

CHAPTER 2.0

PROJECT DESCRIPTION

2.1 PROJECT DESCRIPTION

Information identified in this chapter regarding the proposed Seville Solar Farm Complex is based on technical studies, mapping, figures, and the Conditional Use Permit (CUP) applications submitted to the Imperial County Planning & Development Services Department (ICPDSD) by Regenerate Power LLC (i.e. the Applicant). This section is based, in part, on the “Regenerate Power LLC, Seville Solar Farm Complex Project Description” dated June 6, 2013 (Regenerate 2013a) and a Memorandum regarding proposed modifications to the Imperial Irrigation District (IID) Anza Substation dated February 11, 2014 (EMA 2014a). Information referring to land disturbance, equipment, schedule, mileage, and workforce is based on the most up-to-date information available from the Applicant and generally represents conservative estimates. The internal configurations of the Project may change within the area analyzed based on final engineering and permit requirements for the various components.

2.1.1 INTRODUCTION

This chapter of the Environmental Impact Report (EIR) defines key terms relevant to understanding the spatial arrangement of, and lands affected by, the Seville Solar Farm Complex (“proposed Project” or “Project”). It also describes features and components of the proposed Project both within and outside of the Project area (refer also to Section 1.0 Introduction, sub-section 1.2.2 Definitions).

The proposed Project involves up to five solar energy projects on portions of the Allegretti Farms property. The “Property” is defined as the 2,440-acre Allegretti Farms property currently owned by Allegretti & Company. A major subdivision/tract map has been proposed for the Property which would reconfigure the seven existing legal parcels into eight individual lots (Lots 1 thru 8) and four common development interest lots (Lots A thru D) for common roads and electrical systems.

The proposed Project includes the construction, operation and reclamation* of the following:

- Five solar photovoltaic (PV) or concentrating photovoltaic (CPV) energy projects on five individual lots to be created by reconfiguring the existing legal parcels of the Property;
- An Operations & Maintenance (O&M) building, parking area, water well and sanitary waste septic system and leach field within each of the five solar energy project lots;
- Extending the existing 12.5 kilovolt (kV) electrical distribution system within the Property to each new building;
- A new access road from State Route (SR) 78 and internal access roads across portions of the Property to each lot;
- A new IID electrical switch station and private electrical substations for each of the five solar energy projects to be located within the Property;
- Internal solar development transmission lines (i.e. gen-tie lines) from each of the five solar energy projects to the electrical substations and switch station;
- Approximately three miles of new IID 92 kV transmission line for interconnection of the new IID switch station to the existing IID Anza Substation, 2.25 miles of which would be constructed atop an existing IID 12.5 kV distribution line.
- Modifications of the IID Anza Substation to expand the existing fenced area around the facility; relocate the existing 92kV switch and breaker bank into the expanded substation area and reorient the switch and breaker bank in a north/south alignment; construct a new 92 kV switch and breaker bank; and install up to five new steel and/or concrete poles.

The Project area includes:

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- The five solar energy project lots (Lots 1 thru 5);
- The new IID switch station (Lot C);
- Up to five electrical substations (one for each solar energy project) (Lot D);
- The corridor for the transmission lines from each solar energy project to the electrical substations (Lot A);
- That portion of the common access road corridor within the Property to be used by the solar energy projects (Lot B); and
- The new IID 92 kV transmission line from the new IID switch station (including that portion located on public land managed by the BLM, which is to be constructed as an overbuilt circuit atop the existing IID distribution line) to the existing Anza Substation.
- The 0.24 acre expansion of the Anza Substation fenced area to accommodate the proposed modifications required to support the proposed Project.

Each component of the Project is explained in detail in sub-section 2.1.5, below.

[Note: *The IID-owned facilities would not be decommissioned until IID determined that these improvements were no longer needed and could be retired and removed. In addition, the roads constructed on Lot B and all of the water wells would not be decommissioned or reclaimed.]

The proposed subdivision would be created as a private common interest development in accordance with California law and applicable Imperial County rules and regulations. The subdivision would create common areas (Lot A [utility corridor], Lot B [private common roads will be constructed per County Standards as specified in Title 9, Division 8, #43], and Lot D [substations]) for the beneficial use and enjoyment of the owners of the separate interests (Lots 1-8). These common areas would be held in the name of an Association comprised of the separate interest owners. The Association would be responsible for the operation and maintenance of these common areas, and would impose monetary assessments on its members to fund the operation and maintenance of these common areas.

2.1.2 PROJECT BACKGROUND

The Applicant is proposing to construct, operate and reclaim a solar farm complex on approximately 1,238 acres located in west-central Imperial County, California. The focus of this EIR is on the construction, operation and reclamation aspects of the Project. As reclamation would occur in approximately 25+ years, additional environmental review may be required in the future prior to undertaking these activities.

On June 5, 2013, the Applicant submitted the following permit applications to ICPDSD.

- Major Subdivision/Tract Map application for the entire Allegretti Farms property to reconfigure the existing parcels into 8 development lots;
- Five CUP application packages - one for each of the proposed solar farm projects to be located within the Project area;
- Nine CUP application packages - one for each of the seven existing and two proposed ground water wells; and
- Five Floodplain Development Permit application packages - one for each of the proposed solar farm projects.

This EIR is being prepared to analyze the potential environmental impacts of the proposed Project and fulfill the requirements of the California Environmental Quality Act (CEQA).

On November 15, 2002, BLM granted IID right-of-way (ROW) CACA 044554 to construct the overbuilt 92 kV transmission line above an existing IID distribution line as part of a larger IID project. BLM has confirmed that the granted ROW remains valid (BLM 2012).

2.1.3 SITE LOCATION

The Project area is located in west-central Imperial County, California, approximately eight miles west of the junction of SR 78 and SR 86, and approximately three miles east of the San Diego County line. The Project area is also approximately 14 miles from the southern tip of the Salton Sea and one-half mile west of Pole Line Road. Specifically, the Project area is located in portions of Sections 13-15, 22, 23 and 25-27, Township 12 South (T12S), Range 9 East (R9E), San Bernardino Baseline and Meridian (SBB&M). **Figure 2.0-1** depicts the regional location of the Project area and **Figure 2.0-2** shows the Project area and surrounding vicinity.

The Property follows parcel lines rather than any roads or other physical features. **Figure 2.0-3** is an aerial photograph of the Property showing the existing parcels. **Figure 2.0-4** shows the proposed Project area boundaries, proposed lots, wells and the proposed transmission line alignment to the IID Anza Substation.

2.1.4 OWNERSHIP

Allegretti & Company owns the entirety of the Property. Regenerate Power LLC has acquired an option to purchase the lands to be developed as the Seville Solar Farm Complex and rights to acquire easements across other portions of the Property for access roads and/or electric transmission/distribution lines required for the proposed Project.

2.1.5 SEVILLE SOLAR FARM COMPLEX CHARACTERISTICS

A. EXISTING USES AND FEATURES

The solar farm complex site is comprised of flat-lying, very low gradient idle agricultural fields that are separated by dirt access roads or rows of mature tamarisk trees that serve as a windbreak. San Felipe Creek, in its natural state, previously flowed through the southern third of the Property in a southeasterly direction. In the 1970's the Creek was diverted around the southwestern corner of the Property by an earthen berm constructed along the western boundary of the Property.

The solar farm complex site has an overall slope to the southeast at an estimated average low gradient of 0.4 percent. Elevations across the Project area range from a high of approximately 5 feet below mean sea level (msl) at the northwest corner to a low of approximately 40 feet below msl at the southeast corner (PETRA 2012a, pp. 2-3). Vegetation within the solar farm complex site is generally limited to the several rows of tamarisk trees planted as a windbreak and sporadic weeds.

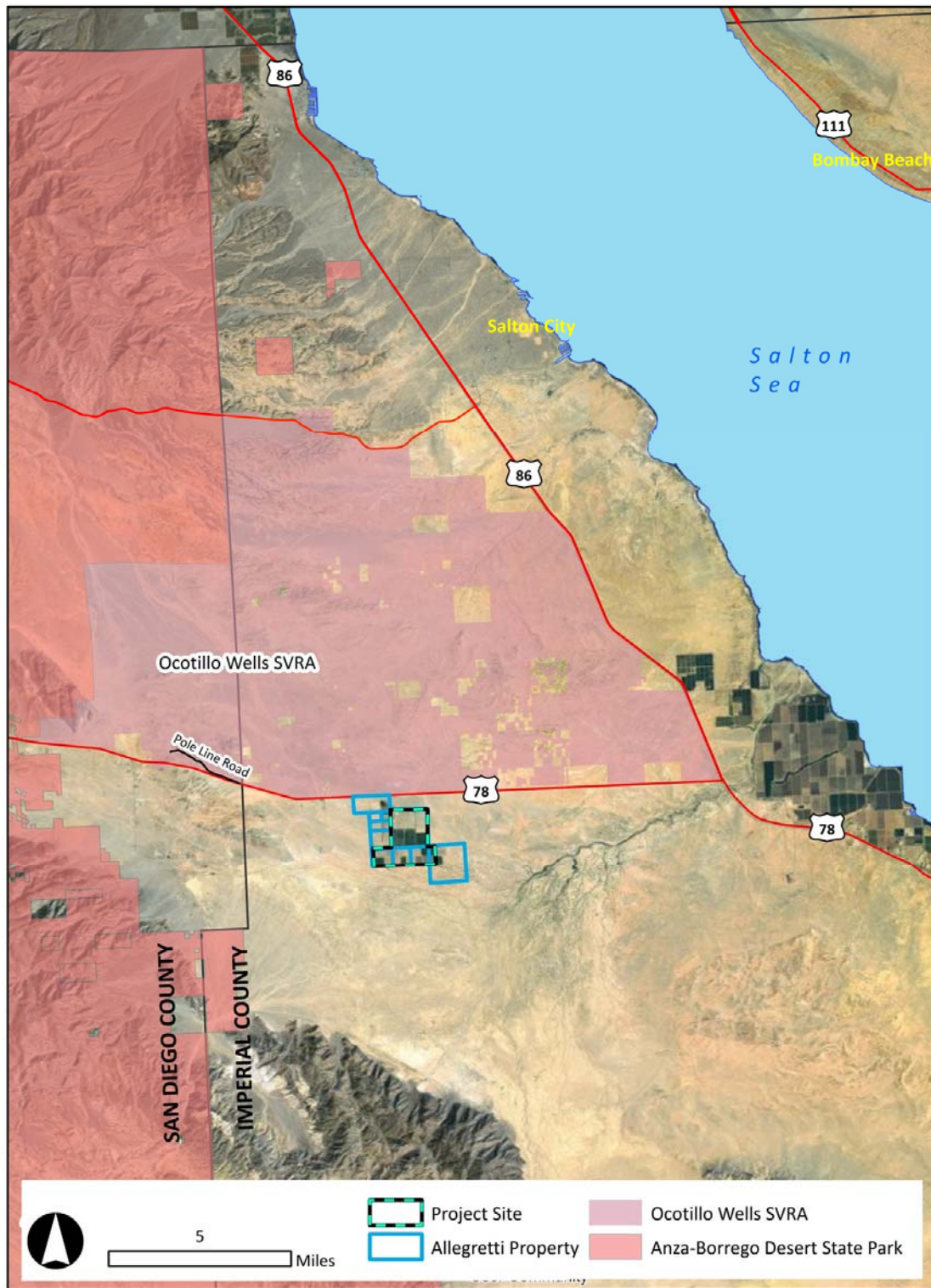
The solar farm complex site contains several out buildings, an above-ground diesel fuel storage tank within a concrete block secondary containment structure, a covered material storage area, a truck weigh scale and shed. Two residences that are occasionally occupied are located in the north side of Lot 5. In addition, two vacant farm houses are located on the west side of Lot 5. Two unlined basins covering approximately 4.5 acres are located in the southeastern portion of the proposed solar farm complex site. The western basin receives runoff via unlined drainage ditches from the surrounding former agricultural lands (HELIX 2014b, p. 6). In addition, a reservoir that is part of the on-site well based irrigation system is located in the southeastern portion of the proposed solar farm complex site.

All agricultural activities on the Property have been suspended within the last few years. The only exception was a small area in the southeast corner of the Property which was planted with grain crops in 2012. Of the Property's 2,440 acres, approximately 1,181 acres of idle agricultural land that is reverting

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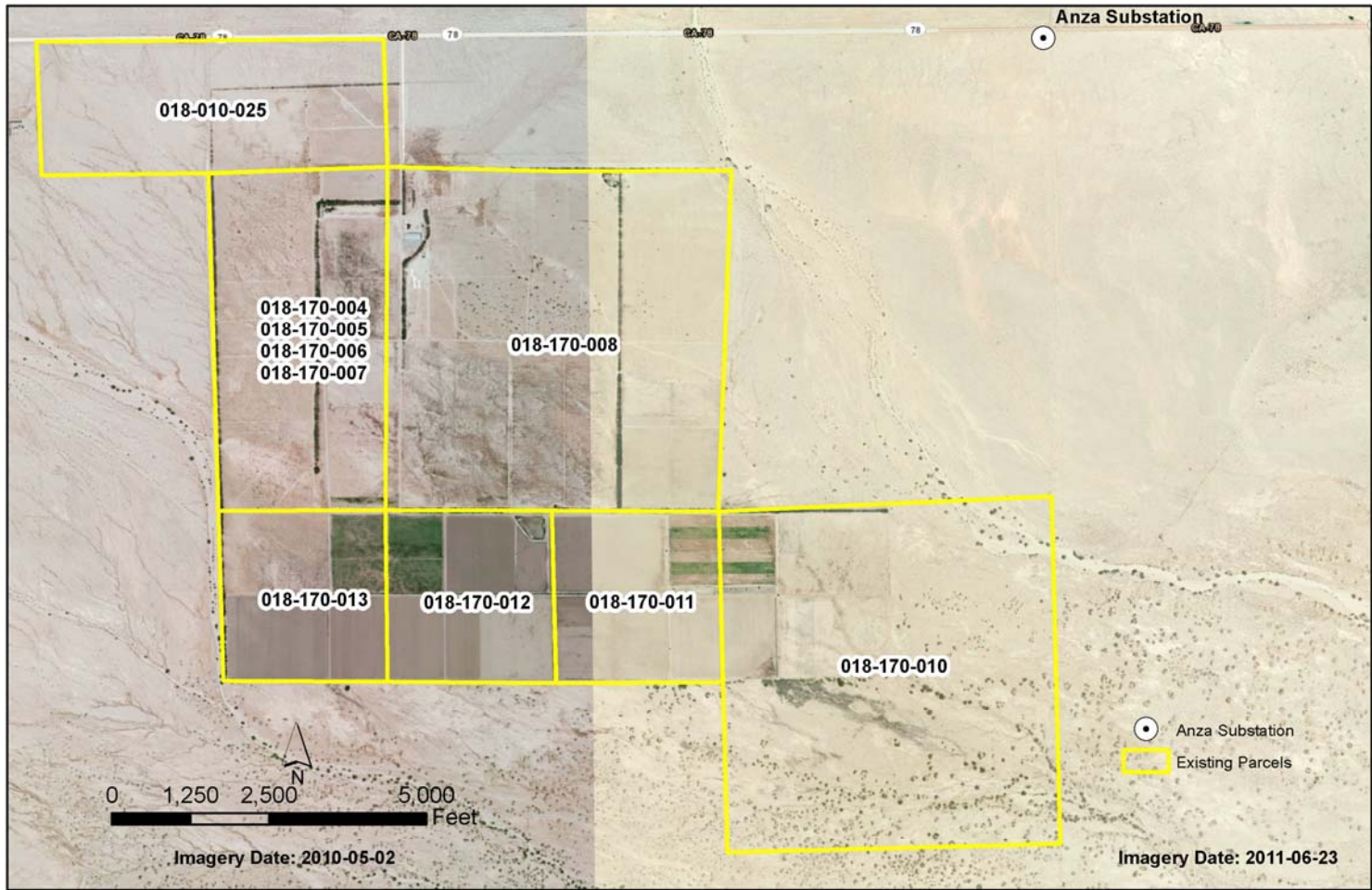
FIGURE 2.0-1
REGIONAL LOCATION MAP



Source: Bing™ Maps Aerial 12/1/2010, U.S. Census Bureau Tiger Line/Shapefiles, County of Imperial, Ericsson-Grant, Inc.

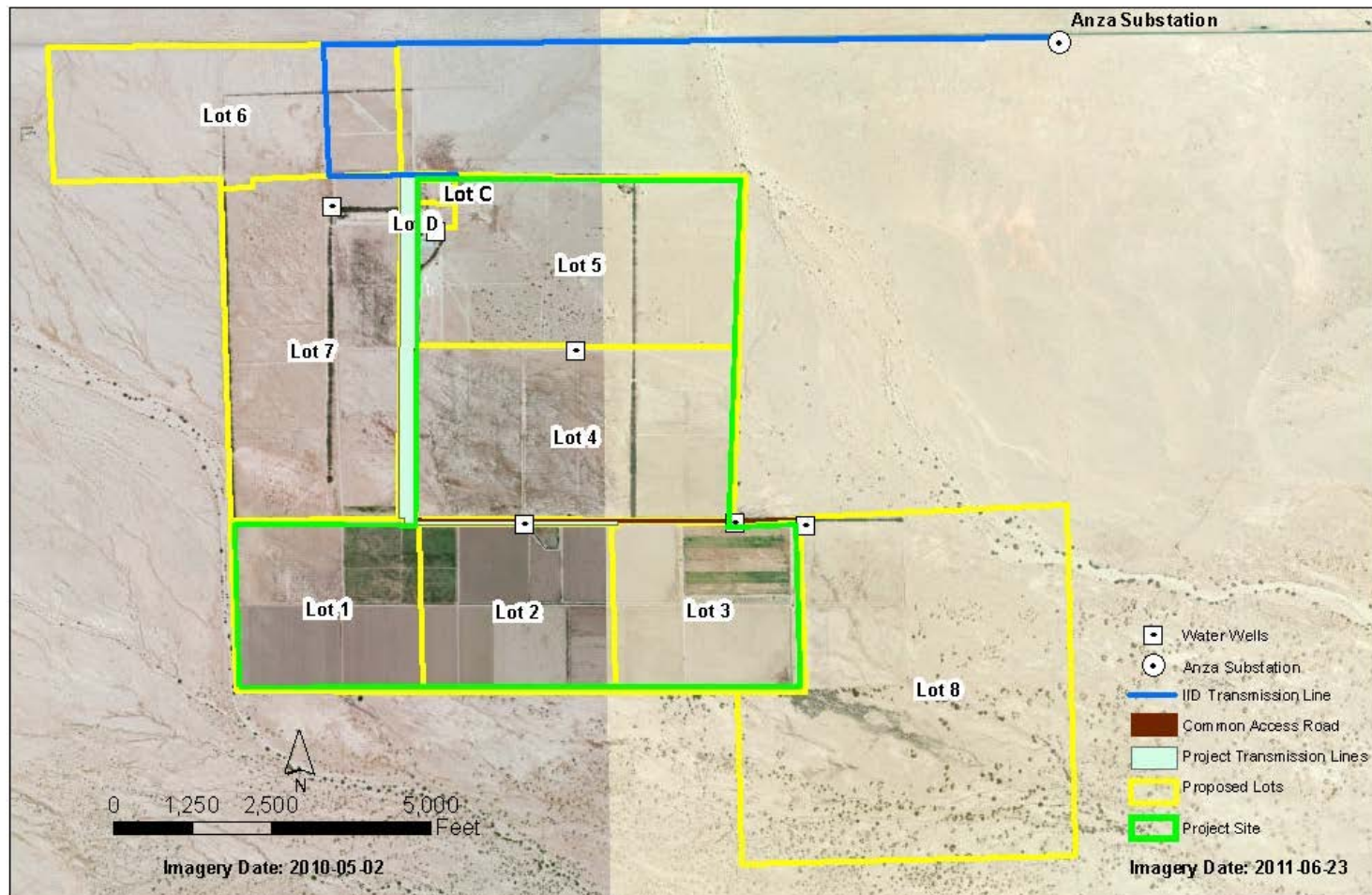
FIGURE 2.0-2
PROJECT VICINITY MAP

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Source: Base Map ESRI 2010 & 2011; Overlay EMA.

FIGURE 2.0-3
EXISTING PARCELS



Source: Base Map ESRI 2010 & 2011; Overlay EMA 2013.

FIGURE 2.0-4
AERIAL VIEW OF PROPOSED LOTS, WELLS, ACCESS ROADS AND TRANSMISSION LINE ALIGNMENT

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to open desert would be developed to accommodate the proposed Project (i.e. solar arrays, O&M buildings, parking and water wells). An additional 55 acres of the Property would be disturbed by the required access roads, gen-tie corridors and substations.

B. GENERAL PLAN AND ZONING DESIGNATIONS

The Imperial County Land Use Plan designates the entire solar farm complex site as “Agriculture” (refer to Figure 4.2-1 in Section 4.2, Land Use). Lands on which solar farm complex is proposed are zoned A-2 - General Agriculture (refer to Figure 4.2-2 in Section 4.2, Land Use). Solar energy electrical generators, electrical power generating plants, substations, and facilities for the transmission of electrical energy are allowed as conditional uses in Agricultural zones (Land Use Ordinance, Title 9, Division 5, Sections 90508.02 and 90509.02). In keeping with the provisions of the zoning designations, the Applicant is seeking a CUP for each solar project from the ICPDSD.

Development of a solar farm complex would preclude the use of approximately 1,235 acres of the Property for agricultural production for life of the Project (i.e. 20 to 25 years of operations plus another 5± years for construction and reclamation combined). However, as previously noted, the solar farm complex site is currently idle farmland as it has not been farmed in recent years. At the end of the useful life of the Project, the solar farm complex would be removed and reclaimed to approximate the existing idle farmland consistent with the existing Agriculture designation and A-2 zoning.

C. PROPOSED SUBDIVISION

In support of the Project, a major subdivision/tract map is proposed which would reconfigure the seven existing legal property parcels (Assessor Parcel Numbers (APNs: 018-010-025, [018-170-004, 018-170-005, 018-170-006, 018-170-007 – Note: These four APN #'s comprise one legal parcel], 018-170-008, 018-170-010, 018-170-011, 018-170-012 and 018-170-013) (**Figure 2.0-3**) into eight new individual lots and four common development interest lots (**Figure 2.0-4** and **Figure 2.0-5**). **Table 2.0-1** provides a summary of the proposed lots.

**TABLE 2.0-1
SUMMARY OF THE PROPOSED LOTS**

Lot	Acres	APN or Description	Township/Range/Section
Lot 1	185	Portion of APN 018-170-013 and APN 018-170-012	Portion NW/4 Section 26 + NE/4 Section 27
Lot 2	185	Portion of APN 018-170-011 and APN 018-170-012	Portion NE/4 Section 26 + Portion NW/4 Section 26
Lot 3	185	Portion of APN 018-170-010 and APN 018-170-011	Portion NW/4 Section 25 + Portion NE/4 Section 26
Lot 4	319	Portion of APN 018-170-008	S/2 Section 23 (approximately)
Lot 5	307	Portion of APN 018-170-008	N/2 Section 23 (approximately)
Lot 6+	266	APN 018-010-025 and a portion of APN 018-170-004	Portion S/2 Section 15 + Portion NE/4 Section 22
Lot 7+	339	A portion of APN 018-170-004 and APN 018-170-005*, APN 018-170-006* and APN 018-170-007*	Portion E/2 Section 22
Lot 8+	599	Portion of APN 018-170-010	Section 25 less portion of NW/4 Section 25

**TABLE 2.0-1
SUMMARY OF THE PROPOSED LOTS**

Lot	Acres	APN or Description	Township/Range/Section
Lot A	34	Solar energy projects gen-tie line corridors within the Property	
Lot B	11	Common access road corridors within the Property	
Lot C	5	Site for IID switch station	In Portion NW/4 Section 23
Lot D	5	Site for five solar energy project substations	In Portion NW/4 Section 23.

Source: Regenerate 2013a.

Notes: * These four APN #'s comprise one legal parcel.

+No development proposed for these lots aside from new well 9 proposed on Lot 8.

Of the 12 proposed lots summarized in **Table 2.0-1**, eight would be specifically developed as the Seville Solar Farm Complex. Lots 1 thru 5 would be developed as individual solar farm projects (respectively, Seville Solar Farm Projects One thru Five). Lots A, C and D would be developed specifically for the benefit of all five solar farm projects. These three common development interest lots include land for: the IID electrical switch station (Lot C); the solar energy project substations (Lot D); and, the solar development gen-tie lines to the solar energy project substations (Lot A) (**Figure 2.0-4** and **Figure 2.0-5**). Lot B would be a common development interest lot for the internal property road system supporting all of the other 11 lots (**Figure 2.0-4** and **Figure 2.0-5**). Lots 6, 7 and 8 are not proposed to be developed as part of this Project.

D. WATER WELLS

Seven ground water wells are located throughout the Property (**Figure 2.0-4**), although only the domestic water well (#7) and two commercial water wells (#4 and #6) are currently operational. The IID currently provides electrical power to the Property for use by the water wells and the existing farm buildings. Water for each of the Property lots/proposed developments would be provided by up to nine ground water wells (the seven existing water wells [#1 thru #7], plus two new water wells [#8 and #9]). Water would be provided to each individual development lot by the owner of each individual lot. Alternatively, water would be provided to each development lot by the Ranch Oasis Mutual Water Company, established in 1994 by Allegretti & Company.

The existing and proposed ground water wells are summarized in **Table 2.0-2** and shown in **Figure 2.0-4**.

**TABLE 2.0-2
SUMMARY OF THE EXISTING AND PROPOSED WELLS**

Well	Lot	APN	Well	Lot	APN	Well	Lot	APN
1 Existing	Lot 5	018-170-008	4 Existing	Lot 1	018-170-012	7 Existing	Lot 5	018-170-008
2 Existing	Lot 7	018-170-005	5 Existing	Lot 4	018-170-012	8 New	Lot 2	018-170-012
3 Existing	Lot 6	018-170-004	6 Existing	Lot 3	018-170-010	9 New	Lot 8	018-170-010

Source: Regenerate 2013a.

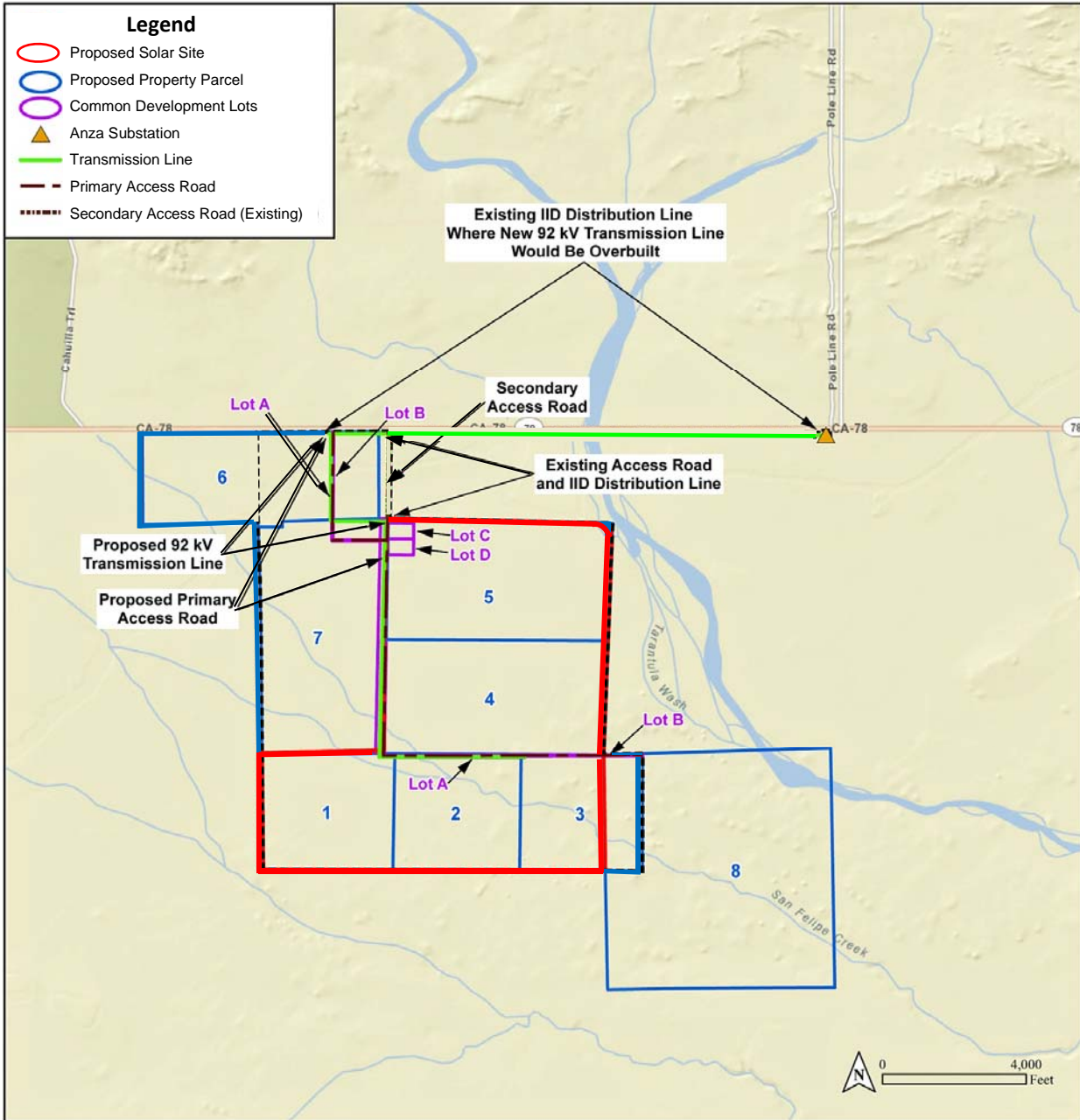
E. SOLAR FARM COMPLEX

Each of the components of the solar farm complex is described in detail below. The components would be installed as part of construction, in use during operation, and removed and decommissioned as part of reclamation.

The net electrical output of the Seville Solar Farm Complex is anticipated to be approximately 135 megawatts (MWs). The actual net electrical output of the solar farm complex, and each individual project,

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Source: HELIX 2014b.

FIGURE 2.0-5
PROPOSED LOTS, ACCESS ROADS AND TRANSMISSION LINE ALIGNMENT

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will depend upon the technology selected and final design and layout of each project. Anticipated net electrical output of each project located on Lots 1, 2 and 3 is approximately 20 MW each. Anticipated net electrical output of the project on Lot 4 is approximately 38 MWs, and the anticipated net electrical output of the project on Lot 5 is approximately 37 MW.

The operational life of each of the projects would be 20 to 25 years. An additional 5± years would be needed for construction and reclamation (combined) to be completed.

Solar Technology

The Project proposes to use either thin film or crystalline solar photovoltaic (PV) technology modules mounted on horizontal single-axis tracker (HSAT) systems; concentrating photovoltaic (CPV) systems mounted on a dual-axis tracking system; or a mix of two of the technologies. Note: Visual simulations of these technologies are provided in Section 4.1, Aesthetics.

PV Technology

PV module arrays would be mounted on racks supported by driven piles. The depth of the piles would be dependent on the geotechnical recommendations for the Project. The fixed-frame racks would be secured at a fixed tilt of 20° to 25° from horizontal facing a southerly direction. If HSAT technology is used, the PV modules would rotate around the north-south HSAT axis so that the PV modules would face the sun as it moves across the sky throughout the day. The PV modules would reach their maximum height (up to nine feet above the ground, depending on the final design) when the HSAT is rotated to point the modules at the rising or setting sun at both sunrise and sunset. When the HSAT system is rotated so that the PV modules are horizontal (at noon, or when stowed during high winds), the nominal height would be approximately six feet above the ground, depending on the final design. The individual PV systems would be configured in large arrays by placing them in columns spaced approximately ten feet apart to maximize operational performance and to allow access for panel cleaning and maintenance. These arrays would be separated from each other and the perimeter security fence by nominal 20-foot wide roads, consistent with emergency access requirements.

Current Project design would have individual PV modules, each approximately two feet wide by four feet long (depending on the specific PV technology selected), mounted on a frame which is attached to an HSAT system. **Figure 2.0-6** shows a potential project HSAT system which is approximately sixty feet long and eight feet wide, holding approximately sixty individual PV modules.

Each PV array would have an electrical output of approximately 1.3 megawatt alternating current (MWAC). The Project's power would be transmitted by the IID to the point of interconnection with the utility which has agreed to purchase the output from each of the five solar energy projects pursuant to a power purchase agreement (PPA).

CPV Technology

CPV technology uses optics such as lenses to concentrate a large amount of sunlight onto a small area of PV cells to generate electricity. The CPV technology focuses the sunlight onto highly efficient solar cells using Fresnel lenses. The CPV technology would likely use a dual-axis tracking system to position the tracker to ensure that concentrated sunlight remains precisely focused on the solar cells throughout the day. The dual-axis tracking structures use single pole/mast-mounted panels that would be approximately 30-feet high at both sunrise and sunset when the panel is rotated to point at the rising or setting sun. The dual-axis modules would be spaced approximately 80 feet apart.

Electrical Power System

Strings of PV modules would be fused and electrically combined together, then electrically connected to an inverter through underground wiring. The inverters would take the direct current (DC) electricity

produced by the PV modules and convert it to AC electricity. A transformer would then increase the voltage of the AC electricity to 13.8 kV or 34.5 kV so that the power could be economically and efficiently conducted over aboveground gen-tie lines to the project substation in Lot D (see **Figure 2.0-7**). Each project would deliver its produced power over a separate, aboveground 13.8 kV or 34.5 kV gen-tie line constructed in the transmission common interest development lot (Lot A) from the solar farm complex site to the individual project's substation.

Substations

Up to five substations (one for each project) would be constructed in the northwest corner of Section 23, within Lot D. Each substation would take delivery of the 13.8 kV or 34.5 kV power from its respective project and increase the electricity voltage to 92 kV for metering and delivery to the IID switch station on Lot C. Each substation and the switch stations would include a transformer, circuit breakers, meters, disconnect switches, microwave or other communication facilities and an electrical control house.

Transmission Line

Electrical interconnection with the IID electrical transmission system would require construction of a new 92 kV transmission line (with static grounding/communication line[s]) from the IID switch station on the Property to the existing Anza Substation on the south side of SR 78 (see **Figure 2.0-8**). Approximately 0.75 miles of new 92 kV transmission line would be constructed on the Allegretti Farms property. An additional 2.25 miles of new 92 kV transmission line would be constructed from the Property to the existing IID Anza Substation. The transmission line would be "overbuilt" (i.e. constructed above) the IID's existing 12.5 kV distribution line located immediately south of SR 78. (Note: The transmission line component of the proposed Project and modifications to the IID Anza Substation are described in greater detail in subsection 2.1.6, below).

Operations and Maintenance (O&M) Buildings

The Project could include construction of an O&M building and parking area within each of the five solar project development lots. Each O&M building could include a small office, material and equipment storage, an electrical/array control room and restrooms. Electrical power for each O&M building would be provided by the IID by extending, as may be necessary, the existing 12.5 kV electrical distribution system on the Property to each building.

Each O&M building could also include its own emergency power, fire suppression equipment, potable water system and septic system. Additional auxiliary facilities located on each solar energy project lot could include a small storage building, security lighting, backup uninterruptable power supply systems and diesel power generators, fire and hazardous materials safety systems and emergency response facilities. The design and construction of the O&M building(s) would be consistent with County building standards.

It should be noted that the decision to construct an O&M building will be left to the discretion of each solar energy project owner. As such, anywhere from zero to five O&M buildings could be constructed.

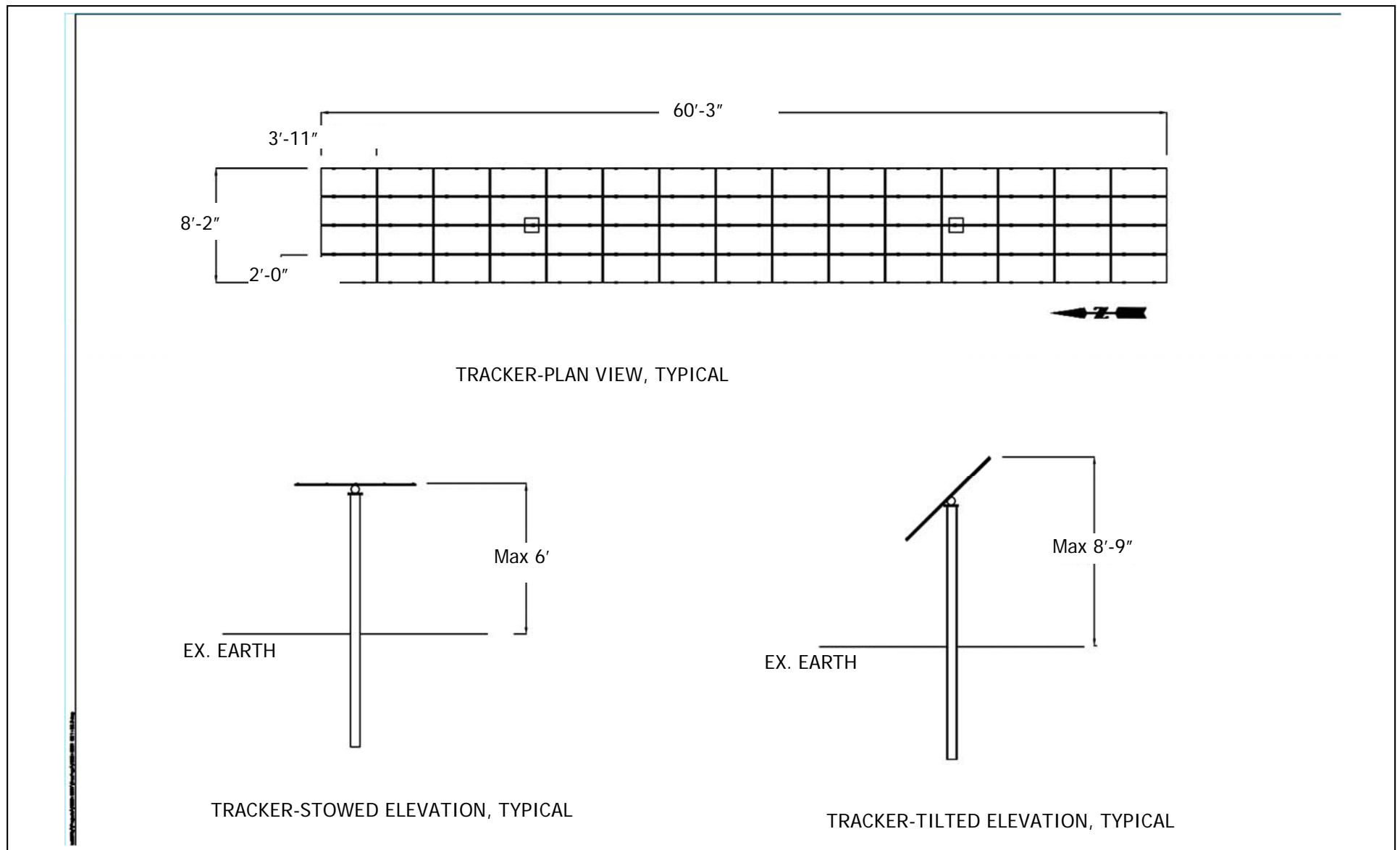
Water Tank

Water could be required for domestic use, solar panel washing and fire protection. Water for these purposes would be stored on-site in an approximately 20,000 gallon water tank. Approximately 10,000-gallons of the storage tank would be reserved and dedicated to water for fire protection.

Septic System

Wastewater from sanitary facilities such as sinks and toilets in each of the O&M buildings would be collected and sent to a sanitary waste septic system and leach field located on each of the five developed solar project lots. In consideration of the number of permanent employees, the soil conditions within the

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Source: Z-GLOBAL 2013.

County of Imperial
April 2014

FIGURE 2.0-6
POTENTIAL PROJECT HSAT SYSTEM TRACKER PLAN VIEW AND ELEVATIONS

Seville Solar Farm Complex
Administrative Draft EIR

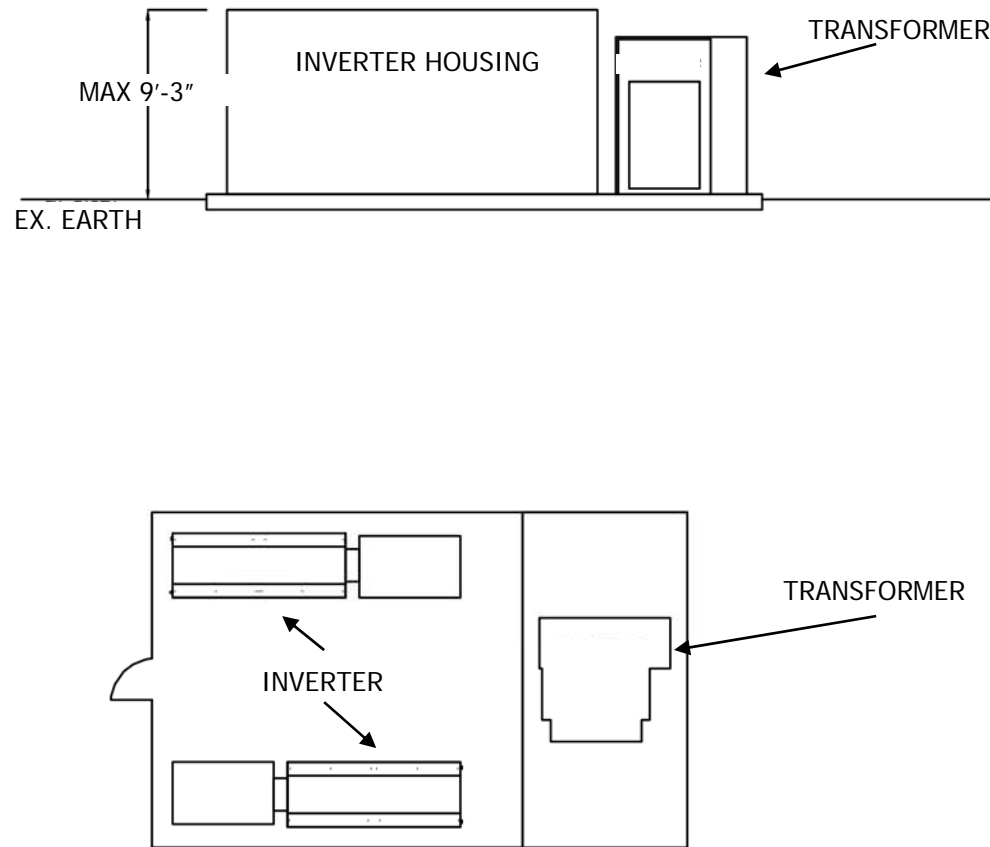


FIGURE 2.0-7
INVERTER/TRANSFORMER ELEVATION AND PLAN

Source: Z-GLOBAL 2013.

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