



LAND USE SERVICES DEPARTMENT PLANNING COMMISSION STAFF REPORT

HEARING DATE: February 19, 2015

AGENDA ITEM 2

Project Description

Vicinity Map

APN: 0465-631-13
Appellant: Jeffrey & Lisa McKellar
Community: Silver Lakes(Helendale)/1st Supervisorial District
Location: 27680 Mountain Springs Road; North West Corner of Mountain Springs Road and Horseshoe Trail
Project no: P201400526
Staff: John Oquendo
Proposal: Appeal of the Director's determination that a proposed 578.34 kWDC solar photovoltaic facility on a portion of 18.23 acres qualifies as an accessory use (B201407722).



14 Hearing Notices Sent On: 02/09/2015

Report Prepared By: John Oquendo

SITE INFORMATION

Parcel Size: 18 Acres
Terrain: Slopes to the Southeast Corner of the Site
Vegetation: Existing Native Vegetation

SURROUNDING LAND DESCRIPTION:

AREA	EXISTING LAND USE	LAND USE ZONING DISTRICT
Site	Vacant Land	RL-5, Rural Living 5 Acre Minimum
North	SFR/ Vacant Land	RL, Rural Living
South	SFRs	RS, Single Residential
East	Accessory Residential Facilities	CN, Neighborhood Commercial RL-20, Single Residential
West	Vacant Land	RL, Rural Living

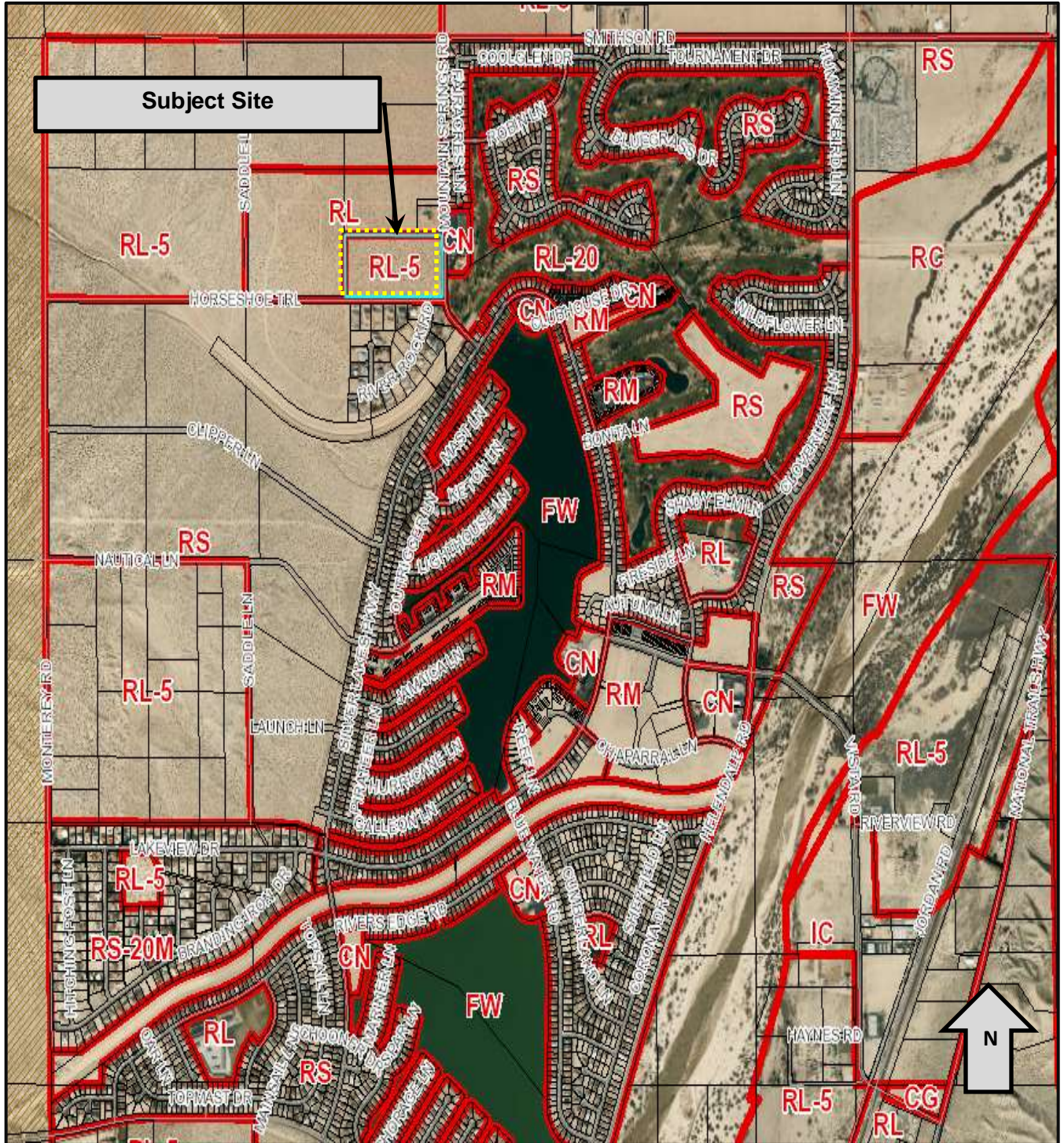
	<u>AGENCY</u>	<u>COMMENT</u>
City Sphere of Influence:	N/A	N/A
Water Service:	Helendale CSD	N/A
Sewer Service:	Helendale CSD	N/A

STAFF RECOMMENDATION: That the Planning Commission **DENY** the Appeal and **UPHOLD** the Director's determination that the proposed use qualifies as an accessory use.

In accordance with Section 86.08.010 of the Development Code, action by the Planning Commission may be appealed to the Board of Supervisors.

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VICINITY MAP



SITE PHOTOS



View South West from Mountain Springs Road



View North West From Mountain Springs Road



View North East from Horseshoe Trail

DESCRIPTION AND BACKGROUND:

On October 17, 2014, construction plans (B201407722) were filed with the Land Use Services Department for a ground mount solar photovoltaic system (Project) on a 6.9 acre portion of an 18.23 acre site owned by and located adjacent to the Silver Lakes Planned Community (Silver Lakes). The Project involves the installation of 1,836 single track axis modules photovoltaic modules, with additional accessory equipment. The power generated will be used to offset that required for the Silver Lakes common facilities. The installation is proposed by SK Solar, a solar development company. The plans were accepted for review subject to Development Code regulations for accessory uses. Land Use Services Department staff reviewed the appropriate data and determined that the Project qualified as an accessory use. The thresholds and criteria for the accessory determination are discussed in the Analysis section.

Planning Division staff was aware of concerns of the Appellants about the nature of the Project. On December 3, 2014, a notice was sent notifying adjoining property owners that they had 10 days to respond to this pending determination. On December 15, 2014, this appeal was filed. Accordingly, the processing of Plan Review B201407722 has been suspended until resolution of the appeal.

Additionally, an administrative citation has been issued to the property owner and its representative by the Code Enforcement Division. The citation was issued for violation of Development Code Section 86.09.050(b), for land clearing/vegetation removal without a valid permit from the Building and Safety Division. This Code Enforcement action is pending.

ANALYSIS:

Basis for Staffs' Determination

For properties within the RL-5 (Rural Living - 5 Acre Minimum Lot Size) land use zoning district, Accessory Structures and Uses are permitted as "Allowed" and require no land use permit, per Table 82-7 (§ 82.04.040) of the Development Code. General Development Standards for accessory uses are described in §84.01.020. Among the standards prescribed in this section are requirements for a legally established primary use when an accessory use is proposed. The Code also requires that an accessory use shall be located on the same parcel or a contiguous abutting parcel under common ownership with the primary use. Additionally, the following Development Code Definitions were used in making this determination and are provided for reference below.

§810.01.030(h) ACCESSORY USE. (See Land Use Tables.) A subordinate use, which may be permanent or temporary. The use is incidental and supported by the primary use. Example: A carport or garage for a single-family dwelling.

§810.01.050(gg) COMMERCIAL SOLAR ENERGY GENERATION FACILITY. The components and subsystems that, in combination, convert solar energy

into electric or thermal energy primarily for the purpose of off-site consumption, and may include other appurtenant structures and facilities. The definition includes, but is not limited to, photovoltaic power systems and solar thermal systems.

§810.01.050(jjj) CONTIGUOUS or CONTIGUOUS PROPERTY. In actual close contact; touching; bounded or traversed by. CONTIGUOUS PROPERTY shall be those properties that touch property lines of any parcel including those properties that touch the property lines of a subject parcel when the lines are projected across public or private rights of way, easements, roads, streets, or railroad rights of way.

In the case of the subject submittal, the proposal was found to satisfy the necessary requirements to meet the definitions of an accessory use not requiring a land use permit to construct, establish and/or operate. First, to apply the definitions of Accessory Use and Commercial Solar Energy Generation Facility, as cited above, staff reviewed the construction plans and a report identifying the usage of the existing common facilities located in the Silver Lakes community and the estimated generation rate for the Project. The Project is anticipated to generate less energy than the energy consumed by the existing common facilities. Therefore as the electricity generated by the Project is intended to offset that currently consumed by the Silver Lakes common amenities. It meets the criteria of an accessory use and does not fit the definition of a Commercial Solar Energy Generation Facility, where the primary purpose of such facilities is to provide energy for the purposes of off-site consumption.

Moreover, the Project is sized based upon the existing usage rate for common facilities, much different from the typical Commercial Solar Energy Generation Facility where project size is driven by commercial market considerations. This further supports the staff determination that the Project meets the criteria for an accessory use.

Second, the proposed improvements were found to be located on a property contiguous to a lawfully established primary use under common ownership, in this case, the Silver Lakes properties across Mountain Springs Road, to the east of the subject site containing the club house and parts of the golf course.

Basis for the Appeal

The Appellant has provided two written documents, laying out the grounds for appeal. Below is a summary of the comments provided by the Appellant as well as the staff responses.

Argument: *The proposed improvements do not meet the criteria for an Accessory Use.*

Response: As discussed above, staff has determined that the proposal satisfies the necessary criteria defined for an accessory use. While the grounds for appeal correctly state that there is no specific definition for an accessory solar facility, Staff has determined

the existing requirements of the Development Code provide adequate and clear guidance for determining what is an accessory use and what is a primary use, subject to use permit requirements. In this case, the proposed improvements are accessory to the primary use of the Silver Lakes community facilities.

Argument: *The Land Use Services Department is exercising discretion in making this determination and therefore the proposed improvements are subject to the California Environmental Quality Act (CEQA).*

Response: A building permit is a ministerial permit, meaning no discretion is being exercised in the land use determination process. The facts surrounding the proposal are simply ascertained and compared to the requirements of the Development Code. Any other similar proposal fitting the established criteria would qualify for the same determination. No discretionary approval has been rendered. The proposed improvements were found to meet the requirements and definitions cited above. Accordingly, the construction of the proposed improvements is exempt under Section 15268 of the CEQA Guidelines, as a ministered action.

Argument: *An Alternative Site should have been selected.*

Response: The Land Use Services Department was not involved in the selection of the subject site. The Silver Lakes Association, a private homeowners association governed by its own bylaws, selected the subject site based upon its own criteria. To the extent that this argument implies that alternatives analysis is required under CEQA, this Project is exempt, and such analysis is not legally mandated.

Argument: *Property Values will be impacted by the proposed improvements.*

Response: As found in other cases reviewed by the decision making bodies of the County of San Bernardino, no demonstrable evidence has been produced that proximity to a solar energy generation facility, let alone proximity to an accessory use as represented by the Project, impacts the assessed values of properties in the vicinity.

Argument: *Significant effects will result from the construction and operation of the Project; including generating dust and noise, impacts to protected wildlife, impacts to protected plants, and aesthetic impacts.*

Response: The applicant has stated that the proposed method of construction will involve post driven installation of the solar PV modules, and that this will not involve any significant site grading nor removal of existing site vegetation. Subject to compliance with standard grading permit and erosion control requirements, no significant dust generation is anticipated.

The applicant has provided Building and Safety a site survey for protected plants, and the findings of the subject report determined no protected desert native plants were located on the site. The property owner and its representatives have additional due diligence to

perform with State and Federal Wildlife agencies if any aspect of the proposed improvements will have an impact upon protected wildlife. As the action does not involve a discretionary use permit, the Land Use Services Department will not be involved in any interaction with these agencies.

With regard to aesthetic impacts, the applicant has proposed chain-link fencing at the edges of the Project site and will install opaque slats to minimize the view of the equipment from public rights of way. Noise and dust generated during construction and operation of the Project is subject to the County standards found in §83.01 of the Development Code. Any violation of these standards is subject to Enforcement action per §86.09 of the Development Code.

SUMMARY:

Based upon the analysis contained in the staff report, the Director's Determination that the Project qualifies as an accessory use remains valid.

RECOMENDATION:

The Planning Commission:

- A. **DENY** the appeal and **UPHOLD** the Director's Determination that the proposed use qualifies as an accessory use.
- B. **FILE** a Notice of Exemption.

ATTACHMENTS:

- Exhibit A: Appeal Application and Attachments
- Exhibit B: Construction Plans for the Silver Lakes Community Solar Facility
- Exhibit C: Supplemental Documents provided by SK Solar

ATTACHMENT A

Appeal Application and Attachments

P 201400526



San Bernardino County

Land Use Services Department, Planning Division

San Bernardino County Government Center
385 N. Arrowhead Ave., San Bernardino, CA 92415-0182

15900 Smoke Tree Street; Hesperia, CA 92345

San Bernardino Office – (909) 387-8311
Fax (909) 387-3249

High Desert Office – (760) 995-8140
Fax (760) 995-8167



APPEAL INFORMATION SHEET AND APPLICATION

Prior to its effective date, any land use decisions made by any County agency, department, office or officer may be appealed to the Planning Commission and any land use decision made by the Planning Commission may be appealed to the Board of Supervisors, except those decisions exempted per Section 86.08.010(b)(2). Actions of the Board of Supervisors are final and may not be appealed.

For permits not subject to any discretionary land use approval, a decision made pertaining to a request to waive or modify right-of-way dedications and/or street improvement requirements may be appealed to the County's Chief Executive Officer.

The decision to require preparation of an Environmental Impact Report (EIR) may be appealed to the Planning Commission for final decision

An appeal must be filed prior to the effective date of the decision being appealed. Land use decisions made by the Planning Commission become effective 11 days after the action. Decisions made by a reviewing authority, other than the Planning Commission are effective 11 days after the written decision has been mailed.

FEES:

Fees must be submitted at the time of submittal of a completed Appeal Application and must be a check or money order made payable to "San Bernardino County." **Fees for appeals submitted by persons other than the applicant and for applicants of average cost (set fee) projects are:**

Appeal to the Planning Commission (L695)	\$1,490.00
Appeal to the Board of Supervisors (L696)	\$1,192.00

Appeals by the applicant of actual cost projects will be charged to the actual cost deposit as follows:

"Actual Cost Initial Deposit" – If your Appeal is to be processed as an "actual cost" application, your money is deposited into an account and the reviewing staff records the time spent processing your application. Your account is then charged for the staff time at established hourly rates (\$78 to \$250/hr). You are responsible for all charges made to the project account. If account funds are depleted an additional deposit will be required. If an additional deposit is required it must be paid to allow staff to continue processing. Any failure to pay the required deposit will result in suspension and possible termination of the review process. For more information on fees, please contact County Planning.

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DEC 15 2014
Sowers
COUNTY OF SAN BERNARDINO
BUILDING AND SAFETY

APPEAL APPLICATION

Complete all portions of this application. If you believe that an item does not apply to your appeal, mark it "N/A". Do not leave any blank spaces.

You may attach additional pages or other documentation to this application.

Project Action Date: 12-03-14

File/Index #: _____

Building Permit No.: 201407722

Project Applicant(s): Silver Lakes Homeowner Association

Appellant's Name (s): Jeffrey, Lisa McKellar

Appellant's Address: 14409 Horseshoe Trail

City: Helendale Zip: 92342

Phone: 760-964-5080 FAX No.: N/A E-Mail: JULMCKELLAR@MSN.COM

Assessor's Parcel No. of Subject Property: 0465-631-13

General Location of Property: Mountain Spring Rd & Horseshoe Trail

Community/Area: Helendale/Silver Lakes HOA

1. I/We hereby appeal to the San Bernardino County: (check one)

Planning Commission from action by: (check one)

Director of Land Use Services and/or Director of Department of Public Works

Division Chief of Environmental Health Services (EHS)

Board of Supervisors from action by the County Planning Commission.

Chief Executive Officer from action by: (check one)

Director of the Land Use Services Department and the Director of the Department of Public Works

To be completed by County Staff: Filing Date: _____ Project No.: _____ JCS Project No.: _____



2. I/We are appealing the project action taken to:

~~DENY~~ DENY the project/waiver or modification request DENY the project without prejudice

APPROVE the project

APPROVE the project with conditions. (Attached a copy of the conditions, if they are the subject of the appeal).

ADOPT a Negative Declaration

OTHER (specify) Determination of accessory use.

3. Detail what is being appealed and what action or change you seek. Specifically address the findings, mitigation measure, conditions and/or policies with which you disagree. Also state exactly what action/changes you would favor.

See Attachment

4. State why you are appealing. Be specific. Reference any errors or omissions. Attach any supporting documentation, including any Conditions of Approval that are being appealed.

See Attachment

I/We certify that I/we are the:

Legal Owner(s)

Jeff S. McKee
[Signature of Appellant(s)]

Authorized Legal Agent(s)

Olivia McKellar
[Signature of Appellant(s)]

Other Interested Person(s)

Date: 12-15-14

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DEC 15 2014

Attachment A

Appeal of San Bernardino County Planning Department's determination that the proposed project is permitted accessory solar energy.

3. We disagree with the decision to permit the project as accessory solar until such a time as the County develops and implements appropriate regulations specific to accessory use of solar energy. According to table 82-7 / Allowed Uses and Permit Requirements for Residential Land Use Zoning Districts, the table identifies specifically Wind Energy Accessory and the appropriate regulating section of the development code (84.26), but there is no regulation for accessory solar. The Planning Department has chosen to approve the accessory solar under regulation code 84.01. Upon reviewing this section, there is no mention of the word "solar" as approved accessory use. However, the table does identify Renewable Energy Generation Facilities as being allowed if permitted with a CUP as regulated by 84.29 of the development code. Although this code speaks directly to commercial solar, due to the size, both in energy produced and physical site, we feel this project should meet the requirements under 84.29.035 of the development code. Specifically, we feel this project violates: (a) the solar energy facility is appropriate in relation to the desirability and future development of communities, neighborhoods, and rural residential uses. Furthermore, the project is not appropriate under part (c)(1)(A), (c)(1)(B), (c)(2), (c)(3)(A), and (c)(3)(B).

Additionally, the Planning Departments decision to permit this project as a ministerial process is incorrect and CEQA should apply to this project. Due to the fact that there is no specific regulating code for accessory solar, including no mention of "solar" in section 84.01, the County Planning Department is exercising discretion in approving the project as accessory use. According to the CEQA guidelines, the issuance of building permits is presumed to be ministerial in the absence of local ordinance provisions creating decision making discretion. However, no "presumption" exists unless the public entity retains no discretion whatsoever in approving an application for a permit. Such an utter lack of discretion exists only when the approving agency retains no discretion to exercise subjective judgment regarding the carrying out of any phase of the proposed project, but rather must only determine whether the proposal is consistent with applicable zoning based on the application of fixed standards. Standards are not fixed where they embody the earlier exercise of an agency's discretion that can be changed or ignored at the agency's discretion. Accordingly, issuance of a building permit would be considered discretionary when it requires application of judgment / (Guide to CEQA). Furthermore, upon reviewing the California Solar Permitting Guidebook, Senate Bill 226 only exempts from environmental review solar projects located on the roof of either an existing building or on an existing parking lot. Based on this, an EIR should be prepared regarding the impact this project may have on the environment and existing residences and vacant properties surrounding the proposed project.

It is clear the Planning Department does not have in place any regulations pertaining to accessory solar. In order to prevent potentially serious impacts to the desert environment, including the loss of endangered animal plant species, rural qualities of desert living, and

the decreased property values caused by location of a solar generating facility amid residences, this project should not be approved at this time.

However, if the Planning Commissions decides to approve the applicants accessory solar use, we request the project be moved to an alternative site. This alternative placement for this project, which is available to the applicant, would have less impact on environment and existing residences in the immediate area. The applicant owns a 236 acre piece of property contiguous to the Association. This larger piece of property is already disturbed, unused agricultural land which is next to a sewage treatment plant and vacant land owned by the Helendale CSD. It is not surrounded by residences. The project could be placed in an area which would have minimal impact on existing property values or desert living qualities and at a nominal expense to the applicant. Additionally, it would be within several hundred feet of an existing 80 acre solar generation facility and recently upgrade Edison transmission services.

4. Due to a lack of regulations and the size and scope of this project, which is similar in nature to a small commercial solar generating facility, this project is not appropriate for placement in an area surrounded by residences. The County's own regulations have been put into place to address this issue regarding commercial solar projects, but there is no regulations regarding accessory solar. By treating this project as simply a ministerial process, the County is not taking into consideration the potential impacts and the loss of property values for the surrounding property owners and destruction of natural, undisturbed desert land.

**Table 82-7
Allowed Land Uses and Permit Requirements for Residential Land Use Zoning Districts**

LAND USE <i>See Division 10 (Definitions) for land use definitions</i>	PERMIT REQUIRED BY DISTRICT			Specific Use Regulations
	RL ⁽¹⁾	RS	RM	
AGRICULTURAL, RESOURCE & OPEN SPACE USES				
Accessory crop production	A ⁽²⁾	A ⁽²⁾	A ⁽²⁾	84.01
Agricultural accessory structure - 1,000 sf max.	A	A	A	
Agricultural accessory structure - up to 10,000 sf max. on 5 ac. or less	A	---	---	
Agricultural accessory structure - greater than 10,000 sf. on 5 ac. or less	M/C	---	---	
Agricultural support services	CUP	---	---	
Animal keeping	S	S	S	84.04
Crop production, horticulture, orchard, vineyard, nurseries	A	---	---	
Livestock operations	CUP	---	---	84.04
Natural resources development (mining)	CUP	---	---	88.03
Nature preserve (accessory uses)	M/C	---	---	
Lake	M/C	CUP	---	
Pond	A	A	M/C	
INDUSTRY, MANUFACTURING & PROCESSING, WHOLESALING				
Composting operations	CUP	---	---	
Recycling facilities – reverse vending machine, accessory	S	---	---	84.19
RECREATION, EDUCATION & PUBLIC ASSEMBLY USES				
Agritourism enterprises	S	---	---	84.03
Campgrounds ⁽³⁾	CUP	---	---	
Commercial entertainment - Indoor ⁽³⁾	CUP	---	---	
Conference/convention facility ⁽³⁾	CUP	---	---	
Equestrian facility ⁽³⁾	M/C	S ⁽⁴⁾	---	
Golf course ⁽³⁾	CUP	---	---	
Library, museum, art gallery, outdoor exhibit ⁽³⁾	M/C	M/C	M/C	
Meeting facility, public or private ⁽³⁾	CUP	CUP	CUP	
Park, playground ⁽³⁾	P	P	P	
Places of worship	CUP	CUP	CUP	
Rural sports and recreation ⁽³⁾	M/C	---	---	
School – College or university	CUP	CUP	---	
School – Private	CUP	CUP	---	
School – Specialized education/training	CUP	---	---	
Sports or entertainment assembly ⁽³⁾	CUP	---	---	
RESIDENTIAL⁽¹¹⁾				
Accessory structures and uses	A	A	A	84.01
Caretaker housing	M/C ⁽⁵⁾	M/C	M/C	84.01
Dependent housing	SUP	SUP	SUP	84.08
Group residential (sorority, fraternity, boarding house, private residential club, etc.)	---	---	M/C	
Guest housing	A	A	A	84.01
Mobile home park/manufactured home land-lease community	CUP	CUP	CUP	84.14
Multiple dwelling, 2 to 3 units, attached or detached	---	---	A	84.16
Multiple dwelling, 4 to 19 units, attached or detached	---	---	A	84.16
Multiple dwelling, 20 to 49 units, attached or detached	---	---	MUP	84.16
Multiple dwelling, 50 or more units, attached or detached	---	---	CUP	84.16
Parolee and/or probationer home	---	---	CUP	
Secondary dwelling	A ⁽⁶⁾	A ⁽⁶⁾	---	84.01

San Bernardino County Code - Title 8 - Development Code

Residential Land Use Zoning Districts

82.04

LAND USE <i>See Division 10 (Definitions) for land use definitions</i>	PERMIT REQUIRED BY DISTRICT			Specific Use Regulations
	RL ⁽¹⁾	RS	RM	
Single dwelling	A	A	PD ⁽⁷⁾	
RETAIL				
Produce stand	A ⁽⁸⁾	A ⁽⁸⁾	A ⁽⁸⁾	
SERVICES - GENERAL				
Cemetery, including pet cemeteries	CUP	CUP	—	84.06
Child care - Small family day care home	A	A	A	
Child care - Large family day care home	MUP	MUP	MUP	
Child care - Day care center	M/C	M/C	M/C	
Commercial Kennels and Catteries - min lot 2.5 acres (over 15 animals)	M/C/S	—	—	84.04
Emergency shelter	—	—	CUP	84.33
Home occupation	SUP	SUP	SUP	84.12
Licensed Residential Care Facility of 6 or fewer persons	A	A	A	84.23
Licensed Residential Care Facility of 7 or more persons	—	—	CUP	84.23
Lodging - Bed and breakfast inn (B&B)	SUP ⁽⁹⁾	SUP ⁽⁹⁾	SUP ⁽⁹⁾	84.05
Public safety facility	M/C	M/C	M/C	
Short-Term Private Home Rental	SUP	SUP	SUP	85.28
Unlicensed Residential Care Facility with 6 or fewer persons	RCP	RCP	RCP	84.32
Unlicensed Residential Care Facility with 7 or more persons	—	—	CUP	
TRANSPORTATION, COMMUNICATIONS & INFRASTRUCTURE				
Broadcasting antennae and towers	M/C	—	—	
Electrical power generation	CUP	—	—	
Pipelines, transmission lines, and control stations ⁽¹⁰⁾	(10)	(10)	(10)	
Renewable Energy Generation Facilities	CUP	—	—	84.29
Sewage treatment and disposal facility	CUP	CUP	CUP	
Solid waste disposal	CUP	CUP	CUP	
Telecommunications facility	S	S	S	84.27
Transportation facility	M/C	M/C	M/C	
Utility facility	CUP	CUP	CUP	
Wind energy accessory	S	S	S	84.26
Wireless telecommunications facility	S	S	S	84.27
OTHER (continued)				
Accessory structures and uses	A	A	A	84.01
Temporary special events	TSP	TSP	TSP	84.25
Temporary structures and uses	TUP	TUP	TUP	84.25

KEY

A	Allowed use (no planning permit required)	PD	Planned Development Permit required (Chapter 85.10)
P	Permitted Use; Site Plan Permit required (Chapter 85.08)	SUP	Special Use Permit required (Chapter 85.14)
M/C	Minor Use Permit required; unless a Conditional Use Permit required in compliance with Section 85.06.050 (Projects That Do Not Qualify for a Minor Use Permit)	S	Permit requirement set by Specific Use Regulations (Division 4)
		TSP	Temporary Special Events Permit required (Chapter 85.16)
CUP	Conditional Use Permit required (Chapter 85.06)	RCP	Unlicensed Residential Care Facilities Permit (Chapter 85.20)
		TUP	Temporary Use Permit required (Chapter 85.15)
MUP	Minor Use Permit required (Chapter 85.06)	—	Use not allowed

Notes:

- (1) For projects within the Oak Glen Community Plan Area, all non-agritourism uses shall comply with the agritourism hours of operation standard [Subsection 84.03.030(b)(3)] and the agritourism noise/amplified sound regulations [Subsection 84.03.030(b)(5)].
- (2) Use allowed as an accessory use only with standards, on the same site as a residential use allowed by this table.
- (3) For projects within the Oak Glen Community Plan Area, these uses shall comply with the agritourism development standards provided in Table 84-1 in Section 84.03.030. The permit requirements presented this table shall prevail over any permit requirement listed in Table 84-1.
- (4) A boarding facility only with a Home Occupation Permit.
- (5) For parcels that are 10 acres or greater, a Site Plan Permit is all that is needed.

CHAPTER 84.26 ACCESSORY WIND ENERGY SYSTEMS

Sections:

- 84.26.010 Purpose.
- 84.26.020 Applicability.
- 84.26.030 Development standards.

84.26.010 Purpose

The purpose of this Chapter is to provide a uniform and comprehensive set of standards for the placement of accessory wind energy systems on parcels in unincorporated areas of the County in order to encourage the generation of electricity for on-site use, thereby reducing the consumption of electrical power supplied by utility companies. These regulations are intended to ensure that accessory wind energy systems are designed and located in a manner that minimizes visual and safety impacts on the surrounding community.

Adopted Ordinance 4011 (2007); Amended Ordinance 4067 (2009); Amended Ordinance 4188 (2012)

84.26.020 Applicability

This Chapter provides development standards for accessory wind energy systems.

Adopted Ordinance 4011 (2007); Amended Ordinance 4067 (2009)

84.26.030 Development Standards

- (a) **Maximum Number of Accessory Wind Energy Systems.** The maximum number of Accessory Wind Energy Systems on a single parcel is determined by the total combined rated kW hours for all the wind turbines in a system. Wind turbines are defined in Subsection 810.010.250(m)(4) of this Title. The maximum number of Accessory Wind Energy Systems is as follows:

**Table 84-14a
Maximum Number of Accessory Wind Energy Systems**

	Type of System	Requirements
Maximum Number of kW	Residential	10 kW
	Non-Residential	50 kW or verified actual energy use
Maximum Number of Turbines in the System	Building-Mounted Turbines	Based on the maximum number of kW
	Tower-Mounted Turbines	Based on the maximum number of kW. Only 1 turbine shall be attached to each tower
	Combined Building Mounted and Tower Turbines	Based on the maximum number of kW. Only 1 turbine shall be attached to a tower

- (b) **Maximum tower height.** The tower height limitations in Table 84-14b (Maximum Tower Heights for Accessory Wind Energy Systems) shall apply to all accessory wind energy systems, provided that the application for a system includes evidence that the proposed height does not exceed the height recommended by the manufacturer or distributor of the system.

**Table 84-14b
Maximum Tower Heights for Accessory Wind Energy Systems**

Land Use Zoning District (parcel size within zoning district)	Region		
	Valley	Mountain	Desert
AG	80'	80'	120'
RC	80'	80'	120'
RL (minimum one-half acre)	65'	65'	80'
RL-5, RL-10, RL-20, RL-40	80'	80'	100'
RM (minimum one-half acre)	52.5'	52.5'	52.5'
RS (minimum one-half acre)	52.5'	52.5'	52.5'
All other land use zoning districts	65' ⁽¹⁾	65' ⁽¹⁾	80' ⁽¹⁾
Note: (1) Or the maximum structure height specified in Division 2 (Land Use Zoning Districts and Allowed Land Uses) for the land use zoning district in which the system is located, whichever is greater.			

- (c) **System Separation Requirements.** All units located on the same parcel shall be separated from each other in accordance with the manufacturer's recommended distances.
- (d) **Setbacks.** The minimum setback from any property line shall be equal to the system height.
- (e) **Climbing apparatus.** Climbing apparatus shall be located at least 12 feet above the ground, and the tower shall be designed to prevent climbing within the first 12 feet.
- (f) **Lighting.** Tower structure lighting shall be prohibited unless required by another code or regulation.
- (g) **Noise.** The noise performance standards in Section 83.01.080 (Noise) shall apply, except during short-term events (e.g., utility outages, windstorms, etc.).
- (h) **Visual effects.** An accessory wind energy system shall not substantially obstruct views of adjacent property owners.
- (i) **Location.**
 - (1) An accessory wind energy system shall be placed or constructed below any major ridgeline when viewed from any designated scenic corridor as identified in the Open Space Element of the General Plan and in Chapter 82.19 (Open Space (OS) Overlay).

- (2) An accessory wind energy system shall not be:
 - (A) Located within a scenic corridor as identified in the Open Space Element of the General Plan and in Chapter 82.19 (Open Space (OS) Overlay).
 - (B) Allowed where otherwise prohibited by any of the following:
 - (I) The Alquist-Priolo Earthquake Fault Zoning Act.
 - (II) The terms of any easement.
 - (III) The listing of the proposed site in the National Register of Historic Places or the California Register of Historical Resources.
- (j) **Turbine certification.** All Wind Turbines in an Accessory Wind Energy System must be approved by the California Energy Commission as eligible in the Emerging Renewables Program or certified by a national program recognized and approved by the Energy Commission including the Clean Energy States Alliance.
- (k) **Engineering analysis.** The application shall include standard drawings and an engineering analysis of the system's tower, showing compliance with the California Building Code (CBC) or the California Residential Code (CRC) and certification by a professional mechanical, structural, or civil engineer licensed by the State. However, a wet stamp shall not be required, provided that the application demonstrates that the system is designed to meet the:
 - (1) CBC or CRC requirements for the applicable wind speed and exposure;
 - (2) CBC or CRC requirements for the applicable seismic design category;
 - (3) Requirements for a soil strength of not more than 1,000 pounds per square foot; or
 - (4) Other relevant conditions normally required by a local agency.
- (l) **Compliance with aviation law.** The system shall comply with all applicable Federal Aviation Administration requirements and the State Aeronautics Act (Public Utilities Code Section 21001 et seq.).
- (m) **Compliance with electrical code.** The application shall include a line drawing of the electrical components of the system in sufficient detail to allow for a determination that the installation conforms to the California Electric Code (CEC).
- (n) **Reduction in onsite electricity consumption.** The system shall be used primarily to reduce onsite consumption of electricity.

Adopted Ordinance 4011 (2007); Amended Ordinance 4067 (2009); Amended Ordinance 4098 (2010); Amended Ordinance 4188 (2012)

- (2) The design and siting of these facilities shall avoid the placement of turbines on or immediately adjacent to the upwind side of ridge crests;
- (3) The design may include other design features to minimize impacts to bats and birds; and
- (4) An avian and bat management plan shall be required for all projects to address unanticipated significant adverse impacts on the population of avian or bat species or with any other migratory corridor.

Adopted Ordinance 4098 (2010); Amended Ordinance 4156 (2011)

84.29.035 Required Findings for Approval of a Commercial Solar Energy Facility

- (a) In order to approve a commercial solar energy generation facility, the Planning Commission shall, in addition to making the findings required under Section 85.06.040(a) of the San Bernardino County Development Code, determine that the location of the proposed commercial solar energy facility is appropriate in relation to the desirability and future development of communities, neighborhoods, and rural residential uses, and will not lead to loss of the scenic desert qualities that are key to maintaining a vibrant desert tourist economy by making each of the findings of fact in subdivision (c).
- (b) In making these findings of fact, the Planning Commission shall consider: (1) the characteristics of the commercial solar energy facility development site and its physical and environmental setting, as well as the physical layout and design of the proposed development in relation to nearby communities, neighborhoods, and rural residential uses; and (2) the location of other commercial solar energy generation facilities that have been constructed, approved, or applied for in the vicinity, whether within a city or unincorporated territory, or on state or federal land.
- (c) The finding of fact shall include the following:
 - (1) The proposed commercial solar energy generation facility is either
 - (A) sufficiently separated from existing communities and existing/developing rural residential areas so as to avoid adverse effects, or
 - (B) of a sufficiently small size, provided with adequate setbacks, designed to be lower profile than otherwise permitted, and sufficiently screened from public view so as to not adversely affect the desirability and future development of communities, neighborhoods, and rural residential use.
 - (2) Proposed fencing, walls, landscaping, and other perimeter features of the proposed commercial solar energy generation facility will minimize the visual impact of the project so as to blend with and be subordinate to the environment and character of the area where the facility is to be located.

- (3) The siting and design of the proposed commercial solar energy generation facility will be either:
 - (A) unobtrusive and not detract from the natural features, open space and visual qualities of the area as viewed from communities, rural residential uses, and major roadways and highways,¹ or
 - (B) located in such proximity to already disturbed lands, such as electrical substations, surface mining operations, landfills, wastewater treatment facilities, etc., that it will not further detract from the natural features, open space and visual qualities of the area as viewed from communities, rural residential uses, and major roadways and highways.
- (4) The siting and design of project site access and maintenance roads have been incorporated in the visual analysis for the project and shall minimize visibility from public view points while providing needed access to the development site.
- (5) The proposed commercial solar energy generation facility will not adversely affect the feasibility of financing infrastructure development in areas planned for infrastructure development or will be located within an area not planned for future infrastructure development (e.g., areas outside of water agency jurisdiction).
- (6) The proposed commercial solar energy generation facility will not adversely affect to a significant degree the availability of groundwater supplies for existing communities and existing and developing rural residential areas.
- (7) The proposed commercial solar energy generation facility will minimize site grading, excavating, and filling activities by being located on land where the existing grade does not exceed an average of five (5) percent across the developed portion of the project site, and by utilizing construction methods that minimize ground disturbance.
- (8) The proposed commercial solar energy generation facility will be located in proximity to existing electrical infrastructure, such as transmission lines, utility corridors, and roads, so that:
 - (A) minimal ground disturbance and above ground infrastructure will be required to connect to the existing transmission grid, considering the location of the project site and the location and capacity of the transmission grid,
 - (B) new electrical generation tie lines will be co-located on existing power poles whenever possible, and

¹ To assist in this determination, photo simulations of the proposed commercial solar energy generation facility as viewed from sensitive receptors (i.e. residences, trails, parks) and public roadways in the area may be required as part of the project's application package.

Requirements of the Solar Rights Act are contained in the following sections of California law: California Civil Code, Sections 714 and 714.1, California Civil Code, Sections 801 and 801.5, California Government Code, Section 65850.5, California Health and Safety Code Section 17959.1, California Government Code, Sections 66473.1 and 66475.3.

California's Solar Shade Control Act

California's Solar Shade Control Act, enacted in 1978, is a state law intended to protect solar systems from being shaded from sunlight by neighboring trees or buildings. A 2008 amendment of this act limits the application of this law to situations in which a neighbor receives a notice that a solar energy system will be installed that they might shade if they plant trees or remodel their building.

Requirements of the act are contained in California Public Resources Code, Sections 25980 through 25986.

CEQA Exemption for Certain Solar Installations

Senate Bill 226, passed in 2011, is a state law establishing that certain solar energy systems are exempt from environmental review under the California Environmental Quality Act (CEQA). To qualify under this statutory exemption, a solar energy project must be located on the roof of either an existing building or on an existing parking lot. SB 226 makes clear the legislative intent that rooftop and parking lot solar projects do not require in-depth environmental review.

This CEQA exemption is contained in Section 21080.35 of the Public Resources Code.

Permit Fees

Current state law requires that fees charged by a local enforcing agency for permit processing and inspection cannot exceed the reasonable cost of providing the service for which the fee is charged. In other words, fee revenue must only be used to defray the cost of permit processing and enforcement and cannot be used for general revenue purposes. These requirements are contained in **Government Code Section 66016** and **State Health and Safety Code Section 17951**.

Many local governments across the state have reduced solar permit fees in recent years to ensure compliance with this law. Some local governments have also discontinued use of a "valuation method" of setting fees, which determines fees for a project simply based on the project's value. This method of setting solar permitting fees has no correlation to the costs of permit processing and enforcement and is therefore inconsistent with state law.

Some local governments have fully waived fees to install solar systems, recognizing the many benefits created by expansion of solar energy in their communities.

Attachment A

Appeal of San Bernardino County Planning Department's determination that the proposed project is permitted accessory solar energy.

3. The Silver Lakes Homeowners Association has entered into a site access agreement as well as a power purchase agreement with SLA Solar, LLC, to provide electricity for the Association at a fixed rate over the next twenty years. The site for placement of the solar system is on a contiguous 18 acre piece of property owned by the Association. This is vacant, naturally vegetated undisturbed land surrounded three sides by residential properties and the Association clubhouse complex consisting of a large indoor facility, swimming pool, and tennis courts. Initially, the proposed solar system consisted of approximately 3800 (270watt) fixed solar panels on 2 acres. This was changed to approximately 3400 (315watt) fixed solar panels on 4 acres. Eventually, the final proposal consisted of 2646 (315watt) solar panels with a single axis tracking system encompassing 10 acres. This is a large system, similar in nature to a small commercial grade project. The project was submitted to the Land Use Services Department and the application was approved as Accessory Solar due to the fact that 80 percent of the energy produced by the solar system was being consumed by the Association.

It is our contention that the Land Use Services decision to permit this project as a ministerial process is incorrect. In a notification received from the Land Use Services Department, they indicated an "analysis, prepared by a qualified professional, to determine if the proposed use should be permitted" was utilized in approving the accessory use. I requested a copy of this analysis, but at this time have not received one. I did receive a single page spreadsheet provided by the applicant indicating estimated annualized solar production of the system and energy consumption by the Association. In addition, I have repeatedly requested from the Land Use Service Department specific building and development codes identifying accessory solar use. However, I have not been provided with any codes identifying accessory solar.

Upon my review of the San Bernardino Development Code, I could not identify a specific regulating code for accessory solar. However, according to table 82-7 / Allowed Uses and Permit Requirements for Residential Land Use Zoning Districts, the table identifies specifically Wind Energy Accessory and the appropriate regulating section of the development code (84.26), but there is no regulation for accessory solar. The Planning Department has chosen to approve the accessory solar under regulation code 84.01. Upon reviewing this section, there is no mention of the word "solar" as approved accessory use. Due to a lack of Building and Development Codes identifying what constitutes accessory solar, the Land Use Services is exercising a large amount of discretion in approving the project as accessory use. Furthermore, by treating this project as a ministerial process, the Land Use Services Department is neglecting and not taking into consideration the environmental impact this project will have on surrounding property owners.

However, the table does identify Renewable Energy Generation Facilities as being allowed if permitted with a CUP as regulated by 84.29 of the Development Code. Although this code speaks directly to commercial solar, due to the size, both in energy produced and number of panels and tracking system, we feel this project should meet the requirements under 84.29.035 of the Development Code in order to comply with CEQA requirements. Within the application of 84.29.035(a), we feel this project site for this solar energy facility is not appropriate in relation to the desirability and future development of communities, neighborhoods, single family residential and rural residential uses, and will lead to loss of the scenic desert qualities that are key to maintaining a vibrant desert tourist economy due to the finding of facts under the following sections of:

84.29.035:(c)(1)(A) – The proposed solar energy facility is not sufficiently separated from the existing communities and existing/developing rural residential areas so as to avoid adverse effects. The proposed site is bordered on two sides by existing residence as well on another side by the Association Clubhouse. The dust pollution, noise, and aesthetics of the project will have a profound impact on the current quality of life existing residents have experienced and lead to a loss of property values.

(c)(1)(B) – The proposed solar energy facility is not adequately screened from public view and will adversely affect the desirability and future development of rural residential use. The existing fencing of the project site is poorly constructed with sub-standard material for the given environment and is screened only along one side. For the undeveloped properties bordering the west and north sides of the project, the elevation change makes screening of the solar panels impossible with the project site being below the undeveloped property.

(c)(2) – The fencing for the solar energy facility does not blend with and is not subordinate to the environment and character of the area. In fact, it draws your attention to the facility and stands out amongst the natural vegetation.

(c)(3)(A) – The solar energy facility will detract from the natural features, open spaces, and visual qualities of the area as viewed from single family and rural residential uses. Due to the elevation change, it is practically impossible to screen from view the facility for the properties bordering the north and west side.

(c)(3)(B) – The site for the solar energy facility is a natural, unadulterated desert land. It will detract from the natural features, open space, and visual qualities of the area.

(c)(9) - The solar energy facility site has not been evaluated for impact on endangered species. Several endangered desert tortoises have been observed over the past on the proposed site.

(c)(12) – Increased erosion will occur as flooding channels are created by the removal of vegetation and water run off from the solar panels.

(c)(22) – There is no wind barrier proposed to protect residences from blowing dust during construction and ongoing operation of the solar facility.

In addition, within the meaning of 84.29.035(b), the solar energy facility site is not appropriate given its relation to nearby communities, neighborhoods, and residential uses. Placing a solar energy facility on a site bordered by existing residences and a community meeting place is not appropriate due to environmental concerns. Along with decreased property values, noise and air pollution are just some of the concerns noted. In the past, the Planning Commission has denied projects similar to this when placed near existing residences.

In regards to treating this project strictly as a ministerial process, there are concerns CEQA maybe violated. According to the CEQA guidelines, the issuance of building permits is presumed to be ministerial in the absence of local ordinance provisions creating decision making discretion. However, no "presumption" exists unless the public entity retains no discretion whatsoever in approving an application for a permit. Such an utter lack of discretion exists only when the approving agency retains no discretion to exercise subjective judgment regarding the carrying out of any phase of the proposed project, but rather must only determine whether the proposal is consistent with applicable zoning based on the application of fixed standards. Standards are not fixed where they embody the earlier exercise of an agency's discretion that can be changed or ignored at the agency's discretion. Accordingly, issuance of a building permit would be considered discretionary when it requires application of judgment / (Guide to CEQA). In addition, upon reviewing the California Solar Permitting Guidebook, it indicates Senate Bill 226 exempts from environmental review solar projects located on the roof of either an existing building or on an existing parking lot. Based on this, either an environmental impact or negative declaration should be prepared regarding the impact this project may have on the environment and existing residences and vacant properties surrounding the proposed project.

There have been several environmental issues and concerns identified with a commercial grade project of this nature which will not be addressed if this project is treated as a ministerial project. First, there is the destruction of land utilized by the protected desert tortoise. Over the past 11 years, numerous tortoises have been seen on the proposed site. Second, there is the effect of soil erosion and diminished air quality. Although the proposed site does not have a severe elevation change, there is enough slope change to cause erosion of the soil, which has caused mud to flow onto and partially block the only access road to the 29 residences immediately adjacent to the site. With the removal of the vegetation of approximately half of the 18 acre parcel, along with the placement of 2600 solar panels creating flooding channels and congregating water flows, the soil erosion onto our access road maybe drastically increased. In addition, given the type of soil on the site, removal of vegetation will drastically increase the blowing dust in the area causing degradation of the air quality near the project. Third, the noise caused by the tracking system will have a severe impact on the surrounding residences. These tracking systems are not silent as panels adjust according to the time of day and

eventually reset. From sunrise to sunset, they generate noise throughout the day: 7 days a week, 365 days a year. I have spoken to property owners adjacent to single axis tracking facilities for two commercial projects in the high desert area. To quote one resident "I didn't sign up for all of this noise. They said it would be silent. I can't believe all the dust in my house now". Another resident stated "It makes noise all day long. Each time it moves, my dogs start barking and I go out to make sure someone isn't on my property". Lastly, there is the visual impact of the project. How is the project going to be screened from surrounding residence in order not to create a visual nuisance?

These are just some environmental concerns which need to be taken into consideration in approval of this type of project given its placement in a residential area. What impact will occur on the surrounding property values due to the aesthetics, noise, and air quality caused by the project? Is my residence, along with my neighbors, now worth 10% less if the project is developed? Who wants to live next to a project which creates noise throughout the day, makes it difficult to breathe or see when the strong winds blow? It is clear the Land Use Services Department does not have in place any regulations pertaining to accessory solar. In order to prevent potentially serious impacts to the desert environment, including the loss of endangered animal plant species, rural qualities of desert living, and the decreased property values caused by location of a solar generating facility amid residences, this project should not be approved for this specific site at this time.

However, if the Planning Commission decides to approve the applicant's accessory solar use, we request the following alternatives to be taken into consideration. To avoid any conflict with CEQA requirements, the Association has several existing parking lots and a recreational vehicle storage area which could be utilized for solar production. Throughout San Bernardino County, there are several parking lots where large systems are being utilized not only to produce electricity, but to provide a shade structure for parked vehicles. This meets the guidelines identified in the California Solar Permitting handbook. Another alternative is a 215 acre, contiguous parcel of fallowed agricultural land owned by the Association. This alternative placement for this project, would have less impact on environment and existing residences in the immediate area. This larger piece of property is already disturbed, fallowed agricultural land which is next to a sewage treatment plant and vacant land owned by the Helendale Community Services District. It is not surrounded by residences and the environmental concerns would be greatly diminished. This project would have a minimal impact on existing property values or desert living qualities and would be a nominal expense to the applicant. Additionally, it would be within several hundred feet of an existing 80 acre solar generation facility and near a recently upgraded Edison transmission services underground vault.

Lastly, if the Planning Commissions decides to approve the accessory use at the current site, we request the following actions be imposed on the project. First, the size of the project is scaled back to 100% of the Association current required use. According to the Land Use Services department, the project will produce 120% of the energy used allowing the solar provider to sell the overage to Edison. Scaling back the project to

100% will decrease the size of the project. This decrease will reduce the visual, dust, and soil erosion of the project. More importantly, we request the system is changed from a tracking system to a fixed panel, non-moving system. This will have a drastic impact on the noise emitted by the project and decrease the size of the project due to the decrease in spacing of the panels for a fixed system.

4. Due to a lack of regulations and the size and scope of this project, which is similar in nature to a small commercial solar generating facility, this project is not appropriate for placement in an area surrounded by residences. The County's own regulations have been put into place to address this issue regarding commercial solar projects, but there is no regulations regarding accessory solar. Given the size and scope of this project, how different is this from a small commercial project? Both the Planning Commission and Board of Supervisors have denied projects similar to this placed in residential neighborhoods. By treating this project as simply a ministerial process without any specific guidelines in the Development Code, the County is not taking into consideration the potential impacts and the loss of property values for the surrounding property owners and destruction of natural, undisturbed desert land. Consequently, if this project is approved, how do you prevent even larger projects proposed under accessory solar? In essence, you are zoning by default and will not have a basis for denying large projects similar in nature to this one . Therefore, we disagree with the decision to permit the project as accessory solar until such a time as the County develops and implements appropriate regulations specific to Accessory Solar, similar to Accessory Wind.



Project
site

Future
S.F.R
Development
58 parcels

CSD

Sewage
Treatment

Sunlight
Partners

4 MW
Solar

80 ac

Helendale
CSD - Park

80 ac

10 ac

215 ac Silver Lakes Prop.

Silver Lake MOA ↓

Silver Lakes RU Storage

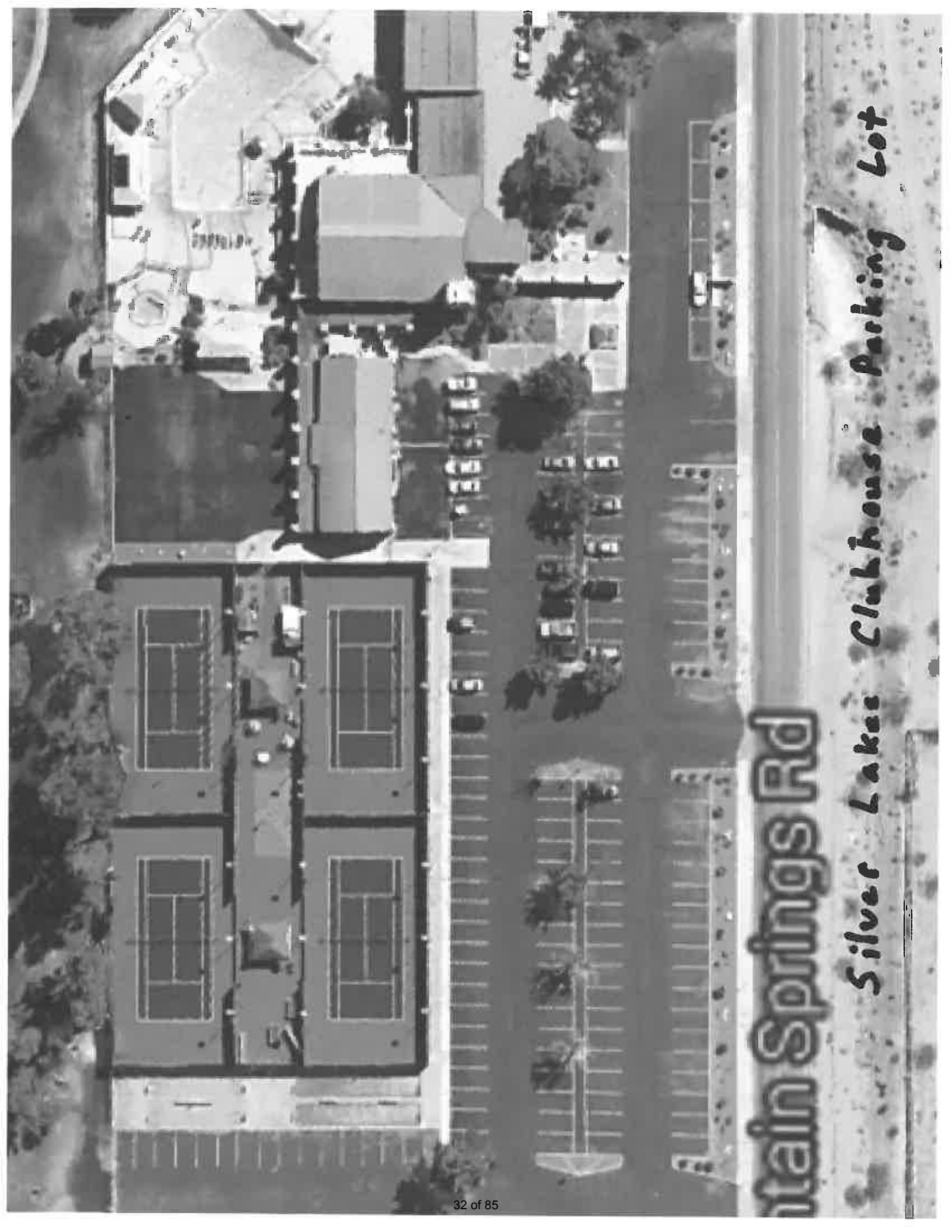


Rd

Hele

Hummingbird Ln

Silver Lakes - Restaurant Parking Lot.



Mountain Springs Rd

Silver Lakes Clubhouse Parking Lot

Oro Grande Solar - Upwind

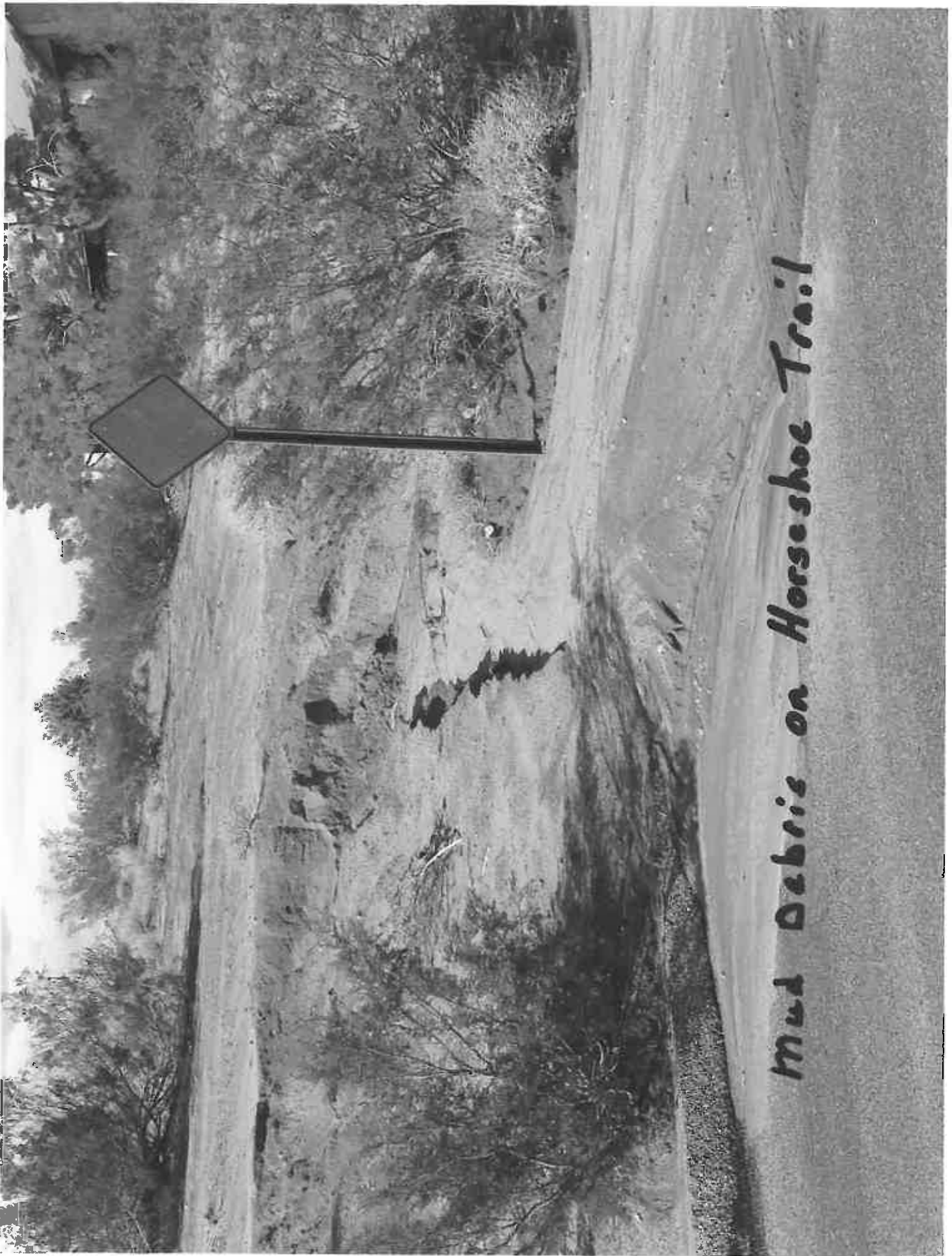


Oro Grande Solar - Downwind





Mud Dabric on Horseshoe Trail



Accessory Solar



Accessory Solar



Accessory Solar



EXHIBIT B

**Construction Plans for the Silver Lakes Community
Solar Facility**

GROUND MOUNT PHOTOVOLTAIC SYSTEM INSTALLATION SILVER LAKES COMMUNITY | TOTAL 578.340kWDC |

27801 MOUNTAIN SPRINGS ROAD, HELENDALE, CA 92342

ABBREVIATIONS:

A	AMPS
AC	ALTERNATING CURRENT
AL	ALUMINUM
ATS	AUTOMATED TRANSFER SWITCH
CB	COMBINER BOX
CKT	CIRCUIT
CU	COPPER
DC	DIRECT CURRENT
DISCO	DISCONNECT
E	EXISTING
EGC	EQUIPMENT GROUNDING CONDUCTOR
FG	FINISH GRADE
G	GENERATOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND
JB	JUNCTION BOX
M	METER
MDB	MAIN DISTRIBUTION BOARD
N	NEW (PROPOSED)
PB	PULL BOX
PE	POSITIVE EARTH
PNL	PANEL
PV	PHOTOVOLTAIC
XFMR	TRANSFORMER

SYMBOL LEGEND:

	NORTH ARROW		DISCONNECT
	KEYED NOTE		CIRCUIT BREAKER
	DRAWING TITLE		CIRCUIT BREAKER W/ KNIFE BLADE
	DETAIL/VIEW NUMBER ON SHEET		FUSED DISCONNECT
	VIEW TITLE		INVERTER
	DETAIL CALLOUT		PV MODULE
	DRAWING NUMBER		METER
	SHEET WHERE LOCATED IN DRAWING		POWER TRANSFORMER
	SECTION CALLOUT		
	DRAWING NUMBER		
	SHEET WHERE LOCATED IN DRAWING		
	ELEVATION CALLOUT		
	DRAWING NUMBER		
	SHEET WHERE LOCATED IN DRAWING		

PROPERTY DESCRIPTION:

VACANT LAND PARCEL
18.23 TOTAL AC
PARCEL NO APN: 046563113
CONSTRUCTION TYPE: TYPE II-B

SCOPE OF WORK:

INSTALLATION OF A GROUND MOUNT, SINGLE AXIS TRACKER PHOTOVOLTAIC SYSTEM TO BE CONNECTED AND METERED BY SCE TO OFFSET EXISTING ELECTRICAL LOADS FOR THE SILVERLAKES COMMUNITY IN HELENDALE, CA.

SYSTEM SUMMARY:

PV MODULE: (1,836) SW315 MODULES
COMBINER BOX: (6) AMTEC SOLAR 1000V
PV INVERTER: (1) SOLECTRIA SGI 500XTM INVERTER

TOTAL STC SYSTEM SIZE: 578.340kW (DC)
TOTAL CEC SYSTEM SIZE: 506.002kW (AC)

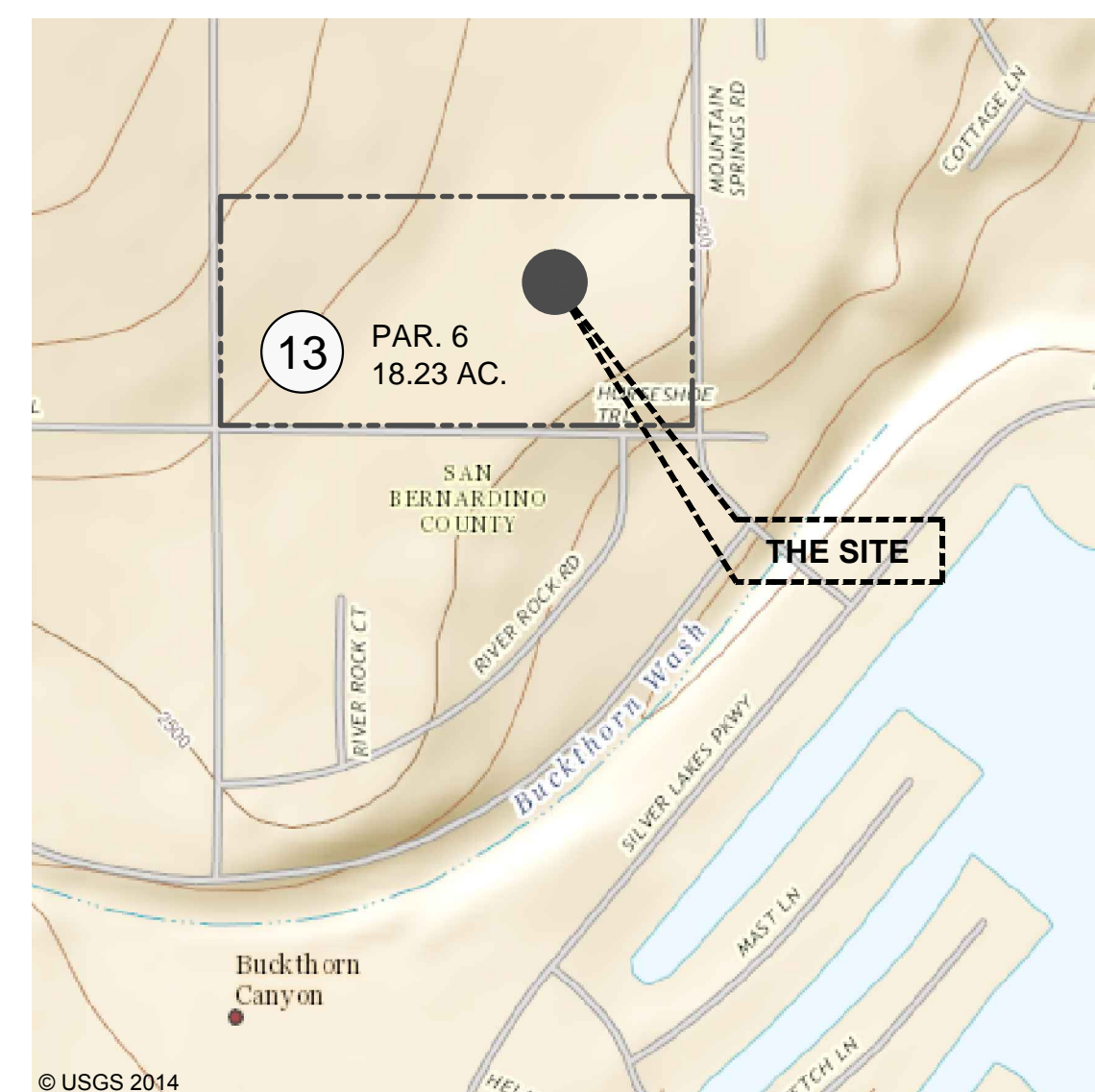
SHEET INDEX:

PV.00	COVER SHEET
PV.01	NOTES
PV.PM	PLOT PLAN
PV.E1	ELECTRICAL SITE PLAN
PV.A1	DETAILS
PV.S1	STRUCTURAL
PV.E2	SINGLE LINE DIAGRAM
PV.SPEC1	SPECIFICATION SHEETS

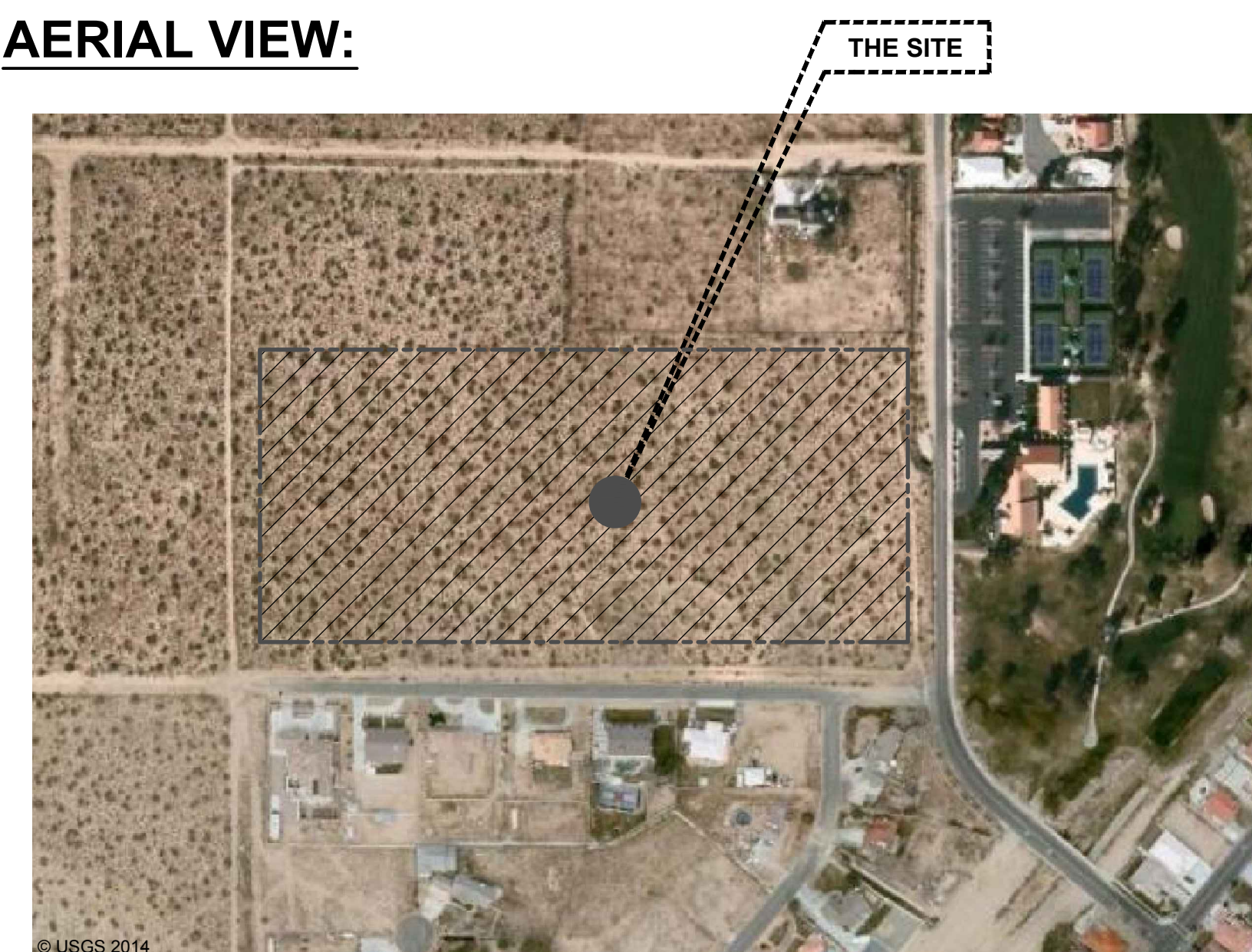
PROJECT NOTES:

THE DESIGN AND CONSTRUCTION OF THE PV SYSTEM SHALL BE IN COMPLIANCE WITH 2013 CALIFORNIA BUILDING CODE, ELECTRICAL CODE, MECHANICAL CODE, PLUMBING CODE, ENERGY CODE, AND GREEN CODE.

MAP VIEW:



AERIAL VIEW:



REVISION / RELEASE

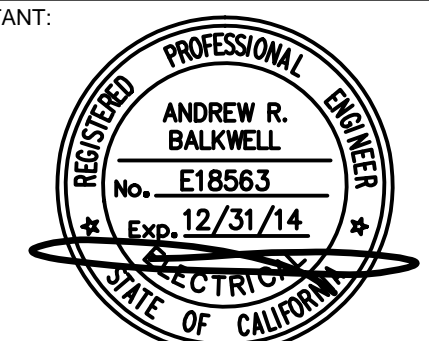
NO.	DESCRIPTION	DATE
1	FIRE COMMENTS	1/29/2015

CONTRACTOR:

SK SOLAR, INC.
BORIS VON BORMANN
2658 GRIFFITH PARK
BLVD. #410
LOS ANGELES, CA 90039 USA
PH: +1 (310) 461-8867
LICENSE NO. 991593



CONSULTANT:



PROJECT:

SILVER LAKES SOLAR FARM

27801 MOUNTAIN SPRINGS ROAD
HELENDALE, CA 92342

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

PV.00

PROJECT NOTES:

CONSTRUCTION NOTES

1. ALL PV MODULES AND ASSOCIATED EQUIPMENT SHALL BE PROTECTED FROM ANY PHYSICAL DAMAGE.
2. LIVE PARTS OF PV SOURCE CIRCUITS AND PV OUTPUT CIRCUITS OVER 150V TO GROUND SHALL NOT BE ACCESSIBLE TO OTHER THAN QUALIFIED PERSONS WHILE ENERGIZED.
3. THE ROOF MOUNTED PV MODULES SHALL HAVE THE SAME OR BETTER LISTED FIRE RESISTANCE RATING THAN THAT OF THE BUILDING ROOF COVERING MATERIAL.
4. NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE ABOVE THE ELECTRICAL EQUIPMENT.
5. ALL CONNECTORS AND COUPLERS ARE SET SCREW TYPE UNLESS OTHERWISE NOTED WHEN RUN INSIDE A BUILDING. ALL EXTERIOR CONNECTORS AND COUPLERS SHALL BE RAIN TIGHT.

GENERAL

1. ALL WORK SHALL CONFORM TO 2008 NEC W/ SPECIAL EMPHASIS ON ARTICLE 690 AND ALL LOCAL APPLICABLE CODE(S).
2. INSTALLATION SHALL COMPLY WITH MANUFACTURERS' RECOMMENDATIONS AND INSTRUCTIONS.
3. WARNING LABELS SHALL BE INSTALLED PER 2008 NEC.

GROUNDING

1. ALL SERVICES SUPPLYING THE BUILDING SHALL HAVE THE SAME GROUNDING ELECTRODE SYSTEM.
2. REMOVAL OF A GRID INTERACTIVE INVERTER OR OTHER EQUIPMENT SHALL NOT DISCONNECT THE BONDING CONNECTION BETWEEN THE GROUNDING ELECTRODE CONDUCTOR AND THE PHOTOVOLTAIC SOURCE AND / OR OUTPUT CIRCUIT GROUNDED CONDUCTOR.
3. GROUND BOND CONDUCTOR SHALL NOT BE SPLICED.
4. USE EQUAL OR APPROVED "LAY IN LUG" ILSCO, UL-467 RATED FOR GROUNDING AND BONDING. HIGH STRENGTH COPPER ALLOY W/ SS SCREW (AS NECESSARY).
5. DC EQUIPMENT GROUND SHALL BE MINIMUM #6AWG SOLID CU WIRE. TO BOND MODULE FRAMES AND RACKING SET.
6. CONTRACTOR SHALL CONFIRM EXISTING BUILDING AND PANEL GROUNDING PRIOR TO INSTALLATION.

PV SYSTEM COMPONENTS

1. ALL CONDUIT RUNS SHALL BE SPECIFICALLY REVIEWED IN THE FIELD WITH THE ARCHITECT FOR APPROVAL OF MOUNTING, ROUTING, AND EXPOSURE PRIOR TO INSTALLATION.
2. ALL PV SYSTEM COMPONENTS SHALL BE LISTED BY A RECOGNIZED TESTING AGENCY, i.e. UL1741, ect.
3. INVERTER SHALL BE EQUIPPED WITH INTEGRATED GFDI, THUS PROVIDING GROUND FAULT PROTECTION.
4. ALL ENCLOSURES MOUNTED TO EXTERIOR WALLS SHALL BE MIN. NEMA 3R RATED.
5. ALL COMBINER BOXES SHALL BE MIN. NEMA 4X.
6. ALL REQUIRED CONDUCTOR SPLICES SHALL BE MADE WITH UL LISTED "POLARIS LUG" IN AN APPROPRIATELY SIZED JUNCTION / GUTTER BOX.
7. ALL PV MODULES AND INVERTERS SHALL BE RECOGNIZED AND APPROVED BY THE CALIFORNIA ENERGY COMMISSION.
8. ALL ROOF MOUNTING CONDUIT, EXTERIOR AND INTERIOR SHALL BE EMT UNLESS NOTED OTHERWISE.

CONDUCTORS

1. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED.
2. ALL PROPOSED CONDUCTORS RATED FOR 90°C., HOWEVER EQUIPMENT RATINGS SHALL BE ASSUMED TO BE 75°C FOR ALL BUILDING FEEDERS AND THEREFORE TERMINATIONS PRIOR TO CONNECTION. INTERMEDIATE JUNCTION BOX MAY BE REQUIRED TO CHANGE FROM 90°C TO 75°C WIRING. MATERIAL SHALL BE COPPER AND 90°C RATED, SUITABLE FOR SUN EXPOSURE AND WET LOCATIONS. FIELD APPLIED COATINGS ARE NOT ACCEPTABLE.
3. ALL WIRE INSULATION TYPE SHALL BE THWN-2 OR USE-2 ON ROOF TO COMBINER BOXES.
4. EACH SOLAR PHOTOVOLTAIC MODULE HAS A POSITIVE AND NEGATIVE USE-2/RHW-2 "SUNLIGHT RESISTANT" QUICK CONNECT PLUG IN LEAD. VERIFY COMPATIBLE EXTENSION WIRES PRIOR TO INSTALLATION.
5. ALL INTER-MODULE SERIES CONNECTIONS TO BE TIE STRAPPED (W/ BLACK UV RESISTANT TIE STRAPS) AND/OR PRE-FABRICATED OR EQUAL APPROVED WIRE ROUTING TRAY SO AS TO BEST CONCEAL AND PROTECT INTERMODULE HOMERUN WIRING. ALL WIRING TO BE CONCEALED UNDER ARRAY AND / OR IN CONDUIT.
6. ALL HOMERUN WIRE RUNS BETWEEN ROWS SHALL BE MADE IN CONDUIT W/ STRAIN RELIEF FITTING OR WIRE COMPRESSION CLAMP AND CONDUIT PUTTY TO ACT AS BARRIER TO MOISTURE.
7. ALL HOMERUN WIRE RUNS OF LENGTH GREATER THAN 20' SHALL BE MADE FROM NEMA 3R MIN. RATED JBOX WITH THWN-2 CONDUCTORS IN CONDUIT.

FIRE NOTES

1. ALL CONSTRUCTION MUST COMPLY WITH ALL APPROPRIATE FIRE PROTECTION INSTALLATION STANDARDS AS ADOPTED BY THE SAN BERNARDINO COUNTY FIRE DEPARTMENT.
2. THIS REVIEW DID NOT INCLUDE ANALYSIS OF ANY RACK OR HIGH PILED COMBUSTIBLE STORAGE TO BE PRESENT. IF THERE IS TO ANY HIGH PILED OR RACK STORAGE PRESENT (INCLUDING PLASTICS STORAGE GREATER THAN 6 FEET), THE APPLICANT MUST PROVIDE STORAGE PLANS AND A LETTER TO IDENTIFY THE COMMODITIES TO BE PRESENT.
3. CONSTRUCTION PERMITS, INCLUDING FIRE CONDITION LETTERS, SHALL AUTOMATICALLY EXPIRE AND BECOME INVALID UNLESS THE WORK AUTHORIZED BY SUCH PERMIT IS COMMENCED WITHIN 180 DAYS AFTER ITS ISSUANCE, OR IF THE WORK AUTHORIZED BY SUCH PERMIT IS SUSPENDED OR ABANDONED FOR A PERIOD OF 180 DAYS AFTER THE TIME THE WORK IS COMMENCED. SUSPENSION OF ABANDONMENT SHALL MEAN THAT NO INSPECTION BY THE DEPARTMENT HAS OCCURED WITH 180 DAYS OF ANY PREVIOUS INSPECTION. AFTER A CONSTRUCTION PERMIT OR FIRE CONDITION LETTER, BECOMES INVALID AND BEFORE SUCH PREVIOUSLY APPROVED WORK RECOMMENCES, A NEW PERMIT SHALL BE FIRST OBTAINED AND THE FEE TO RECOMMENCE WORK SHALL BE ONE- HALF THE FEE FOR THE NEW PERMIT FOR SUCH WORK, PROVIDED NO CHANGES HAVE BEEN MADE OR WILL BE MADE IN THE ORIGINAL CONSTRUCTION DOCUMENTS FOR SUCH WORK, AND PROVIDED FURTHER THAT SUCH SUSPENSION OR ABANDONMENT HAS NOT EXCEEDED ONE YEAR. A REQUEST TO EXTEND THE FIRE CONDITION LETTER OR PERMIT MAY BE MADE IN WRITING PRIOR TO THE EXPIRATION DATE JUSITFYING THE REASON THAT THE FIRE CONDITION LETTER SHOULD BE EXTENDED. AMY APPROVALS MADE ARE BASED UPON SUBMITTED PLANS. FINAL APPROVAL IS SUBJECT TO REQUIRED FILED INSPECTION(S) AND ACCEPTANCE TEST(S), WITH ACCEPTABLE RESULTS, AS REQUIRED. ADDITIONAL REQUIREMENTS MAY BE ISSUED AT THE TIME OF THE FIELD INSPECTION(S) IF THERE IS ANY DEVIATION FROM THE APPROVED PLANS OR IN THE EVENT THAT ISSUES NOT ADDRESSED IN THE PLAN APPROVAL PROCESS ARE DISCOVERED IN THE FIELD.

WARNING LABELS AND PACARDS:

PHOTOVOLTAIC DC DISCONNECT	
WARNING: ELECTRIC SHOCK HAZARD. DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.	
PHOTOVOLTAIC POWER SOURCE RATINGS	
OPERATING CURRENT	148.1 A
OPERATING VOLTAGE	657.0 V
MAXIMUM SYSTEM VOLTAGE	968.5 V
SHORT CIRCUIT CURRENT	248.4 A

TO BE INSTALLED AT EACH COMBINER BOX.

- 1 **LABELS TO BE PLACED ON COMBINER BOXES**
SCALE: NTS

PHOTOVOLTAIC DC DISCONNECT	
WARNING: ELECTRIC SHOCK HAZARD. DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.	
PHOTOVOLTAIC POWER SOURCE RATINGS	
OPERATING CURRENT	888.4 A
OPERATING VOLTAGE	657.0 V
MAXIMUM SYSTEM VOLTAGE	968.5 V
SHORT CIRCUIT CURRENT	1490.2 A

PHOTOVOLTAIC SYSTEM AC DISCONNECT	
WARNING: ELECTRIC SHOCK HAZARD. DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.	
INTERACTIVE SOLAR PV SYSTEM RATINGS	
MAX. OPERATING CURRENT	760 A
OPERATING VOLTAGE	380 V

WARNING	
ELECTRIC SHOCK HAZARD IF A GROUND FAULT IS INDICATED, NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED	

- 2 **LABELS TO BE PLACED ON INVERTER**
SCALE: NTS

CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED

- 3 **LABEL FOR (E) MAIN SERVICE DISCONNECT**
SCALE: NTS

CAUTION: SOLAR ELECTRIC CIRCUIT

- 4 **OTHER EQUIPMENT LABELING**
SCALE: NTS

NOTES
1. EQUIPMENT MARKING SHALL COMPLY WITH CALIFORNIA STATE FIRE MARSHAL'S SOLAR PHOTOVOLTAIC INSTALLATION GUIDELINE SECTION 1.0.

NOTES
1. EQUIPMENT MARKING SHALL COMPLY WITH CALIFORNIA STATE FIRE MARSHAL'S SOLAR PHOTOVOLTAIC INSTALLATION GUIDELINE SECTION 1.0.

THE INSTALLATION OF SOLAR ARRAYS AND PHOTOVOLTAIC POWER SYSTEMS SHALL BE IN ACCORDANCE WITH THE MOST RECENT 2011 NEC, AS AMMENDED BY THE LOCAL AHJ. STRUCTURAL CONNECTIONS SHALL BE TO 2013 IBC AND THE LATEST CITY AND COUNTY ORDINANCES, FIRE SAFETY DURING CONSTRUCTION, ALTERATION OR DEMOLITION SHALL COMPLY WITH 2013 NFPA1.

WIRE COLOR CODING: DC CONDUCTORS:

UNGROUND CONDUCTOR (+)	BLACK
GROUNDED CONDUCTOR (-)	WHITE
GROUNDED CONDUCTOR (EGC)	GREEN, OR BARE

WIRE COLOR CODING: AC CONDUCTORS:

	277 /480V	120/208V
PHASE A	BROWN	BLACK
PHASE B	ORANGE	RED
PHASE C	YELLOW	BLUE
GROUNDED CONDUCTOR (NEUTRAL)	GREY	WHITE
GROUNDED CONDUCTOR (EGC)	GREEN OR BARE	GREEN OR BARE

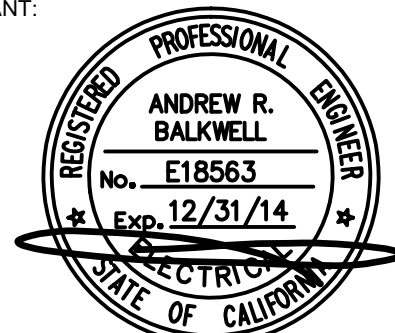
NOTE: FOR WIRE SIZES NO. 8AWG AND LARGER, COLOR BANDING TAPE MINIMUM 2 INCHES WIDE, MAY BE USED AT ALL ACCESSIBLE LOCATIONS IN LIEU OF COLORED INSULATION.

REVISION / RELEASE

NO.	DESCRIPTION	DATE
△	FIRE COMMENTS	1/29/2015

CONTRACTOR:
SK SOLAR, INC.
BORIS VON BORMANN
2658 GRIFFITH PARK
BLVD. #410
LOS ANGELES, CA 90039 USA
PH: +1 (310) 461-8867
LICENSE NO. 991593



CONSULTANT:


PROJECT:
SILVER LAKES SOLAR FARM

27801 MOUNTAIN SPRINGS ROAD
HELENDALE, CA 92342

SHEET TITLE:
NOTES

SHEET NUMBER:
PV.01

SCOPE OF WORK

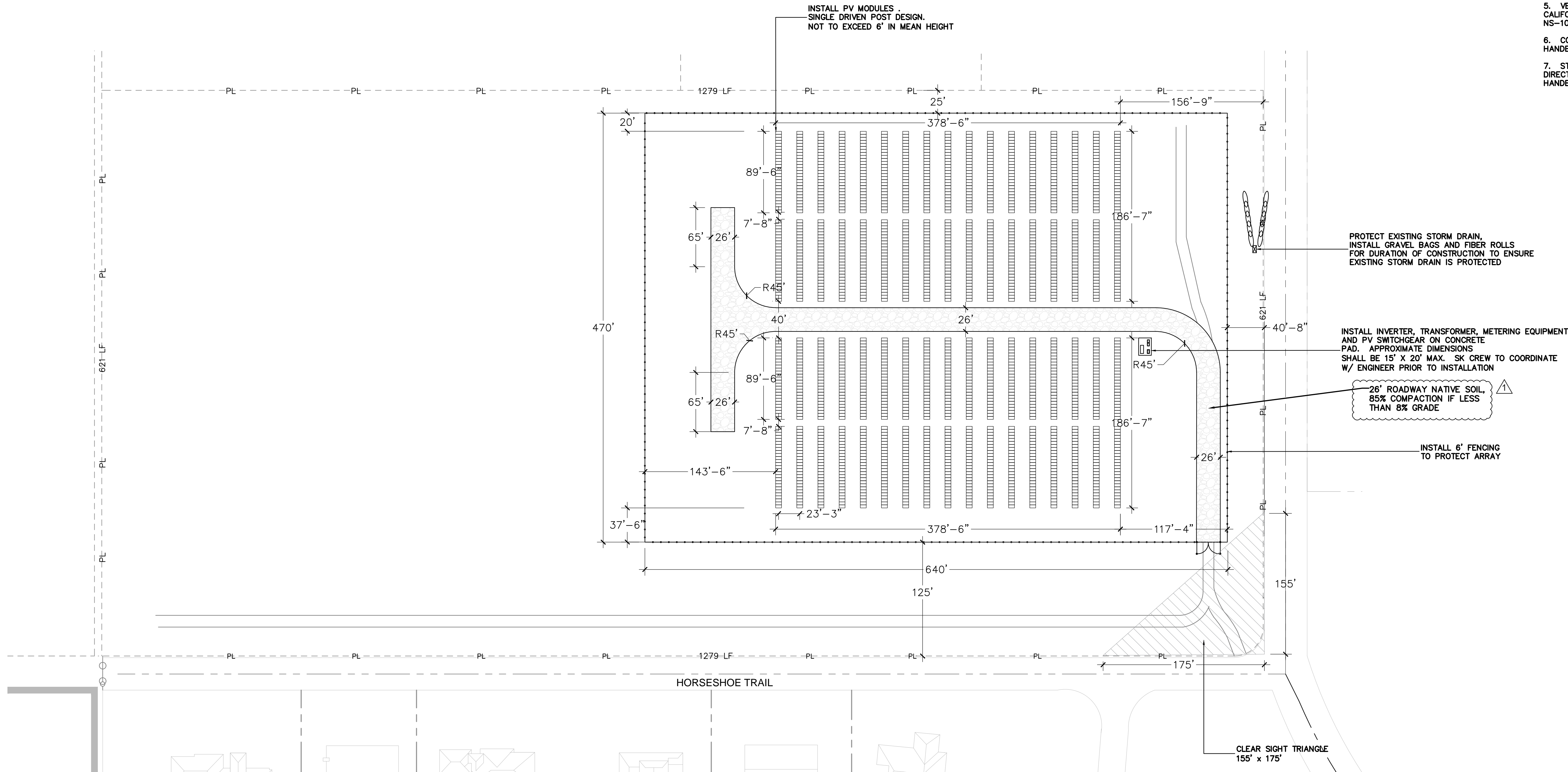
1. INSTALL 6' FENCING, APPROXIMATELY 300,800 SF
2. INSTALL 500KW PHOTOVOLTAIC SYSTEM CONSISTING OF 1846 PV MODULES, < 56,000 SF COVERAGE. INSTALL ALL RACKING AND INVERTERS ASSOCIATED PER PV.E1 OF THIS PLAN.
3. CONNECT TO SCE GRID VOLTAGE. SCE TO PROVIDE PAD AND TRANSFORMER

PROJECT NOTES

1. NO GRADING PROPOSED. EXISTING SITE DRAINAGE AND PROPERTY CONTOURS SHALL NOT BE ALTERED DURING CONSTRUCTION
2. NO NATIVE TREES SIX INCHES OR GREATER EXIST ON THIS SITE
3. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND STAKE OUT PROJECT EXTENTS PRIOR TO CONSTRUCTION.
4. ALL EQUIPMENT SHALL BE INSTALLED PER MFG INSTRUCTIONS.
5. ALL WORK SHALL CONFORM TO THE 2011 NEC AND 2013 CEC, AS WELL AS THE 2013 CALIFORNIA BUILDING CODE.

BMP CONSTRUCTION NOTES

1. INSTALL GRAVEL BAG BERM AROUND EXISTING CATCH BASINS.
2. STOCKPILE MANAGEMENT. SEE CALIFORNIA STORMWATER BMP HANDBOOK SECTION WM-3 FOR INSTALLATION INSTRUCTIONS.
3. PERMANENT 6' FENCE SHALL PROTECT EXISTING SITE DURING AND AFTER CONSTRUCTION.
4. PLACE TRASH AND RECYCLING RECEPTACLES AT CONVENIENT LOCATIONS THROUGHOUT THE PROJECT DURATION
5. VEHICLE EQUIPMENT CLEANING, FUELING, AND MAINTENANCE. SEE CALIFORNIA STORMWATER BMP HANDBOOK SECTION NS-8, NS-9, AND NS-10.
6. CONCRETE WASTE MANAGEMENT. SEE CALIFORNIA STORMWATER BMP HANDBOOK SECTION WM-8.
7. STREET SWEEPING AND VACUUMING TO OCCUR AS NEEDED OR AS DIRECTED BY THE QSP. SEE CALIFORNIA STORMWATER BMP HANDBOOK SECTION SC-7.

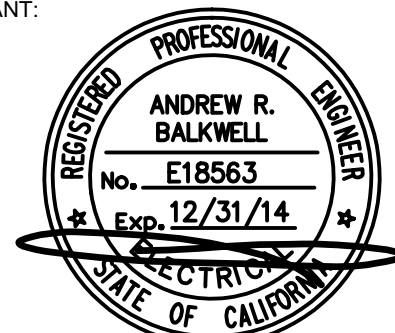


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CONTRACTOR:
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 2658 GRIFFITH PARK
 BLVD. # 410
 LOS ANGELES, CA 90039 USA
 PH: +1 (310) 461-8867
 LICENSE NO. 991593



CONSULTANT:





PROJECT:
SILVER LAKES SOLAR FARM

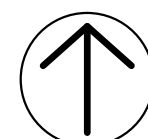
27801 MOUNTAIN SPRINGS ROAD
 HELENDALE, CA 92342

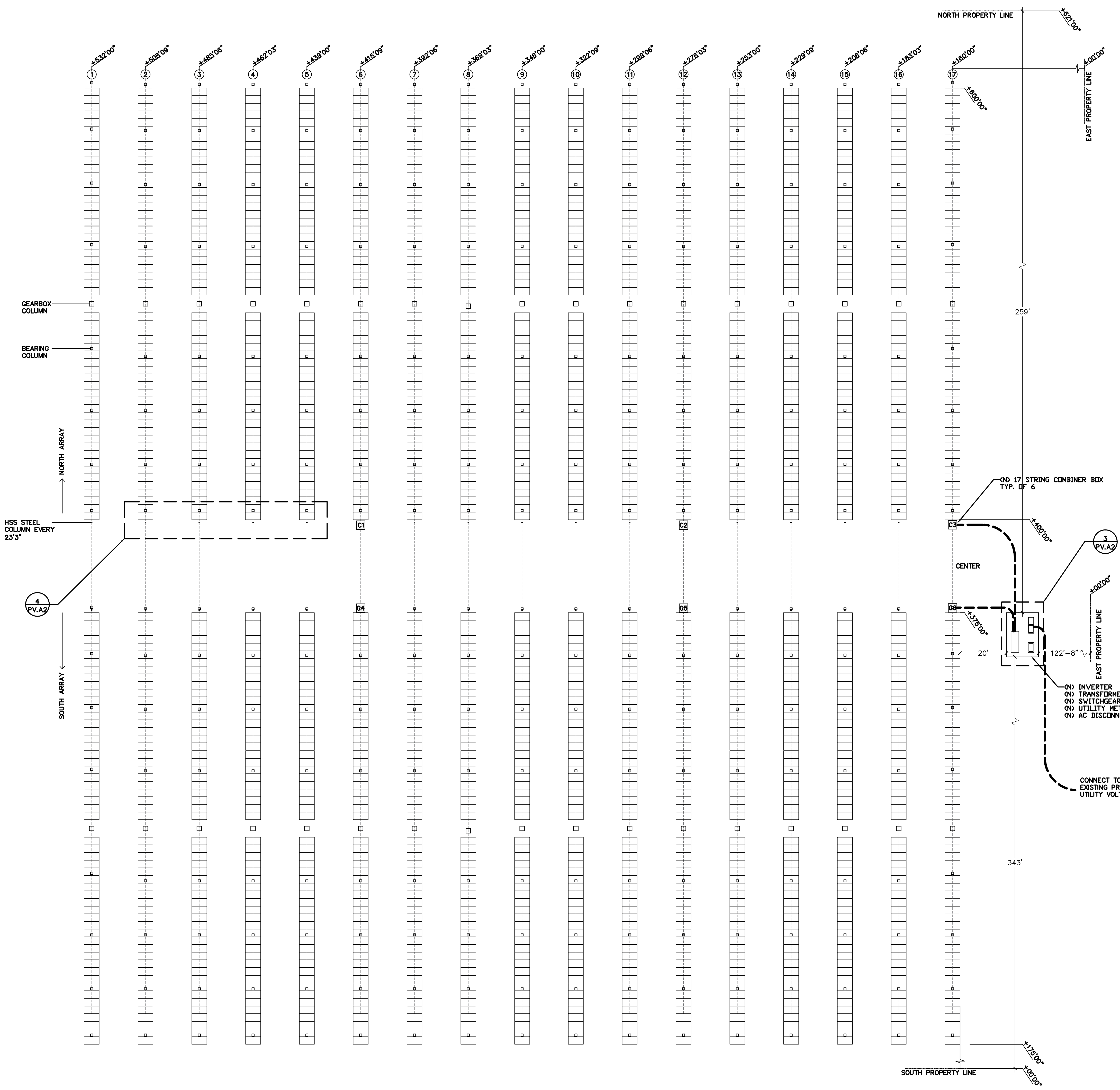
SHEET TITLE:
PLOT PLAN

SHEET NUMBER:
PV.PM

LEGEND

-  (N) 6' FENCE
-  (N) PV MODULES
INSTALL PER MFG
INSTRUCTIONS
-  FIBER ROLLS / GRAVEL BAGS





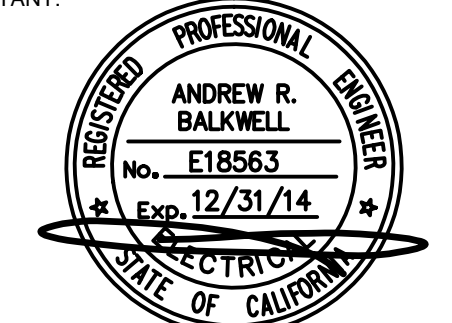
NOTE
 FOR DETAILS ON THE ARRAY AND POST LOCATION(S),
 PLEASE SEE PLANSET FROM ARRAY TECHNOLOGIES
 "DURATRACK HZ PROJECT: 10236 SILVER LAKES"
 PROVIDED WITH THIS SUBMITTAL

REVISION / RELEASE

NO.	DESCRIPTION	DATE
1	FIRE COMMENTS	1/29/2015

CONTRACTOR:
SK SOLAR, INC.
 BORIS VON BORMANN
 2658 GRIFFITH PARK
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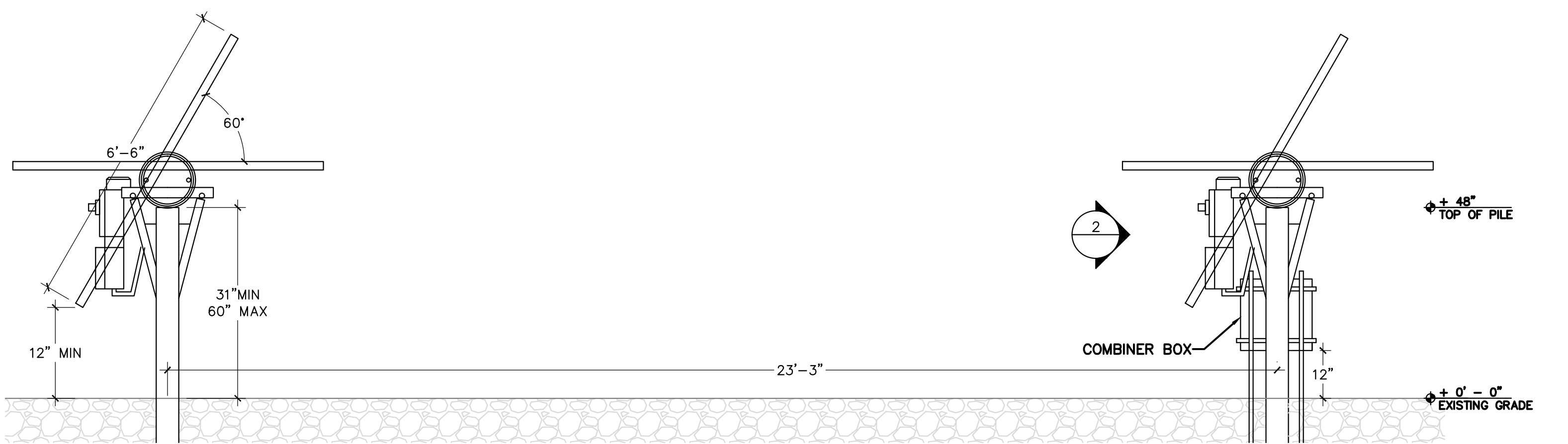


CONSULTANT:


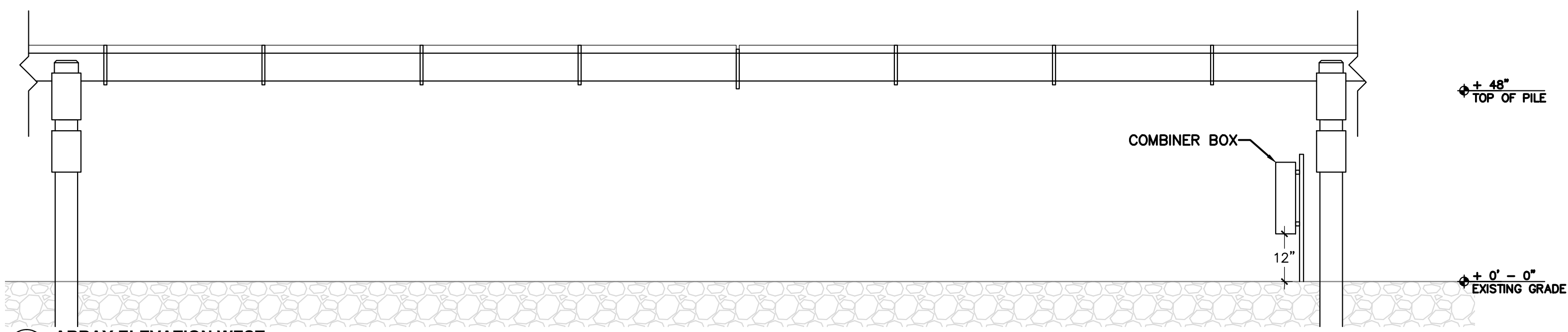
PROJECT:
SILVER LAKES SOLAR FARM
 27801 MOUNTAIN SPRINGS ROAD
 HELENDALE, CA 92342

SHEET TITLE:
ELECTRICAL SITE PLAN

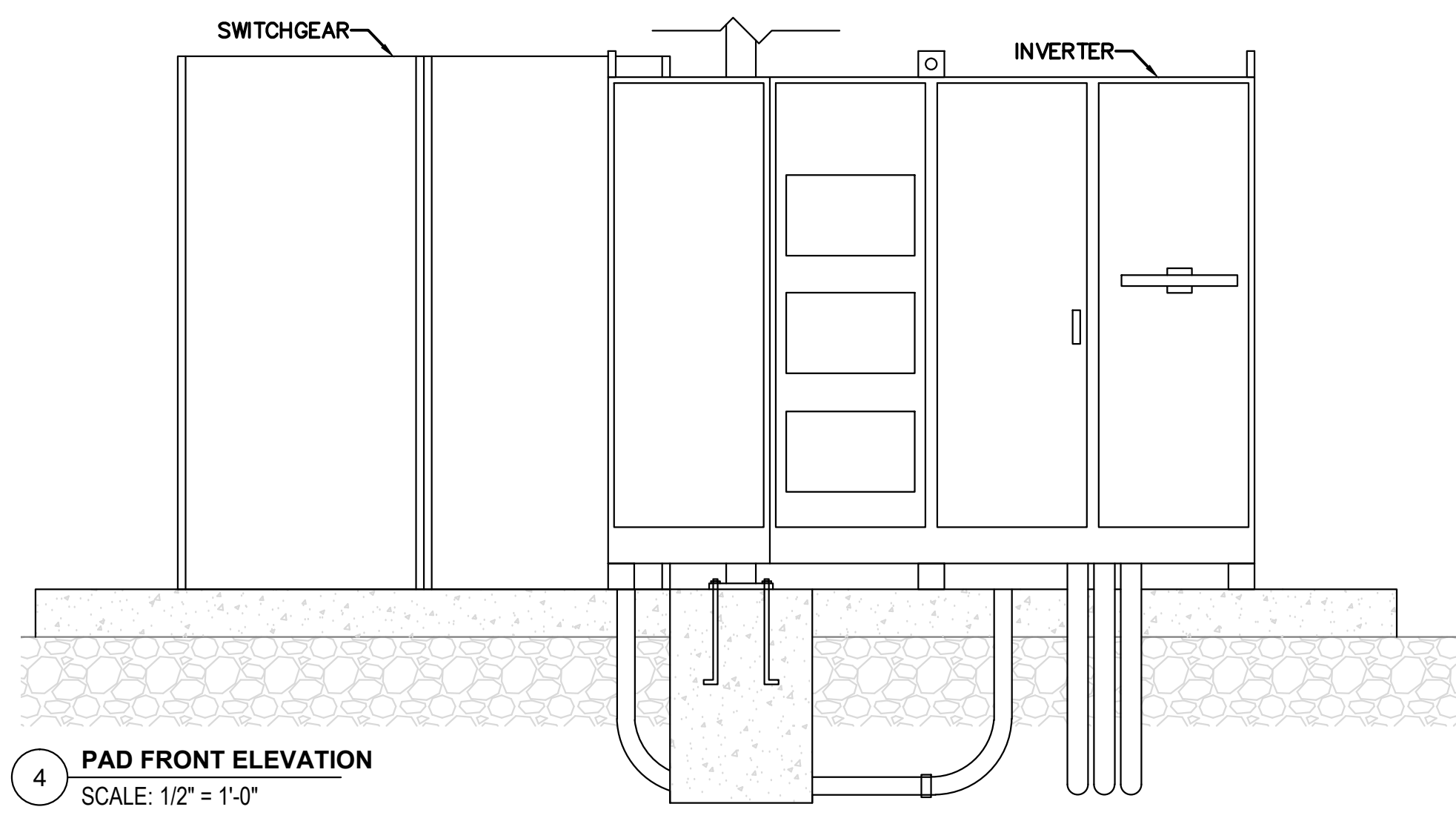
SHEET NUMBER:
PV.E1



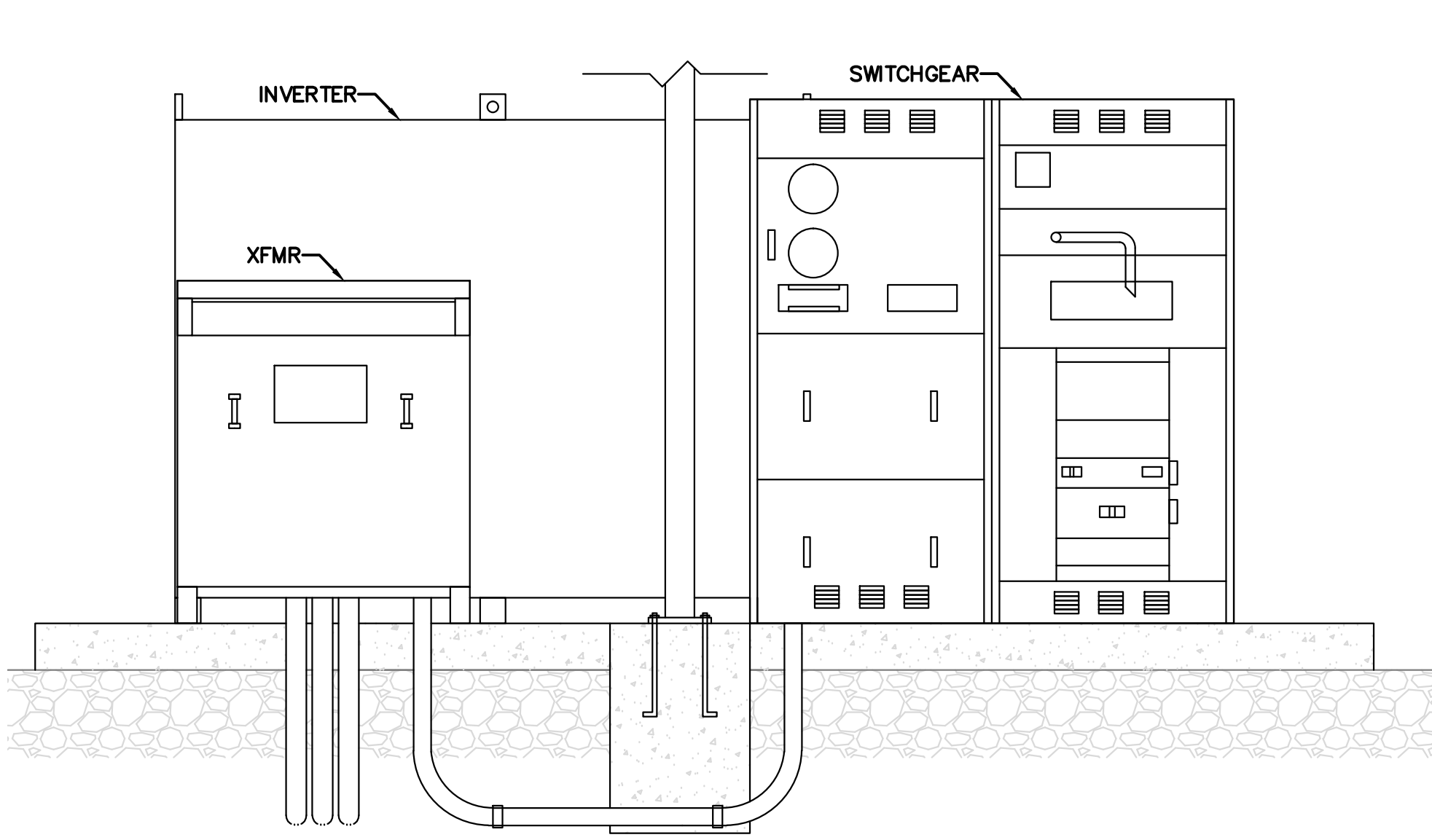
1 ARRAY ELEVATION EAST
Scale: 1/2" = 1'-0"



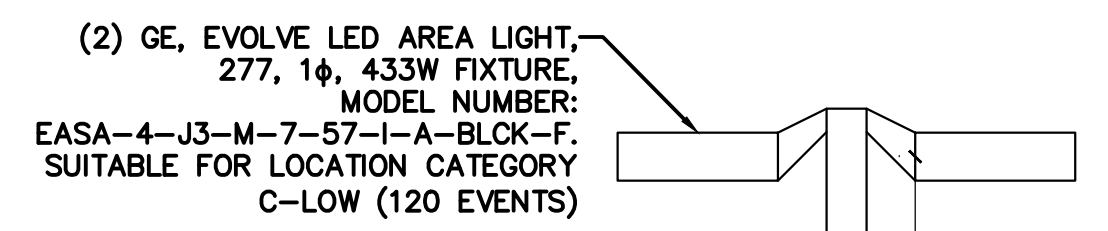
2 ARRAY ELEVATION WEST
Scale: 1/2" = 1'-0"



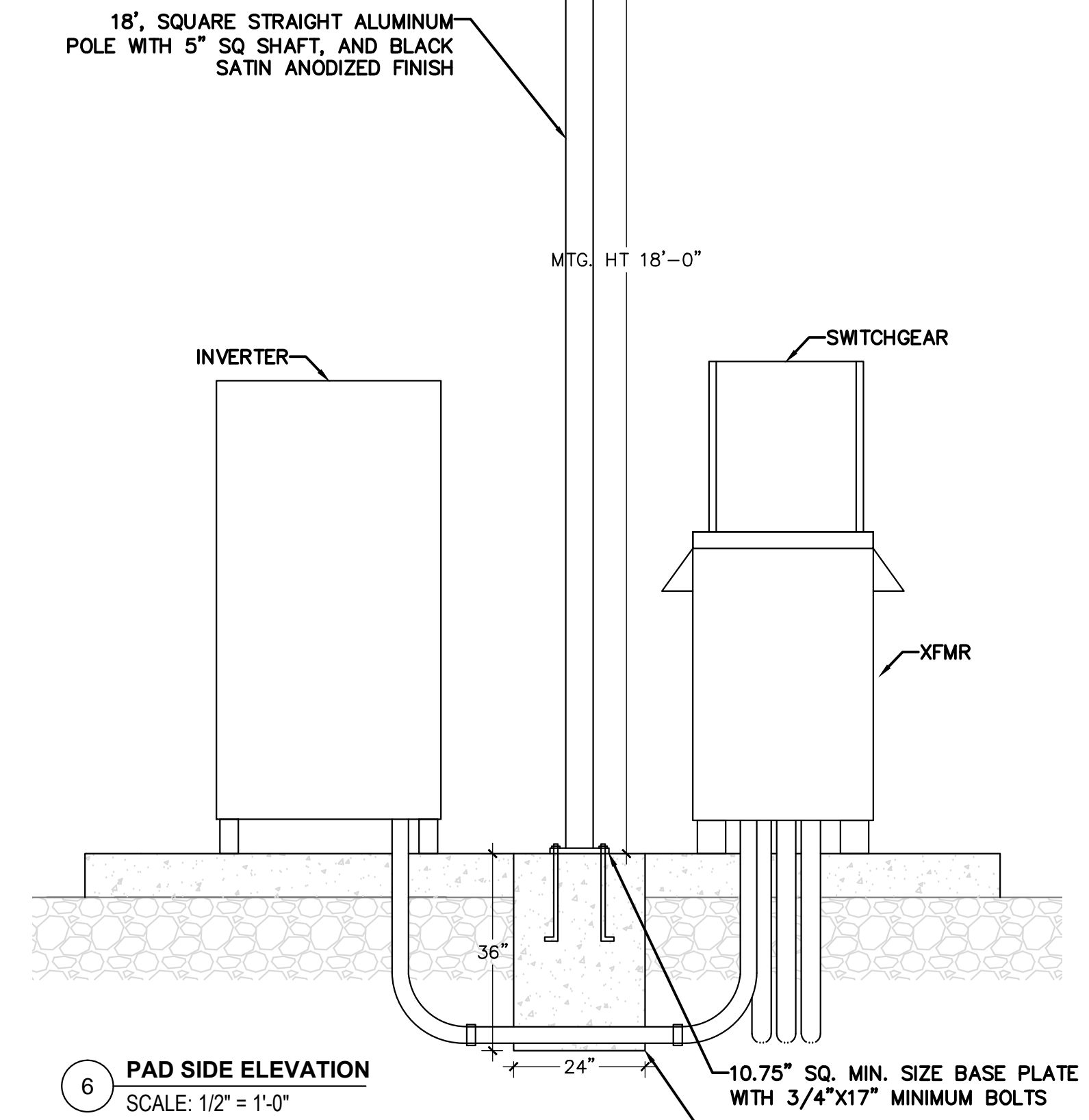
4 PAD FRONT ELEVATION
SCALE: 1/2" = 1'-0"



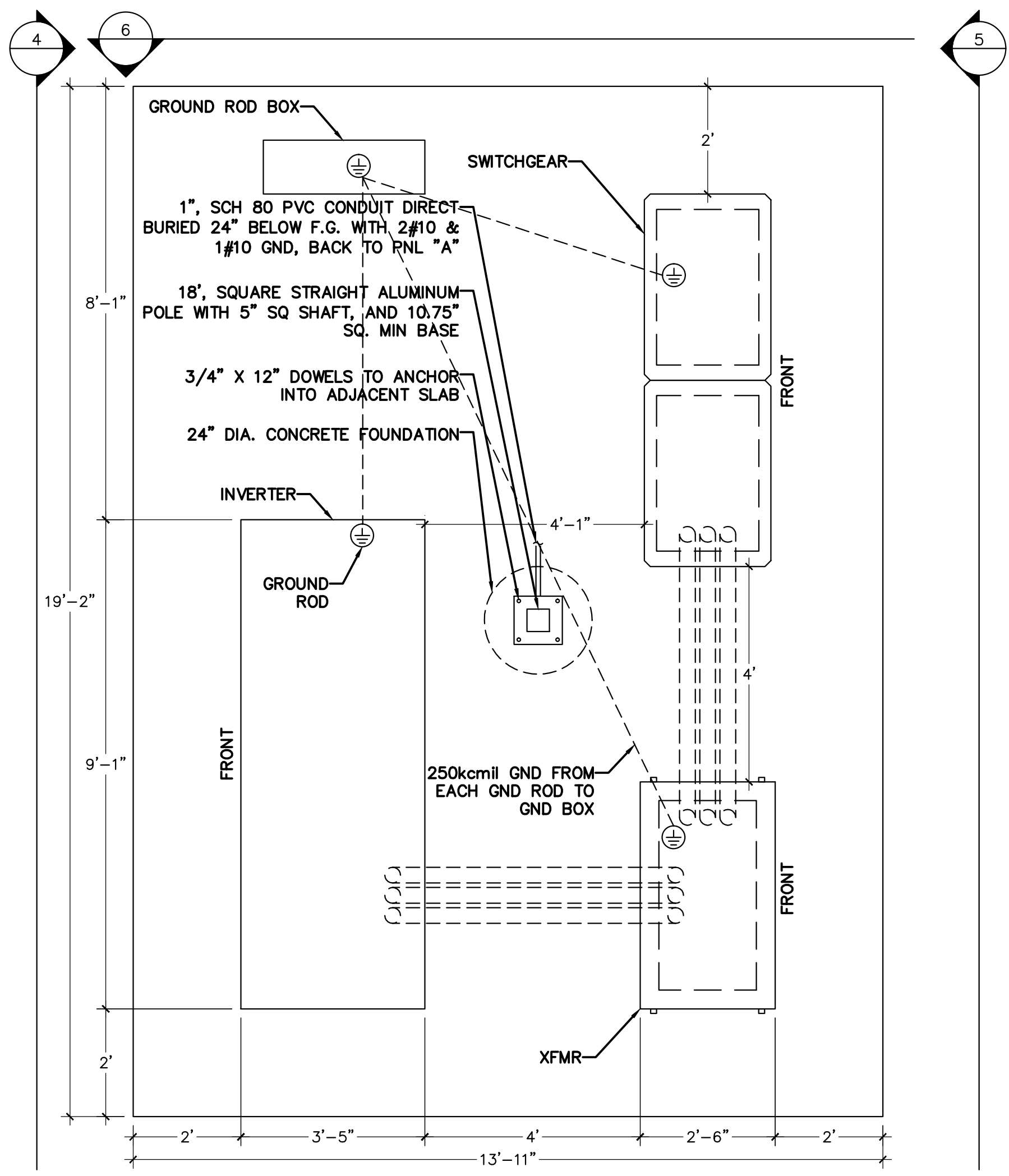
5 PAD REAR ELEVATION
SCALE: 1/2" = 1'-0"



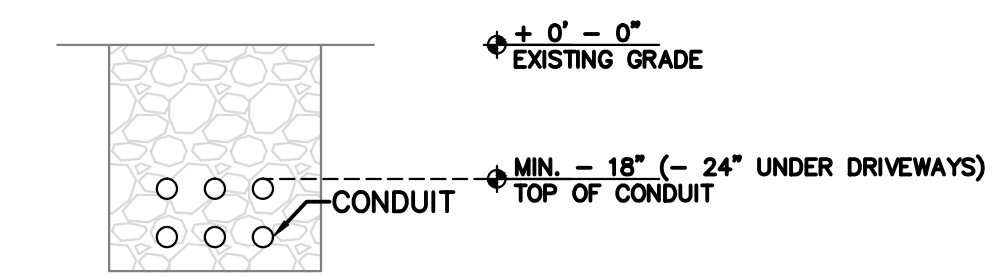
(2) GE, EVOLVE LED AREA LIGHT, 277, 1φ, 433W FIXTURE, MODEL NUMBER: EASA-4-J3-M-7-57-1-A-BLK-F, SUITABLE FOR LOCATION CATEGORY C-LOW (120 EVENTS)



6 PAD SIDE ELEVATION
SCALE: 1/2" = 1'-0"



3 PAD DETAIL
SCALE: 1/2" = 1'-0"



7 TRENCH SECTION
SCALE: 1/2" = 1'-0"

GENERAL NOTES

- FOR STRUCTURAL DETAILS AND CALCULATIONS FOR THE ARRAY AND DRIVEN POSTS, SEE STRUCTURAL NOTES BY D. MICHAEL HEMLICH, CALIFORNIA LICENSED PE.
- FOR STRUCTURAL DETAILS RELATED TO THE EQUIPMENT PAD, PLEASE SEE SHEET S.101 OF THIS PLAN SET.

GROUDNING AND BONDING

- THE REMOVAL OF AN INVERTER OR OTHER EQUIPMENT DISCONNECTS SHALL NOT DISCONNECT OR COMPROMISE THE BONDING CONNECTION BETWEEN THE GROUND ELECTRODE CONDUCTOR AND THE PV SOURCE. A BONDING JUMPER SHALL BE INSTALLED TO MAINTAIN THE SYSTEM GROUNDING WHILE THE INVERTER OR OTHER EQUIPMENT IS REMOVED.

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NO.	DESCRIPTION	DATE
1	FIRE COMMENTS	1/29/2015

CONTRACTOR:
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 BORIS VON BORMANN
 2658 GRIFFITH PARK
 BLVD. # 410
 LOS ANGELES, CA 90039 USA
 PH: +1 (310) 461-8867
 LICENSE NO. 991593

CONSULTANT:

PROJECT:
SILVER LAKES SOLAR FARM

27801 MOUNTAIN SPRINGS ROAD
 HELENDALE, CA 92342

SHEET TITLE:
DETAILS

SHEET NUMBER:
PV.A1

ELECTRICAL NOTES

- EXISTING CONDITIONS SHOWN ARE BASED ON AS-BUILT INFORMATION AND DO NOT REPRESENT ACTUAL EXISTING CONDITIONS THAT MAY EXIST IN THE FIELD.
- CONTRACTOR IS RESPONSIBLE FOR CONFIRMING ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND ALERTING THE ENGINEER TO ANY DEVIATIONS OR FIELD MODIFICATIONS PRIOR TO COMPLETING WORK.
- ADDITIONAL LOADS ASSOCIATED WITH NEW PANELS AND NEW PV WORK ARE DESIGNATED BASED ON THE EXISTING CONDITIONS SHOWN ON THE PLANS. IF EXISTING CONDITIONS DIFFER FROM THAT SHOWN ON THE PLANS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ALERT THE ENGINEER PRIOR TO ANY DEVIATIONS OR FIELD MODIFICATIONS PRIOR TO COMPLETING WORK.
- THE REMOVAL OF AN INVERTER OR OTHER EQUIPMENT DISCONNECTS SHALL NOT DISCONNECT OR COMPROMISE THE BONDING CONNECTION BETWEEN THE GROUND ELECTRODE CONDUCTOR AND THE PV SOURCE. A BONDING JUMPER SHALL BE INSTALLED TO MAINTAIN THE SYSTEM GROUNDING WHILE THE INVERTER OR OTHER EQUIPMENT IS REMOVED.

PV MODULE SPECIFICATIONS

SUNMODULE	PRO SERIES SW 315XL
PTC RATING:	275.6W
MAXIMUM POWER:	315 W
OPEN CIRCUIT VOLTAGE:	45.6 V
MAXIMUM POWER POINT VOLTAGE:	36.5 V
SHORT CIRCUIT CURRENT:	9.35 A
MAXIMUM POWER POINT CURRENT:	8.71 A
TEMPERATURE COEFFICIENT:	-0.304 %/K
CELLS PER MODULE:	72
FRAME:	ANODIZED ALUMINUM
WEIGHT:	49.6 LBS
CONNECTOR:	MC4

PV INVERTER SPECIFICATIONS

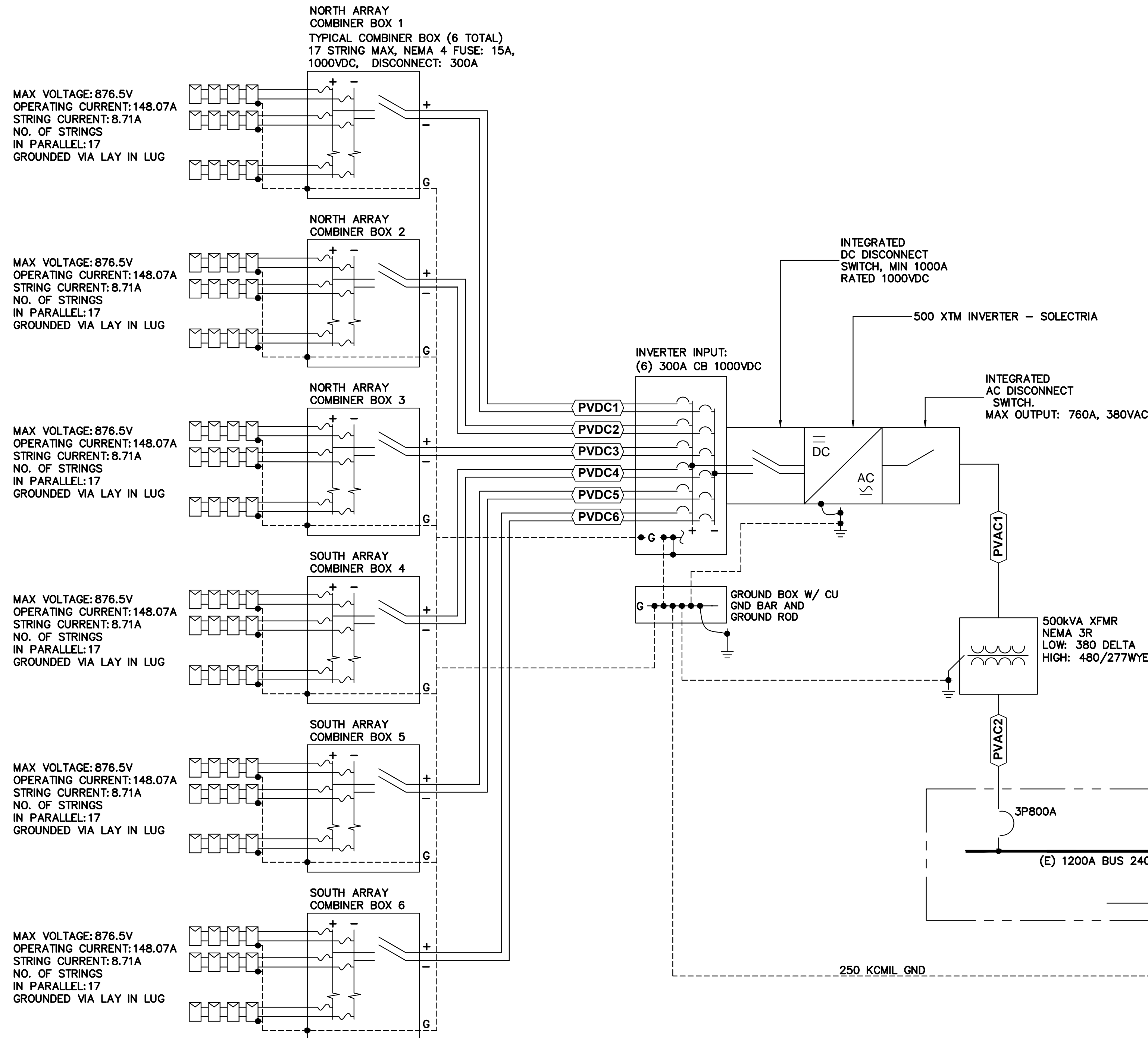
MANUFACTURER:	SOLECTRIA
MODEL:	SGI 500XTM
DC INPUT	
ABSOLUTE MAXIMUM OPEN CIRCUIT VOLTAGE	1000 VDC
MPPT INPUT VOLTAGE RANGE	545-820 VDC
MAXIMUM OPERATING INPUT CURRENT	965 A
AC OUTPUT	
NOMINAL OUTPUT VOLTAGE	380 VAC, 3-PH
AC VOLTAGE RANGE (STANDARD)	-12%/+10%
CONTINUOUS OUTPUT POWER	500 KW
CONTINUOUS OUTPUT CURRENT	760 A
MAXIMUM BACKFEED CURRENT	0 A
NOMINAL OUTPUT FREQUENCY	60 HZ
OUTPUT FREQUENCY RANGE	57-60.5 HZ

ELECTRICAL CALCULATIONS

AVERAGE HIGH TEMPERATURE: 100°F
 RECORD LOW TEMPERATURE: 0°F

MAX VOLTAGE:
 $\{[(-18^{\circ}\text{C} - 25^{\circ}\text{C}) * -0.003 * \text{Voc}] + \text{Voc}\} * 18$ (MODULES IN SERIES) = 928.1V

PANEL NO. NEW A		SECTION: 1 OF 1		Bus: 480 /277 Volts		<input type="checkbox"/> Main C.B.,		AMP			
Location: equip pad		Serving: Normal Power		3 PH, 4 Wire,		225 AMP		<input checked="" type="checkbox"/> Main Lugs Only			
Integrated Equipment SC Rating		<input type="checkbox"/> Feed Thru Lugs		<input type="checkbox"/> Iso. Gnd. Bus		<input type="checkbox"/> Flush Mnt.		<input type="checkbox"/> Top Feed			
10,000 RMS SYM AMPS		<input type="checkbox"/> SubFeed Lugs				<input checked="" type="checkbox"/> Surface Mnt.		<input checked="" type="checkbox"/> Bot. Feed			
Load Type	Circuit Description	CONN KVA	C.B.		C.B.		CONN KVA	Circuit Description	Load Type		
M	MC1 NORTH ARRAY MOTOR 1	1.50	15	3	1	A	2	3	15	MC2 NORTH ARRAY MOTOR 2	M
M	-	1.50	-	-	3	B	4	-	-	-	M
M	-	1.50	-	-	5	C	6	-	-	-	M
M	MC3 SOUTH ARRAY MOTOR 1	1.50	15	3	7	A	8	3	15	MC4 SOUTH ARRAY MOTOR 2	M
M	-	1.50	-	-	9	B	10	-	-	-	M
M	-	1.50	-	-	11	C	12	-	-	-	M
L	LIGHTING	1.00	20	1	13	A	14	-	-	Spare	
Total Receptacle (R) Load @ 180VA/ea., 100% for first 10,000VA, & 50% for remainder:										0.00 KVA	
Total Noncoincident (E) Load		0.00 KVA (Not included in demand load)		Total HVAC (H) Load:						0.00 KVA	
Total Lighting (L) Load @ 1.25%:		1.25 KVA		Total NonContinuous (N) Load:						0.00 KVA	
Total Motor (M) Load:		18.00 KVA		Largest Motor: (25% added to demand load):						0.13 KVA	
TOTAL CONNECTED LOAD:		19.0 KVA		CONNECTED AMP		A B C		TOTAL DEMAND LOAD		19.4 KVA 23.3 A	
				Total / Φ		25 22 22					



PANEL SCHEDULE "PNL-A"

X	Copper	The calculation assumes uncoated copper or aluminum conductors operating at 90°C for all cables and is based on the DC resistance or impedance from NEC 2011 Tables 8 and 9 for stranded conductors operating on a 60Hz system.										Note: Voltage drop for ac systems should total no more than 5% under full load conditions. Voltage drop for dc systems should be designed as low as possible or less than 2%.				
621	Aluminum	The ampacity of each conductor size is based on NEC 2011 Table 310.15(B)(16) for insulated conductors rated 0 through 2000 volts with not more than three current carrying conductors in raceway, cable or earth with an ambient of 30°C (86°F).														
Over	VD	Feeder	Cables	Max Length (ft)	Max Current (A)	Cable Size	Conduit Sched 40 PVC	Distance off Roof (in.)	Design Temp	Add Factor	Derate Factor (Table 310.15(B)(16))	MAX ADJUST (310.15(B)(16))	Usable Current	Voltage Drop (V)	Voltage Drop (%)	General Formula:
OK	OK	PVDC1	(2)350 kcmil THWN-2, (1)#4 THWN-2	350	248.36	350 kcmil	2 1/2"	N/A	100° F	N/A	0.88	1.0	308.00	6.38	1.03%	
OK	OK	PVDC2	(2)350 kcmil THWN-2, (1)#4 THWN-2	200	248.36	350 kcmil	2 1/2"	N/A	100° F	N/A	0.88	1.0	308.00	3.65	0.59%	
OK	OK	PVDC3	(2)350 kcmil THWN-2, (1)#4 THWN-2	80	248.36	350 kcmil	2 1/2"	N/A	100° F	N/A	0.88	1.0	308.00	1.46	0.24%	
OK	OK	PVDC4	(2)350 kcmil THWN-2, (1)#4 THWN-2	350	248.36	350 kcmil	2 1/2"	N/A	100° F	N/A	0.88	1.0	308.00	6.38	1.03%	
OK	OK	PVDC5	(2)350 kcmil THWN-2, (1)#4 THWN-2	200	248.36	350 kcmil	2 1/2"	N/A	100° F	N/A	0.88	1.0	308.00	3.65	0.59%	
OK	OK	PVDC6	(2)350 kcmil THWN-2, (1)#4 THWN-2	80	248.36	350 kcmil	2 1/2"	N/A	100° F	N/A	0.88	1.0	308.00	1.46	0.24%	

X	Copper	The calculation assumes uncoated copper or aluminum conductors operating at 75°C for all cables and is based on the AC resistance or impedance from NEC 2011 Tables for stranded conductors operating on a 60Hz system.										Note: Voltage drop for ac systems should total no more than 3% under full load conditions.				
3	Aluminum	The ampacity of each conductor size below is based on NEC 2011 Table 310.15(B)(16) for insulated conductors rated 0 through 2000 volts with not more than three current carrying conductors in raceway, cable or earth with an ambient of 30°C (86°F).														
Over	VD	Feeder	Cables	Length (ft)	Max Current (A)	Cable Size	Raceway	Distance off Roof (in.)	Design Temp	Add Factor	Derate Factor (Table 310.15(B)(16))	ADJUST (310.15(B)(16))	Usable Current	Voltage Drop (V)	Voltage Drop (%)	General Formula:
OK	OK	380	PVAC1 3 Sets of: (4)600 kcmil THWN-2, (1)#3 THWN-2 GND	10	950.00	600 kcmil	(3) 3 1/2"	N/A	100° F	N/A	0.88	1.0	1108.80	0.00	0.04%	3PH = ((1.7^1.1z) / 1000)^ 1/Vmax
OK	OK	480	PVAC2 2 Sets of: (4)700 kcmil THWN-2, (1)#3 THWN-2 GND	10	752.08	700 kcmil	(2) 4 "	N/A	100° F	N/A	0.88	1.0	809.60	0.00	0.04%	


FEEDER SCHEDULE

REVISION / RELEASE

NO.	DESCRIPTION	DATE
1	FIRE COMMENTS	1/29/2015

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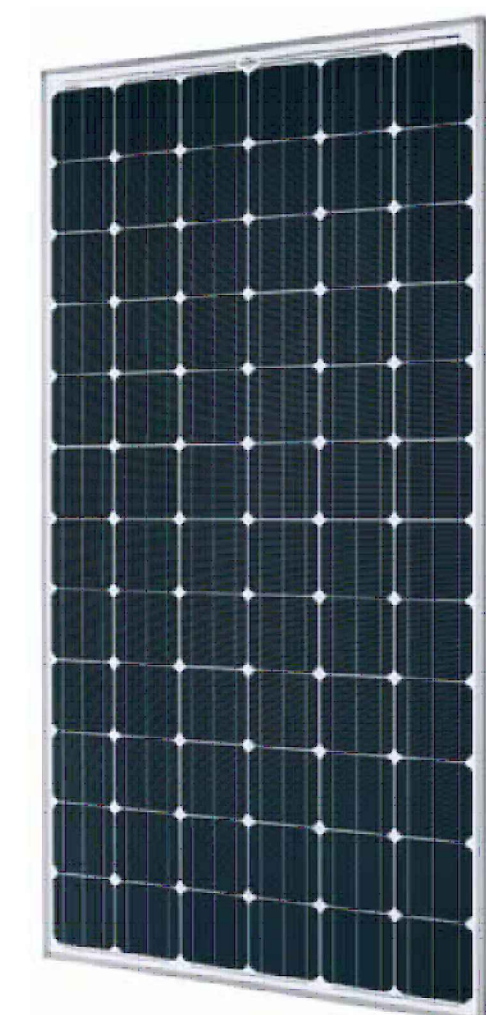
CONSULTANT:

 PROJECT:
SILVER LAKES SOLAR FARM

27801 MOUNTAIN SPRINGS ROAD
 HELENDALE, CA 92342

SHEET TITLE:
ELECTRICAL SINGLE LINE

SHEET NUMBER:
PV.E2

Sunmodule Pro-Series SW 305/310/315 XL mono



- TUV Power controlled.** Lowest measuring tolerance in industry
- RELIABLE** Every component is tested to meet 3 times IEC requirements
- ROBUST** Designed to withstand heavy accumulations of snow and ice
- +** Surmodule Pro-Series: Positive performance tolerance
- 25 Year** 25-year linear performance warranty and 10-year product warranty
- Quality modules made in Germany** Produced in Germany

Sunmodule Pro-Series SW 305/310/315 XL mono

PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC)*

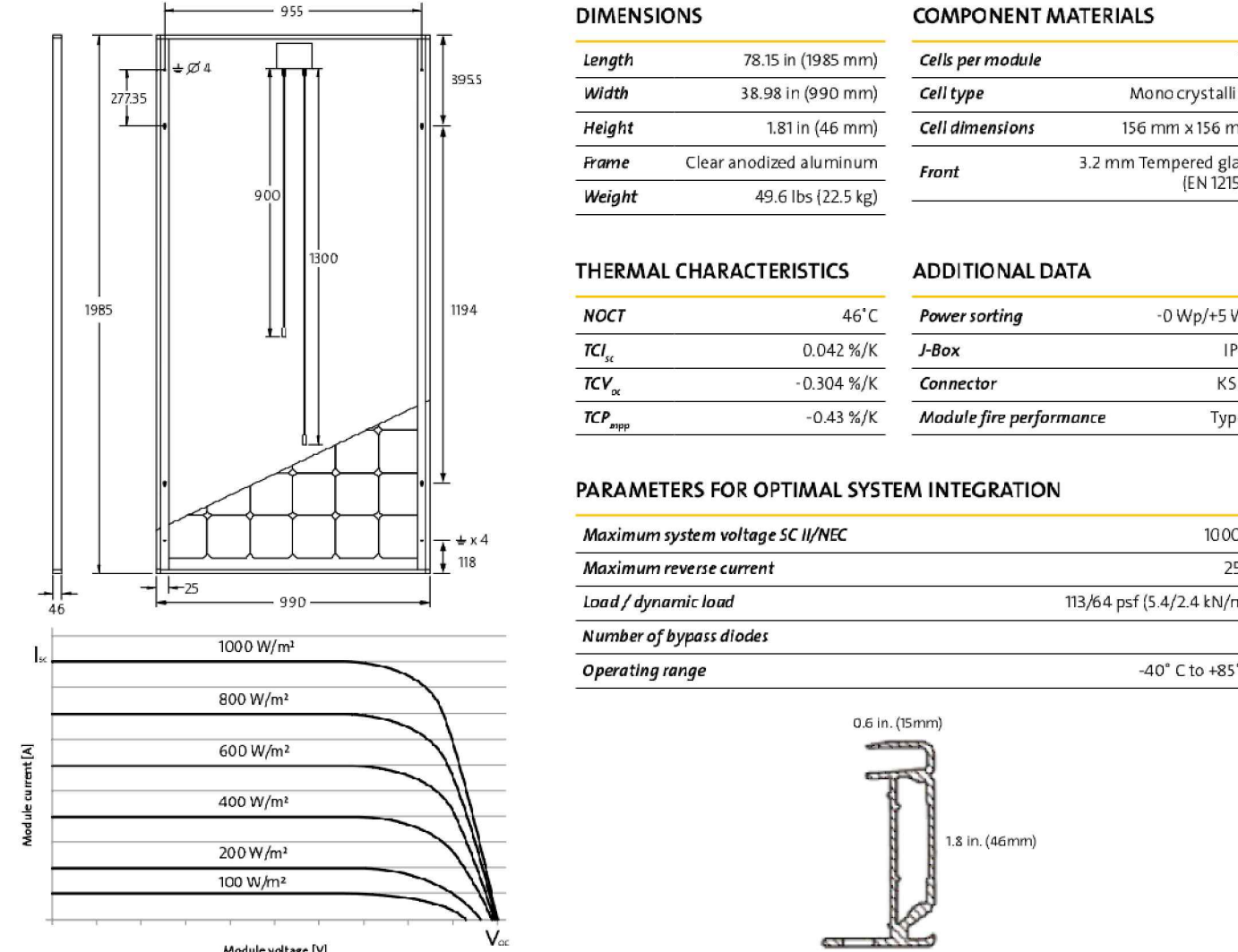
	SW 305	SW 310	SW 315
Maximum power	305 Wp	310 Wp	315 Wp
Open circuit voltage	45.6 V	45.4 V	45.6 V
Maximum power point voltage	36.3 V	36.2 V	36.5 V
Short circuit current	9.02 A	9.28 A	9.35 A
Maximum power point current	8.49 A	8.64 A	8.71 A

*STC: 1000W/m², 25°C, AM 1.5

PERFORMANCE AT 800 W/M², NOCT, AM 1.5

	SW 305	SW 310	SW 315
Maximum power	230.4 W	237.2 W	240.9 W
Open circuit voltage	42.2 V	39.7 V	39.8 V
Maximum power point voltage	33.6 V	33.3 V	33.6 V
Short circuit current	7.35 A	7.71 A	7.77 A
Maximum power point current	6.86 A	7.12 A	7.18 A

Minor reduction in efficiency under partial load conditions at 25°C at 200 W/m², 300% (v/2%) of the STC efficiency (1000 W/m²) is achieved.



DIMENSIONS

- Length: 78.15 in (1985 mm)
- Width: 38.98 in (990 mm)
- Height: 1.81 in (46 mm)
- Frame: Clear anodized aluminum
- Weight: 49.6 lbs (22.5 kg)

COMPONENT MATERIALS

- Cells per module: 72
- Cell type: Monocrystalline
- Cell dimensions: 156 mm x 156 mm
- Front: 3.2 mm Tempered glass (EN 12150)

THERMAL CHARACTERISTICS

- NOCT: 46°C
- TC_v: 0.042 %/K
- TC_p: -0.304 %/K
- TC_{mp}: -0.43 %/K

ADDITIONAL DATA

- Power sorting: -0 Wp/+5 Wp
- J-Box: IP65
- Connector: KSK4
- Module fire performance: Type 1

PARAMETERS FOR OPTIMAL SYSTEM INTEGRATION

- Maximum system voltage (DC)/MCC: 1000 V
- Maximum reverse current: 25 A
- Load / dynamic load: 113.64 psf (5.4/2.4 kN/m²)
- Number of bypass diodes: 3
- Operating range: -40° C to +85° C

World-class quality
Fully-automated production lines and seamless monitoring of the process and material ensure the quality that the company sets as its benchmark for its sites worldwide.

SolarWorld Plus-Sorting
Plus-Sorting guarantees highest system efficiency. SolarWorld only delivers modules that have greater than or equal to the nameplate rated power.

25 years linear performance guarantee and extension of product warranty to 10 years
SolarWorld guarantees a maximum performance degradation of 0.7% p.a. in the course of 25 years, a significant added value compared to the two-phase warranties common in the industry. In addition, SolarWorld is offering a product warranty, which has been extended to 10 years.*

*In accordance with the applicable SolarWorld Limited Warranty at purchase. www.solarworld.com/warranty



We turn sunlight into power.

solarworld.com

UTILITY-SCALE INVERTERS

SGI 500XTM SGI 750XTM

- FEATURES**
- 98% CEC efficiency
 - 1000 VDC
 - Built-in redundancy
 - Submodule options
 - Modbus communications
 - User-interactive LCD

- OPTIONS**
- Uptime guarantee
 - Stainless steel enclosure
 - Web-based monitoring
 - Built-in cellular connectivity
 - AC breaker with shunt trip
 - Revenue grade metering
 - Air filters

- OPTIONS FOR UTILITIES**
- Real power curtailment
 - Reactive power control
 - Voltage ride through
 - Frequency ride through
 - Controlled ramp rates
 - DMS tie-in
 - Plant master control



1000VDC UTILITY-SCALE INVERTERS

Solectria Renewables' next generation of SMARTGRID series inverters are optimized for high efficiency, reliability, and economy. Available in two power classes, 500 kW and 750 kW, these inverters are designed for direct connection to an external transformer for large commercial or utility-scale applications. They are robust, outdoor rated inverters that can be configured as 1 or 1.5 MW Solar Stations. Available utility-scale options include a plant master controller and advanced grid management features such as voltage and frequency ride through, reactive power control, real power curtailment and power factor control. Listed to 1000 VDC, with 98% CEC weighted efficiency, the SGI 500/750XTM inverters set a new standard for large scale power conversion.


Built for the real world



SOLECTRIA RENEWABLES www.solectria.com | inverters@solectria.com | 978.683.9700

MGM Transformer Company

Customer: HAWTHORNE ELECTRIC - HAWTHORNE
Quote #: LZ1_6990A0 Outline Drawing and Specifications



Engineering Specification Sheet
PROMINENCE SERIES configurable disconnecting combiner box with 400 amp disconnect switch

GENERAL INFORMATION

- Description:** Configurable disconnecting fused string combiner box with 400A disconnect; up to 36 strings. 400A at 1000VDC maximum output.
- Enclosures:**
 - NEMA 4X Fiberglass (Standard): Part number PR-X*-400-FG
 - NEMA 4 Metallic (Optional): PR-X*-400-S
 - NEMA 4X 316 Stainless (Optional): PR-X*-400-SS
- *Enclosure sizes will vary depending on configured string count.
- Fuse holders:** Finger safe, non-load break fuse holders. 30A, 1000VDC rated. Fuse amperage rating may differ as long as total amperes of all fuses do not exceed the bus rating or 30A per string.

TECHNICAL SPECIFICATIONS

- Disconnect Switch:** 1000 VDC, 400A, load break, fully rated for continuous duty class DC-21.
- Input Wires:** Fuses: X* total, 8-14AWG, 90°C, Cu Wire
- Output Wires:** Fused, Non-Fused: 1 ea., 350MCM-6AWG, 90°C, Cu/Al Wire
*Dual 350MCM-6AWG, 90°C, Cu/Al Wire (Optional)
- Ground Terminals:** 1 ea., 350MCM-6AWG, 90°C, Cu/Al Wire
X* total, 4-14AWG, 90°C, Cu/Al Wire
- Operating Temperature, Humidity:** -10°C to +60°C (15°F to 130°F), 0-100% Humidity
- Busbars:** C11000 Alloy (Copper), electroplated to prevent corrosion. Rated continuous duty.

FEATURES


- Labeling:** All components, wire ratings, & torque values labeled onto back pan.
- Mounting panel:** Aluminum back pan standard. Optional: White Powder Coated Steel
- Insulators:** All busbars are supported by 1000VDC rated insulators for added rigidity.

OPTIONS

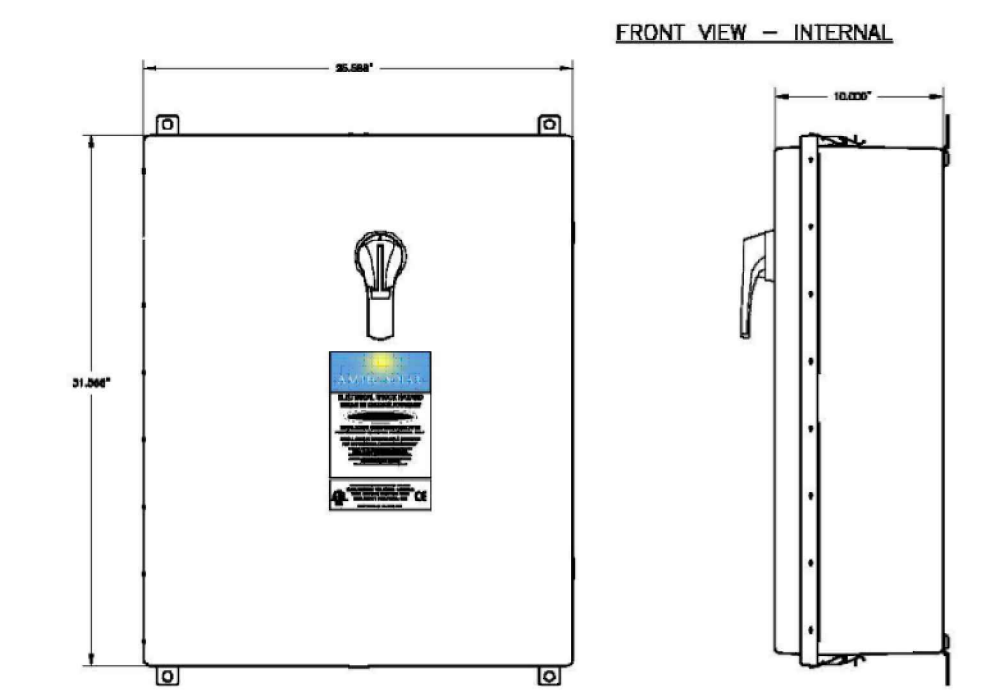
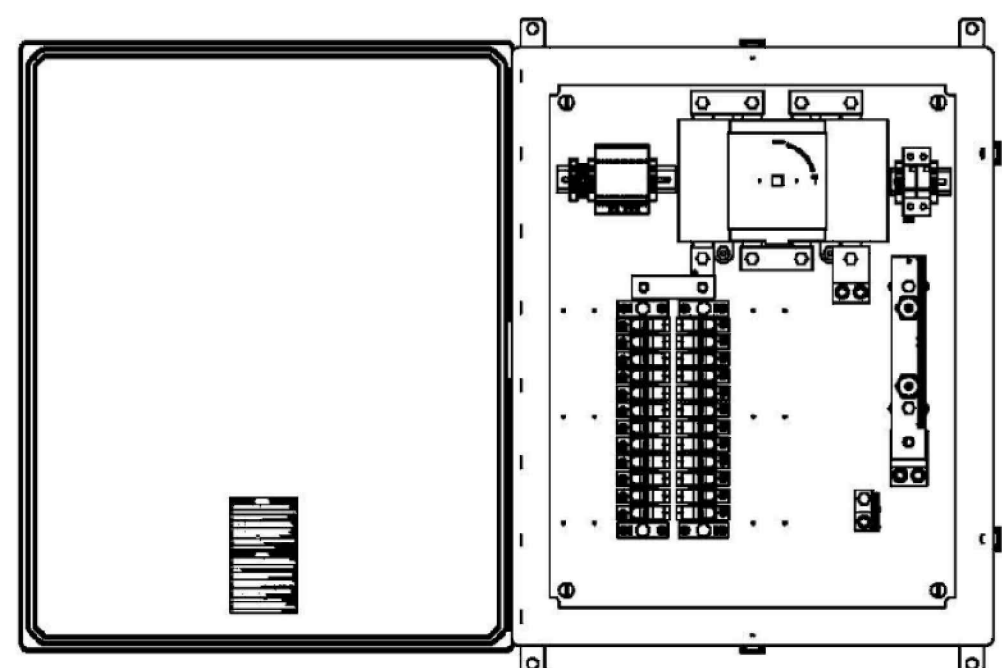
- Surge Protection:** Surge protection can be added for an additional cost. Just as "SP" at the end of part number.
- Pigtails:** Pre-Wired POS and NEG pigtails with Female and Male MC4 Connectors terminated thru HEYCO cord grips.
- Monitoring:** String current monitors capable of monitoring up to 24 strings at +/- 1% accuracy. 2 Wire, Modbus RTU output.
- Output Lugs:** Large single or dual output lugs up to 600MCM AL/Cu available. Provisions for 3-Hole or 2-Hole Compression type lugs also available.

APPROVALS

- Listed to UL1741, CAN/CSA C22.2 Listed @ 1000Volts, CE Listed @ 1000Volts.

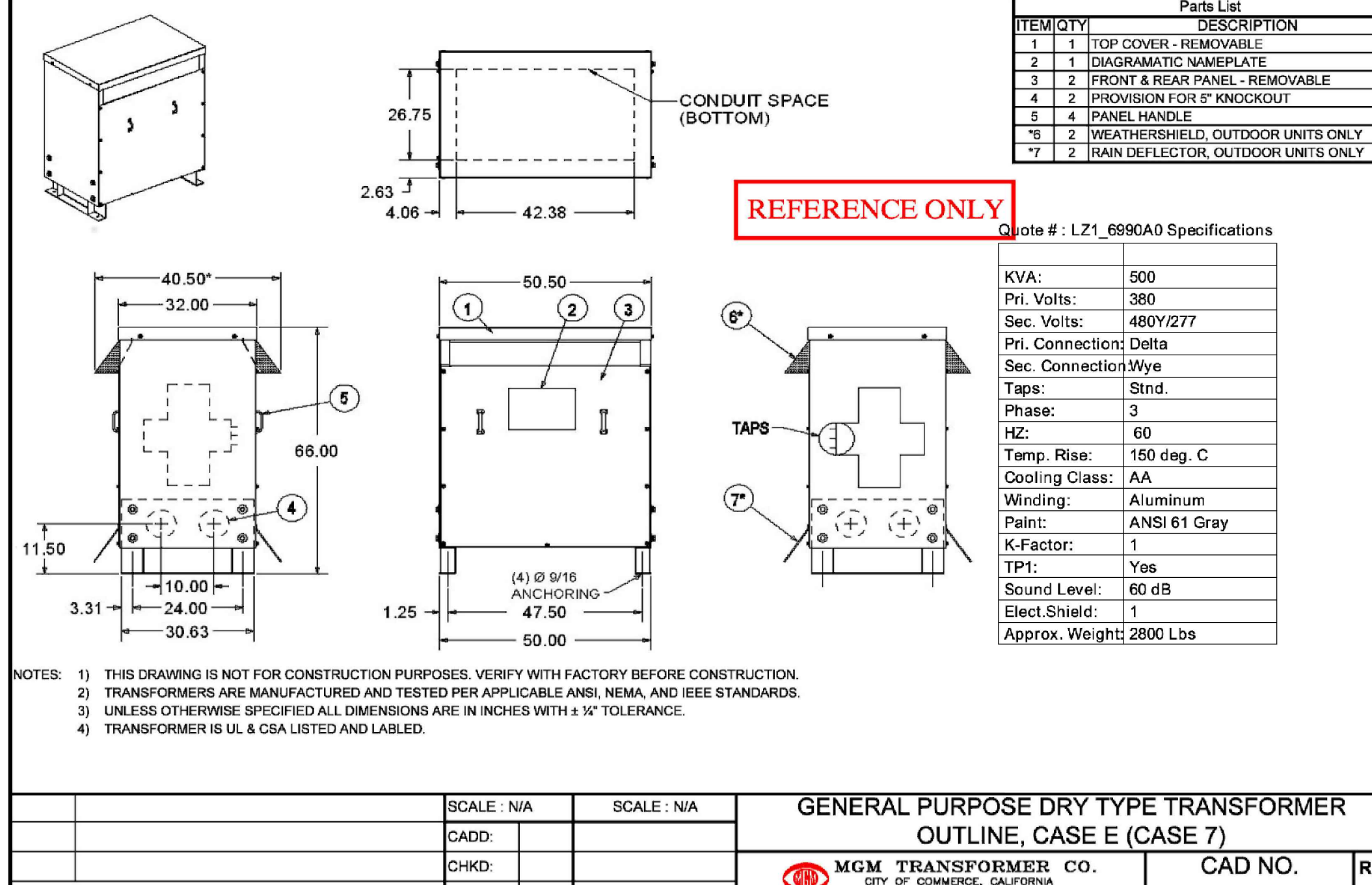


AMtec Solar
7079 Commerce Circle, Pleasanton CA 94588
www.amtecsolar.com
510.887.2289



FRONT VIEW - INTERNAL
FRONT VIEW
SIDE VIEW
-Representative of string configurations up to 24 strings-
-Layouts shown are for standard fiberglass enclosure-

AMtec Solar
7079 Commerce Circle, Pleasanton CA 94588
www.amtecsolar.com
510.887.2289



Parts List

ITEM QTY	DESCRIPTION
1 1	TOP COVER - REMOVABLE
2 1	DIAGRAMATIC NAMEPLATE
3 2	FRONT & REAR PANEL - REMOVABLE
4 2	PROVISION FOR 5" KNOCKOUT
5 4	PANEL HANDLE
6 2	WEATHERSHIELD, OUTDOOR UNITS ONLY
7 2	RAIN DEFLECTOR, OUTDOOR UNITS ONLY

Quote #: LZ1_6990A0 Specifications

KVA:	500
Pri. Volts:	380
Sec. Volts:	480Y/277
Pri. Connection:	Delta
Sec. Connection:	Wye
Taps:	Strnd.
Phase:	3
Hz:	60
Temp. Rise:	150 deg. C
Cooling Class:	AA
Winding:	Aluminum
Paint:	ANSI 61 Gray
K-Factor:	1
TP1:	Yes
Sound Level:	60 dB
Elect.Shield:	1
Approx. Weight:	2800 Lbs

GENERAL PURPOSE DRY TYPE TRANSFORMER OUTLINE, CASE E (CASE 7)

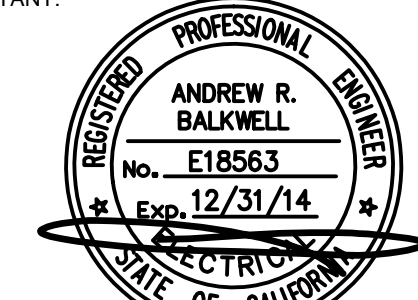
SCALE: N/A	SCALE: N/A	MGM TRANSFORMER CO.	CAD NO.	REV:
CADD:		CITY OF COMMERCE, CALIFORNIA		
CHKD:		TEL: (202) 778-0388 FAX: (202) 778-8182		

REVISION / RELEASE

NO.	DESCRIPTION	DATE
1	FIRE COMMENTS	1/29/2015

CONTRACTOR:
SK SOLAR, INC.
BORIS VON BORMANN
2658 GRIFFITH PARK
BLVD. # 410
LOS ANGELES, CA 90039 USA
PH: +1 (310) 461-8867
LICENSE NO. 991593



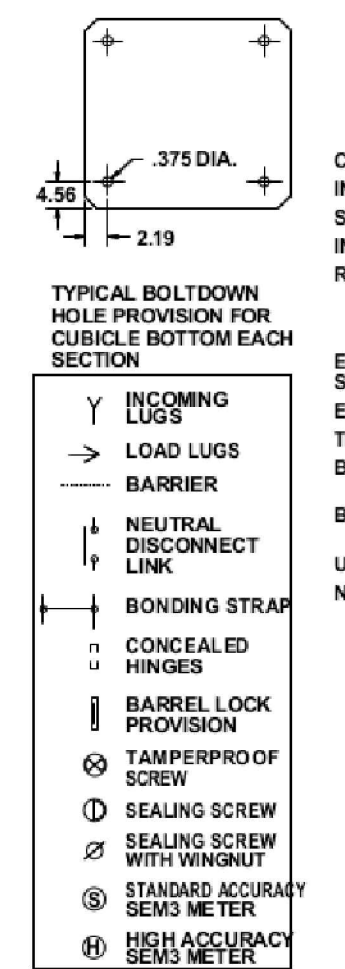
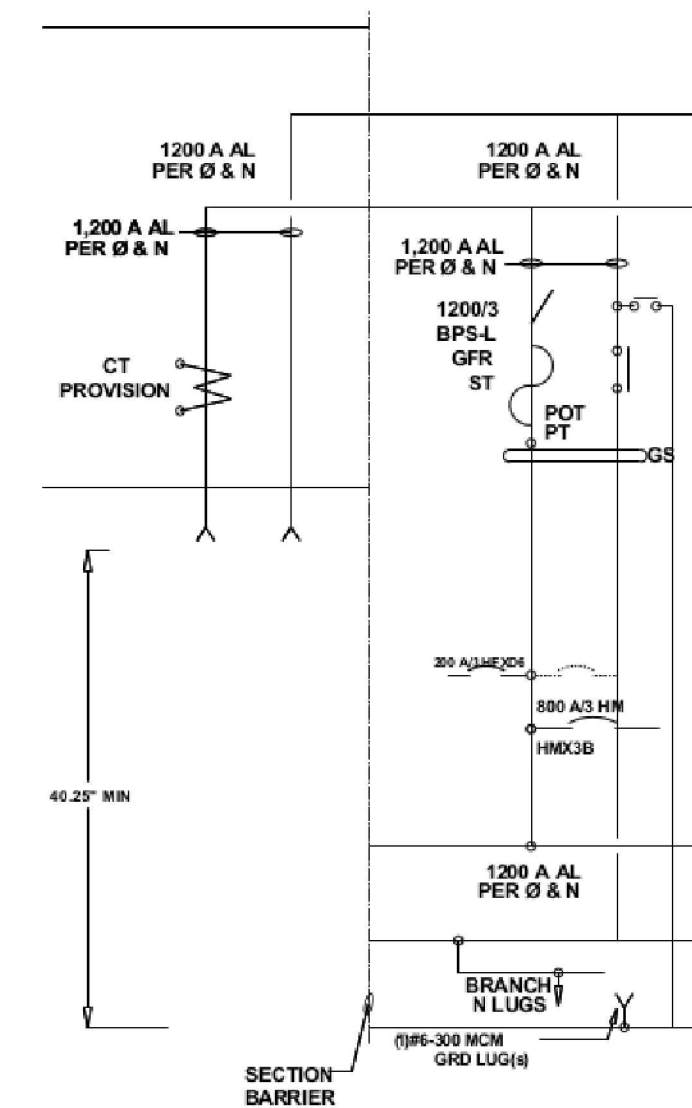
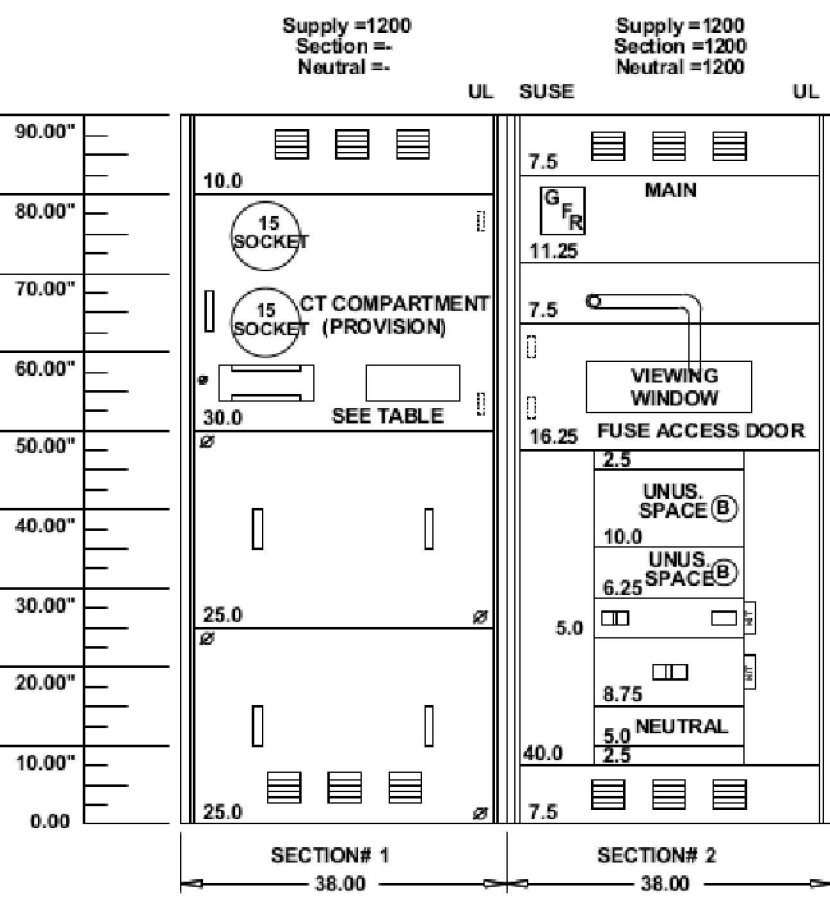
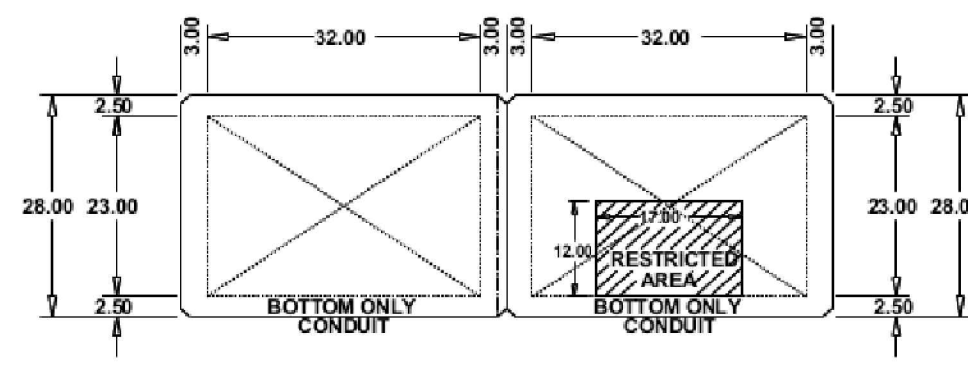
CONSULTANT:


PROJECT:
SILVER LAKES SOLAR FARM

27801 MOUNTAIN SPRINGS ROAD
HELENDALE, CA 92342

SHEET TITLE:
SPECIFICATIONS SHEETS

SHEET NUMBER:
PV.SPEC1



NOTES

CONSTRUCTION : SWITCHBOARD IS BUILT AND LABELED PER UL 891 IN EFFECT.

INCOMING : AMPERES: 1200

SERVICE : SYSTEM VOLTAGE: 480Y/277 3Ø4W Wye AC

INTERRUPTING : THE SHORT CIRCUIT INTERRUPTING CAPABILITY IS 65,000

RATING : RMS SYMMETRICAL AMPERES AT 480 VOLTS BASED ON THE LOWEST SHORT CIRCUIT CURRENT RATING OF THE INDIVIDUAL OR SERIES RATED COMBINATION DEVICES INSTALLED AT TIME OF MANUFACTURE OF BUSING STRUCTURE. THE BUSING STRUCTURE IS CONSTRUCTED TO WITHSTAND FAULTS OF 65,000 RMS SYMMETRICAL AMPERES.

ENCLOSURE : ENCLOSURE IS TYPE NEMA 1 FOR INDOOR APPLICATION

SEISMIC : ENCLOSURE SHALL BE CONSTRUCTED TO MEET SEISMIC REQUIREMENTS

EXTERIOR : ANSI 61 LIGHT GREY PAINT.

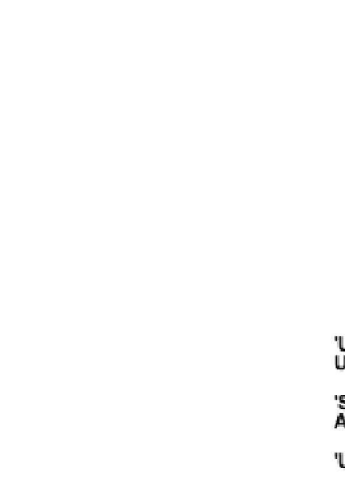
TERMINATIONS : TERMINATIONS ARE ACCESSIBLE FROM THE FRONT.

BUS BARS : TYP PLATED ALUMINUM BUS BARS SIZED ON BASIS OF 65°C MAXIMUM TEMPERATURE RISE.

BUS BARS : THE GROUND BUS IN THIS SWITCHBOARD IS ALUMINUM SIZED PER UL 891 OR GREATER.

UTILITY : SOUTHERN CAL EDISON

NAMEPLATE : NAMEPLATES ATTACHED WITH ADHESIVE.



ABBREVIATIONS

'UL' INDICATES THAT THE MARKED SWITCHBOARD SECTION COMPLIES WITH ALL APPLICABLE UNDERWRITERS LABORATORIES STANDARDS AND IS IDENTIFIED WITH A LABEL.

'SUSE' INDICATES THAT THE MARKED SWITCHBOARD SECTION IS SUITABLE ONLY FOR USE AS SERVICE ENTRANCE EQUIPMENT.

'UNUS. SPACE' INDICATES UNUSABLE SPACE NOT INTENDED FOR FUTURE USE.

'B' INDICATES A SERVICE BARRIER.

'CPT' INDICATES CONTROL POWER TRANSFORMER.

'GFR' INDICATES GROUND FAULT RELAY.

'GS' INDICATES GROUND SENSOR.

'ST' INDICATES A SHUNT TRIP COIL.

INSTALLATION NOTE

Caution: If switchboard is installed on a hoisting platform greater than 2'-12" the meter may be over the 5'3" maximum allowable meter height. Consult utility if you need more information.

DESCRIPTION	PG NO.
CT COMPARTMENT	322
LUGS	345
LINE TERMINATION	347
METER PLATES	352
SMM METERING	306
SUPPORT	330

NO.	REVISIONS	DRAWN BY:	DATE
1	0	korej004	11-10-2014

SK Solar

PROJECT: HAWTHORNE ELECTRIC SUPPL CO INC

CONTRACTOR: MSA

DATE: 11-10-2014

PROJECT NO: korejx00c_05221400_06_00_000-20000-1

SHEET: 1 OF 2

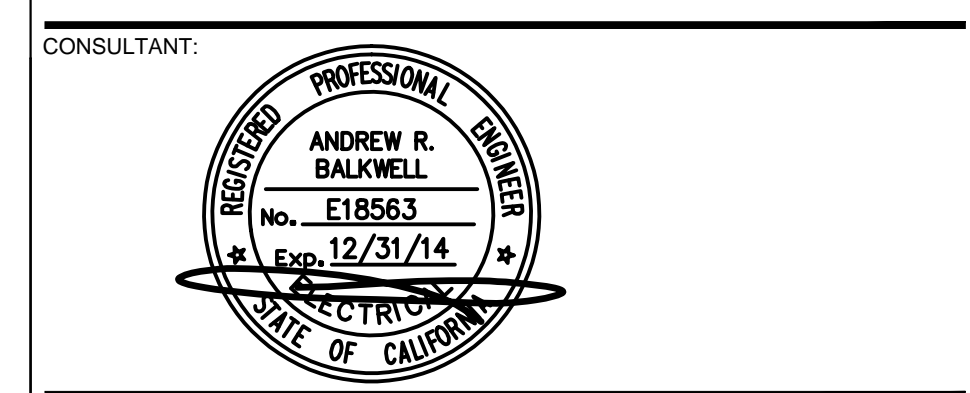
REV: 1

Siemens Industry, Inc.
Norcross, Georgia

REVISION / RELEASE

NO.	DESCRIPTION	DATE
1	FIRE COMMENTS	1/29/2015

CONTRACTOR:
SK SOLAR, INC.
BORIS VON BORMANN
2658 GRIFFITH PARK
BLVD. # 410
LOS ANGELES, CA 90039 USA
PH: +1 (310) 461-8867
LICENSE NO. 991593



CONSULTANT:

PROJECT:
SILVER LAKES SOLAR FARM

27801 MOUNTAIN SPRINGS ROAD
HELENDALE, CA 92342

SHEET TITLE:
SPECIFICATIONS SHEETS

SHEET NUMBER:
PV.SPEC2

EXHIBIT C

Supplemental Documents provided by SK Solar

Solar Production by Month and Time of Day

Production Data Source	PVSyst												2,119.5	kWh/kWdc
TOU Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
	W	W	W	W	W	S	S	S	S	W	W	W		
On-Peak	0	0	0	0	0	51,887	49,158	49,535	42,799	0	0	0		
Mid-Peak	43,639	38,360	69,746	74,973	92,979	41,808	39,440	39,099	29,794	67,982	47,533	41,387		
Off-Peak	17,917	18,717	29,422	40,011	45,311	53,205	45,478	39,838	40,044	25,393	21,164	21,145		
Total kWh Production	61,555	57,077	99,168	114,984	138,290	146,900	134,076	128,473	112,637	93,376	68,697	62,532	1,217,765	

Solar Allocation

Generating Account	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Account 1	0.88%	1.01%	0.75%	0.64%	0.55%	0.44%	0.42%	0.47%	0.46%	0.76%	0.86%	0.94%
Account 2	0.07%	0.08%	0.06%	0.06%	0.05%	0.05%	0.04%	0.05%	0.05%	0.07%	0.07%	0.07%
Account 3	0.14%	0.17%	0.28%	0.44%	0.38%	0.34%	0.31%	0.35%	0.35%	0.52%	0.32%	0.15%
Account 4	0.65%	0.70%	0.52%	0.43%	0.37%	0.34%	0.29%	0.33%	0.15%	0.40%	0.66%	0.71%
Account 5	0.06%	0.07%	0.06%	0.05%	0.05%	0.04%	0.04%	0.04%	0.05%	0.06%	0.07%	0.06%
Account 6	1.20%	1.35%	1.01%	0.86%	0.80%	1.09%	1.05%	1.18%	1.34%	1.64%	1.44%	1.10%
Account 7	15.06%	27.08%	31.31%	31.03%	35.64%	37.68%	33.44%	33.97%	28.66%	27.87%	15.20%	10.27%
Account 8	7.37%	0.78%	9.64%	8.44%	7.37%	5.72%	5.89%	5.20%	5.07%	4.55%	6.16%	10.75%
Account 9	1.63%	1.56%	0.76%	0.58%	0.46%	0.37%	0.38%	0.45%	0.57%	0.80%	1.12%	1.75%
Account 10	14.10%	1.26%	10.95%	9.48%	8.23%	7.38%	6.74%	6.02%	8.01%	8.50%	10.70%	14.13%
Account 11	4.50%	4.64%	3.48%	3.29%	3.17%	3.71%	4.53%	4.26%	4.21%	3.61%	4.29%	4.62%
Account 12	24.81%	28.20%	15.95%	19.46%	19.00%	20.13%	21.97%	21.40%	23.09%	22.60%	26.35%	25.53%
Account 13	1.39%	1.58%	1.21%	1.42%	1.14%	0.48%	0.45%	0.45%	0.34%	0.94%	1.53%	1.45%
Account 14	10.72%	11.84%	9.22%	9.11%	8.79%	8.16%	8.64%	8.87%	9.47%	9.60%	11.53%	10.38%
Account 15	17.10%	19.31%	14.41%	13.15%	12.47%	13.97%	15.34%	15.93%	17.26%	17.14%	19.06%	17.65%
Account 16	0.02%	0.02%	0.16%	1.39%	1.40%	0.00%	0.36%	0.91%	0.75%	0.70%	0.31%	0.07%
Account 17	0.32%	0.35%	0.23%	0.18%	0.13%	0.11%	0.11%	0.13%	0.17%	0.25%	0.33%	0.35%

Total Aggregate Usage

Generating Account	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
Account 1	0	0	0	0	0	0	0	0	0	0	0	0	0
Account 1 Meter #1	920	1,025	954	940	1,037	932	877	860	812	979	936	1,007	11,279
Account 2 Meter #2	72	83	81	82	97	100	87	88	82	84	75	79	1,010
Account 3 Meter #3	145	168	353	637	714	730	654	650	624	662	348	160	5,845
Account 4 Meter #4	675	707	656	623	693	715	603	597	264	510	713	764	7,520
Account 5 Meter #5	64	74	74	73	86	87	82	80	81	71	72	67	911
Account 6 Meter #6	1,248	1,376	1,288	1,262	1,514	2,327	2,183	2,162	2,362	2,106	1,559	1,184	20,571
Account 7 Meter #7	15,730	27,524	39,860	45,419	67,033	80,088	69,675	62,328	50,594	35,687	16,476	11,014	521,428
Account 8 Meter #8	7,692	789	12,272	12,358	13,870	12,152	12,278	9,534	8,954	5,823	6,678	11,532	113,932
Account 9 Meter #9	1,697	1,584	968	851	863	778	784	831	1,011	1,027	1,213	1,874	13,481
Account 10 Meter #10	14,719	1,284	13,935	13,881	15,484	15,681	14,039	11,038	14,134	10,881	11,607	15,160	151,843
Account 11 Meter #18	4,696	4,716	4,431	4,815	5,958	7,889	9,431	7,809	7,440	4,617	4,650	4,954	71,406
Account 12 Meter #19	25,906	28,659	20,310	28,480	35,730	42,778	45,782	39,261	40,766	28,941	28,574	27,384	392,571
Account 13 Meter #23	1,452	1,609	1,541	2,084	2,141	1,014	947	825	600	1,210	1,656	1,558	16,637
Account 14 Meter #24	11,191	12,035	11,732	13,339	16,528	17,344	18,010	16,271	16,725	12,296	12,505	11,135	169,111
Account 15 Meter #27	17,861	19,624	18,346	19,255	23,452	29,700	31,968	29,225	30,472	21,945	20,664	18,932	281,444
Account 16 Meter #29	16	18	209	2,029	2,631	3	740	1,663	1,330	896	341	77	9,953
Total kWh Usage	104,423	101,629	127,301	146,387	188,084	212,545	208,360	183,461	176,544	128,050	108,428	107,254	1,792,466

Acct #2-02-440-0046

Vendor #10286

Description: NORTH BEACH

A/P Acct. #85020

Service Acct. #3-000-0398-63

27722 Lakeview RRM

Rate Schedule: TOU-PA-GS-1-A

APN #0467-632-06

KWH USAGE

Meter #222012-601024

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	155.71	784	30	873	32
07/31/13 - 08/29/13	162.69	831	29	834	29
08/29/11 - 09/30/13	195.19	1011	32	934	30
09/30/13 - 10/30/13	164.81	1027	30	1121	33
10/30/13 - 12/02/13	193.25	1213	33	1407	33
12/02/13 - 01/02/14	288.38	1874	31	1477	30
01/02/14 - 01/31/14	258.18	1697	29	1818	29
01/31/14 - 03/04/14	244.27	1584	32	2234	32
03/04/14 - 04/03/14	157.17	968	30	1381	29
04/03/14 - 05/02/14	139.71	851	29	849	29
05/02/14 - 06/03/14	145.36	863	22	826	30
06/03/14 - 07/02/14	151.40	746	29	778	31
07/01/13 - 07/02/14	\$ 2,256.12	13,449	356	14,532	367

Acct #2-02-441-0078

Vendor #10286

Description: WELL #19C

(Changed from 19B to 19C 07/2001)

A/P Acct. #85020

Service Acct.#3-018-8397-13

Address: 338 Plant F-9B

Rate Schedule: TOU-PA-2-B

Meter #256000-184446

KWH USAGE

State #07N04W06M10

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/02/13 - 08/01/13	2,183.42	20054	30	21597	33
08/01/13 - 08/30/13	2,123.94	19037	29	9844	34
08/30/13 - 10/01/13	1,132.52	6139	32	5217	27
10/01/13 - 10/31/13	1,215.37	13465	30	11028	31
10/31/13 - 12/03/13	400.74	1954	33	18	33
12/03/13 - 01/03/14	682.48	5812	31	17	30
01/03/14 - 02/03/14	380.38	1402	31	700	29
02/03/14 - 03/05/14	51.45	16	20	37	32
03/05/14 - 04/03/14	432.72	2084	30	16	29
04/03/14 - 05/05/14	552.78	3633	31	16452	29
05/05/14 - 06/04/14	1,618.29	16246	30	18703	32
06/04/14 - 07/03/14	2,491.50	18757	29	19431	29
07/02/13 - 07/03/14	\$ 13,265.59	108,599	356	103,060	368

Acct #2-02-441-0268

Vendor #10286

Description: EQUESTRIAN HAY BARN

A/P Acct. #85020

Service Acct.#3-001-2391-24

27437 Helendale Rd

Rate Schedule: TOU-GS-1-B

KWH USAGE

Meter #222011-640400

CURRENT

LAST YEAR

SERVICE PERIOD FROM:	BILL AMOUNT	USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	353.13	1969	30	2112	32
07/31/13 - 08/29/13	350.79	1960	29	2102	29
08/29/13 - 09/30/13	433.11	2439	32	2346	30
09/30/13 - 10/30/13	355.30	2427	30	2919	33
10/30/13 - 12/02/13	349.79	2860	33	2916	33
12/02/13 - 01/02/14	407.14	3305	31	2759	30
01/02/14 - 01/31/14	388.23	3045	29	2659	29
01/31/14 - 03/04/14	384.30	3011	32	2644	32
03/04/14 - 04/03/14	300.95	2340	30	2218	29
04/03/14 - 05/02/14	273.65	2110	29	2053	29
05/02/14 - 06/03/14	261.98	1999	32	1916	30
06/03/14 - 07/02/14	230.87	1791	29	1979	31
07/01/13 - 07/02/14	\$ 4,089.24	29256	366	28623	367

Acct #2-02-441-0417

Vendor #10286

Description: EQUESTRIAN CENTER LIGHT

A/P Acct. #85020

Service Acct.#3-001-2391-25

27427 Helendale Rd

OL-1-ALLNITE

High pressure sodium vapor - FLAT RATE

KWH USAGE

5800L MULTIPLE

CURRENT

LAST YEAR

SERVICE PERIOD FROM:	BILL AMOUNT	USAGE	DAYS	USAGE	DAYS
07/01/13 - 08/01/13	10.87	29	31		
08/01/13 - 09/01/13	10.87	29	31		
09/01/13 - 10/01/13	10.87	29	30		
10/01/13 - 11/01/13	10.85	29	31		
11/01/13 - 12/01/13	10.86	29	30		
12/01/13 - 01/01/14	10.89	29	31		
01/01/14 - 02/01/14	10.88	29	31		
02/01/14 - 03/01/14	10.88	29	28		
03/01/14 - 04/01/14	10.88	29	31		
04/01/14 - 05/01/14	11.00	29	30		
05/01/14 - 06/01/14	11.00	29	31		
06/01/14 - 07/01/14	11.24	29	30		
07/01/13 - 07/01/14	\$ 131.09	348	365		

Acct #2-02-440-0657

Description: WELL#18

Service Acct.#3-000-0398-64

Vendor #10286

A/P Acct. #85020

Address: 306-Plant F-7 PMP

Rate Schedule: TOU-PA-2-B

Meter #256000-006228/

KWH USAGE

State #08N04W31E01

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
06/28/13 - 07/30/13	1,676.81	15681	32	16390	33
07/30/13 - 08/28/13	1,584.15	14039	29	12235	29
08/12/13 - 09/30/13	1,363.27	11038	33	14377	30
09/30/13 - 10/29/13	1,231.53	14134	29	13238	33
10/29/13 - 11/27/13	985.20	10881	29	13896	33
11/27/13 - 12/31/13	1,076.12	11607	34	15044	30
12/31/14 - 01/30/14	1,317.80	15160	30	13219	29
01/30/14 - 03/03/14	1,271.67	14719	32	14553	29
03/03/14 - 03/05/14	111.62	1284	2		
03/05/14 - 04/03/14	1,238.79	15219	31	15321	31
04/03/14 - 05/02/14	1,301.62	13881	29	14309	29
05/02/14 - 06/03/14	1,442.93	15484	32	15029	30
06/03/14 - 07/02/14	1,864.07	13950	29	14297	29
06/28/13 - 07/02/14	\$ 16,465.58	167,077	371	171,908	365

Acct #2-02-440-1077

Vendor #10286

Description: HARTFORD PARK-WELL#17B

A/P Acct. #85020

Service Acct.#3-000-0398-65

State #08N04W31M02

Cumberland - 14783 Hartford

Rate Schedule: PA-2

Address: 339 PLANT F-7 CUMBRL

KWH USAGE

Meter #256000-205089

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/02/13 - 08/01/13	3,165.81	22624	30	24291	33
08/01/13 - 08/30/13	2,707.01	18729	29	17139	29
08/30/13 - 10/01/13	2,138.09	13899	32	12925	32
10/01/13 - 10/31/13	2,155.49	23266	30	23300	31
10/31/13 - 12/03/13	1,947.81	20241	33	2001	33
12/03/13 - 01/03/14	967.13	7008	31	1887	30
01/03/14 - 02/03/14	801.20	4957	31	1774	29
02/03/14 - 03/05/14	1,327.82	11898	30	1842	32
03/05/14 - 04/04/14	2,101.37	21928	30	2660	29
04/04/14 - 05/05/14	1,782.73	16707	31	19031	29
05/05/14 - 06/04/14	2,246.38	20461	30	17973	32
06/04/14 - 07/03/14	3,750.31	21995	29	22048	29
07/02/13 - 07/03/14	\$ 25,091.15	203,713	366	146,871	368

Acct #2-24-531-1162

Vendor #10286

Description: North Marina

#8314/019

A/P Acct. #85020

Service Acct.#3-022-0476-70

APN #0467-581-04

Address: 27108 Lakeview Dr

Rate Schedule: TOU-GS-1-A

KWH USAGE

Meter #222012-605842

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	61.73	220	30	245	32
07/31/13 - 08/29/13	64.07	239	29	240	29
08/29/13 - 09/30/13	75.56	293	32	273	30
09/30/13 - 10/30/13	67.89	315	30	326	33
10/30/13 - 12/02/13	76.89	361	33	373	33
12/02/13 - 01/02/14	78.17	373	31	338	30
01/02/14 - 01/31/14	70.75	339	29	323	29
01/31/14 - 03/04/14	75.20	354	32	323	32
03/04/14 - 04/03/14	64.74	291	30	278	29
04/03/14 - 05/02/14	59.35	259	29	251	29
05/02/14 - 06/03/14	61.39	253	32	238	30
06/03/14 - 07/02/14	62.32	224	29	227	31
07/01/13 - 07/02/14	\$ 818.06	3,521	366	3,435	367

Acct #2-24-531-1402

Description: **South Beach**

Vendor #10286

A/P Acct. #85020

Service Acct.#3-022-9013-26

Address: 26776 Bluewater

Rate Schedule: TOU-GS-1-A

Meter #222012-603732

*****KWH USAGE*****

State #

CURRENT

LAST YEAR

		CURRENT		LAST YEAR	
07/02/13 - 08/01/13	96.23	427	30	412	30
08/01/13 - 08/30/13	96.55	434	29	427	29
08/30/13 - 10/01/13	111.72	510	32	503	32
10/01/13 - 10/31/13	84.90	443	30	521	31
10/31/13 - 12/03/13	157.43	33	28	719	33
12/03/13 - 01/03/14	186.69	1148	31	935	30
01/01/14 - 02/03/14	176.69	1094	31	1322	29
02/03/14 - 03/05/14	158.41	967	30	1700	32
03/05/14 - 04/04/14	102.29	564	30	800	29
04/04/14 - 05/05/14	86.61	447	31	435	29
05/05/14 - 06/04/14	81.70	407	30	451	32
06/04/14 - 07/03/14	90.06	383	29	397	29
07/02/13 - 07/03/14	\$ 1,429.28	6,857	361	8,622	365

Acct #2-02-440-1564

Vendor #10286

Description: WELL #16

A/P Acct. #85020

Service Acct.#3-000-0398-66

Address: 312 PLANT F-8 PMP

Rate Schedule: PA-2

KWH USAGE

Meter #256000-171726

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/02/13 - 08/01/13	93.88	0	30	0	33
08/01/13 - 08/30/13	93.88	0	29	0	29
08/30/13 - 10/01/13	93.88	0	32	0	32
10/01/13 - 10/31/13	93.88	0	30	0	31
10/31/13 - 12/03/13	94.98	0	33	0	32
12/03/13 - 01/03/14	97.30	0	31	0	31
01/03/14 - 02/03/14	99.26	0	31	0	29
02/03/04 - 03/05/14	99.26	0	30	0	32
03/05/14 - 04/04/14	99.26	0	30	0	29
04/04/14 - 05/05/14	99.26	0	31	0	29
05/05/14 - 06/04/14	98.97	0	30	0	32
06/04/14 - 07/03/14	96.41	0	29	0	29
07/02/13 - 07/03/14	\$ 1,160.22	-	366	-	368

Acct #2-02-440-2679

South Beach Pump

Vendor #10286

Description: TRANSFER PUMP / WELL #14

A/P Acct. #85020

Service Acct.#3-000-0398-68

26776 Bluewater (South Beach)

Rate Schedule: TOU-PA-2-B

KWH USAGE

Meter #256000-038907

CURRENT

LAST YEAR

SERVICE PERIOD FROM:	BILL AMOUNT	USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	7,188.92	50768	30	26124	33
07/31/13 - 08/29/13	6,598.92	48543	29	28442	29
08/29/13 - 10/01/13	4,396.01	27816	33	29345	32
10/01/13 - 10/30/13	3,333.01	35679	29	33776	31
10/30/13 - 12/02/13	509.57	1436	33	26197	32
12/02/13 - 01/02/14	40.91	0	31	13639	30
01/02/14 - 01/31/14	41.76	0	29	3644	30
01/31/14 - 03/04/14	1,601.59	16232	32	21222	31
03/04/14 - 04/04/14	2,233.22	24399	31	35949	29
04/04/14 - 05/05/14	3,800.11	38337	31	29079	29
05/05/14 - 06/04/14	4,842.48	45803	30	31077	30
06/04/14 - 07/03/14	9,273.25	52556	29	49363	31
07/01/13 - 07/03/14	\$ 43,859.75	341,569	367	327,857	367

Acct #2-24-629-3013

Vendor #10287

Description # 4 East Waterfall

A/P Acct. #85091

Service Acct.#3-021-6004-28

Address: 28048 Hummingbird

Rate Schedule: TOU-GS-1-A

KWH USAGE

Meter #222011-336129

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/08/13 - 08/06/13	147.53	740	29	1854	31
08/06/13 - 09/05/13	302.15	1663	30	1903	30
09/05/13 - 10/04/13	240.98	1330	29	337	29
10/04/13 - 11/05/13	147.74	896	32	2027	33
11/05/13 - 12/06/13	72.68	341	31	1632	31
12/06/13 - 01/08/14	38.37	77	33	1678	32
01/08/14 - 02/06/14	26.53	16	29	1507	29
02/06/14 - 03/10/14	29.35	18	32	1299	30
03/10/14 - 04/09/14	55.05	209	30	1729	31
04/09/14 - 05/08/14	312.09	2029	29	489	29
05/08/14 - 06/09/14	434.88	2631	32	3	30
06/09/14 - 07/09/14	546.28	2647	0	3	32

Acct #2-02-440-3123

Vendor #10286

Description: WELL #13

A/P Acct. #85020

Service Acct.#3-000-0398-69

Address: 314 PLANT E-9 PMP

Rate Schedule: TOU-PA-2-B

State Well #07N04W06E01

KWH USAGE

Meter #256000-022139

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	3,939.03	36463	30	39845	33
07/31/13 - 08/29/13	3,846.12	34801	29	23341	29
08/29/13 - 10/01/13	2,161.80	12476	33	15120	32
10/01/13 - 10/30/13	2,213.15	24857	29	24705	31
10/30/13 - 12/02/13	1,174.59	9970	33	27	33
12/02/13 - 01/02/14	987.52	6894	31	23	29
01/02/14 - 01/31/14	1,393.55	12609	29	6366	30
01/31/14 - 03/04/14	1,848.37	18802	32	85	31
01/31/14 - 03/04/14	(1,848.37)	Billing Correction			
01/31/14 - 03/05/14	1,848.47	18803	33	85	31
03/05/14 - 04/04/14	839.85	4944	30	6464	29
04/04/14 - 05/05/14	591.55	1287	31	23598	29
05/05/14 - 06/04/14	2,982.12	30222	30	29800	30
06/04/14 - 07/03/14	4,694.72	35403	29	37881	31
07/01/13 - 07/03/14	\$ 26,672.47	247,531	399	207,340	398

Acct #2-02-440-3602

Description: **WELL #15**

Service Acct.#3-000-0398-70

315 PLANT F-9 PMP

Vendor #10286

A/P Acct. #85020

9/12/2000

Rate Schedule: TOU- PA-2-B

*****KWH USAGE*****

Meter #256000-202333

		CURRENT		LAST YEAR	
SERVICE PERIOD FROM:	BILL AMOUNT	USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	3,260.73	30155	30	32642	33
07/31/13 - 08/29/13	3,208.58	28882	29	12053	29
08/29/13 - 10/01/13	1,773.29	10206	33	8497	32
10/01/13 - 10/30/13	2,202.72	25273	29	19157	31
10/30/13 - 12/02/13	788.74	5693	33	13681	32
12/02/13 - 01/02/14	286.98	33	31	9708	30
01/02/14 - 01/31/14	318.48	39	29	1745	30
01/31/14 - 03/04/14	43.19	20	32	14182	31
03/04/14 - 03/05/14	1.49	1	1		
03/05/14 - 04/03/14	1,361.55	12947	30	14713	29
04/03/14 - 05/05/14	2,277.07	23552	32	27012	29
05/05/14 - 06/04/14	2,899.42	30530	30	29268	30
06/04/14 - 07/03/14	3,851.73	28910	29	31490	31
07/01/13 - 07/03/14	\$ 22,273.97	196,241	368	214,148	367

Acct #2-02-440-4436

Vendor #10286

Description: No.Side Entrance Pond

A/P Acct. # 85020

Service Acct.#3-027-7798-71

#0467-013-03-0000

02/13/06

Waterfall-27225 East of Helendale Rd

Rate Schedule: TOU-GS-1-B

317 PLANT G-6 PMP

KWH USAGE

Meter #222012-601209

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	436.45	2469	30	2671	32
07/31/13 - 08/29/13	426.44	2414	29	2431	29
08/29/13 - 09/30/13	471.59	2670	32	2539	30
09/30/13 - 10/30/13	399.18	2749	30	2803	33
10/30/13 - 12/02/13	364.13	2962	33	2817	33
12/02/13 - 01/02/14	381.18	3049	31	2645	30
01/02/14 - 01/31/14	330.81	2547	29	2466	29
01/31/14 - 03/04/14	343.60	2751	32	2676	32
03/04/14 - 04/03/14	328.88	2578	30	2268	29
04/03/14 - 05/02/14	318.54	2498	29	2274	29
05/02/14 - 06/03/14	336.26	2686	32	2458	30
06/03/14 - 07/02/14	354.22	2475	29	2500	31
07/01/13 - 07/02/14	\$ 4,491.28	31,848	366	30,548	367

Acct #2-02-440-4907

Vendor #10286

Description: EQUESTRIAN STABLES

A/P Acct. #85020

Service Acct.#3-000-0398-75

27600 HELENDALE RD

Rate Schedule: TOU-GS-1-A

KWH USAGE

Meter #222012-601207

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	170.69	874	30	959	32
07/31/13 - 08/29/13	164.35	841	29	901	29
08/29/13 - 09/30/13	186.69	960	32	899	30
09/30/13 - 10/30/13	150.33	920	30	991	33
10/30/13 - 12/02/13	166.61	1018	33	1115	33
12/02/13 - 01/02/14	166.67	1005	31	1027	30
01/02/14 - 01/31/14	153.94	937	29	996	29
01/31/14 - 03/04/14	143.10	843	32	1030	32
03/04/14 - 04/03/14	150.95	912	30	886	29
04/03/14 - 05/02/14	146.60	890	29	867	29
05/02/14 - 06/03/14	163.55	978	32	781	30
06/03/14 - 07/02/14	195.48	950	29	846	31
07/01/13 - 07/02/14	\$ 1,958.96	11,128	366	11,298	367

Acct #2-02-439-5410

Vendor #10287

Description: **TIME CLOCK**

A/P Acct. #85091

Service Acct.#3-000-0398-54

73 Fairacres - Robin

Rate Schedule: TOU-GS-1-A

*****KWH USAGE*****

Meter #222011-336103

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/08/13 - 08/06/13	170.35	877	29	972	31
08/06/13 - 09/05/13	168.37	860	30	288	30
09/05/13 - 10/04/13	157.16	812	29	764	29
10/04/13 - 11/05/13	158.95	979	32	956	33
11/05/13 - 12/06/13	154.43	936	31	876	31
12/06/13 - 01/08/14	168.64	1007	33	814	32
01/08/14 - 02/06/14	153.14	920	29	790	29
02/06/14 - 03/10/14	169.87	1025	32	914	30
03/10/14 - 04/09/14	158.57	954	30	937	31
04/09/14 - 05/08/14	155.15	940	29	905	29
05/08/14 - 06/09/14	182.17	1037	32	888	30
06/09/14 - 07/09/14	204.52	967	30	932	32
07/08/13 - 07/09/14	\$ 2,001.32	11,314	366	10,036	367

Acct #2-02-439-5790
 Description: **TIME CLOCK**

Vendor #10287
 A/P Acct. #85091

Service Acct.#3-000-0398-55

Rate Schedule: TOU-GS-1-A

73 Coolglen - Robin

*****KWH USAGE*****

Meter #222011-336153

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/08/13 - 08/06/13	38.75	87	29	93	31
08/06/13 - 09/05/13	39.73	88	30	84	30
09/05/13 - 10/04/13	37.64	82	29	83	29
10/04/13 - 11/05/13	38.08	84	32	88	33
11/05/13 - 12/06/13	36.22	75	31	77	31
12/06/13 - 01/08/14	38.66	79	33	76	32
01/08/14 - 02/06/14	34.26	72	29	69	29
02/06/14 - 03/10/14	38.27	83	32	76	30
03/10/14 - 04/09/14	36.32	81	30	85	31
04/09/14 - 05/08/14	35.57	82	29	84	29
05/08/14 - 06/09/14	41.13	97	32	90	30
06/09/14 - 07/09/14	42.33	96	30	100	32
07/08/13 - 07/09/14	\$ 456.96	1,006	366	1,005	367

Acct #2-03-754-6041

Vendor #10287

Description: #8 SO. GC POND (AERATOR MOTOR)

A/P Acct. #85091

Service Acct.#3-001-8474-71 Fairway Courts between #41 - 42

27535 1/2 Lakeview PMP

Rate Schedule: TOU-GS-1-A

KWH USAGE

Meter #222011-336467

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	182.85	947	30	748	32
07/31/13 - 08/29/13	161.70	825	29	470	29
08/29/13 - 09/30/13	126.71	600	32	719	30
09/30/13 - 10/30/13	189.00	1210	30	1038	33
10/30/13 - 12/02/13	253.72	1656	33	1081	33
12/02/13 - 01/02/14	244.12	1558	31	992	29
01/02/14 - 01/31/14	227.79	1452	29	961	29
01/31/14 - 03/04/14	251.48	1609	32	1105	32
03/04/14 - 04/03/14	241.10	1541	30	1023	29
04/03/14 - 05/02/14	314.53	2084	29	1005	29
05/02/14 - 06/03/14	331.40	2141	32	1002	30
06/03/14 - 07/02/14	390.76	1937	29	1014	31
07/01/13 - 07/02/14	\$ 2,915.16	17,560	366	11,158	366

Acct #2-02-439-6194

Vendor #10287

Description: TIME CLOCK

A/P Acct. #85091

Service Acct.#3-000-0398-56

73 Bluegrass - Hummingbird

Rate Schedule: TOU-GS-1-A

KWH USAGE

Meter #222011-336176

CURRENT

LAST YEAR

SERVICE PERIOD FROM:	BILL AMOUNT	USAGE	DAYS	USAGE	DAYS
07/08/13 - 08/06/13	133.21	654	29	696	31
08/06/13 - 09/05/13	133.37	650	30	637	30
09/05/13 - 10/04/13	126.16	624	29	418	29
10/04/13 - 11/05/13	116.14	662	32	588	33
11/05/13 - 12/06/13	73.25	348	31	685	31
12/06/13 - 01/08/14	50.01	160	33	701	32
01/08/14 - 02/06/14	44.43	145	29	629	29
02/06/14 - 03/10/14	50.10	168	32	670	30
03/10/14 - 04/09/14	74.04	353	30	703	31
04/09/14 - 05/08/14	112.46	637	29	652	29
05/08/14 - 06/09/14	132.93	714	32	681	30
06/09/14 - 07/09/14	147.54	673	30	730	32
07/08/13 - 07/09/14	\$ 1,193.64	5,788	366	7,790	367

Meter Order #7380098 8/3/99

Acct #2-20-078-6259

new pedestal service

Vendor #10286

Description: **Front Entrance - South side / Fire Dept**

A/P Acct. #85020

Service Account #3-016-0636-58

(27225 East Helendale Rd Pond)???

27089 Helendale Pond

Rate Schedule: TOU-GS-1-A

KWH USAGE

Meter #222012-601210

CURRENT

LAST YEAR

SERVICE PERIOD FROM:	BILL AMOUNT	USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	128.72	622	30	689	32
07/31/13 - 08/29/13	124.04	599	29	662	29
08/29/13 - 09/30/13	136.38	658	32	690	30
09/30/13 - 10/30/13	109.20	618	30	753	33
10/30/13 - 12/02/13	120.31	679	33	749	33
12/02/13 - 01/02/14	127.45	725	31	774	30
01/02/14 - 01/31/14	109.95	608	29	646	29
01/31/14 - 03/04/14	116.55	639	32	700	32
03/04/14 - 04/03/14	110.51	605	30	612	29
04/03/14 - 05/02/14	106.67	587	29	600	29
05/02/14 - 06/03/14	117.75	638	32	619	30
06/03/14 - 07/02/14	137.15	588	29	637	31
07/01/13 - 07/02/14	\$ 1,444.68	7,566	366	8,131	367

Acct #2-02-439-6426

Vendor #10287

Description: TIME CLOCK

73 Bluegrass - Sunset

A/P Acct. #85091

Service Acct.#3-000-0398-57

Rate Schedule: TOU-GS-1-A

KWH USAGE

Meter #222011-336102

CURRENT

LAST YEAR

SERVICE PERIOD FROM:	BILL AMOUNT	USAGE	DAYS	USAGE	DAYS
07/08/13 - 08/06/13	124.70	603	29	642	31
08/06/13 - 09/05/13	124.54	597	30	604	30
09/05/13 - 10/04/13	67.90	264	29	568	29
10/04/13 - 11/05/13	95.62	510	32	665	33
11/05/13 - 12/06/13	123.82	713	31	640	31
12/06/13 - 01/08/14	134.60	764	33	659	32
01/08/14 - 02/06/14	118.17	675	29	589	29
02/06/14 - 03/10/14	124.87	707	32	641	30
03/10/14 - 04/09/14	116.29	656	30	689	31
04/09/14 - 05/08/14	110.55	623	29	623	29
05/05/14 - 06/09/14	129.92	693	32	656	30
06/09/14 - 07/09/14	147.30	670	30	715	32
07/08/13 - 07/09/14	\$ 1,418.28	7,475	366	7,691	367

Acct #2-02-439-7465

Vendor #10287

Description: TIME CLOCK

A/P Acct #85091

Service Acct.#3-000-0398-58

73 Sunshine - Cloverleaf S4

Rate Schedule: TOU-GS-1-A

KWH USAGE

Meter #222010-513290

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	38.73	82	30	87	32
07/31/13 - 08/29/13	37.56	80	29	76	29
08/29/13 - 09/30/13	40.24	81	32	77	30
09/30/13 - 10/30/13	34.72	71	30	80	33
10/30/13 - 12/02/13	37.40	72	33	74	33
12/02/13 - 01/02/14	35.30	67	31	64	30
01/02/14 - 01/31/14	33.16	64	29	62	29
01/31/14 - 03/04/14	37.03	74	32	71	32
03/04/14 - 04/03/14	35.37	74	30	70	29
04/03/14 - 05/02/14	34.34	73	29	73	29
05/02/14 - 06/03/14	38.85	86	32	79	30
06/03/14 - 07/02/14	39.04	82	29	87	31
07/01/2013 - 07/02/14	\$ 441.74	906	366	900	367

Acct #2-03-720-7818

Vendor #10285

Description: GOLF PRO SHOP

A/P Acct #85060 (9% to Sk.Br)

Service Acct.#3-003-6299-10

Acct. #85090 (Difference)

#14878 Clubhouse Dr.

Rate Schedule: GS-2

KWH USAGE

Meter #259000-076104

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	3,168.62	18010	30	19860	33
07/31/13 - 08/29/13	2,925.81	16271	29	18060	29
08/29/13 - 09/30/13	3,096.47	16725	32	15960	30
09/30/13 - 10/30/13	1,547.10	12296	30	14880	33
10/30/13 - 12/02/13	1,512.80	12505	33	12420	33
12/02/13 - 01/02/14	1,444.60	11135	31	10329	30
01/02/14 - 01/31/14	1,447.34	11191	29	9847	29
01/31/14 - 03/04/14	1,510.03	12035	32	11201	32
03/04/14 - 04/03/14	1,517.51	11732	30	11824	29
04/03/14 - 05/02/14	1,780.61	1339	29	13903	29
05/02/14 - 06/03/14	2,150.91	16528	32	15793	30
06/03/14 - 07/02/14	3,760.19	17344	29	18323	31
07/31/13 - 07/02/14	\$ 25,861.99	157,111	366	172,400	368

Acct #2-02-439-8158

Vendor #10287

Description: TIME CLOCK

A/P Acct. #85091

Service Acct.#3-000-0398-59

73 Bonita - Lakeview Dr 65

Rate Schedule: TOU-GS-1-B

KWH USAGE

Meter #222011-640403

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	388.79	2183	30	2450	32
07/31/13 - 08/29/13	384.45	2162	29	2215	29
08/29/13 - 09/30/13	420.27	2362	32	2254	30
09/30/13 - 10/30/13	311.72	2106	30	2485	33
10/30/13 - 12/02/13	203.94	1559	33	2439	33
12/02/13 - 01/02/14	172.94	1184	31	2185	30
01/02/14 - 01/31/14	178.67	1248	29	2117	29
01/31/14 - 03/04/14	192.18	1376	32	2348	32
03/04/14 - 04/03/14	191.30	1288	30	2133	29
04/03/14 - 05/02/14	179.66	1262	29	2145	29
05/02/14 - 06/03/14	213.92	1514	32	2224	30
06/03/14 - 07/02/14	218.54	1378	29	2327	31
07/01/13 - 07/02/14	\$ 3,056.38	19,622	366	27,322	367

Acct #2-02-439-8471

Vendor #10287

Description: GOLF COURSE PUMP

A/P Acct. #85091

Service Acct.#3-000-0398-60

Was TOU-PA-SOP-1

#9 SOUTH TEE ON GC *Wireless modem

Rate Schedule: TOU-PA-3-A

Address: 303-Plant F-6 PMP

KWH USAGE

Meter # V349R-000208

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	8,327.61	69675	30	73829	32
07/31/13 - 08/29/13	7,847.59	62328	29	54513	29
08/29/13 - 09/30/13	6,708.28	50594	32	53532	30
09/30/13 - 10/30/13	5,257.89	35687	30	40779	33
10/30/13 - 12/02/13	4,065.60	16476	33	21313	33
12/02/13 - 01/02/14	3,766.29	11014	31	5986	30
01/02/14 - 01/31/14	4,039.87	15730	29	16886	29
01/31/14 - 03/04/14	4,819.40	27524	32	40809	32
03/04/14 - 04/03/14	5,558.81	39860	30	38402	29
04/03/14 - 05/02/14	6,067.59	45419	29	48816	29
05/02/14 - 06/03/14	7,494.32	67033	32	61779	30
06/03/14 - 07/02/14	10,006.70	79814	29	80088	31
07/01/13 - 07/02/14	\$ 73,959.95	521,154	366	536,732	367

Acct #2-02-571-8479

Vendor #10286

Description: EQUESTRIAN Overhead Light*DEC '97

A/P Acct#85020

Service Acct.#3-013-5702-11

27600 Helendale Rd

Rate Schedule: 0L-1-ALLNITE

High pressure sodium vapor

KWH USAGE

22000L MULTIPLE

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 08/01/13	33.59	170	31		
08/01/13 - 09/01/13	33.59	170	31		
09/01/13 - 10/01/13	33.59	170	30		
10/01/13 - 11/01/13	33.49	170	31		
11/01/13 - 12/01/13	33.55	170	30		
12/01/13 - 01/01/14	33.73	170	31		
01/01/14 - 02/01/14	33.60	170	31		
02/01/14 - 03/01/14	33.60	170	28		
03/01/14 - 04/01/14	33.60	170	31		
04/01/14 - 05/01/14	34.33	170	30		
05/01/14 - 06/01/14	34.33	170	31		
06/01/14 - 07/01/14	35.70	170	30		
07/01/13 - 07/01/14	\$ 406.70	2,040	365		

Acct #2-20-184-9213

Vendor #10285

Description: Silver Lakes Restaurant and Lounge

A/P Acct. #85070

Service Acct.#3-016-1356-32

14818 CLUBHOUSE A

Rate Schedule: TOU-GS-2-B

KWH USAGE

Meter #259000-000311

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	5,648.57	31968	30	30780	32
07/31/13 - 08/29/13	5,356.67	29225	29	31151	29
08/29/13 - 09/30/13	5,459.05	30472	32	28002	30
09/30/13 - 10/30/13	2,710.61	21945	30	25354	33
10/30/13 - 12/02/13	2,487.32	20664	33	22753	33
12/02/13 - 01/02/14	2,301.19	18932	31	20173	30
01/02/14 - 01/31/14	2,241.55	17861	29	19773	29
01/31/14 - 03/04/14	2,434.45	19624	32	21101	32
03/04/14 - 04/03/14	2,357.70	18346	30	20820	29
04/30/14 - 05/02/14	2,596.07	19255	29	21395	29
05/02/14 - 06/03/14	3,108.70	23452	32	237851	30
06/03/14 - 07/02/14	5,518.91	26400	29	29700	31
07/01/13 - 07/02/14	\$ 42,220.79	278,144	366	508,853	367

Acct #2-02-440-9401		Vendor #10285				
Description: RV PARK		73 HELENDALE - SMITHSON				
A/P Acct. #85010						
Service Acct.#3-000-0398-76						
27925 Helendale Rd/Smithson Rd						
Rate Schedule: TOU-GS-2-B						
KWH USAGE						
Meter #259000-007185		CURRENT		LAST YEAR		
SERVICE PERIOD FROM:	BILL AMOUNT	Credits & Adj	USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	2,920.98		13775	30	13658	32
07/31/13 - 08/29/13	2,489.03		10951	29	13672	29
08/29/13 - 09/30/13	2,601.34		12319	32	12953	30
09/30/13 - 10/30/13	1,010.53		7288	30	8607	33
10/30/13 - 12/02/13	1,315.40		9806	33	10774	33
12/02/13 - 01/02/14	1,779.37		15057	31	15322	30
01/02/14 - 01/31/14	1,615.17		13530	29	13425	29
01/31/14 - 03/04/14	1,565.67		12939	32	10246	32
03/04/14 - 04/03/14	1,412.52		10658	30	898	29
04/03/14 - 05/02/14	1,441.64		10279	29	7719	29
05/02/14 - 06/03/14	1,352.35		9702	32	9400	30
06/03/14 - 07/02/14	3,007.79		12858	29	12735	31
07/01/13 - 07/02/14	\$ 22,511.79	0.00	139,162	366	129,409	367

Acct #2-02-440-9617

Vendor #10285

Description: ADMIN BLDG

15273 ORCHARD HILL LN

A/P Acct. #85010

Service Acct.#3-000-0398-77

Rate Schedule: TOU-GS-2-B

KWH USAGE

Meter #223000-003485

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	1,951.85	9431	30	8136	32
07/31/13 - 08/29/13	1,718.65	7809	29	8618	29
08/29/13 - 09/30/13	1,688.36	7440	32	7841	30
09/30/13 - 10/30/13	789.53	4617	30	6095	33
10/30/13 - 12/02/13	696.07	4650	33	4582	33
12/02/13 - 01/02/14	761.20	4954	31	4718	30
01/02/14 - 01/31/14	767.28	4696	29	5014	29
01/31/14 - 03/04/14	714.23	4716	32	4933	32
03/04/14 - 04/03/14	699.08	4431	30	4466	29
04/03/14 - 05/02/14	818.05	4815	29	4607	29
05/02/14 - 06/03/14	1,012.02	5958	32	5309	30
06/03/14 - 07/02/14	1,937.85	7316	29	7889	31
07/01/13 - 07/02/14	\$ 13,554.17	70,833	366	72,208	367

Acct #2-02-439-9636

Vendor #10286

Description: **WELL #10A & 10B**

A/P Acct.#85020

Service Acct.#3-000-398-62

304 PLANT F-6 PMP

Rate Schedule: TOU-PA-2-B

Meter #256000-049788

*****KWH USAGE*****

State #08N04W30P01 (#10)

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/30/13	1,363.86	12152	32	26626	33
07/30/13 - 08/28/13	1,381.79	12278	29	22551	29
08/28/13 - 09/30/13	1,156.94	9534	33	16731	30
09/30/13 - 10/29/13	833.09	8954	29	7774	33
10/29/13 - 11/27/13	591.21	5823	29	12	33
11/27/13 - 12/30/13	674.15	6678	33	8	28
12/30/14 - 01/30/14	1,024.68	11532	31	14	31
01/30/14 - 03/03/14	742.42	7692	32	32	29
03/03/14 - 03/05/14	73.61	789	2		
03/05/14 - 04/03/14	1,086.23	13061	31	6277	31
04/03/14 - 05/02/14	1,081.89	12358	29	120	29
05/02/14 - 06/03/14	1,195.67	13870	32	4063	30
06/03/14 - 07/02/14	1,606.30	12577	29	2983	29
07/01/13 - 07/02/14	\$ 12,811.84	127,298	371	87,191	365

Acct #2-02-440-9757

Vendor #10285

Description: **CLUBHOUSE**

27801 MOUNTAIN SPRINGS RD

A/P Acct.#85095

Service Acct.#3-000-0398-78

Rate Schedule: TOU-GS-2-B

*****KWH USAGE*****

Meter #259000-000367

CURRENT

LAST YEAR

SERVICE PERIOD FROM:	BILL AMOUNT	USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	7,783.21	45782	30	46837	32
07/31/13 - 08/29/13	7,047.74	39261	29	43661	29
08/29/13 - 09/30/13	7,371.39	40766	32	37926	30
09/30/13 - 10/30/13	3,562.14	28941	30	33187	33
10/30/13 - 12/02/13	3,332.11	28574	33	27098	33
12/02/13 - 01/02/14	3,320.78	27384	31	25247	30
01/02/14 - 01/31/14	3,256.68	25906	29	23877	29
01/31/14 - 03/04/14	3,434.09	28659	32	26010	32
03/04/14 - 04/03/14	2,692.34	20310	30	24797	29
04/03/14 - 05/02/14	3,592.39	28480	29	29123	29
05/02/14 - 06/03/14	4,497.70	35730	32	30784	30
06/03/14 - 07/02/14	8,174.41	40683	29	42778	31
07/01/13 - 07/02/14	\$ 58,064.98	390,476	366	391,325	367

Acct #2-02-440-9914

Vendor #10286

Description: PARMELEE BASEBALL PARK

A/P Acct. #85020

Service Acct.#3-000-0398-79

Rate Schedule: GS-1

341 PLANT G6

KWH USAGE

Meter #222012-605839

SERVICE PERIOD FROM:	BILL AMOUNT	CURRENT		LAST YEAR	
		USAGE	DAYS	USAGE	DAYS
07/01/13 - 07/31/13	54.07	174	30	104	32
07/31/13 - 08/29/13	52.24	168	29	100	29
08/29/13 - 09/30/13	46.91	121	32	126	30
09/30/13 - 10/30/13	39.52	106	30	119	33
10/30/13 - 12/02/13	38.75	82	33	163	33
12/02/13 - 01/02/14	161.20	966	31	286	30
01/02/14 - 01/31/14	140.75	840	29	768	29
01/31/14 - 03/04/14	137.71	802	32	1204	32
03/04/14 - 04/03/14	69.94	324	30	710	29
04/03/14 - 05/02/14	68.91	322	29	245	29
05/02/14 - 06/03/14	75.56	347	32	235	30
06/03/14 - 07/02/14	80.09	299	29	194	31
07/01/13 - 07/02/14	\$ 965.65	4,551	366	4,254	367

Silver Lakes Association Usage - July 2013 - July 2014

	Meter 1	Meter 2	Meter 3	Meter 4	Meter 5	Meter 6	Meter 7	Meter 8	Meter 9	Meter 10	Meter 11
kWh/ used	13,449	108,599	29,256	348	167,077	203,713	3,521	6,857	-	341,569	2,647

Silver Lakes Solar System Production (1 Year)

Month	January	February	March	April	May	June	July	August	September	October	November
kWh/ produced	61,555	57,077	99,168	114,984	138,290	146,900	134,076	128,473	112,637	93,376	68,697

Total kWh used 3,125,790

Total kWh produced 1,217,765

Meter 12	Meter 13	Meter 14	Meter 15	Meter 16	Meter 17	Meter 18	Meter 19	Meter 20	Meter 21	Meter 22	Meter 23	Meter 24	Meter 25	Meter 26
247,531	196,241	31,848	11,128	11,314	1,006	17,560	5,788	7,566	7,475	906	157,111	19,622	521,154	2,040

December	Total
62,532	1,217,765

Meter 27	Meter 28	Meter 29	Meter 30	Meter 31	Meter 32	Total
278,144	139,162	70,833	127,298	390,476	4,551	3,125,790