From: Hofreiter, Larry
To: Boparai, Poonam
Subject: RE: Rugged AQ & Climate Change Review
Date: Friday, June 22, 2012 10:26:54 AM
Attachments: 3300-12-007-PROJECT DESCRIPTION.pdf

Sure thing!

I am attaching a copy of the applicants project description, and an abbreviated copy that I developed below:

The project is a major use permit for a Solar Farm consisting of 3,422 concentrated photovoltaic (CPV) trackers on 765 acres in unincorporated San Diego County and in the community of Boulevard. The project would utilize dual axis CPV trackers, which would be approximately 48 feet wide and 30 feet in height. The project would produce up to 80 megwatts (MW) of solar generating capacity. It includes a 7,500 square foot operations and maintenance building, a 6000 square foot substation (approximately 35 feet tall), and a 450 square foot control house. The project also includes 59 Inverter/Transformer enclosures and a 34.5-kV collector trunk line that would deliver power to the substation. An overhead 69kV gen-tie transmission line approximately 125 feet tall would then connect the onsite substation to SDG&E's proposed new Boulevard Substation, just south of Interstate 8. On site, the project would provide three 10,000 gallon water tanks and two 20,000 gallon water tanks to support tracker washing and for fire suppression purposes. Access would be provided with the addition of 20.5 miles of newly constructed load-bearing access roads, as well as 46.5 miles of graded, non-load bearing dirt roads. Primary access would be provided by Rough Acres Ranch Road which would traverse the project site connecting McCain Valley Road to Ribbonwood Road. The project site would be enclosed by a 6 foot perimeter fence with 1 foot of security barbwire. The project would be served by an onsite septic system. Grading would include approximately 232,750 cubic yards of cut and 215,300 cubic yards of fill.

The site is subject to the General Plan Regional Category of Rural Lands, with a Land Use Designation RL-80 (1du/80 acres). Zoning for the site is S-92, General Rural Use and A72, General Agricultural Use, both of which allow Major Impact Utility uses with approval of a major use permit. The site is mostly undeveloped, with some areas being used as an active horse and cattle ranch and a portion currently being used as a staging area for the SDG&E Sunrise Powerlink project.

Larry Hofreiter
County of San Diego Department of Planning and Land Use
5201 Ruffin Road, Suite B, San Diego, CA 92123
Telephone: (858) 694-8846 /Fax: (858) 694-3373
Larry.Hofreiter@sdcounty.ca.gov

-----Original Message-----
From: Boparai, Poonam
Sent: Friday, June 22, 2012 10:20 AM
To: Hofreiter, Larry
Subject: RE: Rugged AQ & Climate Change Review

Hi Larry - Can you also send me a copy of the project description? I want to make sure all project elements are captured in the AQ study.

Thanks.

From: Hofreiter, Larry

Sent: Thursday, June 21, 2012 2:36 PM
To: Boparai, Poonam
Subject: RE: Rugged AQ & Climate Change Review

Here ya go... I couldn't find it in Documentum either.

Larry Hofreiter
County of San Diego Department of Planning and Land Use
5201 Ruffin Road, Suite B, San Diego, CA 92123
Telephone: (858) 694-8846 /Fax: (858) 694-3373
Larry.Hofreiter@sdcounty.ca.gov

-----Original Message-----
From: Boparai, Poonam
Sent: Thursday, June 21, 2012 2:35 PM
To: Hofreiter, Larry
Subject: RE: Rugged AQ & Climate Change Review

Larry - Turns out I do want to look at the scoping language. Can you send me the link to the AQ attachment in the Scoping letter. I couldn't find it in Documentum.

-----Original Message-----
From: Hofreiter, Larry
Sent: Thursday, June 21, 2012 1:16 PM
To: Boparai, Poonam
Subject: RE: Rugged AQ & Climate Change Review

Ooops.... sorry, I must have misunderstood you. But if you could get it to me today or tomorrow, I'll click it off for you.

Let me know. Thanks and sorry for the mess-up.

Larry Hofreiter
County of San Diego Department of Planning and Land Use
5201 Ruffin Road, Suite B, San Diego, CA 92123
Telephone: (858) 694-8846 /Fax: (858) 694-3373
Larry.Hofreiter@sdcounty.ca.gov

-----Original Message-----
From: Boparai, Poonam
Sent: Thursday, June 21, 2012 1:14 PM
To: Hofreiter, Larry
Subject: RE: Rugged AQ & Climate Change Review

Hi Larry,

I had indicated in my email that I can get it done by the end of next week! I can still complete the reviews tomorrow. I'll be offsite so would you be able to check off the task for me once done?

Thanks,
Poonam

-----Original Message-----
From: Hofreiter, Larry
Sent: Thursday, June 21, 2012 1:04 PM
To: Boparai, Poonam
Subject: Rugged AQ & Climate Change Review

Hi Poonam,

Just a friendly reminder that the Rugged Solar AQ and Climate Change studies are still outstanding.... Do you think you'll have comments to me sometime either today or tomorrow 06/22/12?

Let me know... Thanks.

Larry Hofreiter
County of San Diego Department of Planning and Land Use
5201 Ruffin Road, Suite B, San Diego, CA 92123
Telephone: (858) 694-8846 /Fax: (858) 694-3373
Larry.Hofreiter@sdcounty.ca.gov

-----Original Message-----
From: Boparai, Poonam
Sent: Tuesday, June 19, 2012 9:45 AM
To: Hofreiter, Larry
Subject: RE: MOU for Rugged

Hi Larry,

Given my current workload, I'd say I can get the review done by end of next week. I may be able to get it done earlier but if you can get me an assignment with that due date, that would be great!

Thanks,
Poonam

_____
From: Hofreiter, Larry
Sent: Friday, June 15, 2012 10:17 AM
To: Boparai, Poonam
Subject: FW: MOU for Rugged

Hi Poonam,

We have the MOU for the AQ and Climate Change... Can you begin reviewing these reports? When you do, when do you think you'll have comments to me? Let me know so I can get an assignment in the system for you.

Thanks so much! :)

Larry Hofreiter
County of San Diego Department of Planning and Land Use
5201 Ruffin Road, Suite B, San Diego, CA 92123
Telephone: (858) 694-8846 /Fax: (858) 694-3373
Larry.Hofreiter@sdcounty.ca.gov

-----Original Message-----
From: Patrick BROWN [mailto:Patrick.BROWN@soitec.com]
Sent: Friday, June 15, 2012 8:29 AM
To: Hofreiter, Larry
Subject: Fwd: MOU for Rugged

Larry,

I will give you soitec signed copy at meeting.

Pb

Begin forwarded message:

From: "Page, Michael (EDAW)" <Michael.Page2@aecom.com<mailto:Michael.Page2@aecom.com>>
Date: June 15, 2012 7:09:57 AM PDT
To: Patrick BROWN <Patrick.BROWN@soitec.com<mailto:Patrick.BROWN@soitec.com>>
Cc: Jeremy Louden <jlouden@ldnconsulting.net<mailto:jlouden@ldnconsulting.net>>, "Maddux, William" <Bill.Maddux@aecom.com<mailto:Bill.Maddux@aecom.com>>
Subject: FW: MOU for Rugged

Patrick,

Here is the MOU from Jeremy. Hopefully this will do the trick for DPLU review of the Rugged Solar LLC Air Quality Report. Let me know if you need anything else and how it goes with Larry today.

Take Care,

Mike

Michael L. Page, AICP
Associate Principal Environmental Planner
Design + Planning
Direct + 1 619 684 6940 Main + 1 619 233 1454
michael.page2@aecom.com<Michael.page2@aecom.com>

AECOM
1420 Kettner Boulevard, Suite 500, San Diego CA 92101 USA
T + 1 619 233 1454 F + 1 619 233 0952
www.aecom.com

From: Jeremy Louden [mailto:jlouden@ldnconsulting.net]
Sent: Friday, June 15, 2012 7:05 AM
To: Page, Michael (EDAW)
Cc: Maddux, William
Subject: MOU for Rugged

Attached is the MOU and letter.

Jeremy Louden, Principal
Ldn Consulting, Inc.
phone 760-473-1253
fax 760-689-4943
446 Crestcourt Lane
Fallbrook, CA 92028
Noise, Air Quality & GHG

PROJECT DESCRIPTION
FOR THE
RUGGED SOLAR LLC PROJECT
BOULEVARD SAN DIEGO COUNTY, CA

Major Use Permit 3300-12-0XX

Prepared for:

County of San Diego
Department of Planning and Land Use
Contact: Larry Hofreiter
5201 Ruffin Road, Suite B
San Diego, California 92123
(858) 694-2960

Project Proponent:

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

May 2012

SDC DPLU RCVD 05-15-12
P12-007

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CHAPTER 1.0
PROJECT DESCRIPTION, LOCATION AND ENVIRONMENTAL SETTING

1.1 PROJECT OBJECTIVES

Rugged Solar LLC proposes to develop, finance, construct, and operate an 80MW AC Concentrating Photovoltaic (CPV) renewable energy project (the Project). The Project would use CPV systems sited in an area with abundant solar energy to generate clean, renewable electricity. A Power Purchase Agreement (a "PPA") has been signed by San Diego Gas and Electric Company ("SDG&E") and approved by the California Public Utilities Commission ("CPUC"). Pursuant to the PPA, SDG&E would purchase the power output from the Project in fulfillment of the State of California's Renewable Portfolio Standard.. The applicant's objectives for the Project are as follows:

- Assist SDG&E in achieving the State's Renewables Portfolio Standard requirements and greenhouse gas emissions reduction objectives to the maximum extent possible by developing, constructing, and operating California RPS qualified solar generation.
- Locate solar power plant facilities close 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 short-term and long-term direct and indirect sustainable high skill jobs.
- Use a proven and financeable CPV technology that ensures that the Project can produce power reliably and at a competitive price.
- Provide a new energy supply in an effort to help meet San Diego County's planned population growth and future generation needs.
- Enhance the local and state economy by using equipment that is largely manufactured in San Diego County.
- 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 Conservation and Open Space Element of 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 greenhouse gas (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 in 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 addresses a reduction in consumption and generation of non-renewable electrical and natural gas energy through the increase in generation

and 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 towards 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 a minimum of 33% of all electricity from renewable sources as well as reducing GHG emissions to 1990 levels by 2020.

1.3 PROJECT LOCATION

Figure 1 shows the project's relationship to San Diego County, which is located in southern California in the unincorporated community of Boulevard. Figure 2 shows the project's relationship to the surrounding unincorporated community of Boulevard and provides the context of local geography/major landforms/points of interest. The project site is located approximately 1.25 miles north of Interstate 8 (I-8) and extends roughly 2 miles between Ribbonwood Road and approximately 0.5 mile east of McCain Valley Road.

The main project site consists of all or a portion of the following Assessor Parcel Numbers (APNs):

- 611-110-01-00
- 611-100-02-00
- 611-100-01-00
- 611-090-04-00
- 611-091-03-00
- 611-090-02-00
- 611-060-04-00
- 611-091-07-00
- 612-030-19-00
- 611-091-09-00
- 612-030-01-00

Figure 3 shows the boundaries of each APN in and surrounding the Project site.

Off-site facilities would impact the following APNs:

- 611-110-01-00, 612-030-15-00, 612-091-12-00, 612-091-13-00. Not under Permit by County: 611-110-06-00 (CA State Lands), 612-030-13-00 (BLM).
- There are no other identified offsite improvements.

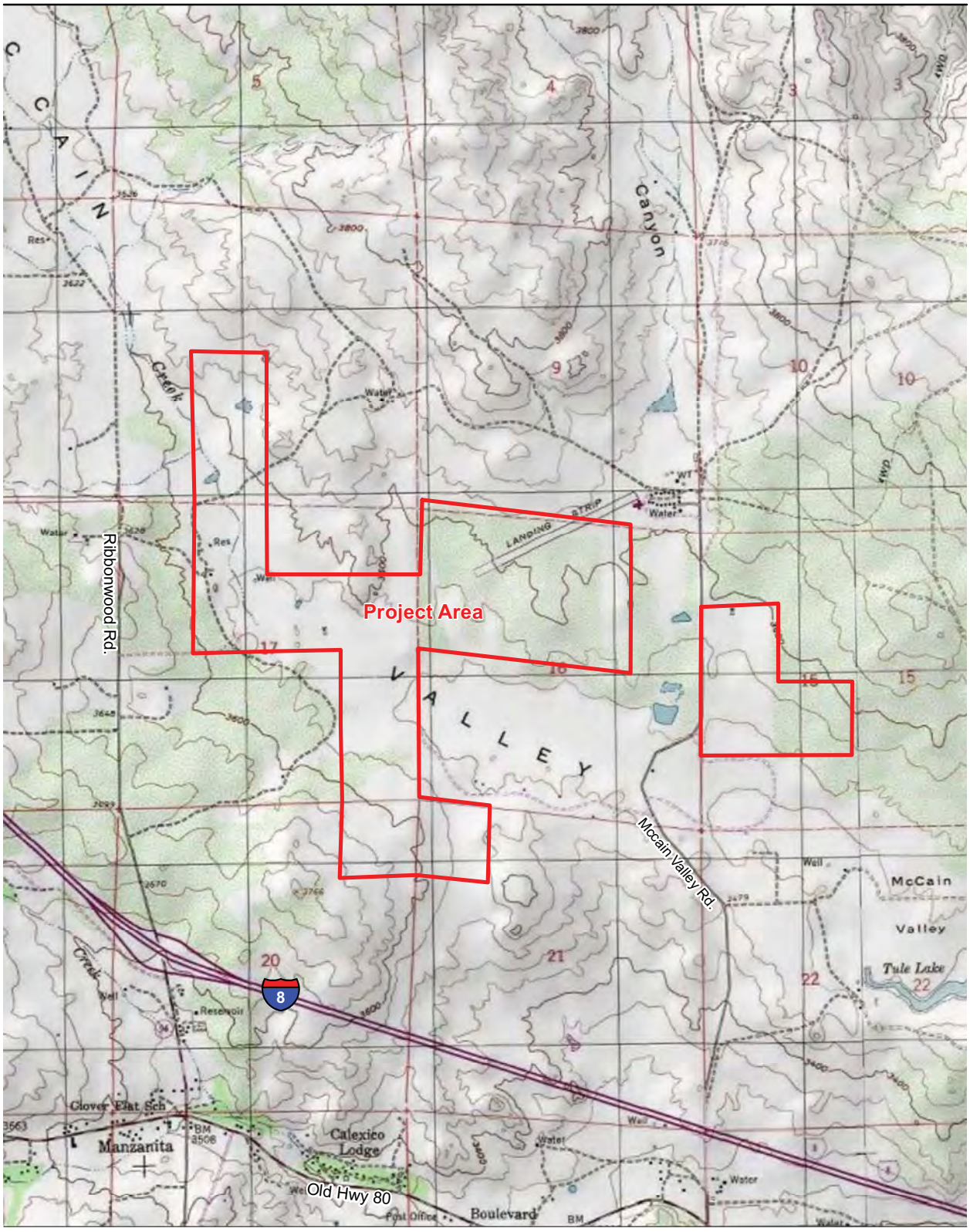
Source: Soitec 2011; AECOM 2011; ESRI 2011

5 2.5 0 5 Miles

Scale: 1 = 316,800; 1 inch = 5 mile(s)

Figure 1
Regional Map

Path: \\ussdg2fp001\data\Projects\2011\11280175.01_Concentrix_S\06GIS\6.3_Layout\Reports\ProjectDescription\Rugged\RegionalMap.mxd, 2/17/2012, HarrisT



Source: USGS; Soitec 2011; AECOM 2011

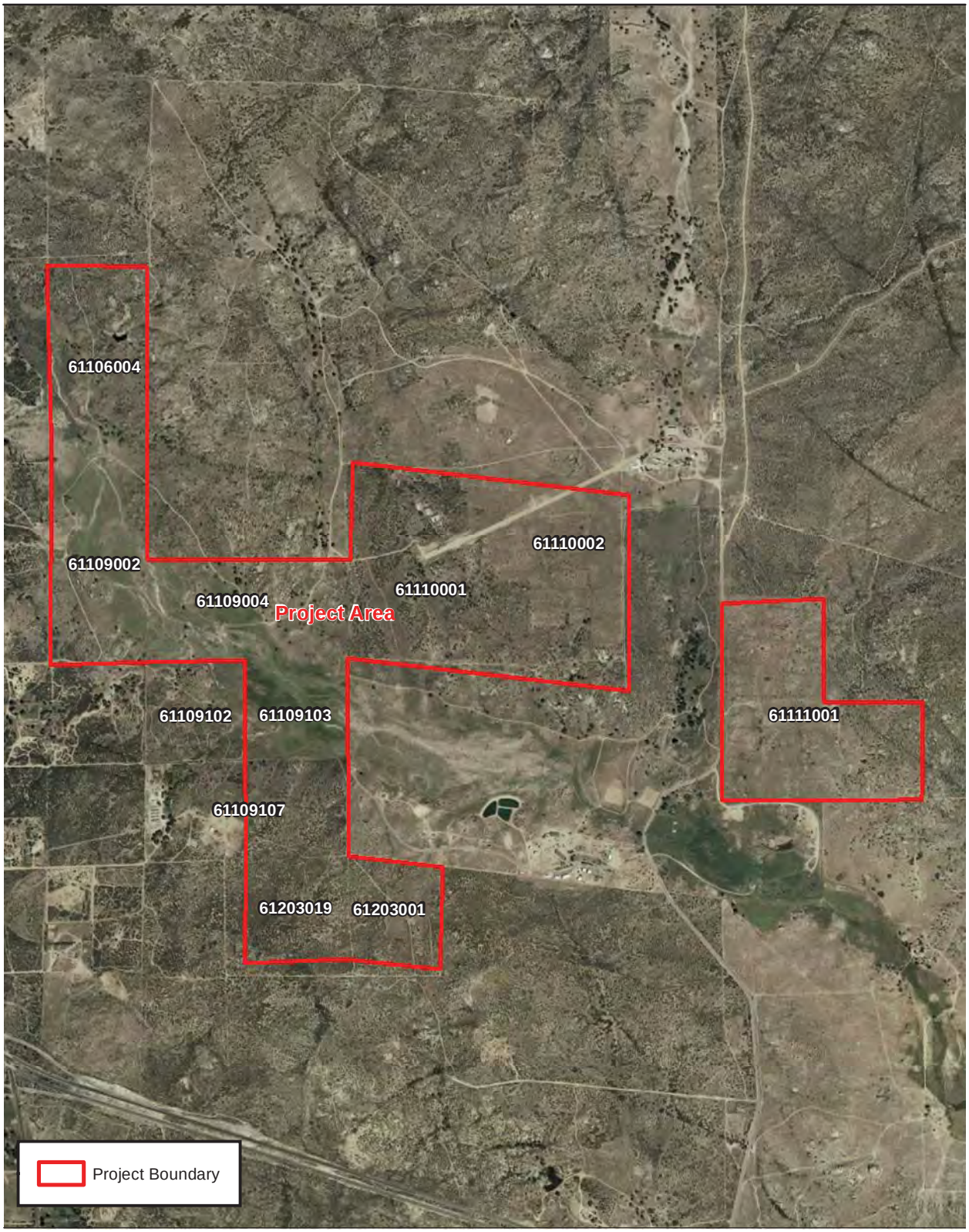
Live Oak Springs USGS Quadrangle, San Diego County

0.5 0.25 0 0.5 Miles

1:31,680 1 inch = 0.5 mile(s)

Figure 2
Vicinity Map

Path: \\ussdg2fp001\data\Projects\2011\11280175.01_Concentrix_S\06GIS\6.3_Layout\Reports\ProjectDescription\Rugged\VicinityMap.mxd, 2/17/2012, HarrisT



Source: USGS; Soitec 2011; AECOM 2011

Live Oak Springs USGS Quadrangle, San Diego County

0.5 0.25 0 0.5 Miles

1:23,920 1 inch = 0.38 mile(s)

Figure 3

Aerial View of Project Area

Path: C:\Users\harrist\Desktop\Desktop_Projects\AECOM\Harrist_Xfer_Folder\Soitec\GIS\Maps\Report\Rugged\VicinityMap_T_Edit.mxd, 5/11/2012, HarrisT

1.3.1 Environmental Setting

The Project area is located in a desert transition zone dominated by chaparral communities, subshrub communities, alkali meadows and seeps, oak woodlands, and wildflower fields. The site is characterized by gently sloping hillsides and shallow valleys, with rock outcrops and a few small hills scattered throughout. Much of the site is part of an active ranching operation, with a series of ranch houses, stables, out buildings, roads, fencing, corrals, stock ponds, and other features typical of a horse and cattle ranch.

The Project site is within the Boulevard Community Planning Area of San Diego County's General Plan; the land use category is Rural Lands with a permitted density of 1 dwelling unit per 80 acres (RL-80). Existing zoning is General Rural (S92), and the Project area is currently an active horse and cattle ranch used for grazing. A portion of the Project area is being used as a staging area for construction of SDG&E's Sunrise Powerlink project. The Project site is located at an elevation of approximately 3,500 to 3,670 feet above mean sea level. The Project is located within San Diego County's draft East County Multiple Species Conservation Program (MSCP) Plan Area. The majority of the Project site is disturbed by extensive grazing activities, but also includes some vegetation of moderate to high value for wildlife species. Although the open area of the Project site is heavily grazed, a small field of herbaceous wildflower species was identified during the spring blooming period.

1.4 PROJECT DESCRIPTION:

The Project includes a Major Use Permit (MUP) to authorize a Major Impact Services and Utility Pursuant to Sections 1350, 2705, and 2926 of the Zoning Ordinance. The Rugged Solar Energy Project would produce up to 80 megawatts (MW) of alternating current (AC) solar generating capacity. The Project would consist of approximately 3,422 concentrating photovoltaic electric generation systems utilizing dual axis tracking CPV trackers on 765 acres in southeastern San Diego County in the unincorporated community of Boulevard, California. In addition to the CPV trackers and inverter transformer units, the Project includes the following primary components:

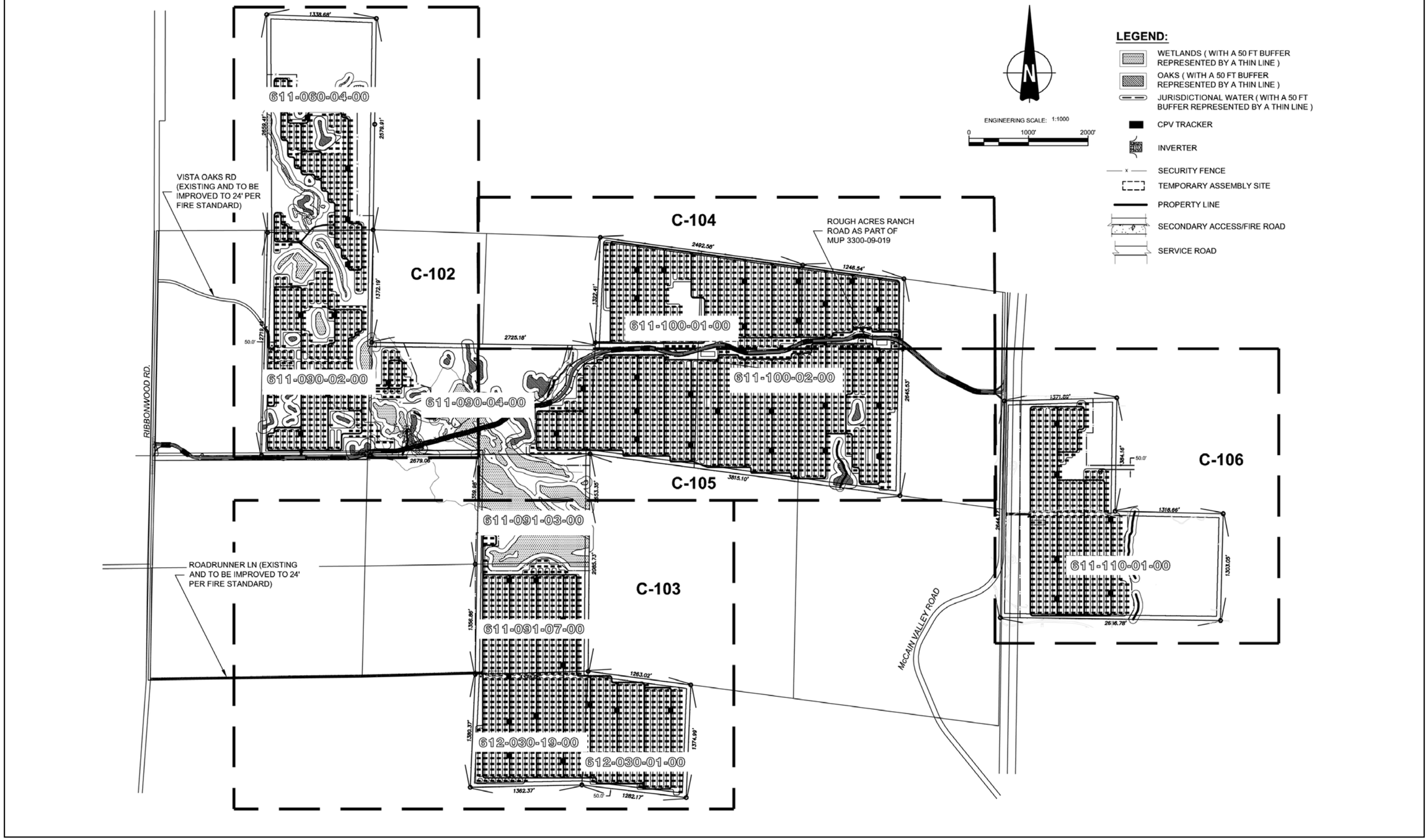
- A collection system linking the CPV trackers to the on-site Project substation comprised of (i) 1,000 volt (V) direct current (DC) underground conductors leading to (ii) 34.5-kV underground and overhead alternating current (AC) conductors.

- A 7,500-square-feet (sf) (60’ X 125’ feet) operations and maintenance (O&M) building.
- A 2-acre onsite private collector substation site with a pad area of 6000 sf (60’ X 100’ feet) with maximum height of 35’ feet and includes a 450-sf (15 feet by 30 feet) control house.
- 59 Inverter/Transformer enclosures. The dimensions of each inverter unit are 10 feet by 40’ feet (400’ sf each) with a total structure height of up to 12 feet.
- A 69-kV overhead generator transmission line (Gen-Tie) connecting the on-site substation to SDG&E’s proposed new Boulevard Substation.
- 20.5-miles of newly constructed load-bearing on-site access roads.
- 46.5-miles of graded, non-load bearing dirt service roads
- Two permanent onsite water wells for the O&M building and to facilitate washing of the CPV Trackers.
- Two on-site 20,000 gallon water storage tanks for fire suppression water storage capacity adjacent to the new O&M building.
- Three additional on-site 20,000 gallon water storage tanks to support tracker washing and each with a dedicated 10,000 gallons for fire suppression water storage capacity.
- A septic tank system and leach field for the O&M building.
- 6 foot perimeter fencing with 1 foot of security barbed wire.

Figures 4a through 4f provide the layout of the Project’s primary components.

The Project would be developed in one phase with a construction period of up to 18 months spanning mobilization to the site through final project commissioning.

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.



Source: Soitec 2011

Not to Scale

Figure 4a
Project Plot Plan

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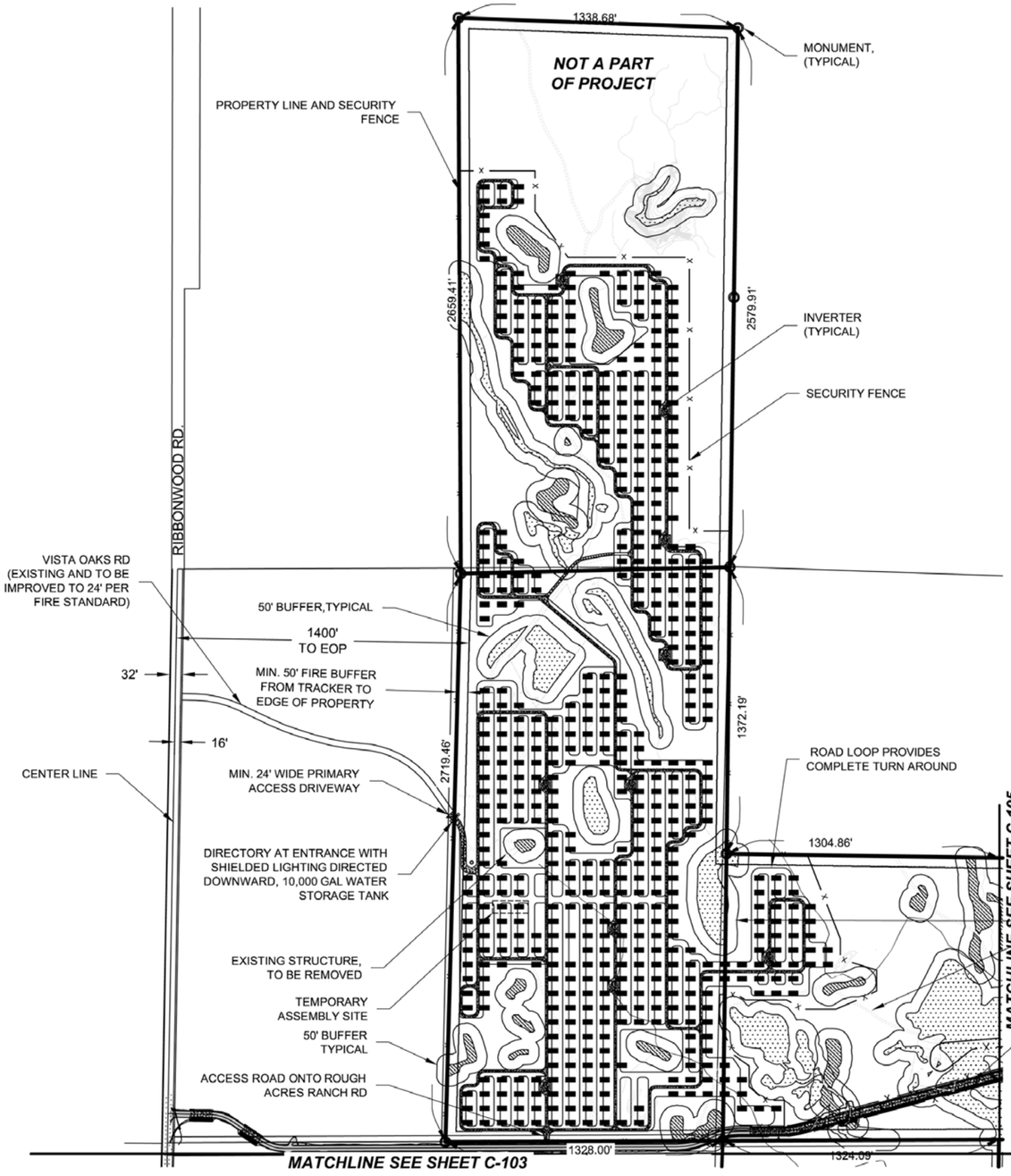

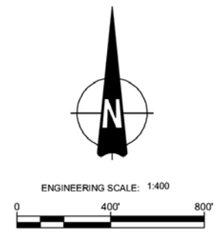

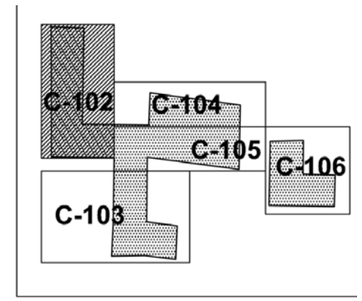

PLOT PLAN KEY MAP

LEGEND:

- WETLANDS (WITH A 50 FT BUFFER REPRESENTED BY A THIN LINE)
- OAKS (WITH A 50 FT BUFFER REPRESENTED BY A THIN LINE)
- JURISDICTIONAL WATER (WITH A 50 FT BUFFER REPRESENTED BY A THIN LINE)
- CPV TRACKER
- INVERTER
- SECURITY FENCE
- TEMPORARY ASSEMBLY SITE
- PROPERTY LINE
- SECONDARY ACCESS/FIRE ROAD
- SERVICE ROAD

PRELIMINARY, NOT FOR CONSTRUCTION

Source: Soitec 2011

Not to Scale

Figure 4b
Project Plot Plan

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Source: Soitec 2011

Not to Scale

Figure 4c
Project Plot Plan

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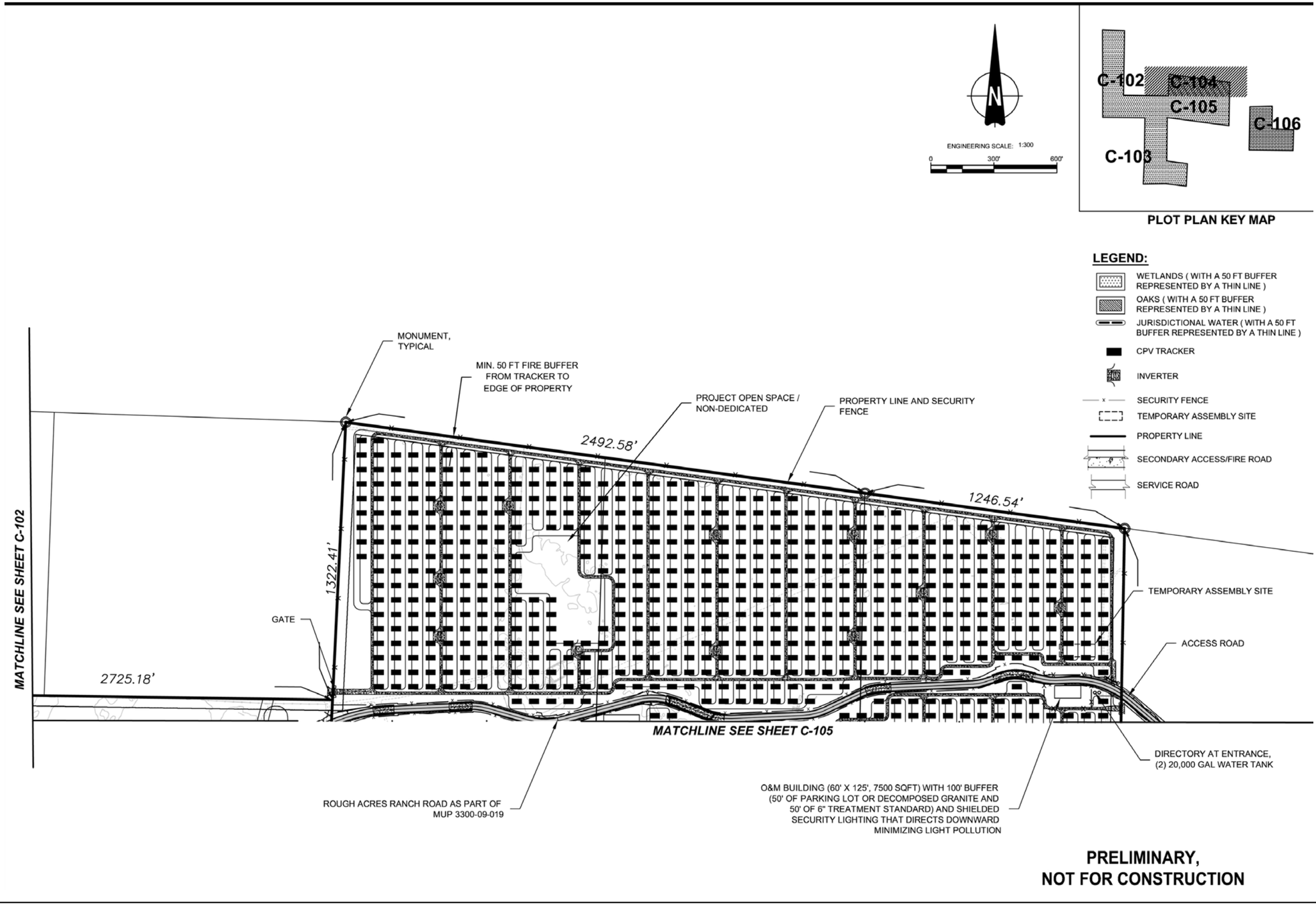

Source: Soitec 2011

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Figure 4d
Project Plot Plan

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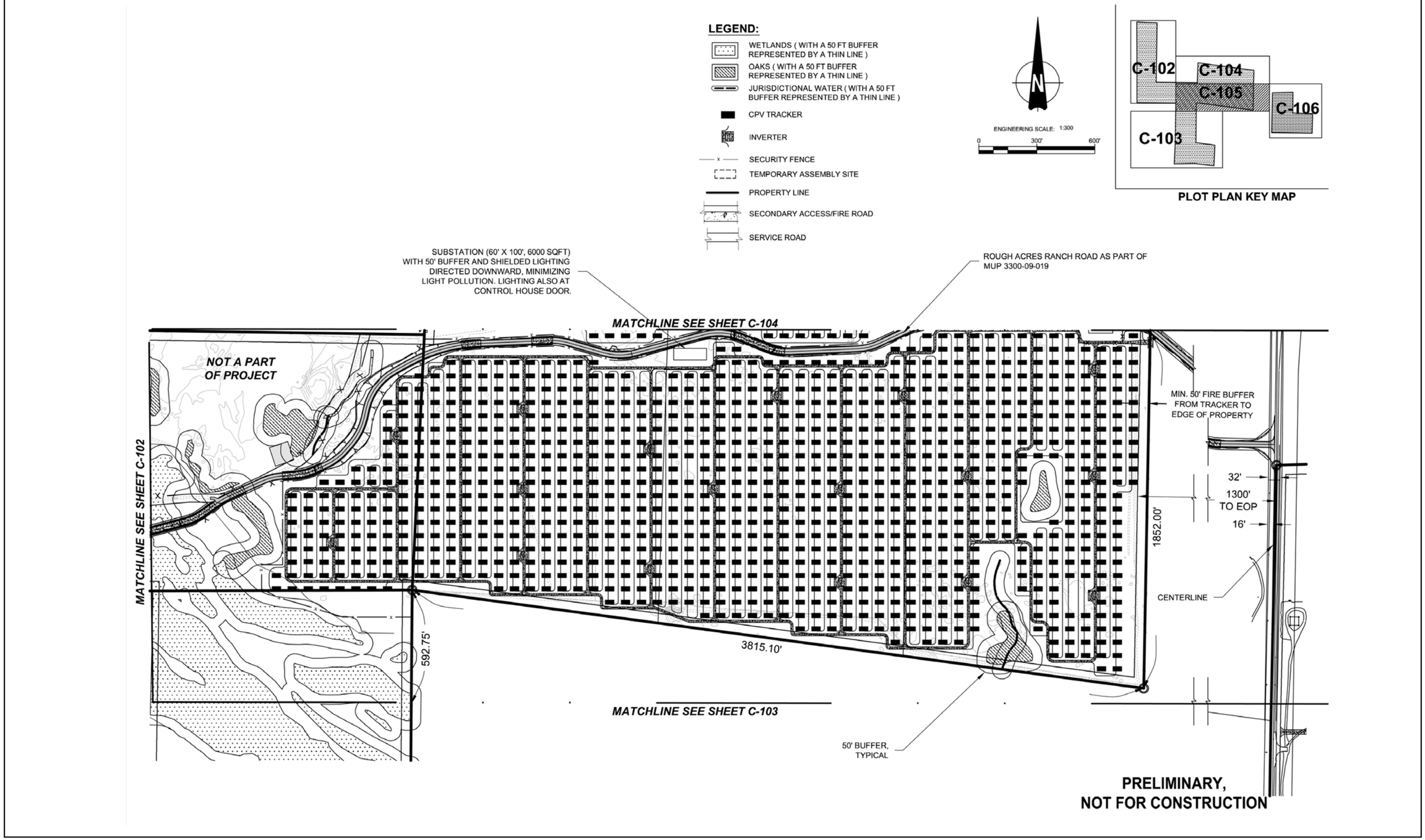

Source: Soitec 2011

Not to Scale

Figure 4e
Project Plot Plan

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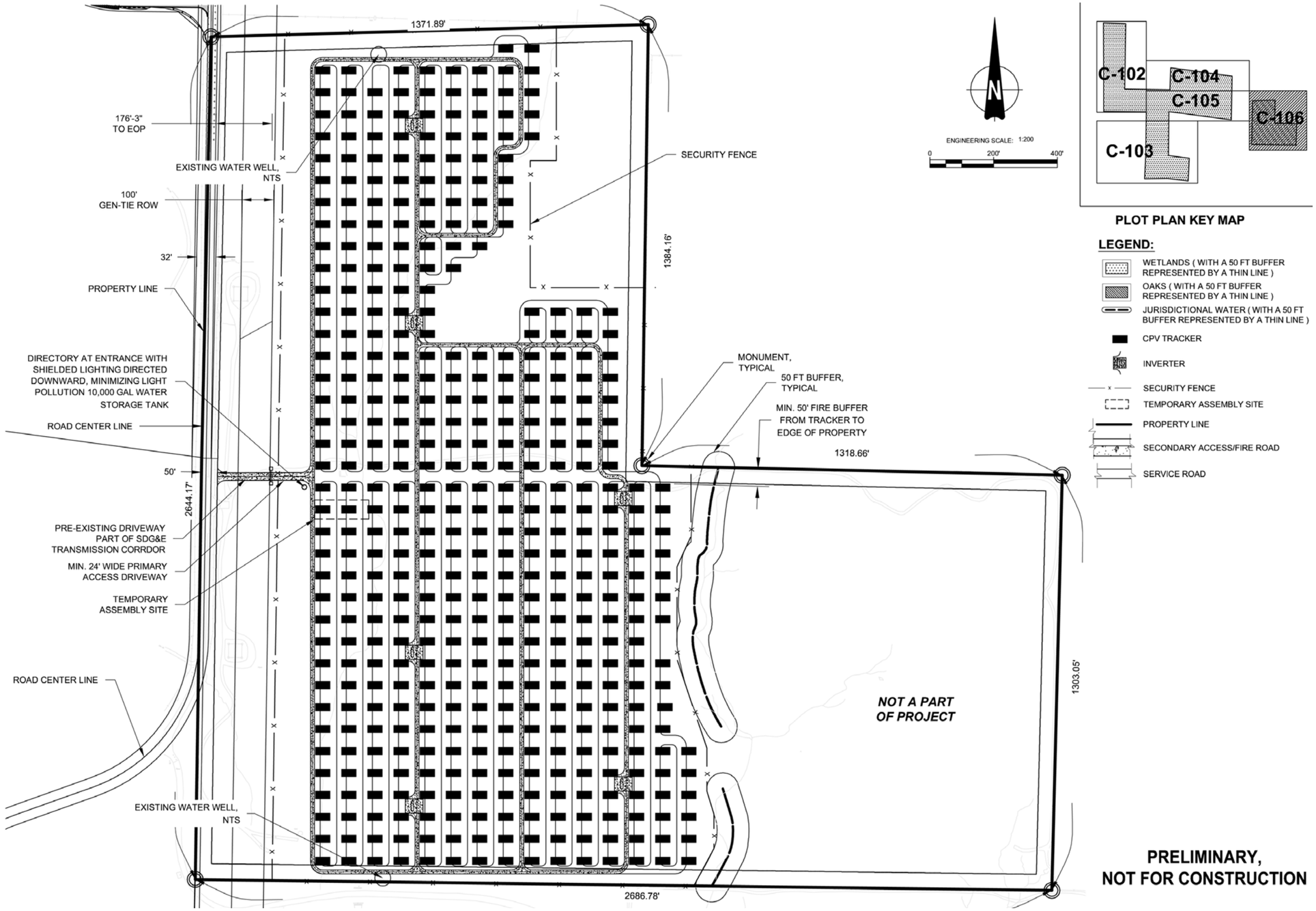

Source: Soitec 2011

Not to Scale

Figure 4f
Project Plot Plan

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1.4.1 Solar Generation Components

1.4.1.1 Module

Soitec's Concentrix™ CX-S530 modules are made up of a lens plate (Fresnel lens) and a base plate on which high-performance triple junction solar cells are mounted. For its module construction, Soitec uses elements from the circuit board industry and an insulating glass technology that are robust, cost-effective and proven to be reliable over many years of testing. Precision and quality in the module manufacturing lead to an extremely high average module efficiency of almost 30%. Soitec's Concentrix modules are IEC62108 certified and won listing with the California Energy Commission (CEC).

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) or 68 degrees Fahrenheit (°F) above ambient temperature, therefore, on a typical summer day at 40°C (104°F), the panel temperature would be approximately 60°C (140°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 back of 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 Tracker

Concentrix technology from Soitec benefits from the use of a dual-axis tracking system to maintain optimal positioning relative to the sun. 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: (i) astronomical positioning is maintained by the control system and (ii) verified by means of a solar sensor that seeks to position the CPV Tracker precisely perpendicular to the sun to ensure optimum system performance.

Individual tracker dimensions are approximately 48' feet across by 28' feet tall (see Figure 5). Each CPV tracker would be mounted on a 28-inch diameter steel mast (steel pole) which would be supported by either (i) extending it into the ground up to 20' feet, or (ii) attaching it to a concrete spread foot foundation. Foundation design will support the CPV tracker in consideration of potential wind loading and soil conditions at the site and to accommodate seismic events and flooding. A variant foundation design includes a concrete casing of the mast described in (i) if needed to enhance stability under a

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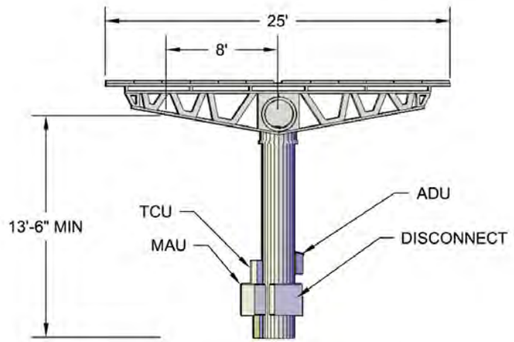
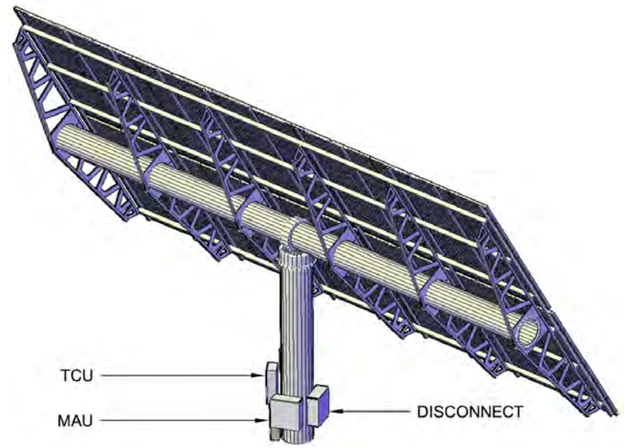
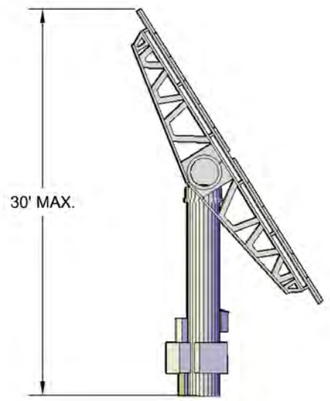


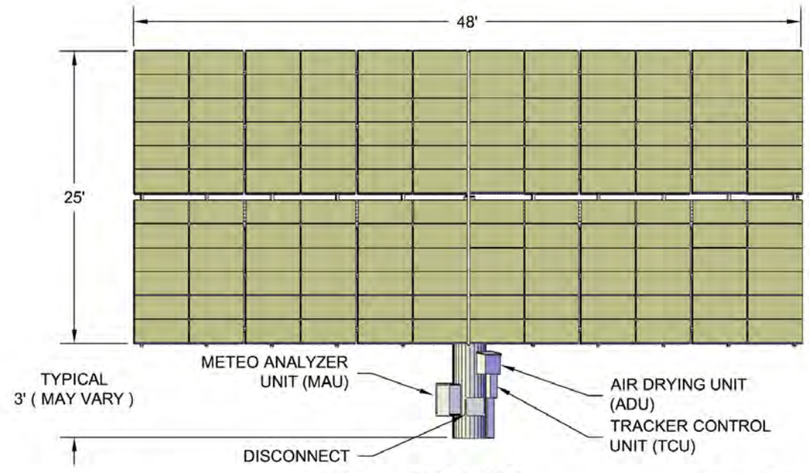
1 STOW MODE VIEW
Scale: NTS



2 ISOMETRIC VIEW
Scale: NTS



3 SIDE VIEW
Scale: NTS



4 FRONT VIEW
Scale: NTS

PRELIMINARY,
NOT FOR CONSTRUCTION

Source: Soitec 2011

Not to Scale

Figure 4b
Project Plot Plan

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range of conditions. The preferred foundation design is described in (i), which would be installed by vibration or conventional pile driving methods depending upon soil conditions.

In its most vertical position and depending on mast height above ground, the top of each tracker would be approximately not more than 30 feet above grade, and the lower edge would not be less than 1 foot above the ground (or 1 foot above flood elevation in areas that are subject to 100-year inundation). In its horizontal "stow" mode (for high winds), each tracker would have a minimum ground clearance of 13' feet 6" inches. Solar CPV modules would be mounted on and comprise, in the aggregate, the surface of each tracker. The dimensions, maximum height, and ground clearance for all trackers would be the same throughout the Project.

1.4.1.3 CPV Tracker Configuration

The Project includes a total installation of 3,422 CPV Trackers installed in groups or "building blocks comprised of approximately 58 individual Soitec Concentrix^{TM} CX-S530 systems (includes dual-axis tracker), with any of the following inverter combinations: two 630-kW inverters, two 680-kW inverters, or three 680-kW inverters, and either a 1.5- or 2.0-MVA transformer.

1.4.1.4 Inverters and Transformers

The purpose of the inverter is to convert the Direct Current (DC) power from the solar modules to an Alternating Current (AC) power, which is compatible with SDG&E system and is the type of power that is sold to residential and commercial customers. The AC power is then stepped up to a medium voltage, collected and then stepped-up to a higher voltage at the Project substation to match the utility voltage at the point of interconnection. Power within each building block would be delivered through a 1,000-V direct current (DC) underground collection system from the trackers to the inverter stations. Each set of inverters would be equipped with a step-up transformer to convert the power from 350 volts AC on the "low side" to 34,500 volts (34.5-kV) on the "high side." An alternative inverter and transformer configuration may be used, with negligible difference in appearance. The inverters and transformer would be mounted on a skid that would include a shade structure. It is uncertain if a two 680 kV inverter or a three 680-kV inverter configuration would be utilized. Therefore the Project has been sized to accommodate the larger of the two configurations which is 10' X 40' feet (400 sq/ft), with an approximate height of 12' feet (including inverter enclosure). The project would require approximately 59 inverter skids for a total of 23,600 sq/ft.

1.4.1.5 Underground and Overhead Collection System

Power from the CPV trackers in each Building Block would be delivered from each tracker to a set of 680-kW inverters through a 1,000-V DC underground collection system. The underground 1,000-V DC collection system construction footprint would include a trench of one to two feet in width and a depth of up to approximately four feet running parallel to each track row. The AC power output from each inverter set would then be stepped-up to 34.5-kV with a dedicated transformer. It is anticipated that there would be a total of six 34.5-kV collection circuits delivering power to an above-ground trunk line leading to the project substation.

The underground 34.5-kV collection system would be installed in a trench of two to four feet in width and a depth of up to approximately four feet running parallel to each row of trackers. Base material would be installed in all trenches to ensure adequate drainage, thermal conductivity and electrical insulating characteristics below and above collection system cables. A small concrete footing would be installed to support each pair of inverters and accompanying transformer.

Each 34.5-kV underground branch circuit would connect to a 34.5-kV overhead trunk line on the project site for delivery to the Project substation (see Figures 4a through 4f). The above ground trunk lines would utilize steel poles approximately 50-75 feet tall and spaced about 300-500 feet apart. The minimum ground clearance of the 34.5-kV lines would be 30 feet. The maximum hole dimensions would be 36” inches in diameter and approximately 20’ feet deep.

1.4.1.6 Project Substation

The Project requires the use of a 6,000-sf (60’ X 100’ Feet) private on-site collector substation that would be located within central portion of the Project site (see Figure 4e). The substation site would be located approximately 0.5 mile west of the O&M building on the Project site. The purpose of the substation is to collect the energy received from the overhead and underground collector system and increase the voltage from 34.5-kV to 69-kV. Once the voltage is stepped up to 69-kV, the power would be conveyed through a 35-foot high dead-end structure that terminates the gen-tie within the onsite collector substation. The power is then conveyed through the gen-tie line to the proposed Tule Wind LLC gen-tie line, as a shared facility to minimize impact that would deliver power to the new Boulevard Substation (See Section 1.4.2.2).

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

- One 52.8/70.4/88 MVA rated step up transformer. The cooling system for the transformer is as follows: Oil Assist, Fan Assist, Fan Assist (OA/FA/FA) respectively.
- One circuit breaker used to protect equipment from an electrical short circuit.
- One Disconnect switch
- Wire, cables and aluminum bus work are used to connect and isolate the major pieces of equipment.
- The substation also includes a 450-sf (15' feet by 30' feet) control house that contains relays used to detect short circuits, equipment controls, communication equipment used to monitor system performance remotely, and the meters used to measure electrical power generated from the Project.
- The tallest structure within the substation boundaries will be the 69-kV dead-end structure that has a maximum height of 35' feet.

1.4.1.7 Control System

Operation of the Project requires monitoring through a supervisory control and data acquisition (SCADA) system. The SCADA system uses on-site sensors, which would maintain tracker orientation toward the sun. At night, the trackers would be positioned vertically to accommodate washing when needed, to minimize dust collection, and to be ready to begin generation soon after sunrise each morning. When winds are high, the trackers would be positioned horizontally in "stow" mode to reduce wind loading. The CPV trackers and communication / monitoring system on-site would require minimal usage of grid-provided electricity for operations. The SCADA system would support Project reporting and production metering used to provide reports 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 would fulfill two functions:

- To provide power in the case of grid outage to move the trackers into stow mode; and,

- To provide power, again in the case of grid outage, to perform monitoring functions at night or otherwise.

As a backup power system, the Project would either employ (1) multiple emergency generators, or (2) an independent source 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 at the north-central portion of the Project site approximately 0.5 mile east of the onsite private substation. The O&M building would be used for storage, employee operations, and maintenance of equipment. The O&M facility would consist of a 7,500 sf building (see Figure 6). The building would include administrative and operational offices and meeting facilities along with material storage and equipment warehouse and lavatory facilities served by a private onsite septic system and groundwater well. The building would be surrounded by 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, while enhancing safety, security, and functionality.

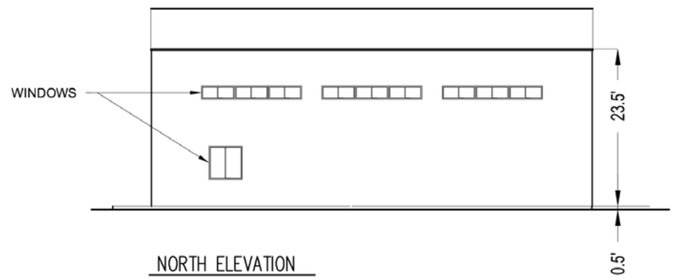
1.4.2.2 Off-Site Private Transmission Facilities

Power from the Project's private on-site substation would be delivered to the 69-kV bus at SDG&E's proposed new Boulevard Substation via a 69kV conductor comprising part of the gen-tie facility to be shared between the Project and Tule Wind LLC (see Figures 4a through 4f). The 69-kV shared gen-tie facility would run south along the east side of McCain Valley Road and SDG&E's Sunrise Power Link and across I-8, after which it would cross McCain Valley Road and run parallel to Old Highway 80 along the north side until it crosses Old Highway 80 at the proposed new SDG&E Boulevard East Substation.

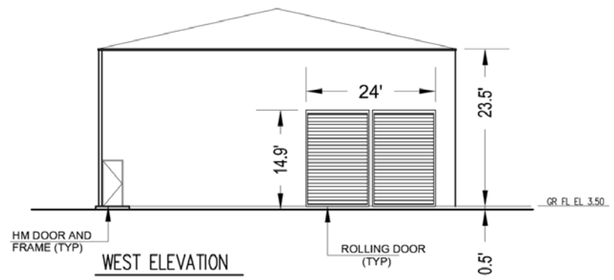
1.4.2.3 Security, Fire Protection, and Maintenance and Security Lighting

1.4.2.3.1 Security

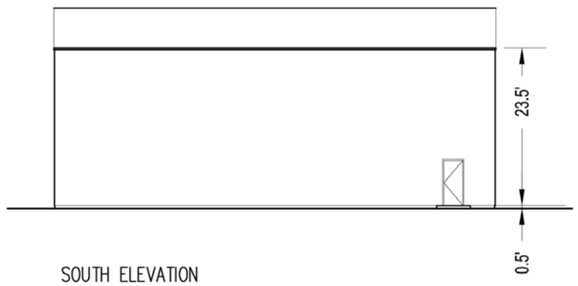
The Project site would be fenced along the entire property boundary for security with fencing that meets National Electrical Safety Code (NESC) requirements for protective arrangements in electric supply stations. Examples of acceptable fencing may include a six foot chain-link perimeter fence with three stands of barbed wire along the top with a four inch maximum clearance from the ground surface (see Figure 7).



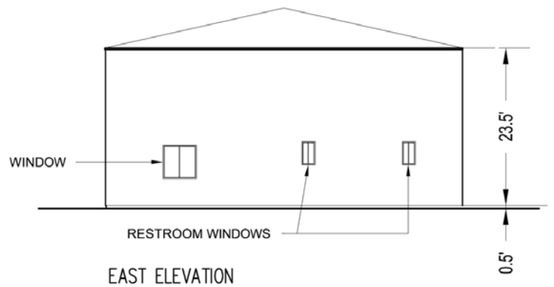
NORTH ELEVATION



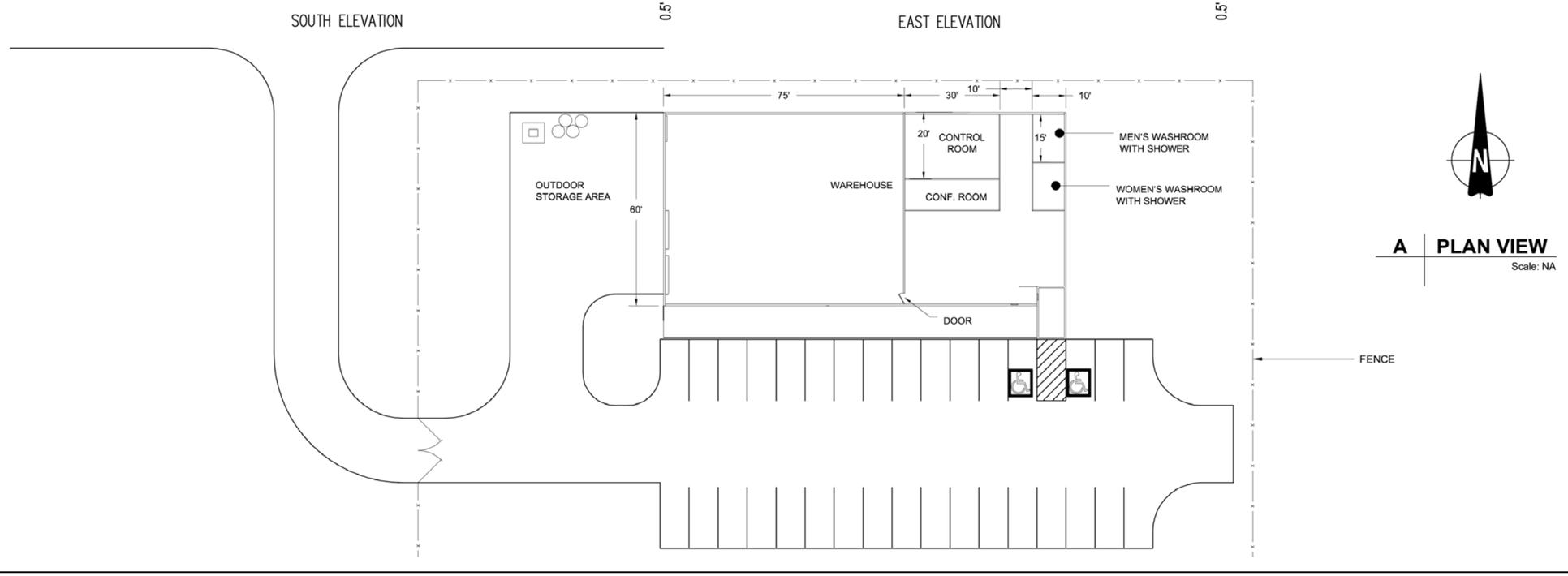
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



A PLAN VIEW
Scale: NA

Source: Soitec 2011

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Figure 6
O&M Building

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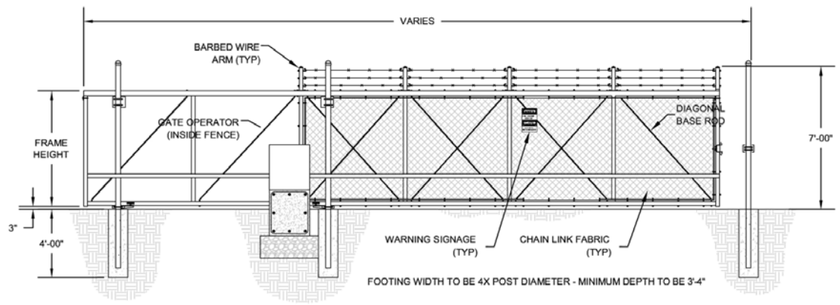
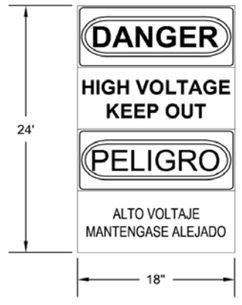
FENCE DETAILS: FOR SOITEC SOLAR FARMS

GATE PLAN

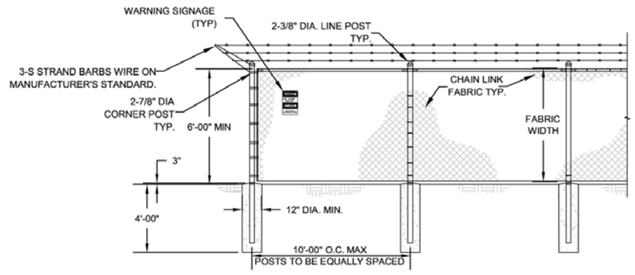


1 DETAIL - GATE
SINGLE MOTORIZED SLIDING GATE NTS

* 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 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.

Source: Soitec 2011

Not to Scale

Figure 7
Fencing Details

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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), is proposed.

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 (and to enable Project construction and access), clearing and grubbing would be required. 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:

- Secure and controlled access by employees or escorted by with fire prevention trainingTwo on-site 20,000 gallon water storage tanks with dedicated fire department connections for fire suppression water storage capacity adjacent to the new O&M building
- Three additional on-site 20,000 gallon water storage tanks to support tracker washing and each with a dedicated 10,000 gallons for fire suppression water storage capacity
- County approved access gates with Knox box locks
- Fire buffers ranging from 50’ feet to 100’ feet
- Illuminated signage at entrance with Inverter and electrical grid disconnect and isolation information and identification
- Weed whipping and maintenance of areas under panels/arrays
- All weather surfaced primary 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 on-site substation.

The on-site substation would include lighting inside the substation to allow for safety inspections or maintenance that maybe required during nighttime 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 for unscheduled maintenance events.

All lighting for the Project would comply with County of San Diego Light Pollution Code Section 59.101 or other appropriate requirements and would be, in any case: (i) equipped with shields to prevent lighting exposure to adjacent or contiguous properties, and (ii) directed downward.

1.4.2.3.4 Internal and External Access Roads

There are three different types of roads for the project that will be improved to different standards: (i) Primary Access Roads, (ii) Fire Access and Service Roads, and (iii) Service Roads. All road surfaces will be permeable and, as needed to reduce fugitive dust and reduce erosion, will be subject to application of a permeable nontoxic soil binding agent. Each road classification is further described below:

Primary Access Roads would be comprised of an unobstructed width of 28-feet graded with a two-way 24-foot improved all weather surface and not less than 50,000 pound load bearing capability in accordance with County of San Diego Fire Standards. The purpose of the Primary Access Road is to allow for: (i) two way fire and rescue apparatus access from public roads through the Project entry point or points to the Project road network, substation, and O&M facility and (ii) to enable operations and maintenance access to the internal Project road network for operations and maintenance. Primary Access Roads would run from the public roads to and through the Project entry point to and across the northern and southern Project perimeters leading to the Secondary Fire Access and Service Roads.

Fire Access and Service Roads would run north – south and would be constructed to a minimum width of 30' feet graded with a permeable all-weather driving surface with the western-most 12' feet being designed, constructed, and maintained: (i) to support the imposed loads of fire apparatus (not less than 50,000 lbs.), and (ii) minimum clearance at all times of 13' feet 6" inches. The purpose of the Secondary Fire Access and Service roads is to allow for: (i) north – south access of fire and rescue apparatus every fourth row such that 160' foot hose pull lengths can reach the entire site, and (ii) to enable operations and maintenance activities for those rows of trackers, inverters and generators (if any). The balance (eastern 18' feet) of each 30' foot Secondary Access Road would be graded and improved to a 15,000 lb load bearing capability to facilitate tracker washing and scheduled or unscheduled maintenance.

Service Roads would run north – south and would be constructed to a minimum width of 30 feet graded with a permeable all-weather 15,000 lb load bearing surface. The purpose of the Service Roads is to enable (i) tracker washing and (ii) scheduled or unscheduled maintenance.

Off-Site Roadway Improvements: The primary access point to the project site would be from Rough Acres Ranch Road, in turn accessed from McCain Valley Road to the east and Ribbonwood Road to the West. A portion of the Project would be accessed directly from McCain Valley Road along its east side. Rough Acres Ranch Road is a 28' feet wide construction access road that is included in the Tule Wind LLC MUP application. The road would be graded to 32' feet with a 28' foot improved within the 60' foot County Right of Way (IOD) to facilitate the movement of vehicles and equipment Tule Wind's project construction. The road would remain in place after construction and, although private, would be available for public access. Upgrades to Rough Acres Ranch Road are necessary and appropriate to enable all construction, and subsequent operations and maintenance vehicle access as well as access for fire-fighting and rescue trucks and equipment. Road Runner Road and Vista Oaks Road will also provide access to the west side of the project site from Ribbonwood Road. All offsite roadway improvements would be constructed in accordance with the County of San Diego Public Road Standards (see Figures 8a and 8b).

1.4.2.4 Traffic and Circulation

As previously discussed, the Project site is approximately 1.25 miles north of I-8 and extends approximately 2 miles between Ribbonwood Road and approximately 0.5 mile east of McCain Valley Road. Primary access would be from Rough Acres Ranch Road accessed from McCain Valley Road and would be controlled by a security gate or gates for fenced portions of the Project; however, construction traffic may use access from

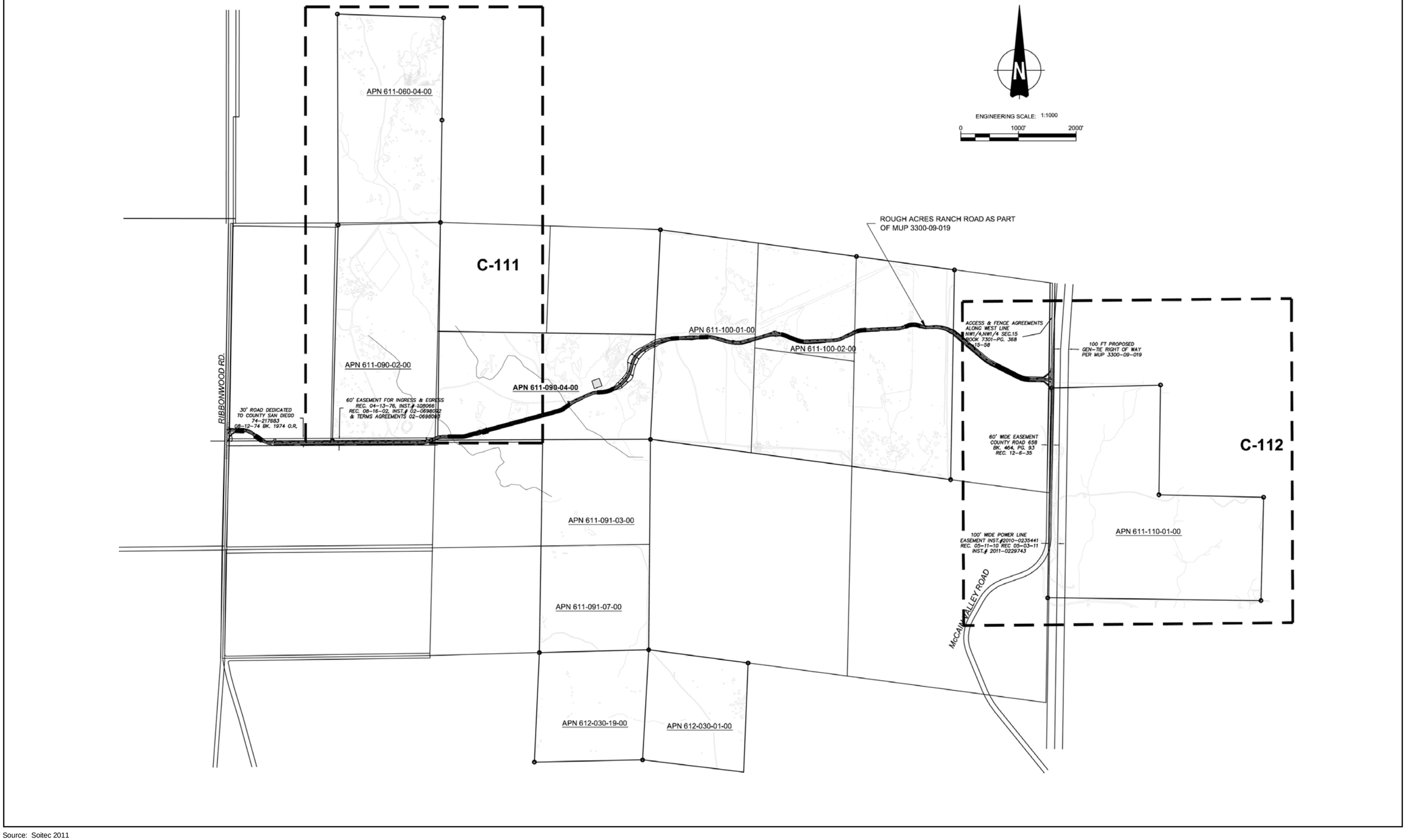
Ribbonwood Road to facilitate traffic flow. Rough Acres Ranch Road would approximately 32' feet wide, paved with asphalt, and extend for approximately 0.5 mile from McCain Valley Road to the western portion of the Project site and continue for an additional 1.5 miles to the Project's western edge.

1.4.2.4.1 Construction Traffic

The Project would be constructed in one phase over a period of up to approximately 18 months. Trip generation for employees and delivery trucks would vary depending on the phase of construction. Based on an estimate of 10 round trips per tracker (3,422 total trackers) for both delivery trucks and workers, the total construction trip generation for work at the Project site would be 33,350 round trips, or approximately 93 round trips per work day (total construction trip generation [33,350 round trips] divided by construction time frame [360 workdays]). This per tracker assumption takes into account all construction deliveries including water, supplies, and equipment. 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 operational phase of the Project, approximately 25 to 30 personnel on average would be on-site at any given time – largely at the O&M facility. 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.



Source: Soitec 2011

Not to Scale

Figure 8a
Easement Plan

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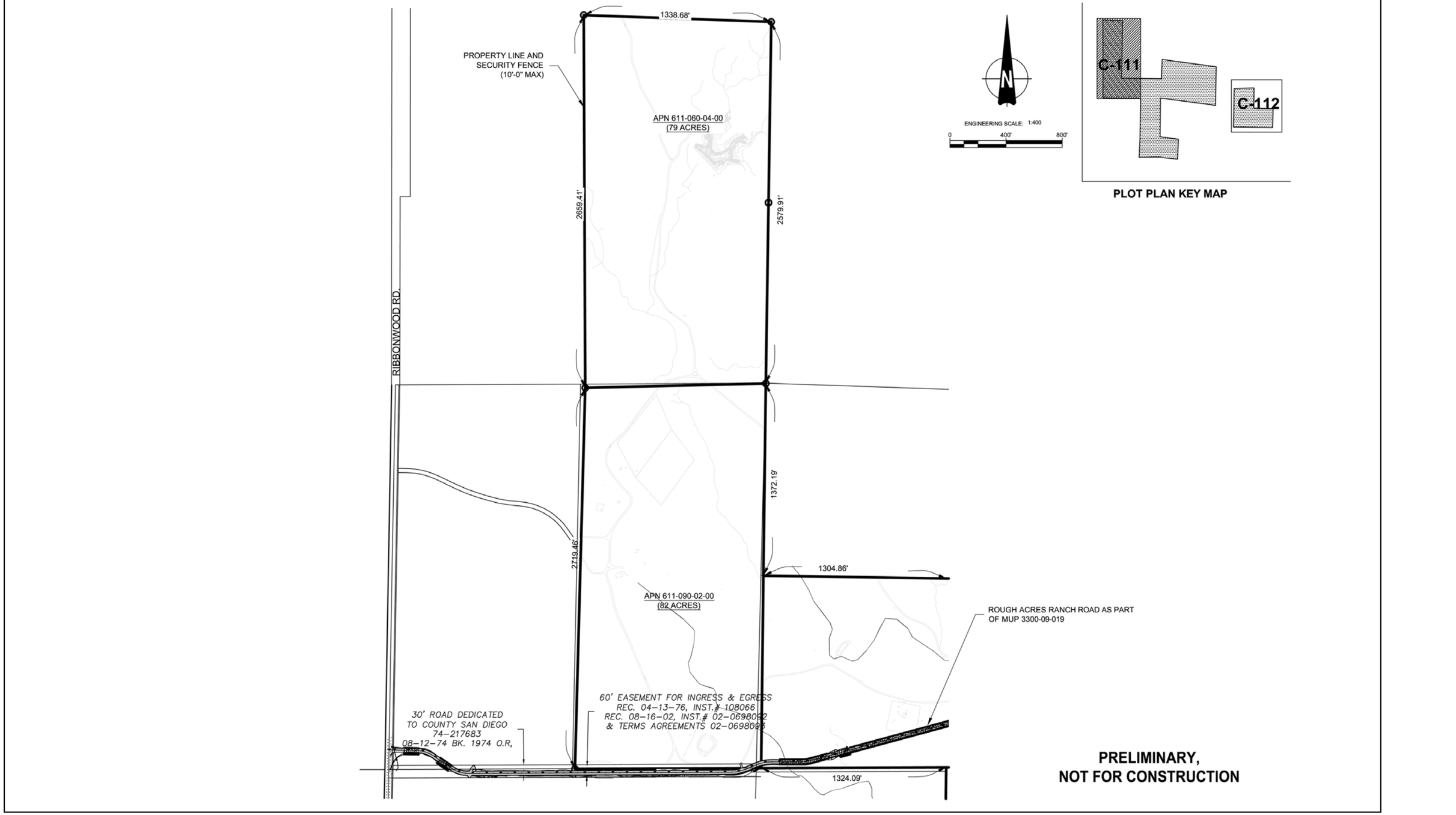

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Figure 8b
Easment Plan

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1.5 CONSTRUCTION

1.5.1 Construction Schedule

Construction of the Rugged Solar Energy Project is anticipated to commence in March 2014 and would require approximately 18 months for completion. Table 1, Rugged Solar Energy 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 (see Table 5 for list of anticipated approvals/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
Proposed Rugged Solar Energy Project Construction Schedule

Project Activity	Duration (months)
MUP approved	1st quarter 2014
Acquisition of additional required permits	1st quarter 2014
Construction begins	March 2014
Completion of construction	August 2015
Project operational	September 2015

1.5.2 Construction Activities and Methods

Project construction would consist of several phases including site preparation and grading, development of site access roads, staging and assembly areas, construction of electrical transmission facilities, solar CPV assembly and installation. These activities are further described below:

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 construction of access roads and CPV foundations; trenching for the electrical collection system and communication lines; installation of a small concrete footing at each set of inverters and transformers; construction of an overhead 34.5-kV "trunk line" for the collection system leading to the Project substation; construction of the 34.5/69-kV substation, an operations and maintenance building, and the 69-kV gen-tie line from the on-site substation, via the proposed Tule Wind LLC shared gen-tie facility, to SDG&E's proposed new Boulevard Substation. The Project site would be revegetated 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.

Collection System Trenching: Trenching for the electrical collection system and communication lines would entail 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. Material from the foundation and trench excavations would be used for site leveling, foundation pads, inverter and transformer pads, and the substation pad. A small concrete footing will be installed at each set of inverters and attendant transformer.

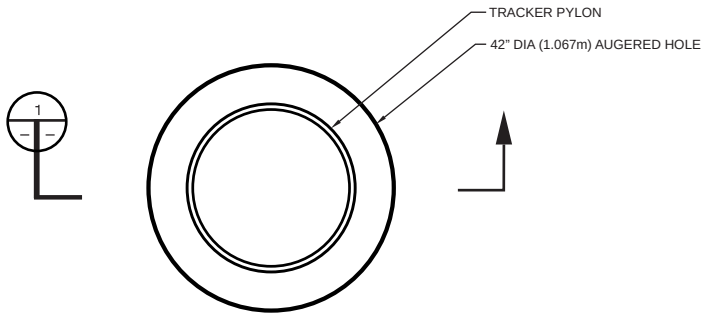
Foundations: Each tracker would be installed on a 28-inch-diameter steel mast. One foundation design calls for the mast to be concrete-encased below grade and to extend to a potentially tracker-specific depth not expected to be more than approximately 20 feet (see Figure 9). A preferred installation 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 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 rarely be used due to the fire clearing requirements).

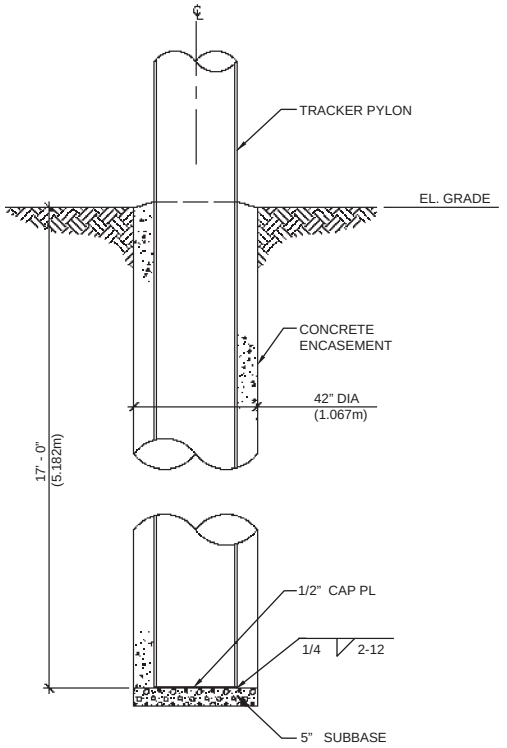
1.5.2.2 Tracker Construction Overview

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



PLAN

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



SECTION 1

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

Source: Soitec 2011

Figure 9
Foundation Design

1.5 acres each. Lay-down areas would be sited within the boundaries of the project area. These lay-down areas would be temporary and would be converted to solar CPV arrays as work is completed in the general area.

Project construction would then include several phases occurring simultaneously with the construction of: (1) CPV arrays including the assembly of trackers, and the pile driving of support piles, placement of trackers on support piles, and trenching and installation of electrical equipment for arrays; (2) electrical transmission facilities including the construction of one substation, transmission lines, and O&M building; and (3) fine grading of access roads for subsequent arrays. Tracker assembly may include small gas-powered generators to power hand tools to assemble trackers and construct tracker arrays.

Of the 765 acres of the project site, approximately 428 acres would be cleared, grubbed, and graded. Of the 455 disturbed acres approximately seven acres would be disturbed on a given day; 140 acres on a given month. After construction, approximately 455 acres of the project site would be permanently disturbed with project facilities.

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 7,500 sf O&M building location would be cleared and access would be provided off of the substation driveway (which would be located west adjacent), or directly from Rough Acres Ranch Road. A portion of the site would be utilized as an on-site staging area.

1.5.2.4 Offsite Transmission Facilities (Gen-Tie Line)

The Project requires a 69-kV transmission line (Gen-Tie) to interconnect into SDG&E's proposed new Boulevard Substation. The proposed plan is to incorporate this conductor into a transmission gen-tie facility included in the Tule Wind LLC that would be shared with Tule Wind to reduce the need for transmission gen-tie poles. The gen-tie would run south along McCain Valley Road, across I-8 and Old Highway 80, and southwest to the Boulevard Substation within right of way located on a

combination of private land under the land use authority of the County of San Diego and state land.

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 by 75' feet (0.13 acre) 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 150' 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 2' feet 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 with concrete.

Installation of the new 69-kV conductor would require 6-10 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 2 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 On-Site Project Roads

See Section 1.4.2.3.4. Refer to Figures 4b through 4f for exact road dimensions and locations.

1.5.2.6 Construction Personnel and Equipment

Construction of the Project would employ up to 120 workers per day during the peak construction period. Depending on the specific stage of construction, an average daily workforce of 60-70 workers would be present at the construction site and up to 186 average daily trips are anticipated. During the peak of construction, a typical day

would include the transportation of trackers, movement of heavy equipment, and transportation of materials. Table 2, Construction Equipment Associated with the Rugged Solar Energy Project, lists construction equipment commonly associated with the construction of solar facilities.

Table 2
Construction Equipment Associated with the Rugged Solar Energy Project

Equipment	Use
Bulldozer	Road construction
Grader	Road construction
Water trucks	Compaction, erosion, and dust control
Roller/compactor	Road compaction
Backhoe/trenching machine	Digging trenches for underground utilities
Excavator	Foundation excavation
Pile Driving Equipment RTG RG21T	Pile Driving Masts
Truck-mounted drill rig	Drilling power pole holes
Cranes	Tracker/transmission pole hoisting
Dump trucks	Hauling road material
Generators kW and smaller	Site electricity
Flatbed and low bed trucks	Hauling trackers, structure /building components, and construction equipment
Pickup trucks	General use and hauling of minor equipment
Small hydraulic cranes/forklifts	Loading and unloading equipment
Four-wheel drive all-terrain vehicles	Rough grade access and underground cable installation

1.6 ONGOING OPERATIONS AND MAINTENANCE

Following the construction phase, the O&M building would provide a base of operations and maintenance for approximately 25 to 30 full-time employees. The O&M building would serve as the base for other projects in the area as well as the O&M location for the Rugged Project. Employees would include general and plant managers, engineers, technicians, maintenance, project reporting and administrative, and security staff. It is anticipated that some staff would carpool to the site each day, so the average daily trips (ADT) would not exceed thirty ADT for purposes of calculating the County's Transportation Impact Fee (TIF).

The project facilities would be monitored at all times. Project facilities would be capable of automatic shutdown, self-diagnosis, and fault detection. Post-fault start-up would be manual. Appropriate levels of security lighting would be installed at the O&M building, project substation and across the site and would also serve for night time unscheduled

maintenance on an as-needed basis. The site would be secured 24 hours per day and may be staffed by on-site private security personnel, remote security services, on site sensors, and / or with motion-detection and monitoring cameras.

Refer to Section 1.8 for on-going water usage activities.

Underground and Overhead Collection System. The underground and overhead cable system would be regularly inspected, maintained, and repaired following construction. Overhead components would be inspected, at a minimum, for corrosion, equipment misalignment, loose fittings, and other mechanical problems. The underground portion of the cable system would be tested and inspected as required.

69-kV Substation. During operations, O&M staff would visit the substation several periodically for routine inspections and maintenance including (but not limited to) 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 ongoing removal of vegetation to increase aerial patrol effectiveness and 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.* Herbicides may be used in accordance with SDG&E's Herbicides and Application Procedures to prevent vegetation from reoccurring around structures. 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 69-kV transmission line would use polymer insulators that do not require washing.

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 enable continued sales of electricity to a power purchaser, or (2) decommission and dismantle the solar plant. 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 for re-use or re-cycling. Off-site disposal is another option. The CPV 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 offsite when the panels are recycled. The majority of the components of the solar installation are made of materials that can be readily recycled, but the panels would not be broken down onsite. 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 complete, or they can be left in place to minimize site disturbance. The electrical wiring is made from copper and/or aluminum and can be reused or recycled if recovery is cost effective and disturbance is acceptable.

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 required to dismantle 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 69kV conductors on the shared 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 more cost effective to remove underground electrical collection and delivery system conductors.

4. The land would have to be returned 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 (S-92), 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 (S-92) 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, any remaining security may be released to the operator of the Solar Energy System.*

Financial responsibility for decommissioning would be an obligation of the owner of the 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 be equal or less than 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. The entire decommissioning effort would be secured by a letter of

credit or cash deposit. 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

The following is an estimate of the amount of water that would be needed for the Project during the construction and site preparation, operations including panel washing, potable water usage for the O&M facility, and the decommissioning and dismantling. The Project would use groundwater from the two existing wells located onsite. 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, or any County permitted Groundwater Extraction operations located within the Mountain Empire. Based on a pending agreement with the owners of contiguous Rough Acres Ranch, the Project could also access the Rough Acres Ranch public, non-community water system for its water supply.

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 72.99 acre-feet (23,783,900 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 3 summarizes construction water usage.

Table 3
Total Estimated Water for Temporary Project Construction

Activity 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	427	32,585,100	100.00
Application of Water/Soil Binding Agent[3]	320	3,300	427	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. The concrete is expected to be delivered to the site already hydrated, therefore water would not be used for concrete hydration.

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 Rugged Solar Energy Project would require up to 30 full-time employees. The O&M building will include a groundwater well to provide up to 251,328 gallons per year of potable water. Once the project is operational, the facility will use approximately 20,944 gallons of water per month, for the employees that may utilize the O&M building's amenities. Table 4 summarizes the operational water usage for the Project.

1.8.3 Ongoing Panel 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 biannually. 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 would 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 428 acres. The total amount of water needed to reapply the soil stabilization agent is 1,412,400 gallons biannually, which is 706,200 gallons annually or 2.17 acre feet.

Solar Module Washing: It is anticipated that in-place panel washing would occur not more frequently than every 6 to 8 weeks by mobile crews who would also be available for dispatch whenever on-site repairs or other maintenance are required (approximately 9 washes per year). A tanker truck and smaller "satellite" panel washing trucks would be used for panel washing. On-site water storage tanks, installed to provide water for fire protection will include additional capacity available for panel washing (Figure 10). Each panel washing truck would carry water treatment equipment and truck-mounted panel washing booms. Water would be treated to ensure a hardness level of 7 or less and to remove impurities. Waste water not used for panel washing would be captured and disposed of offsite. As a conservative (i.e., high) estimate, approximately 24 gallons of water would be required to wash each set of tracker modules thus requiring approximately up to 2.21 acre feet per year rounded up to include the potential for domestic use. Table 4 summarizes the operational water usage for the Project.

Table 4
Total Annual Estimated Water Use for Project Operation

Dust Suppression *(if required)*	
Number of gallons/acre[1]	3,300
Acres[2]	428
Water use/year (gallons)	706,200
Water use/year (acre-feet[3])	2.17
Panel Washing	
Washes/year	9
Number of trackers	3,422
Gallons/tracker/wash (maximum)	24
Total water use/year (gallons)	739,152
Total water use/year (acre-feet)	2.27
Total Potable Water Usage	
Amount of potable water usage per year (gallons) [4]	251,328
Total water use (acre-feet/year)	0.77
TOTAL AMOUNT OF WATER USAGE:	**5.20**

[1] Based on suppression activities of 3,300 gallons every year two years per acre. This table annualizes the two year average per year.

[2] Based on constructed acres within Project site. Open space areas not included in dust suppression estimates.

[3] 1 acre-foot = 325,851 gallons

[4] Average monthly water usage is 10,472 gallons http://www.sandiego.gov/water/conservation/tips.shtml**.** The assumption is that the O&M building would use twice the amount of water than a single-family home.

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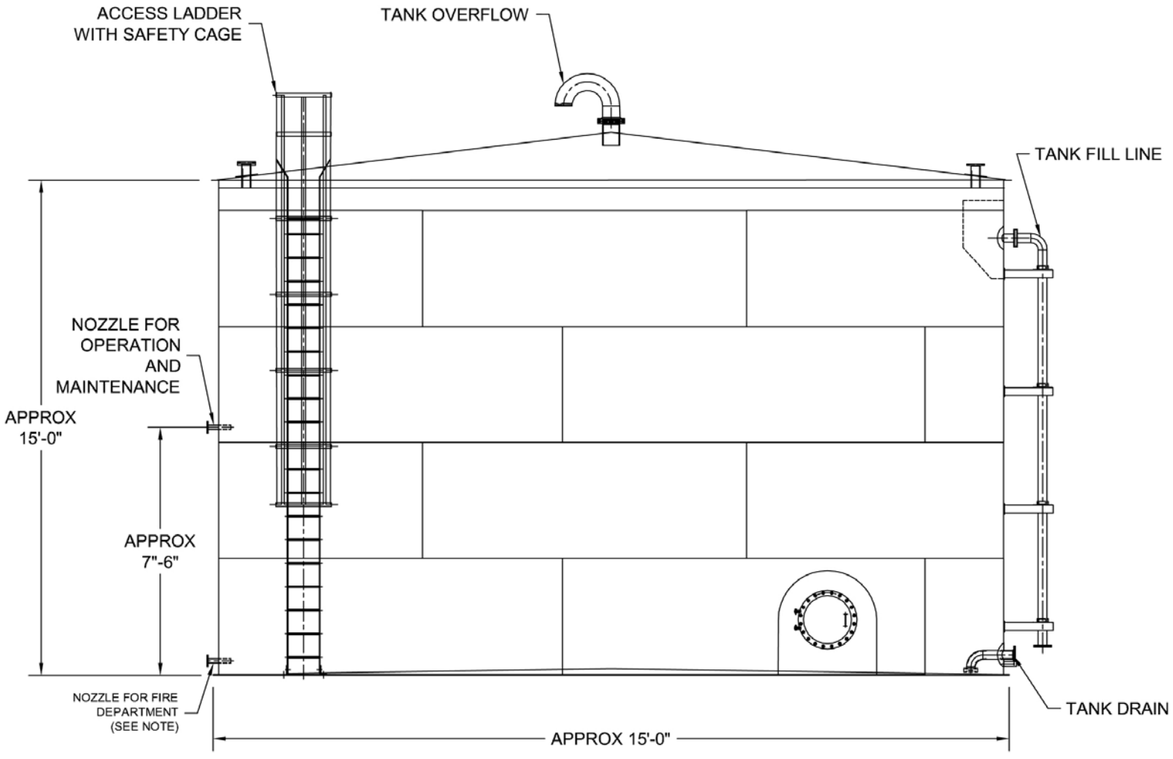

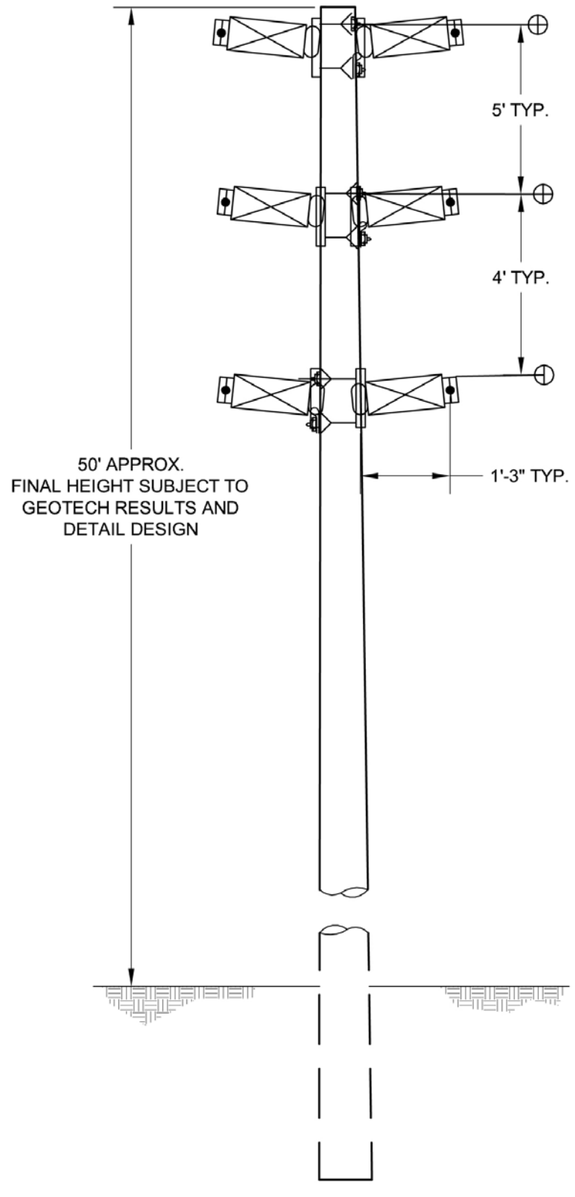

NOTE:

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.

**PRELIMINARY,
NOT FOR CONSTRUCTION**

Source: Soitec 2011

Not to Scale

Figure 10
Water Tank

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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 TECHNICAL, ECONOMIC AND ENVIRONMENTAL CHARACTERISTICS

The format of this project description follows the project description format in the County of San Diego EIR Report Guidelines. To be provided at time of EIR preparation.

1.10 PROJECT LOCATION

See Section 1.3 above. The format of this project description follows the project description format in the County of San Diego EIR Report Guidelines.

1.11 ENVIRONMENTAL SETTING

See Section 1.3.1 above. The format of this project description follows the project description format in the County of San Diego EIR Report Guidelines.

1.12 INTENDED USES OF THE EIR

This EIR is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects and describe reasonable alternatives to the project. The project proponent is Rugged Solar LLC, and the lead agency is the County of San Diego.

This EIR consists of a “project” level EIR (as defined by CEQA Statute 15161), meaning that all elements of the project are known and fully described and analyzed herein.

1.12.1 Matrix of Project Approvals/Permits

Table 5 lists all approvals/permits for which the EIR is intended to be used and the agencies that are expected to use the EIR in their decision-making process. Table 5 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 5
List of Approvals/Permits for the Rugged Solar Energy Project

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.
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
US Department of the Interior, US Fish and Wildlife Service	• Take Permit – Pursuant to Section 7 of the Federal Endangered Species Act (for impacts to federally listed threatened or endangered species) (Not anticipated.)

1.12.2 Related Environmental Review and Consultation Requirements

To be provided at time of EIR preparation.

1.13 PROJECT INCONSISTENCIES WITH APPLICABLE REGIONAL AND GENERAL PLANS

To be provided at time of EIR preparation.

1.14 LIST OF PAST, PRESENT AND REASONABLY ANTICIPATED FUTURE PROJECTS IN THE PROJECT AREA

To be provided at time of EIR preparation.

1.15 GROWTH INDUCING IMPACTS

To be provided at time of EIR preparation.

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