From:	Gungle, Ashley
To:	Boparai, Poonam; Aquino, Emmet; Foster, Terri; Blackson, Kristin; Sinsay, Edwin M; Pine, James
Cc:	Ramaiya, Jarrett; Buell, Diane
Subject:	Tierra Del Sol Solar (REZ 12-005, P12-010)
Date:	Thursday, June 21, 2012 9:16:54 AM
Attachments:	TDS Final Plot Plans wo FTE.pdf Comprehensive PD.pdf

Hi Team,

A new application was received for a solar project in the Tierra Del Sol area (REZ 12-005, P12-010). Most of you likely worked on the Major Pre-App (MPA 11-022).

You should have all received the necessary documents to complete your review of this project as detailed below. If you have not received your documents, please let me know and I will provide you with copies asap.

Air Quality- Poonam- Air Quality Assessment
Noise- Emmet Aquino- Noise Assessment
Hazards- Terri Foster- Phase I ESA
Visual- Kristin- Visual Resources Report
DPW- Ed Sinsay- Drainage/Hydrology, SWMP, Grading Plan, title report
Fire- James Pine- Fire Protection Plan

Cultural- Diane Buell- Cultural Resources Report (*to be submitted Friday*)

Below is the project description completed by staff. The plot plan and project description provided by the applicant are also attached. Please let me know if any changes are warranted based on your review of the project.

The project is a Major Use Permit for the construction and operation of a 60MW solar energy system on an approximately 420-acre site and a Rezone to remove the "A" special area designator from the site. The project site is located within the Boulevard Community Plan area of the Unincorporated County of San Diego, adjacent to the US/Mexico border (APN 658-120-03-00, 658-090-31-00, 658-090-55-00, 658-120-02-00, 658-090-54-00)

The project would be completed in two phases; phase I consisting of 1,910 concentrating photovoltaic (CPV) trackers on approximately 330 acres and phase II consisting of 619 CPV trackers on approximately 90 acres. Also included would be a 1,000 volt DC underground collection system, a 34.5 kV overhead and underground collection system to link the CPV systems to the onsite substation, a 4-acre operations and maintenance(O&M) area including a 7,500 square foot O&M building, a 3-acre onsite private collector substation site, 31 to 46 inverter stations and a 138 kV overhead transmission line connecting the onsite private collector substation to SDG&E's proposed Boulevard Substation.

The project site is accessed off of Tierra Del Sol Road. Internal circulation would be provided by 24-foot graded and 12-foot improved (with an all weather surface) fire access roads

located in the north/south direction (and in the east/west direction every fourth row) and 20-foot wide service roads located in the north/south direction.

The site is subject to the Rural General Plan Regional Category and Rural Lands (RL-80) Land Use Designation. Zoning for the site is S92 (General Rural) and A70 (Limited Agricultural). The project would be include a restroom in the operations and maintenance building which would be served by septic. Water to be used during the construction and maintenance phases would be provided by an onsite well. Earthwork would consist of the balanced cut and fill of approximately 694,450 cubic yards of material.

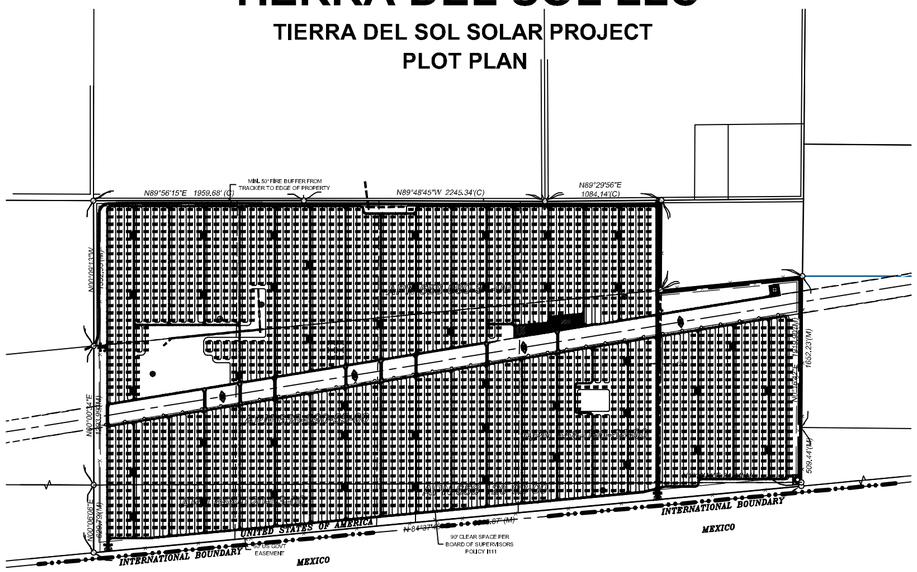
Please let me know if you need to go out to the site with me. I'm looking at going out next week sometime. Also, please let me know if you will not be able to complete your task on time.

Thanks,

Ashley

60.0MW SOLAR SYSTEM
TIERRA DEL SOL LLC

TIERRA DEL SOL SOLAR PROJECT
PLOT PLAN



GENERAL NOTES:

1. Each tracker assembly is approximately 48 FT wide with a maximum constructed height of 30 FT and spaced approximately 69 FT North to South; 82 FT East to West.
2. Entrance to each gate will be from an improved driveway that shall be designed in accordance with the attached details on C-103 and equipped with an emergency key-operated override switch.
3. At no point does the change of grade, along the primary access road, exceed 10%.
4. Detailed cross sections of the roads are provided on the preliminary grading plan.
5. All compaction requirements are listed on the preliminary grading plan.
6. Turnaround shall be designed in accordance with County of San Diego Design Standard DS-06 for a county emergency fire apparatus.
7. The project site is not located in a designated flood plain, therefore lines of inundation are not shown.
8. Temporary and Permanent BMPs are shown on the preliminary grading plan.
9. All coordinates shown are state plane coordinates based on CCS83, Zone 6 (2007.00 Epoch).
10. All dimensions are shown in Decimal Feet.

ABBREVIATIONS:

AC	Alternating Current
ADT	Average Daily Trips
BB	Building Block
BMP	Best Management Practice
CEQA	California Environmental Quality Act
CPV	Concentrating Photovoltaic
CFA	County Fire Authority
DPLU	County of San Diego, Department of Planning and Land Usage
DS	Design Standard
EIR	Environmental Impact Report
EOP	Edge of Pavement
FT	Feet
kV	kilovolt
kW	kilowatts
MAX	Maximum
MOU	Memorandum of Understanding
MPA	Major Use Permit Application
MUP	Major Use Permit
MW	Megawatts
NTS	Not to Scale
PL	Property Lines
QTY	Quantity
RL	Rural Land
ROW	Right of Way
RPO	Resource Protection Ordinance

SHEET INDEX

RESERVED FOR COUNTY STAMPS

AECOM

DESIGNER

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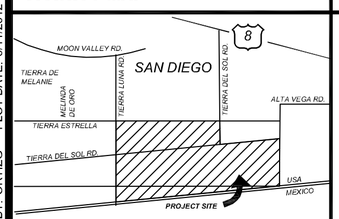
CLIENT

Soitec

Soitec Solar Development, LLC
4250 Executive Square, Suite 770
San Diego, CA 92037-9178

VICINITY MAP



OWNER INFORMATION

NAME: Brown Family Trust, Brown & Reynolds Trust
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ZIP: 38401
PHONE:
FAX:
EMAIL:

CONTACT INFORMATION

NAME: Pat Brown
ADDRESS: 4250 Executive Square, Suite 770
CITY: La Jolla
STATE: CA
ZIP: 92037
PHONE: (858) 652-4423
FAX:
EMAIL: patrick.brown@soitec.com

PARCEL INFORMATION

APN: 6580903100, 6580905500, 6581200300, 6581200200, 6580905400

SITE ADDRESS: 796 Tierra del Sol Road, Boulevard, CA 91905

PROJECT INFORMATION

EXISTING:
Relatively level land on the southern and central portions of the site with rolling rock and boulder covered hills on the northwestern portion. The site is minimally developed with unpaved roads.

PROPOSED:
60 Megawatt (MW) project, constructed in two phases, located on approximately 420 acres and includes the construction and operation of approximately 2529 Concentrated Photovoltaic (CPV) trackers configured into 45 (1.36 MW) BB that consist of 56 trackers with associated Inverter and Transformer.

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Approx. Number of Trackers:	2529
Tracker per BB:	56
Number of BB:	45
Total AC Capacity (MWs):	Approx. 60MW
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Number of 1.36 MW Inverter Skids:	45
Total Lot Size (Acres):	Approx. 420
Estimated Disturbed Acreage:	418.5
Coverage Ratio:	16%

SHEET TITLE

LEGEND, SYMBOLS ABBREVIATIONS & NOTES

SHEET NUMBER	REV.
C-100	0

FILE NAME: P:\10 ENERGY WEST_CURRENT\SOITEC SOLAR 60212653\400 TECHNICAL\401 PRELIMINARY ENGINEERING\7 PLANS - CADD FILES\ACAD SOLAR CPV LAYOUT\TIERRA DEL SOL\C-100 SOITEC TIERRA DEL SOL PLOT PLAN & EASEMENT PLAN .DWG
LAST SAVED BY: ORTIZG PLOT DATE: 6/11/2012 1:44:30 PM

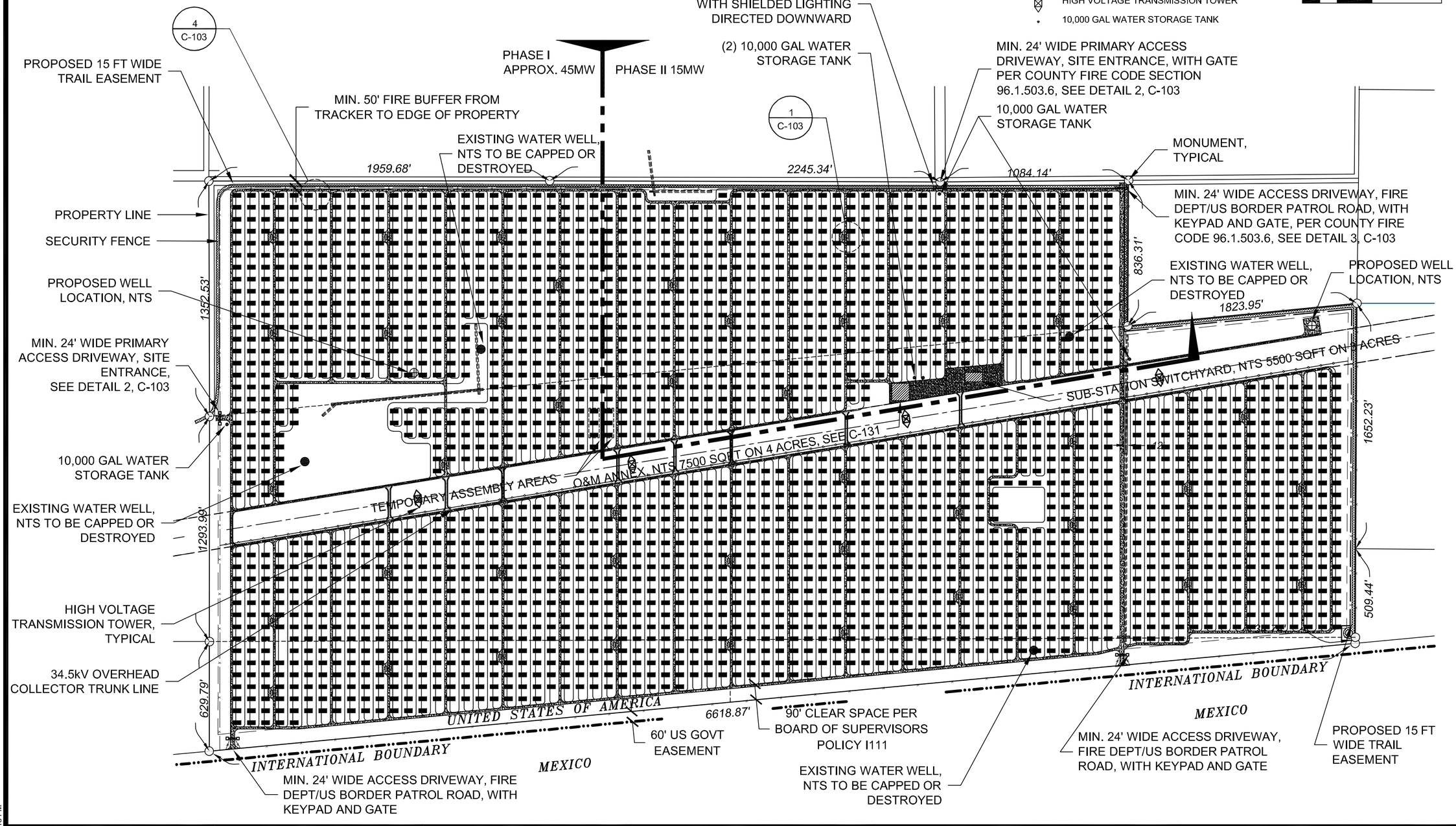
LEGEND:

- EASEMENT
- CPV TRACKER
- INVERTER
- SECURITY FENCE
- TEMPORARY ASSEMBLY SITE
- PROPERTY LINE
- TRAIL EASEMENT
- SECONDARY ACCESS/FIRE ROAD
- SERVICE ROAD
- 34.5kV OVERHEAD COLLECTOR TRUNK LINE
- EXISTING WATER WELL, NTS TO BE CAPPED OR DESTROYED
- PROPOSED WELL LOCATIONS, NTS
- INTERNATIONAL BOUNDARY
- HIGH VOLTAGE TRANSMISSION TOWER
- 10,000 GAL WATER STORAGE TANK

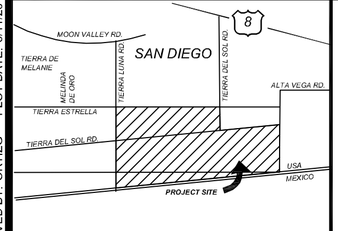
N

ENGINEERING SCALE: 1:400

0 400' 800'



VICINITY MAP



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SHEET TITLE

PLOT PLAN

SHEET NUMBER	REV.
C-101	0

AECOM

DESIGNER

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www.aecom.com

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San Diego, CA 92037-9178

FILE NAME: P:\10 ENERGY WEST_CURRENT\SOITEC SOLAR 60212653400 TECHNICAL\401 PRELIMINARY ENGINEERING\7 PLANS - CADD FILES\ACAD SOLAR CPV LAYOUT\TIERRA DEL SOL\C-100 SOITEC TIERRA DEL SOL PLOT PLAN & EASEMENT PLAN .DWG
LAST SAVED BY: ORTIZG PLOT DATE: 6/11/2012 2:50:13 PM

EXCEPTIONS AND EXCLUSIONS

(15) AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 28, 1979 AS INSTRUMENT NO. 79-085974 OF OFFICIAL RECORDS.

(16) AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 28, 1979 AS INSTRUMENT NO. 79-085975 OF OFFICIAL RECORDS.

(17) AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED MAY 6, 1980 AS INSTRUMENT NO. 80-151392 OF OFFICIAL RECORDS.

(18) AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED JANUARY 21, 1982 AS INSTRUMENT NO. 82-017128 OF OFFICIAL RECORDS.

(19) AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED JUNE 18, 1982 AS INSTRUMENT NO. 82-187732 OF OFFICIAL RECORDS.

EASEMENT LEGEND

△13 EXCEPTIONS AND EXCLUSIONS ARE THE SAME AS THAT SHOWN ON COMMITMENT NO. NCS-474346-SD SEPTEMBER 09, 2011.

(15) EXCEPTIONS AND EXCLUSIONS ARE THE SAME AS THAT SHOWN ON COMMITMENT NCS-505191-SD DATED SEPTEMBER 15, 2011.

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- EASEMENT
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- SECURITY FENCE
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- PROPOSED WELL LOCATIONS, NTS
- INTERNATIONAL BOUNDARY

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ENGINEERING SCALE: #####

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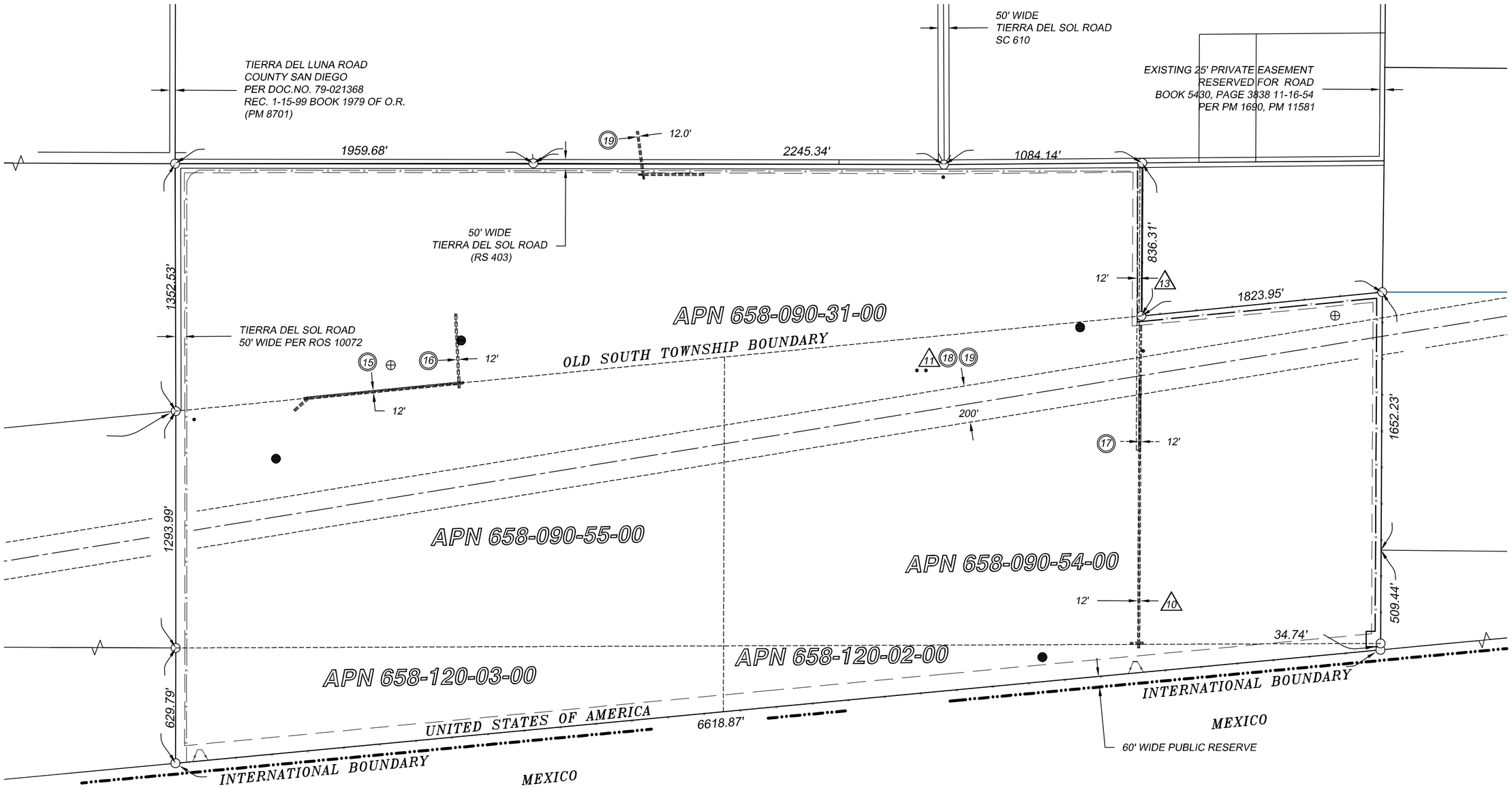
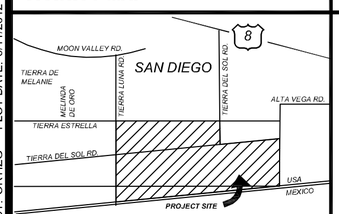


VICINITY MAP



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SHEET TITLE

EASEMENT PLAN

SHEET NUMBER	REV.
C-102	0

AECOM

DESIGNER

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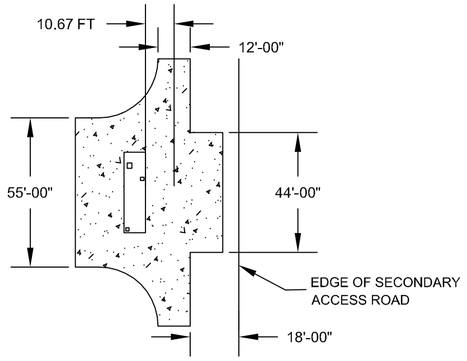
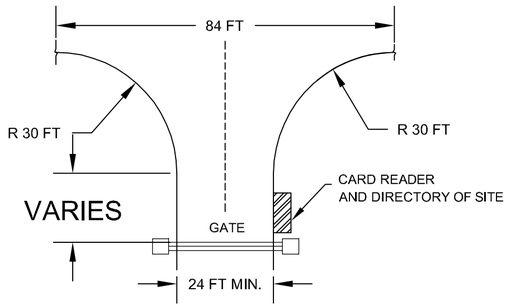


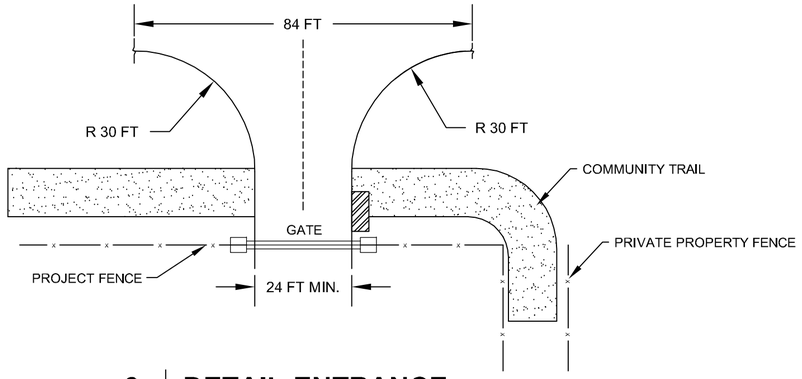
1 DETAIL - DECOMPOSED GRANITE PAD

SEE DETAIL 1 FOR MATERIAL COMPACTION NTS



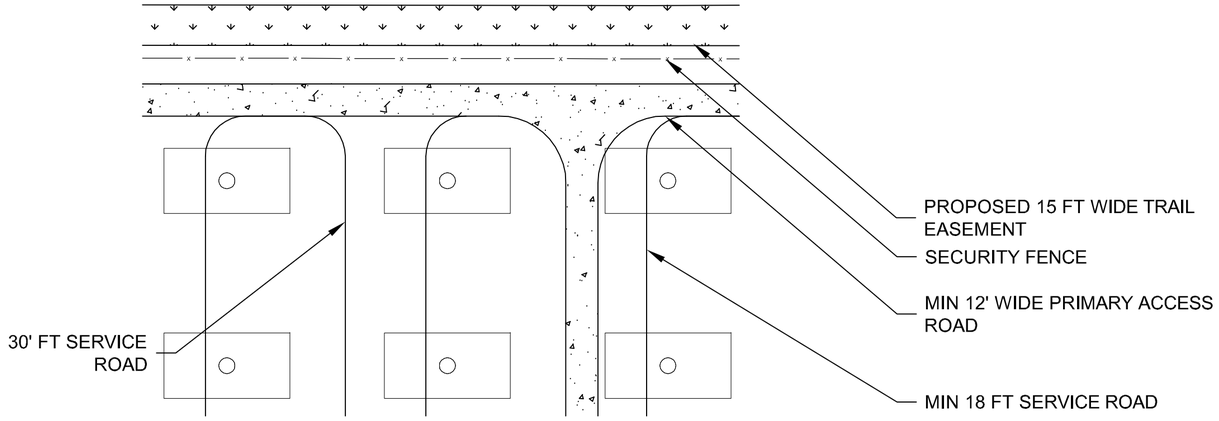
2 DETAIL - DRIVEWAY ENTRANCE

NTS



3 DETAIL-ENTRANCE

NTS



4 DETAIL - ROAD LAYOUT

NTS

AECOM

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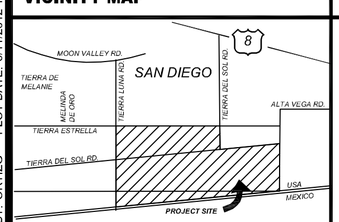
VICINITY MAP



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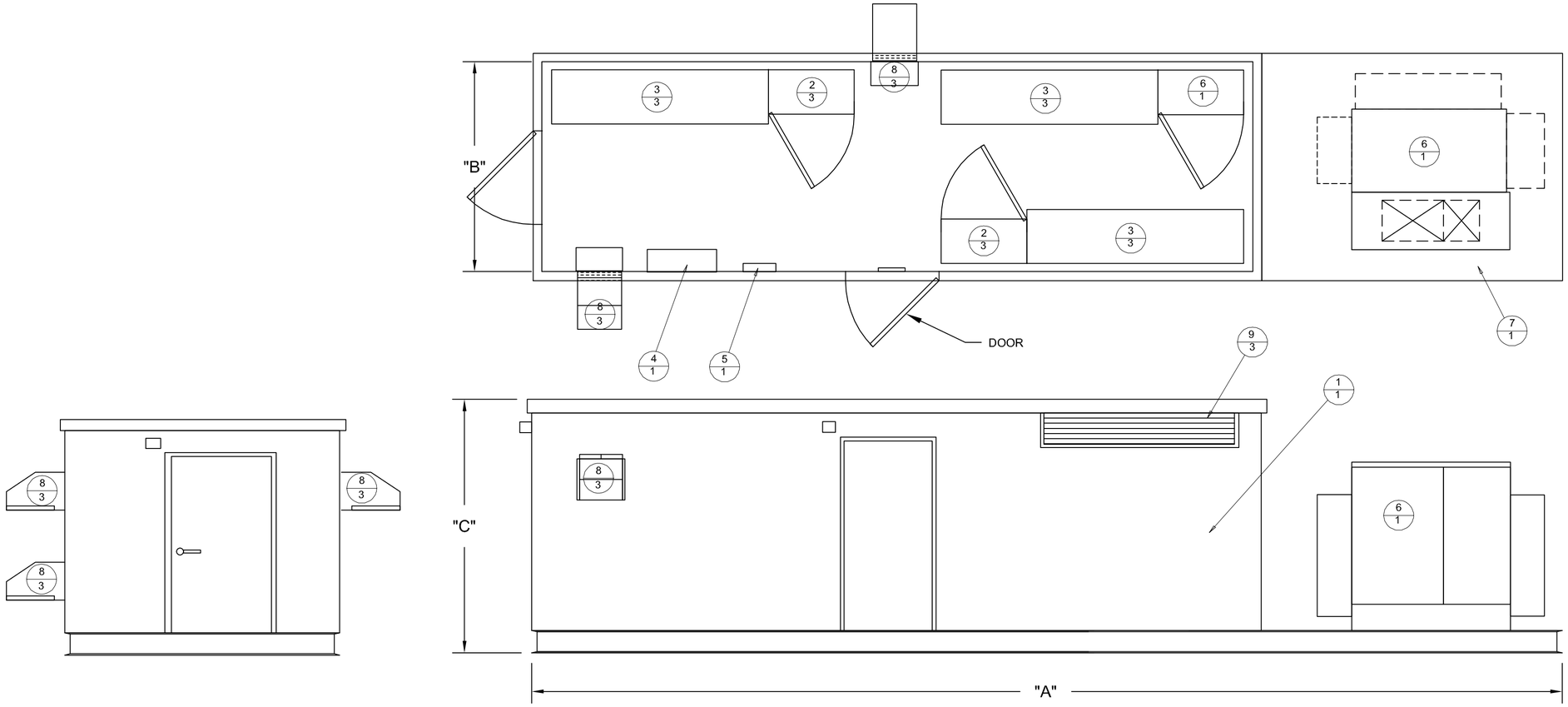
Coverage Ratio:	16%

SHEET TITLE

ROAD DETAILS

SHEET NUMBER	REV.
C-103	0



GENERAL NOTES:

1. INVERTER SKIDS PICTURE IN THIS DRAWING MAY BE OPEN AND EXPOSED AS OPPOSED TO ENCLOSED AS SHOWN

INVERTER DIMENSION

INVERTER RATING (MW)	DIMENSION (FT)		
	"A"	"B"	"C"
1.36	25	10	12
2.00	40	10	12

REV	ITEM	QTY	DESCRIPTION
	1	1	PRECAST SHELTER
	2		PRIMARY RE-COMBINER BOX, 16 X 150A MCCC (QTY OF 2 O3)
	3		XC 680 INVERTER (QTY OF 2 OR 3)
	4	1	SCADA
	5	1	POWER PANEL
	6	1	TRANSFORMER
	7	1	STEEL SKID
	8	3	INTAKE AIR FANS
	9	3	EXHAUST LOUVERS

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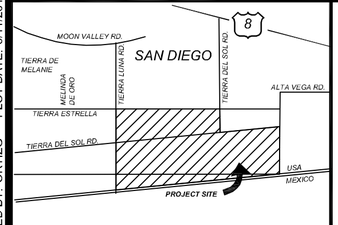

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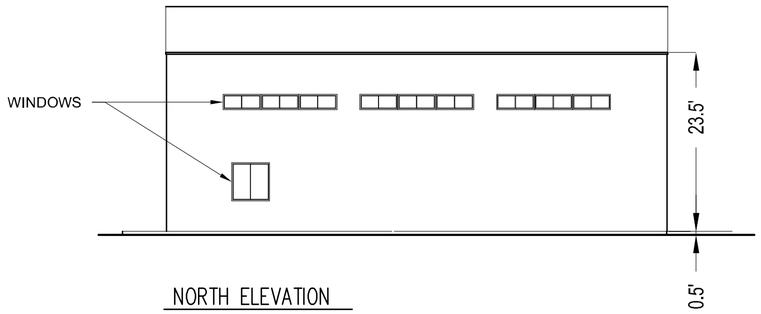
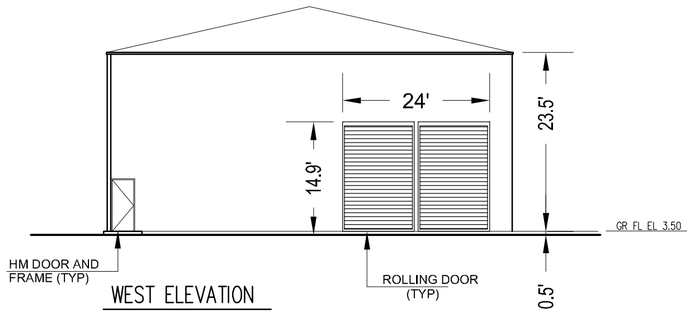
1.36 / 2.0 MW INVERTER BOX DESIGN

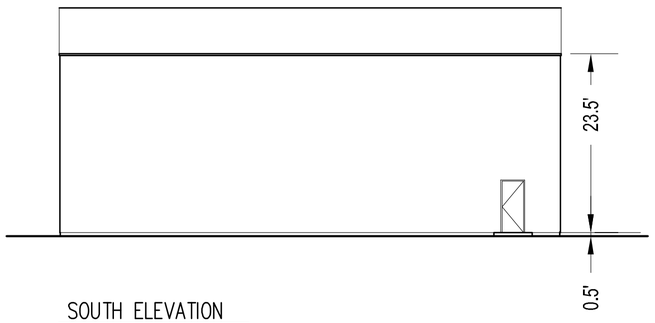
SHEET NUMBER	REV.
C-130	0



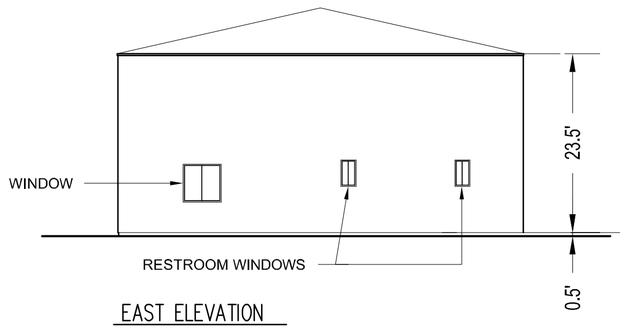
NORTH ELEVATION



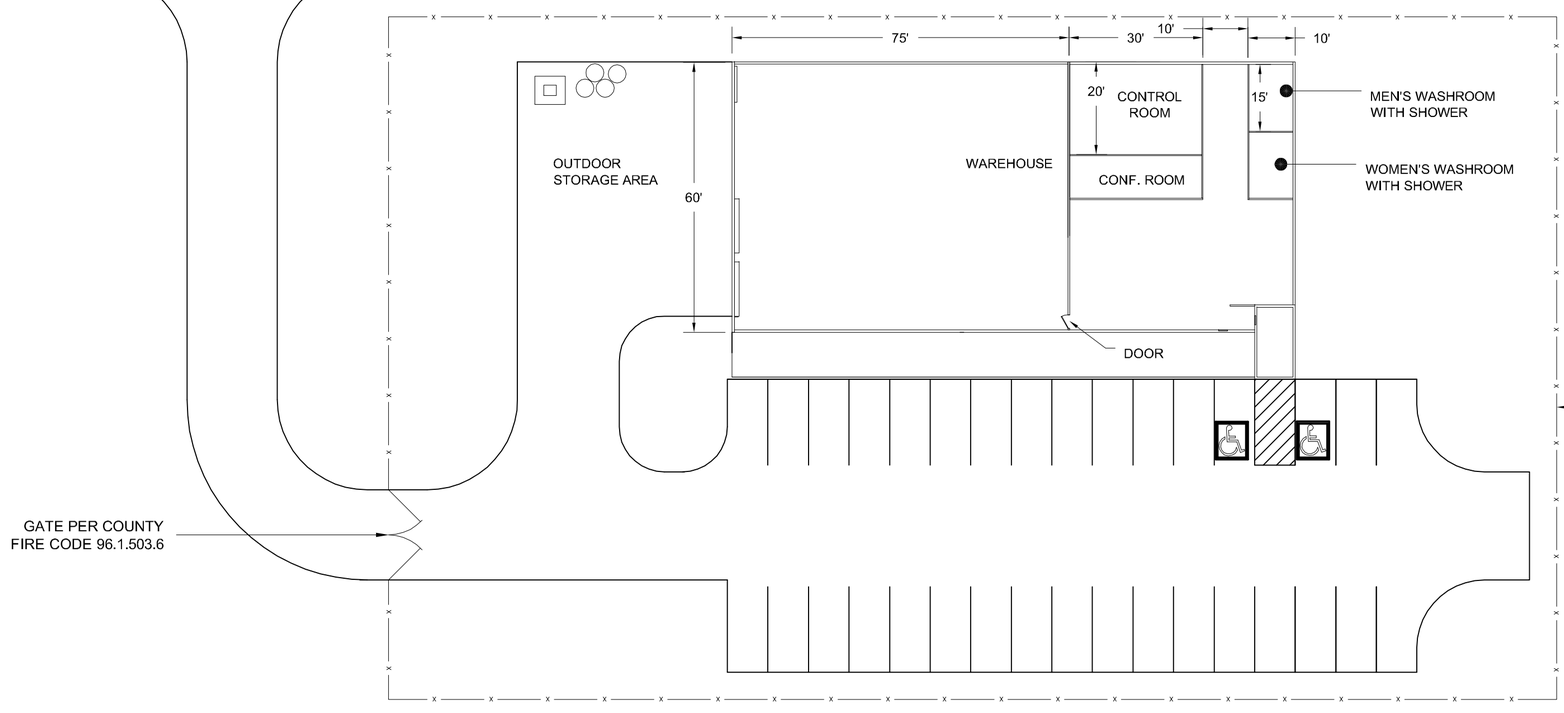
WEST ELEVATION

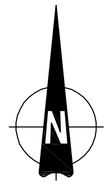


SOUTH ELEVATION



EAST ELEVATION





A PLAN VIEW

Scale: NA

DESIGNER

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www.aecom.com

CLIENT

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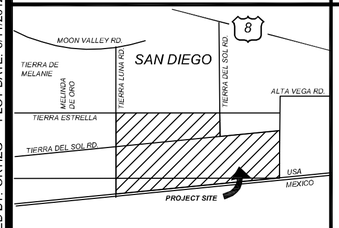
San Diego, CA 92037-9178

VICINITY MAP



OWNER INFORMATION

NAME: Brown Family Trust, Brown & Reynolds Trust
ADDRESS: 1116 W. 7th Sreet PMB 158
CITY: Columbia
STATE: TN
ZIP: 38401
PHONE:
FAX:
EMAIL:

CONTACT INFORMATION

NAME: Pat Brown
ADDRESS: 4250 Executive Square, Suite 770
CITY: La Jolla
STATE: CA
ZIP: 92037
PHONE: (858) 652-4423
FAX:
EMAIL: patrick.brown@soitec.com

PARCEL INFORMATION

APN: 6580903100, 6580905500, 6581200300, 6581200200, 6580905400

SITE ADDRESS: 796 Tierra del Sol Road, Boulevard, CA 91905

PROJECT INFORMATION

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PLOT PLAN INFORMATION

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Number of 1.36 MW Inverter Skids:	45
Total Lot Size (Acres):	Approx. 420
Estimated Disturbed Acreage:	418.5
Coverage Ratio:	16%

SHEET TITLE

O & M BUILDING

SHEET NUMBER	REV.
C-131	0

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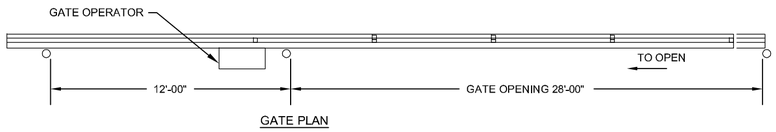
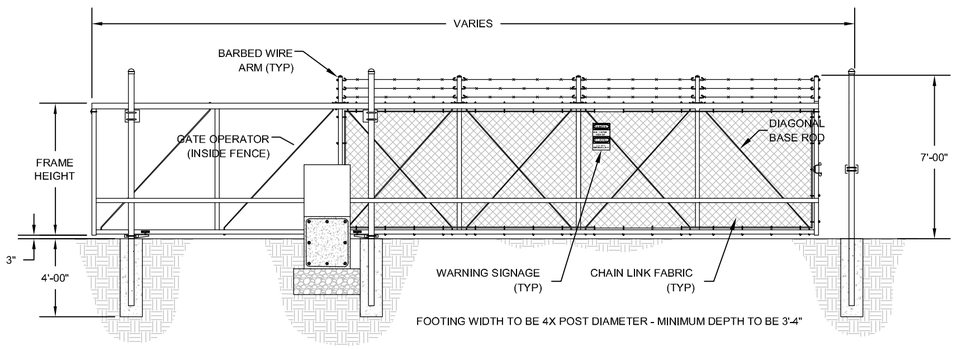
FENCE DETAILS



GATE PLAN

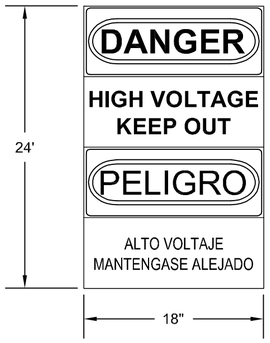


1 DETAIL - GATE

SINGLE MOTORIZED SLIDING GATE
PER COUNTY FIRE CODE 96.1.503.6

NTS

* 4" DIAMETER POST FOR GATE LEAF LENGHT 35'-0" AND LESS



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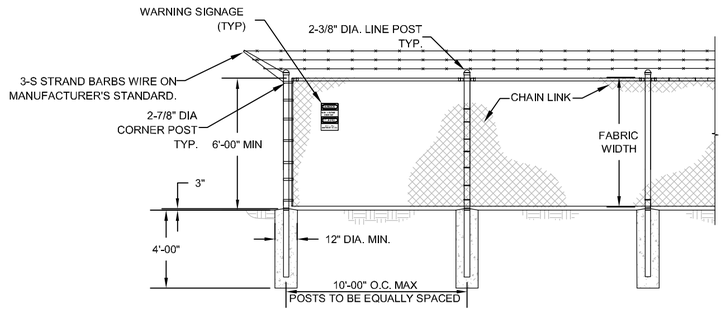
Scale: NTS



3 DETAIL - CHAIN LINK FENCE

NTS

FENCE NOTES:

1. CHAIN LINK SHALL BE 2" MESH NO.9 GAGE WERE SECURITY FASTED TO LINE POSTS AND RAILS.WIRE FASTENERS AND THE CLIPS SHALL BE NO.11 GAGE
2. WIRE.CONCRETE FOOTINGS SHALL HAVE TOPS CROWNED AT GROUND LEVEL.
3. CHAIN LINK FENCE TO BE FITTED WITH UV- RESISTANT MESH FABRIC, COLOR PER CUSTOMER REQUEST.
4. ELECTRICAL SAFETY SIGNAGE TO BE PLACED ALONG PERIMETER.

DESIGNER

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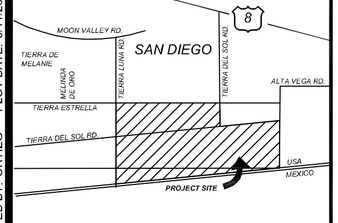
VICINITY MAP



OWNER INFORMATION

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STATE: TN
ZIP: 38401
PHONE:
FAX:
EMAIL:

CONTACT INFORMATION

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CITY: La Jolla
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ZIP: 92037
PHONE: (858) 652-4423
FAX:
EMAIL: patrick.brown@soitec.com

PARCEL INFORMATION

APN: 6580903100, 6580905500, 6581200300, 6581200200, 6580905400

SITE ADDRESS: 796 Tierra del Sol Road, Boulevard, CA 91905

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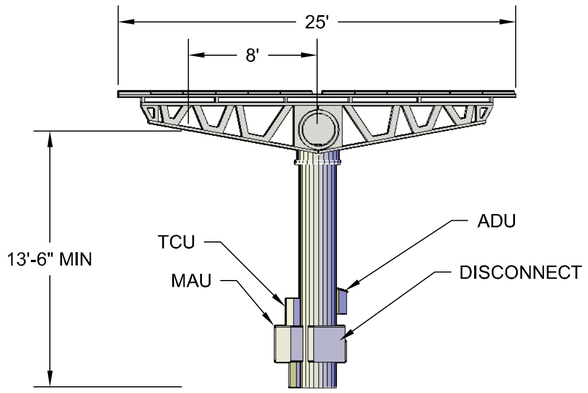
Number of 1.36 MW Inverter Skids:	45
Total Lot Size (Acres):	Approx. 420
Estimated Disturbed Acreage:	418.5
Coverage Ratio:	16%

SHEET TITLE

FENCE ELEVATION DETAIL

SHEET NUMBER	REV.
C-132	0



1 STOW MODE VIEW
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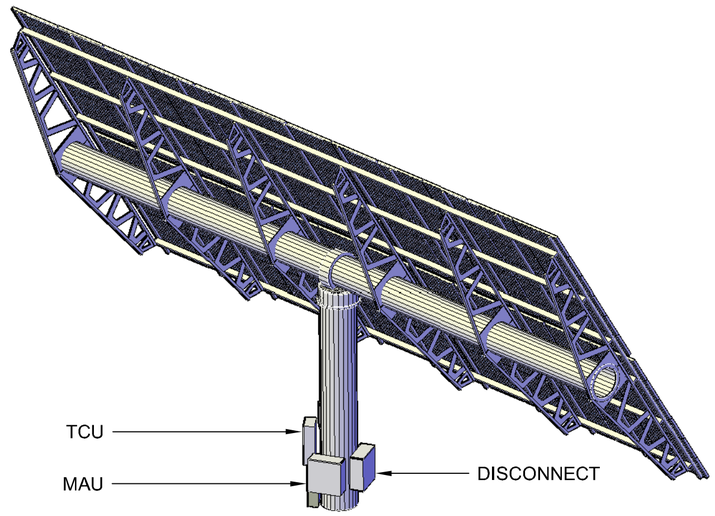
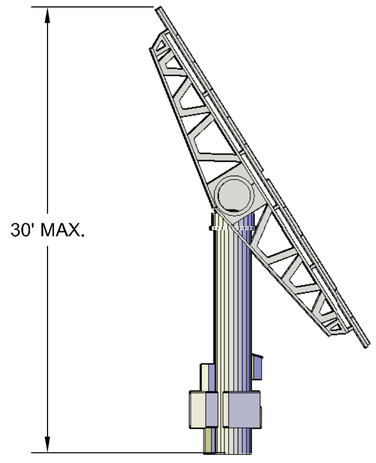
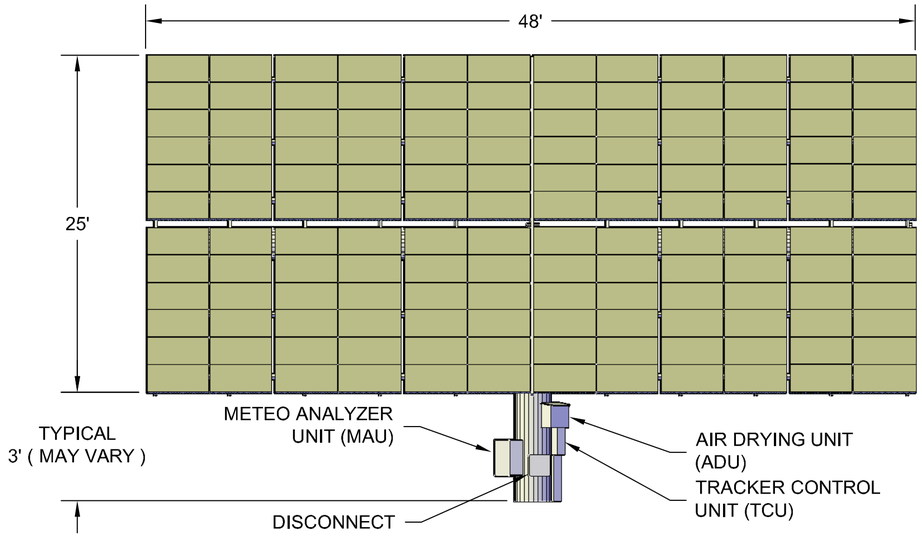


2 ISOMETRIC VIEW
Scale: NTS



3 SIDE VIEW
Scale: NTS



4 FRONT VIEW
Scale: NTS

PRELIMINARY,
NOT FOR CONSTRUCTION

DESIGNER

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CLIENT

Soitec Solar Development, LLC
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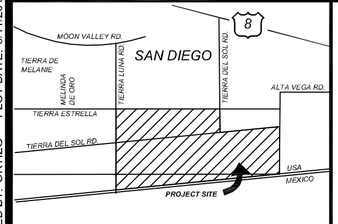
San Diego, CA 92037-9178

VICINITY MAP



OWNER INFORMATION

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ADDRESS: 1116 W. 7th Sreet PMB 158
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ZIP: 38401
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FAX:
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FAX:
EMAIL: patrick.brown@soitec.com

PARCEL INFORMATION

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SITE ADDRESS:
796 Tierra del Sol Road,
Boulevard, CA 91905

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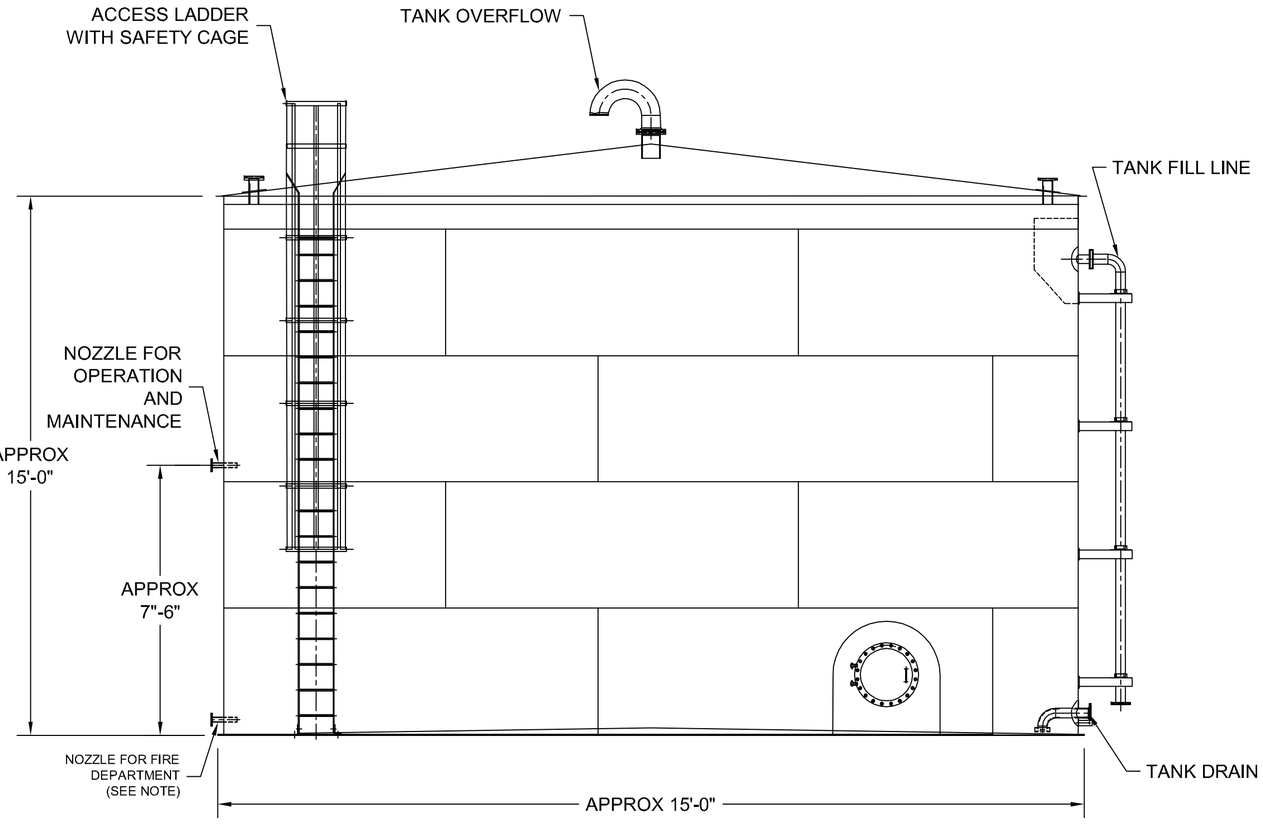
Estimated Disturbed Acreage:	418.5
Coverage Ratio	16%

SHEET TITLE

TRACKER ELEVATION DETAIL

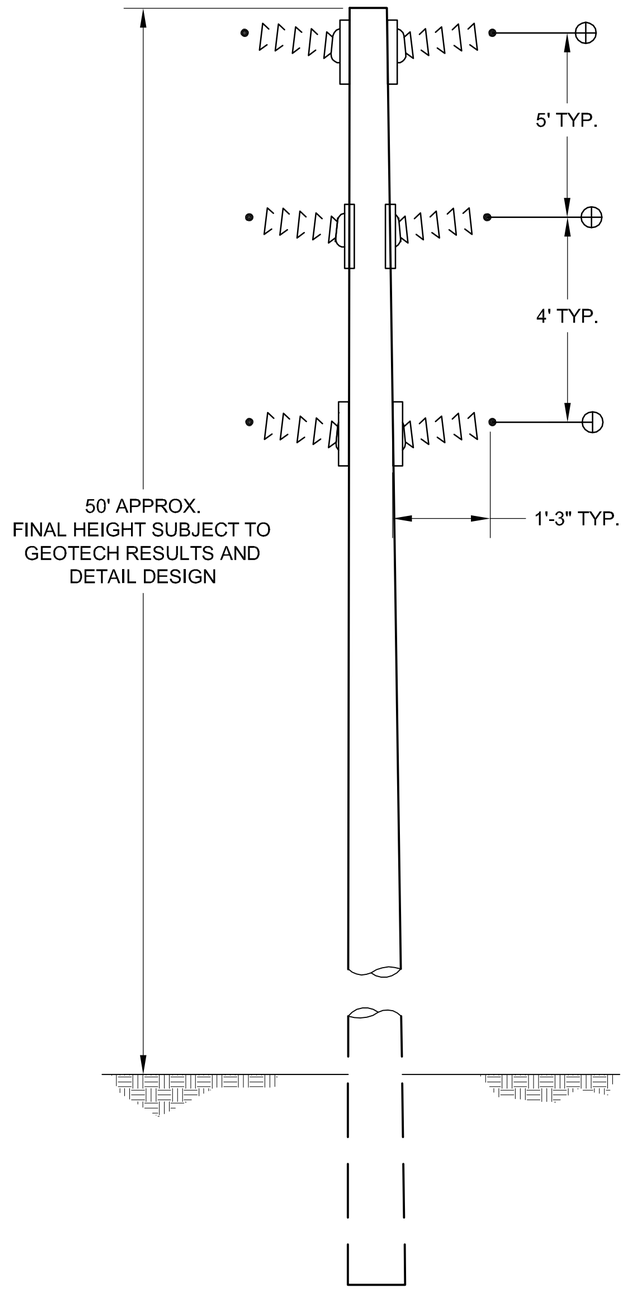
SHEET NUMBER	REV.
C-133	0



NOTE:

IN ACCORDANCE WITH SECTION 507.2.2 IN TITLE 9, DIVISION 6, CHAPTER 1 OF THE SAN DIEGO COUNTY CODE:

1. THE SUPPLY OUTLET SHALL BE AT EAST 4 INCHES IN DIAMETER FROM THE BASE OF THE TANK TO THE POINT OF OUTLET AT THE FIRE DEPARTMENT CONNECTION. THE FIRE DEPARTMENT CONNECTION SHALL BE AT LEAST ONE 4-INCH NATIONAL STANDARD THREAD (MALE), REDUCE TO ONE 2½ INCH NATIONAL STANDARD THREAD (MALE). ADDITIONAL OUTLETS MAY BE REQUIRED.
2. THE LOCATION OF THE FIRE DEPARTMENT OUTLET TO BE DETERMINED ON THE PLOT PLAN WHEN SUBMITTED TO THE FIRE DEPARTMENT. CONSIDERATION WILL BE GIVEN TO TOPOGRAPHY, ELEVATIONS, AND DISTANCE FROM STRUCTURES, DRIVEWAY ACCESS, PREVAILING WINDS, ETC.
3. THE OUTLET SHALL BE LOCATED ADJACENT TO THE FIRE ACCESS ROAD.



34.5 KV OVERHEAD COLLECTOR TRUNK LINE

PRELIMINARY,
NOT FOR CONSTRUCTION

AECOM

DESIGNER

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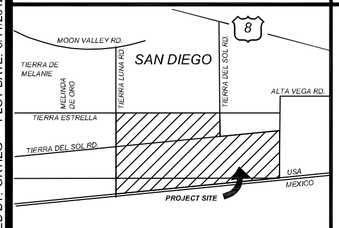
VICINITY MAP



OWNER INFORMATION

NAME:	Brown Family Trust, Brown & Reynolds Trust
ADDRESS:	1116 W. 7th Sreet PMB 158
CITY:	Columbia
STATE:	TN
ZIP:	38401
PHONE:	
FAX:	
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Coverage Ratio:	16%

SHEET TITLE

WATER TANK & 34.5kV OVERHEAD ELEVATION DETAL

SHEET NUMBER	REV.
C-134	0

FILE NAME: P:\10 ENERGY WEST_CURRENT\SOITEC SOLAR 60212653\400 TECHNICAL\401 PRELIMINARY ENGINEERING\7 PLANS - CADD FILES\ACAD SOLAR CPV LAYOUT\TIERRA DEL SOL\IC-134 WATER TANK.DWG
LAST SAVED BY: ORTIZG PLOT DATE: 6/11/2012 1:31:35 PM

Project Description
for the
Tierra del Sol Solar Farm Project
Major Use Permit 3300-12-XXX
Boulevard, San Diego County, California

Prepared for:

County of San Diego
Department of Planning and Land Use
5201 Ruffin Road, Suite B
San Diego, California 92123
Contact: Larry Hofreiter

Project Proponent:

Tierra del Sol Solar LLC
c/o Soitec Solar Development LLC
4250 Executive Square, Suite 770
San Diego, California 92037

JUNE 2012

Printed on 30% post-consumer recycled material.

TABLE OF CONTENTS

Section **Page No.**

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1.0 PROJECT DESCRIPTION, LOCATION, AND ENVIRONMENTAL SETTING

1.1 Project Objectives

Tierra del Sol Solar LLC. proposes to develop, finance, construct, and operate the proposed renewable energy Project (Project). The Project would use Concentrated Photovoltaic (CPV) systems sited in an area with abundant solar energy to generate clean, renewable electricity. A Power Purchase Agreement (PPA) has been signed by SDG&E and approved by the California Public Utilities Commission (CPUC) to purchase the power output from the Project. The applicant's objectives for the Project are as follows:

- Assist in achieving the State's Renewable Portfolio Standard and greenhouse gas emissions reduction objectives to the maximum extent possible by developing and constructing California RPS qualified solar generation.
- Minimize ratepayer funded major transmission upgrades by locating solar power plant facilities as near as possible to existing or planned electrical transmission facilities and electrical "load centers."
- Site the project in an area with excellent solar attributes (i.e., high direct normal irradiance, in order to maximize productivity from the CPV systems.
- Reduce greenhouse gas (GHG) emissions associated with the conventional generation of electricity, which would also reduce regional reliance on imported fossil fuels.
- Support the local economy through creation of long-term direct and indirect sustainable jobs from the local manufacture of the CPV module as well as from the construction, and on-going operations and maintenance of the solar power plant facility.
- Enhance the national economy by the manufacture of most of the other CPV system components in the United States.
- Assist the County of San Diego in accomplishing its renewable energy goals and achieving the primary energy objectives of developing alternative energy systems, as prescribed within the General Plan.

1.2 Consistency With California Global Warming Solutions Act of 2006 (AB 32)

Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, focuses on reducing GHG emissions in California, and requires the California Air Resources Board

(ARB) to adopt rules and regulations that would achieve the equivalent of statewide 1990 GHG emissions by 2020. ARB has determined that the total statewide aggregated 1990 GHG emissions level, and consequently the 2020 emissions limit, is 427 million metric tons (MMT) of carbon dioxide equivalent (CO2e). The target reductions to achieve this level of emissions are currently estimated to be 174 MMT CO2e. The ARB AB 32 Scoping Plan contains the main strategies to achieve this cap. The GHG reduction strategies contained in the Scoping Plan include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

The Scoping Plan contains implementation strategies to achieve a reduction of approximately 80 MMT CO2e, or 16% of California's projected 2020 "business-as-usual" emissions level of 507 MMT CO2e, to achieve the 427 MMT cap noted above. The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of California's GHG inventory, which includes a reduction of approximately 12 MMT CO2e through the implementation of an RPS for electricity production. It is this specific reduction to which the Project will contribute.

The Scoping Plan emphasizes the role of local governments to meet the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. The Scoping Plan expects a reduction of approximately 5 MMT CO2e per year from local land use changes associated with implementation of Senate Bill (SB) 375, and encourages local governments to reduce GHG emissions by approximately 15% from 2008 levels by 2020.

The San Diego County General Plan Update, adopted August 2011, addresses climate change and reduction of GHG emissions in the Land Use, Mobility, Conservation and Open Space, and Housing Elements. One of the major strategies in the General Plan Update is to reduce the consumption of fossil fuels through the increase use of renewable energy sources. San Diego County also has a voluntary Green Building Incentive Program to promote energy and resource-efficient building design. Incentives, in the form of fast-track plan checking and fee reductions, are offered to developers which among other activities, includes the installation of photovoltaic electricity generation systems (solar power).

The Project would be consistent with and would contribute to achieving the goals set forth by AB 32. The Project would provide non-fossil-fuel-based electricity, and would support the state's requirement for utilities to obtain 33% of all electricity from renewable sources as well as reducing GHG emissions to 1990 levels by 2020.

1.3 Project Location

The project site is located approximately 3.5 miles south of SR 94 along the US/Mexico border. Figure 1 shows the project's relationship within San Diego County. Figure 2 shows the project's relationship to the surrounding unincorporated community of Boulevard. Figure 3 shows the location of the Project in context to local geography/major landforms/points of interest.

The main project site consists of the following Assessor Parcel Numbers (APNs):

- 658-090-31
- 658-090-55
- 658-120-03
- 658-090-54
- 658-120-02

Figure 2 shows the boundaries of each APN.

Note to Reviewer: Off-site APN's associated with the gen-tie route will be provided in a subsequent submittal of the project description.

1.3.1 Environmental Setting

The Project is situated south of Tierra Del Sol Road and immediately north of the US/Mexico International Border and is traversed by SDG&E's 500 kV Southwest Power Link, which consists of four lattice steel towers. The Project area lies within the Tierra Del Sol U.S. Geological Survey (USGS) 7.5-minute quadrangle, Township 18 South, Range 6 East, Section 13 (Figure 2).

The Project site is undeveloped but has remnants of some small structures associated with previous ranching activities located near the western portion and middle of the Project site. The entire Project site is fenced. The US/Mexico border fence is located adjacent to the southern portion of the Project site. The area is accessed through locked gates and dirt roads that traverse the Project site.

The Project site is located in a desert transition zone dominated by the chaparral plant community. The site was previously utilized for an active ranching operation. The Project site is within the Boulevard Community Planning Area of San Diego County's General Plan; the land use designation is Rural with a permitted density of 1 dwelling unit per 80 acres. Existing zoning is General Rural (S92) and Agriculture (A72). The Boulevard

planning area requires a minimum lot size of 1 unit per eight acres due to the County's Groundwater Ordinance. The Project site is located at an elevation of approximately 3,700 to 3,566 feet above mean sea level. The Project site is located within San Diego County's draft East County Multiple Species Conservation Program (MSCP) Plan Area. The majority of the Project site was previously disturbed by extensive grazing activities; however, chaparral vegetation has become more established which provides moderate value for wildlife species.

1.4 PROJECT DESCRIPTION

The Project includes a Major Use Permit (MUP) to authorize a Major Impact Utility Pursuant to Sections 1350, 2705, and 2926 of the Zoning Ordinance. The Project may also require a Rezone to remove Special Area Designator "A" and ensure compliance with Section 5100 of the Zoning Ordinance. The Tierra Del Sol Solar Farm Project ("Project") would produce up to 60 megawatts (MW) of solar energy. The Project would consist of approximately 2,529 concentrating photovoltaic electric generation systems (CPV Systems) utilizing dual axis tracking located on 420 acres in southeastern San Diego County near the unincorporated community of Boulevard, California. In addition to the CPV Systems and DC to AC conversion equipment (i.e., inverter and transformer units), the Project would include the following primary components (Figure 4):

- A 1,000 volt direct current (DC) underground collection system and a 34.5 kV overhead and underground collection system linking the CPV Systems to the on-site project substation.
- A 4-acre operations and maintenance (O&M) site including a 60' x125' (7,500 Square Feet) O&M building.
- A 3-acre on-site private collector substation site would encompass an area of approximately 7,500 sq ft (75' X 100'), have a maximum height of 35' feet, and includes 450 sq ft (15' X 30') of metal clad switchgear.
- Depending on the inverter size selected, there would be anywhere from a minimum of 31 to a maximum of 46 DC to AC inverter stations ("Inverter Stations"). The dimensions of the Inverter Station would be either 10' x 25' (250 square feet each) with a total structure height of up to 12 feet or 10' x 40' (400 square feet each) with a total structure height of up to 12 feet.
- A 138 kV overhead transmission line (Gen-Tie) would connect the Project substation to SDG&E's proposed new Boulevard Substation. (Note to Reviewer: The alignment of the gen-tie route will be provided in a subsequent project description submittal).

- 13-miles of newly constructed load-bearing on-site access roads.
- 33-miles of graded, non-load bearing dirt service roads
- 1 permanent water well which would be used to supply water to the O&M building and to facilitate washing of the CPV Trackers. Note to Reviewer: Project Applicant met with County Staff on May 17th, 2012 to discuss groundwater work completed to date. A subsequent submittal will provide the permanent groundwater wells required for project operations.
- A septic tank system and leach field for the O&M building.
- 6' perimeter fencing with 1' foot of security barb wire

The Project would be constructed in two phases, but would be permitted less than one Major Use Permit application according to CEQA guidelines as follows:

Phase I – Phase I is a 45 MW CPV electric generation project located on approximately 330 acres. Phase I will include construction of approximately 1, 910 CPV trackers.

Phase II – Phase II is a 15 MW CPV electric generation project located on approximately 90 acres. Phase II will include construction of approximately 619 CPV trackers.

The Project substation and Gen-Tie as well as SDG&E's interconnection facilities will be sized to accommodate both Phase I and Phase II. The following sections provide a summary of components of the Project including proposed equipment, facilities and infrastructure. Additionally, an overview is provided of (i) the construction processes and phasing, and (ii) the operations and maintenance activities including the associated environmental impact of the construction and O&M activities.

1.4.1 Solar Generation Components

1.4.1.1 Module

Soitec's Concentrix modules are made up of a lens plate (Fresnel lens) and a base plate on which high-performance solar cells are mounted. The Fresnel lens focuses sunlight concentrated by a factor of 500 on the solar cells beneath.

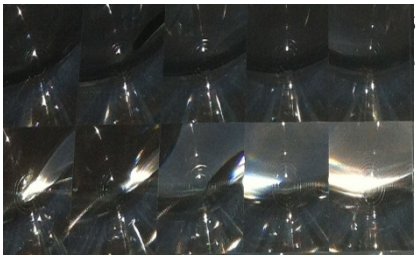

Photo 1: Fresnel lens.

The solar cells are optimized III-V-based triple-junction solar cells (GAInP/GaInAs/Ge) in which three different types of solar cells are stacked on top of one another. Each cell is designed to convert a certain range of the solar spectrum: Short wave

radiation, medium wave radiation and infrared. For almost 20 years, multi-junction solar cells have been used in space applications.

The solar modules are lightweight and surrounded by airflow both inside and outside the module. As a result, heat dissipates quickly from a solar panel. The normal operating condition temperature for solar panels is 20 degrees Celsius (°C) above ambient temperature, therefore, on a typical summer day at 40°C, the panel temperature would be approximately 60°C (172°F). When accounting for irradiance (a measure of solar radiation energy received on a given surface area in a given time), wind, and module type, it is expected that the peak module temperatures in the summer would be between 65°C and 70°C (149 and 158°F) and the peak module temperatures in the winter would be between 35°C and 40°C (95 and 104°F). Although the panels would be hot to the touch, they would not noticeably affect the temperature of the surrounding area; temperatures below the modules would be nearly the same as ambient temperatures in ordinary shade.

1.4.1.2 CPV System

The CPV System uses a dual-axis tracking system (see Photo 2). Two types of sensors are used to ensure that the focal point of the concentrated sunlight is exactly on the cells at every moment of the day: Astronomical positioning and a solar sensor that seeks to position the CPV System precisely perpendicular to the sun to ensure optimum system performance.

The entire CPV System module assembly dimensions are approximately 48 feet across by 25 feet tall (see Figure 5). Each CPV System unit would be mounted on a 28-inch steel mast (steel pole) which would be supported by either (i) inserting the mast into a hole up to 20 feet deep and encasing it in concrete, (ii) vibrating the mast into the ground up to 20 feet deep, or (iii) attaching the mast to a concrete foundation sized to adequately support the CPV System based on wind loading and soil conditions at the site.

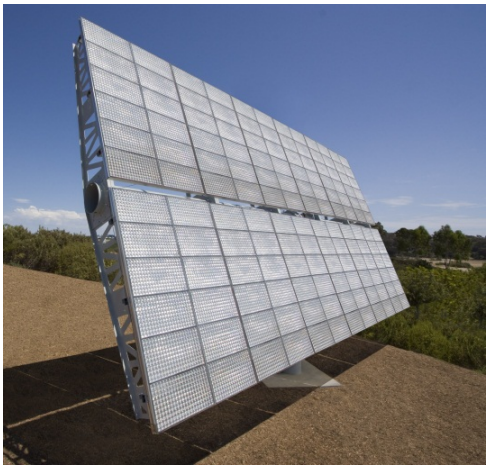

Photo 2: CPV dual-axis tracking system.

In its most vertical position and depending on foundation design, the top of each tracker would

not exceed 30’ feet above grade, and the lower edge would not be less than 1 foot above ground level. In its horizontal “stow” mode (for high winds), each tracker would have a minimum ground clearance of 13’ feet 6” inches

The CPV Systems tracker uses on-site sensors, or a comparable system to maintain tracker orientation toward the sun. At night, the trackers would be positioned vertically to minimize dust collection. When winds are high, the trackers would be positioned horizontally.

1.4.1.3 CPV System Configuration

The Project includes a total installation of 2,529 CPV systems: Approximately 1,910 CPV Systems installed in Phase I on 330 acres, and approximately 619 CPV Systems installed in Phase II on 90 acres. The CPV Systems would be arranged into Building Blocks (“BBs”) with each BB consisting of a total DC CPV System capacity in kilowatts equal to about 1.35-1.45 times the total AC Inverter Station capacity in kilowatts. Each Inverter Station would be pre-wired and mounted on a skid for easy installation. A canopy would cover each Inverter Station for cooling.

1.4.1.4 Inverter Station

The purpose of each Inverter Station is to convert the Direct Current (DC) power from the solar modules to an Alternating Current (AC) power, which is compatible with the SDG&E system and is the type of power that is sold to residential and commercial customers. The electrical device that changes DC to AC is the solid-state inverter.

Power from each CPV System would be delivered through a 1,000-volt (V) direct current (DC) underground collection system to the inverters in the Inverter Station. In addition to the inverters, each Inverter Station would be equipped with a step-up transformer to convert the power output from the inverters from 350-400 volts AC on the “low side” to 34.5 kV on the “high side.” The total number Inverter Stations and the overall dimensions of each Inverter Station depend on the number and capacity of inverters included in each Inverter Station in the final design. As proposed, the Inverter Stations would be constructed in an open configuration (as opposed to placement within an enclosure).

Table 1-1 specifies the maximum number of Inverter Stations per Project phase and the dimensions of each Inverter Station based on the number of inverters per Inverter Station that are selected:

Table 1-1
Inverter Stations

	Phase	Maximum Number	Maximum Dimensions
2 Inverters per Inverter Station (total capacity typically less than 1.5 MW)	I	34	10' wide x 25' long x 12' high
	II	12	10' wide x 25' long x 12' high
3 or more Inverters per Inverter Station (total capacity typically equal to or greater than 1.5 MW)	I	31	10' wide x 40' long x 12' high
	II	10	10' wide x 40' long x 12' high

1.4.1.5 Underground and Overhead Collection System

It is anticipated that power from the CPV Systems would be separated into three 34.5 kV underground collection circuits, each delivering approximately 20-25 MW of power to the Project substation. Each 34.5 kV underground branch circuit associated with Phase I would connect to a 34.5 kV overhead trunk line for delivery to the Project substation (see Figure 4). These two overhead trunk lines would be installed on opposite sides of the same pole structures which would run adjacent to the south side of the SWPL right of way. These trunk lines would be approximately 1.2 miles long and deliver a total of 45 MW. The overhead trunk line structures would be steel poles and would be approximately 50-75 feet high and spaced about 300-500 feet apart. The minimum ground clearance of the overhead 34.5 kV lines would be 30 feet. The maximum hole dimensions would be 24" inches in diameter and approximately 20' feet deep.

Each 34.5 kV underground branch circuit associated with Phase II would connect into an underground trunk line which would continue to connect to the Project substation.

The construction standards for the DC and AC underground trenching are provided in Section 1.5.2.1, Site Preparation & Grading.

1.4.1.6 Project Substation

The Project requires the use of a private on-site collector substation 75' X 100' Feet (7,500 sq ft) that would be located on a 3.0 acre site within the central portion of the Project site, north of the SWPL right-of-way (see Figure 4). The substation site would be located adjacent to the Operations and Maintenance (O&M) building on the Project site.

The purpose of the substation is to collect the power received from the overhead and underground collector trunk lines and convert the voltage from 34.5 kV to 138 kV as

well as to be able to isolate equipment (i) in the event of an electrical short-circuit, or (ii) for maintenance.

The major components of the on-site substation are as follows:

- One 50 MVA rated step up transformer for phase one (Collector Circuits 1 and 2) including secondary containment area per local and state regulations.
- One 17.5 MVA rated step up transformer for phase two (Collector Circuit 3) including secondary containment area per local and state regulations.
- Two 138 kV circuit breakers used to protect equipment from an electrical short circuit on the gen-tie. Disconnect Switches, wire, cables and aluminum bus work used to connect and isolate the major pieces of equipment.
- The substation also includes a 450 sq/ft (15' X 30') metal-clad switchgear that contains three 34.5 kV circuit breakers used to protect equipment from an electrical short circuit on the collection system, disconnects and bus work to connect and isolate the collector circuits, relays used to detect short circuits, equipment controls, telemetering equipment used to provide system control and data acquisition, voice communication, and the meters used to measure electrical power generated from the Project.
- A 138 kV dead-end structure that would have a maximum height of 35' feet. This structure is where the power output from each transformer is delivered to the Gen-Tie line for delivery to the Boulevard Substation (See Section 1.4.2.2).

1.4.1.7 Control System

Operation of the Project requires monitoring through a supervisory control and data acquisition (SCADA) system. The SCADA system would be used to provide critical operating information (e.g., power production, equipment status and alarms, and meteorological information) to the power purchaser, Project owners and investors, grid operator, and Project operations teams, as well as to facilitate production forecasting and other reporting requirements for Project stakeholders.

1.4.1.8 Backup Power and Storm Positioning System

The backup power and storm positioning system has the function of bringing the CPV System into the horizontal position ("Storm Position") in case the electrical power is cut or if there is an approaching storm that could be damaging to the CPV System. The backup power and storm positioning system must fulfill two functions:

- To adequately detect a damaging storm and to be able to communicate a Storm Position command to each CPV system, and.
- To have enough electrical capacity, to power each CPV System into the Storm Position in case of the loss of the primary power supply.

The backup power and storm positioning system would consist of two redundant systems: (1) two independent sets of emergency generators, or (2) two independent sources of utility supplied power.

1.4.2 Project Components and Details

1.4.2.1 Operations and Maintenance Annex

An operations and maintenance (O&M) area is located on a four-acre site adjacent to the on-site private substation as indicated above. The operations and maintenance building would be used for storage, employee operations, and maintenance of equipment. The O&M facility would consist of an approximate 125' X 60' pre-manufactured single-story building (7,500 sq ft). The building would include administrative and operational offices, warehouse storage area for material and equipment, and lavatory facilities served by a private on-site septic system and groundwater well (see Figure 6). The building would include an improved parking area and parking spaces. The building and parking areas would include security lighting designed to minimize light pollution and preserve dark skies.

1.4.2.2 Off-Site Private Transmission Facilities

Note to Reviewer: The Project Applicant is in the process of determining the alignment and right-of-way for the interconnection from the proposed project site to the Boulevard rebuilt substation. The ultimate alignment for the gen-tie will be provided in a subsequent submittal.

Power from the Project substation would be delivered to the 138 kV bus at SDG&E's Rebuilt Boulevard Substation via an approximate 6.5 mile 138 kV transmission line or Gen-Tie line within a 125' foot private right of way. (See Figure 7). The 138 kV transmission line would travel roughly in a northeasterly direction over private land from the Project substation to SDG&E's Rebuilt Boulevard Substation. Steel poles would be located approximately 500-1,000 feet apart, depending on terrain, and would be stabilized by burying the poles in a 24" inch hole with a maximum depth of up to 20 feet.

1.4.2.3 Security, Fire Protection, and Maintenance and Security Lighting

1.4.2.3.1 Security

The Project site would be fenced along the entire property boundary for security with fencing that meets National Electrical Safety Code (NESC) requirements for protective arrangements in electric supply stations. Examples of acceptable fencing may include a six foot chain-link perimeter fence with three stands of barbed wire along the top with a four inch maximum clearance from the ground surface (see Figure 8).

Signage in Spanish and English for electrical safety would be placed along the perimeter of the Project site, warning the public of the high voltage and the need to keep out. Signage would also be placed within the Project site where appropriate. Some localized security-related lighting, on-site security personnel, and/or remotely monitored alarm system may be required during construction and/or operations. Approval for installation of remote-monitored cameras and alarm system(s), and for perimeter and safety lighting that would be used only on an as-needed basis for emergencies, protection against security breach, or unscheduled maintenance and trouble-shooting (such as may occasionally be required).

Department of Homeland Security Project Components

The project applicant has been working with the Department of Homeland Security to ensure the project site is designed in such a manner that security would be enhanced for the surrounding community. The site in its current state contains extensive chaparral vegetation, which limits the ability for the Department of Homeland Security to effectively patrol the project site. In order to ensure the Department of Homeland Security can maintain effective patrols in the area and provide for community safety the following project components will be included in the project design:

Eastern Access Road: An eastern access road would be constructed to provide unobstructed travel from north to south starting about 100 feet from the westerly turn-off from Tierra Del Sol Road and commencing due south to the US Government 60 foot easement at the international border.

Security Gates: A key pad security system and electric gate will be provided at no cost to the Department of Interior. The gates will also provide access to the Fire Department for emergency situations.

Western Access Road: A western access road would provide unobstructed travel from westerly turn off Tierra del Sol Road and commencing due south to the U.S. Government 60 foot easement.

1.4.2.3.2 Fire Protection

Fire protection in the area is shared by the San Diego County Fire Authority (SDCFA), San Diego County Rural Fire Protection District (SDRFPD), California Department of Forestry and Fire Protection (CalFire), and Native American tribal governments. Portions of the Project fall within the jurisdiction of the SDCFA County Service Areas (CSA) 111 and 135, SDRFPD, and CalFire. CalFire has the primary responsibility for wildfire protection within State Responsibility Areas (SRAs). To comply with the fire code, clearing and grubbing, as necessary, in localized areas would be required for construction and access. Additionally, a Fire Protection Plan has been prepared for the Project and is awaiting approval by the County Fire Marshal. The plan proposes the following fire prevention measures:

- Multiple water storage tanks with fire dept. connections
- County approved access gates with Knox box locks
- Fire buffers ranging from 30’ to 50’.
- Illuminated signage at each entrance and Inverter Station that notes the location and identification number of each electrical grid disconnect and circuit breaker.
- Weed whipping and maintenance of areas under panels/arrays
- All weather surfaced fire access roads (See Section 1.4.2.3.4 below)

1.4.2.3.3 Maintenance and Security Lighting

Lighting at the Project site would be designed to provide security lighting and general nighttime lighting for operation and maintenance personnel, as may be required from time to time. Lighting would be shielded and directed downward to minimize any effects to surrounding properties, and would be used only on an as-needed basis. Lighting would be provided in the operations and maintenance area, entrance gates, and the Project substation.

The Project substation would include lighting inside the substation to allow for safety inspections or maintenance that maybe required during the evening hours. Lighting would also be provided next to the entrance door to the control house and mounted at the entrance gates to allow for safe entry. Since maintenance activities are not anticipated to be completed during the evening hours, lights would only be turned on if needed.

All lighting for the Project would have bulbs that do not exceed 100 watts, all lights would be shielded, directed downward, and would comply with the County of San Diego Light Pollution Code Section 59.101 et.al.

1.4.2.3.4 Internal and External Access Roads

There are two different types of roads for the project that will be improved to different standards: fire access and service roads. All road surfaces will have a permeable nontoxic soil binding agent in order to reduce fugitive dust and erosion (see Figure 4). Primary project access will be provided off of Tierra Del Sol Road and no improvements to the existing roadway are proposed at this time.

Fire Access Roads: The fire access roads would be constructed to a minimum width of 24' feet graded with 12' feet being designed, constructed, and maintained to support the imposed loads of fire apparatus (not less than 50,000 lbs.) and would consist of an approved surface so as to provide all-weather driving capabilities. The purpose of the fire access roads are to allow for one way access of fire apparatus throughout the Project site in order to reach all of the CPV Systems and Inverter Stations.

The non-load bearing surface material of the fire access roads would consist of Class-II aggregate. Fire access roads would be located in the east-west direction at the northern and southern perimeters. Additionally, fire access roads would be constructed between every fourth row of north-south CPV Systems to facilitate a maximum fire hose pull of 160 feet. An access controlled gate would be installed at the substation driveway which would be constructed off an improved existing roadway with direct access to Tierra Del Sol Road (see Figure 4).

Service Roads: The service roads would be constructed to a width of about 20' feet and would be compacted to support washing equipment loads of 15,000 pounds. Service roads would run in a north-south direction along the west side of a column of CPV Systems except where there would be a fire access road that would facilitate access to CPV Systems and Inverter Stations.

1.4.2.4 Traffic and Circulation

The Project site is approximately 5 miles south of I-8 and located immediately adjacent to the US/Mexico International Border. Primary access would be from Tierra del Sol Road and would be controlled by a security gate.

1.4.2.4.1 Construction Traffic:

The Project would be constructed over a period of up to approximately 12 months. Trip generation for employees and delivery trucks would vary depending on the phase of construction. The construction trip generation for work at the Project site over the 12 month construction timeframe would range from approximately 300 to 2,000 round trips per month. It is assumed that all employees would arrive within the morning peak hour and depart within the evening peak hour, and delivery truck trips would be distributed evenly throughout a typical 8-hour-shift day. Since the surrounding area is rural, traffic is very low on the local roads surrounding the Project site. Implementation of the Project would result in a temporary increase in traffic along these roads, but not to the level of the road carrying capacity. No road closures are anticipated during Project construction. The construction contractor would develop a Traffic Control Plan to ensure safety and efficient traffic flow in the area and on the Project site. The Traffic Control Plan would be prepared in consultation with the County of San Diego and would contain Project-specific measures for noticing, signage, policy guidelines, and the limitation of lane closures to off-peak hours (although it is noted that no requirement for lane closures has been identified).

1.4.2.4.2 Ongoing Traffic

During the operations phase of the Project, approximately 5 personnel on average would be on-site at any given time. A list of past, present, and reasonably foreseeable future development projects occurring within the area is currently being developed in conjunction with the County. If cumulative traffic impacts are anticipated with implementation of the Project, they would be mitigated by payment of a Transportation Impact Fee or other method acceptable to the County.

1.5 Construction

1.5.1 Construction Schedule

Construction of the Tierra Del Sol Solar Farm Project is anticipated to commence in 1st quarter 2014 and would require approximately 12 months to complete. Table 1-2, Tierra Del Sol Solar Farm Project Construction Schedule, provides the proposed schedule for the project. While the schedule may be modified due to the date of County of San Diego project approval as well other project approval/permits, this table illustrates the approximate duration of major project activities. Construction activities would occur between the hours of 7 a.m. and 7 p.m. Monday through Saturday.

Table 1-2
Proposed Tierra Del Sol Solar Farm Project Construction Schedule

Project Activity	Duration (months)
MUP approved	4th quarter 2013
Acquisition of additional required permits	1st quarter 2014
ROW/property acquisition	3rd quarter 2012
Construction begins	1st quarter 2014
Completion of construction	3rd quarter 2014
Project operational	4th quarter 2014

1.5.2 Construction Activities and Methods

Project construction would consist of several phases including site preparation (described above), development of staging areas and site access roads, solar CPV System assembly and installation, and construction of electrical transmission facilities. After site preparation, initial project construction would include the development of the staging and assembly areas, and the grading of site access roads for initial CPV System installation as follows:

1.5.2.1 Site Preparation & Grading

Clearing and Grading: Construction of the Project would involve clearing and grubbing of the existing vegetation; grading necessary for the construction of access and service roads and the installation and operation of CPV Systems; trenching for the electrical DC and AC collection system including the telecommunication lines; installation of the Inverter Stations; construction of an overhead 34.5 kV trunk line for the Phase I collection systems leading to the Project substation; and construction of the 34.5/138 kV Project substation, an operations and maintenance building, and the 138 kV Gen-Tie line from the Project substation to SDG&E's rebuilt Boulevard Substation. The Project site would be reseeded for erosion control purposes with a native seed mix, except around Project components and where primary and/or secondary service road access is required. A Major Grading Permit would be required, and would be obtained once grading quantities are finalized. There would be no import or export of soils for the project.

Collection System Trenching: Trenching requirements for the DC electrical collection system and telecommunication lines within each building block would consist of a trench up to approximately 3' to 4' feet deep and 1' to 2' feet wide. The trenches would be filled with base material above and below the conductors and communications lines to ensure

adequate thermal conductivity and electrical insulating characteristics. The topsoil from trench excavation would be set aside before the trench is backfilled and would ultimately comprise the uppermost layer of the trench. Any non-road disturbed area would be re-vegetated upon completion of construction. Where possible, trenching would be located beneath roads to minimize disturbance. Excessive material from the foundation and trench excavations would be used for site leveling.

Foundations: Each CPV System would be installed on a 28-inch-diameter steel mast. One foundation design calls for the mast to be concrete-encased below grade and to extend to a depth of not more than approximately 20' feet (see Figure 9). A preferred installation is to install the mast to the necessary depth using a vibration pile-driver. In some instances, conventional pile-driving would be appropriate, and, where rock is particularly hard or near the surface, a spread-foot foundation may be required.

Soil Stabilization: In order to reduce fugitive dust and erosion, the disturbed areas on the project site would either be treated in one of the following three methods, or a combination of all three:

- Treatment with a permeable nontoxic soil binding agent, (Preferred Method)
- Placement of disintegrated granite (DG) or other base material (Good for Roads)
- Or seeding with native seed mix (This method would be used less frequently due to the fire clearing requirements).

1.5.2.2 CPV System Construction Overview

Construction staging and material lay-down areas would be distributed across the project site evenly to allow for efficient distribution of components to different parts of the project. One staging and material lay-down area is typically set up for every 250 acres of a project site. These lay-down areas would be fenced and cover approximately 1.5 acres each. Lay-down areas would be sited within the boundaries of the Project site. These lay-down areas would be temporary and would have CPV Systems installed in these areas as work is completed in the general area.

Project construction would then include several phases occurring simultaneously with the construction of: (1) CPV Systems including the assembly of trackers, and the pile driving of support masts, and the placement of trackers on support masts, (2) trenching and installation of the DC and AC collection system; (3) electrical transmission facilities including the construction of a substation and a Gen-Tie, (4) an O&M building; and (5) the grading of access and service roads. Tracker assembly may require small gas-powered generators to power hand tools to assemble trackers and modules.

Of the 420 acres of the project site, approximately 10 acres would be disturbed on a given day. After construction, approximately 420 acres (nearly the entire Project site) would be permanently disturbed with project facilities and/or Fuel modification improvements.

Tracker Assembly Areas*:* Trackers would be assembled on-site in 10,000 square foot temporary assembly tent structures. The tracker modules need to be fabricated in a clean work environment that the tent could provide. Recycling during construction would be in compliance with the County of San Diego Construction Demolition and Debris Management Plan (in accordance with County Ordinance 68.508-68.518).

1.5.2.3 Construction Operations and Maintenance Building

The 4-acre O&M location would be cleared and access would be provided via the primary access driveway. A portion of the site would be utilized as an on-site staging area. The O&M annex would require the construction of a concrete foundation. A pre-engineered structure would be erected in place on site and individual components such as beams, siding and roofing would be transported to the site. With the exception of minimal ornamental landscaping around the pre-engineered structure, nearly the entirety of the site would remain cleared during operations.

1.5.2.4 Off-site Transmission Facilities (Gen-Tie Line)

Note to Reviewer: The Project Applicant is in the process of determining the alignment and right-of-way for the interconnection from the proposed project site to the Boulevard rebuilt substation. The ultimate alignment for the Gen-Tie will be provided in a subsequent submittal.

The Project requires a 138 kV private transmission line (Gen-Tie) to interconnect into the Boulevard Substation.

The Gen-Tie line would require the setting of new steel transmission poles. Access to each steel pole location would be constructed prior to clearing activities. Once access has been established, temporary work area measuring 75’ feet X 75’ feet (0.13 Acres) around each steel pole location would be cleared of vegetation in order to assist in pole installation.

Each transmission line pole would have a maximum height of 125’ feet depending upon location. The span lengths between poles would be dependent on terrain. The cable span lengths would generally be between 500’ to 1000’ feet. Components used to construct the Gen-Tie line would all feature non-reflective surfaces. The poles would be set in a hole with maximum dimensions of 24” inches by 20’ feet deep. The holes for each pole would

be excavated using a truck-mounted drill rig and poles would then be delivered on a flat-bed trailer and hoisted into place by a crane. Once installed, the remaining space between the pole and excavated area would be backfilled with soil or concrete.

Installation of the new 138 kV conductor would require 10 to 15 pull sites along the transmission line route. The pull sites are required to load the tractors and trailers with reels of conductors and the trucks with tensioning equipment. Each pull and tension site would require clearing an area of approximately 0.5 acres.

Once the conductor has been pulled into place, sag between the structures would be adjusted to a pre-calculated level and the line would then be installed with a minimum ground clearance of 30’ feet. The conductor would then be attached to the end of each insulator, the sheaves would be removed, and the vibration dampers and other accessories would be installed.

1.5.2.5 Access Roads

The project would have 12’ to 16’ dirt access roads as needed for ongoing maintenance. Bulldozers and graders would be used to widen roads and a water truck would be used for road compaction and dust control. Depending on the subsurface soil characteristics present on site, soils may need to be excavated and replaced with gravel and/or sand to provide a stable road base. Roads would be designed to prevent soil erosion and maintain existing surface water runoff patterns.

1.5.2.6 Construction Personnel and Equipment

Construction of the Tierra Del Sol Solar Farm Project would employ up to 146 workers per day during the peak construction period. The Project's two phases would be constructed over a period of up to approximately 12 months. Trip generation for employees and delivery trucks would vary depending on the phase of construction. It is estimated that a total of approximately 34,100 daily trips will be made during the 12-month construction period. Thus, on average approximately 133 trips per day would be generated during construction.

During the peak of construction, a typical day would include the transportation of trackers, movement of heavy equipment, and transportation of materials. Table 1-3, Construction Equipment Associated with the Tierra Del Sol Solar Farm Project, lists construction equipment commonly associated with the construction of solar facilities.

Table 1-3
Construction Equipment Associated with the Tierra Del Sol Solar Farm Project

Equipment	Use
Aerial Lifts	Other Material Handling Equipment
Bore/Drill Rigs	Pavers
Cement and Mortar Mixers	Paving Equipment
Concrete/Industrial Saws	Plate Compactors
Cranes	Pressure Washers
Crawler Tractors	Pumps
Crushing/Processing Equip	Rollers
Dumpers/Tenders	Rough Terrain Forklifts
Excavators	Rubber Tired Dozers
Forklifts	Rubber Tired Loaders
Generator Sets/Load Banks	Scrapers
Graders	Signal Boards
Off Highway Tractors	Skid Steer Loaders
Off Highway Trucks	Surfacing Equipment
Other Equipment	Sweepers/Scrubbers
Other General Industrial Equipment	Tractors/Loaders/Backhoes
Service Trucks	Trenchers
Personnel transport vehicles	Welders
Water Trucks	Steel-tracked dozers
Washing Vehicles	

1.6 Ongoing Operations and Maintenance

The O&M building would provide suitable facilities for supporting up to five full-time employees that would tend to the Project at various times. Employees would include a plant manager, engineers, technicians, and security staff. It is anticipated that the staff would carpool to the site each day, so the average daily trips (ADT) would not exceed five ADT for purposes of calculating the County's Transportation Impact Fee (TIF).

The project facilities would be monitored during operating (daylight) hours, even though the project facilities would be capable of automatic start up, shutdown, self-diagnosis, and fault detection. Appropriate levels of security lighting would be installed at O&M buildings. The site would be secured 24 hours per day by on-site private security personnel and/or remote security services with motion-detection cameras.

Underground and Overhead Collection System. Overhead components would be regularly inspected for corrosion, equipment misalignment, loose fittings, and other

mechanical problems and repaired as required. The underground portion of the cable system would be inspected and repaired if and when problems occur.

138 kV Substation. During operations, O&M staff would visit the substation several times a week for switching and other operations activities. On a regular basis construction and maintenance trucks would visit the substation to perform routine maintenance including but not limited to tracker washing, equipment testing, monitoring, and repair, routine procedures to ensure service continuity, and standard preventative maintenance.

Off-site Transmission Facilities. Maintenance and repair activities for transmission facilities would include both routine preventive maintenance and emergency procedures conducted to maintain system integrity, as well as vegetation clearing. Activities anticipated to occur are described in more detail below.

- ***Pole or Structure Brushing.*** Certain poles or structures would require the removal of vegetation to increase aerial patrol effectiveness or to reduce fire danger. Vegetation would be removed using mechanical equipment, such as chainsaws, weed trimmers, rakes, shovels, and brush hooks. A crew of three workers would typically conduct this work. A 100-foot-diameter area around each transmission structure would be required. Poles are typically inspected on an annual basis to determine if vegetation removal around poles is required.

- ***Application of Herbicides.*** To prevent vegetation from reoccurring around structures, Soitec may use herbicides in accordance with SDG&E's Herbicides and Application Procedures. The utility SDG&E normally utilizes one or more of 16 herbicides. These herbicides are identified in a U.S. Fish and Wildlife Service (USFWS) letter to SDG&E, along with their recommendations. The application of herbicides generally requires one person and takes only minutes to spray around the base of the pole within a radius of approximately 10 feet. The employee would either walk from the nearest access road to apply the herbicide or drive a pick-up truck directly to each pole location as access permits.

- ***Equipment Repair and Replacement.*** Poles or structures support a variety of equipment, such as conductors, insulators, switches, transformers, lightning arrest devices, line junctions, and other electrical equipment. In order to maintain uniform, adequate, safe, and reliable service, electrical equipment may need to be added, repaired, or replaced during operations. An existing transmission structure may be removed and replaced with a larger/stronger structure at the same location or a nearby location, due to damage or changes in conductor size. Equipment repair or replacement generally requires a crew to gain access to the

location of the equipment to be repaired or replaced. The crew normally consists of four people with two to three trucks, a boom or line truck, an aerial-lift truck, and an assist truck. If no vehicle access exists, the crew and material are flown in by helicopter.

- ***Insulator Washing.*** The 138 kV transmission line would use polymer insulators that do not require washing.

- ***Use of Helicopters.*** Each electric transmission line is inspected several times a year via helicopter. Helicopters may also be used to deliver equipment, position poles and structures, string lines, and position aerial markers, as required by Federal Aviation Administration (FAA) regulations.

1.7 Decommissioning and Repowering:

If constructed, the Project would operate, at a minimum, for the life of its long-term Power Purchasing Agreement (PPA). The initial term of the PPA is for 25 years, with additional terms anticipated. The lifespan of the solar facility is estimated to be 30 to 40 years or longer. It is likely, due to the establishment of the Project infrastructure (both physical and contractual), that the continued operation of the Project for a longer term beyond the initial PPA term is feasible. At the end of the useful life of the Project two alternative scenarios are possible: (1) Re-tool the technology and contract to sell energy to a utility. (2) If no other buyer of the energy emerges, the solar plant can be decommissioned and dismantled. This discussion will only cover the decommissioning and dismantling of the facility and reuse of the land.

1.7.1 Decommissioning and Recycling

Decommissioning would first involve removing the panels for sale into a secondary solar CPV panel market. The Project's module component materials do not have toxic metals such as mercury, lead, and cadmium telluride. However, the solar cells do contain a trace amount of gallium arsenide (less than 2.5% of the entire cell), which can be safely removed and properly disposed of off site when the panels are recycled.

The majority of the components of the solar installation are made of materials that can be readily recycled because the panels' components can be broken down to remove the small solar cell that contains the isolated trace amount of gallium arsenide in its solid state. If the panels can no longer be used in a solar array, the aluminum can be resold, and the glass can be recycled. Other components of the solar installation, such as the tracker structures and mechanical assemblies, can be recycled as they are made from galvanized steel. Equipment such as drive controllers, inverters, transformers, and

switchgear can be either reused or their components recycled. The equipment pads are made from concrete which can be crushed and recycled. Underground conduit and wire can be removed by uncovering trenches and backfilling when done. The electrical wiring is made from copper and/or aluminum and can be reused or recycled as well.

1.7.2 Dismantling

Dismantling the Project would entail disassembly of the solar facilities and substantive restoration of the site. Impacts associated with closure and decommissioning of the Project site would be temporary and would span three basic activities: (1) disassembly and removal of all detachable above-ground elements of the installation, (2) removal of tracker masts and any other structural elements including those that penetrate the ground surface to a depth of two feet below grade, and (3) Reuse of the land consistent with the Zoning Ordinance, which could include ground surface restoration to surrounding grade and re-seeding with appropriate native vegetation. The following are the steps needed to dismantle the project site and return the Project site back to a conforming use:

1. The above-ground (detachable) equipment and structures would be disassembled and removed from the site. Detachable elements include all trackers, inverters, transformers, associated controllers and transformers, and any intra-Project gen-tie lines. Removal of the 138-kV conductors on the transmission line would also be implemented. Most of these materials can be recycled or reclaimed. Remaining materials would be limited, and would be contained and disposed of off-site consistent with the County of San Diego Construction Demolition and Debris Management Plan (County Ordinance 68.508-68.518).

2. Removal of tracker masts would entail vibration extraction in the case of vibration or conventional pile-driven installation. For tracker masts supported by concrete encasements, removal to a depth of two or more feet would be implemented. Any spread-foot foundations, along with foundation pads for inverters, transformers, and the switch station, would be removed to a depth of two feet. Recycling of tracker masts is anticipated; concrete would be disposed of or recycled off-site.

3. Removal of underground collector and transmission components may be either abandoned in place or it may be less cost effective to remove underground electrical collection and delivery system conductors.

4. The use of the land would have to return to a use that is consistent with the County of San Diego Zoning Ordinance at the time of dismantling. The current Zoning for the site is General Rural (S92), which allows for the following use types that are

permitted pursuant to Section 2922 and 2923 of the County Zoning Ordinance: Residential, Family Residential, Essential services, Fire and Law Enforcement Services, Agricultural Uses, Animal Sales and Services, Recycling Collection Facility, and Green Recycling.

5. If a new use is not proposed, the decommissioning would include removal of all ground level components and preparing the site with a soil stabilization agent such as a nontoxic permeable soil binding agent or re-seeded with native species. These activities would be consistent with current zoning General Rural (S92) or future applicable zoning.

1.7.3 Removal Surety

The final Decommissioning Plan that will be provided prior to issuance of the building permits for the project will comply with Section 6952.b.3 (d) of the County of San Diego Zoning Ordinance for removal surety as follows:

The operator shall provide a security in the form and amount determined by the Director to ensure removal of the Solar Energy System. The security shall be provided to DPLU prior to building permit issuance. Once the Solar Energy System has been removed from the property pursuant to a demolition permit to the satisfaction of the Director, the security may be released to the operator of the Solar Energy System.

Financial responsibility for decommissioning would be an obligation of the owner of Project. There are several options to consider, but the preferred method would be for a specific amount of funding (the “Decommissioning Fund”) to be set aside by the end of year 25 in an amount equal to the estimated cost of decommissioning (the “Decommissioning Cost”) less the salvage value for equipment to be decommissioned and the sales proceeds from sale of the property once decommissioning is complete. Ideally, the cost of decommissioning should equal the amount of money gained from the scrap value and land value of the Project. If additional funds are needed, they would be provided by the owner of the Project and deposited into a dedicated account. Funds would be provided in an amount that would enable the sum of Decommissioning Fund, salvage value, and land sales proceeds to cover the cost of decommissioning.

1.8 Water Usage

Note to Reviewer: Project Applicant met with County Staff on May 17th, 2012 to discuss groundwater work completed to date. A subsequent submittal will provide the permanent groundwater wells required for project operations.

The following is an estimate of the amount of water that would be needed for the Project during the construction and site preparation, ongoing panel washing, potable water usage for the O&M facility, and the decommissioning and dismantling. The Project would use groundwater from the existing wells located on site. If groundwater were to become unavailable or as an alternative water source, water could be obtained from the Jacumba Service District, Live Oak Springs Water Company, and any County permitted Groundwater Extraction operations located within the Mountain Empire.

1.8.1 Construction and Application of Soil Binding Agents.

During construction, the Project would use water to suppress fugitive dust during grubbing, clearing, grading, trenching, and soil compaction and to apply a nontoxic soil binding agent to help with soil stabilization during construction.

For site preparation and grading, it is assumed that approximately 0.16 acre-feet (52,400 gallons) of water per acre would be used during the first 2 months, or 40 work days, of site construction. For fugitive dust control, it is estimated that approximately 0.01 acre-feet (3,300 gallons) of water per acre would be used for the application of the soil-binding agent during construction. Water would not be used for concrete hydration because the concrete is expected to be delivered to the site already hydrated. In total, the Project would require approximately 74.09 acre-feet (24,143,339 gallons) of water during construction. Less water-intensive methods of dust suppression are under review, including use of soil stabilizers, tightly phasing construction activities, staging grading and other dust-creating activities, and/or compressing the entire construction schedule to reduce the time period over which dust-suppression measures would be required. Table 1-4 summarizes construction water usage.

Table 1-4
Total Estimated Water for Temporary Project Construction

Activity	Time Frame (work days)[1]	Water Use (gallons)	Acres	Total Estimated Water Demand (gallons)	Total Estimated Water Demand (acre-feet)
Site Preparation[2] (clearing, grading)	40	52,400	420	32,585,100	100.00
Application of Water/Soil Binding Agent[3]	320	3,300	420	1,409,100	4.32
Concrete Hydration[4]	--	NA	--	NA	NA
Total Construction Water	**--**	**--**	**--**	**23,783,900**	**72.99**

1 Assumes 20 work days per month.
2 Assumes 52,400 gallons of water per acre (gal/ac) would be used for site preparation (4,000 gal/ac for brushing and clearing and 48,400 gal/ac for grading).
3 Assumes 3,300 gal/ac would be used for application of soil binding agent.
4 Assumes 11,981 cubic yards of concrete used and 30 gallons of water per cubic yard of concrete.

1.8.2 Operations and Maintenance Potable Usage

An on-site operations and maintenance facility, serving as the center for personnel and equipment, would be constructed on the site. Operation and maintenance of the Tierra Del Sol Solar Farm Project would require up to five full-time employees. As stated previously, the O&M annex building will include a groundwater well to provide up to XX gallons per minute of potable water. Once the project is operational, the facility will use approximately 10,472 gallons of water per month, for the employees that may utilize the O&M building's amenities. Table 1-5 summarizes the operational water usage for the Project.

1.8.3 Ongoing Tracker Washing and Soil Stabilization

Water would be used for operational purposes for cleaning the solar modules and for reapplication of the nontoxic permeable soils stabilizers as follows:

Soil Binding Agent Application: It is anticipated that the soil stabilizer chosen for the project would need to be reapplied annually. The project would utilize a soil binding stabilization agent that is nontoxic and permeable. The purpose of the soil stabilizer is to prevent erosion and to reduce fugitive dust. To reapply the soil stabilizer agent will require approximately 3,300 gallons of water per acre. The areas covered by DG road base would not require soil stabilization. The net project area that would require soil stabilization is approximately 111 acres.

Solar Module Washing: It is anticipated that in-place tracker washing would occur every 6 to 8 weeks during evening hours by mobile crews who will also be available for dispatch whenever on-site repairs or other maintenance are required. Tracker washing will be undertaken using a tanker truck and smaller "satellite" tracker washing trucks. On-site water storage tanks may be installed to facilitate washing. Each tracker washing truck will carry water treatment equipment and truck-mounted track washing booms. Water will be treated to ensure a hardness level of 7 or less and to remove impurities. As a conservative (i.e., high) estimate, approximately 24 gallons of water will be required to wash each set of tracker modules thus requiring approximately up to 1.8 acre feet per year rounded up to include the potential for domestic use. Table 1-5 summarizes the operational water usage for the Project.

Table 1-5
Total Estimated Water Use for Project Operation

Dust Suppression *(if required)*	
Number of gallons/acre[1]	825
Acres[2]	420
Water use/year (gallons)	352,275
Water use/year (acre-feet[3])	1.08
Tracker Washing	
Washes/year	9
Number of trackers	2,529
Gallons/tracker/wash (maximum)	24
Total water use/year (gallons)	720,360
Total water use/year (acre-feet)	2.21
Total Potable Water Usage	
Amount of Potable Water usage per year [4]	125,664
Total water use (gallons/year)	**1,198,299**
Total water use (acre-feet/year)	**3.68**

[1] Based on suppression activities of 1,650 gallons every 2 years.
[2] Based on constructed acres within the Project site. Open space areas are not included in estimates for dust suppression.
[3] 1 acre-foot = 325,851 gallons
[4] Average monthly water usage is 10,472 gallons http://www.sandiego.gov/water/conservation/tips.shtml

1.8.4 Decommissioning and Dismantling

It is anticipated that the amount of water that is used for construction above in section 1.8.1 would be the equivalent amount of water needed to decommission and dismantle the Project.

1.9 Matrix of Project Approvals/Permits

This section includes a table (Table 1-6) of all approvals/permits that are expected to be obtained during the decision-making process. Table 1-6 is organized by agency/jurisdiction. In the case where multiple approvals are necessary from a single agency, the approvals are listed in the order they are believed to occur.

Table 1-6
Approvals/Permits Expected to be Obtained

Government Agency	Action/Permit
County of San Diego	• MUP – Compliance with Sections 1350, 2705 and 2926 of the County Zoning Ordinance • Rezone to remove Special Area Designator "A" ZO Section 5100 et. al. Compliance with the County's Zoning Ordinance. • Agricultural Preserve Disestablishment for compliance with the County's Zoning Ordinance Section 5100 et.al. • Compliance Finding of the Resource Protection Ordinance • Plot Plans – compliance with the County's Form #90 • Preliminary Grading Plan – to ensure compliance with County grading limitations • Certification of the Final Environmental Impact Report – Compliance with the California Environmental Quality Act • Groundwater Well Permit from Department of Env. Health • Septic Permit from the Department of Env. Health • Right of Way Permits from the Department of Public Works • Grading Permit Department of Public Works • Improvement Plans and Permits Department of Public Works. • Waiver pursuant to Zoning Ordinance Section 7060.d to reduce 90 foot setback along US Mexico International Border
Regional Water Quality Control Board	• Water Quality Certification (or waiver) – Compliance with Section 401 of the Clean Water Act (for impacts to waters of the US and/or wetlands)
State of California Department of Fish and Game	• Streambed Alteration Agreement - Compliance with Section 1600 of the Fish and Game Code (for impacts to streambeds)
State of California Water Resources Control Board	NA
US Department of Homeland Security, US Border Patrol	• Consistency with US Border Patrol safety and access policies.
US Department of the Army, Corps of Engineers	• Permit – Compliance with Section 404 of the Clean Water Act

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FIGURE 1

Regional Map

PROJECT DESCRIPTION - TIERRA DEL SOL SOLAR FARM

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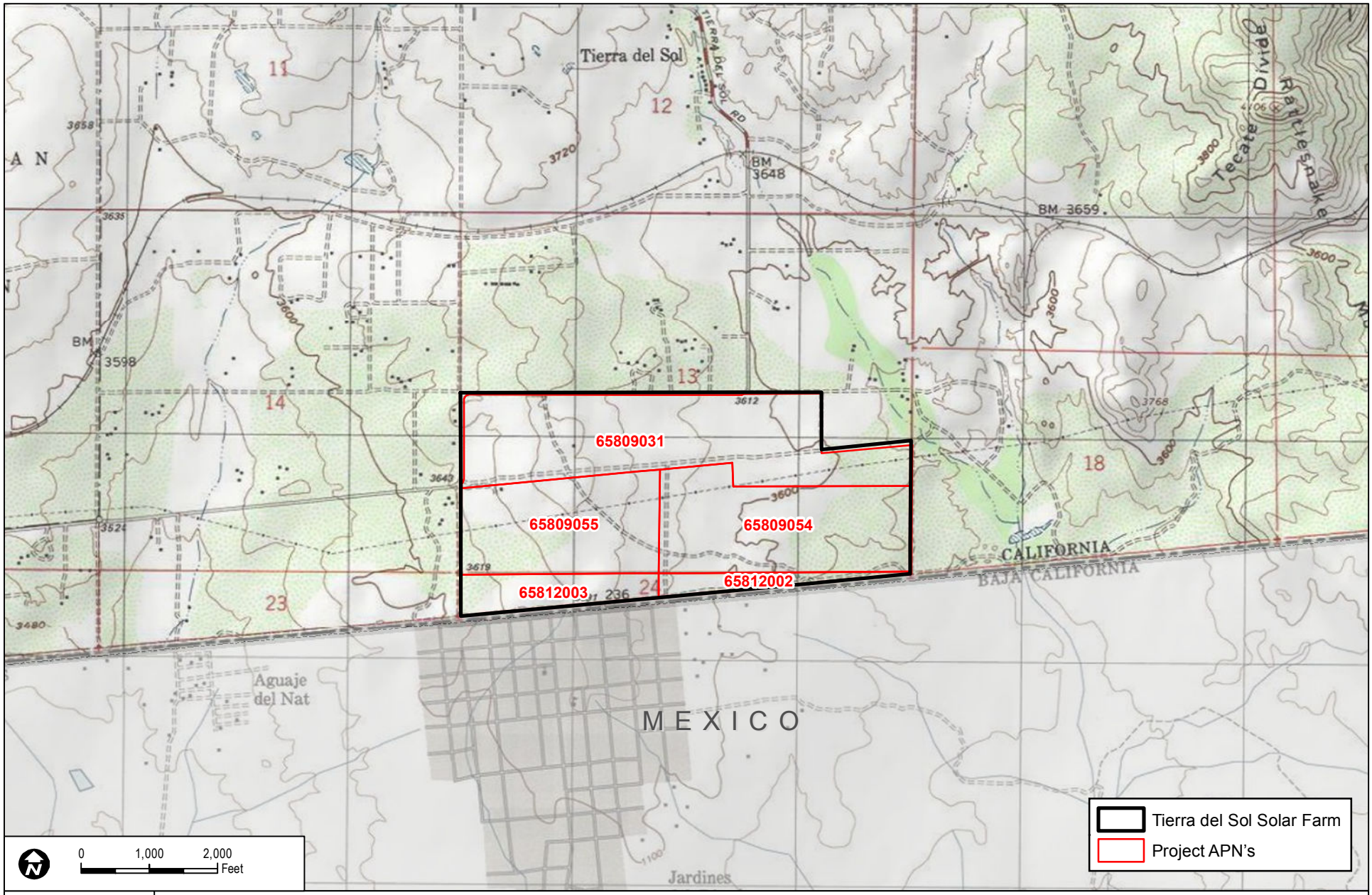

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SOURCE: USGS 7.5-Minute Series Tierra del Sol Quadrangle.

FIGURE 2

Vicinity Map

PROJECT DESCRIPTION - TIERRA DEL SOL SOLAR FARM

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SOURCE: SDGE 2009; Bing Maps

FIGURE 3

Aerial View of Project Area

PROJECT DESCRIPTION - TIERRA DEL SOL SOLAR FARM

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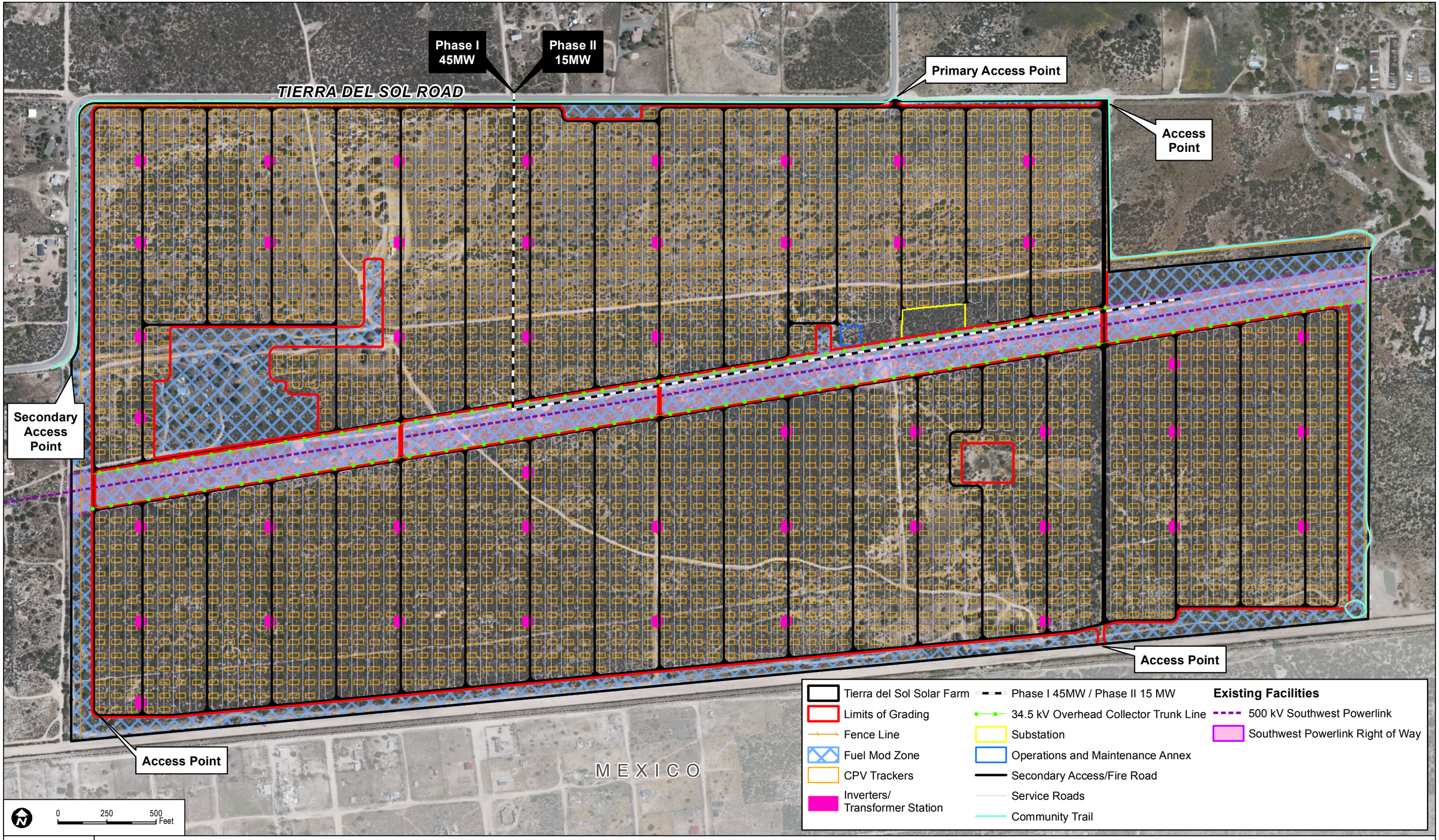

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SOURCE: SanGIS 2011; AECOM 2012; Soitec 2012; Bing Maps

FIGURE 4

Preliminary Site Plan

PROJECT DESCRIPTION - TIERRA DEL SOL SOLAR FARM

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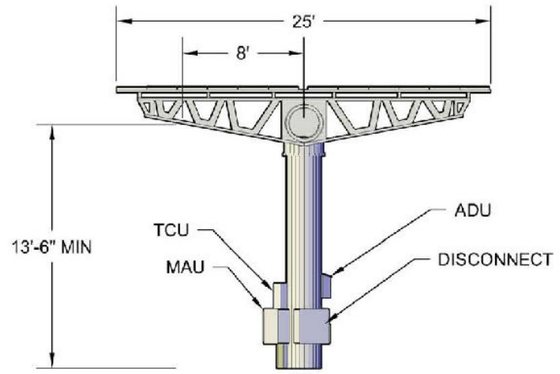
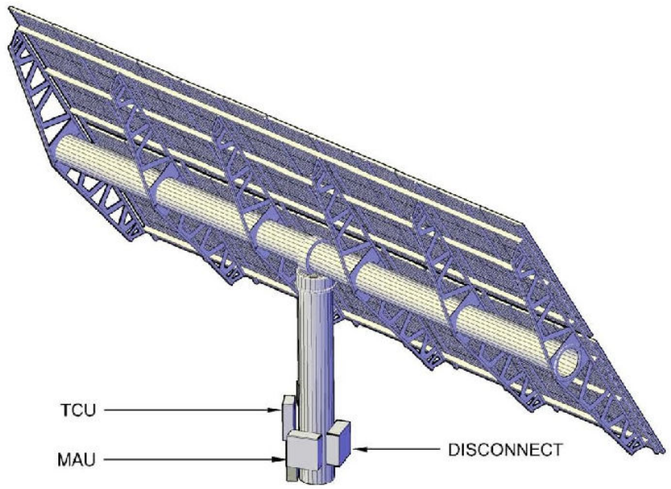
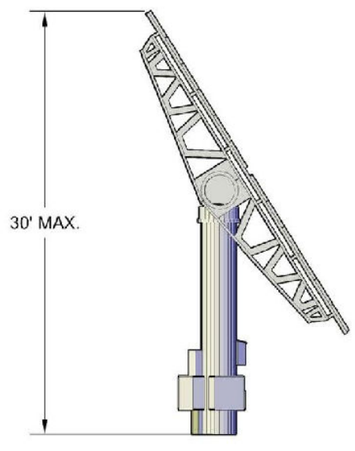


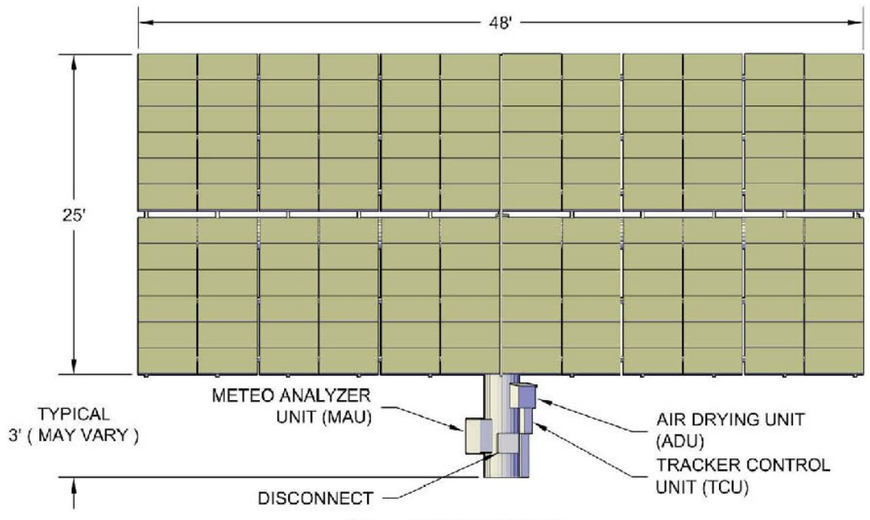
1 STOW MODE VIEW
Scale: NTS



2 ISOMETRIC VIEW
Scale: NTS



3 SIDE VIEW
Scale: NTS



4 FRONT VIEW
Scale: NTS

**PRELIMINARY,
NOT FOR CONSTRUCTION**

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SOURCE: AECOM 2012; SOITEC 2012

FIGURE 5

Tracker Schematic Drawing

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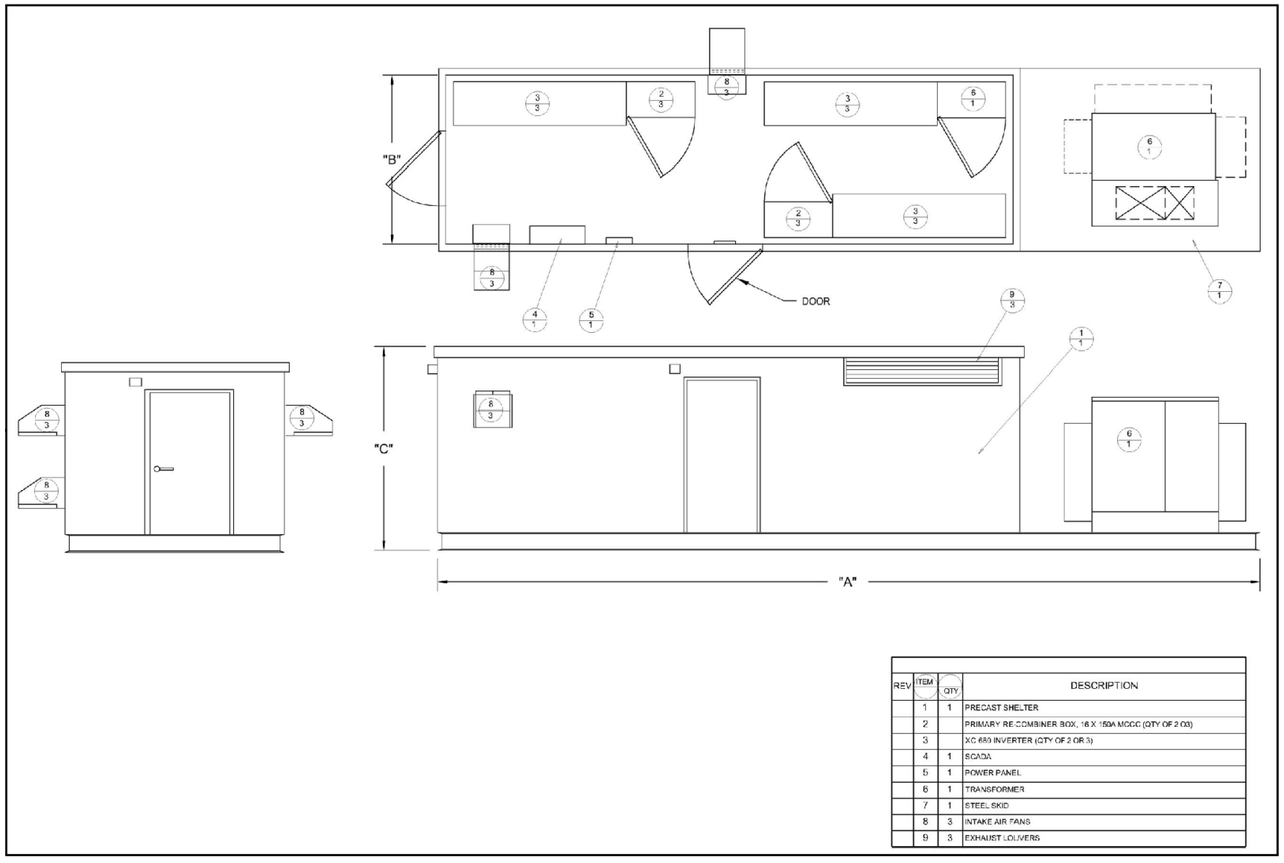
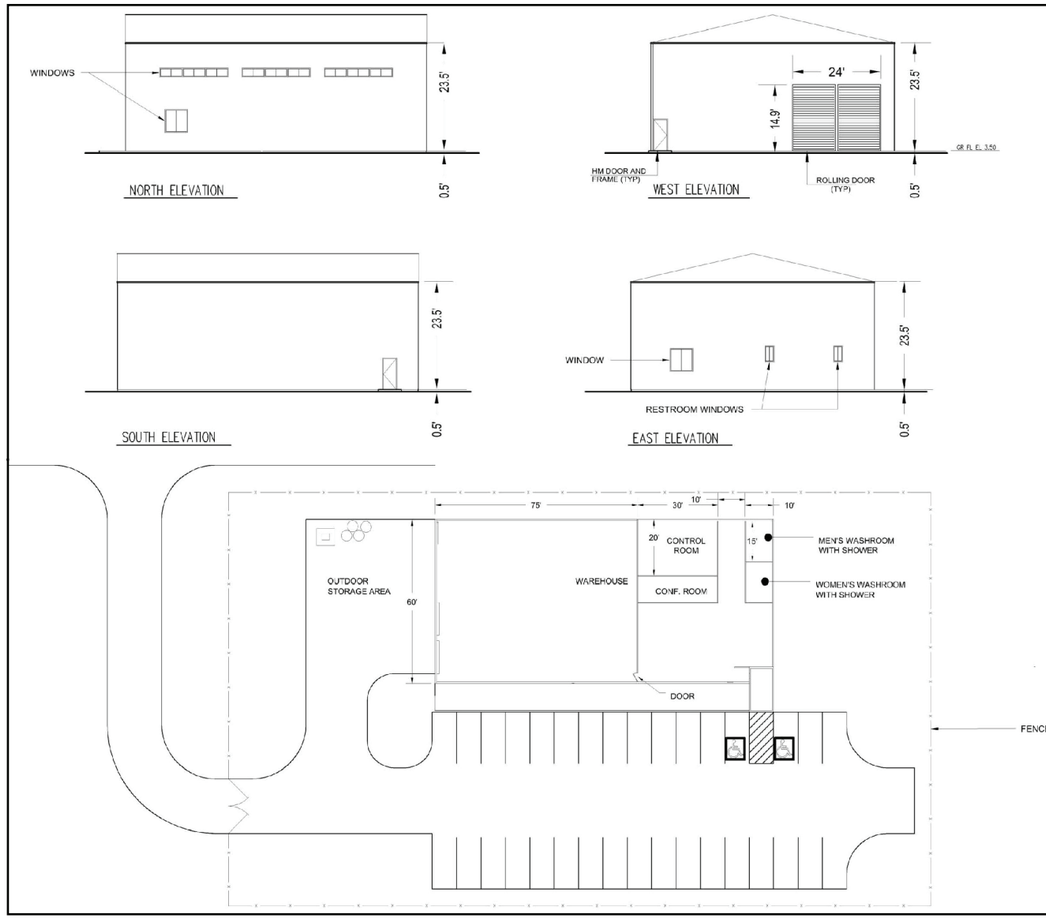


REV	ITEM	QTY	DESCRIPTION
	1	1	PRECAST SHELTER
	2		PRIMARY RE-COMBINER BOX, 16 X 150A MCCC (QTY OF 2.00)
	3		XC 680 INVERTER (QTY OF 2 OR 3)
	4	1	SCADA
	5	1	POWER PANEL
	6	1	TRANSFORMER
	7	1	STEEL SKID
	8	3	INTAKE AIR FANS
	9	3	EXHAUST LOUVERS



O & M BUILDING

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SOURCE: AECOM 2012; SOITEC 2012

FIGURE 6

Operations and Maintenance Facility

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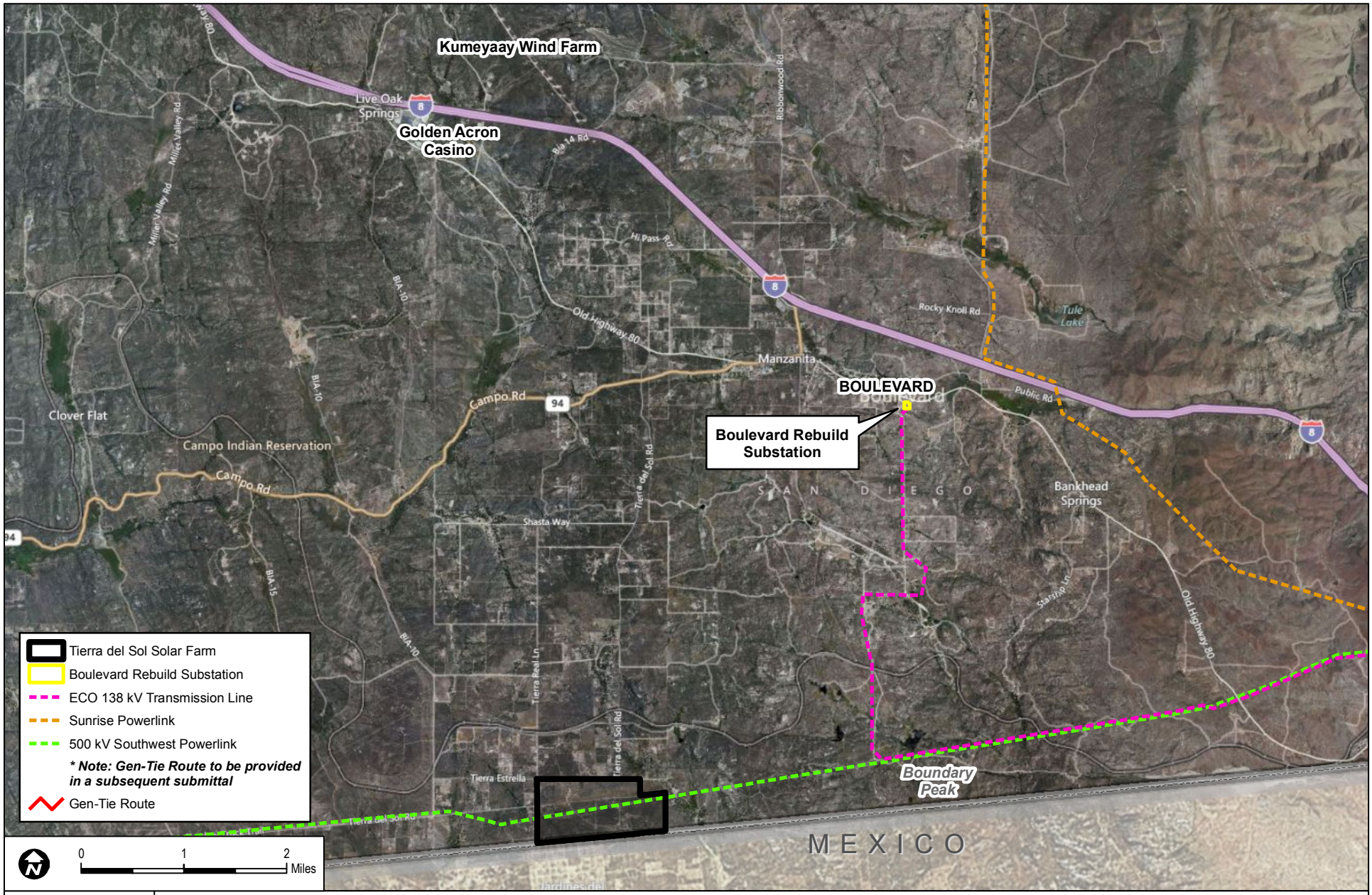

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SOURCE: SDG&E 2099; Bing Maps

FIGURE 7

Gen-Tie Route

PROJECT DESCRIPTION - TIERRA DEL SOL SOLAR FARM

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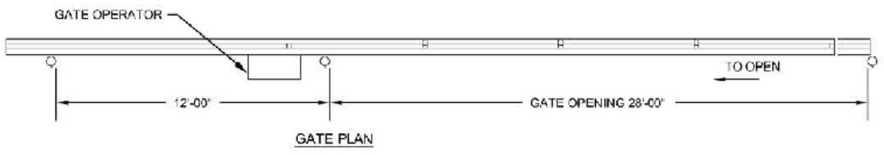
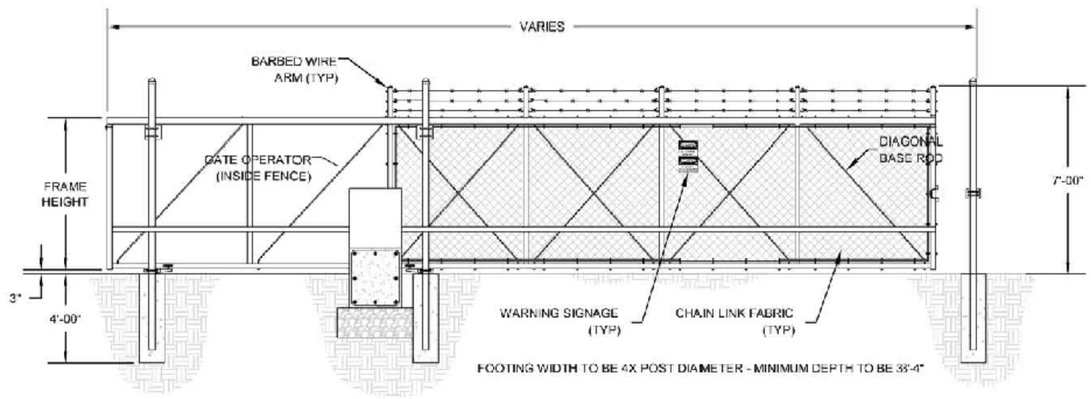


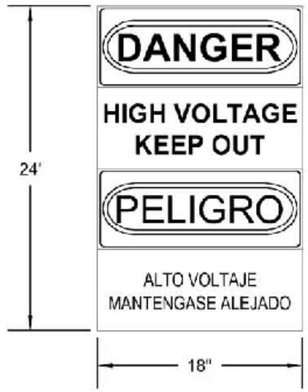
GATE PLAN



1 | DETAIL - GATE

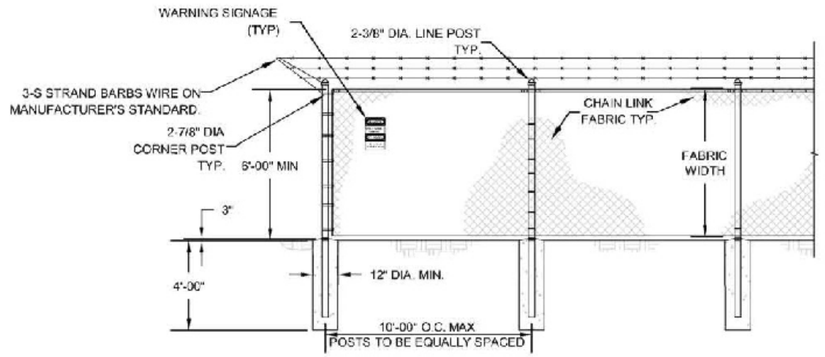
SINGLE MOTORIZED SLIDING GATTE NTS

* 4" DIAMETER POST FOR GATE LEAF LENGHT 35'-0" AND LESS



2 | WARNING SIGNAGE

Scale: NTS



3 | DETAIL - CHAIN LINK FENCE

NTS

FENCE NOTES:

1. CHAIN LINK FABRIC SHALL BE 2" MESH NO.9 GAGE WERE SECURITY FASTED TO LINE POSTS AND RAILS.WIRE FASTENERS AND THE CLIPS SHALL BE NO.11 GAGE
2. WIRE.CONCRETE FOOTINGS SHALL HAVE TOPS CROWNED AT GROUND LEVEEL.
3. CHAIN LINK FENCE TO BE FITTED WITH UV- IRESISTANT MESH FABRIC, COLORR PER CUSTOMER REQUEST.
4. ELECTRICAL SAFETY SIGNAGE TO BE PLACED ALONG PERIMETER.

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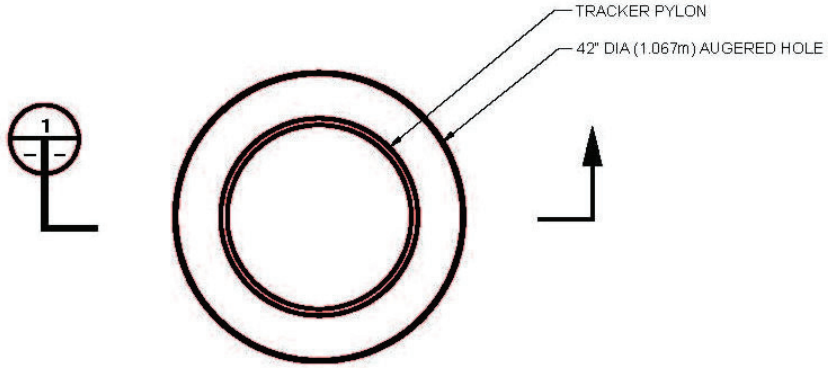
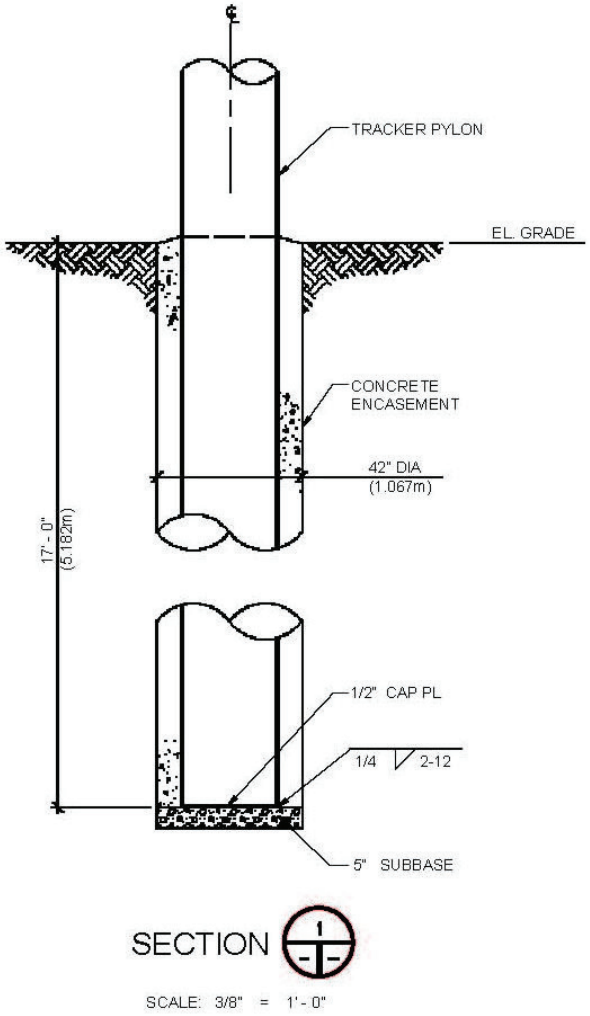


PLAN

SCALE: 3/4" = 1'-0'



SCALE: 3/8" = 1' - 0"

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SOURCE: Soitec 2011

FIGURE 9

Foundation Design

PROJECT DESCRIPTION - TIERRA DEL SOL SOLAR FARM

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