CHAPTER 1.0 PROJECT DESCRIPTION, LOCATION, AND ENVIRONMENTAL SETTING

1.1 Project Objectives

Jacumba Solar LLC (the applicant) proposes to develop, finance, construct, and operate a solar energy facility in southeastern San Diego County. For purposes of this draft environmental impact report (EIR), the Jacumba Solar Energy Project will be referred to as the "Jacumba Solar Energy Project" or the "Proposed Project." Currently, the applicant is seeking project-level approvals for the Jacumba Solar Energy Project, which will be analyzed at a project level of detail in this EIR.

Specific objectives for the Proposed Project are as follows:

1. Develop approximately 20 megawatts (MW) of renewable solar energy that can operate during on-peak power periods to indirectly reduce the need to emit greenhouse gases (GHGs) caused by the generation of similar quantities of electricity from either existing or future non-renewable sources to meet existing and future electricity demands.
2. Develop a solar energy project that can meet the criteria to achieve the maximum federal solar Investment Tax Credit which is intended to decrease the cost of renewable energy generation and delivery, promote the diversity of energy supply, decrease dependence of the United States on foreign energy supplies and improve United States security.
3. Balance the development of the solar energy facility with the protection of resources, which may include preservation of on-site biological and cultural resources and the establishment of a wildlife movement corridor.
4. Develop a utility-scale solar energy project that improves local electrical reliability for the San Diego region by providing a source of local generation as near as possible to the East County (ECO) Substation and other recent regional transmission improvements.
5. Provide a new source of energy storage that assists the state in achieving or exceeding the energy storage target of 1.3 gigawatts of energy by 2020, consistent with the terms of Assembly Bill (AB) 2514.
6. Assist in directly achieving or exceeding the state's Renewable Portfolio Standard (RPS) and GHG emissions reduction objectives by developing and constructing California RPS-qualified solar generation, approved under Senate Bill (SB) X1 2, which established renewable energy targets of 20% total electricity sold to retail customers by the end of 2013, 25% by the end of 2016, and 33% of total electricity sold to retail customers by 2020.

7. Site solar power plant facilities in areas within the County of San Diego (County) that have excellent solar attributes, including but not limited to high direct normal irradiance (DNI), in order to maximize productivity.
8. Develop a utility-scale solar facility within San Diego County supporting the economy by investing in the local community, creating local construction jobs, and increasing property tax revenue.

1.2 Project Description

The Proposed Project area is approximately 304 acres in southeastern San Diego County (see Figure 1-1, Regional Location Map). The Project area includes approximately 7 acres for the public right-of-way (ROW) of Old Highway 80 and a 40-foot-wide private road that provides access to adjacent property owned by San Diego Gas & Electric (SDG&E) (see Table 1-1, Project Acreage Summary) that is the location of the ECO Substation. The proposed solar facility would cover approximately 108 acres within the Project area (shown on Figure 1-2, Specific Location Map) and would be set back an additional 90 feet from the 60-foot-wide strip of federal land along the U.S./Mexico border (see Figure 1-3, Project Site Plan). The solar facility would use photovoltaic (PV) fixed-tilt rack electric generation system technology to produce solar energy at the utility scale, including inverters, an on-site substation, and a battery storage facility capable of storing approximately 10 MW of energy. Through environmental constraints and project design evaluation, approximately 184 acres would be dedicated as Open Space Preserve (see Figure 1-2, Specific Location Map). Finally, approximately 4 acres off site is included in this analysis for the gen-tie corridor extending from the Jacumba Solar Energy Project property boundary to the ECO Substation. The Proposed Project could produce up to 20 MW of solar energy.

Open Space Preserve

The proposed approximately 184-acre Open Space Preserve would conserve important resources in perpetuity. The Open Space Preserve would enable wildlife access across the private lands to adjoining federal lands in an area where cross-border movement is possible. The dedication of this open space will preserve important biological and cultural resources in the area.

Jacumba Solar Energy Project

The Jacumba Solar Energy Project site consists of approximately 108 acres that would be disturbed to develop the facility and access road. The Proposed Project would produce up to 20 MW of alternating current (AC) generating capacity and would consist of approximately 81,108 PV modules fitted on 2,253 fixed-tilt rack panels. The Proposed Project would be located approximately 3 miles east of the community of Jacumba Hot Springs and immediately north of

the U.S./Mexico international border. In addition to the panels and direct current (DC) to AC conversion equipment (i.e., inverter and transformer units), the Jacumba Solar Energy Project would include the following primary components, as shown in Figure 1-5, Project Components:

- A 1,000- to 1,500-volt DC underground collection system and a 34.5-kilovolt (kV) underground AC collection system linking the inverters to the on-site Project substation.
- An on-site collector substation located on an approximately 23,650 square feet (110-foot by 215-foot) pad.
- A 138 kV overhead transmission line (gen-tie) would connect the Project substation to the ECO Substation (approximately 1,500 feet).
- An approximately 10 MW battery energy storage system that would be located on an approximately 21,600-square-foot (135-foot by 160-foot) pad adjacent to the collector substation.

The Jacumba Solar substation and gen-tie interconnection facility would be sized to accommodate the full 20 MW solar facility and the proposed 10 MW energy storage system. The Proposed Project would be located entirely on private lands within unincorporated San Diego County, including the gen-tie. Upon completion, Jacumba Solar would be monitored off site through a supervisory control and data acquisition (SCADA) system. See Sections 1.2.1 and 1.2.2 for additional details.

Primary access to the Jacumba Solar site would be provided via an improved access road from Old Highway 80, as shown on Figure 1-4. The access road was recently constructed as part of the ECO Substation project. An additional point of emergency egress/ingress would be provided at the project's south-central section to facilitate U.S. Customs and Border Protection access and to provide an alternate fire access point.

Power from the on-site collector substation would be delivered to the 138 kV bus at the adjacent SDG&E ECO Substation via an approximately 1,500-foot 138 kV transmission line within a 125-foot private ROW. The Jacumba Solar gen-tie line would extend overhead directly northeast from the on-site substation to the ECO Substation. A transition pole would be constructed at the interconnection point at the ECO Substation (see Figure 1-5).

1.2.1 Project Components and Activities

This section describes the Project components, construction and~~,~~ operation activities. It also discusses a key aesthetic mitigation measure required by the County for~~, and~~ decommissioning activities at the end of the life span of the solar facility. The anticipated construction and operational water usage of the solar facility is also discussed in this section.

Modules

The Project would include installation of individual fixed-tilt-mounted PV modules that would remain stationary on the support structures (described below). The modules would not "track" the sun's position in the sky. The PV modules would cover the majority of the area of the proposed facility. PV modules generate electricity by safely converting the energy of the sun's photons into DC electrons. PV modules can be wired in series and/or parallel to obtain a required nominal voltage. The PV modules are interconnected and arranged to increase overall reliability.

The majority of PV module manufacturers advertise that they have been stringently tested and are robustly constructed to guarantee a useful life of 30 years in adverse weather conditions. The PV modules are uniformly dark in color, non-reflective, and designed to be highly absorptive of all light that strikes their glass surfaces. The PV modules deployed for use in the Project would comply with all industry standard quality testing. The PV modules would be electrically connected to the grounding system of the facility in accordance with local codes and regulations. The final PV module selection would be determined during the detailed engineering phase.

Support Structures

Racking refers to the support structure to which the solar PV modules are affixed that allows them to be properly positioned for maximum capture of the sun's solar energy. The PV module arrays (a row of PV modules) would be a fixed-tilt system that would be oriented along an east to west axis. The mounting structures are typically mounted on metal pipe pile or beam foundations 4 to 6 inches in diameter. The beams would be driven into the soil using a pile/vibratory/rotary driving technique similar to that used to install freeway guardrails. Driven pier foundations offer multiple benefits, including quick installation and minimal site disturbance, and are a "concrete-free" foundation solution that would allow for easy site reclamation at the end of the Project lifecycle. Most foundations would be driven to approximate depths of 10 to 15 feet deep. The PV modules, at their highest point, would be less than 9 feet above the ground surface, as shown in Figure 1-6, Panel and Fence Details.

The east to west arranged fixed-tilt arrays, would be constructed approximately 25 feet apart (centerline to centerline) in a north to south direction, with an east–west array spacing of approximately 12.5 feet. Each PV module array "row" would measure approximately 144 feet in total combined length and approximately 6.5 feet in width. The PV module arrays' final elevations from the ground would be determined during the detailed Project design process; however, for the purpose of the analysis in this EIR, maximum height above the graded ground surface would be less than 9 feet. It is common practice to maintain as low of an elevation profile as possible to reduce potential wind loads on the PV module arrays.

Inverters, Transformers, and Associated Equipment

PV modules would be electrically connected to adjacent modules to form module "strings" using wiring attached to the support structures. PV module strings would be electrically connected to each other via underground wiring. Wire depths would be in accordance with local, state, and federal codes. String wiring terminates at PV module array combiner boxes, which are lockable electrical boxes mounted on or near an array's support structure. Output wires from combiner boxes would be routed along an underground trench system approximately 3.5 feet deep and 1 foot wide, including trench and disturbed area, to the inverters and transformers.

Inverters are a key component of solar PV power-generating facilities because they convert the DC generated by the PV module array into AC that is compatible for use with the transmission network. The inverters within the electrical enclosures would convert the DC power to AC power and the medium-voltage transformers would step up the voltage to collection-level voltage (34.5 kV).

The inverters, medium-voltage transformers, and other electrical equipment are proposed to be located on skids throughout the Project site, totaling approximately 28 units. These power conversion stations would be either shop fabricated as one unit, or field assembled on site. The inverter and medium-voltage transformer units would be mounted on concrete foundation pads or concrete piers depending on local soil conditions. All electrical equipment would be either outdoor rated or mounted within enclosures designed specifically for outdoor installation. The proposed equipment poses no electrical shock risk and is safe to touch.

Project Substation

The Proposed Project requires the use of an on-site collector substation (110-foot by 215-foot (23,650 square feet.)) that would be located on the northeastern corner of the Project site. The purpose of the substation is to collect the power received from the collector 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 138 kV transformer including secondary containment area per local and state regulations.
- One 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 single 34.5 kV circuit breaker 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. Switching gear and other components would be a maximum of 35 feet in height.
- 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.
- One Control House for the SCADA system that would be approximately 15 feet in height by 30 feet in length.

Energy Storage System

A battery energy storage system is proposed to be located adjacent to the on-site substation in the northeast section of the Proposed Project. It would consist of approximately 10 enclosures equipped with batteries capable of delivering approximately 10 MW AC of energy. Each enclosure would include an air conditioning unit for cooling purposes and a self-extinguishing fire system. The enclosures are similar to shipping containers and are approximately 45 feet long by approximately 9 feet in height, and approximately 8 feet wide. Critical information from the system would be monitored along with the solar plant performance. A master control system would coordinate operation of the solar generation equipment and the energy storage system.

Connector Line, Fiber-Optic Line, and Point of Interconnection

The Project would interconnect to the ECO Substation project, which is owned and operated by SDG&E. A 138 kV line interconnecting from the ECO Substation project to the Jacumba Solar Energy Project would be constructed above grade. The length of the interconnecting, or gen-tie, line would be approximately 1,500 feet. An easement across the adjacent parcel for the gen-tie corridor would be necessary from SDG&E.

The 138 kV interconnection line would consist of two or three overhead steel poles that would be up to 150 feet in height and would extend up to 17 feet into the ground. Steel poles would be augered and placed into position. The vertical distance between the cross-arms on the steel case riser would be 20 feet. Non-specular conductors would be installed along the interconnection line alignment in order to minimize the reflectivity and general visibility of new facilities. The distance between the ground and the lowest conductor would be at least 30 feet and the distance between conductors would be 18 feet horizontally and 12 feet vertically. Although span lengths between poles would be dependent on terrain, lengths would generally be between 400 and 800 feet. Components used to construct the proposed 138 kV transmission line would all feature non-reflective surfaces. For instance, the insulators would be constructed of gray polymer, the

conductors would be made from aluminum-wrapped steel, and the transmission poles and associated hardware would be composed of galvanized steel.

Each pole pad would require an approximately 20-foot by 20-foot permanent impact area (<0.01 acre) and an approximately 100-foot by 100-foot temporary impact area (0.23 acres per pole pad) that could be used as an equipment laydown area during construction.

Control System

Operation of the solar facility would require monitoring through a SCADA system, which would be located within a Control House in the substation yard as identified previously. 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. The Project would also have a local overall plant control system (PCS) that provides monitoring of the solar field as well as control of the balance of facility systems. The microprocessor-based PCS would provide control, monitoring, alarm, and data storage functions for plant systems as well as communication with the Project's SCADA system. Redundant capability would be provided for critical PCS components so that no single component failure would cause a plant outage. All field instruments and controls would be hard-wired to local electrical panels. Local panels would be hard-wired to the PCS. Wireless technology would be considered as a potential alternative during final Project design. The SCADA system would be monitored remotely and no on-site operations and maintenance facilities or personnel would be necessary.

Site Design

Security

The 108-acre Project site would be fenced along the entire facility boundary (see Figure 1-5) for security with fencing that meets National Electrical Safety Code (NESC) requirements for protective arrangements in electric supply stations. Fencing will be 9 feet in height with an 8-foot-high chain-link perimeter fence and 1 foot of three strands of barbed wire along the top with a 4-inch maximum clearance from the ground surface (see Figure 1-6). The fence would be constructed with anti-climbing material(s), such as small ring chain-link fencing. 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 operation. Remote-monitored cameras and alarm system(s), and 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) would be installed.

Maintenance and Security Lighting

Lighting 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 the surrounding area, and would be used only on an as-needed basis. Lighting would be provided at the entrance gates and the Project substation.

The on-site substation would include lighting inside the substation to allow for safety inspections or maintenance that may be 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 solar facility would have bulbs that do not exceed 100 watts, and all lights would be shielded, directed downward, and would comply with the County of San Diego Light Pollution Code, Section 59.101 et seq.

Access Roads

The Proposed Project would include dual purpose fire access roads and service roads. All road surfaces would have a permeable nontoxic soil binding agent in order to reduce fugitive dust and erosion in accordance with County Code Section 87.428, Dust Control Measures, and with San Diego Air Pollution Control District (SDAPCD) Rule 55, which regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions. In addition, the primary access driveway would be approximately 35-feet wide and provided off the existing paved ECO Substation driveway.

Fire Access Roads: The interior site roads would be constructed as suitable for fire access roads and would be constructed to a minimum width of approximately 24 feet on the perimeter and approximately 20 feet between panel blocks. The roads would be graded and maintained to support the imposed loads of fire apparatus (not less than 50,000 pounds), and would be designed and maintained to provide all-weather driving capabilities. The purpose of the fire access roads is to allow for two-way access of fire apparatus throughout the Project site in order to reach all of the inverter stations.

The non-load-bearing surface material of the fire access roads would consist of an all-weather surface capable of supporting 50,000 pounds as required by County Fire Code. Fire access roads

would be oriented in a north–south direction and would have east–west connections. An access-controlled gate would be installed at the substation driveway. The Project driveway would be constructed off the existing ECO Substation access roadway with direct access to the Project site.

Service Roads: Service roads inside the fence would be constructed to a width of approximately 24 feet on the perimeter and approximately 20 feet between panel blocks and would be compacted to support washing equipment loads of 15,000 pounds. An approximate 20-foot-wide road outside the fence would be constructed within the 125-foot gen-tie ROW in order to service the 138kV gen-tie line during construction and operations. Service roads would be treated annually with a nontoxic soil binding agent to control dust.

Fire Protection

There are several fire stations that are owned and staffed by San Diego County Fire Authority (SDCFA), California Department of Forestry and Fire Protection (CAL FIRE), San Diego Rural Fire Protection District (SDRFPD), and U.S. Forest Service (USFS) within the Proposed Project area. The Jacumba Hot Springs area is serviced by the SDRFPD's Jacumba Fire Station (Station 43) (see Figure 1-7, Fire Station Locations).

Fire emergencies that may occur at the Proposed Project site would be primarily responded to by SDRFPD's Jacumba Fire Station (Station 43), which is staffed by reserve firefighters Additional response would be available from SDCFA's Boulevard and Campo Fire Stations, and SDRFPD's Lake Morena Fire Station. Other fire protection aid would come from the CAL FIRE Campo Station, as well as from mutual aid resources from throughout San Diego County and the state, when necessary. Clearing and grubbing of the 108-acre Project site would be required for construction and access to the Project site. Consistent with County requirements for discretionary approvals for projects in wildland/urban interface areas, a Fire Protection Plan (see Appendix 2.4-2), has been prepared for the Proposed Project. Fire prevention measures include, but are not limited to:

- Constructing all on-site facilities of non-combustible or ignition-resistant materials in accordance with the County Building Code
- Two 10,000-gallon water storage tanks with fire department connections would be available (see Figure 1-5 for locations)
- Identifying roads and structures to comply with County Consolidated Fire Code, Section 505
- An illuminated sign at the Project entrances that clearly indicates inverter and electrical grid layout and entire site de-energizing disconnect switch identification and location

- Clearing of all existing native vegetation to a height no taller than 6 inches and removal of all dead, dying, and dried (low fuel moisture) vegetation
- 24-hour remote surveillance at the facility
- A fuel treatment perimeter area ensuring safe and effective emergency response to the site should a fire occur

Project Construction, Operation, and Decommissioning Activities

Construction Activities and Methods

The construction of the solar facility would consist of several phases, including site preparation (described below), development of staging areas and site access roads, solar array assembly and installation, and construction of electrical transmission facilities. Table 1-2, Construction Schedule, identifies the proposed construction schedule and Table 1-3, Construction Equipment Associated with Solar Project Development, identifies the equipment likely to be associated with development of the Proposed Project.

Site Preparation and Grading

Clearing and Grading: Construction of the Proposed Project would involve clearing and grubbing of the existing vegetation; grading necessary for the construction of access and service roads and the installation of solar arrays; trenching for the electrical DC and AC collection system, including the telecommunication lines; installation of the inverter stations; construction of underground 34.5 kV collection systems leading to the Project substation; and construction of the Project substation, energy storage facility, and the aboveground gen-tie line from the Project substation to the adjacent ECO Substation. Major Grading Permits would be required, and would be obtained once grading quantities are finalized. Figure 1-8, Grading Plan, shows the conceptual grading plan for the development of the solar facility. Grading is expected to be balanced on site, with approximately 180,000 cubic yards of cut redistributed across the site.

The Proposed Project will implement the following measures in compliance with the Grading Ordinance (County Code Section 87.428) to minimize fugitive dust (PM_{10}) during the construction phase of the Project. These measures are included in the preliminary grading plans and are to be recorded on the final grading for County approval:

- The applicant will apply water three times per day or as necessary depending on weather conditions to suppress fugitive dust during grubbing, clearing, grading, trenching, and soil compaction and/or apply a nontoxic soil binding agent to help with soil stabilization during construction. These measures will be applied to all active construction areas, unpaved access roads, parking areas and staging areas as necessary.

- Sweepers and water trucks will be used to control dust and debris at public street access points.
- Internal construction roadways will be stabilized by paving, chip sealing or nontoxic soil binders after rough grading.
- Exposed stockpiles (e.g., dirt, sand) will be covered and/or watered or stabilized with nontoxic soil binders, tarps, fencing or other suppression methods as needed to control emissions.
- Traffic speeds on unpaved roads will be limited to 15 miles per hour (mph)
- All haul and dump trucks entering or leaving the site with soil or fill material will maintain at least 2 feet of freeboard, or cover loads of all haul and dump trucks securely.
- Disturbed areas will be reseeded with either a native plant hydroseed mix as soon as possible after disturbance, or covered with a nontoxic soil binding agent (such as EP&A's Envirotac II, or Rhinosnot, Dust Control, Erosion Control, and Soil Stabilization).

Collection System Trenching. Trenching requirements for the DC and AC electrical collection system and telecommunication lines would consist of a trench up to approximately 3 to 4 feet deep and 1 to 2 feet wide. The trenches may be filled with sand or another inert material to provide insulation and heat dissipation for the direct buried cable within the collection system. The topsoil from trench excavation would be set aside before the trench is backfilled and would ultimately comprise the uppermost layer of the trench. Excess material from the foundation and trench excavations would be used for site leveling.

PV System Construction Overview. Project construction would include several phases occurring simultaneously with the construction of: (1) PV systems assembly consisting of pile driving of support racks to a depth of 10 to 15 feet and the placement of panels on support racks, (2) trenching and installation of the DC and AC collection system, (3) point of interconnection upgrades, and (4) the grading of access roads.

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 methods, or a combination of both: Treatment with a permeable nontoxic soil binding agent (preferred method), and/or placement of disintegrated granite (DG) or other base material (good for roads).

Construction Personnel, Traffic, and Equipment

The number of workers expected on the site during construction would vary over the construction period and is expected to average approximately 120 each day, generating about 120 daily round trips, with a maximum of 140 trips a day during the most intense phase of construction (i.e., the racks and panels installation). Deliveries of equipment and supplies to the

site would also vary over the construction period but are expected to average about 6 to 8 daily trips. Maximum water deliveries would be approximately 74 daily round trips during the site preparation and grading phase. Equipment delivery trucks and water delivery trucks generate more than 1 passenger car equivalent (PCE) trips. However, the most intense construction period requiring the water trucks would not coincide or overlap with the most workers on site. The site preparation and grading activities result in the need for the most intense water use and the 74 truck deliveries a day. During the site preparation and grading phase, approximately 278 average daily trips (ADT) would be generated (139 round trips). The maximum number of workers would occur during the racks and panels installation, when water deliveries would be considerably reduced, requiring approximately 10 water truck deliveries a day, equipment deliveries would be ongoing throughout this phase. The trips generated during this phase would be approximately 298 ADT (149 round trips).

It is assumed that all employees would arrive within the morning peak hour and depart within the evening peak hour, and water and delivery truck trips would be distributed evenly throughout a 12-hour-shift day, between the hours of 7:00 a.m. and 7:00 p.m. Since the surrounding area is rural, traffic is very low on the local roads surrounding the Project site. Implementation of the Proposed 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. A County-required Traffic Control Plan to provide safe and efficient traffic flow in the area and on the Project site would be prepared prior to construction. 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).

During the peak of construction, a typical day would include the transportation of parts, movement of heavy equipment, and transportation of materials.

Operational Activities and Methods

The Project would be an unmanned facility that would be monitored remotely. Appropriate levels of security lighting would be installed at the Project entrance. The site would be secured 24 hours per day by remote security services with motion-detection cameras.

Underground Collection System. The underground portion of the cable systems would be inspected and repaired if and when problems occur.

Generation Tie-Line. The 138 kV transmission line interconnecting the Proposed Project to ECO Substation would be inspected periodically for damage and repairs made as needed.

Electrical Substation and Energy Storage Facility. During operation, operation and maintenance staff would visit the Project substation and energy storage facility periodically for switching and other operation activities. Maintenance trucks would be utilized to perform routine maintenance, including but not limited to equipment testing, monitoring, repair, routine procedures to ensure service continuity, and standard preventative maintenance.

Solar Field. The solar panels, racking systems, inverters, transformers, and other electrical components would be inspected periodically. Electrical components would be tested routinely according to manufacturer's recommendations. In the event that remote monitoring indicates a problem, such as low performance in a section of the solar field, a crew would investigate and correct the problem on an as-needed basis. Approximately twice a year, if needed, the solar panels would be washed utilizing a water truck and purified water. In addition, the on-site meteorological stations would be cleaned and adjusted on a regular basis.

Decommissioning Activities and Methods

The Jacumba Solar Energy Project would operate, at a minimum, for the life of a long-term Power Purchase Agreement (PPA). The initial term of the PPA for the solar facilities is anticipated to be 20 years, with additional terms possible. The lifespan of the solar facility equipment is estimated to be 30 years. Due to the establishment of the Project infrastructure (both physical and contractual), the continued operation of Jacumba Solar beyond the initial PPA term is very likely. ~~At the end of the useful life of the equipment, two alternative scenarios are possible: (1) re-tool the technology and contract to sell energy to a customer; (2) if no other buyer of the energy emerges, the solar plant can be decommissioned and dismantled.~~Accordingly, the EIR analysis assumes a conservative 30-year life span. A key mitigation measure for aesthetic impacts is the removal of Project structures at the end of the life span of the solar facility. The decommissioning process is identified below and in Section 2.1 Aesthetics of this EIR.

Decommissioning and Recycling

Decommissioning would first involve removing the panels for sale into a secondary solar PV panel market or recycling. 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. 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 rack structures and mechanical assemblies, can be recycled as they are made from galvanized steel. Equipment such as inverters, transformers, and switchgear can be either reused or their components recycled. The equipment pads are made from concrete that 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.

Dismantling

Dismantling the solar facility 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 involve the following steps to dismantle the Project site and return it back to a conforming use:

1. The aboveground (detachable) equipment and structures would be disassembled and removed from the site. Detachable elements include all panels, inverters, transformers, and associated controllers and transformers. Removal of the aboveground conductors on the transmission line would also be implemented. Most of these materials can be recycled or reclaimed. Remaining materials that cannot be recycled or reclaimed 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. Underground collector and transmission components would be removed and recycled, including all of the underground support rack materials.
3. 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.
4. 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 reseeded with native species. These activities would be consistent with current zoning General Rural (S92) or future applicable zoning.

Removal Surety

The final decommissioning plan(s) that would be provided within one year of issuance of the building permits for the Project would comply with Section 6952.b.3 (d) of the County of San Diego Zoning Ordinance (County of San Diego 2012) 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 the County 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 the solar facility.

Water Usage

The following discussion includes an estimate of the amount of water that would be needed for the Proposed Project during the construction and site preparation, ongoing panel washing, and the decommissioning and dismantling. The solar facility would use water from water sources that have been identified at this time that include the following: Jacumba Community Service District (brackish water not distributed by district), and Padre Dam Municipal Water District (reclaimed water not distributed by district). The Jacumba Community Service District can supply up to 100,000 gallons a day. The Proposed Project would receive that limit from the Jacumba Community Service District for approximately the first 6 weeks, during grading activities, and would truck in the remaining water necessary during those 6 weeks from the Padre Dam Municipal Water District. After that initial 6 weeks the Proposed Project would not require more than 100,000 gallons a day and would be able to receive sufficient water from the Jacumba Community Service District. It should be noted that for purposes of analyses such as traffic and air quality, use of the most conservative water supply source (i.e., farthest from the Project), Padre Dam Municipal Water District, has been evaluated.

During operation the Project would obtain water for panel washing approximately twice a year and nominal amounts for other maintenance activities as necessary from the Jacumba Community Services District.

Construction and Application of Soil Binding Agents

During construction, water would be used 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. Water would also be used to mix concrete to be used for the substation, gen-tie, and energy storage facility foundations. Total estimated water demand for Jacumba Solar facility (by activity) is listed in Table 1-4.

Operation and Maintenance Potable Usage

Water would be used for washing the solar modules and for annual reapplication of the nontoxic permeable soil stabilizers as follows.

Soil Binding Agent Application. It is anticipated that the soil stabilizer chosen for the Proposed Project would need to be reapplied annually for at least the first several years. The Proposed Project would use 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

stabilizing agent would require approximately 3,300 gallons of water per acre, or approximately 280,000 gallons per year (see Table 1-5).

Solar Module Washing. It is anticipated that in-place PV panel washing would occur twice a year during evening or nighttime hours, between sunset and sunrise. Washing of the panels would be undertaken using wash trucks. Table 1-5 summarizes the operational water usage for the Jacumba Solar Energy Project.

Decommissioning and Dismantling

It is estimated that the amount of water necessary to decommission and dismantle the Proposed Project would be less than that required for construction, as listed in Table 1-4, because there would be no need to use water for concrete mixing or to hydrate and compact on-site fills. The activities associated with decommissioning would not include grading, and based on the estimates calculated for construction in Table 1-4, dust abatement would be necessary at approximately 8 acre-feet of water. Additional equipment washing and modest compaction needs, if necessary, would require a further approximately 2 acre-feet. The total water demand estimated for decommissioning is approximately 10 acre-feet.

1.2.2 Technical, Economic, and Environmental Characteristics

The following provides a discussion of the Proposed Project's technical, economic, and environmental characteristics.

1.2.2.1 Technical Considerations

The Proposed Project's PV technology employs fixed racks generally directed south, that are tilted at a fixed angle to maximize sun exposure through the day. The racks would not move. The racks would be arranged in rows running east to west.

As depicted in Figure 1-6, Panel and Fence Details, the Proposed Project's rack dimensions are approximately 12.5 feet top to bottom edge with a tilt of up to 30 degrees from horizontal. Each rack would hold an array of panels approximately 144 feet in length. The array would have approximately 2 feet of clearance from grade and have a peak height at full tilt of approximately 8 feet at the highest edge. Each rack would be mounted on a tubular or beam-shaped post. The rack rows would be spaced at approximately 22 feet center-to-center with a minimum of 10 feet of clearance between rack edges. A series of north-to-south (spaced approximately every 450 to 800 feet) and east-to-west (spaced approximately every 450 to 1,000 feet) running all-weather fire access roads, of minimum 24-foot width (covered with a binding agent), would be provided for maintenance and fire access.

1.2.2.2 Economic Considerations

The Proposed Project would help facilitate the development of a local renewable energy supply, thereby improving the reliability of electrical energy production in the San Diego region by increasing local sources of electricity rather than increasing electrical energy import. The Proposed Project would also assist in achieving the state's RPS and GHG reduction objectives by developing and constructing California RPS-qualified solar generation, approved under SB X1 2, which established a renewable energy target of 33% of total electricity sold to retail customers by 2020.

The economic benefits the Proposed Project will bring to San Diego associated with this designation include:

- A minimum capital investment of $40 million in California upon completion of construction

1.2.2.3 Environmental Considerations

Solar energy can provide a number of environmental benefits, such as reductions in air and water pollution and GHG emissions as compared to other sources of energy. However, solar technology, like other energy technologies, has environmental impacts.

Potential fire risks during construction and decommissioning of the Proposed Project may stem from ignition sources such as chainsaws, wood chippers, grinders, torches, earthmoving equipment, and other vehicles that could create sparks, be a source of heat, or leak flammable materials, and other human activities and waste that would increase the possibility of fire. Once construction is complete, the Proposed Project would introduce potential ignition sources that do not currently exist on the site, such as transformers, capacitors, electric transmission lines, substations, energy storage facilities, vehicles, and gas or electric-powered small hand tools. While the inverters and solar panels represent potential ignition sources that are considered to have low likelihood of causing fires, all of this equipment represents a risk of sparking or igniting nearby fuels, particularly within close proximity to off-site flammable vegetation. A number of fire protection measures, focusing on accessibility to and within the Proposed Project sites, as well as fuel modification providing defensible space, are provided; refer to Section 2.4, Hazards and Hazardous Materials, for further information.

Impacts associated with visual character or quality are often a factor with solar energy projects due to the contrast with existing visual elements of a neighborhood or community, such as size, massing, coverage, and scale. The Jacumba Hot Springs community was once a destination resort that has since lost much of its tourism economy. The surrounding desert is a rural area that primarily consists of open landscape with native desert plants. However, recent developments

have resulted in a variable physical setting that includes both rural and major infrastructure elements. The character of the community is evolving with the growing presence of major infrastructure features that interrupt the natural landscape, such as the 500 kV Sunrise Powerlink and ECO Substation. Aesthetic/visual resources are defined as the natural and man-made elements and features of the landscape that contribute to the visual character and quality of a setting. Such visual elements include the Jacumba Mountains to the east, the In-Ko-Pah Mountains to the north, the Southwest Powerlink and Sunrise Powerlink transmission lines that are visible to the north, and the general rural character of the surrounding area. In order to assess the Proposed Project's effect on the existing visual character of the surrounding landscape, key view locations were selected and analyzed. For further discussion, please refer to Section 2.1, Aesthetics.

The Project site includes no groundwater wells and the Project would not require frequent or substantial water once in operation. As such, local water purveyors including Jacumba Community Services District and Padre Dam Municipal Water District would provide water for the Project operation and construction.

Although solar energy generally reduces air pollution as compared to other sources of energy-generating projects, construction activities and traffic trips still result in air pollutant and GHG emissions. The Proposed Project includes a number of measures aimed at reducing air pollutants. Please refer to Section 3.1.1, Air Quality, and Section 3.1.3, Greenhouse Gas Emissions, for further details.

In addition, the Proposed Project includes the dedication of approximately 184 acres of Open Space, in perpetuity. The Open Space Preserve would enable wildlife movement across private property enabling a connection to federally controlled (Bureau of Land Management (BLM)) property in an area where cross-border movement for wildlife is possible. The dedication of this open space will preserve important natural resources in the area. Based on vegetation mapping, elevation ranges, soils, and location of the Open Space Preserve, it contains suitable habitat to compensate for the loss of special-status plant and wildlife species that would potentially be impacted by the Project. The location of the Open Space Preserve provides direct and adjacent connection to public open space and allows for unencumbered movement of wildlife across the site and through adjacent open space to two of the few breaks in the international border fence. This allows for north–south and east–west movement across the site and vicinity. Use of topographically, vegetatively, and governmentally diverse areas is a long-term benefit to wildlife and natural resources in the area.

1.3 Project Location

The Proposed Project would be located on a property that totals approximately 304 acres in southeastern San Diego County (see Figure 1-1, Regional Location Map). The proposed solar facilities would be within an approximately 108-acre fenced area (shown on Figure 1-2, Specific Location Map) south of Old Highway 80 approximately 3 miles east of Jacumba Hot Springs and immediately north of the U.S./Mexico border. The Proposed Project site is located within the Jacumba Subregional Group Area of the Mountain Empire Subregional Plan Area in unincorporated San Diego County (see Figure 1-2, Specific Location Map). The site includes the following Assessor's Parcel Numbers (APNs): 661-080-04, 661-080-05, 661-080-08, 661-041-01, 661-041-02, and 661-041-03.

1.4 Environmental Setting

The Proposed Project area is generally an arid desert environment that supports a limited range of habitats and biological communities. These habitats and communities include desert scrub and chaparral. Additionally, these habitats and communities may vary depending on the ecoregion, soils and substrate, and topography. Topography within the Proposed Project area varies from a gentle slope to steeper terrain on the southwest portion of the Project site. The Proposed Project area is undeveloped, with on-site elevation ranging between 3,114 and 3,176 feet above mean sea level (amsl). The site is relatively flat, except for a hill near the southwest corner and several unvegetated channels that generally flow to the northwest across the site. Additionally, five soil types are found within the Project area: acid igneous rock (loam to loamy coarse sand), the Mecca series (moderately alkaline coarse sandy loam), the Rositas series (loamy coarse sand or fine sand), rough broken land (well-drained steep soils), and sloping gullied land (clay loam to gravelly, cobbly sand). One land cover type (disturbed land) and four native vegetation communities (Peninsular juniper woodland and scrub, semi-desert chaparral, Sonoran mixed woody scrub, and upper Sonoran subshrub scrub) are found within the Proposed Project area. The Project area supports habitat for common upland species. Scrub, chaparral, and woodland habitats within the Project area provide foraging and nesting habitat for migratory and resident bird species and other wildlife species. Rock outcroppings are present north of Old Highway 80 within the Project area and provide cover and foraging opportunities for wildlife species, including reptiles and mammals. Rugged terrain generally surrounds the Project area to the north, east, and southwest. The Project area is included within a Core Wildlife Area due to its size and the undeveloped federal land in the surrounding area, and because wildlife movement is not constrained.

Regional access to the Proposed Project area is provided directly by Old Highway 80 and also by I-8, running east and west further to the north. The surrounding Jacumba area can be characterized as a high desert rural landscape featuring large lots with single-family homes and

row crop agricultural operations that have been conducted in the recent past. Much public agency land (BLM, State Parks) is present in the area and offers recreational opportunities such as hiking. Old Highway 80, which runs through the northern portion of the site, is a scenic corridor identified on Figure C-5 (Scenic Highways) of the General Plan Conservation and Open Space Element. The village of Jacumba Hot Springs, located approximately 3 miles west of the site, lies between Old Highway 80 and the San Diego Arizona and Eastern Railroad bed. It has a population of approximately 561~~400~~ and includes small residential lots and commercial lots primarily along Old Highway 80, which serves as the main street (Census Viewer 2012). The village includes a library, middle school, fire station, and the Jacumba Hot Springs Spa & Resort. The village and surrounding area are dependent on groundwater for supply and the Jacumba Community Services District provides groundwater to the village area. Jacumba Hot Springs was known in the past as a destination for people seeking therapeutic relief in the natural hot springs. This business eventually faded once I-8 was constructed, bypassing the town, and as other Southern California towns began to exploit their hot spring resources.

Utility and border infrastructure development, including the ECO Substation, Sunrise Powerlink, and international border fence, are present in the immediate Project area.

South of I-8 in the Project site vicinity, major infrastructure elements of the landscape include the Sunrise Powerlink and Southwest Powerlink, each of which consists of a 500 kV electric transmission line supported by 150-foot-tall steel lattice structures, and the linear rust-colored U.S./Mexico border fence (located immediately south of the Proposed Project site), as depicted in Figure 1-4, Project Environmental Setting. The Notice of Preparation (NOP) for the Proposed Project was published on September 11, 2014 (see Appendix 1-1 of this EIR for the NOP and comment letters). The baseline for the Project is established by the physical condition that exists at the time the NOP was published..

Additionally, the environmental setting for each environmental issue is further explained in the beginning of each section.

1.5 Intended Uses of the EIR

This EIR is an informational document that will inform public agency decision makers and the public generally about the significant environmental effects of the Proposed Project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the Proposed Project. This EIR has been prepared in accordance with the requirements of the *County of San Diego Environmental Impact Report Format and General Content Requirements* (County of San Diego 2006), the statute and guidelines of CEQA (California Public Resources Code, Section 21000 et seq., and California Code of Regulations (CCR), 14 CCR 15000 et seq., respectively). The NOP released for public review on September 11, 2014, and associated

comment letters received during the public review period are included as Appendix 1-1 to this EIR. The Initial Study prepared for the Proposed Project is included as Appendix 1-2. This EIR addresses issues identified in the Initial Study and comments received regarding the NOP.

This EIR will be made available for review by members of the public and public agencies for 45 days to provide comments "on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated" as stated in CEQA Guidelines, Section 15204 (14 CCR 15000 et seq.).

As the designated lead agency, the County is responsible for preparing this document. The decision to approve the Proposed Project is within the purview of the County Planning Commission. When deciding whether to approve the Project, the County will use the information included in this EIR to consider potential impacts on the physical environment associated with the Project.

The County will consider written comments received on the EIR in making its decision whether to certify the EIR as complete and in compliance with CEQA, and also whether to approve or deny the Project. Environmental considerations and economic and social factors may be weighed to determine the most appropriate course of action. If the EIR is certified and the Project approved, agencies with permitting authority over all or portions of the Project may use the EIR as the basis for their evaluation of environmental effects of the Project and approval or denial of applicable permits.

1.5.1 Project Approvals/Permits

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

Major land use actions that would be required to implement the Proposed Project include a major use permit (MUP), building permit, grading permit, County ROW permit, and various administrative permits.

Major Use Permit. The Proposed Project is considered a Major Impact Service and Utility type of use that requires approval of a MUP on the Project site, which has a zone classification of S92. The application for a MUP would be processed according to Section 7350 of the Zoning Ordinance, including making required findings pursuant to Section 7358.

Building and Demolition Permits. The building of structures would require a building permit. Although this is a ministerial permit, the applicant must adhere to all applicable regulations. Exact requirements for building or demolition permits are dependent upon the type of structure proposed.

Grading Permits. The County Grading, Clearing, and Watercourses Ordinance (Grading Ordinance) is contained in Title 8, Division 7, of the Code of Regulatory Ordinances. The Project involves grading, clearing, and removal of natural vegetation and therefore requires a grading permit. Proposed grading activities must meet requirements of the Grading Ordinance.

Other Permits and Approvals. In addition to the key permits from the County identified above, the project would require a variety of other local, state, and federal permits. These would include, but are not limited to those permits listed in Table 1-6.

1.5.2 Related Environmental Review and Consultation Requirements

Pursuant to the CEQA Guidelines (Section 15365), the County prepared an NOP for this EIR. The NOP was publicly circulated for 30 days beginning September 11, 2014. The County held a public scoping meeting on September 23, 2014, in conjunction with a Jacumba Planning Group meeting at the Jacumba Library to provide responsible agencies and members of the public with information about the CEQA process and to provide further opportunities to identify environmental issues and alternatives for consideration in the EIR. Public comments received during the NOP scoping process are provided in Appendix 1-1.

1.6 Project Inconsistencies with Applicable Regional and General Plans

Planning documents reviewed for the Proposed Project include the County's General Plan and Mountain Empire Subregional Plan. Other planning documents reviewed for the Proposed Project include the Regional Air Quality Strategy for the San Diego County Air Pollution Control District, the California Regional Water Quality Control Board (Region 9, San Diego, and Region 7, Colorado River) Basin Plans, and the County of San Diego Multiple Species Conservation Program (MSCP). In addition, the County has reviewed the Draft Conservation Strategy for the future East County MSCP. The potential for the Project to result in inconsistencies are discussed and analyzed in Section 3.1.5, Land Use and Planning, of this EIR.

1.7 List of Past, Present, and Reasonably Anticipated Future Projects in the Project Area

CEQA Guidelines Section 15355 defines cumulative effects as two or more individual effects, which, when considered together, are considerable or which compound or increase other environmental impacts. The CEQA Guidelines further state that individual effects may include changes resulting from a single project or a number of separate projects, or the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. CEQA Guidelines Section 15130 allows for the use of two alternative methods to determine the scope of projects to analyze cumulative impacts.

List Method: A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.

General Plan Projection Method: A summary of projects contained in an adopted general plan or related planning document, or in a prior environmental document, that have been adopted or certified, which describe or evaluate regional or area-wide conditions contributing to the cumulative impact.

The cumulative analysis conducted for this EIR is based on both the list method and summary of projections method. The summary of projections method uses the County's General Plan and Mountain Empire Subregional Plan (both of which are available at the following website: http://www.sandiegocounty.gov/pds/generalplan.html); the summary project method was used in Section 3.1.1, Air Quality, and Section 3.1.4, Hydrology and Water Quality. Each environmental issue area within this EIR includes a discussion of potential cumulative impacts based on these methods. Table 1-7 lists projects that serve as the foundation on which the cumulative analysis approach has been based. These projects are also illustrated in Figure 1-9, Cumulative Projects Map.

1.8 Growth-Inducing Impacts

CEQA requires a discussion of the ways in which a proposed project could induce growth. Growth-inducing impacts are those that foster economic or population growth, or the construction of new development, either directly or indirectly, in the surrounding environment. In addition, the potential for characteristics of the project to encourage or facilitate additional growth that could significantly affect the environment, either individually or cumulatively, must be considered.

As discussed in Section 3.2.3, Population and Housing, during construction, the Proposed Project would employ a total of approximately 200 workers with a daily maximum of 140 workers at the peak of construction and an average of 120 workers. These workers are not anticipated to relocate to the area with their families and are not expected to induce substantial population growth in the Mountain Empire and Jacumba area. It is anticipated that workers from San Diego to the west or Imperial Valley to the east would construct the Proposed Project. The limited scale of solar facility construction and operation would not affect the employment base within the San Diego region as a whole.

Additionally, the development of the solar energy Project would not induce substantial population growth in the Mountain Empire region. The Proposed Project would not propose any physical or regulatory changes that would remove a restriction to, or encourage population growth in an area, including, but not limited to, the following: large-scale residential development; accelerated conversion of homes to commercial or multifamily use; regulatory

changes including General Plan Amendments encouraging population growth, specific plan amendments, zone reclassifications, or sewer or water annexations; or Local Agency Formation Commission annexation actions. As previously discussed in Section 1.1, Project Objectives, the Proposed Project is intended to create utility-scale solar energy to improve reliability in the region by providing a source of renewable on peak generation, invest in the local economy, and create construction jobs. The Proposed Project would supplement the region's energy supply and would not encourage housing growth.

Table 1-1
Project Acreage Summary

	Project Area (acres)	Project Property (acres)	Off Project Property (acres)
Project site (solar facility)	108	Included (108)	Not included
Open Space Preserve	184	Included (184)	Not included
Setback area	5	Included (5)	Not included
Gen-tie corridor	4	Not included	Included (4)
Existing roads and rights-of-way (ROW) (including Old Highway 80)	3	Not included	Included (3)
Total	**304**	**297**	**7**

Table 1-2
Construction Schedule

Project Activity	Working Weeks[1]	Start	End
Mobilization	2	May 2016	May 2016
Clear and grub/grading roads	6	May 2016	June 2016
Underground electrical	16	June 2016	October 2016
PV racks and solar panel installation	16	June 2016	October 2016
Substation	7	August 2016	September 2016
Gen-tie	4	September 2016	October 2016

Note: Working days during construction period = 6 days/week.

Table 1-3
Construction Equipment Associated with Solar Project Development

Equipment	Weeks	Quantity	Hours Per Day
Clearing/Grubbing			
Dozer	2	2	8
Excavator	2	2	8
Water trucks	2	21	8
Grading (including access roads)			
Dozer	8	4	8

Table 1-3
Construction Equipment Associated with Solar Project Development

Equipment	Weeks	Quantity	Hours Per Day
Water trucks	8	3	8
Loaders	8	4	8
Scraper graders	8	4	8
Interconnection (138 kV Gen-Tie)			
Crane	4	1	4
Boom truck	4	2	8
Pulling rig	4	2	8
Backhoes	4	3	6
Excavators	4	2	8
Water trucks	4	3	8
Substation Construction			
Crane	7	1	8
Aerial lift	7	1	8
Excavator	7	1	8
Forklift	7	1	8
Trenching (Underground Utilities)			
Backhoes	16	3	8
Trenchers	16	1	8
Water trucks	16	2	8
PV Construction			
Forklifts	16	2	8
Air compressor	16	2	6
Welders	16	2	6
Generator	16	2	8
Pile driver	16	2	8
Cranes	16	2	4
Bore/drill rig	16	2	8

Table 1-4
Construction Water Demand

Activity	Total Estimated Water Demand	Total Estimated Water Demand (acre-feet)[1]
Site preparation (clearing, grubbing, grinding, and dust control)	0.4 acre-foot/day for 28 days	11.3
Grading	[0.96 acre-foot/day for 40 days]	38.4
Dust abatement[2]	About 25,000 gallons/day for 104 days	8.0

Table 1-4
Construction Water Demand

Activity	Total Estimated Water Demand	Total Estimated Water Demand (acre-feet)[1]
Other construction needs	Water necessary for other construction needs such as filling tanks for fire protection; washing stations for vehicles/equipment (noxious weed mitigation); the 1,500-foot off-site gen-tie line; and concrete hydration requirements for substation, inverter, and other facility foundations (e.g., fencing, lighting).	0.9
	Total Construction Water	**58.6**

Source: Appendix 3.1.4-2.
Notes:
1 1 acre-foot equals 325,851 gallons.
2 Dust abatement is included in the estimate for initial site preparation (first 40 days); therefore, general dust abatement was assumed to occur over 104 days (i.e., the remainder of the construction phase).

Table 1-5
Operation Water Demand

Activity	Total Estimated Water Demand (gallons/year)
Application of Soil Binder (if required)[1]	280,000
Panel Washing	800,000
Total Water Use / Year	**1,080,000**

1 Based on application of nontoxic permeable soil binding agent 3,300 gallons per acre annually.

Table 1-6
Approvals/Permits Expected to be Obtained

Government Agency	Action/Permit
County of San Diego	• Major use permit for compliance with Sections 1350, 2705, and 2926 of the County Zoning Ordinance • County right-of-way permits (construction permit, excavation permit, and encroachment permit) • Grading permit for compliance with County's Grading Ordinance • Improvement plans • Exploratory borings, direct-push samplers, and cone penetrometers permits • Waiver of Board Policy I-92 • Certification of the Final EIR – compliance with CEQA
Regional Water Quality Control Board	• Clean Water Act Section 401 – Water Quality Certification • General Construction Stormwater Permit
State of California Department of Fish and Wildlife	• 1602 Streambed Alteration Agreement
California Department of Transportation	• Transportation permits for the movement of vehicles or loads exceeding the limitations on the size and weight contained in Division 15, Chapter 5, Article 1, Section 35551, of the California Vehicle Code (1983)

Table 1-6
Approvals/Permits Expected to be Obtained

Government Agency	Action/Permit
U.S. Department of Homeland Security, U.S. Customs and Border Protection	• Consistency with U.S. Customs and Border Protection safety and access policies
U.S. Army Corps of Engineers	• Clean Water Act Section 404 Permit / Nationwide Permit – Dredge and Fill
U.S. Fish and Wildlife Service	• Section 7 – Consultation or Section 10a Permit – Incidental Take
Air Pollution Control District	• Air quality permit to construct
San Diego County Fire Authority	• Fire District Approval; Fire and Emergency Protection Services Agreement ~~for County Service Area 135~~
California Public Utilities Commission	• Section 851 Advice Letter
Miscellaneous	• All other discretionary permits and approvals necessary from local, state and federal agencies with jurisdiction over the project.

Table 1-7
Cumulative Scenario – Reasonably Foreseeable, Approved, and Pending Projects

Map ID	Project	Type	Status	Distance from Project	Project-Related Impacts
W1	ENERGIA SIERRA JUAREZ WIND PROJECT I: Development of 400 MW of wind generation. Phase I (just north of the town of La Rumorosa in Mexico) is proposed to generate approximately 100 MW of energy with 45 to 52 turbines. Point of interconnection proposed with the ECO Substation (CAISO 2010).	PF-W	~~U~~C	Approx. 3 miles	Aesthetics, Air Quality, Biological Resources, Cultural Resources, and Hazards and Hazardous Materials (Fire)
W2	TULE WIND FARM: 12,239 acres of public lands, 186 MW, with 67 wind turbines. The project would deliver power through the project substation via a 138-kilovolt (kV) transmission line to run south to an interconnection with the proposed San Diego Gas & Electric (SDG&E) Rebuilt Boulevard Substation.	PF-W	A	Approx. 10 miles	Air Quality, Biological Resources, Cultural Resources, Public Services, and Hazards and Hazardous Materials (Fire)
W3	OCOTILLO EXPRESS LLC, CACA 051552: Development of 562 MW on 14,691 acres in two phases.	PF-W	Phase 1 = C Phase II = UC	Approx. 6 miles	Aesthetics, Air Quality, Biological Resources, Cultural Resources, and Noise
T1	ENERGIA SIERRA JUAREZ U.S. TRANSMISSION, MUP: 230 kV double circuit power lines leading to SDG&E ECO Substation near the Mexican border.	PF	A	Approx. 1 mile	Aesthetics, Air Quality, Biological Resources, Cultural Resources, and Hazards and Hazardous Materials (Fire)
T2	ECO SUBSTATION: East County (ECO) Substation, Rebuilt Boulevard Substation, and 13.3-mile 138 kV line between Rebuilt Boulevard Substation and ECO Substation.	PF	~~U~~C	Approx. 0.25-mile	Aesthetics, Air Quality, Biological Resources, Cultural Resources, Hydrology/Water Quality,

Table 1-7
Cumulative Scenario – Reasonably Foreseeable, Approved, and Pending Projects

Map ID	Project	Type	Status	Distance from Project	Project-Related Impacts
					Noise, and Hazards and Hazardous Materials (Fire)
S1	CHAPMAN RANCH SOLAR PROJECT: An approximately 2.9 MW photovoltaic solar project on an approximately 133-acre site. The disturbance footprint would be limited to approximately 25 acres.	PF-S		Approx. 9 miles	Aesthetics, Air Quality, Biological Resources, Cultural Resources, Noise, Public Services, and Hazards and Hazardous Materials (Fire)
S2	RUGGED SOLAR: Major Use Permit (MUP)-12-007; MUP for the construction and operation of an 80 MW solar energy system on an approximately 765-acre site.	PF-S	A	Approx. 8 miles	Aesthetics, Air Quality, Biological Resources, Cultural Resources, Hydrology/ Water Quality, Noise, Public Services, and Hazards and Hazardous Materials (Fire)
S3	TIERRA DEL SOL SOLAR: Major Use Permit (MUP)-12-005 for the construction and operation of a 60 MW solar energy system on an approximately 420-acre site with gen-tie to Boulevard Substation.	PF-S	A	Approx.10 miles	Aesthetics, Air Quality, Biological Resources, Cultural Resources, Hydrology/ Water Quality, Noise, Public Services, and Hazards and Hazardous Materials (Fire)
F1	GOLDEN ACORN CASINO AND TRAVEL CENTER: State Clearinghouse (SCH) No. 2007071097: 33-acre expansion consisting of 150-room hotel, 900-space parking garage, surface parking, RV park, casino expansion, bowling alley, arcade, offices, retail, restaurants/food service, wind turbines, and water and wastewater improvements in three phases.	F	A	Approx. 12 miles	Aesthetics, Air Quality, Biological Resources, Cultural Resources, Noise, Public Services, Utilities, and Hazards and Hazardous Materials (Fire)
R1	STAR RANCH: Tentative Map (TM) 5459; subdivide 2,160.1 acres into 460 single-family residential lots, commercial uses, equestrian facility, helipad, water treatment facility, and wastewater treatment facility. (Residential)	R		Approx. 20 miles	Aesthetics, Air Quality, Biological Resources, Cultural Resources, Noise, Public Services, Utilities, and Hazards and Hazardous Materials (Fire)
R2	FREEDOM RANCH: MUP 74-011W1; Expand existing facilities from 50 beds to 125 in four phases. (Alcohol/Drug Treatment and Recovery Facility)	R		Approx. 20 miles	Aesthetics, Air Quality, Biological Resources, Cultural Resources, Noise, Public Services, Utilities, and Hazards and Hazardous Materials (Fire)
O1	BOULEVARD FIRE STATION: Project would replace existing fire station along Highway 94. The fire station would be 8,496 square feet including an apparatus bay, and would have a total footprint of disturbance of approximately	PF	UC	Approx. 10 miles	Aesthetics and Air Quality

Table 1-7
Cumulative Scenario – Reasonably Foreseeable, Approved, and Pending Projects

Map ID	Project	Type	Status	Distance from Project	Project-Related Impacts
	30,000 square feet of the 17.5-acre parcel. The site would include water tank facilities that would be filled infrequently as well as roadway improvements along its northern boundary and roadway access improvements to Manzanita Dulce. (Fire Station)				
O2	ROUGH ACRES FOUNDATION CAMPGROUND FACILITY; MUP-12-021; MUP for a campground/conference center. (wellness center and campground facility)	O	UR	Approx. 10 miles	Aesthetics, Air Quality, Biological Resources, Cultural Resources, Noise, Public Services, Utilities, and Hazards and Hazardous Materials (Fire)
O3	JCSD Capacity Increase: Project would involve creation of new well at existing monitoring well site (Park Well) to increase capacity of JCSD water supply.	O	UR	Approx. 3 miles	Hydrology Water Quality

Notes: PF = Public Facilities and Utilities; S = Solar; W = Wind; T = Transmission; F = Federal; R = Residential; O = Other; MUP = Major Use Permit; A = Approved; UC = under construction; UR = under review C = Completed kV = kilovolt; MW = megawatt; ECO = East County; TM = Tentative Map.

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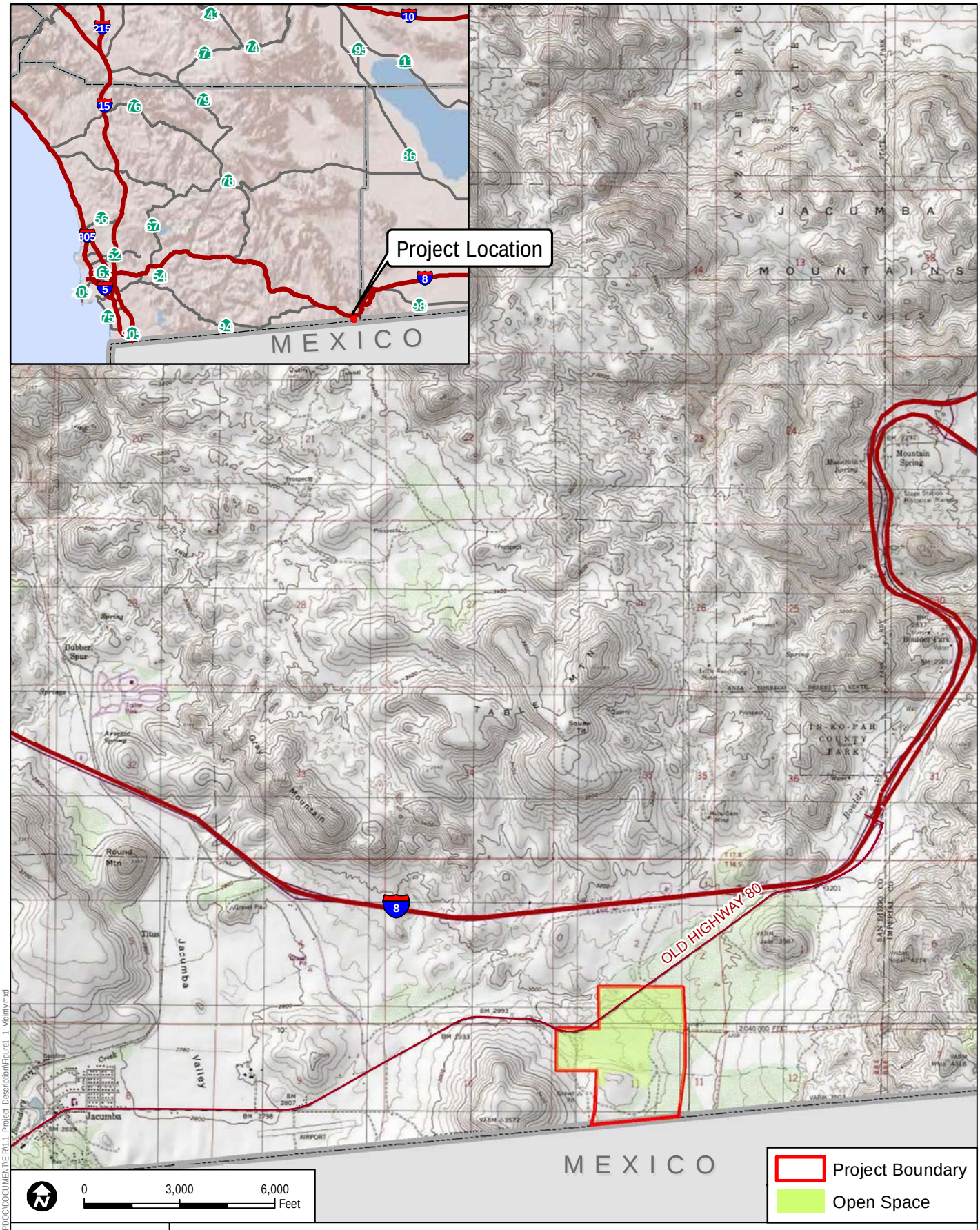

SOURCE:USGS 7.5 Minute Jacumba Quadrangle

FIGURE 1-1

Regional Location Map

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Jacumba Solar Energy Project

Path: Z:\Projects\8477\01\MAPDOC\DOCUMENT\EIR\1.1 Project Description\Figure1_1 Vicinity.mxd

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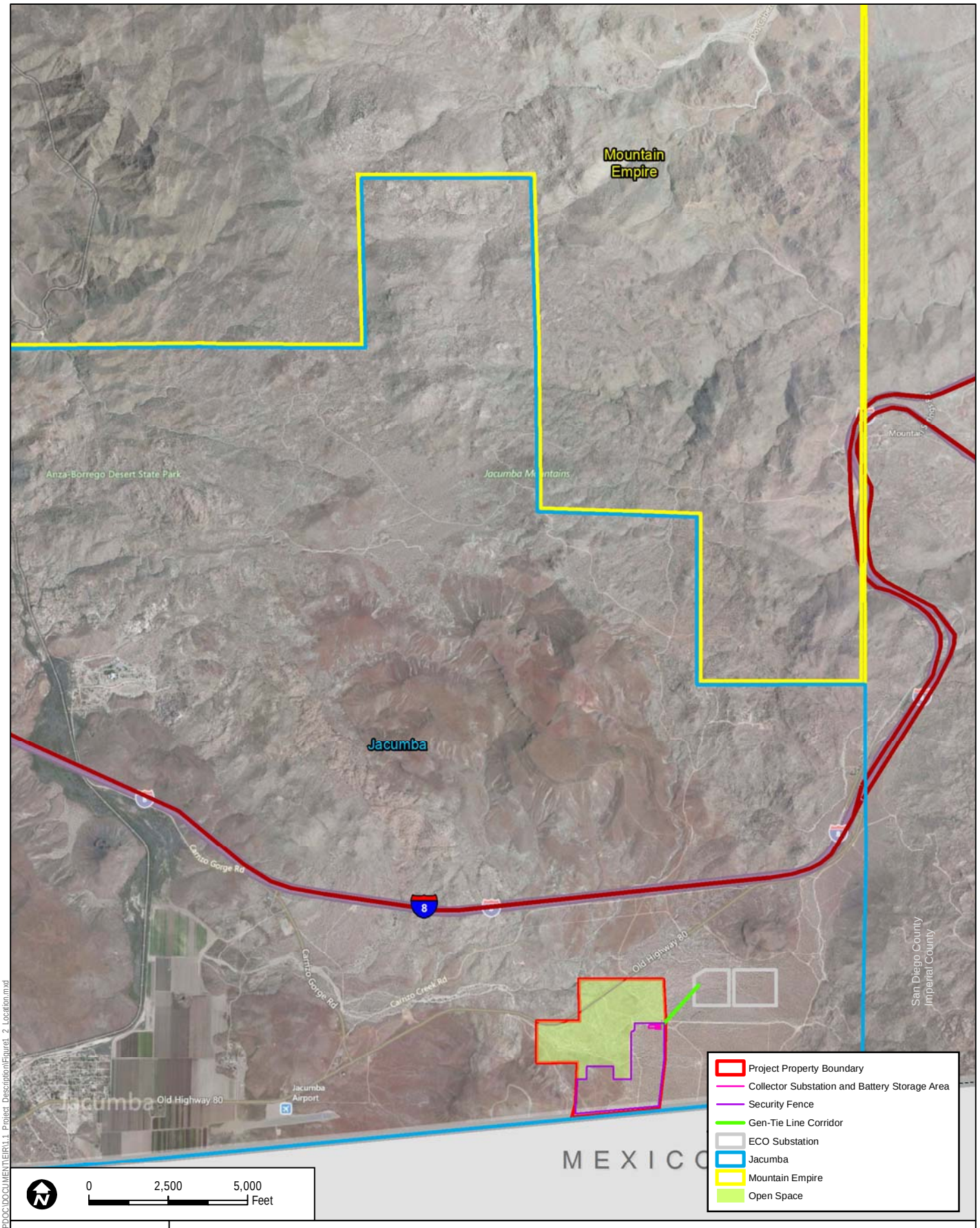

Path: Z:\Projects\8477\01\MAPDOC\DOCUMENT\EIR\1.1 Project Description\Figure1_2_Location.mxd

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SOURCE:Bing 2014

FIGURE 1-2

Specific Location Map

Jacumba Solar Energy Project

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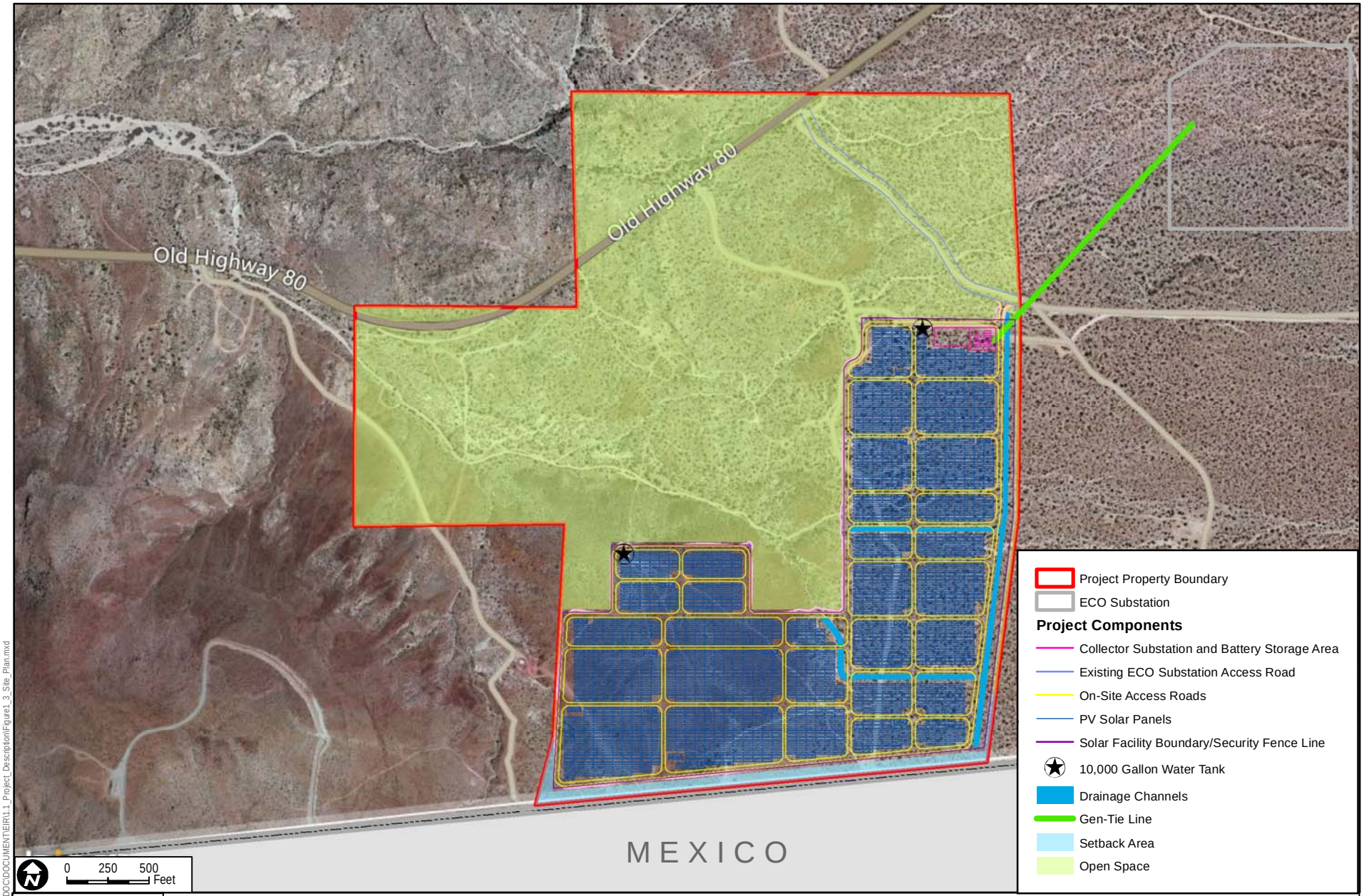

SOURCE:Bing 2014

FIGURE 1-3

Project Site Plan

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Jacumba Solar Energy Project

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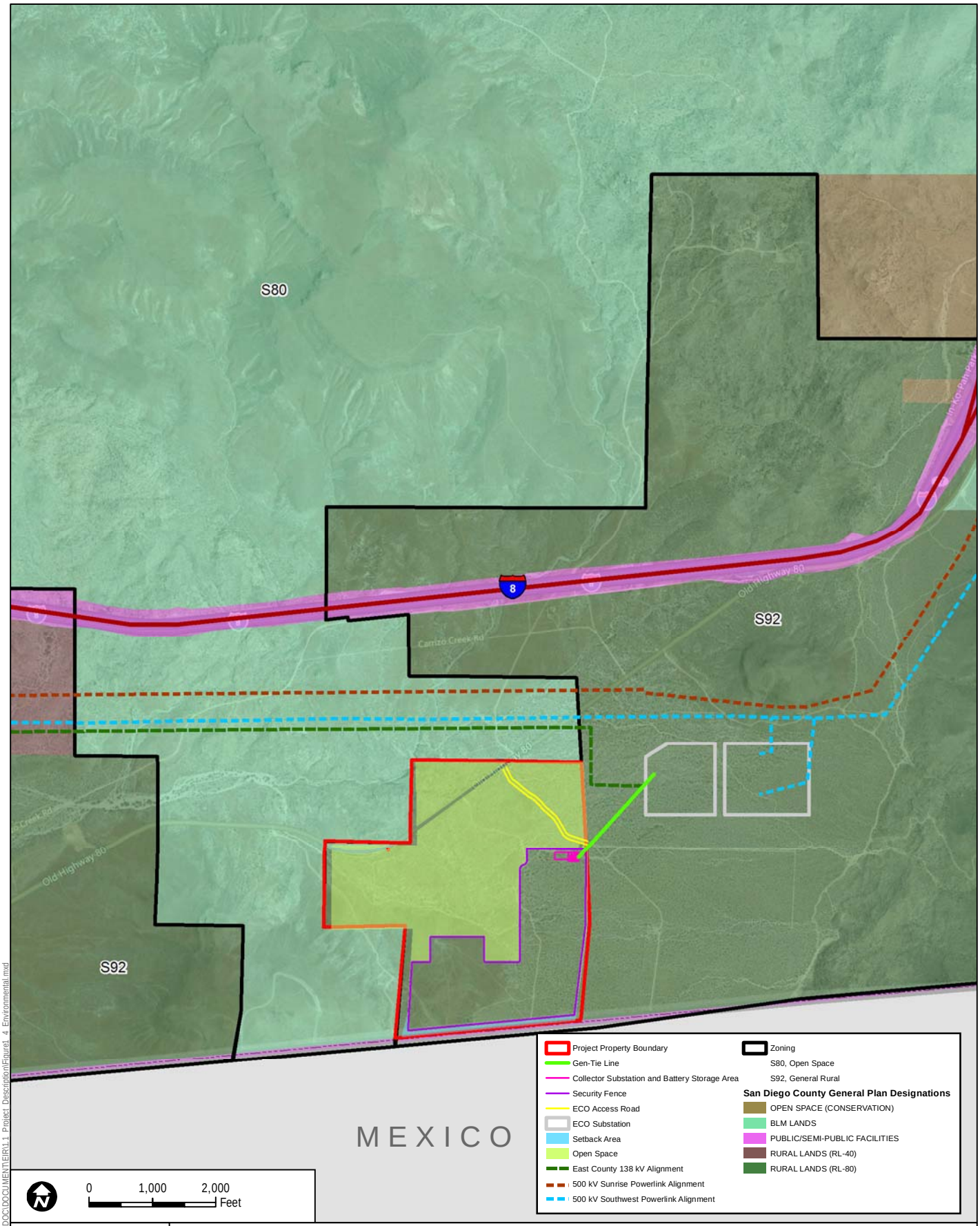

Path: Z:\Projects\8477\01\MAPDOC\DOCUMENT\EIR\1.1 Project Description\Figure1_4 Environmental.mxd

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SOURCE:Bing 2014

FIGURE 1-4

Project Environmental Setting

Jacumba Solar Energy Project

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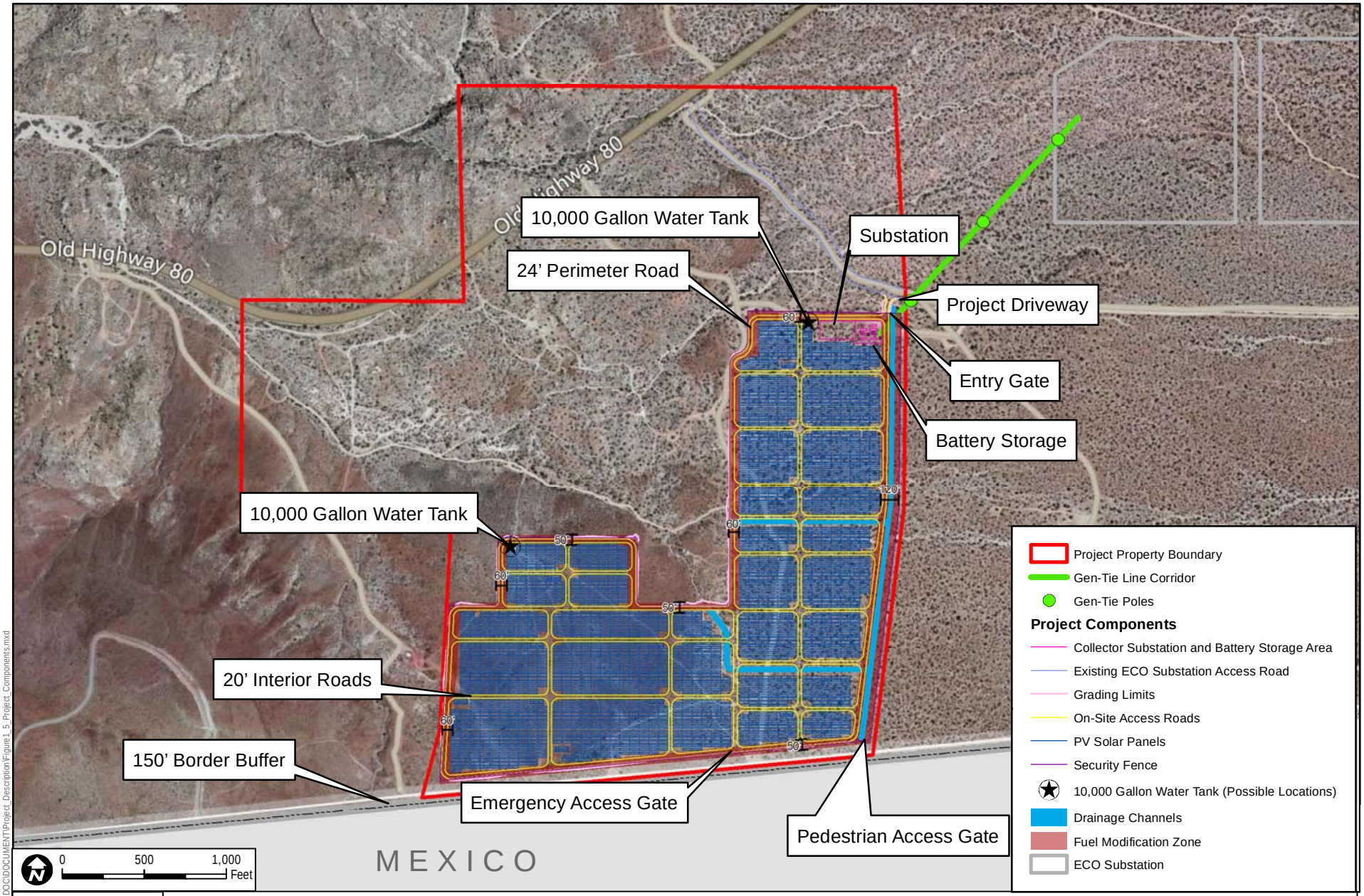

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SOURCE: Bing Maps 2014

FIGURE 1-5

Project Components

Jacumba Solar Energy Project

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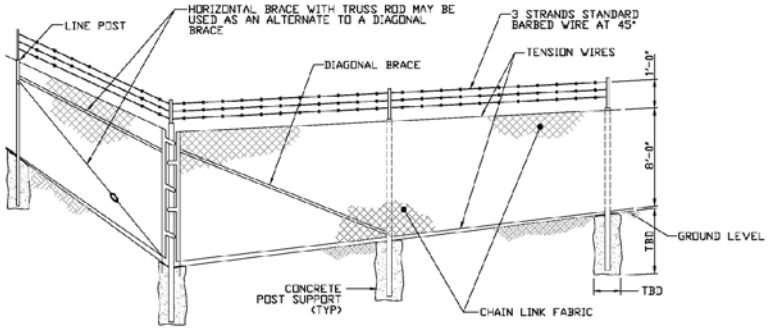
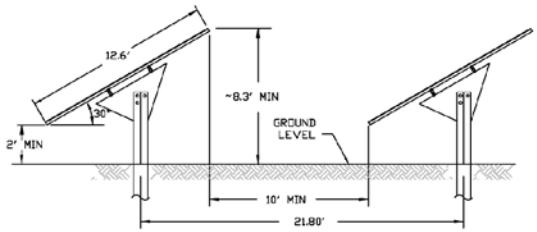


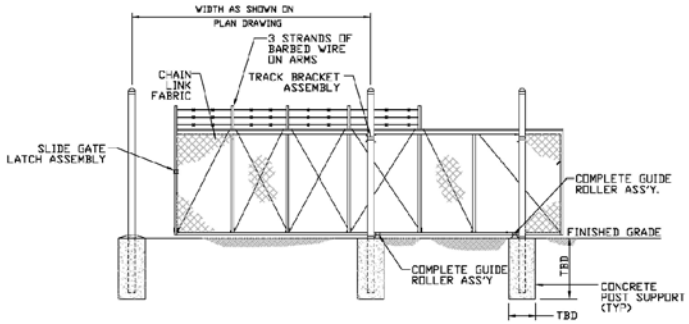
TYPICAL FENCE ELEVATION
NOT TO SCALE



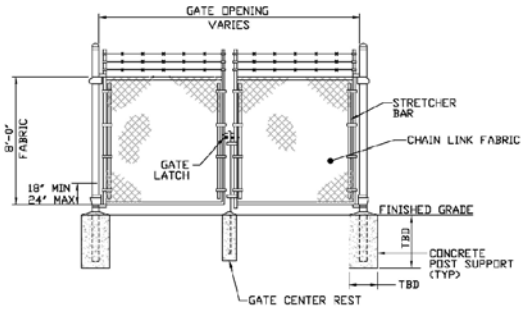
FIXED TILT RACK
NOT TO SCALE

NOTES:

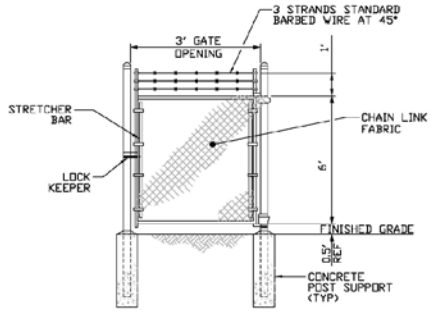
1. FENCING SETBACKS WILL BE DETERMINED DURING DETAILED DESIGN SO THAT ANY PONDING WILL BE WITHIN PROJECT BOUNDARY.
2. THIS DRAWING IS CONCEPTUAL AND NOT INTENDED FOR DETAILED DESIGN.



TYPICAL CANTILEVER SLIDING GATE
NOT TO SCALE



TYPICAL DOUBLE SWING GATE
NOT TO SCALE



TYPICAL SINGLE SWING GATE
NOT TO SCALE

CONCEPTUAL ENGINEERING PLANS

NOT FOR CONSTRUCTION FOR PERMITTING ONLY

PROPERTY OWNER INFORMATION

NAME: JACUMBA SOLAR, LLC.
ADDRESS: 700 UNIVERSE BLVD
JUNO BEACH, FL. 33408
TELEPHONE NUMBER:
(24 HOUR CONTACT NUMBER)
SITE A.P.N. NUMBER: 661-080-04, 661-080-05, 661-080-08, 661-080-01, 661-080-013, 661-041-02, 661-041-03
SITE ADDRESS: XXX OLD HWY 80
JACUMBA, CA 91934

REFERENCE DRAWINGS:

JSEP-2-DW-112-000-001	COVER SHEET
JSEP-2-DW-112-002-001	PLOT PLAN
JSEP-2-DW-112-735-001	PRELIMINARY GRADING PLAN
JSEP-2-DW-112-735-002	GRADING SECTIONS
JSEP-2-DW-112-717-001	EROSION CONTROL PLAN
JSEP-2-DW-601-206-010	CONCEPTUAL ONE LINE DIAGRAM

SHEET LEGEND:

TBD = TO BE DETERMINED
(TYP) = TYPICAL

PLAN CHECK/PERMITS

BUILDING RECORD ID:
PARCEL MAP NUMBER:

ENGINEER OF WORK

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT AND THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT.
NAME: JUAN BRAVO DATE:
RCE NO: EXPIRES:

PRIVATE CONTRACT

COUNTY OF SAN DIEGO
PLANNING & DEVELOPMENT SERVICES
MINOR GRADING PLAN FOR:
JACUMBA SOLAR, LLC.
JACUMBA SOLAR ENERGY PROJECT
20MW PV
SHEET: 5 FENCE DETAILS OF SHEETS: 7
APPROVED DIRECTOR OF PLANNING & DEVELOPMENT SERVICES
GRADING RECORD ID: JSEP-2-DW-112-735-003
BY: DATE:

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SOURCE: Worley Parsons 2014

FIGURE 1-6

Solar Panel and Perimeter Fence Details

Jacumba Solar Energy Project

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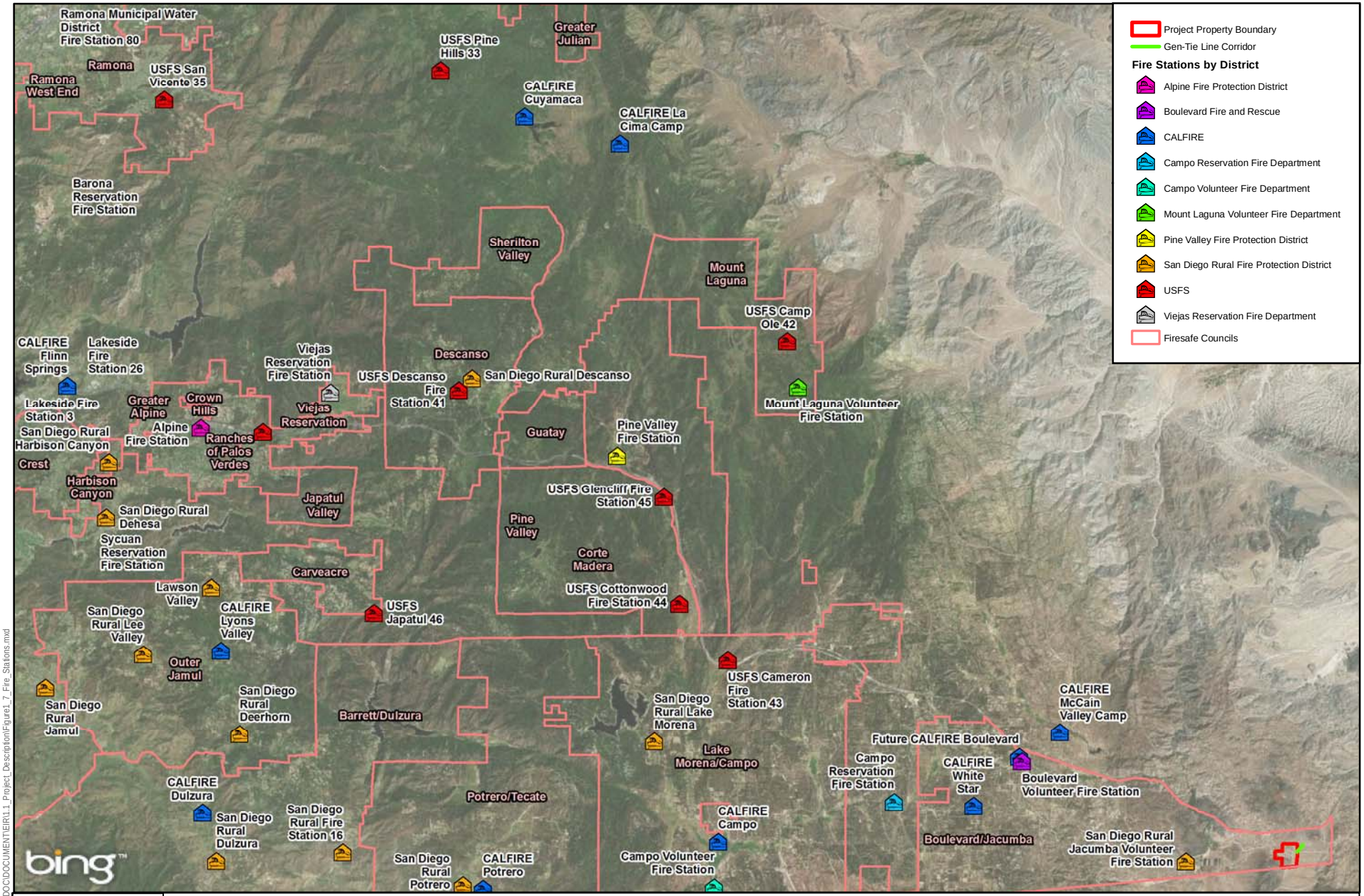

Path: Z:\Projects\8477\01\MAP\DOC\DOCUMENTEIR\1.1_Project_Description\Figure1_7_Fire_Stations.mxd

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8477

SOURCE: SANGIS 2012; Bing Maps 2014

FIGURE 1-7

Fire Station Locations

Jacumba Solar Energy Project

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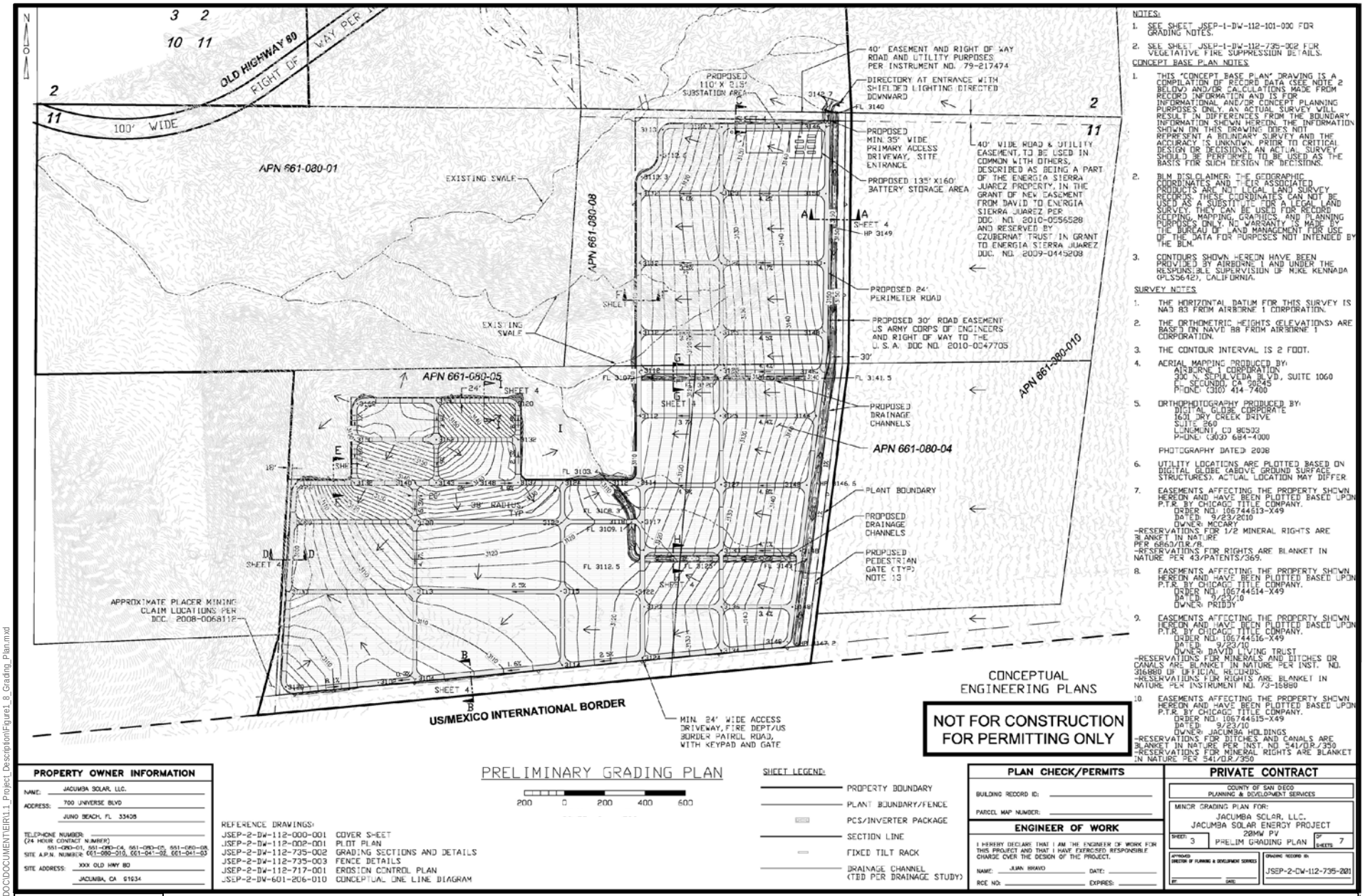

Path: Z:\Projects\8477\01\MAP\DOC\DOCUMENTEIR\1.1_Project_Description\Figure1_8_Grading_Plan.mxd

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SOURCE: Worley Parsons 2014

FIGURE 1-8

Grading Plan

Jacumba Solar Energy Project

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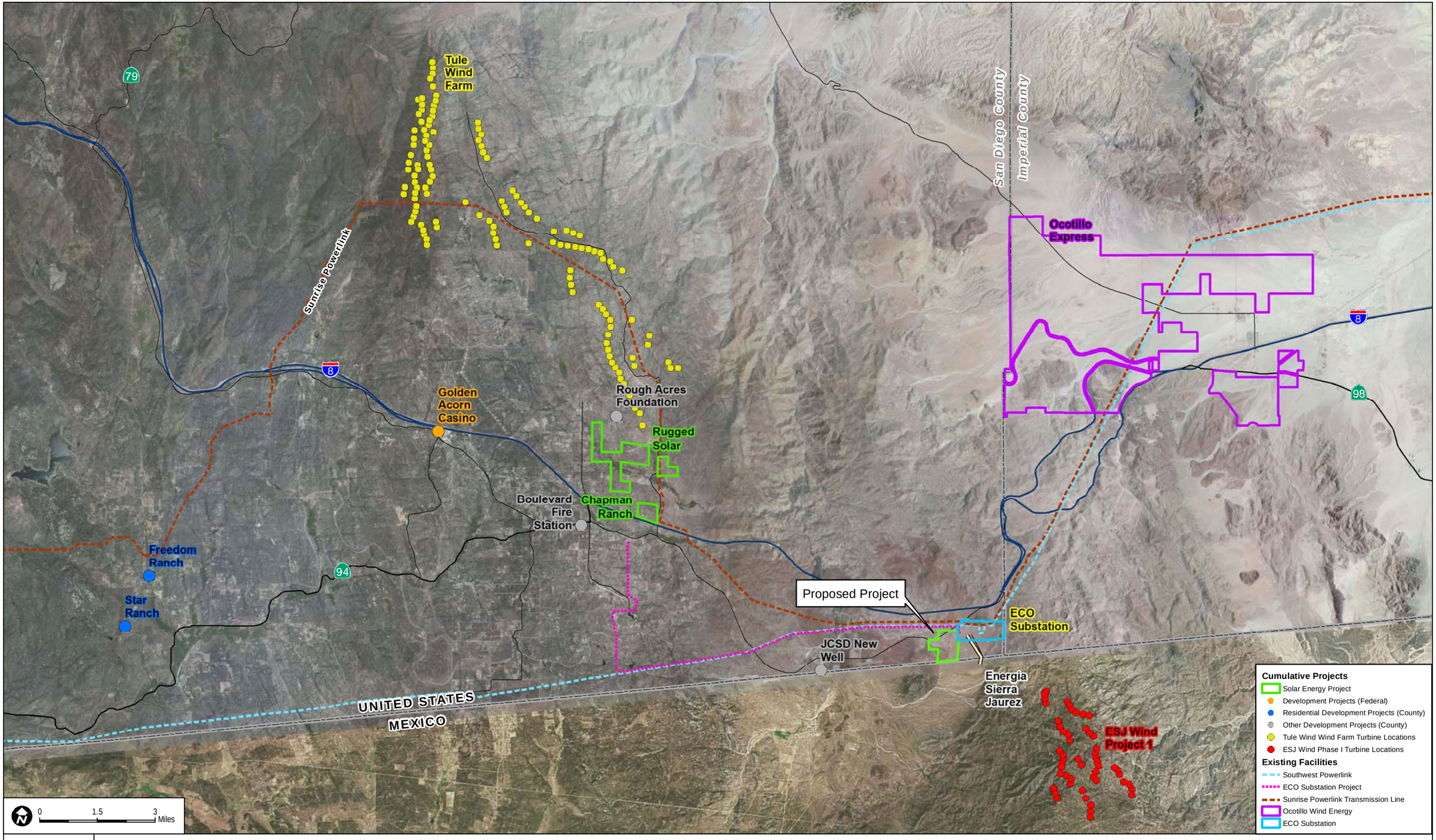

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SOURCE: Bing 2014; Soitec 2012

FIGURE 1-9

Cumulative Projects Map

Jacumba Solar Energy Project

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