considered a “Confidential Transaction” within the meaning of United States Treasury Regulation 1.6011-4(b)(3), the Parties (and each Representative of the Parties) may (a) consult any tax advisor/consultant regarding the tax treatment and tax structure relating to the transactions contemplated by this Agreement, and (b) may at any time disclose to any Person, without limitation of any kind, the tax treatment and tax structure of the transactions contemplated by this Agreement and all materials of any kind (including tax opinions or other tax analysis) that are provided relating to such tax treatment or tax structure.

(c) The obligations of the Parties under this Article 13 will survive for a period of two (2) years from and after the termination of the Transaction to which any Confidential Information relates.

(d) Notwithstanding anything to the contrary herein, Owner understands that, as a public agency, Host Customer is subject to the California Public Records Act and, as such, this Agreement and some or all of the records related to this Agreement may be discloseable public records. If records are created or maintained by Owner pursuant to this Agreement and discloseable under that Act, Owner shall provide timely access to such records to the Host Customer for reproduction, upon request. Should Owner refuse to provide access to any documents requested by the Host Customer pursuant to a request under the Act and which must be disclosed under the Act, Owner shall bear all legal costs in responding to request and shall indemnify Host Customer, its governing body, every member of the governing body, employees, representatives and assigns against any and all claims related to the request.

13.2 Publicity.

(a) The Parties share a common desire to generate favorable publicity regarding the SEF and their association with the SEF. The Parties agree they will, from time-to-time, issue press releases regarding the SEF and that they shall cooperate with each other in connection with the issuance of such releases. Host Customer agrees that it shall not issue any press release regarding the SEF without the prior consent of Owner, and Owner agrees not to unduly withhold or delay any such consent.

(b) Subject only to the provisions on confidential information in Section 13.1 above, Owner shall have the right to publish any information or statement related to the SEF on its website (or the website of an Affiliate) and through other forms of media. Such information may include, but is not limited to, the location of the SEF, the name of the Host Customer and other features of the SEF.

(c) Notwithstanding Section 13.2(a) above, Host Customer shall have the right to publicize, without prior approval by Owner, that it is serving as a “solar host” for the SEF and to display photographs of the SEF in its advertising and promotional materials, *provided* that any such materials identify Owner as the “developer, owner and operator” of the SEF.

ARTICLE 14. DISPUTE RESOLUTION AND ARBITRATION

14.1 The Parties, through their respective authorized representative, shall negotiate in good faith and attempt to resolve any dispute, controversy or claim arising out of or relating to this PPA (a **“Dispute”**) within thirty (30) days after the date that a Party gives written notice of such Dispute to the other Party.

14.2 If, after such negotiation in accordance with Section 14.1 above, the Dispute remains unresolved, the Parties may mutually agree to submit the dispute to non-binding mediation. In such mediation, the authorized representative of each Party shall meet for at least three (3) hours with a mediator whom the Parties choose together. If the Parties are unable to agree on a mediator, then the Parties may mutually agree to submit the dispute to formal mediation through the American Arbitration Association.

14.3 In the event any Dispute is not settled to the mutual satisfaction of the Parties pursuant to Sections 14.1 or 14.2, both Parties shall retain the right, but not the obligation, to pursue any legal or equitable remedy available to it in a court of competent jurisdiction.

14.4 All mediations pursuant to Section 14.2 shall be held in Novato, California. Any legal action or proceeding brought by either of the Parties against the other Party with respect to this PPA or the transactions in connection with or relating hereto, may be brought in the courts of the State of California in the Marin County and, by execution and delivery of this PPA, each of the Parties hereby irrevocably accepts for itself and in respect of its property, generally and unconditionally, the non-exclusive jurisdiction of the aforesaid court and waives any objection which it may have to the laying of venue of any proceedings brought in any such court; and any claim that such proceedings have been brought in an inconvenient forum. Each of the Parties agrees that a judgment, after exhaustion of all available appeals, in any such action or proceeding shall be conclusive and binding upon each of the Parties, and may be enforced in any other jurisdiction, by a suit upon such judgment, a certified copy of which shall be conclusive evidence of the judgment.

**ARTICLE 15.
NOTICES**

15.1 Notices. All notices, requests, statements or payments will be made to the addresses and persons specified below. All notices, requests, statements or payments will be made in writing except where this PPA expressly provides that notice may be made orally. Notices required to be in writing will be delivered by hand delivery, overnight delivery, facsimile, or e-mail (so long as a copy of such e-mail notice is provided immediately thereafter in accordance with the requirements of this section by hand delivery, overnight delivery, or facsimile unless confirmation of successful transmission is received). Notice by facsimile will (where confirmation of successful transmission is received) be deemed to have been received on the day on which it was transmitted (unless transmitted after 5:00 p.m. at the place of receipt or on a day that is not a Business Day, in which case it will be deemed received on the next Business Day). Notice by hand delivery or overnight delivery will be deemed to have been received when delivered. Notice by e-mail will be deemed to have been received when such e-mail is transmitted, so long as a copy of such e-mail notice is delivered immediately thereafter by hand delivery, overnight delivery, or facsimile unless confirmation of successful transmission is received. When notice is permitted to be provided orally, notice by telephone will be permitted and will be deemed to have been received at the time the call is received. A Party may change its address by providing notice of the same in accordance with the provisions of this section.

Host Customer: At the address stated on the signature page below

Owner:

With Copy To:

B

**ARTICLE 16.
ASSIGNMENT; FINANCING**

16.1 Assignment.

(a) Neither Party shall have the right to assign or transfer, whether voluntarily or by operation of law, any of its rights, duties or obligations under this PPA without the prior written consent of the other Party, which consent shall not be unreasonably withheld or delayed (it being understood and agreed that Owner shall not be deemed to have unreasonably withheld its consent to such assignment or transfer by Host Customer of any or all of Host Customer's right, title and interest in and to this Agreement if such proposed assignment or transfer is to any Person whose Credit Rating is worse than Host Customer's Credit Rating as of the Effective Date or to any Person who has no Credit Rating). Notwithstanding the foregoing, Owner may assign any of its rights, duties or obligations under this PPA, *provided, however*, that any such assignee pursuant to clause (i) through clause (iv) below shall agree to be bound by the terms and conditions hereof: (i) to

one or more of its Affiliates, (ii) Host Customer or any of its assignees, (iii) to any Person succeeding to all or substantially all of the assets of Owner, (iv) to a successor entity in a merger or acquisition transaction or (v) to one or more Affiliates or third parties in connection with a sale-and-leaseback or other debt and/or equity financing transaction. Owner shall notify the Host Customer of any assignment of its rights, duties or obligations under this PPA.

(b) Subject to the foregoing restrictions on assignment, this PPA will inure to the benefit of and be binding upon the Parties and their respective successors and permitted assigns.

16.2 Financing.

(a) In connection with an assignment pursuant to clause (v) of Section 16.1(a), Owner may pledge its interest in this PPA, including any rights to payment, and the SEF, as security for loans or financing against its personal property. If any of Owner's Financing Parties requests any amendments or clarifications to the terms and conditions of this PPA, Host Customer agrees to consider any such requests in good faith.

(b) Host Customer acknowledges that Owner will be financing the acquisition and installation of the SEF with financing accommodations from one or more financial institutions and that Owner's obligations thereunder will be secured by, among other collateral, a pledge or collateral assignment of this PPA and Owner's rights to payment and a first security right in the SEF. In order to facilitate such necessary financing, Host Customer acknowledges that it has been advised that part of the collateral securing financial accommodations of Owner is the granting of a first priority security interest in the SEF to Owner's Financing Parties to be perfected by a filing under the Uniform Commercial Code (UCC) and to be documented in a recorded notice on title to the Premises. Host Customer agrees to such filings so long as they reflect the Parties' agreement that any filing to perfect or provide notice of such security interest clearly document the Parties' intent that the SEF is considered personal property only and is not considered a fixture to the Premises.

(c) Host Customer agrees that upon Owner's request it will use commercially reasonable efforts to confirm the ownership of the SEF by Owner and/or Owner's Financing Parties, the existence of Owner's Financing Parties' security interest and the fact that the SEF is not part of the Premises or a fixture thereof, as necessary and appropriate to avoid confusion or adverse claims.

16.3 Additional Cooperation with Financing. Host Customer acknowledges that Owner will be financing the development, acquisition, installation and/or operation of the SEF and Host Customer agrees that it shall reasonably cooperate with Owner and Owner's Financing Parties in connection with such financing for the SEF, including without limitation by (i) furnishing such information, including but not limited to the Financial Statements, as may be reasonably requested by Owner or Owner's Financing Parties, (ii) delivering one or more consents to collateral assignment in substantially the form attached hereto as Exhibit G with such changes as may be reasonably requested by Owner's Financing Parties and (iv) providing such opinions of counsel and other matters as Owner or Owner's Financing Parties may reasonably request.

ARTICLE 17. MISCELLANEOUS

17.1 Governing Law. This PPA will be governed by the Laws of the State of California, without giving effect to principles of conflicts of laws.

17.2 Entire Agreement; Amendments. This PPA (including the exhibits, schedules and any written supplements or amendments) and the Lease constitute the entire agreement between the Parties, and shall supersede any prior oral or written agreements between the Parties, relating to the subject matter hereof. Except as otherwise expressly provided in this PPA, in order to be effective any amendment, modification or change to this PPA must be in writing and executed by both Parties.

17.3 Non-Waiver. No failure or delay by either Party in exercising any right, power, privilege or remedy hereunder will operate as a waiver thereof. No waiver by either party of a breach of any term or provision contained herein shall be effective unless signed and in writing by the waiving party. No consent by either party to, or waiver of, a breach by either Party, whether express or implied, shall be construed, operate as or constitute a consent to, waiver of or excuse of any other or subsequent or succeeding breach by either Party.

17.4 Severability. If any part, term, or provision of this PPA is determined by a court of competent jurisdiction to be invalid, illegal or unenforceable, such determination shall not affect or impair the validity, legality or enforceability of any other part, term or provision of this PPA, and shall not render this PPA unenforceable or invalid as a whole. Rather the part of this PPA that is found invalid or unenforceable will be amended, changed or interpreted to achieve as nearly as possible the same objectives and economic effect as the original provision, or replaced to the extent possible, with a legal, enforceable and valid provision that is as similar in tenor to the stricken provision, within the limits of applicable Law, and the remainder of this PPA will remain in full force and effect.

17.5 No Third Party Beneficiaries. Nothing in this PPA will provide any benefit to any third party or entitle any third party to any claim, cause of action, remedy or right of any kind, except with respect to Owner's Financing Parties to the extent expressly provided herein.

17.6 No Recourse to Affiliates. This PPA is solely and exclusively between the Parties, and any obligations created herein on the part of either Party shall be the obligations solely of such Party. Unless otherwise provided for or authorized by Law, no Party shall have recourse to any parent, subsidiary, partner, member, Affiliate, lender, director, officer or employee of the other Party for performance or non-performance of any obligation hereunder, unless such obligations were assumed in writing by the Person against whom recourse is sought.

17.7 Relationships of Parties. The Parties are independent contractors, and will not be deemed to be partners, joint venturers or agents of each other for any purpose, unless expressly stated otherwise herein.

17.8 Counterparts. This PPA may be executed in one or more counterparts, each of which is an original and all of which together constitute one and the same instrument. A signature on a copy of this PPA received by either Party by facsimile transmission or electronic signature is binding upon the other Party as an original.

17.9 Further Assurances.

(a) The Parties acknowledge that adjustments in the terms and conditions of this PPA may be appropriate to account for rule changes in the respective Utility or Utility control areas, by the respective independent system operators, or their successors, that could not be anticipated at the date of execution of this PPA or that are beyond the control of the Parties, and the Parties agree to make such commercially reasonable amendments as are reasonably required to comply therewith.

(b) The Parties shall, at their own cost and expense, do such further acts, perform such further actions, execute and deliver such further or additional documents and instruments as may be reasonably required or appropriate to consummate, evidence, or confirm the agreements and understandings contained herein and to carry out the intent and purposes of this PPA.

17.10 General Interpretation. The terms of this PPA have been negotiated by the Parties hereto and the language used in this PPA shall be deemed to be the language chosen by the Parties hereto to express their mutual intent. This PPA shall be construed without regard to any presumption or rule requiring construction against the Party causing such instrument of any portion thereof to be drafted, or in favor of the Party receiving a particular benefit under the PPA. No rule of strict construction will be applied against any Person.

[SIGNATURE PAGE FOLLOWS]

Intending to be legally bound, Owner and Host Customer have signed this Power Purchase Agreement through their duly authorized representatives effective as of the date set forth by their respective signatures below.

“OWNER:”

Date: _____

Its: Manager

By: _____
Name: _____
Title: _____

“HOST CUSTOMER:”

Date: _____

a California public entity

By: _____
Printed name: _____

Title: General Manager

Address:
[INSERT ADDRESS]
Phone:
Fax:

EXHIBIT A

PRELIMINARY SYSTEM DESCRIPTION

This SEF description and design are preliminary and subject to change based upon construction and permitting requirements, so long as the overall system size is not increased above kW DC.

EXHIBIT B

ENERGY PAYMENT RATE

Contract Year ¹	Energy Payment Rate	Energy Payment Rate Increase Factor
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
Thereafter		

Annual Price Escalator: Each Contract Year¹ during the term of the PPA, the Energy Payment rate shall be adjusted upward by the Energy Payment Rate Increase Factor listed in this Exhibit B.

¹ Each year starts at 0000 hours on the Commercial Operation Date (or anniversary) and runs through 2400 hours on the date before the following anniversary (e.g., 0000 hours on January 1 through 2400 hours on December 31).

SAMPLE

EXHIBIT C

PREMISES

Address: :

Parcel Number:

Legal Description:

SAMI

EXHIBIT D

TERMINATION PAYMENT

Year of Contract	Termination Payment
1	\$2,551,550
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
Thereafter	

EXHIBIT E

SCHEDULE OF DEFINITIONS AND RULES OF INTERPRETATION

1. Definitions. The definitions provided below and elsewhere in this PPA will apply to the defined terms used in this PPA:

- (a) **“Affiliate”** means, with respect to any entity, such entity’s general partner or manager, or any other entity that, directly or indirectly, through one or more intermediaries, controls, or is controlled by, or is under common control with, such entity.
- (b) **“Bankrupt”** means that a Party or other entity (as applicable): (i) is dissolved (other than pursuant to a consolidation, amalgamation or merger); (ii) becomes insolvent or is unable to pay its debts or fails (or admits in writing its inability) generally to pay its debts as they become due; (iii) makes a general assignment, arrangement or composition with or for the benefit of its creditors; (iv) has instituted against it a proceeding seeking a judgment of insolvency or bankruptcy or any other relief under any bankruptcy or insolvency Law or other similar Law affecting creditor’s rights, or a petition is presented for its winding-up, reorganization or liquidation, which proceeding or petition is not dismissed, stayed or vacated within forty-five (45) Business Days thereafter; (v) commences a voluntary proceeding seeking a judgment of insolvency or bankruptcy or any other relief under any bankruptcy or insolvency Law or other similar Law affecting creditors’ rights; (vi) seeks or consents to the appointment of an administrator, provisional liquidator, conservator, receiver, trustee, custodian or other similar official for it or for all or substantially all of its assets; (vii) has a distress, execution, attachment, sequestration or other legal process levied, enforced or sued on or against all or substantially all of its assets except for, with respect to Owner, any enforcement of rights by Owner’s Financing Parties pursuant to the Financing Documents; (viii) causes or is subject to any event with respect to it which, under the applicable Laws of any jurisdiction, has an analogous effect to any of the events specified in clauses (i) to (vii) inclusive; or (ix) takes any action in furtherance of, or indicating its consent to, approval of, or acquiescence in, any of the foregoing acts.
- (c) **“Business Day”** means any day except a Saturday, Sunday, or a Federal Reserve Bank holiday.
- (d) **“Claiming Party”** shall have the meaning ascribed to it in Section 7.4 of the PPA.
- (e) **“Claims”** shall have the meaning ascribed to it in Section 16.1(c)(ii) of the PPA.
- (f) **“Code”** means the Internal Revenue Code of 1986, as amended.
- (g) **“Commercial Operation”** means that the SEF is ready for regular, daily operation, has been connected to the Premises electrical system, has undergone testing as provided herein, is in compliance with applicable Laws in all respects and is producing Energy Output.
- (h) **“Commercial Operation Date”** means the first day on which the SEF is ready for Commercial Operation as certified in writing by Owner to Host Customer in the Notice of Commercial Operation.
- (i) **“Confidential Information”** shall have the meaning ascribed to it in Section 13.1(a) of the PPA.
- (j) **“Contract Year”** means the consecutive 12 month period commencing on the Commercial Operation Date.
- (k) **“Costs”** means (i) all reasonable attorneys’ fees and expenses incurred by the relevant Party in connection with the termination of this PPA and (ii) all reasonable costs and expenses incurred by the relevant Party in removal of the SEF from the Premises; provided that in the case of clauses (i) and (ii), the relevant Party uses commercially reasonable effort to mitigate such Costs.
- (l) **“Credit Rating”** shall mean, with respect to any entity on any date of determination, the respective rating then assigned to its unsecured and senior long-term debt or deposit obligations (not supported by third party credit enhancement) by a national rating agency, such as Standard & Poor’s Ratings Services (a division of McGraw Hill), Moody’s Investors Service, Inc., Fitch Ratings, Dun & Bradstreet, or their respective successors.
- (m) **“Defaulting Party”** shall have the meaning ascribed to it in Section 8.1 of the PPA.

- (n) **“Delivery Point”** means the agreed location or locations where Energy Output is to be delivered and received under this PPA, and specifically the electrical tie-in point(s) between the SEF and the Premises.
- (o) **“Dispute”** shall have the meaning ascribed to it in Section 14.1 of the PPA.
- (p) **“Downgrade Event”** shall be deemed to have occurred if (1) Host Customer was, on the date of this PPA, rated at least Investment Grade, and Host Customer ceases to be rated at least Investment Grade at any time during the Term, or (2) Host Customer was on the date of this PPA not rated at least Investment Grade, and Host Customer at any time during the term of this PPA fails (A) to maintain Performance Assurance of a type and in an amount reasonably required by Owner, or (B) fails to provide Financial Statements to Owner within twenty (20) Business Days of Owner’s written request therefore.
- (q) **“Early Termination Date”** shall have the meaning ascribed to it in Section 8.2 of the PPA.
- (r) **“Effective Date”** shall have the meaning ascribed to it in the preamble of the PPA.
- (s) **“Energy”** means electric energy (alternating current, expressed in kilowatt-hours).
- (t) **“Energy Commission”** means the California Energy Commission in respects to all projects located within the state of California, or other applicable Governmental Entity for non-California projects.
- (u) **“Energy Deficiency Quantity”** shall have the meaning ascribed to it in Section 6.3(c)(v) of the PPA.
- (v) **“Energy Output”** means the actual and verifiable amount of Energy generated by the SEF and delivered to Host Customer at the Delivery Point, as metered in whole kilowatt-hours (kWh) at the Metering Device. The Energy Output delivered to Host Customer at the Delivery Point shall be deemed to be equal to the energy measured at the Metering Device; actual energy losses between the Metering Device and the Delivery Point shall not affect the Energy Output.
- (w) **“Energy Payment Rate”** shall have the meaning ascribed to it in Section 3.3 of the PPA.
- (x) **“Energy Payment Rate Increase Factor”** means the factor expressed in percent by which the Energy Payment Rate shall increase from one Contract Year to another as set forth in Exhibit B hereto.
- (y) **“Energy Surplus Quantity”** shall have the meaning ascribed to it in Section 6.3(c)(v) of the PPA.
- (z) **“Environmental Attributes”** means any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the SEF, and its displacement of conventional Energy generation. Environmental Attributes include, but are not limited to (1) Renewable Energy Credits; (2) any avoided emissions of pollutants to the air, soil or water such as sulfur oxides (Sox), nitrogen oxides (Nox), carbon monoxide (CO) and other pollutants; and (3) any avoided emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by law, to contribute to the actual or potential threat of altering the Earth’s climate by trapping heat in the atmosphere, irrespective of whether such Environmental Attributes accrue for the benefit of Owner, any Affiliate, or any investor of Owner to any Affiliate. Environmental Attributes do not include (i) any energy, capacity, reliability or other power attributes from the SEF, (ii) emission reduction credits encumbered or used by the SEF for compliance with local, state, or federal operating and/or air quality permits, and (iii) Environmental Incentives.
- (aa) **“Environmental Incentives”** means any and all (i) any investment tax credits attributable to the SEF, any SEF Asset or Energy Output, (ii) production tax credits attributable to the SEF, any SEF Asset or Energy Output, (iii) accelerated depreciation attributable to the SEF, any SEF Asset or Energy Output, (iv) direct third-party rebates or subsidies for generation of energy by a renewable energy source, (v) fuel-related subsidies or “tipping fees” that may be paid to accept certain fuels, (vi) local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits and (vii) other financial incentives in the form of credits, tax write-offs, reductions, or allowances under applicable Law attributable to the SEF, any SEF Asset or Energy Output,

irrespective of whether such Environmental Incentives accrue for the benefit of Owner, any Affiliate or any investor of Owner or its Affiliate.

- (bb) **“Event of Default”** shall have the meaning ascribed to it in Section 8.1 of the PPA.
- (cc) **“Exercise Notice”** shall have the meaning ascribed to it in Section 12.7(a) of the PPA.
- (dd) **“Exercise Period”** shall have the meaning ascribed to it in Section 12.7(a) of the PPA.
- (ee) **“Extension Term”** shall have the meaning ascribed to it in Section 2.1(b) of the PPA.
- (ff) **“Fair Market Value”** means the value of the SEF as determined in Article 12 of the PPA .
- (gg) **“Final Determination”** shall have the meaning ascribed to it in Section 12.4(b) of the PPA.
- (hh) **“Financial Statements”** means with respect to a Party, such Party’s most recently available unaudited balance sheet and statement of income and cash flows as of a previous fiscal quarter and such Party’s most recently available audited statement of income **and of cash flows**, each prepared in accordance with generally accepted accounting principles (GAAP).
- (ii) **“Financing Documents”** means the loan and credit agreements, notes, bonds, indentures, security agreements, lease financing agreements, mortgages, interest rate exchanges, or swap agreements, and any other documents relating to the development, bridge construction or the permanent financing for the SEF, even if more than one financing arrangement exists at any time and even if the financing arrangements are of different tiers or tranches, including any credit enhancement, credit support, working capital financing, or refinancing documents, and any and all amendments, modifications or supplements to the foregoing that may be entered into from time to time (except for purposes of Section 2.2(a), in which case **“Financing Documents”** shall only be deemed to include such amendments, modifications or supplements to the foregoing that may be entered into prior to the Commercial Operation Date).
- (jj) **“Force Majeure”** shall mean, when used in connection with the performance of a Party's non-monetary obligations under this Agreement, any of the following events to the extent not caused by such Party or its agents, employees or contractors:
 - (1) war, riot, terrorism, acts of a public enemy or other civil disturbance;
 - (2) acts of God, including but not limited to, storms, floods, lightning, earthquakes, hailstorms, ice storms, tornados, typhoons, hurricanes, landslides, mudslides, volcanic eruptions, fires, objects striking the earth from space, sabotage or destruction; and
 - (3) strikes, walkouts, lockouts or similar industrial or labor actions or disputes.
- (kk) **“General SEF Description”** means the conceptual design of the SEF as of the Effective Date. After the Effective Date, the Parties shall continue to work to refine and finalize the SEF General Description.
- (ll) **“Governmental Approvals”** shall have the meaning ascribed to it in Section 2.2(c) of the PPA.
- (mm) **“Governmental Charges”** means all applicable federal, state and local taxes (other than taxes based on income or net worth but including, without limitation sales, use, gross receipts or similar taxes), governmental charges, emission allowance costs, duties, tariffs, levies, licenses, fees, permits, assessments, adders or surcharges (including public purposes charges and low income bill payment assistance charges), imposed or authorized by a Governmental Entity, independent system operator, utility, transmission and distribution provider or other similar entity, on or with respect to the Energy Output or this PPA.
- (nn) **“Governmental Entity”** means any government or any agency, bureau, board, commission, court, department, official, political subdivision, tribunal, program administrator or other instrumentality of any government, whether federal, state or local, domestic or foreign, or any Person, owned, operated, managed or otherwise controlled thereby.
- (oo) **“Host Customer”** shall have the meaning ascribed to it in the preamble of the PPA.

- (pp) **“Indemnitee”** shall have the meaning ascribed to it in Section 11.1 of the PPA.
- (qq) **“Indemnitor”** shall have the meaning ascribed to it in Section 11.1 of the PPA.
- (rr) **“Indemnity Claims”** means all losses, liabilities, damages, costs, expenses and attorneys’ fees, whether incurred by settlement or otherwise, related to injury to persons or damage to property.
- (ss) **“Independent Appraiser”** means an individual who is a member of a national accounting, engineering or energy consulting firm qualified by education, certification, experience and training to determine the value of solar generating facilities of the size and age and with the operational characteristics of the SEF. Except as may be otherwise agreed by the Parties, the Independent Appraiser shall not be (or within three years before his appointment have been) a director, officer or an employee of, or directly or indirectly retained as consultant or adviser to, Owner or any Affiliate of Owner or Host Customer or any Affiliate of Host Customer.
- (tt) **“Initial Term”** shall have the meaning ascribed to it in Section 2.1(a) of the PPA.
- (uu) **“Investment Grade”** means with respect to any Party, to have obtained a Credit Rating of Baa3 or better by Moody’s Investors Service, Inc. (or its successor), or BBB- or better by Standard and Poor’s Ratings Services (a division of McGraw Hill) (or its successor).
- (vv) **“Late Payment Interest Rate”** means, for any date, the lesser of (i) the per annum rate of interest equal to the Prime lending rate as may from time to time be published in The Wall Street Journal under “Money Rates” on such day (or, if not published on such day, on the most recent preceding day on which published), plus 4% and (ii) the maximum rate permitted by applicable Law.
- (ww) **“Law”** means any national, regional, state or local law, statute, rule, regulation, code, ordinance, administrative ruling, judgment, decree, order or directive of any jurisdiction applicable to this PPA or the transaction contemplated hereby.
- (xx) **“Lease”** means the Lease Agreement by and between the Parties, as amended, amended and restated, supplemented or otherwise modified from time to time, which, by this reference, is incorporated herein.
- (yy) **“Metering Device”** means any and all meters at or before the Delivery Point needed for the registration, recording and transmission of information regarding the Energy Output generated by the SEF.
- (zz) **“Non-Defaulting Party”** shall have the meaning ascribed to it in Section 8.1(a) of the PPA.
- (aaa) **“Notice of Commercial Operation”** shall have the meaning ascribed to it in Section 2.3 of the PPA.
- (bbb) **“Owner”** shall have the meaning ascribed to it in the preamble of the PPA.
- (ccc) **“Owner’s Financing Parties”** means any Persons, and their permitted successors and assignees, providing funding in connection with any development, bridge, construction, permanent debt or tax equity financing or refinancing for the SEF.
- (ddd) **“Parties”** shall have the meaning ascribed to it in the preamble of the PPA.
- (eee) **“Party”** shall have the meaning ascribed to it in the preamble of the PPA.
- (fff) **“Performance Assurance”** shall mean collateral in the form of either cash, letter(s) of credit, or other security reasonably acceptable to Owner.
- (ggg) **“Person”** means an individual, general or limited partnership, corporation, municipal corporation, business trust, joint stock company, trust, unincorporated association, joint venture, Governmental Entity, limited liability company, or any other entity of whatever nature.
- (hhh) **“PPA”** shall have the meaning ascribed to it in the preamble of the PPA.
- (iii) **“Preliminary Determination”** shall have the meaning ascribed to it in Section 12.4(a) of the PPA.

- (jjj) **“Premises”** shall have the meaning ascribed to it in Recital A of the PPA.
- (kkk) **“Purchase Option”** shall have the meaning ascribed to it in Section 12.1 of the PPA.
- (lll) **“Purchase Price”** shall have the meaning ascribed to it in Section 12.5 of the PPA.
- (mmm) **“Renewable Energy Credits”** means certificates, green tags, or other transferable indicia indicating generation of a particular quantity of energy from a renewable energy source by a renewable energy facility attributed to all of the Energy Output during the Term created under a renewable energy, emission reduction, or other reporting program adopted by a governmental authority, or for which a registry and a market exists (which, as of the Effective Date are certificates issued by Green-e in accordance with the Green-e Renewable Electric Certification Program, National Standard Version 1.3 administered by the Center of Resource Solutions); *excluding, however*, all Environmental Incentives.
- (nnn) **“Reporting Rights”** means the right of Owner to report to any Governmental Entity, utility or other party, including without limitation under Section 1605(b) of the Energy Policy Act of 1992 and provisions of the Energy Policy Act of 2005, or under any present or future domestic, international or foreign emissions trading program, that Owner owns the Environmental Attributes and the Environmental Incentives associated with the Energy Output.
- (ooo) **“Representatives”** shall have the meaning ascribed to it in Section 13.1(a) of the PPA.
- (ppp) **“SEF”** means the solar electric generating facility that produces the Energy Output sold and purchased under this PPA.
- (qqq) **“SEF Assets”** means each and all of the assets of which the SEF is comprised, including Owner’s solar energy panels, mounting systems, carports, tracking devices, inverters, integrators and other related equipment and components installed on the Premises, electric lines and conduits required to connect such equipment to the Delivery Point, protective and associated equipment, improvements, and other tangible and intangible assets, permits, property rights and contract rights reasonably necessary for the construction, operation, and maintenance of the SEF.
- (rrr) **“SEF Loss”** means loss, theft, damage or destruction of the SEF or SEF Assets, or any other occurrence or event that prevents or limits the SEF from operating in whole or in part, resulting from or arising out of any cause (including casualty, condemnation or Force Majeure).
- (sss) **“Term”** means the Initial Term and any Extension Term.
- (ttt) **“Termination Payment”** means the amount stated on the *Termination Payment Schedule* attached to this PPA as Exhibit D for any given Contract Year, plus the Costs incurred and/or payable by Owner as a result of termination of this PPA, as determined by Owner in a commercially reasonable manner.
- (uuu) **“Third Party Performance Monitoring and Reporting Service Provider”** means an unaffiliated third party, selected in each case by Owner, that reads and reports the Energy Output as recorded by the specified Metering Device.
- (vvv) **“Transfer Date”** shall have the meaning ascribed to it in Section 12.9 of the PPA.
- (www) **“Utility”** means the electric utility (including municipal or cooperative utility, as applicable) serving Host Customer in the service territory in which Host Customer is located at any given time.
- (xxx) **“Utility Documents”** shall have the meaning ascribed to it in Section 2.2(d) of the PPA.

2. Rules of Interpretation. In this PPA, unless expressly provided otherwise:

(a) the words “herein,” “hereunder” and “hereof” refer to the provisions of this PPA and a reference to a recital, Article, Section, subsection or paragraph of this PPA or any other agreement is a reference to a recital, Article, Section, subsection or paragraph of this PPA or other agreement in which it is used unless otherwise stated;

(b) references to this PPA, or any other agreement or instrument, includes any schedule, exhibit, annex or other attachment hereto or thereto;

(c) a reference to a paragraph also refers to the subsection in which it is contained, and a reference to a subsection refers to the Section in which it is contained;

(d) a reference to this PPA, any other agreement or an instrument or any provision of any of them includes any amendment, variation, restatement or replacement of this PPA or such other agreement, instrument or provision, as the case may be;

(e) a reference to a statute or other Law or a provision of any of them includes all regulations, rules, subordinate legislation and other instruments issued or promulgated thereunder as in effect from time to time and all consolidations, amendments, re-enactments, extensions or replacements of such statute, Law or provision;

(f) the singular includes the plural and vice versa;

(g) a reference to a Person includes a reference to the Person's executors and administrators (in the case of a natural person) and successors, substitutes (including Persons taking by novation) and permitted assigns;

(h) words of any gender shall include the corresponding words of the other gender;

(i) "including" means "including, but not limited to," and other forms of the verb "to include" are to be interpreted similarly;

(j) references to "or" shall be deemed to be disjunctive but not necessarily exclusive, (i.e., unless the context dictates otherwise, "or" shall be interpreted to mean "and/or" rather than "either/or");

(k) where a period of time is specified to run from or after a given day or the day of an act or event, it is to be calculated exclusive of such day; and where a period of time is specified as commencing on a given day or the day of an act or event, it is to be calculated inclusive of such day;

(l) a reference to a Business Day is a reference to a period of time commencing at 9:00 a.m. local time on a Business Day and ending at 5:00 p.m. local time on the same Business Day;

(m) if the time for performing an obligation under this PPA expires on a day that is not a Business Day, the time shall be extended until that time on the next Business Day;

(n) a reference to (i) a day is a reference to a calendar day unless the defined term "Business Day" is used, (ii) a month is a reference to a calendar month and (iii) a year is a reference to a calendar year;

(o) where a word or phrase is specifically defined, other grammatical forms of such word or phrase have corresponding meanings;

(p) a reference to time is a reference to the time in effect in Novato, California on the relevant date; and

(q) if a payment prescribed under this PPA to be made by a Party on or by a given Business Day is made after 2:00 pm on such Business Day, it is taken to be made on the next Business Day.

EXHIBIT F

PPA ENERGY PRODUCTION GUARANTY

Definitions.

“Actual Annual Energy Output” means, for each Contract Year, the Energy Output produced by the SEF as measured by the Metering Device and recorded by DAS, as defined below, for such Contract Year, plus any kWh that are estimated to have been lost for that Contract Year due to a Force Majeure Event or Host Customer Event..

“Adjusted Actual Annual Energy Output” shall mean, for each Contract Year, the Actual Annual Energy Output plus any Performance Credit Balance.

“Annual Output Guaranty Level” for the given Contract Year, eighty percent (80%) of the Estimated Annual Energy Output.

“DAS” means the data acquisition system, including but not limited to a meteorological system, production meter and data logger. The DAS measures and logs the following four parameters on a 15-minute average basis at the Premises: (1) actual AC electricity production of the SEF (in kWh); (2) solar insolation measured in the global horizontal plane (in kWh/m²); (3) ambient air temperature; (4) cell temperature; and (5) wind speed.

“Estimated Annual Energy Output” shall mean, with respect to a given Contract Year, the Energy Output in kWh expected to be produced by the System as described in Exhibit F-2 to this PPA.

“Host Customer Event” shall mean loss or reduction of Energy Output caused by actions or inaction of Host Customer or utility.

“kWh” means electric energy expressed in kilowatt-hours and measured by multiplying the amount of electric power delivered (measured in kilowatts) by the amount of time over which the electricity was consumed (measured in hours). One kilowatt hour equals one thousand watt-hours.

“Performance Credit Balance” shall mean the sum of any unused Performance Credits.

“Performance Credit Difference” shall mean, for each Contract Year, the number of kWh by which the Actual Annual Energy Output for such Contract Year exceeds the Estimated Annual Energy Output for such Contract Year.

“Performance Credits” shall mean, for each Contract Year, any positive Performance Credit Difference.

“Performance Guaranty Difference” shall mean, for each Contract Year, the number of kWh by which (i) the sum of Adjusted Actual Annual Energy Output for such Contract Year exceeds or falls short of (ii) the Annual Output Guaranty Level for such Contract Year.

“Replacement Energy Incremental Cost” shall mean ten percent (10%) of the Energy Payment Rate for the Contract Year for which the Annual Output Guaranty Level is being tested.

Energy Production Guaranty.

a. Within twenty (20) Business Days of the end of each Contract Year, Owner shall provide Host Customer with a written report setting forth a good faith calculation of the Performance Guaranty Difference for such Contract Year.

b. If the Performance Guaranty Difference for such Contract Year results in a negative number, Owner shall be deemed not to have satisfied the Annual Output Guaranty Level for such Contract Year and shall credit towards future energy payment obligations of Host Customer pursuant to Article 9 of the PPA an amount in US Dollars equal to the product of the absolute value of such Performance Guaranty Difference multiplied by the Replacement Energy Incremental Cost.

c. If the Performance Guaranty Difference for such Contract Year results in a positive number, Owner shall be deemed to have satisfied the Annual Output Guaranty Level for such Contract Year.

d. If the Performance Credit Difference for any given Contract Year results in a positive number, Owner shall be credited such positive difference as Performance Credits. Such Performance Credits shall be added to the Actual Annual Energy Output when calculating the Performance Guaranty Difference for up to three (3) future Contract Years from the date the Performance Credit Difference is accrued until such credit has been used and the Performance Credit Balance equals zero (0).

SAMPLE

EXHIBIT F-2

ESTIMATED ANNUAL ENERGY OUTPUT

Contract Year	Estimated Annual Insolation (in kWh/m²)	Estimated Annual Energy Output (in kWh)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
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EXHIBIT G

**FORM OF CONSENT TO COLLATERAL ASSIGNMENT
(POWER PURCHASE AGREEMENT / SITE AGREEMENT)**

This CONSENT AND AGREEMENT (this "Consent"), dated as of [____], [____], is entered into by and among [*Insert name of Host Customer*], a [_____] (together with its permitted successors and assigns, "Host Party"), [*Insert name of Lender*], a [_____] in its capacity as collateral agent (together with its successors, designees and assigns in such capacity, "Collateral Agent") for the various lenders and note purchasers referred to below (collectively, the "Lenders") and _____ (the "Company").

RECITALS

A. _____ has developed and is constructing an approximately [*Insert kw for applicable Project*] Kw solar electric facility located at [*Insert address of applicable Project*] in the State of _____, known as [*Insert name of applicable Project*] (the "Project").

B. Following completion of construction of the Project, _____ will sell its rights in the Project to the Company pursuant to a purchase and sale agreement between _____ and the Company (the "Project Sale").

C. [In order to partially finance the completion of construction of the Project and to fund other operating expenses, _____ have entered into certain [_____] [*Insert name of financing document*] dated as of the date hereof with certain note purchasers party thereto (as each may be amended, amended and restated, modified or supplemented from time to time collectively, the "Construction Note Agreements").

D. In order to partially finance the purchase of _____ rights in the Project, the Company has entered into that certain [_____] [*Insert name of 2nd financing document*] dated as of the date hereof with [*Insert name of Lender*], as note purchaser (as amended, amended and restated, modified or supplemented from time to time collectively, the "Purchase Credit Agreement," and together with the Construction Note Agreements, the "Loan Agreements").

E. Host Customer is party to that certain [*Insert description of relevant Power Purchase Agreement*], dated as of [_____] [____], [____] [*List any current amendments*] (as [**further**] amended, amended and restated, supplemented or otherwise modified from time to time in accordance with the terms thereof and hereof, the "PPA") and that certain [*Insert description of relevant [Rooftop] Lease Agreement*], dated as of [_____] [____], [____] [*List any current amendments*] (as [**further**] amended, amended and restated, supplemented or otherwise modified from time to time in accordance with the terms thereof and hereof, the "Lease") (the PPA and Lease, individually or collectively, as the context may require, the "Contracts"), copies of which are attached hereto as Exhibit A.

F. Pursuant to a security agreement, dated as of the date hereof, the Company has agreed, among other things, to assign, as collateral security for its obligations under the Purchase Note Agreement all of its right, title and interest in, to and under the Contracts to Collateral Agent for the benefit of itself and the note purchasers party to the Purchase Note Agreement and each other entity or person provided collateral security under the related financing documents (the "Purchase Note Agreement Secured Parties").

G. Pursuant to a certain security agreement, dated as of the date hereof, _____ has agreed, among other things, to assign, as collateral security for their respective obligations under the Construction Note Agreements all of their respective right, title and interest in, to and under the Contracts to Collateral Agent for the benefit of itself and the note purchasers party to the Construction Note Agreements and each other entity or person provided collateral security under the related financing documents (the "Construction Note Agreements Secured Parties," and together with the Company and the Purchase Note Agreement Secured Parties, the "Secured

Parties,")].]

H. The Secured Parties have, pursuant to certain intercreditor agreements and/or collateral agency agreements, jointly retained Collateral Agent as their collateral agent for purposes of administering their respective collateral under the respective Loan Agreements and related security agreements referenced above.

AGREEMENT

NOW THEREFORE, in consideration of the foregoing, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, and intending to be legally bound, the parties hereto hereby agree, notwithstanding anything in the Contracts to the contrary, as follows:

SECTION 1. CONSENT TO ASSIGNMENT

Host Customer acknowledges the [Construction Note Agreements], the [Purchase Credit Agreement] and the assignments of the Contracts referred to in Recitals G through I above, consents to such assignments (including, without limitation, the assignment of all of Company's rights to receive payments under or with respect to the Contracts, whether as contractual obligations, damages, indemnity payments or otherwise, and agrees with _____ and Collateral Agent for the benefit of the Secured Parties, as follows:

(a) The Collateral Agent shall be entitled (but not obligated) to exercise all rights and to cure any defaults of the Company under the Contracts. Upon receipt of notice from Collateral Agent, Host Customer agrees to accept such exercise and cure and to render to the curing party all performance due by Host Customer to the Company under the Contracts and this Consent. Host Customer agrees to make all payments (if any) to be made by Host Customer to the Company under the Contracts in accordance with the Collateral Agent's written instructions upon receipt of the same.

(b) Host Customer agrees to deliver duplicates or copies of all notices of default delivered by Host Customer under or pursuant to the Contracts to Collateral Agent simultaneously with delivery thereof to the Company Tenant under the Contracts.

(c) Host Customer will not, without the prior written consent of Collateral Agent (such consent not to be unreasonably withheld), (i) cancel or terminate the Contracts, or suspend performance of its services thereunder, except as provided in the Contracts and in accordance with Section 1(e) below, or consent to or accept any cancellation, termination or suspension thereof by the Company, (ii) except as provided in the Contracts, sell, assign or otherwise dispose (by operation of law or otherwise) of any part of its interest in the Contracts, or (iii) amend or modify the Contracts.

(d) Host Customer will not terminate any Contract on account of any default or breach of the Company thereunder without written notice to Collateral Agent and the Company and first providing to Collateral Agent and the Company (i) thirty (30) days from the date notice of default or breach is delivered to Collateral Agent to cure such default if such default is the failure to pay amounts to Host Customer which are due and payable by the Company under such Contract or (ii) a reasonable opportunity, but not fewer than ninety (90) days, to cure such breach or default if the breach or default cannot be cured by the payment of money to Host Customer so long as Collateral Agent or its designee(s) or assignee(s) shall have commenced to cure the breach or default within such ninety (90)-day period and thereafter diligently pursues such cure to completion and continues to perform any monetary obligations under such Contracts, and all other obligations under such Contract are performed by the Company or Collateral Agent or their respective designee(s) or assignee(s). If possession of the Project is necessary to cure such breach or default, and Collateral Agent or its designee(s) or assignee(s) declare the Company in default and commence foreclosure proceedings, Collateral Agent or its designee(s) or assignee(s) will be allowed a reasonable period to complete such proceedings. If Collateral Agent or its designee(s) or assignee(s) are prohibited by any court order or bankruptcy or insolvency proceedings from curing the default or from commencing or prosecuting foreclosure proceedings, the foregoing time periods shall be extended by the period of such prohibition.

(e) Host Customer consents to the transfer of the Company's interest under the Contracts to the Collateral Agent or its respective designee(s) or assignee(s) or any of them or a purchaser or grantee at a foreclosure sale by judicial or nonjudicial foreclosure and sale or by a conveyance by the Company in lieu of foreclosure and agrees that upon such foreclosure, sale or conveyance, Host Customer shall recognize the Collateral Agent or its designee(s) or assignee(s) or any of them or other purchaser or grantee as the applicable party under the Contracts (provided that such Collateral Agent or its designee(s) or assignee(s) or purchaser or grantee assume the obligations of the Company under the Contracts). Host Customer agrees that if Collateral Agent shall notify Host Customer that it is exercising remedies under any of the security arrangements described in Recitals G through I above, Collateral Agent shall be substituted for the Company under each Contract and, in such an event, Host Customer will continue to perform under the Contracts in favor of Collateral Agent.

(f) In the event that any Contract is rejected by a trustee or debtor-in-possession in any bankruptcy or insolvency proceeding, or if any Contract is terminated for any reason other than a default which could have been but was not cured as provided in subparagraph 1(d) above (including in the event Host Customer bids for and purchases (or causes another person to bid for and purchase) any Contract in any foreclosure, bankruptcy, insolvency or similar proceeding), and if, within forty-five (45) days after such rejection or termination, Collateral Agent or its successors or assigns shall so request, Host Customer will execute and deliver to Collateral Agent or its designee(s) or assignee(s) a new contract, which contract shall be on the same terms and conditions as the original Contract for the remaining term of the original Contract before giving effect to such termination.

(g) In the event Collateral Agent, the Lenders or its designee(s) or assignee(s) elect to perform the Company's obligations under the Contracts as provided in subparagraph 1(d) above or to enter into a new contract as provided in subparagraph 1(f) above, Collateral Agent or its designee(s) and assignee(s), such parties' liability to Host Customer for the performance of such obligations and Host Party's recourse for enforcement thereof shall be limited to such parties' interest in the Project and shall exclude any liability for acts or omissions of the Company or any other predecessor of such party's interest in such Contract that arose prior to the assumption by such party of its interest in the Project and such Contract.

(h) In the event Collateral Agent or its designee(s) or assignee(s) succeed to the Company's interest under the Contracts, Collateral Agent or its designee(s) or assignee(s), as applicable, shall cure any then-existing payment and performance defaults under the Contracts, except any performance defaults which by their nature are not capable of being cured. Collateral Agent or its designee(s) or assignee(s) shall have the right to assign its interest in the Contracts or the new contract entered into pursuant to subparagraph 1(f) above to a person or entity to whom the Project is transferred, provided such transferee assumes the obligations of the Company (or Collateral Agent or its designee(s) or assignee(s), as applicable) under the Contracts. Upon such assignment, Collateral Agent or its designee(s) or assignee(s), as applicable (including their agents and employees), shall be released from any further liability thereunder.

SECTION 2. REPRESENTATIONS AND WARRANTIES

Host Customer hereby represents and warrants that:

(a) Host Customer (i) is a [_____] duly **[formed][organized]** and validly existing under the laws of the State of [_____] , (ii) is duly qualified, authorized to do business and in good standing in every jurisdiction necessary to perform its obligations under the Contracts and this Consent, and (iii) has all requisite power and authority to enter into and to perform its obligations hereunder and under the Contracts, and to carry out the terms hereof and thereof and the transactions contemplated hereby and thereby;

(b) the execution, delivery and performance by Host Customer of this Consent and the Contracts have been duly authorized by all necessary corporate or other action on the part of Host Customer and do not require any approvals, filings with, or consents of any entity or person which have not

previously been obtained or made;

(c) each of this Consent and the Contracts is in full force and effect, has been duly executed and delivered on behalf of Host Customer by the appropriate officers of Host Party, and constitutes the legal, valid and binding obligation of Host Party, enforceable against Host Customer in accordance with its terms, except as the enforceability thereof may be limited by (i) bankruptcy, insolvency, reorganization or other similar laws affecting the enforcement of creditors' rights generally and (ii) general equitable principles (whether considered in a proceeding in equity or at law);

(d) there is no litigation, action, suit, proceeding or investigation pending or (to the best of Host Customer's knowledge) threatened against Host Customer before or by any court, administrative agency, arbitrator or governmental authority, body or agency which, if adversely determined, individually or in the aggregate, (i) could adversely affect the performance by Host Customer of its obligations hereunder or under the Contracts, or which could modify or otherwise adversely affect any required approvals, filings or consents which have previously been obtained or made, (ii) could have a material adverse effect on the condition (financial or otherwise), business or operations of Host Customer or (iii) questions the validity, binding effect or enforceability hereof or of the Contracts, any action taken or to be taken pursuant hereto or thereto or any of the transactions contemplated hereby or thereby;

(e) the execution, delivery and performance by Host Customer of this Consent and the Contracts, and the consummation of the transactions contemplated hereby and thereby, will not result in any violation of, breach of or default under any term of its formation or governance documents, or of any contract or agreement to which it is a party or by which it or its property is bound, or of any license, permit, franchise, judgment, injunction, order, law, rule or regulation applicable to it;

(f) the Contracts and this Consent are the only agreements between the Company and Host Customer with respect to the Project, and all of the conditions precedent to effectiveness under the Contracts have been satisfied or waived; and

(g) attached hereto as Exhibit A is a true, correct and complete copy of each of the Contracts, including all amendments, modifications, supplements and waivers with respect thereto as of the date hereof.

Each of the representations and warranties set forth in this Section 2 shall survive the execution and delivery of this Consent and the Contracts and the consummation of the transactions contemplated hereby and thereby.

SECTION 3. NOTICES

All notices required or permitted hereunder shall be in writing and shall be effective (a) upon receipt if hand delivered, (b) upon telephonic verification of receipt if sent by facsimile and (c) if otherwise delivered, upon the earlier of receipt or two (2) Banking Days after being sent registered or certified mail, return receipt requested, with proper postage affixed thereto, or by private courier or delivery service with charges prepaid, and addressed as specified below:

If to Host Customer:

a California public entity

Tel:

Fax:

Attn: General Manager

If to Collateral Agent:

[_____]
 [_____]
 [_____]
 Telephone No.: [_____]
 Telecopy No.: [_____]
 Attn: [_____]

If to :

If to the Company:

[_____]
 [_____]
 [_____]
 Telephone No.: [_____]
 Telecopy No.: [_____]
 Attn: [_____]

SECTION 4. ASSIGNMENT, TERMINATION, AMENDMENT AND GOVERNING LAW

This Consent shall be binding upon and benefit the successors and assigns of the parties hereto and their respective successors, transferees and assigns (including without limitation, any entity that refinances all or any portion of the obligations under any of the Loan Agreements). Host Customer agrees (a) to confirm such continuing obligation in writing upon the reasonable request of _____ and Collateral Agent for the benefit of the Secured Parties or any of their respective successors, transferees or assigns and (b) to cause any successor-in-interest to Host Customer with respect to its interest in the Contracts to assume, in writing in form and substance reasonably satisfactory to Collateral Agent, the obligations of Host Customer hereunder. Any purported assignment or transfer of the Contracts not in conjunction with the written instrument of assumption contemplated by the foregoing clause (b) shall be null and void. No termination, amendment or variation of any provisions of this Consent shall be effective unless in writing and signed by the parties hereto, and no waiver of any such provision shall be effective unless in writing and signed by the waiving party. This Consent shall be governed by, and construed under, the laws of the State of California without regard to conflicts of law principles that would result in the application of any law other than the law of the State of California.

SECTION 6. COUNTERPARTS

This Consent may be executed in one or more duplicate counterparts, and when executed and delivered by all the parties listed below, shall constitute a single binding agreement.

SECTION 7. SEVERABILITY

In case any provision of this Consent, or the obligations of any of the parties hereto, shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions, or the obligations of the other parties hereto, shall not in any way be affected or impaired thereby, and the parties hereto shall negotiate in good faith to replace such invalid, illegal or unenforceable provisions.

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SAMPLE

IN WITNESS WHEREOF, the parties hereto by their officers thereunto duly authorized, have duly executed this Consent as of the date first set forth above.

A California public entity

By: _____
Name: _____
Title: _____

By: _____
Name: _____
Title: _____

[Insert Company]
a [_____]

By: _____
Name: _____
Title: _____

[Insert Collateral Agent],
as Collateral Agent for the Lenders

By: _____
Name: _____
Title: _____

EXHIBIT A

Contracts

(see attached)

SCHEDULE 1(b)

Required Approvals, Filings and Other Consents

EXHIBIT H

Insurance Requirements

GENERAL LIABILITY

Each party shall maintain during the Term of this Agreement (or any extensions thereof), the insurance coverage outlined below, and all such other insurance as required by applicable law. Evidence of coverage will be provided to the other party and Owner's Financing Parties on an annual basis, 30 days prior to policy expiration, via a Certificate of Insurance as specified below. All Insurance Carriers will be rated A- VIII or better by A.M. Best Company:

- a. Commercial General Liability with limits of:
 - i. \$1,000,000 per occurrence for 3rd Party Property Damage & Property Damage
 - ii. \$1,000,000 per occurrence for Products Completed Operations
 - iii. \$2,000,000 General Aggregate
 - iv. Coverage to be written on an Occurrence form basis, including (1) Broad Form Contractual Liability and (2) provisions for severability of interest
 - v. Each party shall name the other, and Owner's Financing Parties as Additional Insureds with respect to the insurance required under this Agreement. The Additional Insured shall be on ISO form CG2011 (11/85) or equivalent.
 - vi. The policy should provide that the coverage is Primary and Non-Contributory with any other available insurance of the other party and/or of Owner's Financing Parties.
 - vii. The policy shall be endorsed to provide for 30 days advance notice of cancellation or non-renewal (10 days for non-payment of premium).
- b. Excess/Umbrella Liability Policy with minimum limits of:
 - i. \$4,000,000 per occurrence for 3rd Party Bodily Injury and Property Damage
 - ii. \$4,000,000 General Aggregate - other than Products/Completed Operations
 - iii. Coverage terms and limits to apply excess of the primary per occurrence and/or aggregate limits provided for in the Commercial General Liability, Auto Liability and Employers' Liability coverage.
- c. Workers' Compensation/Employers Liability limits as follows:
 - i. Workers' Compensation – Statutory Coverage.
 - ii. Employers Liability
 1. Bodily Injury by accident \$1,000,000 each accident
 2. Bodily Injury by disease \$1,000,000 each employee
 3. Bodily Injury by disease \$1,000,000 policy limit
 - iii. Policy shall be endorsed to include a Waiver of Subrogation in favor of Owner and Owner's Financing Parties

Host Customer is self-insured up to \$1 Million, with an additional \$9 Million in umbrella coverage above the initial \$1 Million.

CONTRACTOR AGREEMENT

(THE ATTACHED FORM MUST BE SIGNED BY AN AUTHORIZED OFFICIAL AFTER THE AWARD OF A CONTRACT BY THE DISTRICT FOR THE CAPITAL PURCHASE OPTION.)

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CONTRACTOR AGREEMENT

THIS AGREEMENT made this _____ day of _____, 20____, by and between the **LAS GALLINAS VALLEY SANITARY DISTRICT** (hereinafter referred to as “DISTRICT”), and _____ whose address is _____ (hereinafter referred to as “CONTRACTOR”).

WITNESSETH:

IN CONSIDERATION of the mutual covenants and conditions herein contained, the parties do hereby agree as follows:

1. General

DISTRICT engages CONTRACTOR to furnish the services hereinafter mentioned upon the covenants and conditions of this Agreement, at the compensation herein stipulated, and CONTRACTOR accepts said engagement upon said terms.

2. Duties of Contractor: Services to be Performed by Contractor

CONTRACTOR shall perform such duties and services as are listed on Exhibit A attached hereto, signed by the parties hereby referred to and made part hereof by reference. Said services shall be completed according to the time schedule contained in Exhibit A.

3. Services or Materials to be Performed or Furnished by District

DISTRICT shall perform such services or furnish such materials to CONTRACTOR in connection with this Agreement as are set forth on Exhibit B. If there are no entries on said Exhibit B, DISTRICT shall not be required to provide any services or furnish any materials to CONTRACTOR. Unless otherwise provided on Exhibit B, all said services and materials to be furnished by DISTRICT will be without cost to CONTRACTOR.

4. Payment by District: Time and Manner of Payment

DISTRICT shall pay CONTRACTOR, for all services to be rendered and all materials to be furnished under this Agreement, the amount specifically set forth and in the manner specifically set forth on **Exhibit A**. CONTRACTOR agrees to accept said sum as full compensation for all services due under this Agreement. Notwithstanding any other language in the Agreement or any exhibits, CONTRACTOR agrees that it will perform all tasks for a sum not to exceed _____ **Dollars** (**U.S. Dollars**). This is an Agreement for a specific task as defined in Exhibit A, Contractor Services (Scope of Work) for _____ Project, and CONTRACTOR has accurately determined the price of those tasks.

5. Additional Work

CONTRACTOR shall only be entitled to extra compensation for services or materials not otherwise required under this Agreement, if DISTRICT shall first have identified the services or materials as extra and requested such extra services or materials in writing; but, in no event shall DISTRICT be liable for payment unless the amount of such extra compensation shall first have been agreed to in writing by DISTRICT.

6. Professional Skill

CONTRACTOR represents that CONTRACTOR is skilled and licensed by the State of California in the professional calling necessary to perform the work agreed to be done under this Agreement. DISTRICT relies upon the skill of CONTRACTOR to do and perform its work in a skillful manner, and CONTRACTOR agrees to thus perform its work, and the DISTRICT'S acceptance of CONTRACTOR'S work shall not operate as a release of CONTRACTOR from this Agreement. For purposes of this Agreement, "skillful manner" shall mean the prevailing industry standard during the term of this Agreement.

7. Equal Employment Opportunity

CONTRACTOR shall not discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or military and veteran status of any person, except as provided in Section 12940 of the Government Code.

8. Compliance with Laws

CONTRACTOR shall comply with all applicable federal, state, and local laws, statutes, ordinances, rules and regulations and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of the Agreement. Compliance with this section shall include, but not limited to, the following:

- a. CONTRACTOR shall set forth:
 - 1. The name, the location of the place of business, the California contractor license number, and public works contractor registration number of each subcontractor who will perform work or labor or render service to the CONTRACTOR pursuant to Public Contract Code § 4104.
 - 2. The name and location of the place of each subcontractor certified as a minority, women, or disabled veteran business enterprise who will perform work or labor or render service to the CONTRACTOR to fulfill minority, women, and disabled veteran business enterprise goals pursuant to Public Contract Code § 2001.
- b. CONTRACTOR and its subcontractors shall pay "prevailing wages" in compliance with Labor Code § 1773.

9. Independent Contractor

CONTRACTOR is acting as an independent contractor in furnishing the services or materials and performing the work required by this Agreement and is not an agent, servant or employee of DISTRICT.

10. Indemnity

CONTRACTOR agrees to indemnify, save harmless and defend DISTRICT, its officers and employees from all costs, expenses, claims, liabilities or damages to persons or property arising out of or in any way connected with the performance of the CONTRACTOR'S work by the CONTRACTOR, its officers, employees, agents, contractors, subcontractors or any officer, agent or employee thereof. However, this indemnity will not extend to any loss, damage, or expense arising out of the active negligence of the DISTRICT or the DISTRICT'S employee's.

11. Insurance: Public Liability, Worker's Compensation

CONTRACTOR shall maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the CONTRACTOR, and their agents, representatives, or employees.

See Exhibit C for DISTRICT Insurance Requirements

12. Work Safety

CONTRACTOR shall provide adequate employee supervision and comply with all safety regulations while performing activities in connection with this Agreement. CONTRACTOR acknowledges that he has been provided and understands the DISTRICT'S safe work requirements listed as Exhibit D.

13. Notices

Unless otherwise provided herein, all notices required hereunder shall be given by certified mail, postage prepaid and addressed to the party at the address indicated in the opening paragraph of this Agreement provided however, that in lieu thereof, notice may be given by personal delivery to the party at said address.

14. Title to Documents

All original calculations, photographs, maps, drawings, plans, design notes and other material or documents developed or used in connection with the performance of this Agreement shall be the property of DISTRICT provided, however, that CONTRACTOR may provide DISTRICT with legible photostatic copies thereof in lieu of the originals upon approval by DISTRICT representative. Any plans and specifications shall bear the name of the CONTRACTOR.

15. Assignment

Neither party shall assign or sublet any portion of this Agreement without the written

consent of the other party in writing.

16. Termination

Without limitation to such rights or remedies as DISTRICT shall otherwise have by law, DISTRICT shall also have the right to terminate this Agreement for any reason upon seven (7) days' written notice to CONTRACTOR. This Agreement may also be terminated by either party upon seven (7) days' written notice should the other party fail substantially to perform in accordance with this Agreement through no fault of the other or if the project is stopped by conditions beyond the control of the DISTRICT.

17. Venue

Venue for any action of any nature regarding this Agreement shall be in Superior Court in the County of Marin.

18. Miscellaneous

Failure on the part of either party to enforce any provisions of this Agreement shall not be construed as a waiver or the right to compel enforcement of such provisions or any other provision.

19. Additional Provisions, Exhibits

Additional provisions of this Agreement are set forth on Exhibit F. All Exhibits shall be attached to, signed by the parties, and are hereby referred to and made a part hereof by reference.

20. Attorneys' Fees

If any party to this contract resorts to an action or arbitration to enforce or interpret any provision of this contract, the prevailing party shall be entitled to recover reasonable attorneys' fees in addition to any other relief to which that party may be entitled.

21. Severability

If a court of competent jurisdiction finds or rules that any provision of this Agreement is invalid, void, or unenforceable, the provisions of this Agreement not so adjudged shall remain in full force and effect. The invalidity in whole or in part of any provision of this Agreement shall not void or affect the validity of any other provision of this Agreement.

22. Entire Agreement: Amendment

This contract supersedes any and all other agreements, whether oral or in writing, between the parties with respect to the subject of this contract. Except as to those documents specifically incorporated by reference into this contract, this contract contains all of the covenants and agreements between the parties with respect to the subject of this contract, and each party acknowledges that no representations, inducements, promises, or agreements have been made by or on behalf of any party except the covenants and agreements embodied in this

contract. No agreement, statement, or promise not contained in this contract shall be valid or binding on the parties with respect to the subject of this contract. No modifications hereof shall be effective unless such modification is in writing signed by all parties to this Agreement.

IN WITNESS WHEREOF, the parties have hereunto set their hands the day and year first above written.

LAS GALLINAS VALLEY SANITARY DISTRICT

By _____
General Manager Date

CONTRACTOR

By _____
Signature Date

Print Name & Title

NOTE: The following exhibits are hereby incorporated into this Agreement by this reference:

- Exhibit A: Scope of Work
- Exhibit B: Services or Materials to be Performed or Furnished by District (Not Used)
- Exhibit C: General Conditions (Not Used.)
- Exhibit D: District Safe Work Requirements
 - 1. Contractor/Consultant Safe Work Requirements
 - 2. Confined Space Entry Program
- Exhibit E: Contractor's License & Workers' Compensation Insurance Info
- Exhibit F: Performance Bond
 - Payment/Labor and Materials Bond
 - 3-Year Maintenance Bond

Exhibit A
Scope of Work

Exhibit B

Services or Materials to be Performed or Furnished by District

(Not Used)

Exhibit C
General Conditions
(Not Used)

Exhibit D

District Safe Work Requirements

- 1. Contractor/Consultant Safe Work Requirements**
- 2. Confined Space Entry Program**

Exhibit D

District Insurance Requirements

Insurance Requirements for Professional Services

Consultant shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the Consultant, his agents, representatives, employees or subcontractors.

MINIMUM SCOPE OF INSURANCE

Coverage shall be at least as broad as:

1. **Commercial General Liability (CGL):** Insurance Services Office Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than **\$2,000,000** per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.
2. **Automobile Liability:** ISO Form Number CA 00 01 covering any auto (Code 1), or if Consultant has no owned autos, covering hired, (Code 8) and non-owned autos (Code 9), with limit no less than **\$1,000,000** per accident for bodily injury and property damage.
3. **Workers’ Compensation:** as required by the State of California, with Statutory Limits, and Employer’s Liability Insurance with limit of no less than **\$1,000,000** per accident for bodily injury or disease. (Not required if consultant provides written verification it has no employees)
4. **Professional Liability (Errors and Omissions):** Insurance appropriate to the Consultant’s profession, with limit no less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate. *(If applicable – see footnote next page)*

If the consultant maintains broader coverage and/or higher limits than the minimums shown above, the Entity requires and shall be entitled to the broader coverage and/or higher limits maintained by the contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the Entity.

Other Insurance Provisions

The insurance policies are to contain, or be endorsed to contain, the following provisions:

Additional Insured Status

The Entity, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the Consultant including materials, parts or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Consultant’s insurance (at least as broad as ISO Form CG 20 10 11 85 or **both** CG 20 10, CG 20 26, CG 20 33, or CG 20 38; **and** CG 20 37 forms if later revisions used).

Primary Coverage

For any claims related to this contract, the **Consultant’s insurance coverage shall be primary** insurance coverage at least as broad as ISO CG 20 01 04 13 as respects the Entity, its officers,

officials, employees, and volunteers. Any insurance or self-insurance maintained by the Entity, its officers, officials, employees, or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

Notice of Cancellation

Each insurance policy required above shall provide that **coverage shall not be canceled, except with notice to the Entity.**

Waiver of Subrogation

Consultant hereby grants to Entity a waiver of any right to subrogation which any insurer of said Consultant may acquire against the Entity by virtue of the payment of any loss under such insurance. Consultant agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the Entity has received a waiver of subrogation endorsement from the insurer.

Self-Insured Retentions

Self-insured retentions must be declared to and approved by the Entity. The Entity may require the Consultant to purchase coverage with a lower retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorse to provide, that the self-insured retention may be satisfied by either the name insured or Entity.

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to the Entity.

Claims Made Policies (note – should be applicable only to professional liability, see below)

If any of the required policies provide claims-made coverage:

1. The Retroactive Date must be shown, and must be before the date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided ***for at least five (5) years after completion of the contract of work.***
3. If coverage is canceled or non-renewed, and not replaced ***with another claims-made policy form with a Retroactive Date prior to*** the contract effective date, the Consultant must purchase "extended reporting" coverage for a minimum of ***five (5) years*** after completion of work.

Verification of Coverage

Consultant shall furnish the Entity with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the Entity before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Consultant's obligation to provide them. The Entity reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

Special Risks or Circumstances

Entity reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

Sub Contractors

Consultant shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Consultant shall ensure that Entity is an additional insured on insurance required from subcontractors.

Note: Professional liability insurance coverage is normally required if the Consultant is providing a professional service regulated by the state. (Examples of service providers regulated by the state are insurance agents, professional architects and engineers, doctors, certified public accountants, lawyers, etc.). However, other professional Consultants, such as computer or software designers, technology services, and services providers such as claims administrators, should also have professional liability. If in doubt, consult with your risk management or insurance advisor.

1. Safe Work Requirements

LAS GALLINAS VALLEY SANITARY DISTRICT

CONTRACTOR SAFE WORK REQUIREMENTS

Revised June 8, 2017

SAFETY POLICY

Contractors and their subcontractors working for the Las Gallinas Valley Sanitary District shall comply with all applicable federal, state, and local safety orders in the performance of any work on District projects. In addition, Contractors and their subcontractors shall comply with all safety regulations and procedures listed in this Safe Work Requirements. Contractors shall take any additional precautions necessary to prevent injury or damage to persons, property, or interference with District operations.

Contractors shall be responsible for notifying employees, subcontractors, and invitees of these District Safe Work Requirements. No work within District facilities or on District contract work sites shall begin prior to such notification. Contractor shall not allow a new employee or new subcontractor to begin work on District projects without having conducted a full and proper safety orientation.

Contractors doing work at the Treatment Plant facility, lift stations or sewage conveyance systems shall schedule a safety orientation session for their site Superintendent and other Contractor-designated personnel with the Authorized District Representative prior to commencing work. The orientation session shall include emergency procedures, an explanation of applicable District safety policies, and any unique and inherent hazards of District facilities. It is then the responsibility of the Contractor's Superintendent or designated personnel to orient and so inform all personnel under the Contractor's supervision.

The District may, in its sole discretion, either temporarily or permanently remove a Contractor's employee from District work and/or terminate the Contractor's right to proceed for any violation of applicable Cal/OSHA Construction Safety Orders or these District Safe Work Requirements.

DEFINITIONS

As used in this Safe Work Requirement, the following definitions are applicable:

A. **PARTS AND MATERIALS:**

All products, materials, devices, systems, or installations installed by Contractor shall have been approved, listed, labeled, or certified as conforming to applicable governmental or other nationally recognized standards, or applicable scientific principles. The listing, labeling, or certification of conformity shall be based upon an evaluation performed by a person, firm, or entity with appropriate registered engineering

competence; or by a person, firm, or entity, independent of the manufacturer or supplier of the product, with demonstrated competence in the field of such evaluation.

- B. CONTRACTOR**
Designates “Contractor”, “Contractors”, “Sub-Contractors”, “Suppliers”, and all employees of each.
- C. AUTHORIZED DISTRICT REPRESENTATIVE**
The District’s Authorized Representatives shall be the employee(s) designated by the District to be responsible for communicating with the Contractor.
- D. DISTRICT JURISDICTION**
For the purposes of these regulations, “District” Shall mean the Las Gallinas Valley Sanitary District.
- E. TREATMENT PLANT AND FACILITIES**
For the purposes of these regulations, “Treatment Plant & Facilities” shall include the District's Wastewater Treatment Plant, lift stations and sewage conveyance systems located within the boundaries of the District.

EMERGENCY PROCEDURES

- A. FIRST AID**
Contractors shall be responsible for providing first aid and medical treatment for their employees and for compliance with the first aid requirements of all applicable Cal/OSHA Construction Safety Orders.
- Contractors shall be responsible for making prior arrangements for emergency medical care and for transportation of injured Contractor personnel.
- B. FIRE**
When work is being performed which generates sparks or open flames, the Contractor will provide a fire watch, a person trained in the use of appropriate fire fighting equipment, whose only task is to observe and extinguish fires. A District “Hot Works” permit must be filled out and turned into the Collection System / Safety Manager, or General Manager when the Safety Manager is not available, when work is completed. Contractor shall ensure that appropriate fire extinguisher(s) are available at the specific work site for use in case of a fire. All Contractor’s employees shall be properly trained to use them.
- In the event of a fire, Contractor shall immediately notify the nearest District employee and if possible, call emergency (911) and give the location of the plant, which is 300 Smith Ranch Rd. San Rafael. A map of the wastewater plant is included in this policy. Refer to Attachment A.

BASIC SAFETY RESPONSIBILITIES AT DISTRICT FACILITIES

A. COMMUNICATION

Contractor shall maintain close communication with the Authorized District Representative. Contractors should sign-in at the office at the beginning and end of each day along with a headcount of crew members.

B. RESPONSIBILITY

Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss, to:

1. All employees on the work site and other persons and organizations who may be affected thereby.
2. All the work, materials, and equipment to be incorporated therein, whether in storage or off the site.
3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation, or replacement in the course of construction.

Contractor shall comply with all applicable laws and regulations (whether referred to herein or not) of any public agency having jurisdiction over the safety of persons or property, or the protection of persons from damage, injury, or loss, and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and facilities when performance of the work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property and facilities.

Contractor shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's Superintendent unless otherwise designated in writing by the Contractor to the District.

C. GENERAL SAFETY REGULATIONS

Basic Rules:

- Work shall not begin until the Contractor's personnel have been informed of the District's Safe Work Requirements and potential hazards. The District employee responsible for the project is responsible for advising the Contractor of the District's Safe Work Requirements and potential hazards.
- All safety procedures applicable to the job being performed, including use of appropriate protection equipment, shall be followed.
- The Contractor's personnel shall **never** operate, use, adjust, modify or relocate any District equipment, switches, valves, or other controls. The Authorized

District Representative must be contacted should operation, adjustment, modification, or relocation of District equipment be necessary.

- Contractor’s use of District instruments, tools, ladders, scaffolding or other equipment is not permitted except in cases of emergency as determined by a District supervisor or by permission from a senior Manager of the District.
- Drinking water shall be supplied by Contractor. **Do Not Drink Water from Hose Connections at any District Facility.**
 1. Hose bib connections are located throughout the treatment plant. Most of these supply treated wastewater and may or may not be posted with signs reading “Do Not Drink.” In any case, **never** drink water from hose bibs or hoses.
 2. Water lines throughout the treatment plant are color coded (when not stainless steel) and labeled as follows:

Recycle Water Piping	Purple
Domestic Water Piping	Blue
Service Water Piping (Plant Effluent)	Gray
 3. Hose connections may be used to wash down equipment. Never hose down electrical or heated equipment of any kind. If an employee has used a gray or purple water hose for wash down, he/she should immediately wash their hands in domestic water with soap.
- NEVER make any connection to any water line without first verifying with the Authorized District Representative that contamination of the water lines will not occur.
- Use of alcoholic beverages and/or illegal drugs by Contractor or any employee is strictly prohibited. Smoking within the plant is prohibited. Use of prescription or non-prescription drugs which interfere with the individual’s ability to work safely is also prohibited.
- Contractor shall advise the Authorized District Representative of any employee with any medical conditions that could put the employee in danger.

Personal Protection Equipment:

- Contractor shall be responsible for providing and assuring use by employees of all OSHA required protective equipment.
- Approved respiratory equipment shall be worn when the possibility of exposure to hazardous dusts, vapors, fumes, mists, or gases exists. In addition to all other safety regulations, pipes or conduit should be mechanically BLOCKED off when being worked on. District safety procedures shall be followed when working on, but not limited to, the following systems:
 - 1) Natural gas and sludge gas (Methane)

- 2) Ferrous Chloride
- 3) Polymer
- 4) Hypochlorite
- 5) Compressed Air
- 6) Sodium Bisulfite

- Contractor shall be responsible for determining the existence and location of such systems prior to commencement of work.

Power Tools and Welding Equipment:

- Gasoline and electrical powered hand tools shall be protected by approved ground fault circuit interrupters, or shall be double insulated. Cords shall be inspected daily prior to use. Damaged cords shall not be used on District work.
- Pneumatic driven power tools shall be disconnected from air lines when not in use. Hoses shall be inspected daily prior to use. Damaged hoses shall not be used on District work.
- Power tools shall be used only by trained personnel who have a valid license (when applicable, i.e, welding) in their possession. Proper warning signs shall be posted when these tools are in use.
- Electric and gas welding and cutting tools, including cords and gas hoses, shall be inspected daily prior to use. Damaged cords and gas hoses shall not be used on District work.
- Contractor and Contractor employees' tools and equipment used on District work sites shall be in safe operating condition and shall conform to the requirements of Cal/OSHA regulations. All personnel using such tools shall be properly trained.

D. BARRICADES AND SIGNS FOR TRAFFIC CONTROL

All Contractors, permittees, or agencies doing work for District which requires traffic control shall:

- 1) Install and maintain required traffic devices.
- 2) Provide appropriately equipped flag persons when required.
- 3) Provide adequate safeguards for workers and District personnel.
- 4) Maintain access for District personnel to all District facilities.

All work on streets, roadways, or similar thoroughfares shall comply with the Federal Highway Administration's "Manual on Uniform Traffic Control Devices for Streets and Highways" and any local ordinances. District Plant speed is *maximum* 10 mph.

SPECIAL PROCEDURES AND UNIQUE HAZARDS

A. **CONFINED SPACE ENTRY**

Confined spaces of all types exist throughout the District and throughout the plant and range from open trenches and manholes, to tanks, clarifiers and digesters. Contractors are required to meet Cal/OSHA safety standards for CONFINED SPACE ENTRY OPERATIONS, Title 8 Article 108 (Sections 5156-5159), or the most current CAL/OSHA applicable standards, and to provide a safe working environment for their employees. All Contractors directing or working in confined spaces are required to notify the Authorized District Representative. Contractors are responsible for all operations, testing, equipment calibration, ventilation, and entry per the Cal/OSHA standards. Contractors are responsible for all confined space permits and all appropriate equipment. Completed confined space permits are to be turned in to the District's safety manager.

B. **ELECTRICAL SUPPLY SYSTEMS**

The treatment plant's Electrical Supply System consists of two 65kW Gas Microturbine Generators, one 500kW diesel oil engine driven standby generator and one 380 KW trailer mounted standby generator, and solar power. All electrical power generated in the plant and PG&E power (beyond their transformer) is 480 volt, 3 phase, 60 Hz electricity and is delivered to one 480 volt switchgear panel. This panel is interconnected by cables and protected by breakers, relays and monitoring devices.

Electricity is dispersed from the switchgear through breakers and cables to motor control centers (MCC's), to power panels, to transformers (voltage reducers), to lighting panels and to motor driven pumps and equipment. Lockable control stations are located at each piece of equipment. 480 volt, 208 volt and 120 volt electricity is used in the plant. Contact the duty operator prior to working on any piece of electrical equipment. Electricity is hazardous and can burn or kill people.

All work on electrical systems shall be done in accordance with the State of California, CAL/OSHA, Article 33, Electrical Requirements for construction work, Low Voltage Electrical Safety Orders.

C. **FERROUS CHLORIDE SYSTEMS -**

The Ferrous Chloride System consists of a positive displacement pump with feed rate adjustment. Shut-off valves are located before and after the pump. Before working on this system, close all valves and disconnect the pump from electricity.

Ferrous Chloride is a dangerous chemical which will attack the skin, eyes and the mucous membranes of the mouth, throat and lungs. Contact the plant duty operator prior to working on this system.

D. DIGESTER GAS SYSTEM

The Digester Gas System consists of one steel tank, associated piping, compressors, flare, etc. Sludge is bacterially reduced in the tanks creating principally methane (CH₄) and other combustible hazardous gases, including hydrogen sulfide (H₂S). Hydrogen sulfide is toxic at very low concentrations. These gases are contained by the tank covers and piping which is located on overhead racks, in pipe trenches and buried throughout the plant. The gases are burned in large engines driving generators to make electricity for the plant. Heat from the engines is captured and piped to the digesters to heat the sludge, speeding up the digestion process.

Digesters and the stored gases within them are hazardous. No smoking, cutting, or spark-generating equipment is allowed on or within ten feet of any digester. Contact the duty operator prior to working on digesters.

E. HYPOCHLORITE SYSTEM

Hypochlorite, or concentrated chlorine bleach (12.5%), is used to disinfect, or kill bacteria and virus in the final effluent (water) discharged from the plant. Two tanks, each 7,000 gallons are used to store hypochlorite. Piping, valves, pumps, strainers (filters) and flow measuring and control equipment make up the system. Hypochlorite will attack clothing, skin, eyes and mucous membranes of the nose, mouth, throat and lungs. Contact the duty operator prior to working on the hypochlorite system.

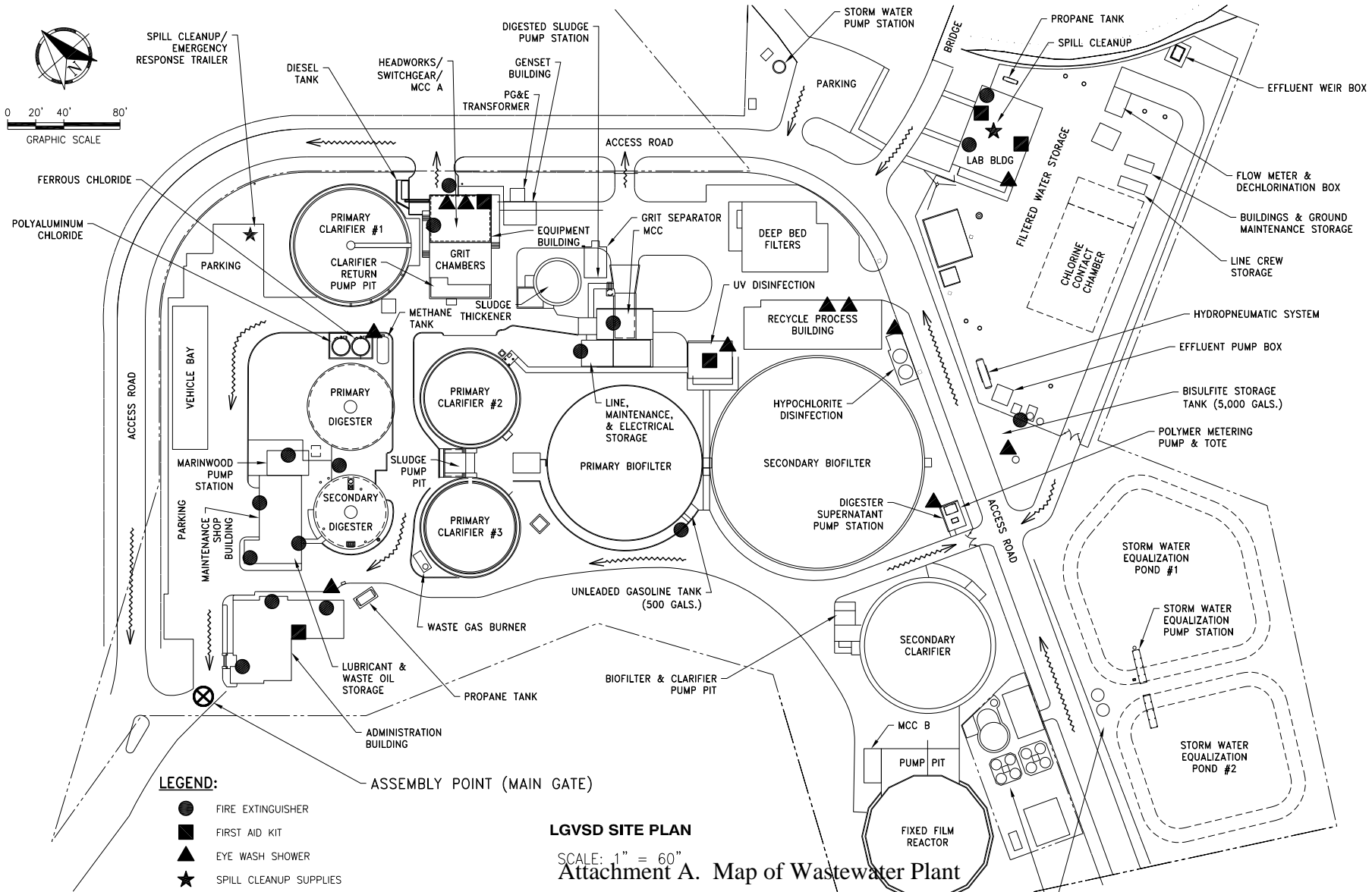
F. SODIUM BISULFITE

Sodium bisulfite is used when neutralizing sodium hypochlorite. Two tanks, each 4,000 gallons and one 2,500 gallons are used to store sodium bisulfite. Piping, valves, pumps, strainers (filters) and flow measuring and control equipment make up the system. Sodium bisulfite is an irritant to eyes, skin and mucous membranes. Inhalation of mist may cause irritation to respiratory tract. Contact the duty operator prior to working on the sodium bisulfite system.

G. GENERAL HAZARDS

Throughout District's treatment plant and facilities there are a number of extremely hazardous elements that are dangerous. They include, but are not limited, to:

- Flammable gas and petroleum.
- H₂S (hydrogen sulfite)
- Deep pools of liquid sewage which are rarely patrolled, and for which self-rescue is unlikely.
- Automatic start equipment.
- HBV (Hepatitis B Virus)



- LEGEND:**
- FIRE EXTINGUISHER
 - FIRST AID KIT
 - ▲ EYE WASH SHOWER
 - ★ SPILL CLEANUP SUPPLIES

LGVSD SITE PLAN
SCALE: 1" = 60"
Attachment A. Map of Wastewater Plant

X:\FORMS and Templates\Project and Bid Related\Forms\Contractor Safety\Contractor Safety - Rev 5-13-2013.southwestwater.com\SWD\WATER RECLAMATION FACILITIES

2. Confined Space Entry Program

**Las Gallinas Valley
Sanitary District**

**Confined Space
Entry
Program**

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**LAS GALLINAS VALLEY SANITARY DISTRICT
Confined Space Entry Program**

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LGVS D CONFINED SPACE ENTRY PROGRAM

INTRODUCTION

The purpose of Las Gallinas Valley Sanitary District's confined space entry program is to protect employees who work in manholes, pump stations, tanks, or any other confined space that could expose employees to hazardous conditions or substances. The program establishes an entry permit system and procedures to ensure that potential hazards of each confined space are identified and evaluated and that appropriate safety precautions are taken before an employee enters the space.

Employees will be given an opportunity to participate in the development and implementation of LGVS D's confined space procedures. The program will be revised or procedures will be modified whenever suggestions or recommendations from employees would improve confined space safety.

The policies and procedures in this program are consistent with the requirements of Cal/OSHA General Industry Safety Orders, Title 8, Sections 5156 and 5157 and supersede previous confined space policies and procedures. The program applies to all employees who work in, or in connection with LGVS D confined spaces.

Confined spaces at LGVS D have been identified based on the definitions in Section 5157 as follows:

Confined Space is a space that:

1. Is large enough and so configured that an employee can bodily enter and perform assigned work; and
2. Has limited or restricted means for entry or exit; and
3. Is not designed for continuous employee occupancy.

Permit-Required Confined Space is a space that has one or more of the following characteristics:

1. Contains or has a potential to contain a hazardous atmosphere;
2. Contains a material that has the potential for engulfing an entrant;
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section; or
4. Contains any other recognized serious safety or health hazard.

Non-Permit Confined Space is a space that does not contain (or with respect to atmospheric hazards, has no potential to contain) any hazard capable of causing death or serious physical harm.

Employees who work in or in connection with confined spaces are required to follow the procedures described in this program and to take all the appropriate precautions to ensure that the work is performed safely. At no time should an employee enter a confined space or perform work in the space unless it can be done safely.

PERMIT-REQUIRED CONFINED SPACES

The tables on pages 4 and 5 list confined spaces at LGVSD that require a permit to enter. Potential hazards associated with these spaces include engulfment, toxic gases, explosive or flammable gases, oxygen deficiency, electrical and mechanical hazards, and may under certain circumstances involve heat stress. Warning signs will be posted at wet wells and similar locations to inform employees that the space requires a permit to enter. To prevent unauthorized entry, each of these spaces will be secured.

Using the entry permit, a non-entry evaluation must be done so that potential hazards can be identified and the appropriate safety precautions taken. The types of hazards that may be encountered, pre-entry safety checks, and the types of safety equipment that will be used are entered on the permit. Only the person designated as the entry supervisor has the authority to authorize the entry permit. At least three employees are required for a permit-required confined space entry which would include an attendant and a standby rescuer.

The tables on pages 4 and 5 that list permit-required confined spaces at LGVSD are not all-inclusive. Other spaces may be determined to be permit-required after evaluating the conditions or circumstances of the entry. The type of work to be performed in the space could introduce hazards to an otherwise safe space. Working with flammable or toxic substances, welding or other hot work, or drifting vapors from outside sources would make a space hazardous or potentially hazardous and therefore require a permit to enter.

ALTERNATE ENTRY PROCEDURES

Alternate procedures are allowed in permit-required spaces where it can be demonstrated and documented that the only hazard or potential hazard is an atmospheric one, and that continuous forced air ventilation alone will maintain the space safe for entry. A trained, qualified employee may enter these confined spaces without an attendant or rescue preparations provided the following conditions are met.

1. All unsafe conditions are eliminated before the confined space cover is removed.
2. The entrance to the space is guarded with a railing or other type of barrier to prevent an accidental fall through the opening and to protect employee in the space.
3. The atmosphere is tested before entry in the following order: O₂, LEL/LFL, H₂S.
4. No entrance is made until hazardous atmosphere is eliminated.
5. There is no hazardous atmosphere when employees are in the space.
6. Continuous forced ventilation is used.
7. The air supply is clean and will not increase hazards.
8. The air supply is directed to area where employees are working.
9. The atmosphere is tested every 15 minutes to ensure a hazardous atmosphere is not developing.
10. Records of pre-entry and entry monitoring data and inspection data are maintained.
11. The entrant certifies, in writing, that the required pre-entry measures have been taken.
12. Monitoring and inspection data, and the certification information are made available to each employee entering the space.

If a hazardous atmosphere develops in the space, or other hazards arise, alternate procedures can no longer be used and the space must be reclassified as a fully permitted space.

SPECIAL ENTRY PROCEDURES

There are a few confined spaces at LGVSD that are not considered permit-required confined spaces. As far as can be determined, these spaces do not contain any known hazard. However, as a precautionary measure, employees are required to follow certain special procedures before entering these spaces.

1. Test the atmospheric conditions prior to entry.
2. If atmospheric conditions are acceptable, entry can be made.
3. If atmospheric conditions are not acceptable, use alternate procedures.
4. If any other hazardous condition exists, follow permit-required confined space procedures.

THE ENTRY PERMIT SYSTEM

Confined space entry permits are to be issued for a specific purpose, a specific work crew, and for a specified period of time. The entry permit is a written authorization of the location and type of work to be done. It also authorizes the personnel assigned to the job, and verifies that potential hazards have been evaluated and controlled or eliminated, that proper safety precautions have been taken, and it is safe for workers to enter. The permit must be kept at the work site (outside the space) for the duration of the work and cancelled after the work is completed.

HOT WORK PERMIT

A hot work permit must be issued for any work that produces heat, sparks or flame in a permit-required confined space. This includes but not limited to brazing, cutting, grinding, soldering, and welding.

Table 1: Main Plant Permit-Required Confined Spaces

MAIN PLANT	Permit-Required	Alternate or Special Procedure	MAIN PLANT	Permit-Required	Alternate or Special Procedure
Marinwood Pump Station			Deep Bed Filter		
Pre Wet Well Structure	•		Bypass Channel	•	
Wet Well	•		Wet Well/Supply Pumps	•	
Valve Pit		SP	Valve Pit		SP
Flow Meter Pit (F1)		SP	Tanks	•	
Primary Clarifier			Weir Overflow Pit	•	
Tank	•		Underdrain	•	
Scum Pit	•		Inlet Channel	•	
Weir Overflow Pit	•		Center Column	•	
Chemical Tank	•		F8 Flow Meter Manhole	•	
Sodium Hydroxide Tank	•		Effluent Channel	•	
Methane Tank	•		Backwash Return Wet Well	•	
Methane Scrubber Tank	•		Hypochlorite Storage Tank	•	
Primary Digester			Digester Supernatant Pump Station		
Tank	•		Wet Well	•	
Valve Pit			Valve Pit		SP
Secondary Digester			Secondary Clarifier		
Tank	•		Tank	•	
Valve Pit		SP	Flow Meter (F4)	•	
Intermediate Flow Meter Pit (F3)	•		Effluent Box	•	
Aerated Grit			Scum Pit	•	
Tank	•		Fixed Film Reactor		
Scum Pit	•		Tank	•	
Outlet Channel	•		Underdrain	•	
Inlet Channel	•		Center Column	•	
Clarifier Return Pit			F4 Diversion Box	•	
Wet Well	•		Influent and Effluent Wet well	•	
Influent Flow Meter Pit		SP	Filter Water Storage Tank	•	
Grease Storage Tank	•		Chlorine Sample Pump #2		
Intermediate Clarifier East			Wet Well	•	
Diversion Structure	•		Valve Pit	•	
Tank	•		Chlorine Contact Chamber/DBF Backwash		
Scum Pit	•		Tank	•	
Weir Overflow Pit (2)	•				
Intermediate Clarifier West			Pipe Inspection Manhole	•	
Tank	•		Plant Effluent Water Pump Wet Well	•	
			Bisulfite		
Scum Pit	•		Wet Well	•	
Weir Overflow Pit	•		Tanks	•	
Sludge Thickener			White Shack Effluent Box		
Influent Pit	•		Wet Well	•	
Tank	•		Flow Meter Pit (F5)		SP
Scum Pit	•		Effluent Pipe Inspection Manhole	•	
Primary Biofilter			Stormwater Pump Station		
Valve Pit			Wet Well	•	
Pump Pit Dry Well		SP	Flow Metet Pit (F9)		SP
Underdrain	•		Miller Creek Plant Effluent Box Wet Well	•	
Prim/Sec Biofilter Diversion Vault	•		Storm Ponds Pump Pit Wet Wells	•	
Secondary Biofilter			Centrifuge Pit Tank	•	
Effluent Box	•		Gardener's Building (ventilate before entry)		
Underdrain	•		F4 - DBF Effluent Box	•	
Pump Pit	•		DBF Effluent Weir Box/Plant Water Pump	•	
			MMWD Backwash Return Wet Wells (2)	•	

Table 2: Reclamation, Collection System, and Pump Stations Permit-Required Confined Spaces

Location	Permit-Required	Alternate Procedure	Location	Permit-Required	Alternate Procedure
RECLAMATION			PUMP STATIONS		
Diversion box			McInnis Park		
Wet Well	•		Wet Well	•	
Valve Pit	•		Valve Pit		•
Underdrain	•		Smith Ranch		
Transfer Box			Wet Well	•	
Wet Well	•		Valve Pit		•
Valve Pit	•		Flow Meter Pit		•
Underdrain	•		Industrial Park		
Meter Pit (F7)		•	Wet Well	•	
Reclamation Pump Station			Valve Pit		•
Wet Well	•		John Duckett		
Flow Meter Pit (F6)			Wet Well	•	
Sludge Supernatant Pump Station			Valve Pit		•
Wet Well	•		Flow Meter Pit		•
Dry Well	•		Comminutor Deck		•
Valve Pit		•	Civic Center North		
Pond Diversion Gate Boxes	•		Wet Well	•	
Pond Inflow/Effluent Boxes	•		Valve Pit		•
Sludge Ponds (3)	•		Marin Lagoon (9)		
			Wet Well	•	
			Valve Pit		•
COLLECTION SYSTEM			Mulligan		
All Manholes	•		Wet Well	•	
Air Release Valves		•	Valve Pit		•
Valve Boxes	•		Venetia Harbor		
			Wet Well	•	
			Valve Pit		•
			Hawthorne		
			Wet Well	•	
			Dry Well		•
			Adrian Way		
			Wet Well	•	
			Valve Pit		•
			Descanso Way		
			Wet Well	•	
			Valve Pit		•
			McPhail		
			Wet Well	•	
			Valve Pit		•
			San Rafael Meadows		
			Wet Well	•	
			Valve Pit		•
SPECIAL ENTRY PROCEDURES (SP)					
1. Test atmospheric conditions prior to entry.					
2. If atmospheric conditions are acceptable, entry can be made.					
3. If atmospheric conditions are not acceptable, use alternate procedures.					
4. If any other hazardous condition exists, follow permit-required confined space procedures.					

DUTIES OF ENTRY TEAM

A permit-required confined space entry team will include an entry supervisor, entrant(s), and at least one attendant. Before an employee begins confined space work, the work must be authorized by the District Manager or Plant Superintendent. In the absence of the District Manager and Plant Superintendent, the designated employee-in-charge may authorize the work.

As long as each individual can fully perform his/her duties, an entry supervisor may be the same person as the entrant or the attendant. The safety precautions that should be taken with a permit-required confined space entry will vary depending on the types of hazards or potential hazards involved. Regardless of the types of hazards, it is the District's policy that in addition to an attendant, a standby rescuer must be part of the entry team.

Duties of Entry Supervisor

1. Verifies that acceptable entry conditions exist.
2. Ensures acceptable entry conditions are maintained.
3. Verifies that the information and procedures on the entry permit are accurate and complete.
4. Verifies that the equipment specified on the permit is in place and in good condition.
5. Reviews permit conditions and procedures with entrants and attendants.
6. Ensures unauthorized persons do not enter the space.
7. Signs the permit to authorize entry.
8. Cancels and files permit.

Duties of Entrant

1. Properly uses the safety equipment and tools supplied.
2. Promptly notifies the attendant if any prohibited condition exists or any warning signs or symptoms appear.
3. Quickly evacuates space if an order is given by the attendant or entry supervisor, if any prohibited condition is detected, or if an alarm is activated.
4. Maintains communication with the attendant to enable attendant to monitor status of space conditions and the entrants.
5. Adheres to the procedures and precautions indicated on the permit and provided in training.

Duties of Attendant

1. Remains outside the permit space until relieved by another attendant.
2. Maintains communication with entrants.
3. Maintains accurate count and identification of entrants.
4. Monitors activities inside and outside the space.
5. Orders entrants to evacuate if a prohibited condition exists, or behavioral effects of hazardous exposure are detected, or activities outside space could endanger entrants, or attendant cannot effectively perform all required duties.
6. Ensures unauthorized persons stay away from the space.
7. Performs non-entry rescue procedures or initiates on-site rescue operations.
8. Summons additional rescue services, when needed.

ENTRY PROCEDURES

Pre-Entry

1. Notify other work groups or employees who may be affected by any interruption in service.
2. Determine (by entry supervisor or other qualified person) what hazards or potential hazards are within the confined space.
3. Check that all safety equipment is available and in good working condition.
4. Check that atmosphere monitoring equipment has been calibrated as recommended by manufacturer.
5. Without entering space:
 - a) Test atmosphere and record readings on permit.
Acceptable atmospheric conditions: Oxygen not less than 19.5% or more than 23.5%, LEL/LFL not more than 10%, H2S not more than 10 ppm, CO not more than 25 ppm.
 - b) Ventilate the space or check that ventilation system is operating properly.
6. Ensure that all affected employees observe pre-entry atmospheric testing.
7. Set up barrier around entrance to prevent accidental falls and to protect employees from vehicles, or falling objects.
8. Check for physical hazards such as poor footing, structures and equipment that hinder movement, and extreme temperatures or humidity that could affect worker safety.
9. Secure and lock out all energy sources (electrical, mechanical, hydraulic, pneumatic, chemical) that are potentially hazardous to confined space workers. Follow lockout/tagout procedures.
10. Disconnect, blind, or block lines to prevent development of hazardous conditions.
11. Use continuous forced air ventilation. Ensure that there is no recirculation of exhausted air from blowers or the introduction of contaminants from the outside, such as traffic exhaust, or vapors or toxic substances from other areas. Place blowers at least 10 feet away from opening of space.
12. Entry supervisor reviews and authorizes entry permit if the space is safe to enter, and all preparatory steps required for safe entry have been taken.

Entry

1. Only employees who have been trained on LGVSD's confined space entry and work procedures are allowed to work in or around confined spaces.
2. Only the work activity specified on the authorized permit is to be performed in the confined space.
3. At least one attendant is required for confined space work.
4. If at any time during the performance of confined space work, dangerous atmospheric conditions develop, work must stop and the space evacuate immediately.
5. An attendant must be stationed outside the space at all times during the confined space operations and remain in constant communication with workers in the space.
6. The attendant must order evacuation of the space whenever:
 - a) a condition not allowed on the permit is observed
 - b) unusual behavior is observed
 - c) an outside situation endangers the confined space workers
 - d) the attendant must leave the work station

7. The permit must be cancelled if the air becomes hazardous after entry.
8. Respiratory equipment must be worn whenever a safe atmosphere cannot be assured after implementing pre-entry procedures.

Post-Entry

The entry supervisor:

1. Cancels the permit by entering date and time of cancellation and signature.
2. On the reverse side of the permit, makes note of any problems encountered during entry operations.
3. Places the cancelled permit in the safety files.
4. Notifies the Plant Superintendent if any equipment, safety gear or tools need to be repaired or replaced.

RESCUE PROCEDURES

It is the District's policy that all employees who work in or in connection with confined spaces must be trained in rescue procedures. Members of a permit space entry team must be knowledgeable of the hazards or potential hazards, be able to recognize the signs and symptoms of exposure, be trained in the selection and use of personal protective equipment, and be certified in first-aid and cardiopulmonary resuscitation. Prior to each entry the team will plan and prepare for non-entry and entry rescues and ensure that at least one standby is immediately available to provide rescue services.

Self-Rescue

If possible, entrants should immediately leave the confined space:

1. When an alarm sounds.
2. At the first sign of any exposure symptoms.
3. When ordered to evacuate by attendant or entry supervisor.

Non-Entry Rescue

If entrants cannot immediately evacuate the space at the first sign of trouble, the attendant should attempt a non-entry rescue by retrieving the entrant using a harness and hoisting equipment. The attendant must not enter the space unless relieved by another attendant. Retrieval systems must be used in vertical permit spaces more than 5 feet deep.

Entry Rescue

Rescuers are to assume that a hazardous atmosphere exists if an entrant has slurred speech, appears dizzy, disoriented, confused, unconscious, or displays any unusual behavior, or if communication with the entrant is lost. A self-contained breathing apparatus must be worn for entry rescues if a hazardous atmosphere is suspected or if there is any chance that it can develop. Call 911 for assistance or if specialized equipment is needed to remove a worker.

Outside Rescue Services

Although outside rescue services may be present at the time of the entry or summoned to give assistance and support in an emergency, members of the entry team must be prepared to give immediate assistance to any of the entrants who may need it.

NON-PERMIT CONFINED SPACES

All confined spaces are considered permit-required until pre-entry procedures demonstrate otherwise. A confined space may be designated a non-permit space, or a permit-required confined space may be reclassified a

non-permit space if all hazards have been eliminated. Because atmospheric hazards are controlled with ventilation and not eliminated in spaces, these spaces cannot be classified as non-permit spaces.

CONTRACTORS

Contractors and subcontractors who plan to work in LGVSD confined spaces will be given all available information on LGVSD confined space hazards, the permit system, and entry procedures. Contractors are required to use a permit system for entry into LGVSD permit-required confined spaces. Contractors are also required to coordinate work and entry activities whenever LGVSD employees and contractor employees will be working in or near the permit spaces.

At the conclusion of the contractor's work, the LGVSD supervisor in charge will debrief the contractor to determine if any hazards were encountered or created during entry.

TRAINING

All employees who work in or around confined spaces must be trained before performing any confined space work. At a minimum, the training will include:

1. Hazards of confined spaces.
2. Signs and symptoms of hazard exposure.
3. Duties of entrant, attendant, and entry supervisor.
4. Pre-entry and entry procedures.
5. LGVSD confined space permit system.
6. Selection and use of personal protective equipment.
7. Atmosphere test equipment.
8. Rescue procedures and equipment.
9. CPR/First Aid.

In addition, employees involved in confined space work will participate in simulated rescue operations at least once per year. Review training will be provided whenever the need is indicated, such as changes in procedures, introduction of new equipment, the hiring of new employees or whenever deficiencies in implementing the program are observed.

Training records will be maintained which will include names and signatures of trainees and trainers, dates and content of training. These records will be made available for inspection to employees or their representatives

LGVSD CONFINED SPACE ENTRY PERMIT

Date issued: _____ Permit Expiration Date/Time: _____ Location/Description of Space: _____ Street Address of Entry _____ Reason for Entry: _____	Work Site Permit: Authorized entry permit and monitoring data must remain at the work site until the job is complete.
	Fire Dept. Notified 472-0911 Before entry _____ initials After exiting _____ initials

Entry Supervisor: _____

Authorized Attendants and Initials	Authorized Entrant and Initials:
_____	_____
_____	_____
_____	_____

Note: Indicate which attendant is assigned standby rescue duties. Initial of attendants and entrants indicate they understand their assignments, responsibilities and duties.

Pre-Entry Checks (complete before obtaining work authorization): <input type="checkbox"/> Notified other work groups. N/A _____ <input type="checkbox"/> Notified office personnel. N/A _____ <input type="checkbox"/> Checked that entry team training is current. N/A _____ <input type="checkbox"/> Reviewed entry procedures with team. N/A _____ <input type="checkbox"/> Set up barrier at entrance to space. N/A _____ <input type="checkbox"/> Checked that gas detection equipment calibration is current. N/A _____ <input type="checkbox"/> Performed pre-entry atmosphere tests. N/A _____ <input type="checkbox"/> Checked ventilation system. N/A _____ <input type="checkbox"/> Checked for physical hazards. N/A _____ <input type="checkbox"/> Secured and locked out energy sources. N/A _____ <input type="checkbox"/> Blocked or disconnected lines. N/A _____ <input type="checkbox"/> Discussed potential hazards with team. N/A _____ <input type="checkbox"/> Reviewed emergency response procedures. N/A _____ <input type="checkbox"/> Checked condition of safety equipment. N/A _____ <input type="checkbox"/> Obtained work authorization signatures. N/A _____	Potential Hazards: <input type="checkbox"/> Oxygen deficiency N/A _____ <input type="checkbox"/> Oxygen enrichment N/A _____ <input type="checkbox"/> Flammable gases or vapors N/A _____ <input type="checkbox"/> Toxic gases or vapors N/A _____ <input type="checkbox"/> Mechanical hazards N/A _____ <input type="checkbox"/> Electrical hazards N/A _____ <input type="checkbox"/> Engulfment/entrapment N/A _____ <input type="checkbox"/> Noise N/A _____ <input type="checkbox"/> Heat/Cold N/A _____ <input type="checkbox"/> Falls N/A _____ <input type="checkbox"/> Falling objects N/A _____ <input type="checkbox"/> Other N/A _____ Safety Equipment: <input type="checkbox"/> Gas detection equipment N/A _____ <input type="checkbox"/> Safety harness N/A _____ <input type="checkbox"/> Safety line N/A _____ <input type="checkbox"/> Wristlets N/A _____ <input type="checkbox"/> Hoisting equipment N/A _____	<input type="checkbox"/> Manhole hook N/A _____ <input type="checkbox"/> Barricades, cones, tape N/A _____ <input type="checkbox"/> Portable blower and hose N/A _____ <input type="checkbox"/> Explosion-proof lighting N/A _____ <input type="checkbox"/> Non-sparking tools N/A _____ <input type="checkbox"/> Tool bucket and line N/A _____ <input type="checkbox"/> Ladder N/A _____ <input type="checkbox"/> First aid kit N/A _____ <input type="checkbox"/> Fire extinguisher N/A _____ <input type="checkbox"/> Radio communication equipment N/A _____ <input type="checkbox"/> Cell phone N/A _____ <input type="checkbox"/> SCBA N/A _____ <input type="checkbox"/> Hard hat N/A _____ <input type="checkbox"/> Goggles, face shield N/A _____ <input type="checkbox"/> Gloves N/A _____ <input type="checkbox"/> Rain suit N/A _____ <input type="checkbox"/> Rubber boots N/A _____ <input type="checkbox"/> Other _____ _____
--	---	---

Hot Work:
 Does the entry involve hot work? Yes No If Yes, complete and attach a hot work permit.

Special Instructions:

Monitoring Data: Record monitoring data at 15-minute intervals on the reverse side of this permit.
Acceptable Atmospheric Conditions: Oxygen not less than 19.5% or more than 23.5%, LEL/LFL/not more than 10%, H₂S not more than 10 ppm.

Work Authorization Signatures All confined space work must be authorized by the General Manager, Plant Manager or Collection Crew Manager Work authorized by: _____ Date/Time: _____	Entry Authorization I certify that the confined space work authorized by this permit has been reviewed with the entry team and that acceptable entry conditions exist and the necessary equipment for safe entry has been provided. Entry supervisor signature: _____	Permit Cancellation Date: _____ Time: _____ Entry supervisor signature: _____
---	---	--

Monitoring Data: Monitor continuously and record data at 15-minute intervals.								
Time	LEL <10%	O₂ > 19.5%, <23.5%	H₂S <10 ppm	CO <25 ppm	Initials			
Record the time when a worker(s) initially enters the space and each exit and entry thereafter.								
Name	Time							
	Entry	Exit	Entry	Exit	Entry	Exit	Entry	Exit

ConfinedSpace Permit Back

LGVSD CONFINED SPACE ALTERNATE PROCEDURES

Location/Description of Confined Space: _____

Entry into this confined space without an entry permit is allowed if the only potential hazard posed by the space is a hazardous atmosphere and the following measures are taken:

1. Any condition making it unsafe to remove the entrance cover is eliminated before the cover is removed.
2. The atmosphere is tested prior to entry.
3. No entry is made if there is a hazardous atmosphere.
4. Continuous forced ventilation is used.
5. The opening of the space is guarded by a railing or other temporary barrier.
6. The air supply is clean and is directed to where employees will be working.
7. The atmosphere is periodically tested and monitoring data is recorded.
8. Employees will immediately evacuate the space if a hazardous atmosphere is detected.

Certification: *I certify that on the date indicated, the conditions and pre-entry measures described above existed or were implemented and this space was determined to be safe for entry.*

<i>Signature</i>	<i>Date</i>	<i>Signature</i>	<i>Date</i>

Monitoring Data: Record the pre-entry test data, monitor the space continuously and record the readings every 15 minutes.

Date	Time	%O ₂	CO	%LEL	H ₂ S	Initials	Date	Time	%O ₂	CO	%LEL	H ₂ S	Initial

P:\Safety\Alternate Permit
 Revised September 2008

LGVSD HOT WORK PERMIT

This form is to be filled out by employee before performing hot work.

Name: _____

Date: _____ Time: _____ Location of job: _____

Detailed description of job: _____

	YES	NO
1. If the job is planned to be done indoors, can it be done outdoors or in the welding shop? If yes, move to one of these locations.	<input type="checkbox"/>	<input type="checkbox"/>
2. have all combustible materials (solids, liquids, gases) been removed from the work area?	<input type="checkbox"/>	<input type="checkbox"/>
3. Are there any gas lines or other lines carrying combustible/flammable materials?	<input type="checkbox"/>	<input type="checkbox"/>
4. If yes, have all lines be disconnected, blanked or otherwise protected?	<input type="checkbox"/>	<input type="checkbox"/>
5. Has atmospheric test data been collected in the work area?	<input type="checkbox"/>	<input type="checkbox"/>
6. Is a fire watch needed for this job?	<input type="checkbox"/>	<input type="checkbox"/>
7. Is a fire extinguisher or water hose available and ready to use at the job site?	<input type="checkbox"/>	<input type="checkbox"/>
8. Can flame or sparks ignite materials in work area or on lower floors or levels?	<input type="checkbox"/>	<input type="checkbox"/>
9. Are non-flammable tarps used to cover combustibles in the work area?	<input type="checkbox"/>	<input type="checkbox"/>
10. Have affected employees reviewed or given specific safety instructions?	<input type="checkbox"/>	<input type="checkbox"/>
11. Have screens been set up in the work area?	<input type="checkbox"/>	<input type="checkbox"/>

Special precautions to be taken: _____

<p>I have reviewed and approved this permit:</p> <p>Date: _____ Time: _____</p> <p>_____</p> <p style="text-align: center;">Signature of District Manager</p>	<p>Please make note of any actions taken based on the above responses.</p>
---	--

Revision: February 2006
P:\Safety\Hot Work Permit

LGVSD CONFINED SPACE ENTRY PROCEDURES SUMMARY

Pre-Entry

1. Obtain work authorization from the District Manager or District Superintendent.
1. Perform non-entry evaluation of the space to identify potential hazards.
2. Test atmosphere, check ventilation system and check for physical hazards in and around work area.
3. Ensure affected employees observe pre-entry testing.
4. Gather appropriate safety equipment and check that all of it is in good working condition.
5. Without entering the space, secure and lockout energy sources and disconnect or block lines.
6. Place barricade or railing around opening to space.
7. Make sure there are no ignition sources near the confined space.
8. Complete pre-entry checks.
9. Have the Entry Supervisor authorize the entry permit.
10. Test atmosphere of space again. If there is no air contamination or O₂ deficiency, entry may proceed provided permit conditions and appropriate safety procedures are in effect.
11. If there is contamination or O₂ deficiency, ventilate 10 minutes and test again. If contamination persists, do not enter. Notify the Entry Supervisor.
12. Prior to entry, ventilate manholes and other confined spaces known or suspected to be hazardous.
13. Maintain continuous ventilation. Existing ventilation must be augmented whenever there is a potential for hazardous atmosphere or initial tests indicate contamination.
14. Keep the entry permit and monitoring data at the work site until the job is complete. Entry permits are valid only for the duration indicated on the permit.

Entry

1. Do not work in or around confined spaces if you are not properly trained or experienced in safe entry and rescue procedures.
2. Wear respiratory equipment whenever a safe atmosphere cannot be ensured.
3. Attendant must be in constant communication and visual contact with entrant and must monitor activities inside and outside of space.
4. Attendant must order evacuation if he/she observes any activity not on the permit, unusual behavior, or an outside situation that endangers the entrant.
5. Perform only the work authorized on the permit.

Rescue

1. Attendant never performs entry rescue unless relieved by another attendant.
2. Perform rescue from outside the space whenever possible.
3. Use respiratory equipment if entry rescue is performed.
4. Call 911 for rescue assistance.

Post-Entry

1. Note on back of permit and notify the District Superintendent of any unsafe or unusual conditions encountered during the confined space work.
2. Have Entry Supervisor cancel and file the permit.
3. Submit the cancelled permit to the Safety chairperson for review and filing.
3. Notify the Plant Superintendent if any equipment, safety gear or tools need to be repaired or replaced.

Exhibit E

Contractor's License & Workers' Compensation Insurance Info

Exhibit F
Performance Bond
Payment/Labor and Materials Bond

LAS GALLINAS VALLEY SANITARY DISTRICT
300 Smith Ranch Road
San Rafael, California 94903

PERFORMANCE BOND

BOND NO. _____

PREMIUM: _____

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, LAS GALLINAS VALLEY SANITARY DISTRICT, (hereinafter designated as "Obligee") and _____ (hereinafter designated as "Principal") have entered into an agreement whereby principal agrees to install and complete certain designated public IMPROVEMENT, which said agreement, dated _____, and identified as project _____, is hereby referred to and made a part hereof; and

WHEREAS, Said principal is required under the terms of said agreement to furnish a bond for the faithful performance of said agreement;

NOW, THEREFORE, We, the principal and _____ as surety, are held and firmly bound unto the hereinafter called "The Obligee," in the penal sum of _____ dollars (\$ _____) lawful money of the United States for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors, executors and administrators, jointly and severally firmly by these presents.

The condition of this obligation is such that if the above bound principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and provisions in the said agreement and any alteration thereof made as therein provided, on his or their part, to be kept and perform and at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the Obligee, its officers, agents and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by county in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

The surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the agreement or to the work to be performed thereunder or the specification accompanying the same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the agreement or to the work or to the specifications.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their

several seals this _____ day of _____, the name and corporate seals of each corporate party being hereto affixed and these presents duly signed by their undersigned representatives, pursuant to authority of their governing bodies.

(Corporate Seal)

PRINCIPAL

(Acknowledgement)

By: _____
Title: _____

(Corporate Seal)

SURETY

(Acknowledgement)

By: _____

(Attorney-in-fact)

Title: _____

(NOTE TO SURETY COMPANY: A certified copy of unrevoked resolution of authority for the attorney-in-fact must be submitted with and attached to the executed bid bond.)

LAS GALLINAS VALLEY SANITARY DISTRICT
300 Smith Ranch Road
San Rafael, California 94903

PAYMENT/LABOR AND MATERIALS BOND

BOND NO.: _____

KNOW ALL MEN BY THESE PRESENTS:

That we, _____ Principal, and _____, incorporated under the laws of the State of _____ and authorized to execute bonds and undertakings as sole surety, as Surety, are held and firmly bound unto any and all persons named in California Civil Code Section 1181 whose claim has not been paid by the contractor, company or corporation, in the aggregate total of _____ dollars (\$ _____), for the payment whereof, well and truly to be made, said Principal and Surety bind themselves, their heirs, administrators, successors and assigns, jointly and severally, firmly by these present.

The Condition of the foregoing obligation is such that; whereas the above bounden Principal has entered into a contract, dated _____, with the LAS GALLINAS VALLEY SANITARY DISTRICT to do the following work, to-wit: _____.

NOW, THEREFORE, if the above bounden Principal contractor, person, company or corporation, or his or its subcontractor, fails to pay any claimant named in Section 3181 of the Civil Code of the State of California, or amounts due under the Unemployment Insurance Code, with respect to work or labor performed by any such claimant, that, the Surety on this bond will pay the same, in an amount not exceeding the aggregate sum specified in this bond, and also in case suit is brought upon this bond, a reasonable attorney's fee, which shall be awarded by the court to the prevailing party in said suit, said attorney's fee to be taxes as costs in said suit. This bond shall inure to the benefit of any person named in Section 3181 of the Civil Code of the State of California so as to vie a right of action to them or their assignees in any suit brought upon this bond.

This bond is executed and filed to comply with the provisions of the act of Legislature of the State of California as designated in Civil Code Sections 3247-3252 inclusive, and all amendments thereto.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals this _____ day of _____, _____ the name and corporate seals of each corporate party being hereto affixed and these presents duly signed by their undersigned representatives, pursuant to authority of their governing bodies.

(Corporate Seal)

LGVSD CONTRACTOR'S AGREEMENT
PAYMENT/LABOR AND MATERIALS BOND

PRINCIPAL

(Acknowledgement)

By:
Title: _____

(Corporate Seal)

SURETY

By: _____

(Attorney-in-fact)

(Acknowledgement)

Title: _____

(NOTE TO SURETY COMPANY: A certified copy of unrevoked resolution of authority for the attorney-in-fact must be submitted with and attached to the executed bid bond.)

LAS GALLINAS VALLEY SANITARY DISTRICT
300 Smith Ranch Road
San Rafael, California 94903

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS the Board of the Las Gallinas Valley Sanitary District (designated as the "OBLIGEE"), has awarded to _____, (designated as the "PRINCIPAL") a contract for the _____ project, Job No. _____, which contract and all of the Contract Documents as defined therein (designated as the "Contract") are hereby made a part hereof;

WHEREAS, the PRINCIPAL is required under the terms of the Contract to furnish a bond for the correction of any defects due to defective materials or workmanship in the work performed under the Contract, for a period of THREE (3) YEARS from the date of acceptance by the OBLIGEE of the contracted work.

NOW, THEREFORE, we the PRINCIPAL and the undersigned _____, as surety (designated as "SURETY"), an admitted surety insurer authorized to do business in the State of California, are held and firmly bound unto the Las Gallinas Valley Sanitary District, in the penal sum of _____ Dollars (\$_____), lawful money of the United States, being a sum not less than ten percent (10%) of the final Contract price, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that if, during a maintenance period of THREE (3) YEARS from the date of acceptance by the OBLIGEE of the contracted work, the PRINCIPAL upon receiving written notice of a need for repairs which are directly attributable to defective materials or workmanship, shall diligently take the necessary steps to correct said defects within seven (7) calendar days from the date of said notice, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

If any action shall be brought by the OBLIGEE upon this bond, a reasonable attorney's fee, to be fixed by the Court, shall be and become a part of OBLIGEE's judgment in any such action. No right of action shall accrue on this bond to, or for the use of, any person or corporation other than the OBLIGEE named herein or the heirs, executors, administrator or successor of the OBLIGEE.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their seals this _____ day of _____, _____, the name and corporate seals of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

PAYMENT/LABOR AND MATERIALS BOND

(Corporate Seal)

PRINCIPAL

(Acknowledgement)

By: _____
Title: _____

(Corporate Seal)

SURETY

(Acknowledgement)

By: _____

(Attorney-in-fact)
Title: _____

(NOTE TO SURETY COMPANY: A certified copy of unrevoked resolution of authority for the attorney-in-fact must be submitted with and attached to the executed bid bond)

TECHNICAL SPECIFICATIONS

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SPECIFICATIONS

Las Gallinas Valley Sanitary District

PART 1 OVERVIEW

- 1.1 The District's goals are to:
 - A Obtain pricing for the Capital purchase and for an optional power purchase agreement (PPA) for a new PV system.
 - B Remove and dispose of approximately 2,400 existing solar panels, and 3 central inverters.
 - C Reuse existing racking, conduit, transformers, pull boxes, electric panels, Data acquisition system, etc., as appropriate.
 - D Install a 1 MW PV system.
- 1.2 Introduction
 - A The District's main treatment facility is located at 300 Smith Ranch Road, San Rafael, CA. 94903
 - B The existing PV system is 588 kW and is installed approximately 3,200 feet to the northeast of the main plant. The PV system uses a step-up and step-down transformers to deliver the energy from the PV system to the plant.
 - C Plan Drawings for the existing system are included as Attachment 1.
 - D The existing system has had modifications over time, including:
 - 1 The theft of ~90 panels in 2010 that were replaced with new Suntech panels. These panels should be disposed of and replaced.
 - 2 The installation of 234 new Canadian Solar panels in 2021, as a warranty replacement of the original panels. The new Canadian Solar panels could be reused if there is a cost benefit. If not, the District will store those panels for future projects.
 - E The District has completed an interconnection application for the new system to ensure qualification for NEM2. The draft single line diagram is included as Attachment 2.
- 1.3 Scope of Work
 - A Remove and Dispose of the existing inverters and PV panels as appropriate.
 - B Design, install, and operate a new PV system.
- 1.4 Prevailing Wages are required.
- 1.5 The District will retain ownership of all environmental attributes of the energy systems (Renewable Energy Credits (RECs), Carbon Credits, etc.)

- 1.6 In the case of a PPA, the vendor will be responsible for all operations and maintenance of the PV system for the life of the PPA. Operations and Maintenance will include system operation, repair, warranty replacement, weed control (Roundup is not allowed), security, system output, etc.

PART 2 CONSTRUCTION SUBMITTALS

2.1 SUBMITTALS DUE WITH EXECUTION OF THE AGREEMENT:

- A General Liability insurance certificate with endorsement
- B Automobile Liability insurance certificate with endorsement
- C Executed Workers Compensation Certification

2.2 PRE-CONSTRUCTION SUBMITTALS

- A 60% and 90% detailed drawings for review and comment by the District.
- B Stamped permit set with Professional Engineer (registered in the State of California) verification that the systems and the mounting structures and details will meet all local applicable seismic and wind-load requirements per the Specification, for review and approval.
- C Utility interconnection applications.
- D Copies of permits.
- E Fire jurisdiction approval for fire access.

2.3 POST CONSTRUCTION SUBMITTALS

- A As-built drawings showing the final placement of all combiner boxes, connections, and conduit placement, electrical plans, including three-line diagrams, and elevation drawings showing the final placement of the electrical equipment.
- B Panel disposal tracking and compliance paperwork.
- C Copies of all start-up procedure measurements.
- D Copies of all testing data and reports.
- E Copies of Utility operation Approval.
- F Lien releases from all subcontractors.

PART 3 WARRANTIES

3.1 VENDOR WARRANTY

- A The vendor is responsible for ensuring that the systems operate as designed for the term of the agreements.
- B All repairs shall be completed in a timely fashion, including, but not limited to, failed cells, inverter issues, damage to units, etc.
- C As part of system monitoring, the Contractor will notify the District staff of performance issues within 15 days.

- 3.2 All materials used in the construction of the system shall be warranted against degradation for the life of the equipment.

3.3 QUALITY ASSURANCE

- A All generating equipment shall be certified by Underwriter Laboratories (UL). The system shall be comprised of UL listed components or in cases where a UL listed component is not available, the component shall be listed by another OSHA recognized National Recognized Testing Laboratory (NRTL).
- B All installations shall meet or exceed Cal-OSHA requirements for equipment access.
- C The installation shall not void the warranty or UL Listing of any existing equipment or electric panels

PART 4 CONTRACTOR EXPERIENCE

- 4.1 Installation Contractor must hold appropriate licenses, and be approved by the Manufacturer to install the system.
- 4.2 Subcontractors must hold licenses in the appropriate disciplines.
- 4.3 Electrical work will be completed by a licensed electrical contractor.

PART 5 MATERIALS SPECIFICATION

5.1 GENERAL

- A The Work shall include all materials, labor, equipment, fencing, trenching, paving, electric panels, breakers, services, and incidentals necessary to install a complete PV system including, but not limited to, the work included in this Specification.
- B At a minimum, the Project shall consist of the design, supply, and installation of equipment, mounting structures, terminal and combiner boxes, DC wiring, DC disconnect, grid-connected inverter, AC disconnect, AC wiring, and all utility grade metering equipment, all designed to interconnect with the buildings' electrical systems.
- C It is the Contractor's responsibility to review all available drawings and visit the jobsite to collect and document existing conditions and determine conduit and wiring runs. The Contractor is also responsible for identifying all underground obstructions in the working area via a District approved Underground contractor. The District will support the Contractor by providing all available drawings and institutional knowledge that is available. No allowance shall be made for any additional costs incurred by the Contractor due to failure to properly understand site conditions.
- D The Contractor must provide Civil and Structural engineering analysis and documentation, stamped and signed by a Civil or Structural Engineer registered in the State of California, certifying that the mounting structures can support any loads resulting from local applicable seismic and wind-load activity. A Professional Engineer in the appropriate discipline must stamp all relevant drawings. All mounting canopies shall have a safety factor of at least 1.5.
- E Complete all required utility paperwork for the interconnection agreements.

- F All current California Building Codes and all other applicable codes shall apply.
- G The systems shall be designed to meet all local applicable seismic and wind-load requirements.
- H The Contractor is responsible for securing, and for compliance with, all permits (building, fire, etc), final sign off, and final utility sign off.
- I Commission the system per manufacturer's requirements and provide documentation of proper operation.
- J All components are to be new and direct from the manufacturer; no used or refurbished materials are permitted.
- K All materials that are used outdoors shall be sunlight and UV resistant.
- L Materials shall be designed to withstand the temperatures to which they are exposed.
- M Dissimilar materials should be isolated from one another using non-conductive shims, washers, or other methods.
- N Any materials, equipment, or workmanship that is found defective, based on the acceptance tests or for any other reason, shall be reported to the Engineer. Defective material, equipment, and workmanship shall be replaced.
- O Metals shall be hot dipped galvanized steel, anodized aluminum, and stainless steel.
- P Aluminum shall not be placed in direct contact with concrete materials.
- Q Only grade 316 or better stainless steel fasteners shall be used.
- R All external electrical conduits shall be rigid schedule 40, galvanized and unpainted.
- S All electrical equipment shall be rated for the current and voltage ratings necessary for the application.
- T All required over-current protection devices will be included and accessible for maintenance. Each shall have trip ratings no greater than the de-rated amperage of the conductor it protects.
- U Drainage – The construction shall not adversely affect water drainage.

5.2 PANEL MOUNTING SYSTEMS

- A All systems shall meet the requirements of the all California Building Codes.
- B PV module attachment must be four-point equally distributed over the frame

5.3 MODULES

- A Only Bloomberg Tier 1 rated panels.
- B If panels are manufactured in China, provide certification that the panels

meet US "Withhold Release Order" requirements for imports from China.

- C Photovoltaic modules shall be tested in the factory for design performance.

5.4 OPTIMIZERS

- A Tigo TS4-A-2F or equal.

5.5 INVERTER

- A PV Inverter shall be SMA Sunny Tri-power or equal.
- B The array shall have a dedicated inverter(s) with optimized performance.
- C Each inverter shall be sized so that it can operate the PV arrays at a minimum of 98% of the array's kW rating.
- D Installation shall meet all applicable UL 1741, IEEE Standard 929-2000 and standard 519, California electric code, and the latest applicable ANSI and FCC standards and addenda dated prior to the award of the purchase order for this procurement.

5.6 ELECTRICAL ENCLOSURES AND BOXES

- A Exterior enclosures and boxes shall be minimum 14 gauge type 316 stainless steel with seams continuously welded and ground smooth, and fast access door latches.
- B Interior enclosures and boxes shall be minimum 14 gauge NEMA 3R.
- C Outer doors shall have provisions for locking enclosure with standard padlocks.
- D A copper ground bus shall be provided in each enclosure or cabinet. It shall have provisions for connecting a minimum of ten grounding conductors.
- E Provide thermoplastic data pockets mounted on inside door. The As-Built drawings for the electrical enclosure shall be placed in a watertight plastic wrap and shipped with the enclosure to the jobsite.

5.7 CONDUIT

- A All exposed conduit shall be unpainted, schedule 40 Rigid galvanized, meeting NEMA/ANSI C80.3 and UL 797 standards.

5.8 WIRE

- A All conductors shall be copper, with a minimum conductivity of 98%.
- B Wire shall be Class B stranded.
- C Insulation of all conductors and cables shall be rated for the voltage of the system.
- D Insulation type shall be moisture and heat resistant thermoplastic THWN, rated 90°C in dry locations and 75°C in wet locations, for #8 AWG and smaller. For #6 AWG and larger insulation shall be type XHHW.
- E Wire identification - all wires, field and interior (non-field) to equipment,

shall be identified with machine permanent ink printed sleeve markers or clip-on markers covered with clear plastic heat shrinkable tubing. Hand lettered wire labels are not acceptable and shall be replaced at the Contractor's expense. All wires that are electrically the same (connected to common termination points) and do not pass through a contact or other switching device shall have the same wire identification. The wire labeling code for each end of the same wire shall be identical. Tubing shall be sized for the wire and shrunk into place with the properly sized heat gun.

5.9 CIRCUIT BREAKERS

- A Circuit Breakers shall be of the indicated type, providing ON, OFF and TRIPPED positions. Circuit breakers shall be quick make, quick break with thermal magnetic action and shall be compatible with existing breaker panel at the power feed facility. The use of tandem or dual circuit breakers in normal single pole space to provide the number of poles or spaces specified are not acceptable. All multiple-pole circuit breakers shall be designed so that an overload on one pole automatically causes all poles to open. Circuit breakers shall be manufactured by Square D or approved equivalent. Breakers shall be sized and have the minimum interrupting capacity as required.

5.10 CONCRETE

- A Concrete shall conform to Caltrans standard specification for class 2 concrete.
- B Concrete mix must exceed the compressive strength requirements of ASTM C387.
- C Type I Portland cement must be used.
- D Aggregate shall be hard, durable, selected, graded, and free from foreign materials.
- E Water shall be potable and free from foreign materials in amounts harmful to the concrete and embedded steel.
- F Utilize standard designs incorporating mixtures that facilitate the workability, curing, and strength.
- G Forms shall be sized to minimize air pockets and maximize strength.

PART 6 INSTALLATION SPECIFICATION

6.1 GENERAL INSTALLATION REQUIREMENTS

- A All safety, electric, building, and labor code requirements at the national, state, and local levels shall be met.
- B The installations shall be completed in a "workman like manner." The areas shall be kept clean and free of obstructions at all times.
- C The installations shall be completed per each manufacturer's installation manual.
- D All electrical connections and terminations shall be fully tightened, secured, and strain relieved as appropriate.

- E All mounting equipment shall be installed to the manufacturer's specifications.
- F All cables, conduit, exposed conductors, and electrical boxes should be secured and supported according to code requirements.
- G All applicable environmental regulations shall be met.
- H System switching and metering equipment shall have convenient access for resetting or repair during electrical outages, and regular monitoring for data retrieval.
- I The Contractor shall employ personnel that are skilled and experienced in the installation and connection of all elements, equipment, devices, instruments, accessories, and assemblies. All installation labor shall be performed by qualified personnel who have had experience on similar projects. The Contractor must provide first class workmanship for all installations.
- J Ensure that all equipment and materials fit properly in their installations.
- K Perform any required work to correct improper installations at no additional expense to the Customer.
- L The Customer's Engineer reserves the right to halt any work that is found to be substandard or being installed by unqualified personnel.

6.2 INSTALLATION STANDARDS

- A System Installations shall conform to Manufacturers' Installation Manuals and approved project drawings and specifications.
- B Mounting hardware shall be compatible with the site considerations and environment. Special attention shall be paid to minimizing the risk from exposed fasteners, sharp edges, and potential damage to the units or support canopies. Corrosion resistance and durability of the mechanical hardware shall be emphasized – the use of stainless steel fasteners and aluminum support canopies are required. The use of ferrous metals, wood, or plastic components is not acceptable.
- C The installations shall be completed with minimal impact on the environment.

6.3 WASTE DISPOSAL

- A All waste will be disposed of offsite.
- B Panels shall be recycled and or refurbished, and any waste shall comply with EPA regulatory standards.
- C Vendor must provide R2 and ISO 14001 certificates to the District.

6.4 COORDINATION

- A The contractor shall provide a daily update via email and shall participate in a weekly onsite meeting with District staff.
- B The Contractor shall coordinate the electrical work with the other trades, code authorities and Engineer (District's engineer or representative); with

due regard to their work, towards promotion of a rapid completion of the Project. If any cooperative work must be altered due to lack of proper supervision of such, or failure to make proper provisions, then the Contractor shall bear expense of such changes as necessary to be made in work of others.

- C The Contractor shall cease work at any particular point, temporarily, and transfer operations to such portions of work as directed, when in the judgment of the Engineer it is necessary to do so.
- D The Contractor shall schedule all the required work with the Engineer, including each shutdown period. Each shutdown shall be implemented to minimize disruption of the existing operations. The Work to be provided under this Contract shall not disrupt any of the existing operations without prior approval.
 - 1 The Contractor shall not have any unscheduled shutdowns.
 - 2 Carry out scheduled shutdowns only after the time, date, and sequence of work proposed to be accomplished during shutdown has been favorably reviewed by the Engineer. Submit shutdown plans at least 2 days in advance of when the scheduled shutdown is to occur.
 - 3 The Engineer reserves the right to delay, change, or modify any shutdown at any time, at no additional cost to the Customer, when the risk of such a shutdown would jeopardize the operation of the facility.

6.5 SUPERVISION

- A The Contractor shall schedule all activities, manage all technical aspects of the project, coordinate submittals and drawings, and attend all project meetings.
- B The Contractor shall supervise and coordinate all work to insure each phase of the project, submittal, delivery, installation, and acceptance testing, etc. is completed within the allowable scheduled time frames.
- C The Contractor shall be responsible for obtaining, preparing, completing, and furnishing all paper work, which shall include transmittals, submittals, forms, documents, manuals, instructions, and procedures.

6.6 SPECIAL INSPECTIONS

- A All work or materials covered by the Contract documents shall be subject to inspection at any and all times by the applicable Engineer. If any material does not conform to the Contract documents, or does not have a favorably reviewed submittal status; then the Contractor shall, within three days after being notified by the Engineer, remove said material from the premises; and if said material has been installed, the entire expense of removing and replacing same, including any cutting and patching that may be necessary, shall be borne by the Contractor.
- B The Contractor shall give the Engineer 10 working days' notice of the dates and time for inspection. Date of inspection shall be as agreed upon

by the Contractor, Operations Manager and Engineer.

- C Work shall not be closed in or covered over before inspection and approval by the Engineer. All costs associated with uncovering and making repairs where non-inspected work has been performed shall be borne by the Contractor.
- D The Contractor shall cooperate with the Engineer and provide assistance at all times for the inspection of the electrical system under this Contract. The Contractor shall remove covers, provide access, operate equipment, and perform other reasonable work that, in the opinion of the Engineer, will be necessary to determine the quality and adequacy of the work.
- E The permitting authority shall be notified to perform required inspection either prior to or concurrent with Engineer's inspection in the close out process.
- F Before request for final inspection is made, the Contractor shall submit to the Engineer in writing, a statement that the Contractor has made his own thorough inspection of the entire project, enumerating punch list items not complete and that the installation and testing is complete and in conformance with the requirements of this Section.
- G The Owner's Engineer may arrange for a facility inspection by Cal-OSHA Consultation Service at any time. The Contractor shall make the necessary corrections to bring all work in conformance with Cal-OSHA requirements, all at no additional cost to the Customer.
- H Contractor will be Responsible for any Additional Cost for Overtime, Weekend Overtime or Differential Time, Expenses for Inspection of Defective Work that has to be re-inspected.

6.7 JOB CONDITIONS

- A The Contractor shall make all arrangements and pay the costs thereof for temporary services required during construction of the project, such as temporary electrical power. Upon completion of the project, remove all temporary services, equipment, material and wiring from the site as the property of the Contractor.
- B The normal outdoor, not in direct sunlight, ambient temperature range of the job site will vary between 5 to 115 degrees Fahrenheit. All equipment shall be rated to operate in these temperature ranges or provisions for adequate heating and cooling shall be installed, at no additional cost to Customer.

6.8 SAFETY

- A Testing shall conform to the respective manufacturer's recommendations. All manufacturers' safety precautions shall be followed.
- B The procedures stated herein are guidelines for the intended tests, the Contractor shall be responsible to modify these tests to fit the particular application and ensure personnel safety. Absolutely no tests shall be performed that endanger personal safety.

- C The Electrical Contractor shall have two or more Electricians present at all electrical field tests.
- D California Electrical Safety Orders (ESO) and Occupational Safety and Health Act (OSHA): The Contractor is cautioned that testing and equipment shall comply with ESO and OSHA as to safety, clearances, padlocks and barriers around electrical equipment energized during testing.
- E Field inspections and pre-energization tests shall be completed prior to applying power to equipment.

PART 7 METERS, MONITORING, AND DATA ACQUISITION

7.1 PV DATA ACQUISITION SYSTEM (DAS)

- A The District shall have access to the DAS. The DAS shall include instrumentation (with a stability < 2% change over a one year period) that allows the measurement of :
 - 1 Ambient temperature - accuracy $\pm 2^{\circ}\text{C}$
 - 2 PV module temperature - accuracy $\pm 2^{\circ}\text{C}$
 - 3 Wind speed - starting threshold 2.98 mph & accuracy < 5%
 - 4 Plane of array solar irradiation (accuracy $\pm 5\%$)
 - 5 A Net Energy package with the ability to monitor the energy used by the facility in all utility time-of-use periods.
 - 6 Monitoring must provide string level output and alarms.
 - 7 Inverter level monitoring.
- B All measurement equipment must be "revenue" grade.
- C The DAS shall capture and store data on 15-minute intervals.
- D Real-Time display will provide the following information. This information can be viewed via the Internet for the entire term of the warranty period. The Contractor will use a regression to establish the system rating at PV-USA Test Conditions as the basis for projecting system output.
 - 1 Instantaneous system output in kW
 - 2 Instantaneous irradiation in watts/square meter.
 - 3 Instantaneous ambient temperature in degrees Fahrenheit
 - 4 Instantaneous wind speed
 - 5 Daily and year-to-date system output in kWh
 - 6 Data shall be provided in a format that easily facilitates graphing and analysis in third party database or spreadsheet programs.

PART 8 PROJECT CLOSEOUT

8.1 CLEANING AND TOUCH-UP

- A Clean all work areas and remove any debris.

- B Prior to startup and completion of the work, and subsequent to final acceptance, all parts of the installation, including all equipment, exposed conduit, devices, and fittings shall be cleaned and given touch up by Contractor as follows:
 - 1 Remove all grease and metal cuttings.
 - 2 Any discoloration or other damage to parts of the building, the finish, or the furnishings shall be repaired. Thoroughly clean any exposed work requiring repairs.
 - 3 Vacuum and clean the inside of all panel and electrical enclosures.
 - 4 Clean all above and below ground pull boxes and junction boxes from all foreign debris prior to final acceptance.
 - 5 Paint all scratched or blemished surfaces with the necessary coats of quick drying paint to match adjacent color, texture, and thickness. This shall include all primed painted electrical equipment, including enclosures, panels, poles, boxes, devices, etc.
 - 6 Repair damage to factory finishes with repair products recommended by Manufacturer.
 - 7 Repair damage to PVC or paint finishes with matching touchup coating recommended by Manufacturer.

8.2 FINAL ACCEPTANCE

- A Final acceptance will be given by the District Engineer after the equipment has passed the final acceptance trial period of one month, each deficiency has been corrected, final documentation has been provided, and all the requirements of design documents have been fulfilled.
- B Upon completion of the project, prior to final acceptance, remove all temporary services, equipment, material, and wiring from the site.
- C Acceptance by Engineer shall be based on:
 - 1 All operational tests performed to the satisfaction of Engineer.
 - 2 Receipt of all final documentations listed above.

PART 9 SYSTEM START-UP

9.1 START-UP FORMS

- A Complete start-up and testing forms included Attachment 3.
- B Bill of Materials: Include modules, inverters, disconnects, DAS, and combiner boxes.
- C Power conductor test form: Contractor shall complete a megger test on all wiring at 500 volts for 10 seconds. Each reading shall be a minimum of 100 Meg-Ohms.
- D Grounding system test form
 - 1 Visual and Mechanical Inspection.

- a. Verify ground system is in compliance with drawings and specifications.
- 2 Electrical Tests
 - a. Before making connections to the ground electrodes, and before placement of sidewalks, landscape and paving, measure the resistance of each electrode to ground using a ground resistance tester.
 - b. After all individual ground electrode readings have been made, interconnect as required and measure the system's ground resistance.
 - c. Perform point-to-point tests to determine the resistance between the main grounding system and all major electrical equipment frames, system neutral, and/or derived neutral points.
 - d. The grounding test shall be in conformance with IEEE Standard 81.
 - e. Plots of ground resistance shall be made and submitted to the District Engineer for approval.
 - f. The current reference rod shall be driven at least 100 feet from the system under test.
 - g. Measurements shall be made at 10 feet intervals beginning 25 feet from the test electrode and ending 75 feet from it in a direct line between the system being tested and the test electrode.
 - 3 Test Values
 - a. The resistance between the main grounding electrode and ground shall be no greater than five ohms for commercial or industrial systems per IEEE Standard 142.
 - b. Investigate point-to-point resistance values that exceed 0.5 ohms.
- E System Visual and Mechanical Inspection Form: Complete Forms for all equipment listed below.
- 1 PV System: complete a form for the inspection of the PV system. Include inspection of all DC connections, conduit, modules, etc.
 - 2 Combiner Box: Complete a form for each combiner box.
 - 3 Inverter: Complete a Form for each Inverter.
 - 4 Disconnects: Complete a form for each AC Disconnect
 - 5 Main Panel
- F System Output Measurement Form: The Contractor will establish the initial system output to demonstrate that the system is performing as designed, and to establish a baseline to be used for warranty.
- 1 The system output will be verified after construction of the system

has been completed, on a clear, sunny day, with a minimum insolation of 700 watts per square meter.

- 2 Data to be collected will include:
 - a. Volts open circuit
 - b. Volts maximum power (use max of instantaneous reading)
 - c. Current at maximum power (use the min of instantaneous reading)
 - 3 Voltages and currents shall be measured for each string, combiner box circuit, and the entire array.
 - 4 Irradiance measurements shall be in the plane of the array.
 - 5 Time, irradiance, and temperature measurements must be taken at a minimum of 15 minute intervals
- 9.2 Start-up shall be per all manufacturers' instruction.
- 9.3 System start-up procedure will be as outlined by the Manufacturer's installation manual and the inverter manual.
- 9.4 Commission inverters per factory instructions.

Attachment 1

Existing PV System Drawings

(See Exhibit A.)

Attachment 2

Draft Single Line

NEM2 Interconnection Application

(See Exhibit B.)

Attachment 3

Start Up Sheets

POWER CONDUCTOR TEST FORM						
EQUIPMENT NAME:				LOCATION		
CONDUCTOR NUMBER	INSULATION TESTS					
	PHASE TO GROUND			PHASE TO PHASE		
	A	B	C	AB	BC	CA
NOTES: RECORD INSULATION TEST VALUES IN MEG-OHMS						
TESTED BY:				DATE:		
WITNESS:						

--

GROUNDING SYSTEM TEST FORM					
TEST FORM (TF3)					

FALL IN POTENTIAL TEST					
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MAIN GROUND LOCATION	APPLIED VOLTAGE V	MEASURED POINT VOLTAGE	MEASURED POINT 2 VOLTAGE	MEASURED POINT 3 VOLTAGE	CALCULATED RESISTANCE OHMS

TWO POINT TESTS					
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EQUIPMENT NAME	EQUIPMENT #	CIRCUIT NUMBER	APPLIED CURRENT	MEASURED VOLTAGE	CALCULATED RESISTANCE

NOTES:

TESTED BY:	DATE:
------------	-------

WITNESSED BY:

VISUAL AND MECHANICAL INSPECTION FORM	
EQUIPMENT NAME:	LOCATION:
NAMEPLATE DATA	
MFG:	SERIES #:
MODEL #:	U.L.#:
VOLTAGE:	PHASE:
AMPERAGE:	SERVICE:
GRD. BUS:	NEU. BUS:
INSPECTION CHECK LIST ENTER: A-ACCEPTABLE, R-NEEDS REPAIR OR REPLACEMENT, NA-NOT APPLICABLE	
TIGHTEN ALL BOLTS AND SCREWS	
TIGHTEN ALL CONDUCTOR AND BUS CONNECTIONS	
CHECK BUS BRACING AND CLEARANCE	
CHECK MAIN GROUNDING AND CONNECTION SIZE	
INSPECT GROUND BUS BONDING	
CHECK EQUIPMENT GROUNDS	
CHECK CONDUIT GROUNDS AND BUSHINGS	
INSPECT NEUTRAL BUS AND CONNECTIONS	
CHECK VENTILATION AND FILTERS	
CHECK FOR BROKEN/DAMAGED DEVICES	
CHECK DOOR AND PANEL ALIGNMENT	
INSPECT ANCHORAGE	
CHECK FOR PROPER CLEARANCES	
REMOVE ALL DIRT AND DUST ACCUMULATION	
INSPECT ALL PAINTED SURFACES	
CHECK FOR PROPER WIRE COLOR CODES	
INSPECT ALL WIRING FOR WIRE LABELS	
CHECK FOR PROPER TERMINATIONS	
CHECK FOR PROPER WIRE SIZES	
INSPECT ALL DEVICES FOR NAMEPLATES	
CHECK IF DRAWINGS MATCH EQUIPMENT	
CHECK ACCURACY OF OPERATION & MAINTENANCE	
TESTED BY:	DATE:
WITNESSED BY:	

SYSTEM OUTPUT FORM							
DATE:							
Panel Make and Model:							
STRING #	PANELS PER STRING	TIME	PANEL TEMP	INSOLATION - W/SF POA	VOLTS OPEN CIRCUIT	VOLTS CLOSED CIRCUIT	AMPS CLOSED CIRCUIT
TESTED BY:					DATE:		
WITNESSED BY:					DATE:		

BILL OF MATERIALS

PROJECT: _____

DATE: _____

LOCATION: _____

PAGE: _____

SPECIFICATION SECTION	QTY	DESCRIPTION	MFG	PART #	TAG #

DRAWINGS

Exhibit A – As-Built Drawings

Exhibit B – Preliminary Design for Interconnection Application

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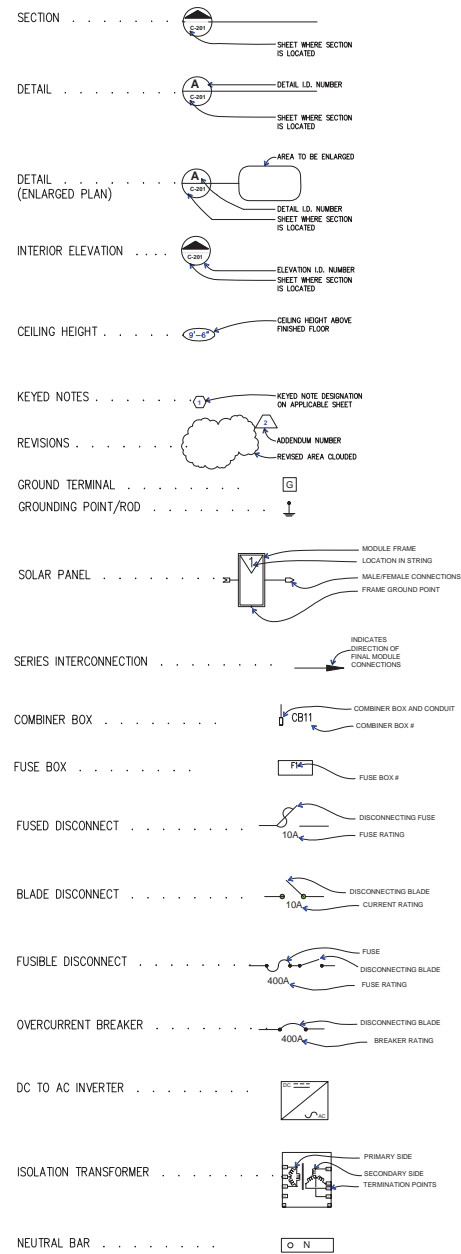
Exhibit A
As-Built
Drawings for the Existing
PV System

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ABBREVIATIONS

AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
APPROX	APPROXIMATE
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
B/N	BETWEEN
C	CENTER LINE
CBH	CIRCUIT BREAKER HOUSE
CONC	CONCRETE
DC	DIRECT CURRENT
DET	DETAIL
DIA	DIAMETER
DWG	DRAWING
EL	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
FC	FINISHED CONCRETE
FF	FINISHED FLOOR
ID	INSIDE DIAMETER
MFR	MANUFACTURER
MIN	MINIMUM
MSC	MISCELLANEOUS
NOM	NOMINAL
OAE	OR APPROVED EQUAL
OD	OUTSIDE DIAMETER
PV	PHOTOVOLTAIC
PSI	POUND PER SQUARE INCH
PRE-FAB	PRE FABRICATED
SQ	SQUARE
SF	SQUARE FOOT/FEET
TYP	TYPICAL
UNO	UNLESS OTHERWISE NOTED

SYMBOLS LEGEND



GENERAL NOTES:

- G1. PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES NOTED AMONG SITE CONDITIONS, MANUFACTURER RECOMMENDATIONS OR CODES, REGULATIONS OR RULES OF JURISDICTIONS HAVING AUTHORITY.
- G2. ALL DIMENSIONS OF EXISTING CONDITIONS MUST BE VERIFIED PRIOR TO COMMENCING WORK.
- G3. THE CONTRACTOR IS RESPONSIBLE FOR ALL BRACING AND SHORING OF EQUIPMENT DURING INSTALLATION.
- G4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND MEASURES ON SITE. THE ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY AND NO DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS.
- G5. CONTRACTOR INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR APPROVAL PRIOR TO MAKING ANY CHANGES.

PROJECT NOTES:

- P1. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS AND INSTRUCTIONS SHOWN HERE.
- P2. THE ELECTRICAL CONTRACTOR IS ADVISED THAT ALL DRAWINGS, COMPONENT MANUALS, ESPECIALLY THE INVERTER MANUALS ARE TO BE READ AND UNDERSTOOD PRIOR TO INSTALLATION. CONTRACTOR IS ALSO ADVISED TO HAVE ALL COMPONENT SWITCHES IN THE OFF POSITION AND FUSES REMOVED PRIOR TO INSTALLATION OF FUSE-BEARING COMPONENTS.
- P3. THIS SOLAR PHOTOVOLTAIC SYSTEM IS TO BE INSTALLED FOLLOWING THE CONVENTIONS OF THE NATIONAL ELECTRIC CODE. ANY LOCAL CODE WHICH MAY SUPERCEDE THE NEC SHALL GOVERN.
- P4. ALL COMPONENTS TO BE INSTALLED WITH THIS SYSTEM ARE TO BE "UL" LISTED. EQUIPMENT SHALL BE NEMA 3R OUTDOOR RATED UNLESS LOCATED INDOORS.
- P5. **DC VOLTAGE FROM THE ARRAY IS ALWAYS PRESENT AT THE DC DISCONNECT ENCLOSURE AND THE DC TERMINALS OF THE INVERTER DURING DAYLIGHT HOURS. ALL PERSONS WORKING ON OR INVOLVED WITH THIS PHOTOVOLTAIC SYSTEM ARE WARNED THAT THE SOLAR MODULES ARE ENERGIZED WHENEVER THEY ARE EXPOSED TO SUNLIGHT.**
- P6. ALL PORTIONS OF THIS SOLAR ELECTRIC SYSTEM SHALL BE CLEARLY MARKED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE ARTICLE 690.
- P7. THE SYSTEM AC POWER RATING IS ACHIEVABLE DURING PEAK CONDITIONS.
- P8. PRIOR TO SYSTEM STARTUP THE ELECTRICAL CONTRACTOR SHALL PERFORM INITIAL HARDWARE CHECKS AND PV/WIRING CONDUCTIVITY CHECKS. FINAL STARTUP SHALL BE BY EI SOLUTIONS.
- P9. FOR PROPER MAINTENANCE AND ISOLATION OF INVERTERS, REFER TO ISOLATION PROCEDURE IN XANTREX OPERATION MANUAL.

ROOF NOTES:

- R1. IN ORDER TO MAINTAIN ROOF INTEGRITY, THE GOAL FOR THE VARIOUS BUILDING ROOFTOPS IS TO MINIMIZE OVERALL PENETRATIONS. CONDUITS AND ELECTRICAL WIRING SHALL BE ROUTED ON THE OUTSIDE OF THE BUILDING SURFACE. CONDUIT PENETRATIONS WILL BE MINIMIZED TO 2 PER BUILDING.
- MODULE INSTALLATION NOTES:**
- M1. REFER TO THE UNIRAC SYSTEM AND SHARP SOLAR MODULE MANUALS FOR MORE DETAILS ON RIGGING, UNPACKING, HANDLING, PLANNING, AND INSTALLATION.
 - M2. MODULE CRATE PLACEMENT – MODULES ARE SHIPPED ON PALLETS. THE ROOF IS NOT CAPABLE OF SUPPORTING A PALLET LOAD OF MODULES. EACH MODULE MUST BE TRANSFERRED TO THE ROOF INDIVIDUALLY.
 - M3. THE MODULES ARE SHIPPED WITH 2 MODULES PER BOX. TAKE CARE WHEN OPENING THE BOX AND ENSURE THAT BOTH MODULES ARE SECURELY HANDLED.
 - M4. NEVER LEAVE A MODULE UNSUPPORTED OR UNSECURED. IF A MODULE SHOULD FALL, THE GLASS MAY BREAK. A MODULE WITH BROKEN GLASS CANNOT BE REPAIRED AND CANNOT BE USED.

ELECTRICAL NOTES:

- E1. IN EVERY PULL BOX, TERMINAL BOX, AND AT ALL PLACES WHERE WIRES MAY NOT BE READILY IDENTIFIED BY NAMEPLATE MARKINGS ON THE EQUIPMENT TO WHICH THEY CONNECT, IDENTIFY EACH CIRCUIT WITH A PLASTIC LABEL OR TAG.
- E2. THE LAYOUT OF CONDUIT SHOWN HERE IS INDICATIVE ONLY. CONTRACTOR TO FIELD ROUTE & LOCATE THE CONDUITS TO SUIT SITE CONDITIONS. CONTRACTOR TO COORDINATE ALL LOCATIONS WITH EI SOLUTIONS.
- E3. WHERE WIRE AND CABLE ROUTING IS NOT SHOWN, AND DESTINATION ONLY IS INDICATED, DETERMINE EXACT ROUTING AND LENGTHS REQUIRED.
- E4. ALL ABOVE GROUND WIRING SHALL BE RUN IN METAL CONDUIT.
- E5. BENDS SHALL NOT DAMAGE THE RACEWAY OR SIGNIFICANTLY CHANGE THE INTERNAL DIAMETER OF RACEWAYS (NO KINKS).
- E6. SUPPORT CONDUCTORS IN VERTICAL CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS.
- E7. INSTALL ALL WIRING MATERIALS IN A NEAT WORKMANLIKE MANNER. USE GOOD TRADE PRACTICES AS REQUIRED BY CHAPTER 3 OF THE NEC.
- E8. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND IN A NEAT INCONSPICUOUS MANNER. RUN PARALLEL AND AT RIGHT ANGLES TO STRUCTURAL MEMBERS. PROVIDE BOXES, FITTINGS AND BENDS FOR CHANGE OF DIRECTION. FASTEN CONDUIT SECURELY IN PLACE.
- E9. SUPPORT CONDUIT USING STEEL OR MALLEABLE IRON STRAPS, LAY-IN ADJUSTABLE HANGERS, CLEVIS HANGERS AND SPLIT-HANGERS. HANGER SPACING SHALL BE 5' MAXIMUM. USE APPROVED BEAM CLAMPS FOR CONNECTION TO STRUCTURAL MEMBERS.
- E10. PROVIDE PULL AND JUNCTION BOXES WHERE REQUIRED TO FACILITATE THE INSTALLATION OF WIRING IN ADDITION TO THOSE SHOWN ON THE DRAWINGS. BENDS IN CONDUITS BETWEEN PULL BOXES SHALL NOT EXCEED THE EQUIVALENT OF FOUR 90 DEGREE BENDS.
- E11. WHEN FIELD CUTTING IS REQUIRED, THE CONDUIT SHALL BE CUT SQUARE.
- E13. CONDUIT SIZES NOT SPECIFIED SHOULD CONFORM TO NEC SPECIFICATIONS. MINIMUM CONDUIT SIZE 3/4".
- E14. THE WIRING MINIMUM SIZE SHOULD BE #12 AWG
- E15. SAFETY REGULATIONS (LOCK OUT-TAG OUT, ETC.) MUST BE OBSERVED BY THE CONTRACTOR DURING CONSTRUCTION.
- E16. THE WIRING SIZE IS BASED ON THE ESTIMATED CONDUIT ROUTING AS SHOWN IN THIS DRAWING PACKAGE. SHOULD THE CONDUITS LENGTH INCREASE DUE TO RELOCATION OF SOURCE AND/OR ROUTING, THE CONDUITS AND THE WIRE SIZE MAY NEED TO BE RESIZED.
- E17. ALL WIRING SHALL BE THHN OR THWN-2 FOR 90°C APPLICATIONS.
- E18. WHERE BREAKER SPACE IS NOT AVAILABLE, SERVICE PANELS MAY BE TAPPED ON THE LINE SIDE BUS BARS FOR INTERCONNECTION.
- E19. MODULE FRAME (EQUIPMENT) GROUND WIRES BECOME A LARGER WIRE IN THE EQUIPMENT GROUNDING SCHEME. ULTIMATELY, THE GOAL IS TO RUN THIS GROUND AS A BARE COPPER CONDUCTOR DIRECTLY IN THE CONDUIT TRENCH FOR BETTER GROUNDING CONDITIONS.

4628 SECOND ST, STE 110, DAVIS, CA 95616
530.747.2026

SEAL:

D	8-15-06	AS BUILTS	TB						
C	12-05-05	UPDATED GENERAL NOTES	TB						
B	10-27-05	OK FOR CONSTRUCTION	TB						
A	10-17-05	PRELIMINARY ONLY	TB						
REV. NO.	DATE	DESCRIPTION	BY	CHK.	APR.				

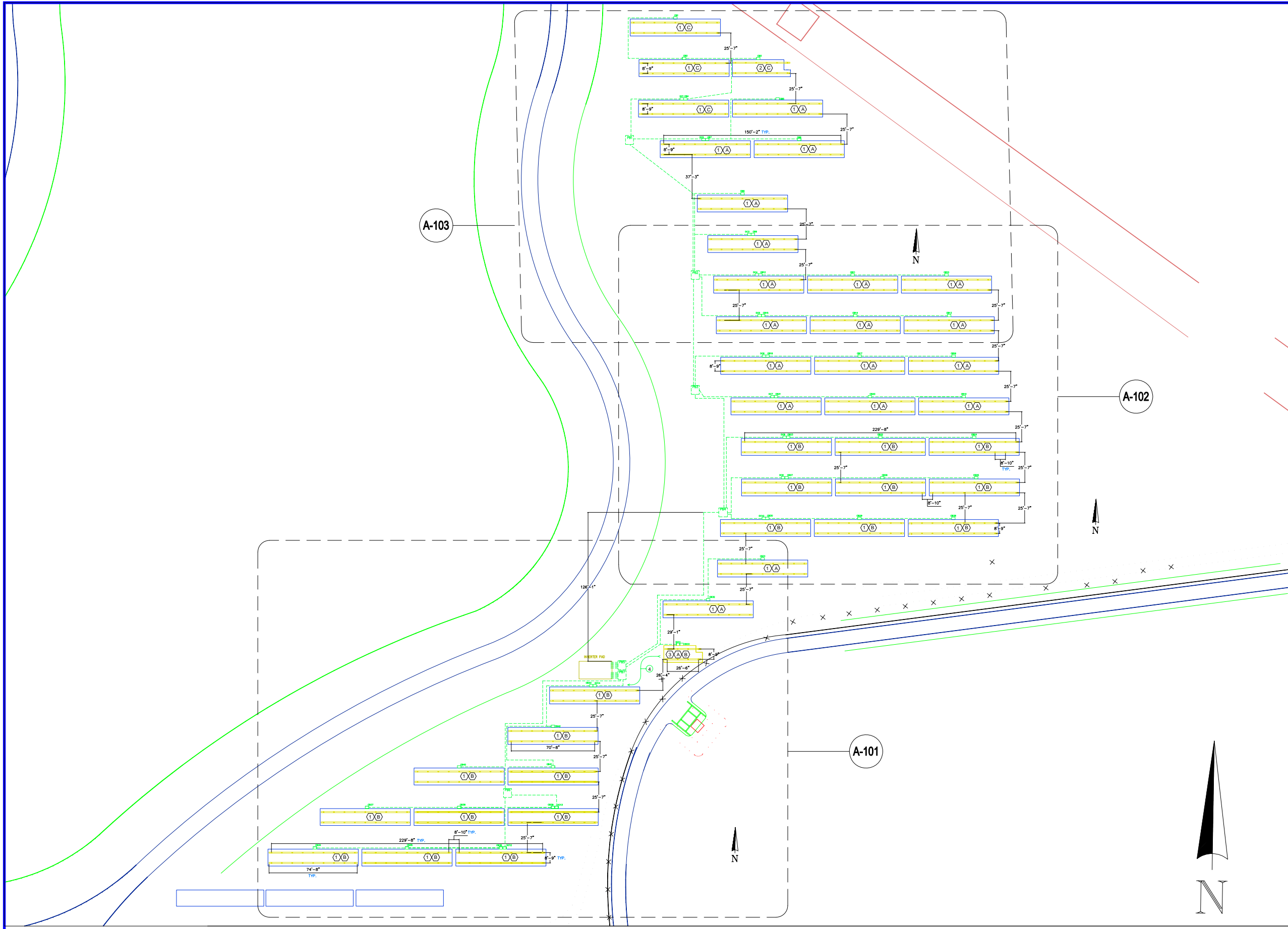
EI Solutions, Inc.
2173 Francisco Blvd. Suite H
San Rafael, CA 94901

LAS GALLINAS VALLEY SANITATION DISTRICT
LAS GALLINAS, CALIFORNIA

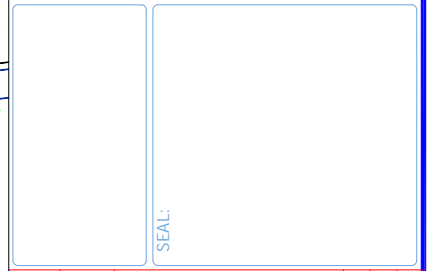
PROJECT: SOLAR PHOTOVOLTAIC SYSTEM
DRAWING: SYMBOLS ABBREVIATIONS AND NOTES

PROJ. MGR. CHRIS TILLEY	PROJ. ENGR. TOBIN BOOTH	DR. BY [CHK. BY] SCALE: TB CT AS NOTED	
PROJ. DIRECTOR. CHRIS TILLEY	DRAWING NO.		REV.
JOB No:	T-101	D	

THIS PRINT IS NOT TO BE USED FOR CONSTRUCTION UNLESS NOTED AND SIGNED OK FOR CONSTRUCTION ABOVE LAST REVISION.



- NOTES:**
- SEE GENERAL NOTES ON DRAWING T-101.
- KEYED NOTES:**
- THIS FOOTING REPRESENTS THE MAJORITY OF THE SOLAR ARRAY FIELD. SEE DRAWING A-104 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THIS FOOTING IS USED IN 1 PLACE. SEE DRAWING A-105 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THIS FOOTING IS USED IN 1 PLACE. SEE DRAWING A-106 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER A, PV 225, AS SHOWN ON DRAWINGS E-100 AND E-103.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER B, PV225, AS SHOWN ON DRAWING E-100 AND E-103.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER C, PV 45, AS SHOWN ON DRAWING E-100 AND E-103.
 - ONE STRING OF MODULES (14 TOTAL MODULES IN SERIES) WILL BE REMOVED FROM THE 2 STRING ARRAY STRUCTURE AND SHALL BE ROUTED TO COMBINER BOX #15.



REV. NO.	DATE	DESCRIPTION	BY	CHK.	APP.
-	-	-	-	-	-
-	-	-	-	-	-
E	8-15-06	AS BUILTS	TB	-	-
D	11-17-05	ARRAY FIELD WIRE/CONDUIT UPDATE	TB	-	-
C	11-09-05	UPDATED ARRAY FIELD LAYOUT	TB	-	-
B	10-27-05	OK FOR CONSTRUCTION	TB	-	-
A	10-17-05	PRELIMINARY ONLY	TB	-	-

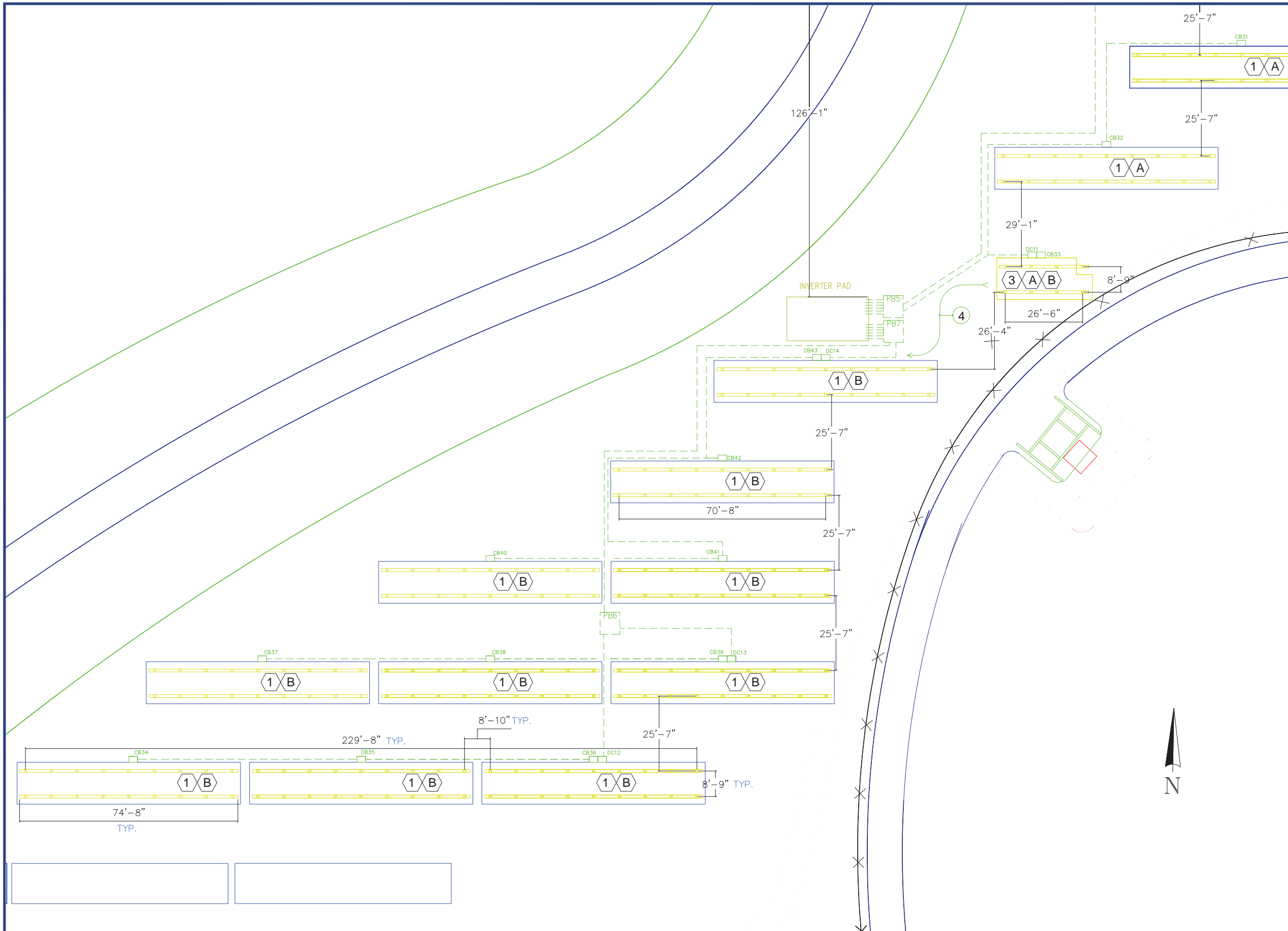
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 2173 Francisco Blvd. Suite H
 San Rafael, CA 94901

LAS GALLINAS VALLEY SANITATION DISTRICT
 LAS GALLINAS, CALIFORNIA

PROJECT: SOLAR PHOTOVOLTAIC SYSTEM
 DRAWING: OVERALL SITE LAYOUT PLAN

PROJ. MGR. CHRIS TILLEY	PROJ. ENGR. TOBIN BOOTH	DR. BY	CHK. BY	SCALE:
PROJ. DIRECTOR CHRIS TILLEY	DRAWING NO.	TB	CT	AS NOTED
JOB No:	A-100			E

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- NOTES:**
- SEE GENERAL NOTES ON DRAWING T-101.
- KEYED NOTES:**
- THIS FOOTING REPRESENTS THE MAJORITY OF THE SOLAR ARRAY FIELD. SEE DRAWING A-104 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THIS FOOTING IS USED IN 1 PLACE. SEE DRAWING A-105 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THIS FOOTING IS USED IN 1 PLACE. SEE DRAWING A-106 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER A, PV 225, AS SHOWN ON DRAWINGS E-100 AND E-103.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER B, PV225, AS SHOWN ON DRAWING E-100 AND E-103.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER C, PV 45, AS SHOWN ON DRAWING E-100 AND E-103.
 - ONE STRING OF MODULES (14 TOTAL MODULES IN SERIES) WILL BE REMOVED FROM THE 2 STRING ARRAY STRUCTURE AND SHALL BE ROUTED TO COMBINER BOX #15.

SEAL:

REV. NO.	DATE	DESCRIPTION	BY	CHK.	APR.
-	-	-	-	-	-
-	-	-	-	-	-
E	8-15-06	AS BUILTS	TB	-	-
D	11-17-05	ARRAY FIELD WIRE/CONDUIT UPDATE	TB	-	-
C	11-09-05	UPDATED ARRAY FIELD LAYOUT	TB	-	-
B	10-27-05	OK FOR CONSTRUCTION	TB	-	-
A	10-17-05	PRELIMINARY ONLY	TB	-	-

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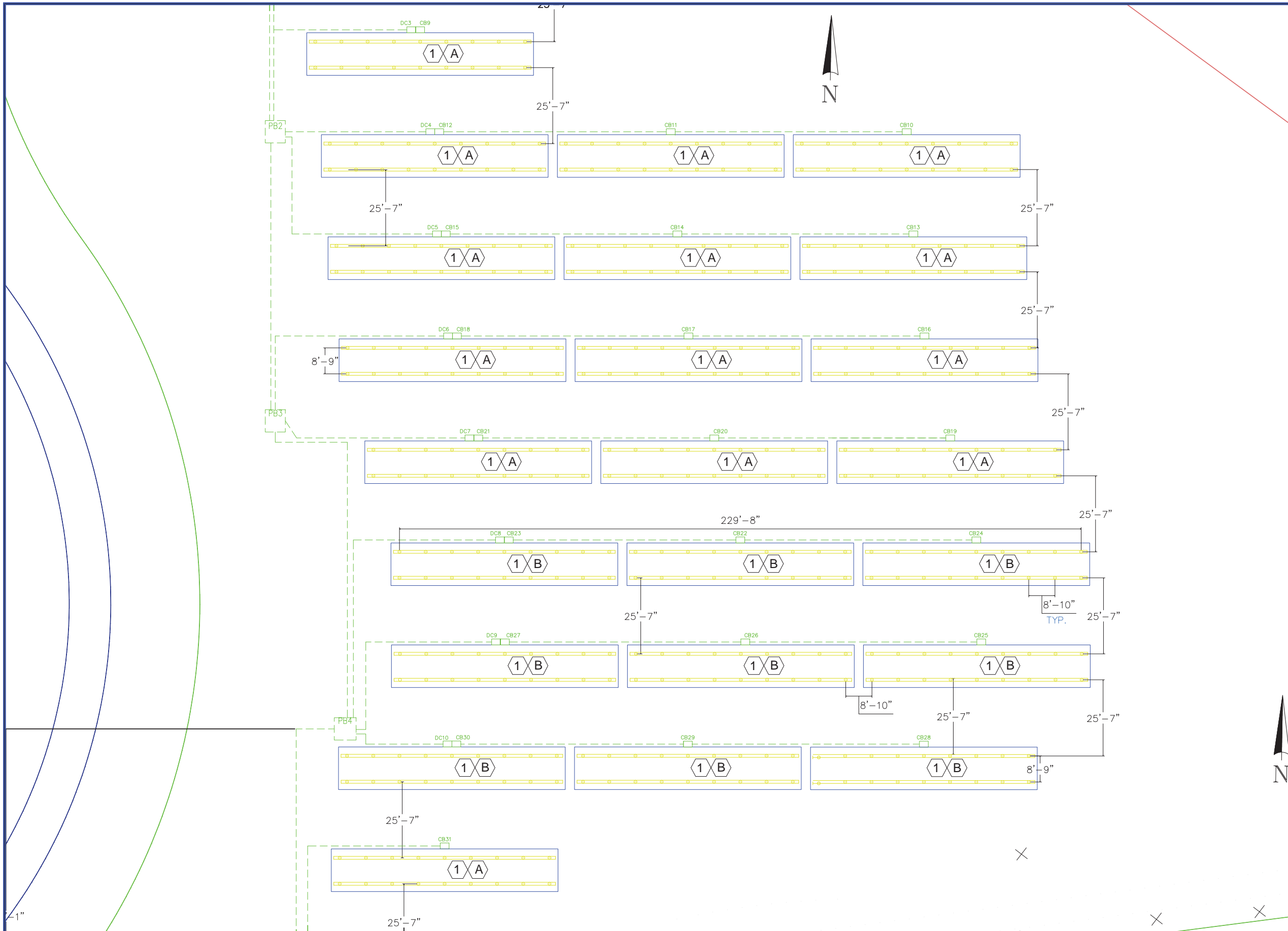
PROJECT: SOLAR PHOTOVOLTAIC SYSTEM
 DRAWING: SOUTH ARRAY LAYOUT PLAN

PROJ. MGR. CHRIS TILLEY	PROJ. ENGR. TOBIN BOOTH	DR. BY TB	CHK. BY CT	SCALE AS NOTED	REV.
PROJ. DIRECTOR CHRIS TILLEY	DRAWING NO.	A-101		E	
JOB No:					

THIS PRINT IS NOT TO BE USED FOR CONSTRUCTION UNLESS NOTED AND SIGNED OK FOR CONSTRUCTION ABOVE LAST REVISION.

SOUTH ARRAY LAYOUT PLAN

SCALE: 1/16" = 1'



- NOTES:**
- SEE GENERAL NOTES ON DRAWING T-101.
- KEYED NOTES:**
- THIS FOOTING REPRESENTS THE MAJORITY OF THE SOLAR ARRAY FIELD. SEE DRAWING A-104 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THIS FOOTING IS USED IN 2 PLACES. SEE DRAWING A-105 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THIS FOOTING IS USED IN 3 PLACES. SEE DRAWING A-106 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER A, PV225, AS SHOWN ON DRAWINGS E-100 AND E-103.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER B, PV225, AS SHOWN ON DRAWING E-100 AND E-103.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER C, PV45, AS SHOWN ON DRAWING E-100 AND E-103.

SEAL:

REV. NO.	DATE	DESCRIPTION	BY	CHK.	APR.
-	-	-	-	-	-
-	-	-	-	-	-
E	8-15-06	AS BUILTS	TB	-	-
D	11-17-05	ARRAY FIELD WIRE/CONDUIT UPDATE	TB	-	-
C	11-09-05	UPDATED ARRAY FIELD LAYOUT	TB	-	-
B	10-27-05	OK FOR CONSTRUCTION	TB	-	-
A	10-17-05	PRELIMINARY ONLY	TB	-	-

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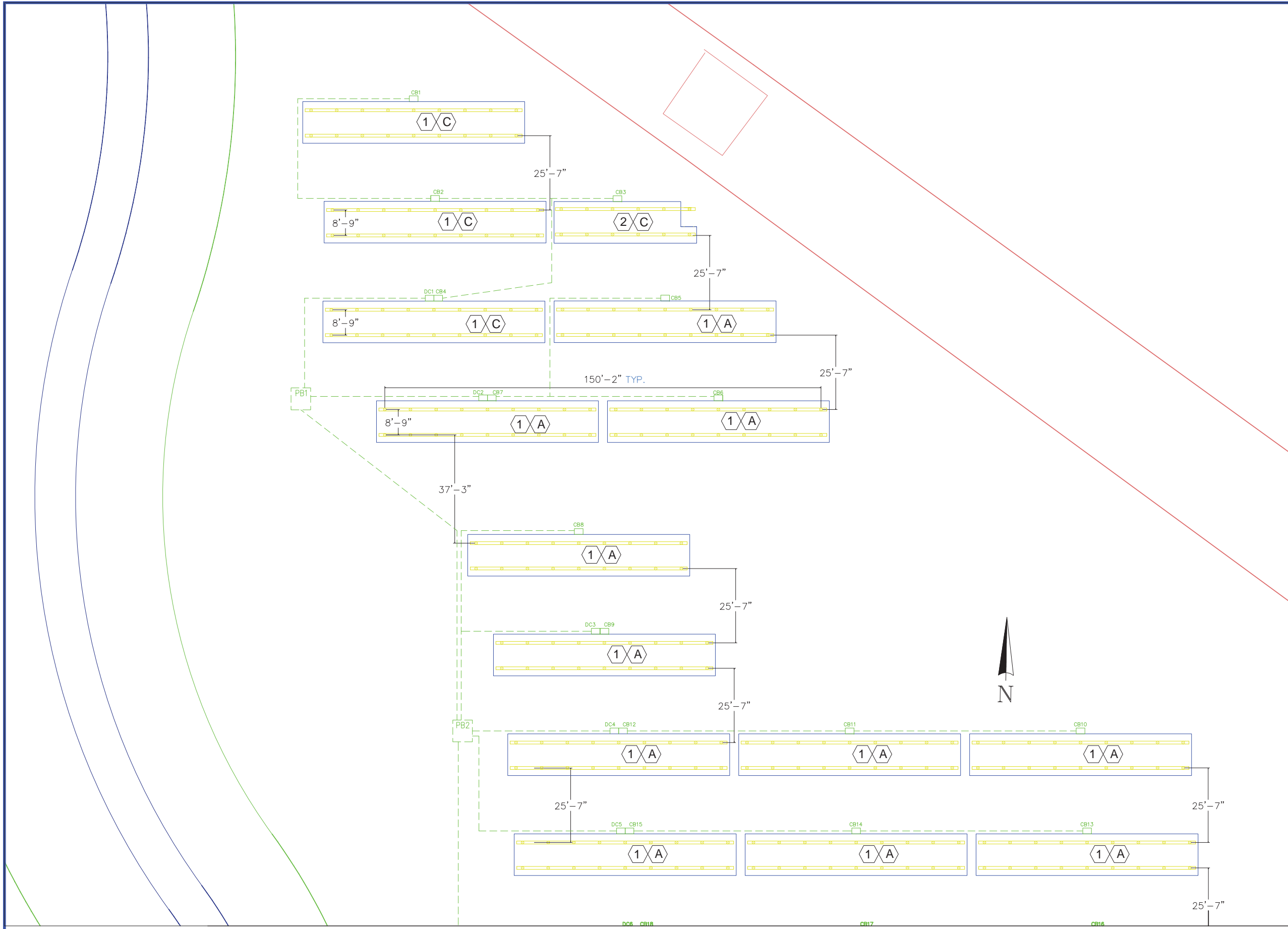
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LAS GALLINAS, CALIFORNIA

PROJECT: SOLAR PHOTOVOLTAIC SYSTEM
DRAWING: MID ARRAY LAYOUT PLAN

PROJ. MGR. CHRIS TILLEY	PROJ. ENGR. TOBIN BOOTH	DR. BY TB	CHK. BY CT	SCALE: AS NOTED	REV.
PROJ. DIRECTOR CHRIS TILLEY	DRAWING NO.	JOB No:		A-102	E

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MID ARRAY LAYOUT PLAN
SCALE: 1/16" = 1'



- NOTES:**
- SEE GENERAL NOTES ON DRAWING T-101.
- KEYED NOTES:**
- THIS FOOTING REPRESENTS THE MAJORITY OF THE SOLAR ARRAY FIELD. SEE DRAWING A-104 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THIS FOOTING IS USED IN 2 PLACES. SEE DRAWING A-105 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THIS FOOTING IS USED IN 3 PLACES. SEE DRAWING A-106 FOR DETAILS. THE NORTH AND SOUTH FOOTINGS ARE DIFFERENT.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER A, PV 225, AS SHOWN ON DRAWINGS E-100 AND E-103.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER B, PV 225, AS SHOWN ON DRAWING E-100 AND E-103.
 - THE OUTPUT WIRES FROM THIS ARRAY WILL BE ROUTED TO INVERTER C, PV 45, AS SHOWN ON DRAWING E-100 AND E-103.

SEAL:

REV. NO.	DATE	DESCRIPTION	BY	CHK.	APP.
-	-	-	-	-	-
-	-	-	-	-	-
E	8-15-06	AS BUILTS	TB	-	-
D	11-17-05	ARRAY FIELD WIRE/CONDUIT UPDATE	TB	-	-
C	11-09-05	UPDATED ARRAY FIELD LAYOUT	TB	-	-
B	10-27-05	OK FOR CONSTRUCTION	TB	-	-
A	10-17-05	PRELIMINARY ONLY	TB	-	-

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LAS GALLINAS VALLEY SANITATION DISTRICT
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PROJECT: SOLAR PHOTOVOLTAIC SYSTEM

DRAWING: NORTH ARRAY LAYOUT PLAN

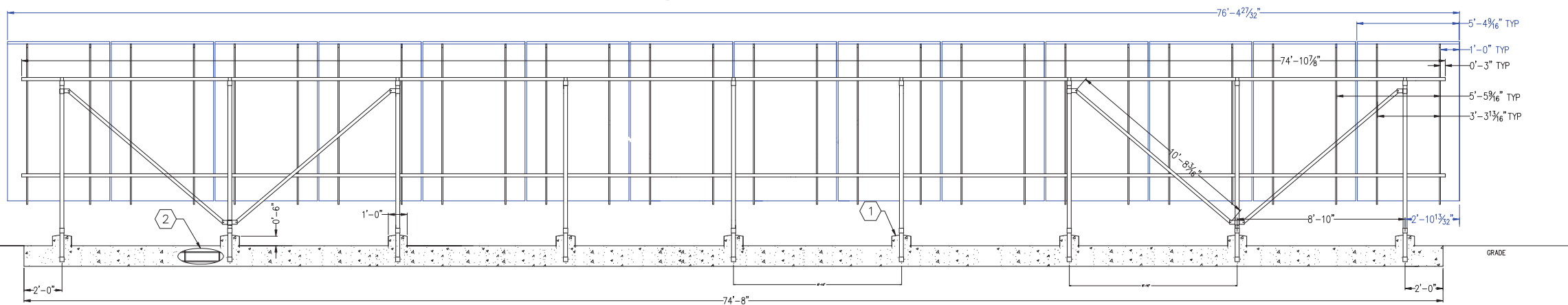
PROJ. MGR. CHRIS TILLEY	PROJ. ENGR. TOBIN BOOTH	DR. BY TB	CHK. BY CT	SCALE AS NOTED	REV.
PROJ. DIRECTOR CHRIS TILLEY	DRAWING NO.	A-103		E	
JOB No:					

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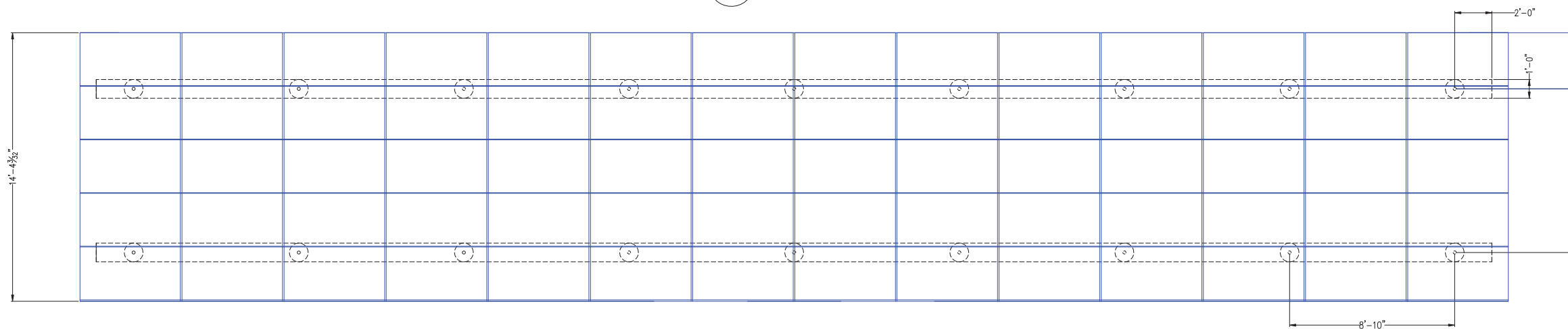
NORTH ARRAY LAYOUT PLAN

SCALE: 1/16" = 1'

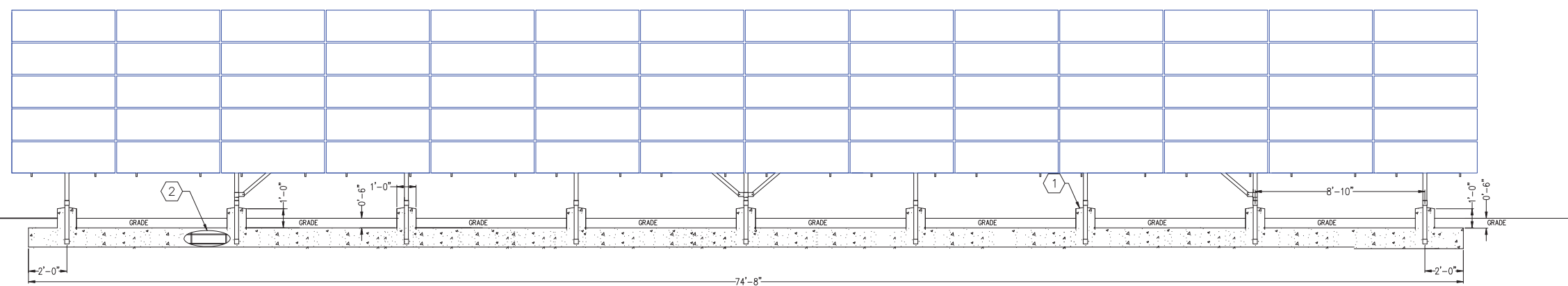
A BACK VIEW
A-104 SCALE: 1:40



B TOP VIEW
A-104 SCALE: 1:40



C FRONT VIEW
A-104 SCALE: 1/2\"/>



NOTES:

- SEE GENERAL NOTES ON DRAWING T-101.
- PLEASE NOTE THE DIFFERENCE BETWEEN FOOTINGS ON THE ARRAY FRONT VIEW AND REAR VIEW. THE FRONT FOOTING TRENCH USES 6\"/>

KEYED NOTES:

- SLOPE CONCRETE FOR DRAINAGE.
- CONTINUOUS #4 REBAR TOP AND BOTTOM. ATTACH #3 REBAR VERTICAL @ 24\"/>

SEAL:

REV. NO.	DATE	DESCRIPTION	BY	CHK.	APP.
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-	-	-	-	-	-
C	8-15-06	AS BUILTS	TB	-	-
B	10-27-05	OK FOR CONSTRUCTION	TB	-	-
A	10-17-05	PRELIMINARY ONLY	TB	-	-

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LAS GALLINAS VALLEY SANITATION DISTRICT
LAS GALLINAS, CALIFORNIA

PROJECT: SOLAR PHOTOVOLTAIC SYSTEM

DRAWING: MAIN SUB ARRAY DETAILS

PROJ. MGR. CHRIS TILLEY	PROJ. ENGR. TOBIN BOOTH	DR. BY TB	CHK. BY CT	BY SCALE AS NOTED	REV.
PROJ. DIRECTOR CHRIS TILLEY	DRAWING NO.				
JOB No:					

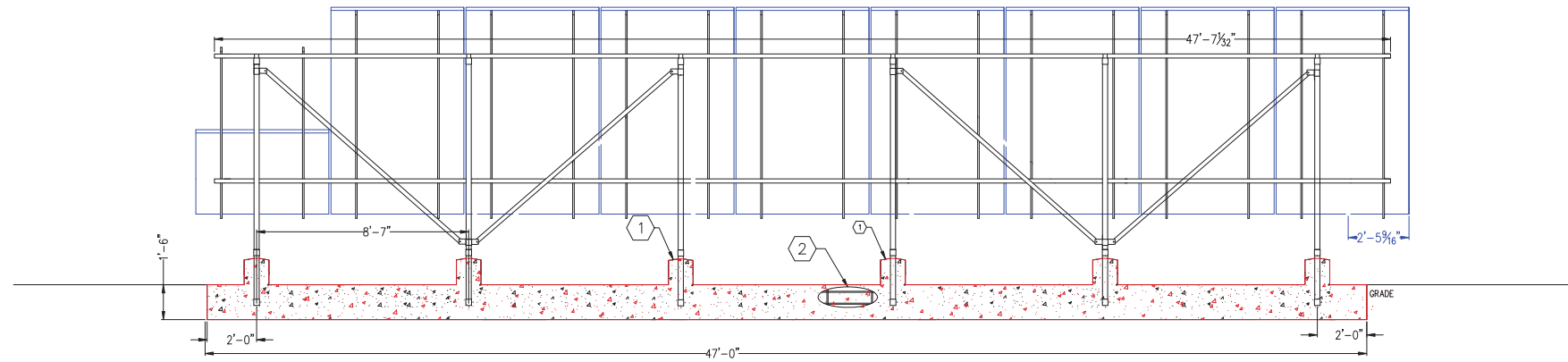
A-104 C

THIS PRINT IS NOT TO BE USED FOR CONSTRUCTION UNLESS NOTED AND SIGNED OK FOR CONSTRUCTION ABOVE LAST REVISION.

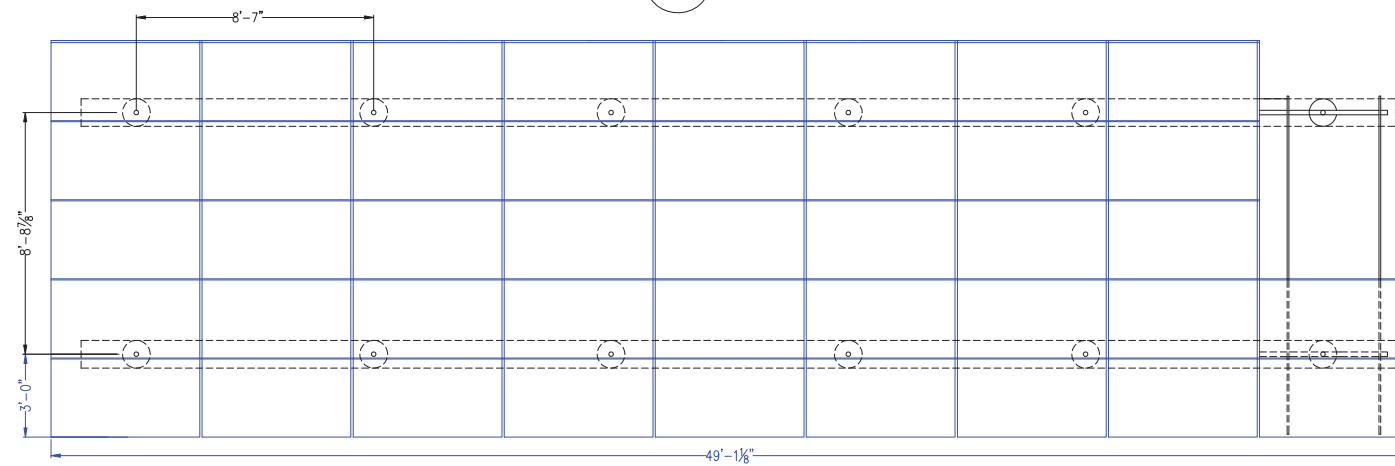
MAIN SUB-ARRAY LAYOUT AND DETAILS

SCALE: VARIES

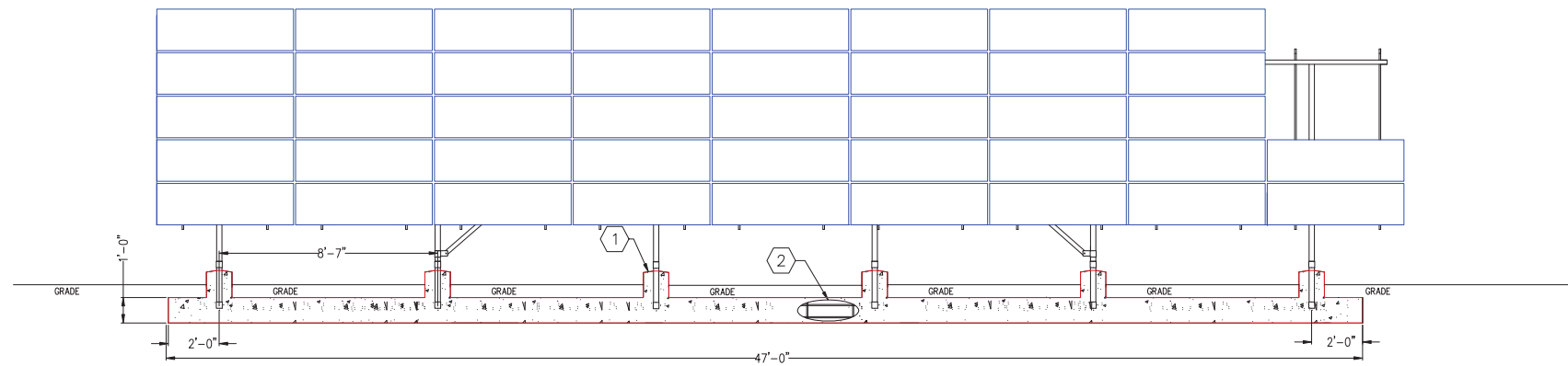
A
A-105 SCALE: 3/8"=1'



B
A-105 SCALE: 3/8"=1'



C
A-105 SCALE: 1/2"=1'



SUB-ARRAY A (3 STRINGS) LAYOUT AND DETAILS

SCALE: NOT TO SCALE

NOTES:

- SEE GENERAL NOTES ON DRAWING T-101.
- PLEASE NOTE THE DIFFERENCE BETWEEN FOOTINGS ON THE ARRAY FRONT VIEW AND REAR VIEW. THE FRONT FOOTING TRENCH USES 6" LESS CONCRETE THAN THE REAR FOOTING TRENCH.

KEYED NOTES:

- SLOPE CONCRETE FOR DRAINAGE.
- CONTINUOUS #4 REBAR TOP AND BOTTOM. ATTACH #3 REBAR VERTICAL @ 24" O.C. TO SUPPORT BARS. ENSURE REBAR IS SECURED TO ALLOW 3" OF CONCRETE FLOW UNDERNEATH AND ABOVE THE REBAR FRAME.

SEAL:

REV. NO.	DATE	DESCRIPTION	BY	CHK.	APR.
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-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
C	8-15-06	AS BUILTS	TB	-	-
B	10-27-05	OK FOR CONSTRUCTION	TB	-	-
A	10-17-05	PRELIMINARY ONLY	TB	-	-

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2173 Francisco Blvd. Suite H
San Rafael, CA 94901

LAS GALLINAS VALLEY SANITATION DISTRICT
LAS GALLINAS, CALIFORNIA

PROJECT: SOLAR PHOTOVOLTAIC SYSTEM
DRAWING: SUB ARRAY A DETAILS

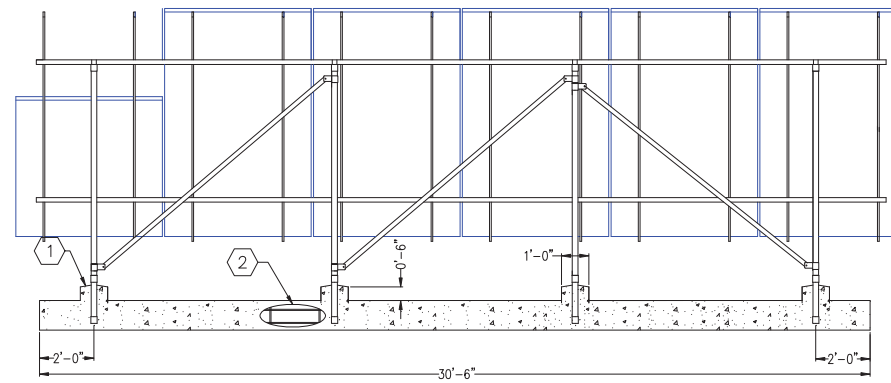
PROJ. MGR. CHRIS TILLEY
PROJ. DIRECTOR. CHRIS TILLEY
JOB No. .

PROJ. ENGR. TOBIN BOOTH
DR. BY TB
CHK. BY CT
SCALE: AS NOTED

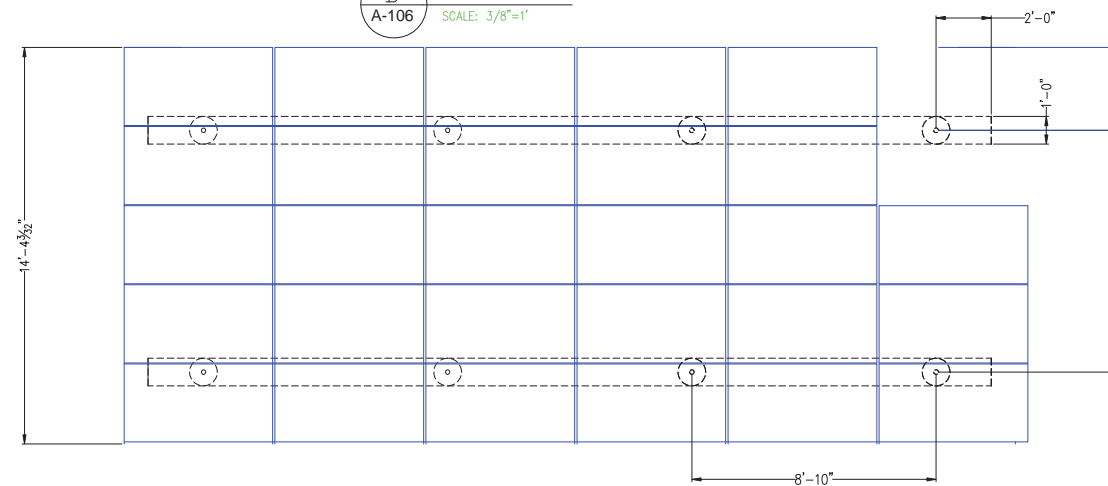
DRAWING NO. A-105
REV. C

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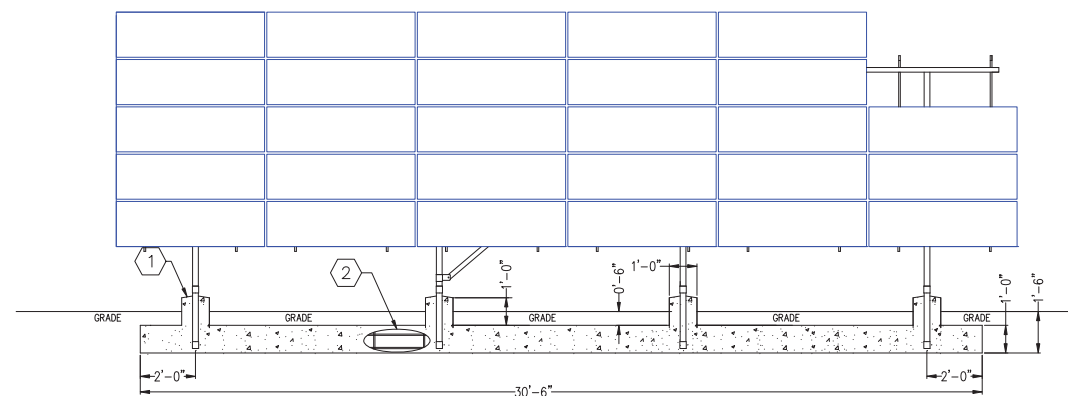
A
BACK VIEW
A-106 SCALE: 3/8"=1'



B
TOP VIEW
A-106 SCALE: 3/8"=1'



C
FRONT VIEW
A-106 SCALE: 1/2"=1'



SUB-ARRAY B (2 STRINGS) LAYOUT AND DETAILS

SCALE: VARIES

NOTES:

- SEE GENERAL NOTES ON DRAWING T-101.
- PLEASE NOTE THE DIFFERENCE BETWEEN FOOTINGS ON THE ARRAY FRONT VIEW AND REAR VIEW. THE FRONT FOOTING TRENCH USES 6" LESS CONCRETE THAN THE REAR FOOTING TRENCH.

KEYED NOTES:

- SLOPE CONCRETE FOR DRAINAGE.
- CONTINUOUS #4 REBAR TOP AND BOTTOM. ATTACH #3 REBAR VERTICAL @ 24" O.C. TO SUPPORT BARS. ENSURE REBAR IS SECURED TO ALLOW 3" OF CONCRETE FLOW UNDERNEATH AND ABOVE THE REBAR FRAME.

SEAL:

REV. NO.	DATE	DESCRIPTION	BY	CHK.	APR.
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-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
C	8-15-06	AS BUILTS	TB	-	-
B	10-27-05	OK FOR CONSTRUCTION	TB	-	-
A	10-17-05	PRELIMINARY ONLY	TB	-	-

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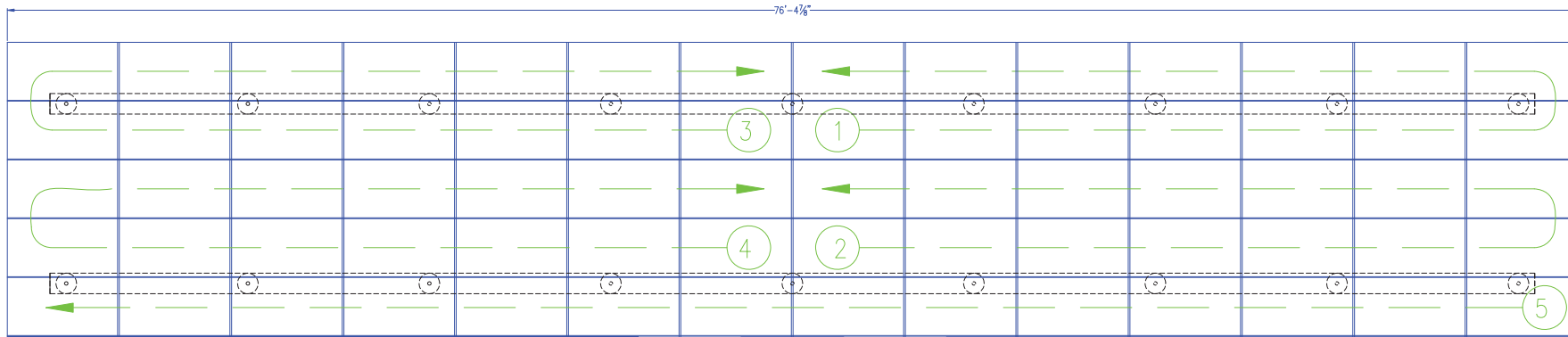
PROJECT: SOLAR PHOTOVOLTAIC SYSTEM
DRAWING: SUB-ARRAY B DETAILS

PROJ. MGR.	PROJ. ENGR.	DR. BY	CHK. BY	SCALE:
CHRIS TILLEY	TOBIN BOOTH	TB	CT	AS NOTED
PROJ. DIRECTOR:	DRAWING NO.			REV.
CHRIS TILLEY				
JOB No.:				

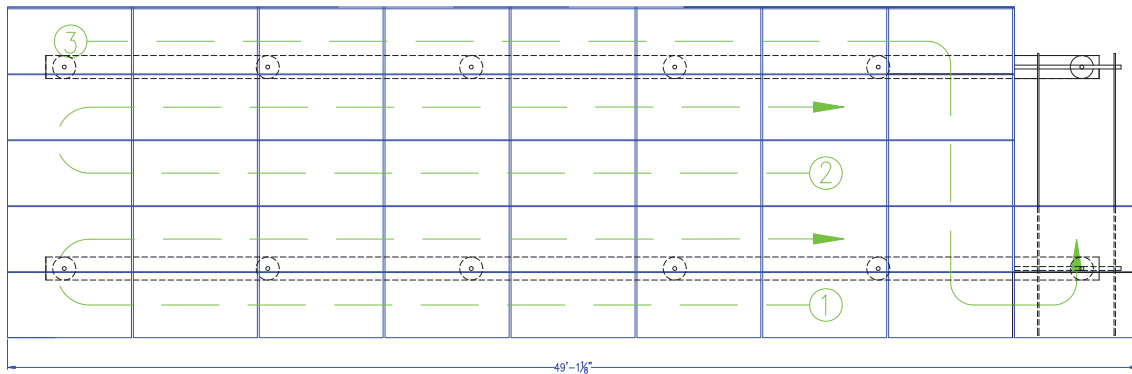
A-106 C

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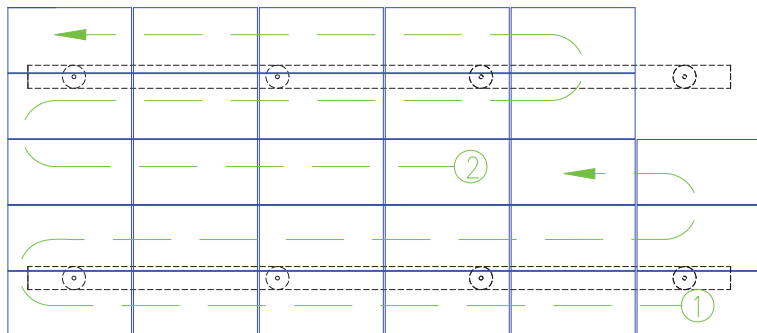
A SUB-ARRAY 1
A-107 SCALE: 1/4" = 1'



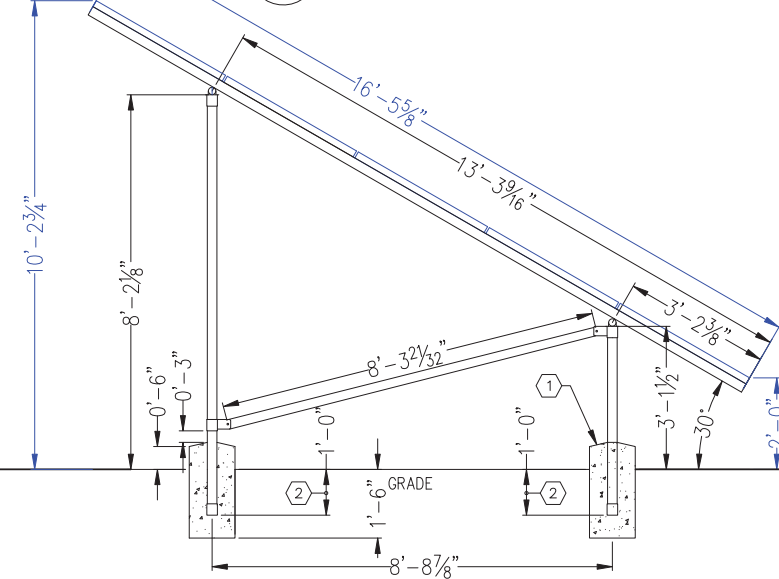
B SUB-ARRAY 2
A-107 SCALE: 1/4" = 1'



C SUB-ARRAY 3
A-107 SCALE: 1/4" = 1'



D TYPICAL SUB-ARRAY PROFILE
A-107 SCALE: NTS



- NOTES:**
- SEE GENERAL NOTES ON DRAWING T-101.
 - THE DASHED LINES WITH ARROWS REFLECT THE EXPECTED ROUTING FOR EACH SOURCE CIRCUIT ON THE DIFFERENT SOLAR ARRAY STRUCTURES FOUND ON THIS PROJECT.

- KEYED NOTES:**
- SLOPE CONCRETE FOR DRAINAGE.

SEAL:

REV. NO.	DATE	DESCRIPTION	BY	CHK.	APR.
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
C	8-15-06	AS BUILTS	TB	-	-
B	10-27-05	OK FOR CONSTRUCTION	-	-	-
A	10-17-05	PRELIMINARY ONLY	TB	-	-

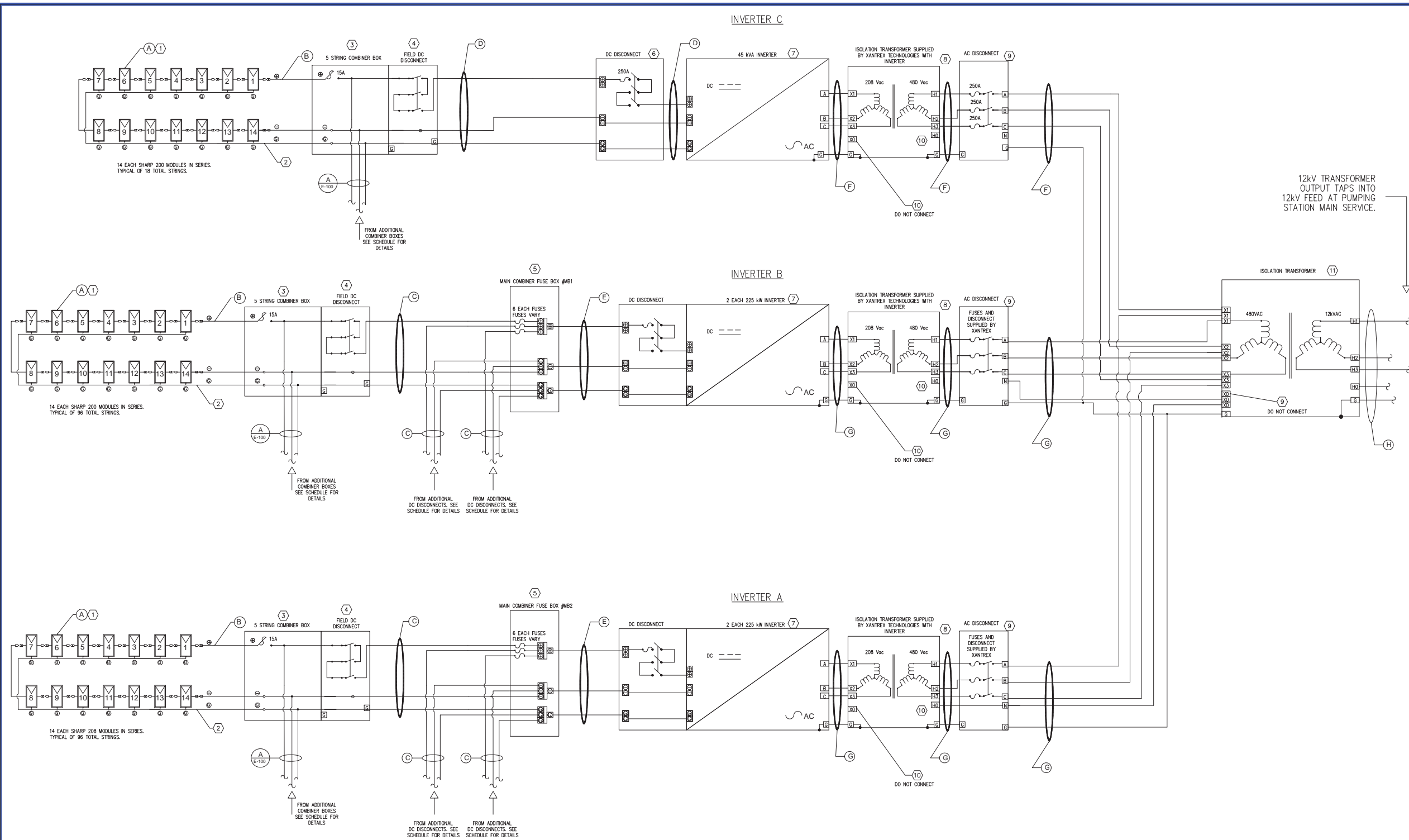
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2173 Francisco Blvd. Suite H
San Rafael, CA 94901

LAS GALLINAS VALLEY SANITATION DISTRICT
LAS GALLINAS, CALIFORNIA

PROJECT: SOLAR PHOTOVOLTAIC SYSTEM
DRAWING: SUB ARRAY DETAILS

PROJ. MGR. CHRIS TILLEY	PROJ. ENGR. TOBIN BOOTH	DR. BY (CHK. BY)	SCALE:
PROJ. DIRECTOR CHRIS TILLEY	DRAWING NO.	TB CT	AS NOTED
JOB No.	A-107		C

THIS PRINT IS NOT TO BE USED FOR CONSTRUCTION UNLESS NOTED AND SIGNED OK FOR CONSTRUCTION ABOVE LAST REVISION.



- NOTES:**
- SEE GENERAL NOTES ON DRAWING T-101.
 - ALL WIRING SHALL BE THIN OR THWN-2 TYPE FOR 90°C APPLICATIONS, PER NOTE E.17 ON SHEET T-101.
- KEYED NOTES:**
- SHARP 200 WATT MODULES. 14 EACH 200 WATT PANELS WIRED IN SERIES. EACH MODULE INCLUDES #10 AWG OUTDOOR RATED QUICK CONNECTS FOR MODULE INTERCONNECTION. DO NOT REMOVE THE QUICK CONNECTS, OTHERWISE THE MODULE WARRANTY AND THE UL LISTING MAY BE INVALIDATED.
 - #10 AWG BARE COPPER GROUND WILL BE USED AS AN EQUIPMENT GROUND TO CONNECT THE MODULE FRAMES. USE THE MODULE GROUNDING SCREW OR "LAY-IN" LUGS REQUIRED PER NEC 690 FOR MODULE EQUIPMENT GROUNDING. THE ATTACHMENT POINTS FOR GROUND FASTENERS ARE INDICATED ON THE MODULE FRAMES. USE THE INDICATED LOCATION ONLY OTHERWISE WARRANTY MAY BE INVALIDATED. THE MODULE EQUIPMENT GROUND SHALL GROUND ALL OTHER EQUIPMENT AND SHALL TERMINATE IN THE INVERTER CABINET.
 - COMBINER BOX, NEMA 3R ENCLOSURE. RATED @ 600 VDC. EACH STRING PROTECTED WITH 15 AMP FUSE. SEE DC WIRING SCHEDULE FOR EXACT NUMBER OF STRINGS IN PARALLEL.
 - DC DISCONNECT, SQUARE D OR SIMILAR. EXTERNALLY LOCKABLE, HEAVY DUTY NON-FUSED. TWO SWITCH POLES ARE WIRED IN SERIES FOR LOAD BREAKING. LOCATED IN THE ARRAY FIELD.
 - MAIN COMBINER FUSE BOX, NEMA 3R ENCLOSURE. RATED @ 600 VDC. EACH STRING PROTECTED WITH A 200 AMP FUSE. SEE DC WIRING SCHEDULE FOR EXACT NUMBER OF DC DISCONNECTS WIRED IN PARALLEL.
 - DC DISCONNECT, SQUARE D OR SIMILAR. EXTERNALLY LOCKABLE, HEAVY DUTY FUSED. TWO SWITCH POLES ARE WIRED IN PARALLEL FOR LOAD BREAKING. LOCATED ON INVERTER PAD NEXT TO 45 kW INVERTER.
 - INVERTER: 45 kW OR 225kW. UL1741 LISTED WITH INTEGRAL ANTI-ISLANDING PROTECTION FEATURES. UL1741 LISTING INCLUDES COMPLIANCE WITH IEEE519 FOR POWER QUALITY, IEEE929 FOR INTERCONNECTION SAFETY AND THE NATIONAL ELECTRICAL CODE.
 - ISOLATION TRANSFORMER, 45 kVA OR 225 kVA, 208 Vac - 208 Vac, SUPPLIED BY XANTREX. THIS ISOLATION TRANSFORMER IS UL LISTED FOR USE WITH THE INVERTER.
 - AC DISCONNECT, SQUARE D OR SIMILAR, EXTERNALLY LOCKABLE, HEAVY DUTY FUSED. LOCATED ADJACENT TO INVERTER PAD ON OUTSIDE OF BUILDING.
 - DO NOT CONNECT TRANSFORMER "X0" TO GROUND. PLEASE REFER TO INVERTER MANUFACTURER'S INSTALLATION GUIDE FOR DETAILED INSTRUCTIONS. IF THE NEUTRAL IS TIED TO GROUND, DAMAGE MAY OCCUR.
 - ISOLATION TRANSFORMER, 500 kVA, 208 Vac - 12kV. INSTALLED ON SEPERATE CONCRETE PAD NEAR PUMPING STATION.

ELECTRICAL WIRING DIAGRAM - FOR USE WITH SHEET E-100

SCALE: NOT TO SCALE

BLUE ORK ENERGY
 4628 SECOND ST. STE. 110, DAVIS, CA 95618
 530.747.2020

SEAL:

REV. NO.	DATE	DESCRIPTION	BY	CHK.	APR.
H	8-15-06	AS BUILTS	TB	-	-
G	05-01-06	REMOVED MAIN COMBINER BOX ON PV45	TB	-	-
F	03-31-06	CHANGED DC DISCONNECT TO NON-FUSED	JG	-	-
E	12-05-05	FIELD DC DISCO - 3 POLES	TB	-	-
D	11-17-05	ADDED NOTE FOR COMBINER INTER-WIRING	TB	-	-
C	11-09-05	UPDATES TO REFLECT ARRAY CHANGES	TB	-	-
B	10-27-05	TABLE UPDATES, OK FOR CONSTRUCTION	TB	-	-
A	10-17-05	PRELIMINARY ONLY	TB	-	-

Energy Innovations
 2173 Francisco Blvd. Suite H
 San Rafael, CA 94901

LAS GALLINAS VALLEY SANITATION DISTRICT
 LAS GALLINAS, CALIFORNIA

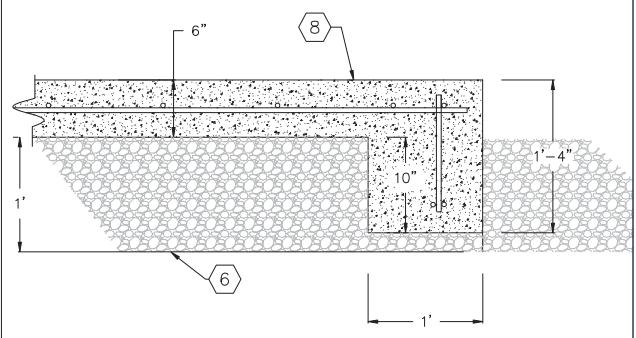
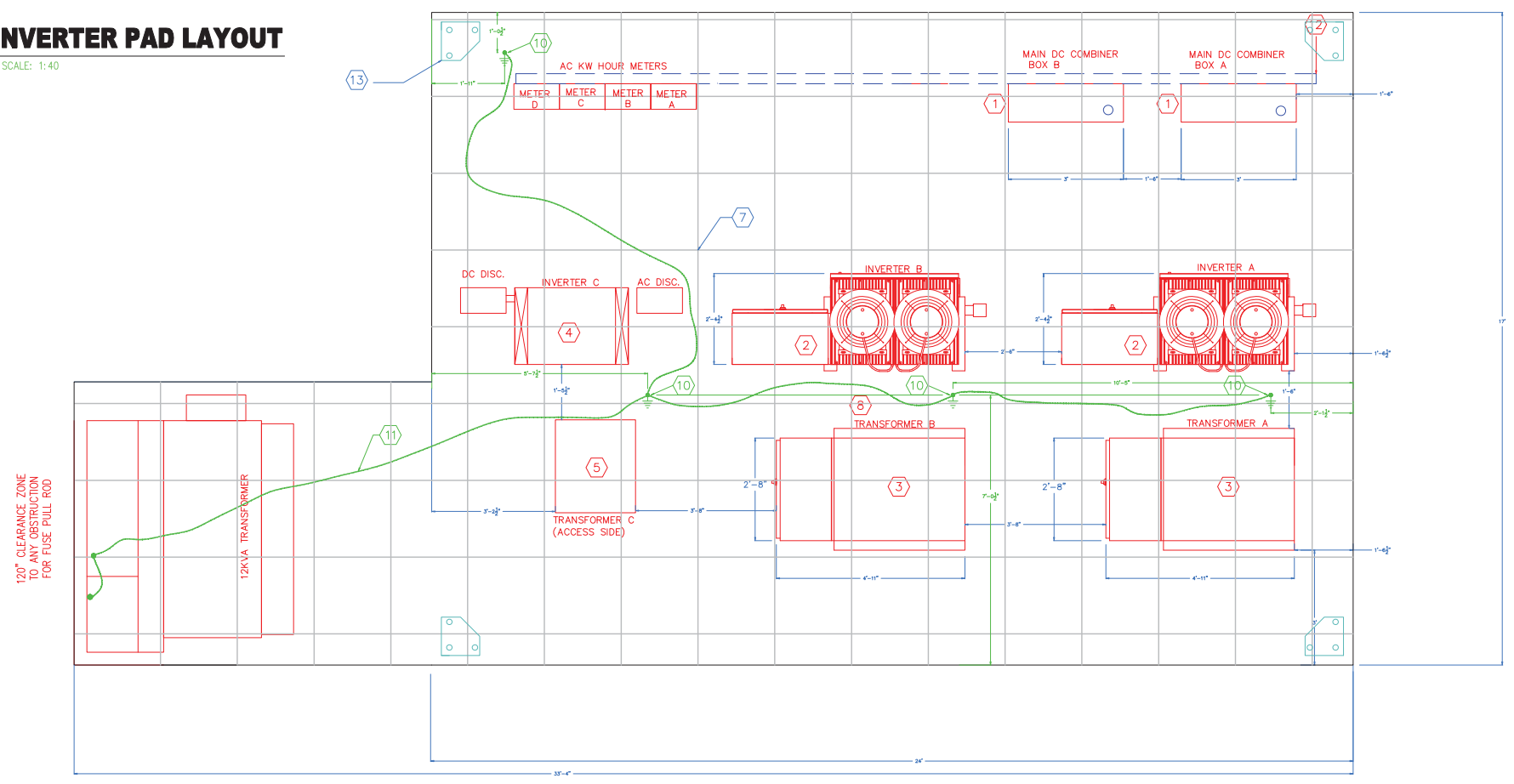
PROJECT: SOLAR PHOTOVOLTAIC SYSTEM
 DRAWING: ELECTRICAL WIRING DIAGRAM

PROJ. MGR. CHRIS TILLEY	PROJ. ENGR. TOBIN BOOTH	DR. BY TB	CHK. BY CT	SCALE: AS NOTED
PROJ. DIRECTOR CHRIS TILLEY	DRAWING NO. -	JOB No.		REV.

E-101 H

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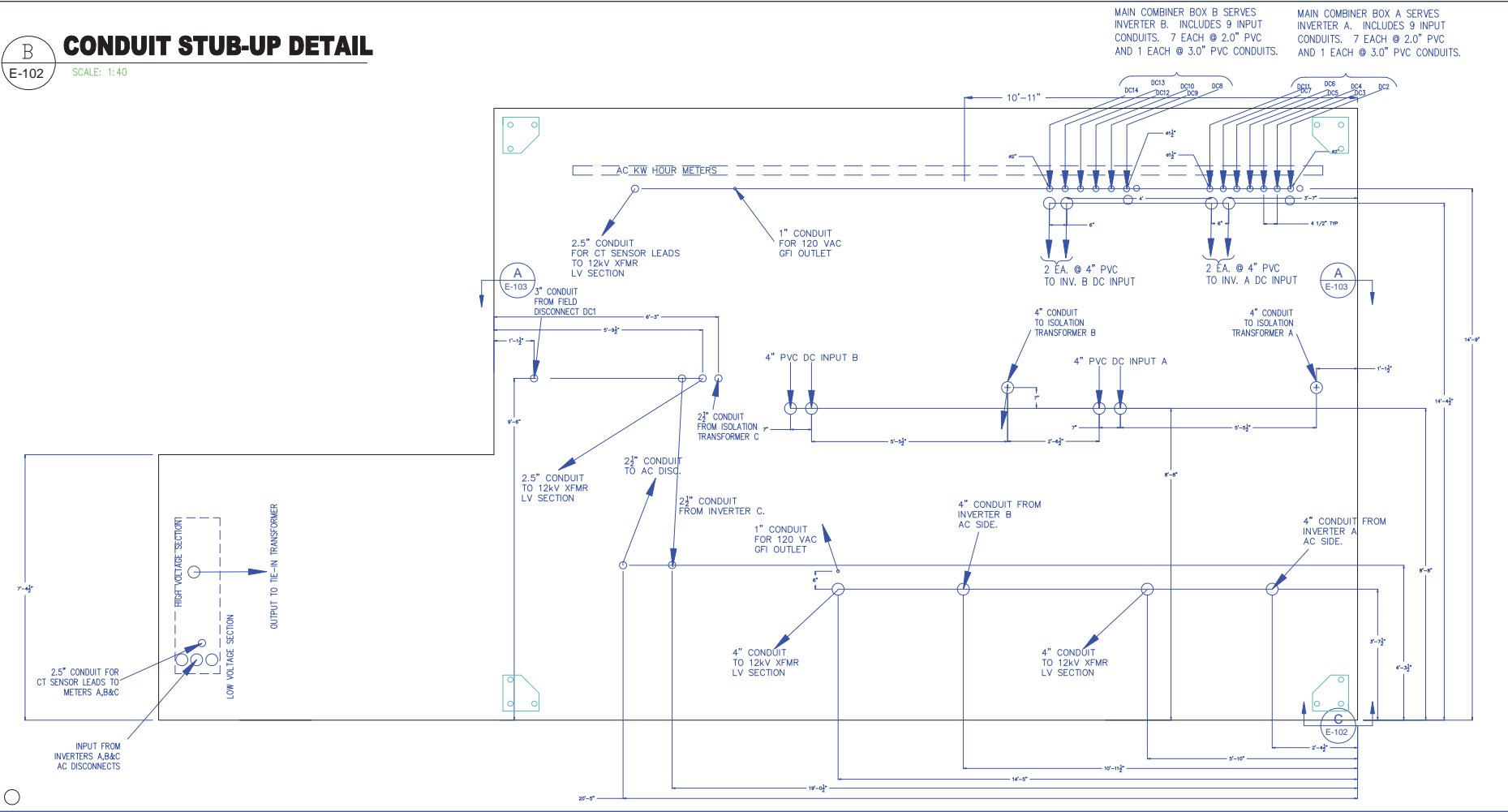
A INVERTER PAD LAYOUT
E-102 SCALE: 1:40



C INVERTER PAD PROFILE
E-102 SCALE: 1:40

- NOTES:**
- SEE GENERAL NOTES ON DRAWING T-101.
 - ADD PVC SLEEVES TO ALL CONDUIT PENETRATING THE CONCRETE PAD. PVC SLEEVE SIZE SHOULD BE 1/2" DIA LARGER THAN THE CONDUIT IT IS PROTECTING. THESE WILL ALLOW FOR NORMAL PAD SETTLING WITHOUT AFFECTING THE CONDUIT CONNECTIONS.
- KEYED NOTES:**
- MAIN DC COMBINER BOXES, 2 EACH. WEIGHT: APPROX. 50 LBS EACH. MOUNTED ON UNISTRUT CHANNEL WITH FOOTINGS ANCHORED TO CONCRETE.
 - XANTREX PV 225S INVERTER WITH DC DISCONNECT CABINET. APPROX WEIGHT, 4650 LBS EACH, INCLUDING TRANSFORMER AND AC DISCONNECT. ATTACH TO CONCRETE PER MANUFACTURER'S SPECIFICATIONS.
 - XANTREX PV45 DEDICATED TRANSFORMER.
 - XANTREX PV45 INVERTER WITH AC AND DC DISCONNECTS. APPROX WEIGHT: 300 LBS.
 - XANTREX PV45 DEDICATED TRANSFORMER.
 - BUILD UP BASE FOR CONCRETE PAD WITH CRUSHED GRAVEL. GRAVEL SHALL BE LAID IN 6" INCREMENTS AND SHALL BE COMPACTED EACH INCREMENT. A TOTAL OF 12" OF GRAVEL SHALL BE LAID TO ACCOMMODATE THE EQUIPMENT PAD.
 - TIE ALL STEEL REINFORCING BARS TOGETHER WITH STEEL TIE WIRE. THIS TIE WIRE HELPS FORM THE UFER GROUND SYSTEM.
 - THE CONCRETE PAD SHALL BE THE MINIMUM DIMENSIONS SHOWN WITH 12" WIDE AND 10" DEEP FOOTING POURED FOR THE PERIMETER FOOTING. PAD SHALL BE 6" MINIMUM THICKNESS. REINFORCING BAR SHALL BE #3 OR #4 EVERY 12" O.C. IN EACH DIRECTION.
 - 1" CONDUIT FOR 120VAC GFI OUTLET TAPPED OUT OF INVERTER B DISCONNECT.
 - GROUND ROD, 4 LOCATIONS, 5/8" DIAMETER. AT LEAST ONE SHALL BE DRIVEN 8' INTO THE GROUND PRIOR TO POURING THE CONCRETE. THE OTHERS MAY BE 4' LENGTHS. ALL GROUND RODS SHALL BE SECURELY FASTENED TO THE STEEL REINFORCING (UFER GROUND) SYSTEM WITH #2 BARE COPPER WIRE AND THE PROPER GROUNDING CLAMPS. SEE SHEET E-103 FOR MORE DETAILS.
 - ROUTE BARE #2 COPPER WIRE FROM ONE OF THE GROUND RODS, IN THE CONDUIT TRENCH TO THE MAIN 12KV TRANSFORMER PAD. THIS GROUND WIRE SHALL EXTEND THROUGH THE TRANSFORMER PAD OPENING INTO THE HIGH VOLTAGE AND LOW VOLTAGE SECTIONS. TERMINATE THIS WIRE IN BOTH THE HIGH VOLTAGE AND LOW VOLTAGE GROUND POINTS.
 - ALL BOXES SHALL BE MOUNTED ON A UNISTRUT RACK.
 - SEE STOLTZ METALS DRAWING FOR EQUIPMENT SHELTER, DETAIL 1A ON SHEET S1 FOR J-BOLT SPECIFICATION AND PLACEMENT.

B CONDUIT STUB-UP DETAIL
E-102 SCALE: 1:40



BLUE ORK ENERGY
4628 SECOND ST. STE. 110, DAVIS, CA 95616
925.747.2626

SEAL:

REV. NO.	DATE	DESCRIPTION	BY	CHK.	APR.
F	08.16.06	AS BUILT	TB		
E	12-05-05	ADDITIONAL PAD DETAILS	TB		
D	12-1-05	UPDATED PAD SIZE AND XFMR ORIENTATION	MS		
C	11-17-05	UPDATED PAD SIZE AND XFMR ORIENTATION	TB		
B	10-27-05	OK FOR CONSTRUCTION	TB		
A	10-17-05	PRELIMINARY ONLY	TB		

Energy Innovations
EI Solutions, Inc.
2173 Francisco Blvd. Suite H
San Rafael, CA 94901

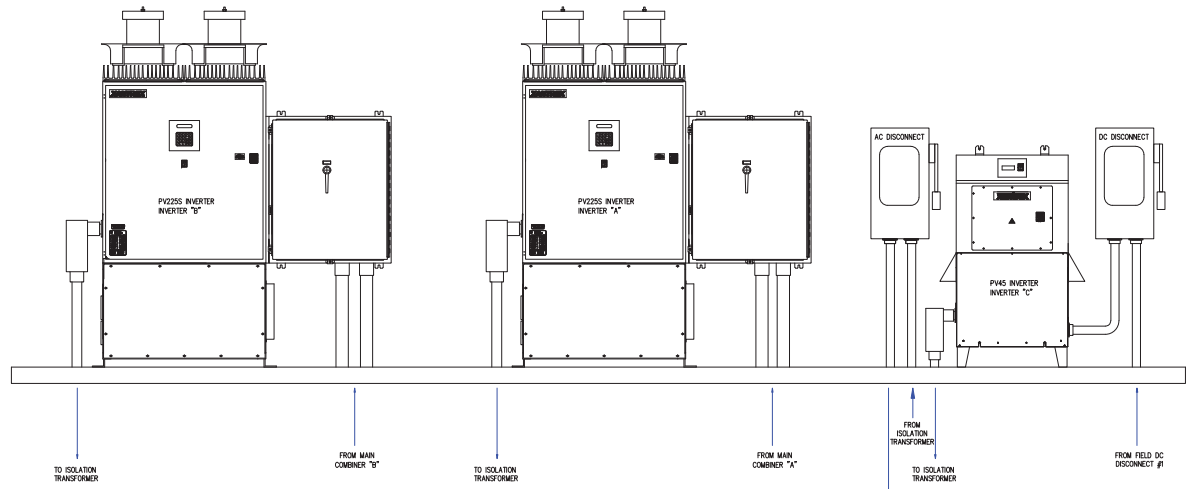
LAS GALLINAS VALLEY SANITATION DISTRICT
LAS GALLINAS, CALIFORNIA

PROJECT: SOLAR PHOTOVOLTAIC SYSTEM
DRAWING: INVERTER PAD LAYOUT

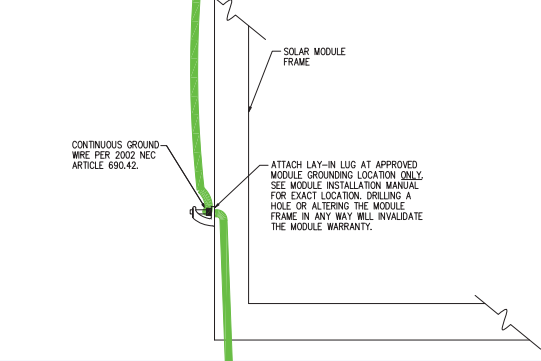
PROJ. MGR.	PROJ. ENGR.	DR. BY	CHK. BY	SCALE:
	TOBIN BOOTH	TB	CT	AS NOTED
PROJ. DIRECTOR:	DRAWING NO.	JOB No:		REV.
		E-102		F

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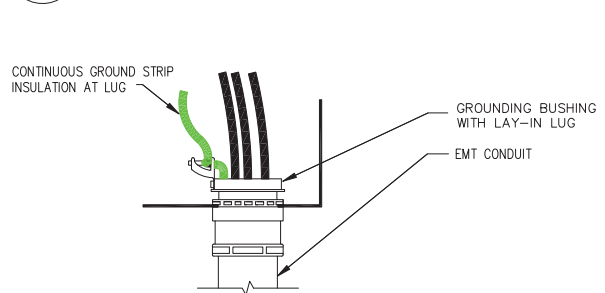
A INVERTER LAYOUT
E-103 SCALE: NTS, REPRESENTATIVE ONLY



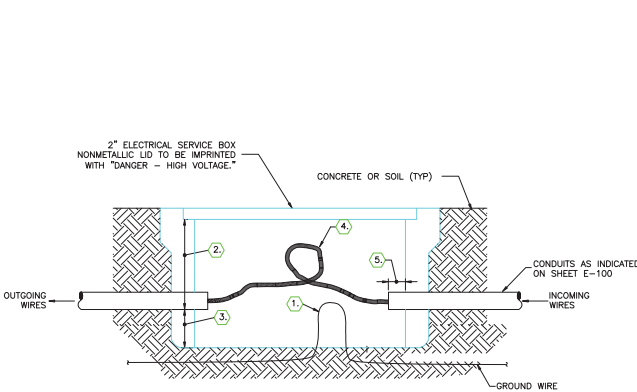
B MODULE GROUNDING DETAIL
E-103 SCALE: NTS



C CONDUIT GROUND
E-103 SCALE: NTS

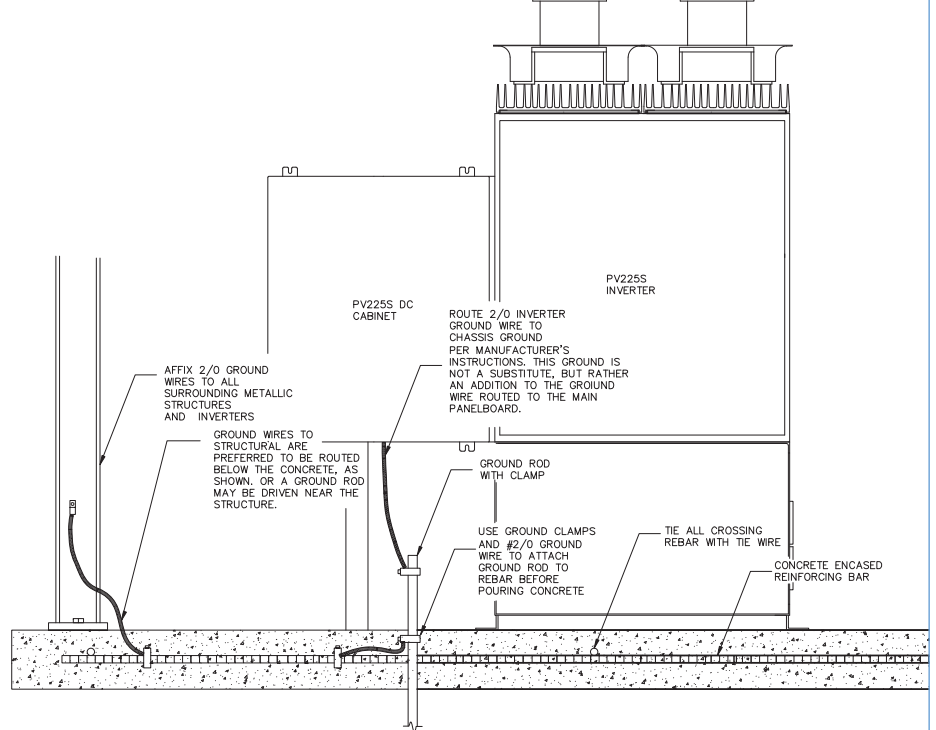


D PULLBOX DETAIL
E-103 SCALE: NTS

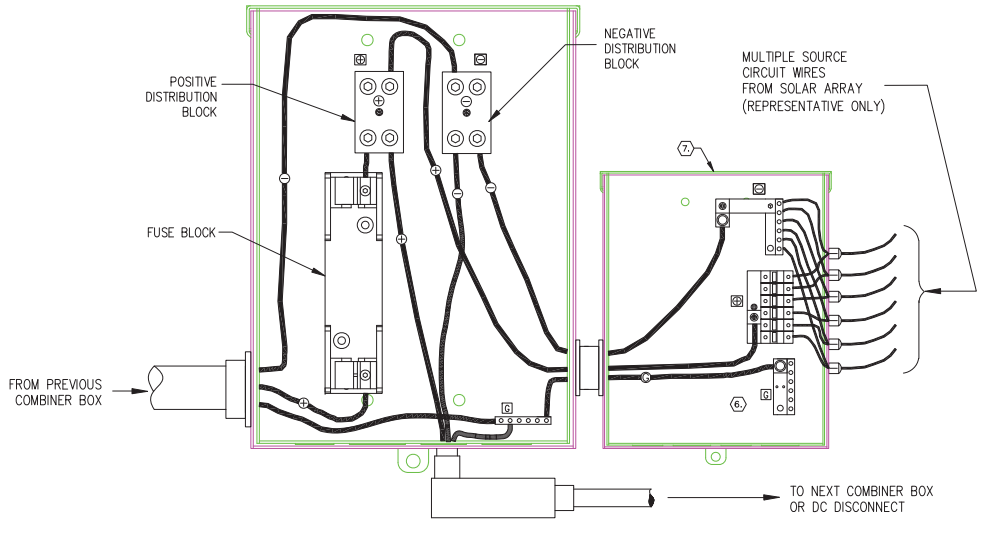
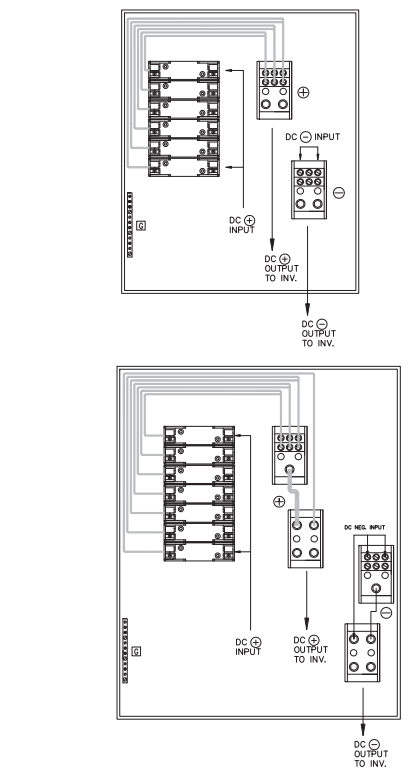


- NOTES:**
- SEE GENERAL NOTES ON DRAWING T-101.
- KEYED NOTES:**
- PROVIDE 2" GROUND WIRE LOOP TO GROUND ALL METALLIC PULLBOX COMPONENTS.
 - PROVIDE SUFFICIENT CLEARANCE FOR CONDUCTOR RADI.
 - ALLOW 4" MINIMUM CLEARANCE BETWEEN GROUND SURFACE AND BOTTOM EDGE OF CONDUIT.
 - PROVIDE 2" CONDUCTOR LOOP FOR ALL WIRES IN EACH PULLBOX. EACH WIRE IS TO BE LABELED PER SHEET E-100.
 - EXTEND CONDUIT THROUGH PULL-BOX BY 4" MINIMUM.
 - COMBINER BOX GROUND WIRES NOT SHOWN FOR CLARITY.
 - COMBINER BOX, NEMA 3R ENCLOSURE, MINIMUM. ALL PARTS USED IN THE COMBINER BOX ARE REQUIRED TO BE RATED FRO 600 VDC. ALL WIRING SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS. ALLOW AMPLE ROOM IN THE BOX FOR LARGE WIRE BENDS AND SEVERAL LARGE INCOMING CONDUITS PER DRAWING E-100. ENCLOSURE SIZE: 10" X 12" IS THE SMALLEST RECOMMENDED SIZE.
 - MAIN COMBINER BOX SHALL USE LITTELFUSE CLASS H 600 V 200 AMP AND 60 AMP FUSEHOLDERS. POWER DISTRIBUTION BLOCKS SHALL BE FERRAZ SHAMMUT 62000-69000 SERIES. GROUND WIRES ARE NOT SHOWN FOR CLARITY. NEMA 3R ENCLOSURE MINIMUM.

E INVERTER PAD GROUNDING
E-103 SCALE: NTS



F MAIN COMBINER BOX DETAIL
E-103 SCALE: NTS



G STRING COMBINER BOX DETAIL
E-103 SCALE: 1:40

ELECTRICAL DETAILS
SCALE: NOT TO SCALE

BLUE ORK ENERGY
4628 SECOND ST. STE 110, DAVIS, CA 95616
831.74.2626

SEAL:

REV. NO.	DATE	DESCRIPTION	BY	CHK.	APR.
-	-	-	-	-	-
E	8-15-06	AS BUILTS	TB	-	-
D	12-15-05	ADDED MAIN COMBINER BOX DETAILS	TB	-	-
C	12-05-05	INVERTER PAD, COMBINER BOX - UPDATED	TB	-	-
B	10-27-05	OK FOR CONSTRUCTION	TB	-	-
A	10-17-05	PRELIMINARY ONLY	TB	-	-

EI Solutions, Inc.
2173 Francisco Blvd. Suite H
San Rafael, CA 94901

LAS GALLINAS VALLEY SANITATION DISTRICT
LAS GALLINAS, CALIFORNIA

PROJECT: SOLAR PHOTOVOLTAIC SYSTEM
DRAWING: ELECTRICAL DETAILS

PROJ. MGR.	PROJ. ENGR.	DR. BY	CHK. BY	SCALE	REV.
CHRIS TILLEY	TOBIN BOOTH	TB	CT	AS NOTED	
PROJ. DIRECTOR:	DRAWING NO.				
CHRIS TILLEY					
JOB No.					
		E-103			

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Exhibit B
Preliminary Design for
Interconnection
Application

DRAFT

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LAS GALLINAS VALLEY
SANITATION DISTRICT
300 SMITH RANCH RD.
SAN RAFAEL, CA 94903

STAMP:



REV	DESCRIPTION	DATE
1	25% DESIGN SET	24-JAN-22
2	CLIENT COMMENTS	27-JAN-22
3	CLIENT COMMENTS	27-JAN-22
4	UPDATED SYSTEM SIZE	02-FEB-22
5	UPDATED SYSTEM SIZE	24-FEB-22

PROJECT NUMBER:

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
A100

REVISION:
05

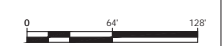
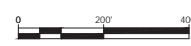


NOTES:
1. ALL SITE MEASUREMENTS ARE APPROXIMATE & SHALL BE FIELD VERIFIED.
2. DIMENSIONS ARE SHOWN BASED ON PLAN VIEW PROJECTION.

SYSTEM INFO
SYSTEM SIZE : 1,081.35KWSTC; 840KWAC
PANEL USED : (2,430) LONGI SOLAR LR4-72HBD-445M (445W)
TYPE OF INVERTER : (14) CPS SCA60KTL-DO/US-480 (60KW)

A OVERALL SITE PLAN
SCALE: 1"=200'-0"

B DETAILED SITE PLAN
SCALE: 1"=64'-0"





LAS GALLINAS VALLEY
SANITATION DISTRICT
300 SMITH RANCH RD.
SAN RAFAEL, CA 94903

STAMP:



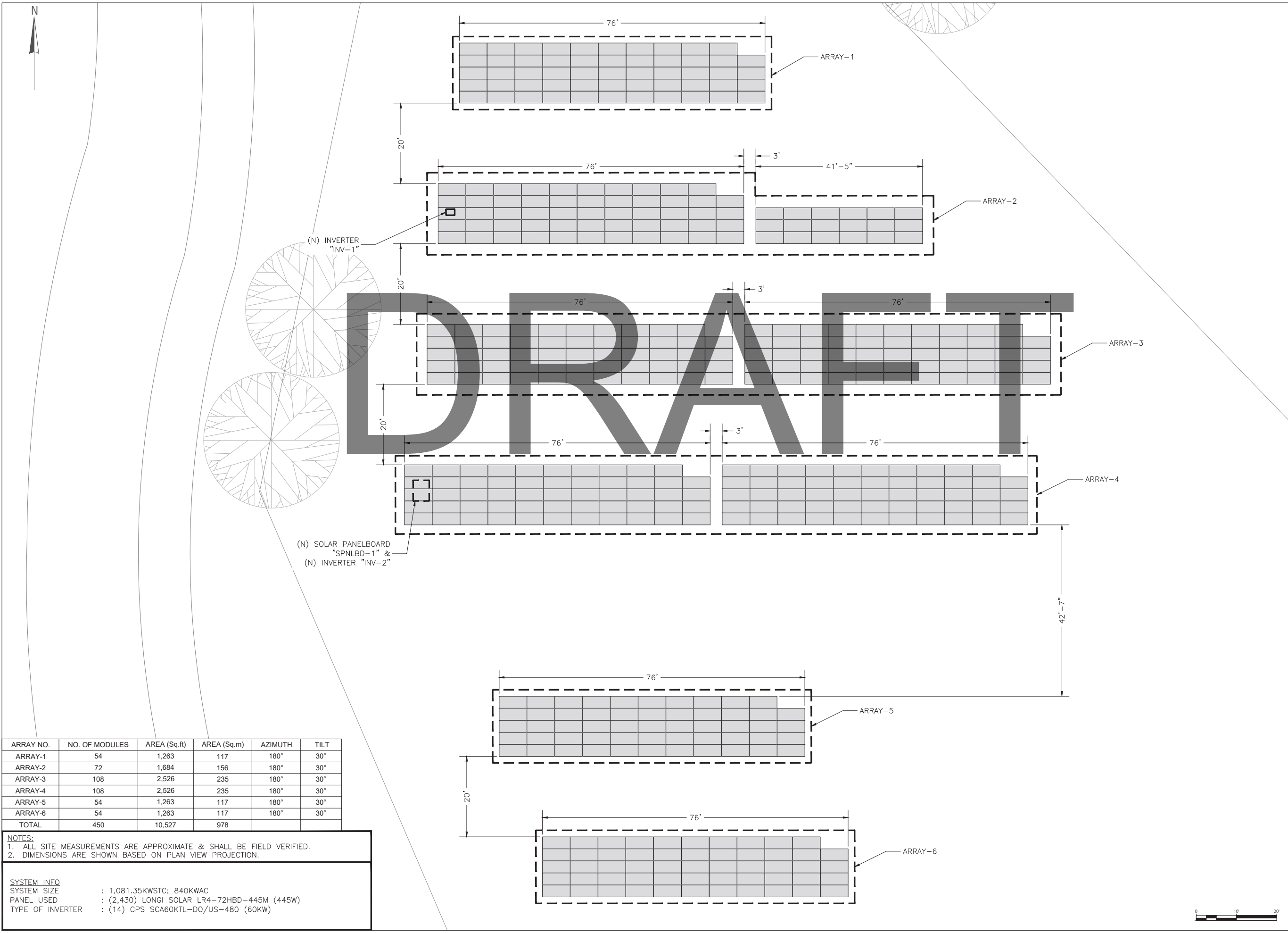
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△	25% DESIGN SET	24-JAN-22
△	CLIENT COMMENTS	27-JAN-22
△	CLIENT COMMENTS	27-JAN-22
△	UPDATED SYSTEM SIZE	02-FEB-22
△	UPDATED SYSTEM SIZE	24-FEB-22

PROJECT NUMBER:

SHEET TITLE:
ARRAY PLAN-1

SHEET NUMBER:
A201

REVISION:
05



ARRAY NO.	NO. OF MODULES	AREA (Sq.ft)	AREA (Sq.m)	AZIMUTH	TILT
ARRAY-1	54	1,263	117	180°	30°
ARRAY-2	72	1,684	156	180°	30°
ARRAY-3	108	2,526	235	180°	30°
ARRAY-4	108	2,526	235	180°	30°
ARRAY-5	54	1,263	117	180°	30°
ARRAY-6	54	1,263	117	180°	30°
TOTAL	450	10,527	978		

NOTES:
1. ALL SITE MEASUREMENTS ARE APPROXIMATE & SHALL BE FIELD VERIFIED.
2. DIMENSIONS ARE SHOWN BASED ON PLAN VIEW PROJECTION.

SYSTEM INFO
SYSTEM SIZE : 1,081.35KWSTC; 840KWAC
PANEL USED : (2,430) LONGI SOLAR LR4-72HBD-445M (445W)
TYPE OF INVERTER : (14) CPS SCA60KTL-DO/US-480 (60KW)





LAS GALLINAS VALLEY
SANITATION DISTRICT
300 SMITH RANCH RD.
SAN RAFAEL, CA 94903

STAMP:



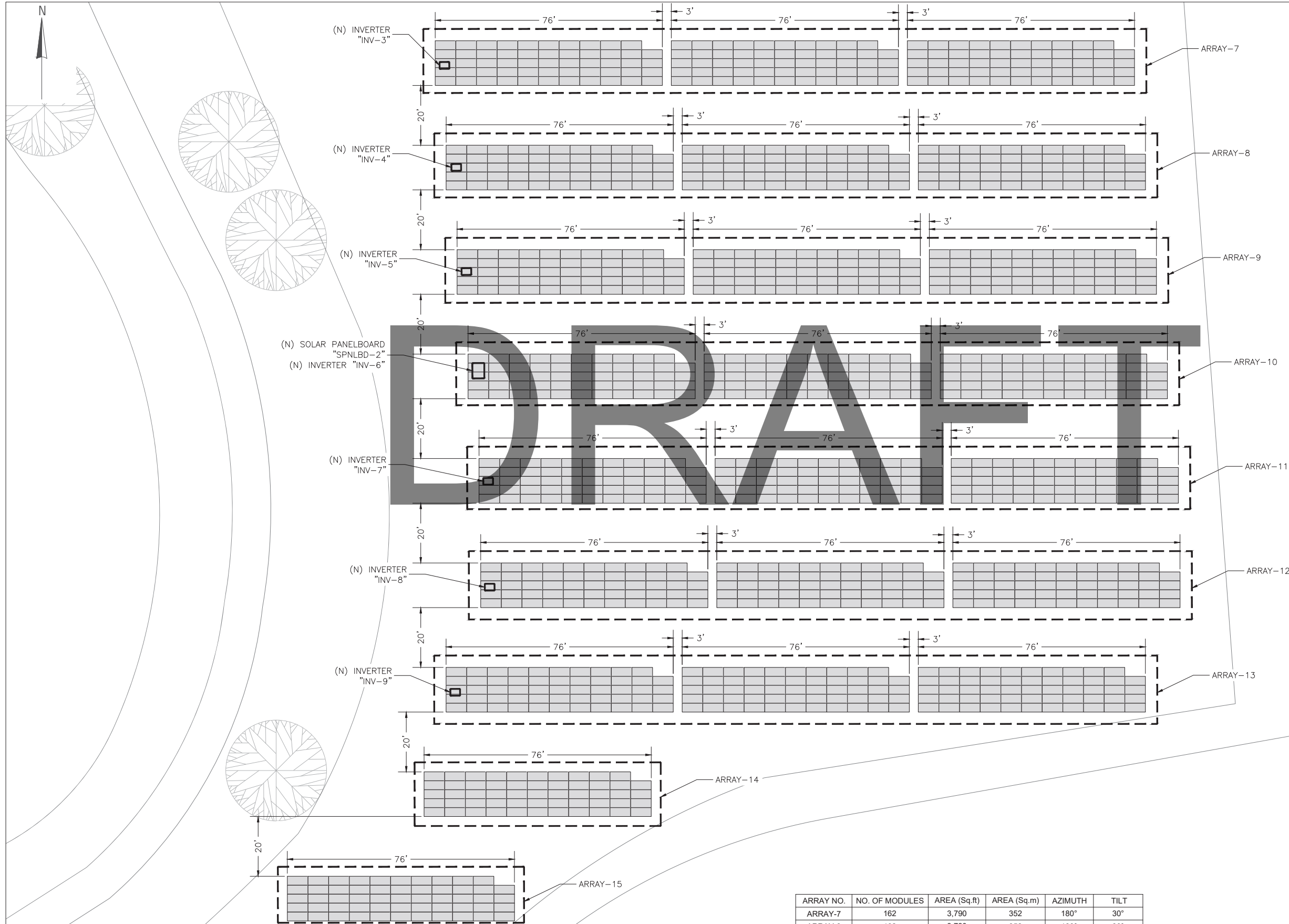
REV	DESCRIPTION	DATE
△	25% DESIGN SET	24-JAN-22
△	CLIENT COMMENTS	27-JAN-22
△	CLIENT COMMENTS	27-JAN-22
△	UPDATED SYSTEM SIZE	02-FEB-22
△	UPDATED SYSTEM SIZE	24-FEB-22

PROJECT NUMBER:

SHEET TITLE:
ARRAY PLAN-2

SHEET NUMBER:
A202

REVISION:
05



- NOTES:
1. ALL SITE MEASUREMENTS ARE APPROXIMATE & SHALL BE FIELD VERIFIED.
2. DIMENSIONS ARE SHOWN BASED ON PLAN VIEW PROJECTION.

SYSTEM INFO
SYSTEM SIZE : 1,081.35KWSTC; 840KWAC
PANEL USED : (2,430) LONGI SOLAR LR4-72HBD-445M (445W)
TYPE OF INVERTER : (14) CPS SCA60KTL-DO/US-480 (60KW)

ARRAY NO.	NO. OF MODULES	AREA (Sq.ft)	AREA (Sq.m)	AZIMUTH	TILT
ARRAY-7	162	3,790	352	180°	30°
ARRAY-8	162	3,790	352	180°	30°
ARRAY-9	162	3,790	352	180°	30°
ARRAY-10	162	3,790	352	180°	30°
ARRAY-11	162	3,790	352	180°	30°
ARRAY-12	162	3,790	352	180°	30°
ARRAY-13	162	3,790	352	180°	30°
ARRAY-14	54	1,263	117	180°	30°
ARRAY-15	54	1,263	117	180°	30°
TOTAL	1242	29,053	2,699		





SHEET SIZE: 36 x 24 IN
DRAWING SCALE: 1"=15'-0"



LAS GALLINAS VALLEY
SANITATION DISTRICT
300 SMITH RANCH RD.
SAN RAFAEL, CA 94903

STAMP:



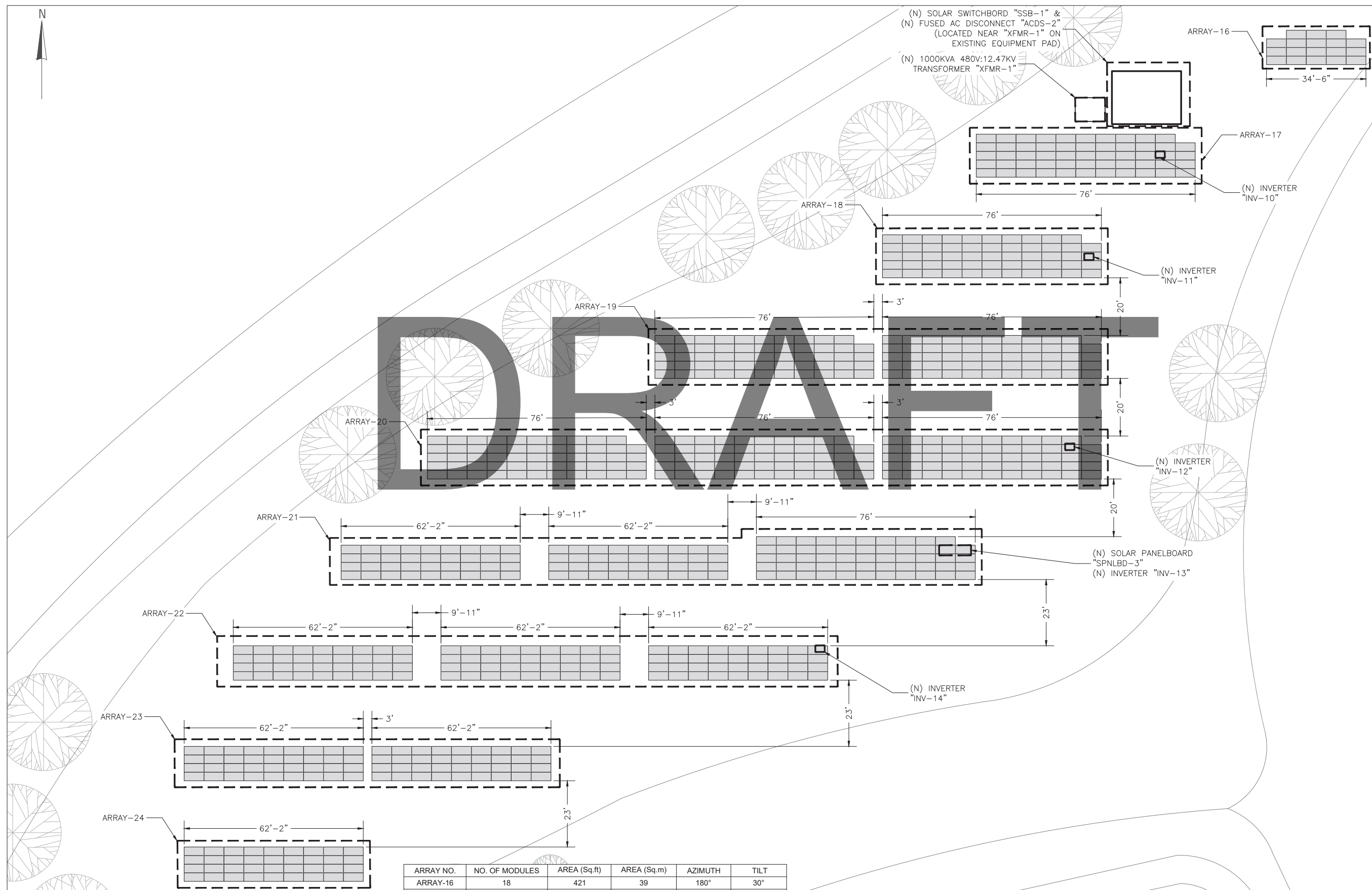
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△	25% DESIGN SET	24-JAN-22
△	CLIENT COMMENTS	27-JAN-22
△	CLIENT COMMENTS	27-JAN-22
△	UPDATED SYSTEM SIZE	02-FEB-22
△	UPDATED SYSTEM SIZE	24-FEB-22

PROJECT NUMBER:

SHEET TITLE:
ARRAY PLAN-3

SHEET NUMBER:
A203

REVISION:
05



ARRAY NO.	NO. OF MODULES	AREA (Sq.ft)	AREA (Sq.m)	AZIMUTH	TILT
ARRAY-16	18	421	39	180°	30°
ARRAY-17	54	1,263	117	180°	30°
ARRAY-18	54	1,263	117	180°	30°
ARRAY-19	108	2,526	235	180°	30°
ARRAY-20	162	3,790	352	180°	30°
ARRAY-21	126	2,947	274	180°	30°
ARRAY-22	108	2,526	235	180°	30°
ARRAY-23	72	1,684	156	180°	30°
ARRAY-24	36	842	78	180°	30°
TOTAL	738	17,264	1,604		

NOTES:
1. ALL SITE MEASUREMENTS ARE APPROXIMATE & SHALL BE FIELD VERIFIED.
2. DIMENSIONS ARE SHOWN BASED ON PLAN VIEW PROJECTION.

SYSTEM INFO
SYSTEM SIZE : 1,081.35KWSTC; 840KWAC
PANEL USED : (2,430) LONGI SOLAR LR4-72HBD-445M (445W)
TYPE OF INVERTER : (14) CPS SCA60KTL-D0/US-480 (60KW)





LAS GALLINAS VALLEY
SANITATION DISTRICT
300 SMITH RANCH RD.
SAN RAFAEL, CA 94903

STAMP:



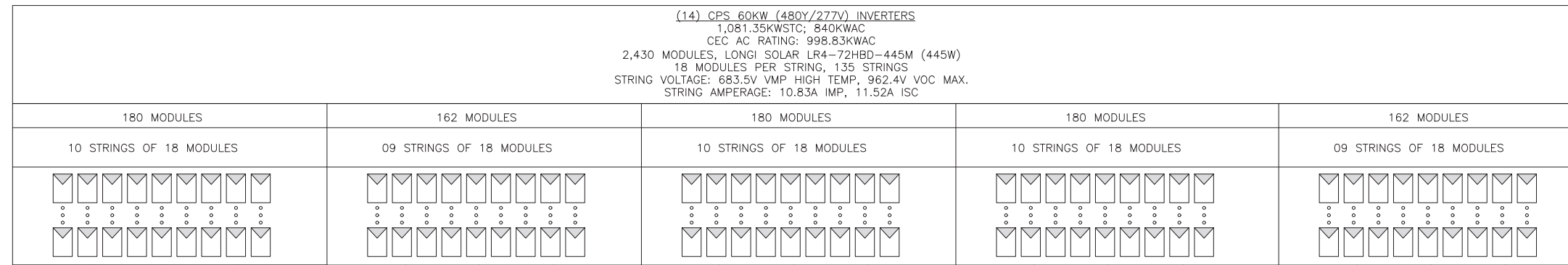
REV	DESCRIPTION	DATE
Δ	25% DESIGN SET	24-JAN-22
Δ	CLIENT COMMENTS	27-JAN-22
Δ	CLIENT COMMENTS	27-JAN-22
Δ	UPDATED SYSTEM SIZE	02-FEB-22
Δ	UPDATED SYSTEM SIZE	24-FEB-22

PROJECT NUMBER:

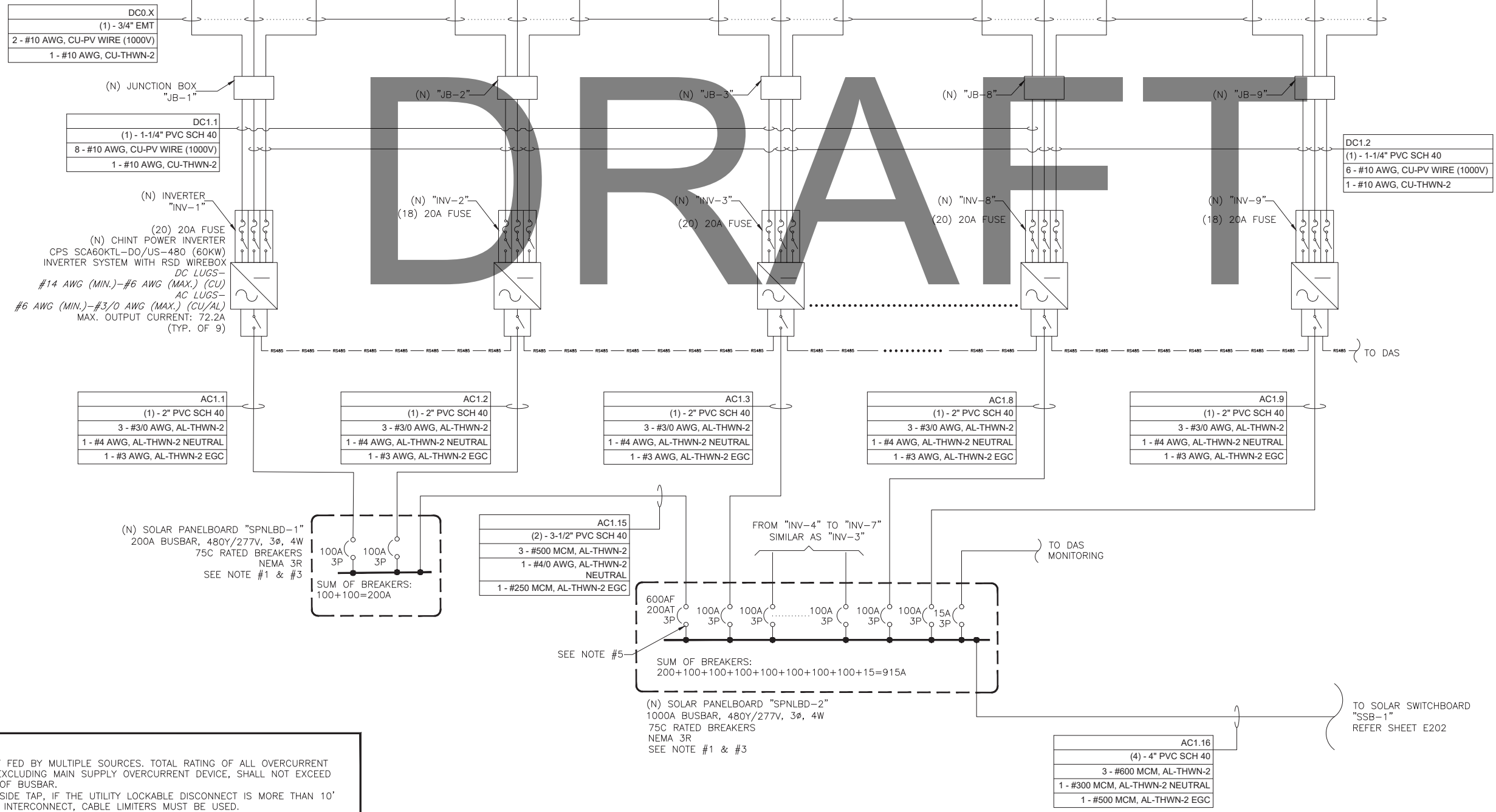
SHEET TITLE:
SINGLE LINE DIAGRAM-1

SHEET NUMBER:
E201

REVISION:
05



(14) CPS 60KW (480Y/277V) INVERTERS
1,081.35KWSTC; 840KWAC
CEC AC RATING: 998.83KWAC
2,430 MODULES, LONGI SOLAR LR4-72HBD-445M (445W)
18 MODULES PER STRING, 135 STRINGS
STRING VOLTAGE: 683.5V VMP HIGH TEMP, 962.4V VOC MAX.
STRING AMPERAGE: 10.83A IMP, 11.52A ISC



- NOTES:**
- EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES, EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE, SHALL NOT EXCEED AMPACITY OF BUSBAR.
 - FOR LINE SIDE TAP, IF THE UTILITY LOCKABLE DISCONNECT IS MORE THAN 10' FROM THE INTERCONNECT, CABLE LIMITERS MUST BE USED.
 - PROVIDE ADD ALTERNATE PRICING FOR AN INTERNAL SURGE PROTECTIVE DEVICE PROVIDED BY THE PANEL MANUFACTURER. SPD SHALL INCLUDE AN INTEGRAL DISCONNECT AND OVERCURRENT PROTECTIVE DEVICE.
 - INSTALLER SHALL BE RESPONSIBLE FOR VERIFYING THAT ALL BACKFED BREAKERS ARE SUITABLE FOR THE APPLICATION AND THAT IF GFP IS PRESENT ALL SOLAR FEEDERS SHALL HAVE GFP PER 705.32.
 - PROVIDE PERMANENTLY INSTALLED PADLOCK PROVISION FOR SERVICE RATED UTILITY LOCKABLE FUSED AC DISCONNECT.

MODEL NO.	# OF INVERTER	VOLTAGE (V)	FAULT CURRENT PER INVERTER (A)	TOTAL FAULT CURRENT (A)
CPS SCA60KTL-DO/US-480	14	480	64.1	897.4
		TOTAL		897.4



LAS GALLINAS VALLEY
SANITATION DISTRICT
300 SMITH RANCH RD.
SAN RAFAEL, CA 94903

STAMP:



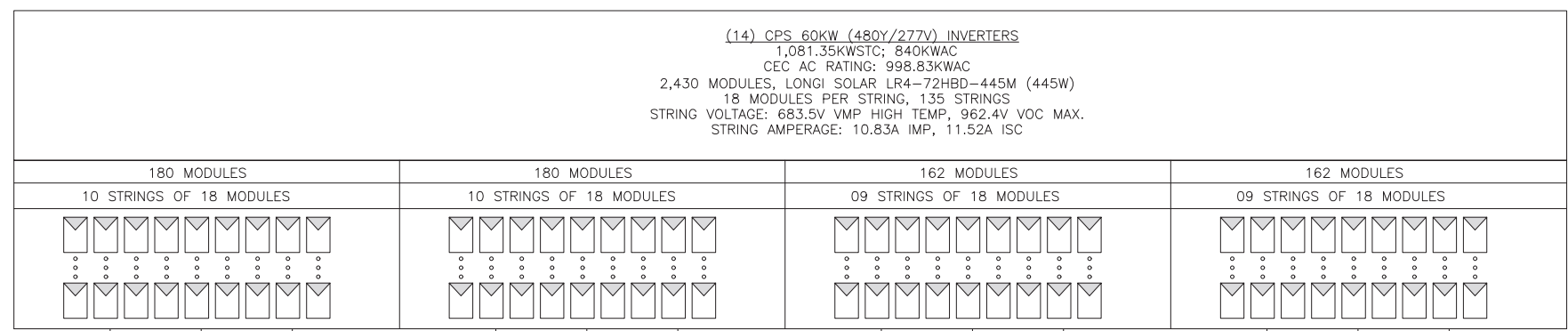
DATE	DESCRIPTION
24-JAN-22	25% DESIGN SET
27-JAN-22	CLIENT COMMENTS
27-JAN-22	CLIENT COMMENTS
02-FEB-22	UPDATED SYSTEM SIZE
24-FEB-22	UPDATED SYSTEM SIZE

PROJECT NUMBER:

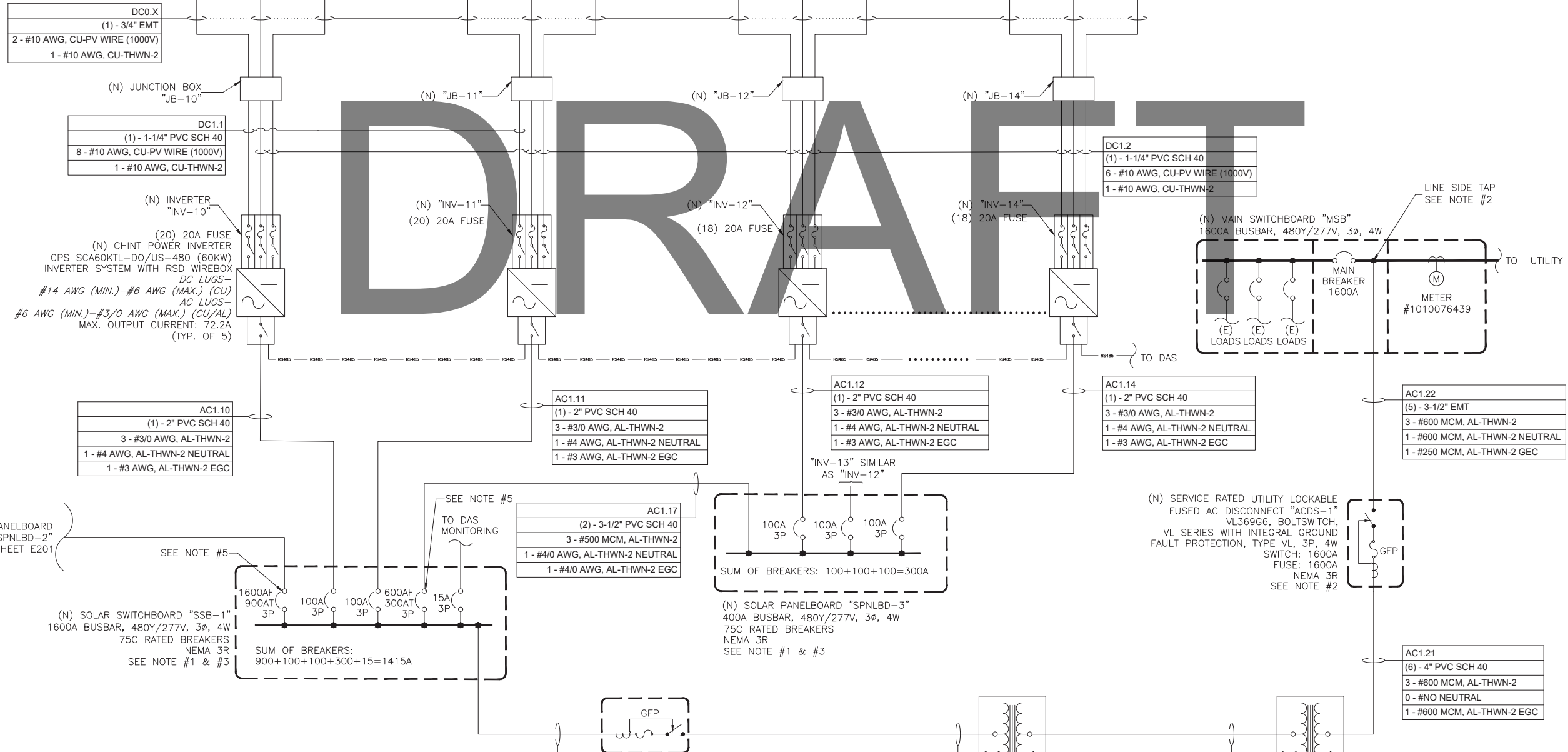
SHEET TITLE:
SINGLE LINE DIAGRAM-2

SHEET NUMBER:
E202

REVISION:
05



(14) CPS 60KW (480Y/277V) INVERTERS
1,081.35KWSTC; 840KWAC
CEC AC RATING: 998.83KWAC
2,430 MODULES, LONGI SOLAR LR4-72HBD-445M (445W)
18 MODULES PER STRING, 135 STRINGS
STRING VOLTAGE: 683.5V VMP HIGH TEMP, 962.4V VOC MAX.
STRING AMPERAGE: 10.83A IMP, 11.52A ISC



FROM SOLAR PANELBOARD "SPNLBD-2" REFER SHEET E201

SEE NOTE #5

SEE NOTE #5

TO DAS MONITORING

(N) SERVICE RATED UTILITY LOCKABLE FUSED AC DISCONNECT "ACDS-1" VL369G6, BOLTSWITCH, VL SERIES WITH INTEGRAL GROUND FAULT PROTECTION, TYPE VL, 3P, 4W SWITCH: 1600A FUSE: 1600A NEMA 3R SEE NOTE #2

- NOTES:**
- EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES, EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE, SHALL NOT EXCEED AMPACITY OF BUSBAR.
 - FOR LINE SIDE TAP, IF THE UTILITY LOCKABLE DISCONNECT IS MORE THAN 10' FROM THE INTERCONNECT, CABLE LIMITERS MUST BE USED.
 - PROVIDE ADD ALTERNATE PRICING FOR AN INTERNAL SURGE PROTECTIVE DEVICE PROVIDED BY THE PANEL MANUFACTURER. SPD SHALL INCLUDE AN INTEGRAL DISCONNECT AND OVERCURRENT PROTECTIVE DEVICE.
 - INSTALLER SHALL BE RESPONSIBLE FOR VERIFYING THAT ALL BACKFED BREAKERS ARE SUITABLE FOR THE APPLICATION AND THAT IF GFP IS PRESENT ALL SOLAR FEEDERS SHALL HAVE GFP PER 705.32.
 - PROVIDE PERMANENTLY INSTALLED PADLOCK PROVISION FOR SERVICE RATED UTILITY LOCKABLE FUSED AC DISCONNECT.

MODEL NO.	# OF INVERTER	VOLTAGE (V)	FAULT CURRENT PER INVERTER (A)	TOTAL FAULT CURRENT (A)
CPS SCA60KTL-DO/US-480	14	480	64.1	897.4
		TOTAL		897.4



LAS GALLINAS VALLEY
SANITATION DISTRICT
300 SMITH RANCH RD.
SAN RAFAEL, CA 94903

STAMP:



REV	DESCRIPTION	DATE
25	DESIGN SET	24-JAN-22
	CLIENT COMMENTS	27-JAN-22
	CLIENT COMMENTS	27-JAN-22
	UPDATED SYSTEM SIZE	02-FEB-22
	UPDATED SYSTEM SIZE	24-FEB-22

PROJECT NUMBER:

SHEET TITLE:
WIRING SCHEDULE

SHEET NUMBER:
E400

REVISION:
05

INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	# STRINGS IN COMBINER BOX IN PARALLEL	RAWEAY NAME	CIRCUIT ID	RAWEAY SIZE OR DIRECT BURIAL	# OF PARALLEL CIRCUITS	# OF CONDUCTORS IN RACEWAY OR BURIAL BUNDLE	% OF MAX CONDUIT FILL	310.15(B)(2)(a) Temp Correction Factor	310.15(B)(3)(a) Fill Adjustment Factor	690.8 (A)(1) and (B)(1) Adjustment Factors	Isc	DESIGN LINE CURRENT	TERMINAL TEMP LIMIT	TEMP LIMIT AMPACITY 30C AMB	OC PD	MINIMUM CORRECTED AMPACITY	CONDUCTOR CORRECTED AMPACITY	ONE WAY LENGTH (FT)	VOLTAGE DROP %	CURRENT CARRYING CONDUCTOR TYPE AND SIZE (AWG)	EQUIPMENT GROUNDING CONDUCTOR SIZE (AWG)	NOTES - FREE AIR WHERE PV WIRE IS PROTECTED FROM PHYSICAL DAMAGE.
ST-X	JB-X	1	DC0.X	DC0.X-1	3/4" EMT	1	3	60%	0.96	1.00	1.56	12	18	Cu-90C	40	N/A	14	38	130	0.51%	2 - #10 AWG, CU-PV WIRE (1000V)	1 - #10 AWG, CU-THWN-2	FREE-AIR OR 3/4" EMT MIN
JB-X	INV-X	1	DC1.1	DC1.1-1	1-1/4" PVC SCH 40	1	9	77%	0.96	0.70	1.56	12	18	Cu-90C	40	20	14	27	200	0.78%	2 - #10 AWG, CU-PV WIRE (1000V)	1 - #10 AWG, CU-THWN-2	
JB-X	INV-X	1		DC1.1-2								40	20		14	27	0.78%	2 - #10 AWG, CU-PV WIRE (1000V)					
JB-X	INV-X	1		DC1.1-3								40	20		14	27	0.78%	2 - #10 AWG, CU-PV WIRE (1000V)					
JB-X	INV-X	1		DC1.1-4								40	20		14	27	0.78%	2 - #10 AWG, CU-PV WIRE (1000V)					
JB-X	INV-X	1	DC1.2	DC1.2-1	1-1/4" PVC SCH 40	1	7	58%	0.96	0.80	1.56	12	18	Cu-90C	40	20	14	31	200	0.78%	2 - #10 AWG, CU-PV WIRE (1000V)	1 - #10 AWG, CU-THWN-2	
JB-X	INV-X	1		DC1.2-2								40	20		14	31	0.78%	2 - #10 AWG, CU-PV WIRE (1000V)					
JB-X	INV-X	1		DC1.2-3								40	20		14	31	0.78%	2 - #10 AWG, CU-PV WIRE (1000V)					

INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	RAWEAY NAME	CIRCUIT ID	RAWEAY SIZE OR DIRECT BURIAL	# OF PARALLEL CIRCUITS	# OF CONDUCTORS IN RACEWAY OR BURIAL BUNDLE	% OF MAX CONDUIT FILL	310.15(B)(2)(a) Temp Correction Factor	310.15(B)(3)(a) Fill Adjustment Factor	690.8 (A)(3) Adjustment Factor	OPERATING LINE CURRENT	DESIGN LINE CURRENT	TERMINAL TEMP LIMIT	TEMP LIMIT AMPACITY 30C AMB	OC PD	MINIMUM CORRECTED AMPACITY	CONDUCTOR CORRECTED AMPACITY	ONE WAY LENGTH (FT)	VOLTAGE DROP %	CURRENT CARRYING CONDUCTOR TYPE AND SIZE	NEUTRAL WIRE TYPE AND SIZE	GROUNDING CONDUCTOR SIZE (AWG)	NOTES
INV-1	SPNLBD-1	AC1.1	AC1.1-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	80	0.26%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-2	SPNLBD-1	AC1.2	AC1.2-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	20	0.07%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-3	SPNLBD-2	AC1.3	AC1.3-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	120	0.39%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-4	SPNLBD-2	AC1.4	AC1.4-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	150	0.49%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-5	SPNLBD-2	AC1.5	AC1.5-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	100	0.33%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-6	SPNLBD-2	AC1.6	AC1.6-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	70	0.23%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-7	SPNLBD-2	AC1.7	AC1.7-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	120	0.39%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-8	SPNLBD-2	AC1.8	AC1.8-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	150	0.49%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-9	SPNLBD-2	AC1.9	AC1.9-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	140	0.46%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-10	SSB-1	AC1.10	AC1.10-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	50	0.16%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-11	SSB-1	AC1.11	AC1.11-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	120	0.39%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-12	SPNLBD-3	AC1.12	AC1.12-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	100	0.33%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-13	SPNLBD-3	AC1.13	AC1.13-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	50	0.16%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
INV-14	SPNLBD-3	AC1.14	AC1.14-1	2" PVC SCH 40	1	5	75%	0.96	1.00	1.25	72	90	AI-75C	155	100	90	168	60	0.20%	3 - #3/0 AWG, AL-THWN-2	1 - #4 AWG, AL-THWN-2	1 - #3 AWG, AL-THWN-2	EGC
SPNLBD-1	SPNLBD-2	AC1.15	AC1.15-1	3-1/2" PVC SCH 40	2	5	73%	0.96	1.00	1.25	144	180	AI-75C	620	200	180	672	260	0.29%	3 - #500 MCM, AL-THWN-2	1 - #4/0 AWG, AL-THWN-2	1 - #250 MCM, AL-THWN-2	EGC
SPNLBD-2	SSB-1	AC1.16	AC1.16-1	4" PVC SCH 40	4	4	75%	0.96	1.00	1.25	650	812	AI-75C	1380	900	812	1478	270	0.56%	3 - #600 MCM, AL-THWN-2	1 - #300 MCM, AL-THWN-2	1 - #500 MCM, AL-THWN-2	EGC
SPNLBD-3	SSB-1	AC1.17	AC1.17-1	3-1/2" PVC SCH 40	2	5	71%	0.96	1.00	1.25	217	271	AI-75C	620	300	271	672	270	0.45%	3 - #500 MCM, AL-THWN-2	1 - #4/0 AWG, AL-THWN-2	1 - #4/0 AWG, AL-THWN-2	EGC
SSB-1	ACDS-2	AC1.18	AC1.18-1	4" PVC SCH 40	5	5	63%	0.96	1.00	1.25	1010	1263	AI-75C	1550	1400	1263	1680	10	0.03%	3 - #500 MCM, AL-THWN-2	1 - #350 MCM, AL-THWN-2	1 - #350 MCM, AL-THWN-2	EGC
ACDS-2	XFMR-1	AC1.19	AC1.19-1	4" PVC SCH 40	4	5	71%	0.96	1.00	1.25	1010	1263	AI-75C	1380	N/A	1263	1478	30	0.10%	3 - #600 MCM, AL-THWN-2	1 - #300 MCM, AL-THWN-2	1 - #350 MCM, AL-THWN-2	EGC
XFMR-1	XFMR-2	AC1.20	AC1.20-1	3-1/2" PVC SCH 40	1	4	92%	0.96	1.00	1.25	46	58	AI-75C	100	N/A	58	110	3900	0.63%	3 - #1 AWG, AL-MV-105 15kV 133% INSUL.	0 - #NO NEUTRAL	1 - #1 AWG, AL-MV-105 15kV 133% INSUL.	EGC
XFMR-2	ACDS-1	AC1.21	AC1.21-1	4" PVC SCH 40	6	4	69%	0.96	1.00	1.25	1203	1504	AI-75C	2040	1600	1504	2218	270	0.69%	3 - #600 MCM, AL-THWN-2	0 - #NO NEUTRAL	1 - #600 MCM, AL-THWN-2	EGC
ACDS-1	MSB	AC1.22	AC1.22-1	3-1/2" EMT	5	5	84%	0.96	1.00	1.25	1203	1504	AI-75C	1700	N/A	1504	1848	10	0.03%	3 - #600 MCM, AL-THWN-2	1 - #600 MCM, AL-THWN-2	1 - #250 MCM, AL-THWN-2	GEC

DC CONDUITS	DC VOLTAGE DROP	DESIGN LINE CURRENT	MINIMUM CORRECTED AMPACITY	CONDUIT FILL	CONDUCTOR CORRECTED AMPACITY
CONDUIT NAME	(2*ONE WAY LENGTH*RESISTANCE PER 1000FT*PHASE CURRENT/1000 FT/STRING VOLTAGE/# WIRES PER PHASE)= VOLTAGE DROP IN CONDUIT	ISC*1.56	ISC*1.25	100*(TOTAL CONDUCTOR AREA)/((CONDUIT AREA)*(PERCENT ALLOWED FILL)) = PERCENT MAXIMUM FILL	CONDUCTOR AMPACITY AT 30C * CONDUCTOR PER PHASE * TEMP. CORRECTION FACTOR * FILL ADJUSTMENT FACTOR = CONDUCTOR CORRECTED AMPACITY
DC0.X	(2 * 130 * 1.24 * 10.8 / 1000FT / 683.46 / 1) = 0.51%	(11.52 * 1.56) = 18	(11.52 * 1.25) = 14.4	100 * 0.13 / (0.53 * 0.4) = 60%	(40 * 1 * 0.96 * 1) = 38.4

AC CONDUITS (For 3-Phase system)	3 PHASE AC VOLTAGE DROP	DESIGN LINE CURRENT	MINIMUM CORRECTED AMPACITY	CONDUIT FILL	CONDUCTOR CORRECTED AMPACITY
CONDUIT NAME	1.732*ONE WAY LENGTH*RESISTANCE PER 1000FT*PHASE CURRENT/1000 FT/OPERATING VOLTAGE/# WIRES PER PHASE) = VOLTAGE DROP IN CONDUIT	OPERATING CURRENT*1.25	OPERATING CURRENT*1.25	100*(TOTAL CONDUCTOR AREA)/((CONDUIT AREA)*(PERCENT ALLOWED FILL)) = PERCENT MAXIMUM FILL	CONDUCTOR AMPACITY AT 30C * CONDUCTOR PER PHASE * TEMP. CORRECTION FACTOR * FILL ADJUSTMENT FACTOR = CONDUCTOR CORRECTED AMPACITY
AC1.1	(1.732*80 * 0.126 * 72 / 1000FT / 480 / 1)=0.26%	(72.17 * 1.25) = 90.21	(72.17 * 1.25) = 90.21	100 * 0.98 / (3.29 * 0.4) = 75%	(175*1*0.96*1) = 168

WIRES / EQUIPMENT	INV-1	INV-2	INV-3	INV-4	INV-5	INV-6	INV-7	INV-8	INV-9	INV-10	INV-11	INV-12	INV-13	INV-14
INV-X to SPNLBD-X	0.26%	0.07%	0.39%	0.49%	0.33%	0.23%	0.39%	0.49%	0.46%	0.16%	0.39%	0.33%	0.16%	0.20%
SPNLBD-1 to SPNLBD-2	0.29%													
SPNLBD-2 to SSB-1	0.56%													
SPNLBD-3 to SSB-1	0.45%													
SSB-1 to ACDS-2	0.03%													
ACDS-2 to XFMR-1	0.10%													
XFMR-1 to XFMR-2	0.63%													
XFMR-2 to ACDS-1	0.69%													
ACDS-1 to MSB	0.03%													
TOTAL AC VOLTAGE DROP	2.59%	2.39%	2.43%	2.53%	2.37%	2.27%	2.43%	2.53%	2.50%	1.64%	1.87%	2.25%	2.09%	2.09%
TOTAL DC VOLTAGE DROP	1.29%													
TOTAL VOLTAGE DROP	3.88%	3.68%	3.72%	3.82%	3.66%	3.56%	3.72%	3.82%	3.79%	2.94%	3.17%	3.55%	3.38%	3.39%