

# NILAND SOLAR ENERGY PROJECT

## Initial Study



Los Angeles Department of Water and Power  
Environmental Services  
111 North Hope Street, Room 1044  
Los Angeles, CA 90012

County of Imperial  
Planning & Development Services  
801 Main Street  
El Centro, CA 92243

With Technical Assistance By:

OptiSolar, Inc.  
31302 Huntwood Avenue  
Hayward, CA 94544

EDAW, Inc.  
2737 Campus Drive  
Irvine, CA 92612

OCTOBER 2008

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- Appendix A Site Plan, Drainage and Erosion Control Plans. OptiSolar, Inc. October 14, 2008.
- Appendix B Air Quality Report for the Niland Solar Energy Project. EDAW, Inc. October 2008.
- Appendix C1 Phase II and Phase III Burrowing Owl Survey Report for Debris Removal Activities within the Imperial Valley. LADWP and Aspen Environmental Group. October 2007.
- Appendix C2 Burrowing Owl Monitoring Report for Debris Removal Activities at Several Waste Sites and Other Areas within the Imperial Valley, California. LADWP and Aspen Environmental Group. March 2008.
- Appendix C3 Burrowing Owl Presence/Absence Surveys Summary Report. EDAW, Inc. October 2008.
- Appendix C4 Biological Resource Reconnaissance Report for the Niland Solar Energy Project. EDAW, Inc. October 2008.
- Appendix D1 Cultural and Architectural Resources Survey Report for the Niland Solar Energy Project. EDAW, Inc. October 2008.
- Appendix D2 Paleontological Literature Search for the Niland Solar Energy Project. Cogstone Resource Management Inc. August 2008.
- Appendix E Hydrology and Water Quality Report for the Niland Solar Energy Project. EDAW, Inc. October 2008.
- Appendix F Noise Report for the Niland Solar Energy Project. EDAW, Inc. September 2008.
- Appendix G Mitigation Monitoring and Reporting Program. EDAW, Inc. October 2008.

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# **SECTION 1.0 INTRODUCTION**

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## **1.1 OVERVIEW OF THE PROJECT**

The Los Angeles Department of Water and Power (LADWP) proposes to construct and operate a 68 MW photovoltaic (PV) power project to assist the agency in meeting its renewable energy portfolio standards. LADWP and the County of Imperial are the co-lead agencies for the project and have jointly prepared this Initial Study (IS) to evaluate potential environmental impacts resulting from project construction and operation. LADWP has enlisted a solar energy developer to assist with project design, development, construction, and initial operation.

## **1.2 SUMMARY OF PROJECT DESCRIPTION**

The proposed solar facilities would be located on approximately 970 acres of LADWP-owned land adjacent to and east of the community of Niland, California in Imperial County (see Figure 1, Regional Location Map). LADWP and the solar energy developer propose to construct a solar power project up to 68 MW using ground-mounted photovoltaic (PV) arrays. The PV panels would cover about 40 to 50 percent of the land area. Project preliminary design drawings, including proposed site plan, layout of solar arrays, drainage and erosion control plan and details are provided in Appendix A1 and A2 of this document. As shown in Appendix A2, the project's basic unit will be a 12 module (½ by one meter photovoltaic element) panel. These panels will be mounted on concrete ballast and generally organized into 500 kilowatt blocks covering about 5 acres each. Due to the project's multi-parcel configuration, the site will also employ smaller 250 kilowatt (kW) and 100 kW blocks. The project will employ pad-mounted transformers which will step the power from each block to 34.5 kV (thousand volts), this power will then be transmitted to an onsite substation, where it will then be stepped up in voltage to 161 kV, for interconnection with the local grid. It is anticipated that construction would begin within two years and that the project would be in production by late 2010. Section 2.0 includes a more detailed description of the proposed project.

## **1.3 CALIFORNIA ENVIRONMENTAL QUALITY ACT COMPLIANCE**

The California Environmental Quality Act (CEQA) applies to proposed projects initiated by, funded by, or requiring discretionary approvals from State or local government agencies. The proposed renewable energy project at Niland constitutes a project as defined by CEQA (California Public Resources Code §§21000 et seq.). LADWP and the County of Imperial (County) have agreed to act as co-lead agencies for compliance with CEQA. As a municipal utility, LADWP will fund, implement, and operate the proposed project. As an incorporated County government, County of Imperial will issue land use approvals and will issue other ministerial permits for the project. The proposed solar energy project is considered a "project" under CEQA.



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**Figure 1**  
**Regional Location**

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The Initial Study (IS) is prepared pursuant to the requirements of Section 15063 of the CEQA Guidelines and Public Resources Code Section 21000 *et seq.* According to Section 15063 of the CEQA Guidelines, the purposes of an Initial Study are to: (1) Provide the Lead Agency with information to use as the basis for deciding whether to prepare an Environmental Impact Report (EIR) or a Negative Declaration; (2) Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a Negative Declaration; or (3) Assist in the preparation of an EIR, if one is required.

#### **1.4 IS FORMAT AND CONTENT**

This Initial Study (IS) contains an introduction, a project description, a CEQA environmental checklist, and impacts analysis. The document is comprised of five sections and appendices.

The introduction provides an overview (Section 1) of the project and review requirements. The project description (Section 2) provides a detailed description of project objectives and components, and the CEQA environmental documentation process. The Initial Study Checklist (Section 3) presents the CEQA environmental checklist for all impact areas and mandatory findings of significance. The environment impact assessment (Section 4) presents the environmental analysis for each issue area identified on the environmental checklist form. When the proposed project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the proposed project could have a potentially significant impact on a resource, the issue area discussion provides a description of potential impacts, and appropriate mitigation measures that would reduce those impacts to a less than significant level. The list of preparers and references (Section 5) provides a list of key personnel involved and of reference materials used in the preparation of the IS. Some of the technical studies and data used to prepare this IS are included as appendices.

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## **SECTION 2.0 PROJECT DESCRIPTION**

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### **2.1 Project Power Production and Power Purchase Agreement**

LADWP is committed to a renewable energy policy that seeks to boost the amount of renewable energy that the utility provides its customers to 20 percent of retail electric sales by 2010. The long-term goal, as identified in the Mayor's Climate Action Plan, is to achieve 35 percent renewable energy production by 2020. These goals, which are part of the LADWP's Renewable Portfolio Standard (RPS), are aimed at expanding the City's supply of renewable resources, such as wind, solar, geothermal, biomass, and small hydroelectric power. The benefits of increasing renewable power supply include: reducing greenhouse gas emissions, improving air quality, providing a sustainable energy resource, providing a hedge against market fluctuations of fuel costs, and reducing dependence on foreign sources of fuel.

To meet the goals of the program, the renewables will be diversified by location and technology, and LADWP will consider both owning projects and entering into Power Purchase Agreements (PPA) with third-party developers.

The proposed project is planned to be constructed on approximately 970 acres of land owned by the LADWP located in Imperial County near the Salton Sea. The proposed project consists of solar panel arrays attached to grade level concrete foundation/ballasts.

Renewable energy from Imperial County would be transmitted via LADWP and Imperial Irrigation District (IID) transmission lines to regional transmission systems to deliver energy to Los Angeles. The proposed project's 68 MW would represent less than one percent of total LADWP annual energy sales.

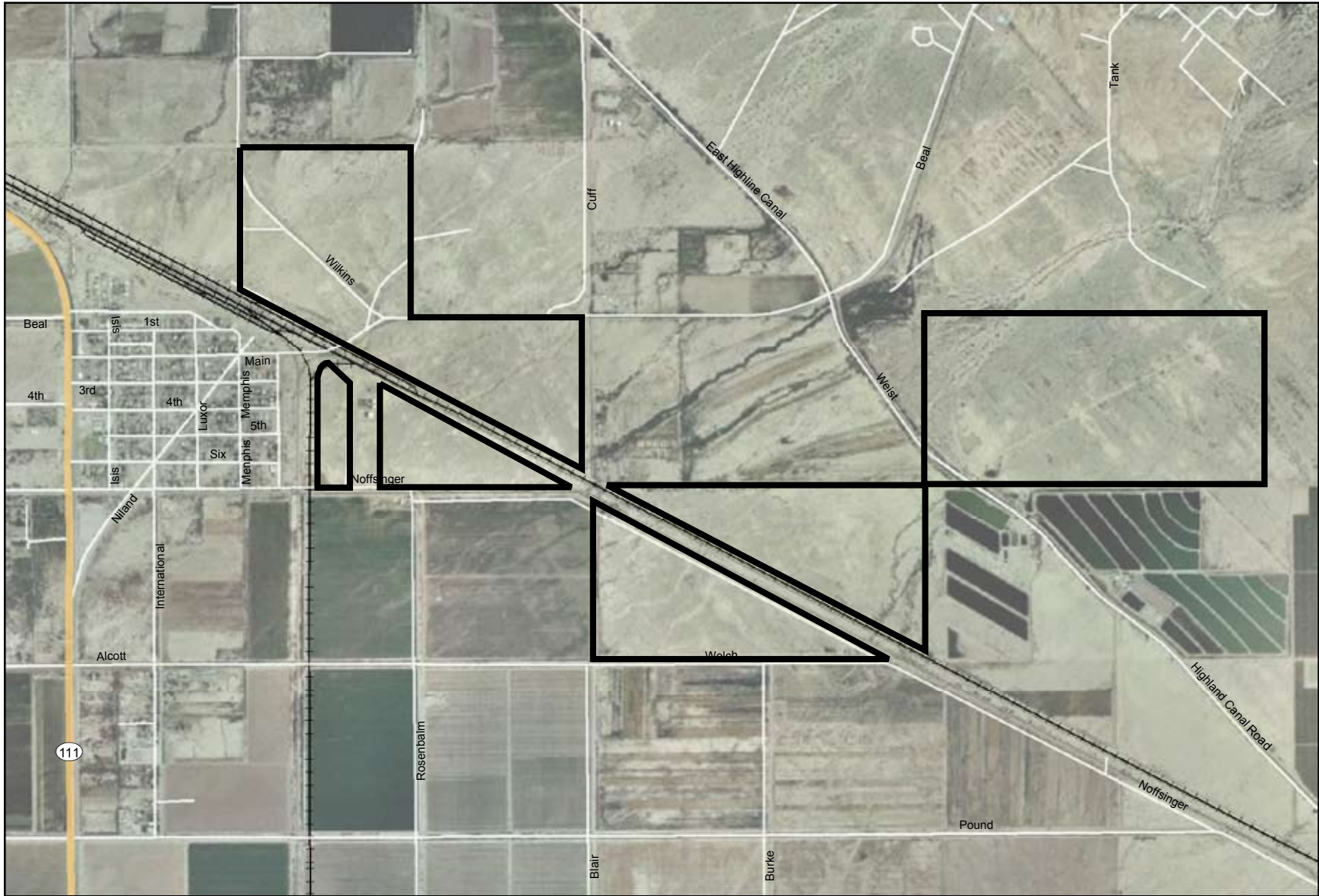
### **2.2 Project Location**

The Niland Solar Energy Project is located east and southeast of the town of Niland, CA in Imperial County. The project area is on the southeastern side of the Salton Sea. Figure 2, Local Vicinity Map, shows the vicinity of the project site.

### **2.3 General Project Site Description**

The proposed project would be constructed on LADWP-owned land in areas 4-1, 4-2, 4-3, 4-4, and 4-5, known as the Niland Group near the Salton Sea in Imperial County. The proposed photovoltaic panels allow for direct conversion of light (photo) into electricity (voltaic), as described below.

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Project Site 



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**Figure 2**  
**Local Vicinity**



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## 2.4 Project Background and Detailed Project Description

### Project Technology: Amorphous Silicon PV

The project will utilize amorphous silicon (a-Si) thin-film PV modules. Amorphous silicon PV modules utilize a proven technology that has successfully performed in utility-scale installation for over 20 years, and has been used in smaller applications since the mid-1980s. Some aspects of the a-Si modules usage are summarized below:

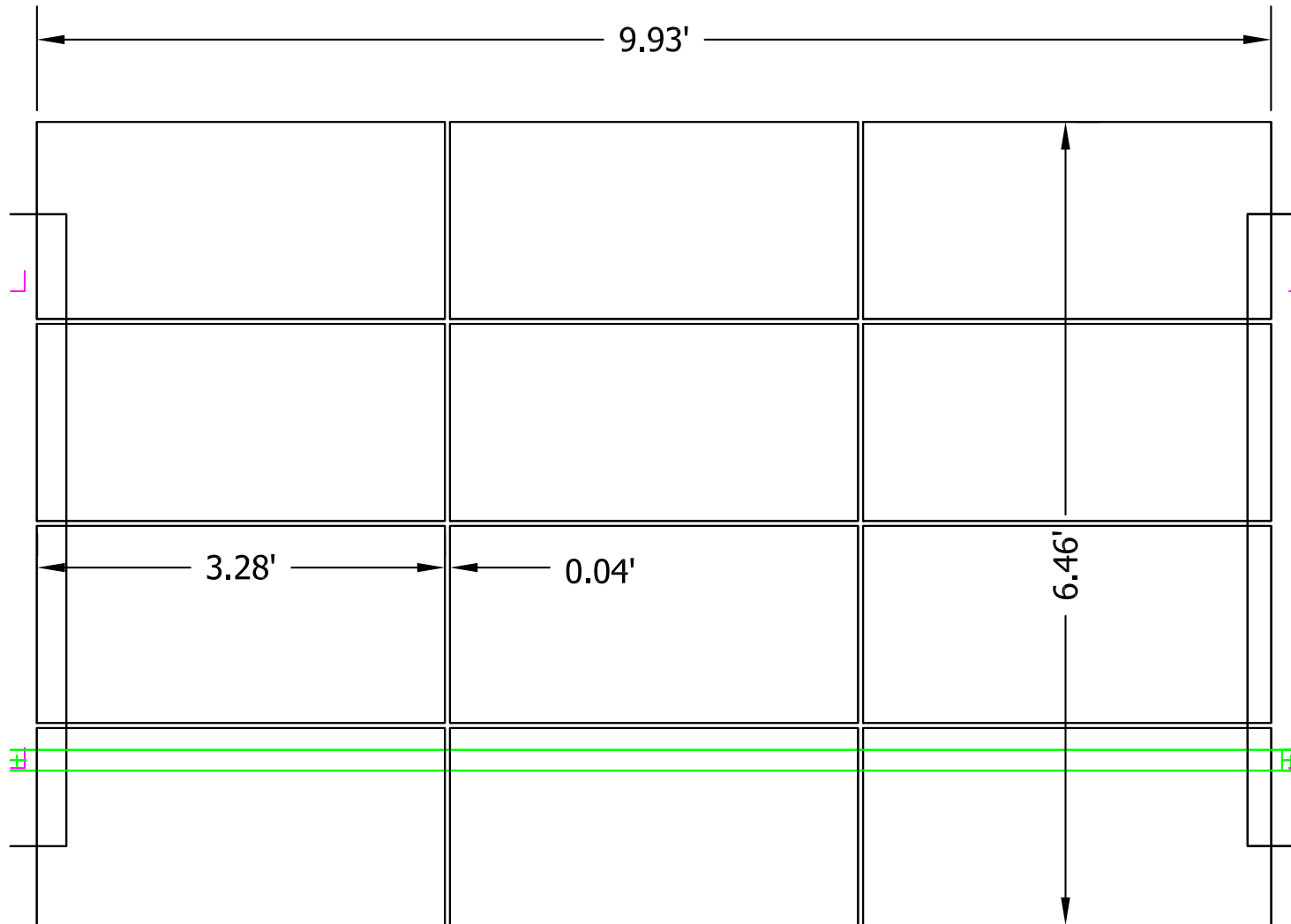
- a-Si modules use about 0.2 percent of the amount of silicon as compared to crystalline silicon modules, and are not impacted by the current or future shortages of crystalline silicon.
- The thin-film technology used to manufacture a-Si modules is well-suited for automated mass production.
- a-Si modules have the lowest cost per Watt of any commercial PV technology.
- The a-Si modules performance degrades from initial installation by about 10 percent in the first 6 months and then stabilizes at that production level. The assumed module output for all projects has the initial degradation built into the projected output, thus for all intents and purposes, any of the a-Si projects produce slightly more than their rated output during the first 6 months. Therefore, the modules generate above their rated capacity for the first six months of operation.
- a-Si modules perform better in peak summer conditions than crystalline silicon panels.
- a-Si modules have proven to have good durability, stability, and performance over 20 years of operation enabling long-term performance projections.

Solar cells are usually made from silicon, a very abundant mineral. Solar cells convert the energy in visible light into electricity. The electricity produced by the cells is direct current (DC), and must be converted into alternating current (AC) before it can be used in a home or business. A single cell produces a small amount of power, so cells are combined to form solar power modules.

### Plant Configuration

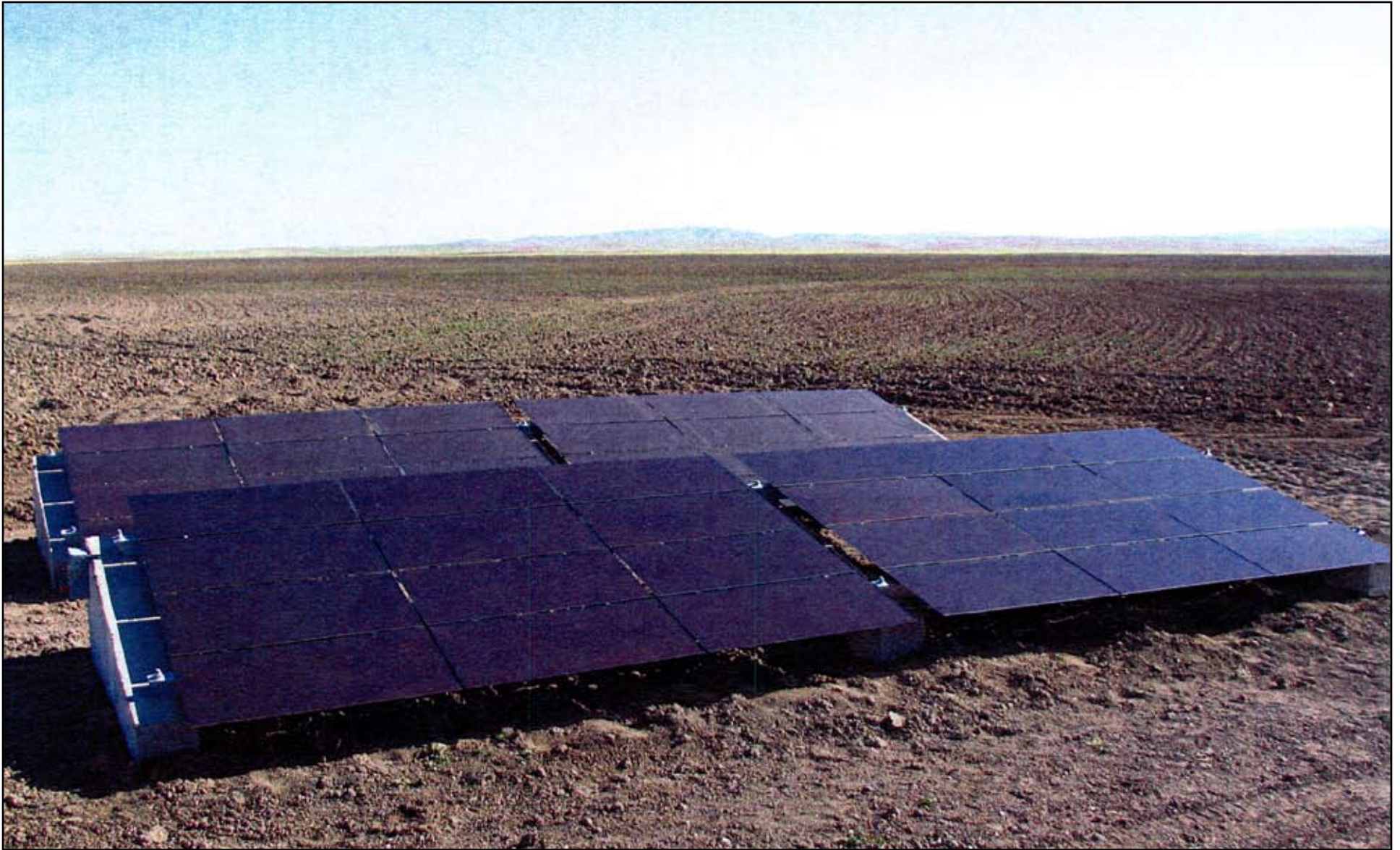
Solar power modules may produce from 30 to 150 watts, depending on size and arrangement. The modules, consisting of 3.2 mm tempered glass, are ½ meter by one meter in size; 12 modules are combined to produce a single panel (see Figure 3, Panel Drawing). The project will include PV panels on steel support structures that are anchored in at-grade concrete ballasts. The panels are very low profile, with the high end of the slightly tilted panel less than 3 feet above the ground. An example of the typical ground mounted array is provided in Figure 4. Central to each 5 acre, 500 kW block of panels will be on a pad-mounted transformer, which will step up the 600 volt panel output to 34.5 kV, and an inverter which will convert the DC generated sun power to AC (see Figure 5, Typical 500kW Block Configuration).

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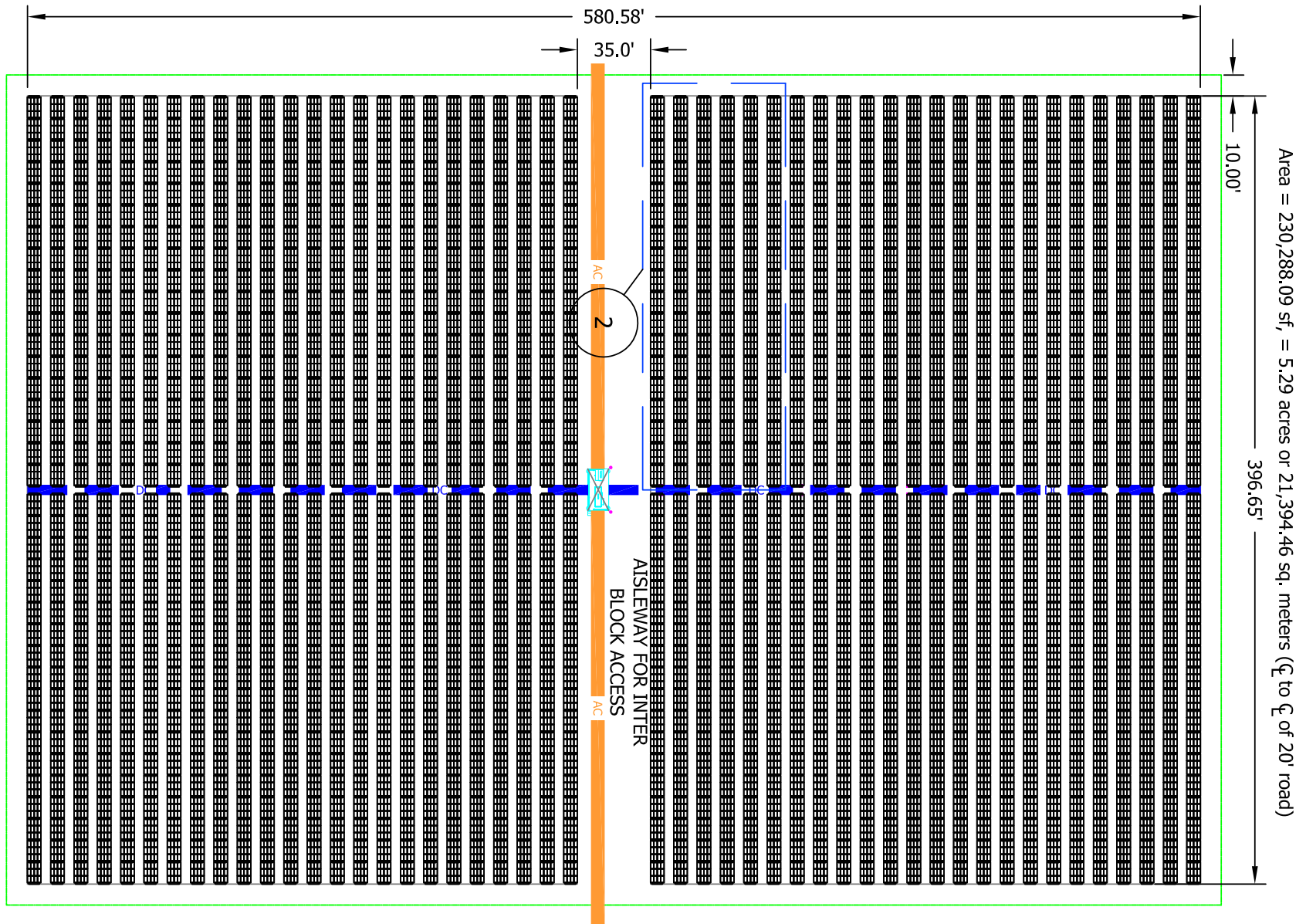
1 PANEL = 12 OPTISOLAR MODULES

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**Figure 4**  
**Ground-Mounted Solar Array Example**

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**Figure 5**  
**Typical 500kW Block Configuration**



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## **Detailed Site Parcel Descriptions (see Figure 6, Site Plan)**

### ***Area 4-1***

Area 4-1 is divided into Northwest and Southeast parcels. Wilkins Road intersects the Northwest parcel to the southeast and an existing transmission line intersects to the northeast. In addition to Wilkins Road, the northeast parcel is developed with East Beal Road, Union Pacific Railroad tracks, a Union Pacific Railroad communication and signal maintenance station, and two manmade reservoirs (dry). The southeast parcel, which is located north of Noffsinger Road, is developed with Union Pacific Railroad tracks.

### ***Area 4-2***

Area 4-2 is located between Area 4-1 Northwest parcel and Area 4-1 Southeast parcel with a triangular shaped boundary; East Main Street intersects the area. Area 4-2 is developed with Beal Road and an unimproved access road leading to the Union Pacific Railroad communication and signal maintenance station.

### ***Area 4-3***

Area 4-3 is a located south to Area 4-2 and west to Area 4-1 Southeast parcel. The parcel is bisected by a small tank farm, which it not in LADWP ownership. Otherwise the parcel is vacant.

### ***Area 4-4***

Area 4-4 is located southwest to Area 4-1 Southeast parcel. Noffsinger Road intersects the area. The area is surrounded with agricultural use to the west. Area 4-4 is developed with Union Pacific Railroad tracks and "R" Side Main Canal.

### ***Area 4-5***

Area 4-5 is located to the north of an existing filtration plant close to Area 4-4. Weist Road intersects the southwest corner of the area. Area 4-5 is developed with East Highline Canal, high-voltage power lines, and an undeveloped road.

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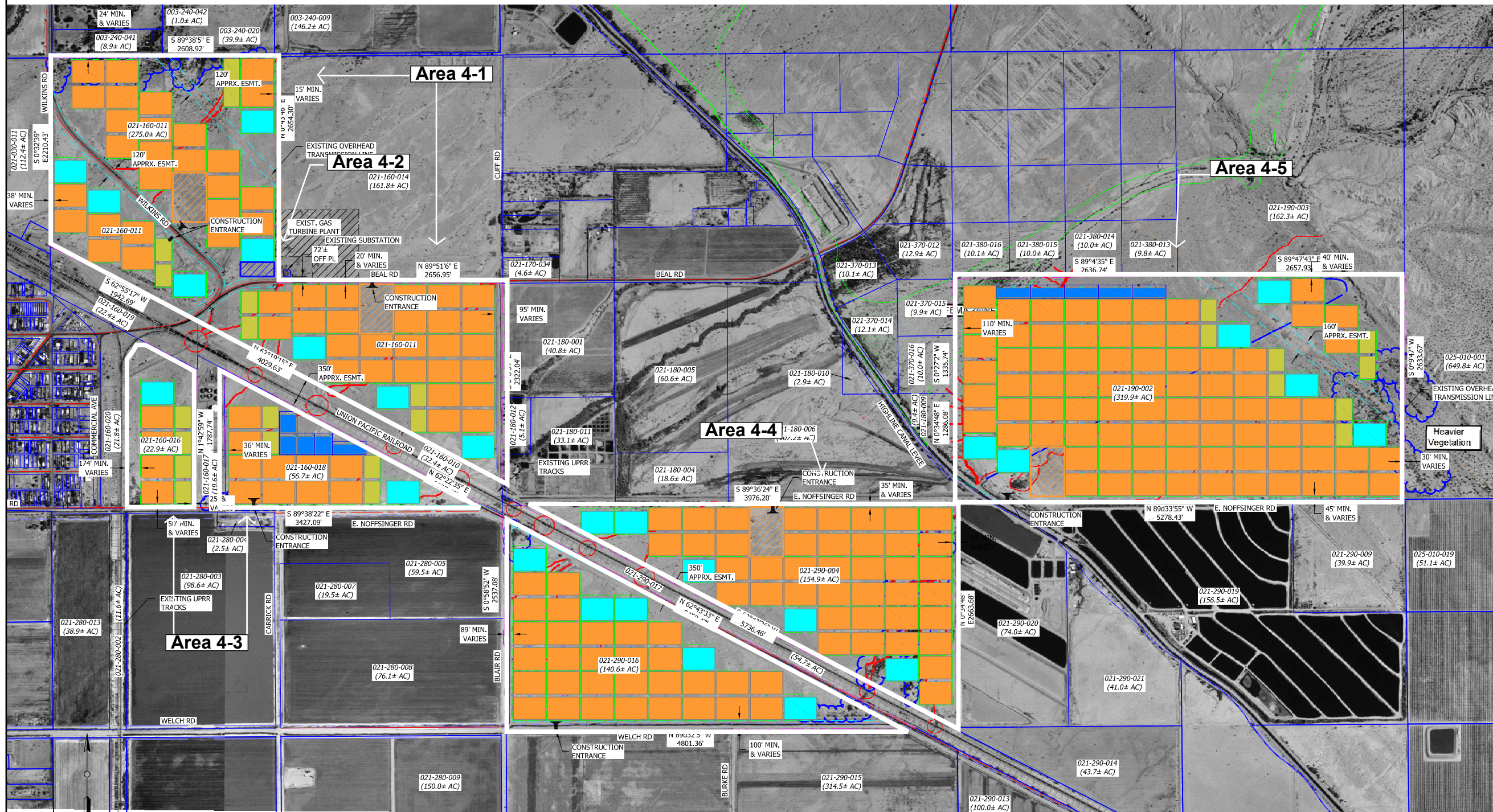
PROJECT ADDRESS:  
LADWP-OPTISOLAR SOLAR FARM  
NILAND  
UNINCORPORATED IMPERIAL COUNTY  
CALIFORNIA

OWNER/APPLICANT:  
LOS ANGELES DEPARTMENT OF WATER AND POWER  
111 NORTH HOPE STREET, ROOM 1044  
LOS ANGELES, CA 90012  
TEL. NO. (213) 367-0285

SITE STATISTICS:  
GROSS SITE AREA: 970± AC  
APNS: 021-160-011, 016, 018,  
021-290-004, 016 &  
021-190-002

LEGEND

- PROPERTY LINE
- - - R/W OR EASEMENT
- PARCELS
- - - ROADWAY CENTERLINE
- - - EXISTING OVERHEAD TRANSMISSION LINE
- ||||| EXISTING RAILROAD TRACKS
- ~ EXISTING VEGETATION
- EPHEMERAL WASH
- XXX-XXX-XXX ASSESSORS PARCEL NO.
- 500KW PV BLOCK
- 250KW PV BLOCK
- 250KW PV BLOCK
- 100KW PV BLOCK
- 100KW PV BLOCK
- FEMA FLOOD ZONE A
- CONSTRUCTION STAGING AREA
- OPERATION & MAINTENANCE FACILITY



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Figure 6  
Site Plan

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## **2.5 Project Components**

### **Transmission Interconnect**

LADWP will provide a 120-foot transmission line connecting the LADWP built substation to the existing Imperial Irrigation District (IID) substation.

### **Switching Station**

The switching station will be the interconnection station between the new 68 MW solar facility and IID's existing Niland switching station, rated at 161 kV voltage level, for the purpose of transmitting the solar generated renewable power via IID transmission system to the LADWP grid. The new, solar facility will consist of a generating facility and a 34.5kV collector station. This renewable energy will be transmitted to the interconnection switching station with step-up transformers and through a short transmission line to the IID's Niland Station across the street. Additional future power from renewable sources, such as solar and geothermal available in the same region, could be transmitted through this switching station.

The switching station will have a breaker and a half configuration with two step-up transformers, initially for two lines, with the future expansion capability for other renewable energy sources in the same region. The station will be located in the proximity of the proposed plant.

### **Power Delivery Point**

The delivery point will be on the high side of the 34.5kV/161kV transformer located in the project substation.

### **Net Output, Capacity Factor, Annual Production, In-Service Date**

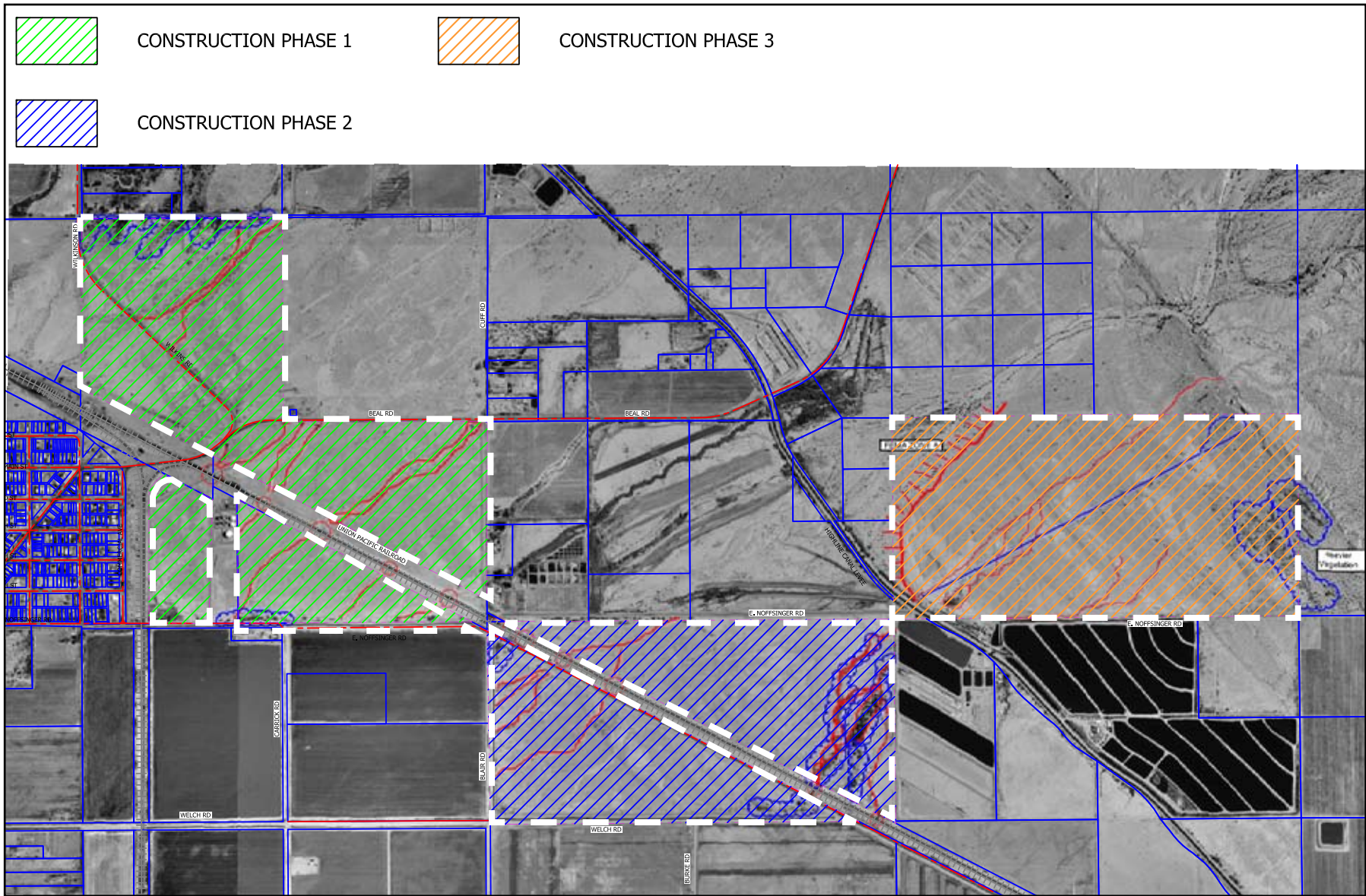
The project will have a maximum net output of 68 MW based on the stabilized rating of the PC modules. The output factor is initially 1,823 kWh<sub>AC</sub> per kWd<sub>DC</sub>, which equates to a capacity factor of about 24 percent.

The project's annual production is expected to be 160,000 MWh, declining at approximately 0.5 percent per year of operation.

The project will be phased in incremental blocks beginning at the time that the grid interconnection becomes available (see Figure 7, Construction Phasing Plan). The entire 68 MW project will be fully operational on or before December 31, 2010. This in-service date assumes that project PPA negotiations, permitting, financing, and the interconnection process occur in accordance with the project schedule.

## Phasing

The proposed project will be constructed in approximately 10 MW sections, with each 10 MW Phase taking approximately one month to construct. The proposed project will require considerable grading and drainage control facilities in some locations. This site preparation will be undertaken for each Phase, after which the crews installing the solar plant will enter the prepared site and install the balance of plant. Once site preparation is completed for Phase I, as illustrated in Figure 7, the site preparation crews will move on to Phase II, and so forth to completion. The solar farm installation crews will follow in succession. The PV blocks, as shown in Figure 5, require a relatively flat surface for installation. Based on site visits, topographic map evaluations, and preliminary geotechnical surveys, most of the project site can accommodate PV blocks with limited ground preparation, and primarily to deal with on-site drainage issues. It is expected that some grading on site will occur for the construction of all-weather roads, temporary construction staging areas, the project substation, and the project's Operation and Maintenance (O&M) facility. The total graded area in the project for roads inverter/transformers, substations, staging areas, and the O&M facility totals about three percent of the total site area. In addition, about six percent of the area is affected by trenching for the 34.5 kV medium voltage underground lines, and the underground DC lines within each block of panels, a total resulting from the approximately ten-foot wide area of impact. It will be necessary to create some graded all-weather roads in selected locations to bring equipment and materials from the staging areas to the construction areas, and for long term project operation and maintenance. These roads will be heavily used during construction and rarely used during operation. Trenching machines will be used to bury electrical cables between the inverter and transformer locations and the substation. Most trenching will take place within the proposed aisle ways between the rows of panels. The trenched areas will be filled once the cables are buried. The trenches will be between two and four feet in width, and will disturb an area approximately ten feet in width. The project site will include four separate staging areas of approximately 10 acres each, which will be graded and fenced for security. These staging areas will be utilized in phases throughout the project construction period, and will then be decommissioned and replaced with solar panels as the construction of each phase is completed. The project will maintain at least two of the staging areas with duplicate concrete batch plants throughout the construction process.



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**Figure 7**  
**Construction Phasing Plan**



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## 2.6 Construction Procedures and Schedule

### Design Factors to be Considered

- a. Grading and Land Disturbance: The PV modules require a relatively flat surface for installation. While the overall project site could be characterized as relatively flat and gently sloping to the southwest, several drainage features and locally uneven landforms are common throughout. Considerable grading, fill, and erosion control cultivation will be required to accommodate the placement of concrete ballasts that will hold the solar arrays, access roads, and drainage features. The solar energy developer has prepared detailed grading, drainage, and erosion control plans intended to reduce the amount of ground disturbance and related environmental impacts. Some of these features are as follows:

Drainage Plan – Project site drainage is primarily toward the southwest via sheetflow and minor drainage depressions. One 100-year flood plain (Federal Flood Zone A) crosses the eastern portion of Area 4-5 (which is northeast of the East Highline Canal). No other drainages are formally designated as either ephemeral or perennial on the applicable USGS 7.5 minute quads. The East Highline Canal intercepts most drainage from areas east of the canal. The grading plan shows that most drainage depressions on the property would be filled in to provide level surface for solar arrays. Sheetflow drainage across the project parcels would be directed to a series of drainage control devices and detention basins (depicted on Drawings C-200 through C-213 in Appendix A, Site Plan, Drainage and Erosion Control Plans) where collected flows would either percolate or be released at a controlled velocity. Additional culverts would be provided to direct flows through road embankments or other blockages. Flows through the Union Pacific Railroad right-of-way would be controlled and maintained at existing culverts locations. Overall, the drainage plan is designed to maintain similar rates of surface runoff from the site as currently exist.

Erosion Control – Control of erosion during construction would be provided via a series of measures detailed on Drawing C-500 and C-501 in Appendix A, Site Plan, Drainage and Erosion Control Plan. A variety of measures including use of silt fencing, straw bale and temporary catch basin, inlet filters, and truck tire muck shakers, will be installed to reduce the adverse effects of erosion and sedimentation during construction. In addition, a Stormwater Pollution Prevention Plan incorporating Best Management Practices for erosion control will be prepared and approved prior to the start of construction.

Trenching and Cabling - Trenching machines will be used to bury electrical cables in conduit between inverters, transformers, and the substation. Most trenching will take place within the proposed roads, or corridors between the chains of panels as a way to reduce disturbance. The trenched areas will be filled once the cables are buried.

Onsite Roads and Access - It will be necessary to create graded roadways in selected locations to bring equipment and materials from the staging areas to the construction areas. These roads will be heavily used during construction and rarely used during operation. Temporary construction roads will be graveled and compacted. The solar energy developer intends to use separation fabrics to facilitate removal and recovery of granular materials. It will be necessary to maintain approximately 5-foot wide corridors between panel chains for access to the PV blocks and to control vegetation growth by periodic mowing.

Staging and Temporary Use Areas - Additionally, the project site will include two staging areas of approximately 30 acres each. These areas will be used for equipment storage and would include typical locations where concrete batching would occur. An O&M trailer or building for parts storage, security and possible project monitoring will be a permanent feature. Project security measures include a perimeter chain link fence.

- b. Orientation, Spacing and Color: The solar modules are dark colored as shown in Figure 4, Ground-Mounted Solar Array Example, and will be oriented to face the south, or between south and west. The modules will be mounted at an angle from horizontal of approximately 15 degrees. The rows of modules, known as chains, will be separated from each other by a space that will prevent the modules from shading each other and allow for access between the chains. This spacing distance will depend upon the tilt angle of the modules and will result in a ground coverage ratio in the PV blocks of between 40 and 50 percent.
- c. Suitability of Soils and Geology: A reconnaissance level geotechnical investigation was completed and it was concluded that the project site is generally feasible from a geotechnical perspective. A final geotechnical investigation and soils assessment will be prepared in support of final foundation design for the inverters and transformers. In addition, the solar panels will be bolted to the concrete ballast that will lay at-grade. The ballast design may vary depending upon soil conditions.

### **Construction of the Facilities**

- a. Description of Construction Activities: The solar energy developer anticipates construction would begin with clearing and fencing of the staging areas. The staging area will include air-conditioned construction offices, a first aid station and other buildings, worker parking, truck loading and unloading facilities, and an area for assembling the support structures. The sewage needs during the construction process would be handled by the Niland Sanitation District and, if necessary, a septic system. Golden State Water Company (Golden State) would provide the water needs during the construction process. If necessary, LADWP would apply for a permit under Imperial County's Groundwater Ordinance (Title 9 Division 2) to extract groundwater from Imperial County. The solar energy developer would then survey, clear and grade road corridors to bring equipment, materials, and workers to the areas under construction. The corridors will later incorporate buried electrical lines of 34.5 kV or other medium voltage which will be installed with a trenching machine. The medium voltage lines will serve as gathering lines that bring power from transformers in the PV blocks to the project substation.
- b. Construction of the PV blocks is expected to take place at a pace between 10 and 25 MW per month, which will occupy between 25 and 160 acres at any given time. Prior to construction of the PV blocks, locations for the inverters, transformers, and buried electrical lines would be surveyed. Buried electrical lines would then be installed using trenching machines. After this work is complete, and depending on the level of ground preparation chosen, the surveyors, vegetation cutters, graders and trenchers would move on to the next parcel block.
- c. Solar support structures will arrive in containers on tractor-trailers at the staging area, where the containers will be transferred by crane onto smaller vehicles and brought to the construction location. Support structures will be put in place manually and secured by concrete ballasts resting on grade. Once the support structures are in place, pre-assembled

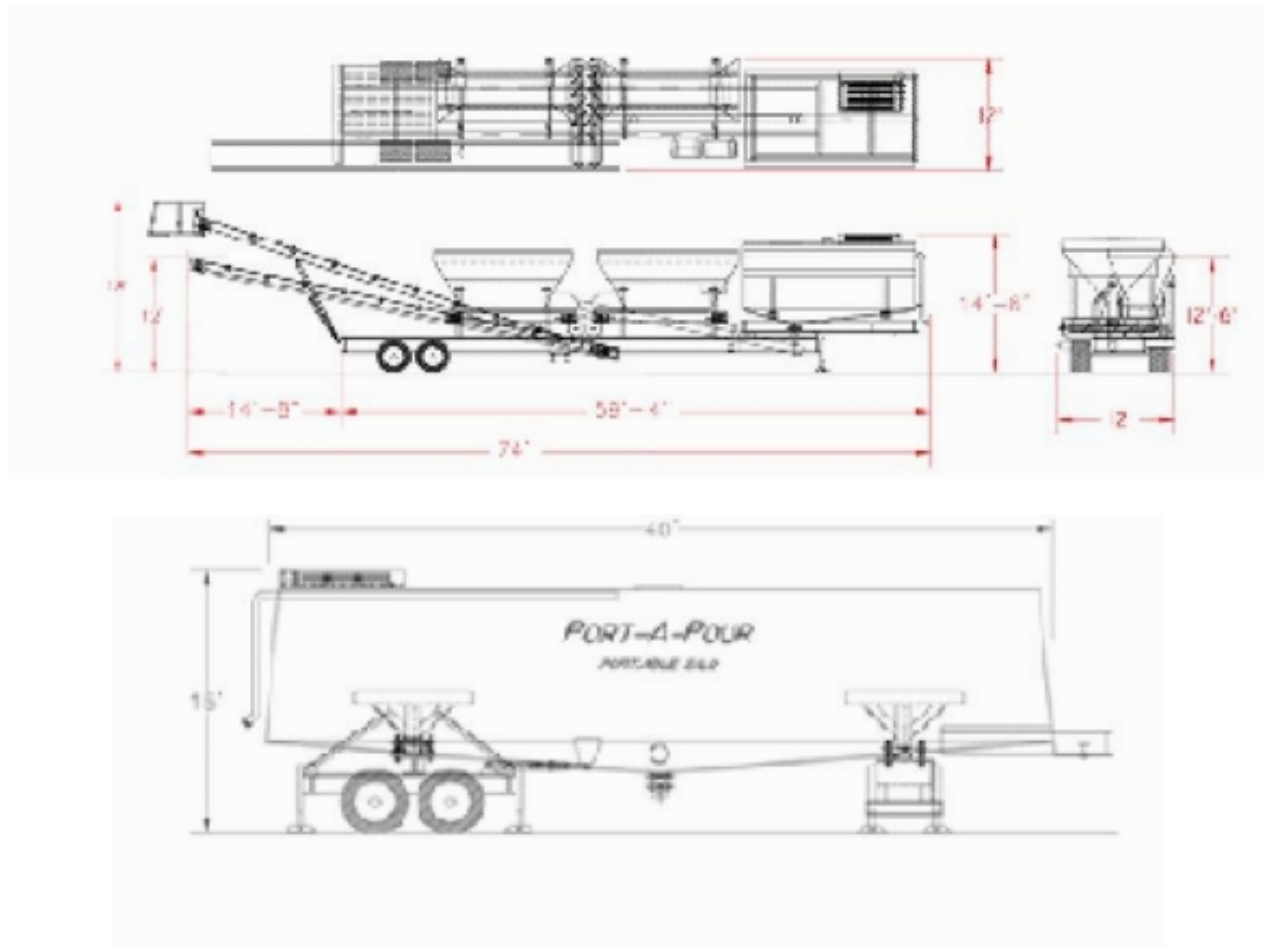
groups of glass PV modules, called panels, will be attached to the support frame. The pre-assembled groups of elements will be already wired together into strings via connectors on the back of the modules. A chain of panels then will be connected to a combiner box delivering power to the local inverter. Invertors and transformers will be brought in by low impact trucks and installed at predetermined central locations and connected to incoming lines from the combiner boxes.

- d. Workforce: The construction workforce is estimated to be 100-150 workers at its peak.
- e. Fencing: Subject to approval from relevant regulatory bodies and legal and liability review, the solar energy developer proposes that the property be fenced with six-foot high chain link fence topped with a two strand electrical component.
- f. Flagging and Staking: Road corridors, buried electrical lines, PV block locations and the locations of other facilities may be flagged and staked in order to guide construction activities.
- g. Safety Requirements: Safety is of primary concern to the solar energy developer. The project will follow all OSHA and CalOSHA requirements for its construction and operating activities. A safety and compliance director will be assigned to the project to ensure that safety is given high priority.
- h. Concrete Volume and Specifications: Concrete will be required for solar panel frame ballasts or foundations. An onsite concrete batch plant will be set up to produce these foundation blocks. Concrete from this plant will also service building or structure footings/foundations and pads for inverters, transformers, and substation equipment. Specifications for the batch plant and any associated impacts will be provided in Section 3.0 of this document. The batch plant layout is illustrated in Figure 8, Portable Batch Plant. Final concrete specifications will be determined during project engineering but any related production of the ballast will meet all applicable building codes.

### **Stabilization and Rehabilitation**

- a. Soil Replacement and Stabilization: Surface runoff from small drainages will be diverted to the appropriate swales or drainages to stabilize soil in conformance with California Water Regional Quality Control Board (Colorado River Basin Region). As noted previously, the drainage plan is designed to control runoff volumes and velocities that would reduce the potential for erosion and sedimentation. Features to be incorporated into the permanent drainage plan for the project include appropriately sized culverts, detention basins, and swales. Fugitive dust will be controlled in accordance with a plan as required by the Imperial County Air Pollution Control District.
- b. Limiting Access to Property: The proposed project site will be fenced to help prevent access by the public. Gates will be installed at the roads entering the property. Limiting access to the property will be necessary both to ensure the safety of the public and to protect the equipment from vandalism.

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N.T.S.

**Figure 8**  
**Portable Batch Plant**

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## 2.7 Operation and Maintenance

The project will be managed to maximize output every hour of the year, with particular emphasis on ensuring that full capacity is available during peak load periods. The PV arrays be routinely analyzed and optimized by experienced engineers and technicians.

As the project's PV arrays produce electricity with no moving parts, maintenance requirements will be very minimal. Any required planned maintenance will be scheduled to avoid peak load periods, and unplanned maintenance will typically be responded to within hours of an event. Any normal annual preventive maintenance for the project, such as PV array washing, will be scheduled during the season and the time of day with the lowest expected solar resource in order to minimize impact on the performance of the plant.

Preventive maintenance kits and critical spares are typically stored on-site, and other components will usually be readily available from the solar energy developer's facility.

- a. All-Weather Roads: With the exceptions indicated in Appendix A and the staging areas, which will contain an office building, storage area, and a gravel parking lot, the property will not require new all-weather roads.
- b. Safety: To ensure the safety of the public, the property will be fenced, and signs will be posted. Access to the site will be limited.
- c. Industrial Wastes and Toxic Substances: The project will not generate industrial wastes or toxic substances during operation.
- d. Inspection and Maintenance Work Schedules: The project may have up to five maintenance workers located on site. Typical work schedules are expected to be during daylight hours only, with the exception of 24-hour on-site security.
- e. Washing of PV Panels: In the event that the PV panels require periodic washing, the water supply for this purpose will be provided via well and/or via onsite cistern collection system. It is anticipated that washing will be required several times per year and the annual water demand for this need will be approximately between 0.45 acres feet per year (AFY) to 4.5 AFY.
- f. Fire Control: There is a negligible potential for wildfire in the project area. Vegetation is sparse with little potential for vegetative fuel buildup. Similarly the PV panels and ancillary equipment represents a negligible increase in fire potential. However, the solar energy developer will have a fire prevention plan approved per applicable County regulations.
- g. Inspections: During construction, the site will be under continuing surveillance by the supervising construction staff. Special inspections will be conducted in conformance with the environmental protection measures adopted by the project. During normal operations, the facilities will be subject to continuing inspections by operations and maintenance staff.
- h. Contingency Planning: Considerable engineering design will be completed for the project anticipating foreseeable problems that could occur prior to beginning site construction. The PV blocks, panels, and facility support building will be built over a 6 month period. Should unforeseen problems occur that require amending the proposed construction or operational



methods or facilities, the solar energy developer will identify these problems as early as practical and work with LADWP and Imperial County and responsible agencies to implement any necessary project changes in a manner acceptable to those agencies.

## **2.8 Required Permits and Approvals**

Several discretionary and non-discretionary approvals and/or permits would be required to implement the proposed project. The environmental documentation for the project would be used to facilitate compliance with federal and state laws and the granting of permits by various state and local agencies having jurisdiction over one or more aspects of the project. These approvals and permits may include but may not be limited to the following.

### ***City of Los Angeles, Department of Water and Power***

- Certification by the Board of Commissioners that the document was prepared in accordance with CEQA and other applicable codes and guidelines (discretionary)
- Approval by the Board of Commissioners of the proposed project (discretionary)

### ***County of Imperial, Planning & Development Services Department (ICPDSD)***

- Conditional Use Permit (discretionary; County Planning Commission)
- CEQA Certification (County Planning Commission)
- Groundwater Ordinance Permit (discretionary: County Planning Commission)

### ***County of Imperial, Public Works Department, Engineering Division***

- Excavation and Class 'A' Permanent Resurfacing Permit
- Grading Permits
- Haul Route permits
- Road Encroachment Permits
- Cable Crossing Easements/Permits

### ***County of Imperial, Building Division***

- Building
- Electrical
- Mechanical
- Fire Sprinkler
- Grading
- Plumbing
- Demolition

**County of Imperial, Department of Public Works, Flood Control**

- Permit for Alteration of Storm Facilities

**Imperial Irrigation District**

- Transmission System Connection
- Cable Crossing and Road Easements

**Golden State Water Company**

- Water Supply

**State of California, Department of Fish and Game**

- Consultations, actions, and permits under Sections 1602 and/or 2081 of the Fish and Game Code relative to impacts to waters of the state and protection of rare, threatened, and endangered species or other sensitive species protected by law (discretionary)

**California Regional Water Quality Control Board – Colorado Region**

- NPDES Permit for Construction Storm Water: Applicant is required to submit a Notice of Intent (NOI) to the RWQCB, Colorado River Basin Region, for coverage under the General Construction Permit.
- Storm Water Pollution Prevention Plan (SWPPP): The SWPPP is a standard requirement for development under the General Construction Permit. The SWPPP shall be developed and implemented throughout the entire project. The SWPPP shall contain the elements required by the General Construction Permit and illustrate the protective measures that would be taken during construction to control storm water runoff and erosion and siltation on site. The SWPPP is to remain on site throughout construction and be available for inspection if requested by the RWQCB or County.

**U.S. Army Corps of Engineers**

- Section 404 Permit, Clean Water Act (discretionary): The contractor should consult with the USACE regarding this project. A jurisdictional determination in consideration of the aquatic features for the East Highline Canal is required to determine if a Nationwide 404 Permit is necessary. If it is determined a Nationwide 404 Permit is required by the USACE, the requirement to obtain a 401 Permit from the RWQCB is triggered. If it is determined a Nationwide 404 Permit is not necessary, the contractor should seek a letter from the USACE stated such prior to construction.

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## SECTION 3.0 INITIAL STUDY FORM

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The following discussion of potential environmental effects was completed in accordance with Section 15063(d)(3) of the *CEQA Guidelines* (2006) to determine if the project may have a significant effect on the environment.

**Project Title:**

Niland Solar Energy Project

**Lead Agency Name and Address:**

Los Angeles Department of Water and Power  
Environmental Services  
111 North Hope Street, Room 1044  
Los Angeles, CA 90012

County of Imperial  
Planning & Development Services Department  
801 Main Street  
El Centro, CA 92243

**Contact Person and Phone Number:**

Erica Blyther  
Environmental Specialist  
Los Angeles Department of Water and Power  
(213) 367-2325

Richard Cabanilla  
Planner IV  
County of Imperial  
(760) 482-4236

**Project Sponsor's Name and Address:**

Los Angeles Department of Water and Power  
Solar Energy Resources Development  
111 North Hope Street  
Los Angeles, CA 90012

**Project Location:**

The Niland Solar Energy Project is located east and southeast of the town of Niland, California in Imperial County. The project area is on the south eastern side of the Salton Sea

### **General Plan Designation (County of Imperial General Plan):**

Agriculture: This category is intended to preserve lands for agricultural production and related industries.

Medium Agriculture: Includes all agricultural crop production.

Light Industry: Refers to industrial plants, and storage, distribution, and administrative facilities.

Urban Area: Is characterized by a full level of urban services.

### **Zoning Areas (County of Imperial Land Use Ordinance):**

M-1 Light Industrial Area: Designates areas for wholesale commercial, storage, trucking, assembly type manufacturing and other similar light industrial uses. Solar Energy use is permitted in the M-1 zone (Land Use Ordinance Section 90515.01).

A-2 General Agricultural Area: Designates areas that are suitable and intended primarily for agricultural uses (limited) and agricultural related compatible uses (Land Use Ordinance Section 90508.00). Solar Energy Electrical Generator use is permitted with conditional use permit (Land Use Ordinance Section 90508.02).

U Urban Areas: Land classified in the "U" zone shall also be classified in another zone. The "U" zone is therefore intended to be an Overlay zone to designate areas that are within an Urban area of an incorporated city or an Urban area as designated on the County's General Plan (Land Use Ordinance Section 90501.08).

### **Niland Urban Area Plan (NUAP) (County of Imperial General Plan):**

Areas 4-1, 4-2, and 4-3 of the proposed project site are located within the Niland Urban Area and are designated as Light Industry and Medium Agriculture.

### **Description of Project:**

The proposed solar facilities would be located on approximately 970 acres of LADWP-owned land adjacent to and east of the community of Niland, California in Imperial County. LADWP and the solar energy developer propose to construct a solar power project up to 68 MW using ground-mounted photovoltaic (PV) arrays covering about 40 to 50 percent of the land area. The project would include on-site roads, collectors system, substation, and a short transmission line connecting to an Imperial Irrigation District (IID) regional transmission system.

### **Surrounding Land Uses and Setting:**

The proposed solar project is located in an area characterized by a mix of rural residential, agriculture, and open desert uses. The town of Niland is located adjacent to and on the west of project sites. The project site is within the general military training boundary, as well.

**Agencies That May Have an Interest in the Proposed Project:**

Responsible/Trustee Agencies:

- California Department of Fish and Game
- State Water Resources Control Board
- Regional Water Quality Control Board, Colorado River Region
- County of Imperial, Planning and Public Works Departments
- Imperial County Air Pollution Control District

Reviewing Agencies:

- U.S. Army Corps of Engineers
- County of Imperial Fire Department
- Imperial Irrigation District

## ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the Environmental Impacts discussion in Section 4.

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Aesthetics                       | <input type="checkbox"/> Agriculture Resources              | <input type="checkbox"/> Air Quality            |
| <input type="checkbox"/> Biological Resources             | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Geology/Soils          |
| <input type="checkbox"/> Hazards &<br>Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality            | <input type="checkbox"/> Land Use Planning      |
| <input type="checkbox"/> Mineral Resources                | <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population/Housing     |
| <input type="checkbox"/> Public Services                  | <input type="checkbox"/> Recreation                         | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems        | <input type="checkbox"/> Mandatory Findings of Significance |   |

## DETERMINATION

On the basis of this initial evaluation:

- I/We find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I/We find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I/We find that the proposed project MAY have a significant effect on the environment, and an environmental impact report is required.
- I/We find that the proposed project may have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I/We find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

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Signature \_\_\_\_\_ Date \_\_\_\_\_  
Charles Holloway, Manager of Environmental Assessment  
Los Angeles Department of Water and Power

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Signature \_\_\_\_\_ Date \_\_\_\_\_  
Jurg Heuberger, AICP, CEP  
EECCHAIRMAN/Planning Director  
County of Imperial

	Potentially Significant Impact	Less than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I. AESTHETICS.</b> Would the project:				
a. Have a substantial adverse effect on a scenic vista?				X
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c. Substantially degrade the existing visual character or quality of the site and its surroundings?				X
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?		X		
<b>II. AGRICULTURE RESOURCES.</b> In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b. Conflict with existing zoning for agricultural use, or a Williamson act contract?				X
c. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X
<b>III. AIR QUALITY.</b> Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?			X	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	
d. Expose sensitive receptors to substantial pollutant concentrations?			X	
e. Create objectionable odors affecting a substantial number of people?				X
<b>IV. BIOLOGICAL RESOURCES.</b> Would the project:				



	Potentially Significant Impact	Less than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		X		
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X
<b>V. CULTURAL RESOURCES.</b> Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?		X		
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?		X		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
d. Disturb any human remains, including those interred outside of formal cemeteries?		X		
<b>VI. GEOLOGY AND SOILS.</b> Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	

	Potentially Significant Impact	Less than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) Strong seismic ground shaking?		X		
iii) Seismic-related ground failure, including liquefaction?		X		
iv) Landslides?				X
b. Result in substantial soil erosion, loss of topsoil, or changes in topography or unstable soil conditions from excavation, grading, or fill?			X	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		X		
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?		X		
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
<b>VII. HAZARDS AND HAZARDOUS MATERIALS:</b> Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X

	Potentially Significant Impact	Less than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			X	
<b>VII. HYDROLOGY AND WATER QUALITY.</b> Would the project:				
a. Violate any water quality standards or waste discharge requirements?			X	
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?		X		
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?		X		
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
f. Otherwise substantially degrade water quality?			X	
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?				X
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j. Inundation by seiche, tsunami, or mudflow?				X
<b>IX. LAND USE AND PLANNING.</b> Would the project:				
a. Physically divide an established community?			X	

	Potentially Significant Impact	Less than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
<b>X. MINERAL RESOURCES.</b> Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X
<b>XI. NOISE.</b> Would the project result in:				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X
<b>XII. POPULATION AND HOUSING.</b> Would the project:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

	Potentially Significant Impact	Less than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIII. PUBLIC SERVICES.</b>				
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?				X
ii) Police protection?				X
iii) Schools?				X
iv) Parks?				X
v) Other public facilities?				X
<b>XIV. RECREATION.</b>				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?				X
<b>XV. TRANSPORTATION/TRAFFIC.</b> Would the project:				
a. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			X	
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?			X	
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e. Result in inadequate emergency access?				X
f. Result in inadequate parking capacity?				X
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X
<b>XVI. UTILITIES AND SERVICE SYSTEMS.</b> Would the project:				

	Potentially Significant Impact	Less than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g. Comply with federal, state, and local statutes and regulations related to solid waste?		X		
<b>XVII. MANDATORY FINDINGS OF SIGNIFICANCE.</b>				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b. Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.			X	
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?		X		

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## SECTION 4.0 ENVIRONMENTAL IMPACT ASSESSMENT

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### INTRODUCTION

The following discussion addresses impacts to various environmental resources, per the IS checklist questions contained in Appendix G of the *CEQA Guidelines*.

#### I. AESTHETICS

##### Would the project:

##### a) Have a substantial adverse effect on a scenic vista?

**No Impact.** The proposed project would not have an adverse effect on scenic vistas. Scenic views or vistas are the panoramic public views of natural features, including views of the ocean, striking or unusual natural terrain, or unique urban or historic features. The proposed solar project is located in an area characterized by a mix of rural residential, agriculture, and open desert uses. The town of Niland is located adjacent to and on the west of the project sites. The community and neighborhood residential and commercial uses border the project site parcels southwest of the proposed project site. Agricultural field crops occur on several parcels in the vicinity of the project site. A Union Pacific rail line bisects several of the project parcels towards the southern portion of the project area. The East Highland Canal Levee bisects Area 4-5 and Area 4-4 (see Figure 1, Site Plan). A 161 kV transmission line connects to a substation on the north east side of Area 4-1 (southeast). There are no observed scenic vistas or resources in proximity.

The project could be visible to facing residential neighborhoods located west of the proposed project area, along Noffsinger Road. However, construction of the proposed PV panels are very low profile, with the high end of the slightly tilted panel, less than 3 feet above the ground, mounted at an angle from horizontal of approximately 15 degrees, and will be oriented to face the south, or between south and west. The proposed project will also include padmount transformers for each 5-acre, 500 kW block of panels, and an inverter, which will convert the DC generated sunpower to AC. An Operations and Maintenance trailer or building for parts storage, security, and possible project monitoring will be a permanent feature. Another proposed project element includes construction of a six-foot high chain link fence topped with a two strand electrical component.

Although the project involves constructing new structures, except for the short transmission line, they will be within the existing LADWP property. Construction of the proposed project and ancillary structures would not obstruct views. The views from vantage points adjacent to the site would remain similar to existing conditions. No impacts would occur.



**b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

**No Impact.** Implementation of the proposed project would not damage scenic resources within a state scenic highway. The proposed project is located entirely on approximately 970 acres of undeveloped LADWP-owned land adjacent to and east of the community of Niland, California. Surrounding land uses include a mix of rural residential, agriculture, and open desert uses. Neighborhood residential and commercial uses are located on the southwest border of the proposed project site. Agricultural field crops occur on several parcels in the vicinity of the project site. A Union Pacific rail line bisects several of the project parcels towards the southern portion of the project area. The East Highline Canal Levee bisects Area 4-5 and Area 4-4. Additionally, the proposed project does not contain any designated or eligible state scenic highway.<sup>1</sup> No impacts would occur.

**c) Substantially degrade the existing visual character or quality of the site and its surroundings?**

**No Impact.** Implementation of the proposed project would not degrade the existing visual character or quality of the site and its surroundings. The proposed project includes construction of PV panels located on approximately 970 acres of LADWP-owned land. Views of the project site may be available to surrounding residential neighborhoods located southwest of the proposed project site west of Union Pacific railroad tracks, adjacent to Area 4-1, 4-2, and 4-3. However, the location of the proposed PV panels will be within the existing LADWP property. As previously stated, construction would be very low profile, with the high end of the slightly tilted panel, less than 3 feet above the ground, mounted at an angle from horizontal of approximately 15 degrees, and will be oriented to face the south, or between south and west. For security purposes, a proposed perimeter six-foot high chain link fence, topped with a two strand electrical component, will be constructed around the perimeter of the project site. The views of the project site would be similar in character and quality as the current use.

Residential and commercial neighborhoods are located southwest of the proposed project site west of Union Pacific railroad tracks, adjacent to Area 4-1, 4-2, and 4-3. Figure 9, Viewshed Locations, illustrates visual simulations from three vantage points: Main Street, Noffsinger Road, and the Union Pacific Railroad Line.

Figure 10, View 1 – Main Street, shows the visual impact looking from within Niland along Main Street. From this vantage point, residents along Main Street have an unobstructed view of Chocolate Mountains, which is located east of the proposed project site. No adverse shadow patterns appear to be cast from the solar panels.

Figure 11, View 2 – Noffsinger Road, illustrates the viewpoint from the agricultural fields south of Noffsinger Road looking north to the proposed project site. From this vantage point, the view of the farmlands and Chocolate Mountain is neither unobstructed by the PV array nor by the six-foot high chain link fence. Additionally, no adverse shadow patterns appear to be cast from the solar panels.

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<sup>1</sup> California Department of Transportation. *California Scenic Highway Mapping System*. Website [http://www.dot.ca.gov/hq/LandArch/scenic\\_highways/index.htm](http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm). Accessed August 2008.



N.T.S.

**Figure 9**  
**Viewshed Locations**

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Existing



Proposed

**Figure 10**  
**View 1 - Main Street**

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Existing



Proposed

**Figure 11**  
**View 2 - Noffsinger Road**

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Existing



Proposed

**Figure 12**  
**View 3 - Union Pacific Railroad Corridor**



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Figure 12, View 3 – Union Pacific Railroad Corridor, displays the visual impact along the Union Pacific Railroad Line. From this vantage point, northbound trains will have unobstructed views. Additionally, no adverse shadow patterns appear to be cast from the solar panels.

Views of the project site would be similar in character and quality as the current use. Therefore, views from the surrounding residents would not be adversely affected by the proposed improvements. In addition, other than the proposed transmission line and the substation, the proposed project would be predominantly low profile use and therefore, shade and shadow impact would not be expected. No impacts would occur.

**d) Create new source of substantial light or glare that would adversely affect day or nighttime views in the area?**

**Less Than Significant With Mitigation Incorporated.** Glare is produced when any visible light source is brighter than the surroundings in the line of vision. Reflections from smooth, polished reflective surfaces can be a cause of glare. Unintended reflections usually occur at sunrise or sunset when the intensity of sunlight is lower and sun is low to the east or west.

LADWP proposes to construct a solar power project up to 68 MW using ground-mounted PV arrays on approximately 970 acres of LADWP-owned land. The project's basic unit will be a twelve module ( $\frac{1}{2}$  by one meter photovoltaic element) panel. The PV panels will utilize amorphous silicon (a-Si) thin-film modules, consisting of 3.2 mm tempered glass, to be organized into 500 kilowatt blocks covering about five acres each. The solar modules will be oriented to face the south, or between south and west. The modules will be mounted at an angle from horizontal of approximately 15 degrees. The rows of modules, known as chains, will be separated from each other by a space that will prevent the modules from shading each other and allow for access between the chains. The proposed project can result in an adverse impact resulting from glare.

Preliminary analysis has concluded the following results:

- East Beal Road and Weist Road – These are heavily traveled roads. Due to sun location, ground observers north of the PV arrays will not observe any reflections.
- Wilkins Road, Welch Road, and Noffsinger Road - These cut directly through or south of farm properties. Observers at these locations may experience glare. Additional landscaping may be required.
- The natural East to West slope of the flood plain in the Niland area results in a geometry that can be used to shield the city of Niland from any major reflections if required.

The PV panels are designed to absorb and capture sunlight rather than reflect sunlight. Additionally, design features, such as textured glass and landscaping will be incorporated into the design to reduce reflectivity. In addition, the implementation of Mitigation Measure AES-1 would reduce the impact to less than significant.

- AES-1** Prior to construction, the solar developer's final site plan will include design elements to reduce the potential glare impacts on the adjacent sensitive receptors.

## II. AGRICULTURE RESOURCES

### Would the project:

- a) **Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

**No Impact.** The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses. The project would be located on approximately 970 acres of LADWP-owned land. The project site does not contain land that is designated as Prime, Unique Farmland, or Farmland of Statewide Importance (Farmland) as mapped by the Farmland Mapping and Monitoring Program.<sup>2</sup>

The project site is located on land that is designated as "Farmland of Local Importance" and "Other Land."<sup>3</sup> A Farmland of Local Importance is unirrigated and uncultivated lands with prime and statewide soils that are of importance to the local economy as defined by Imperial County's local advisory committee and adopted by its Board of Supervisors. Farmland of Local Importance is either currently producing crops, or has the capability of production. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. These include Areas 4-1, 4-2, 4-3, and 4-4. Other Land is land not included in any other mapping category. This land may be important to the local economy due to its productivity. Vacant and non-agricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land. Area 4-5 is designated as Other Land. The proposed project will not have any impact to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. No impact would occur.

- b) **Conflict with existing zoning for agricultural use, or a Williamson Act contract?**

**No Impact** The proposed project site is partially zoned for light manufacturing and general agriculture use.<sup>4,5</sup> Both uses allow for solar energy generation. As such, the proposed project would not conflict with existing zoning. No impact would occur.

The proposed project would not conflict with existing zoning for agricultural use, or a Williamson Act contract. The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to

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<sup>2</sup> State of California, Division of Land Resource Protection. *Farmland Mapping and Monitoring Program*. Website <http://www.consrv.ca.gov/DLRP/fmmp/index.htm>, Accessed August 2008.

<sup>3</sup> Ibid.

<sup>4</sup> County of Imperial. *Imperial County General Plan*. Zoning Maps, Map #11. 1998.

<sup>5</sup> County of Imperial. County of Imperial Codified Ordinances. Website [http://municipalcodes.lexisnexis.com/codes/imperial\\_co/](http://municipalcodes.lexisnexis.com/codes/imperial_co/). Accessed August 8, 2008.

agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value. The proposed project would be located on approximately 970 acres of LADWP-owned land. There are no Williamson Act contracts applicable to the project site.<sup>6</sup> As such, the project would not conflict with existing zoning for agricultural use or a Williamson Act contract. No adverse impacts would occur.

**c) Involve other changes in the existing environment which, due to their location or nature, could result in the conversion of Farmland, to non-agricultural use?**

**No Impact.** The project would be located on approximately 970 acres of LADWP-owned land. As previously discussed, the project site does not contain land that is designated as Prime, Unique Farmland, or Farmland of Statewide Importance as mapped by the Farmland Mapping and Monitoring Program. The project site does contain land that is designated as “Farmland of Local Importance” and “Other Land.” However, when conversion of agricultural land is justified, direct development to less valuable farmland (i.e., Unique Farmland and Farmland of Local Importance rather than Prime Farmland or Farmland of Statewide Importance) is allowed<sup>7</sup>. In addition, there are no Williamson Act contracts applicable to the project site.

The proposed project site is undeveloped and is not currently occupied by agricultural uses. As discussed above, the proposed project site is partially zoned for light manufacturing (Areas 4-1, 4-2, and 4-3) and general agriculture use (Areas 4-4 and 4-5).<sup>8,9</sup> Both uses allow for solar energy generation. Therefore, there would be no potential for the construction or operation of the project to convert farmland, either directly or indirectly, to non-agricultural use. No adverse impacts would occur.

### III. AIR QUALITY

#### Would the project:

**a) Conflict with or obstruct implementation of the applicable air quality plan (e.g., the Imperial County Air Quality Management Plan)?**

**Less Than Significant Impact.** The federal Clean Air Act (CAA) requires each state to prepare an air quality control plan, referred to as a State Implementation Plan (SIP), to achieve, maintain and enforce federal air quality standards throughout the state (see Appendix B, Air Quality Report). In Imperial County, the Imperial County Air Pollution Control District (ICAPCD) is the agency responsible for administering federal and state air quality laws and policies. Included in the ICAPCD’s tasks is the preparation and implementation of the Imperial County portion of the SIP (the Imperial County Air Quality Management Plan (AQMP)), which includes strategies and tactics to be used to attain and maintain acceptable air quality in Imperial

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<sup>6</sup> California Department of Conservation. *Williamson Act Program*. Website [ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Map%20and%20PDF/Imperial/Imperial%20wa%2006\\_07.pdf](ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Map%20and%20PDF/Imperial/Imperial%20wa%2006_07.pdf). Accessed August 2008.

<sup>7</sup> County of Imperial. *Imperial County General Plan*. Agricultural Element. November 19, 1996.

<sup>8</sup> County of Imperial. *Imperial County General Plan*. Niland Zoning Map #11. 1998.

<sup>9</sup> County of Imperial. County of Imperial Codified Ordinances. Website [http://municipalcodes.lexisnexis.com/codes/imperial\\_co/](http://municipalcodes.lexisnexis.com/codes/imperial_co/). Accessed August 2008.

County; and promulgating Rules and Regulations to govern emissions from activities within their jurisdiction that may negatively affect air quality and result in nonattainment with either local, state, or federal air quality standards.

ICAPCD Rules and Regulations that would affect project construction include:

- Regulation IV – Prohibitions:
  - Rule 401 – Opacity of Emissions, which regulates opacity of emissions;
  - Rule 407 – Nuisances, which prohibits the release of air contaminants that may cause injury, detriment, nuisance, or annoyance; and
  
- Regulation VIII – Fugitive Dust Rules:
  - Rule 800 – General Requirements for Control of Fine Particulate Matter (PM<sub>10</sub>), which defines terms for the regulation and specifies, amongst other topics, soil stabilization and stabilization testing methods; and
  - Rule 801 – Construction and Earth Moving Activities, which contains EPA-required Best Available Control Measures (BACM) to be included in the ICAPCD Non-Attainment Area Plan for attaining the NAAQS for PM<sub>10</sub>. The BACM, construction phasing, paving unpaved haul and access roads, wetting unpaved roads and reduction of vehicle speeds and trips, are required to be implemented prior to and during, construction and earthmoving operations for development projects.
  - Rule 804 – Open Areas, which contains BACM for PM<sub>10</sub>. Implementation of one or more of the BACM, applying and maintaining water or dust suppressant(s) to all unvegetated areas, establishing vegetation on all previously disturbed areas, and paving, applying and maintaining Gravel, or applying and maintaining Chemical Stabilizers/Suppressants, is required.

Regulation VIII also has requirements for developments to implement dust control plans depending on size.

Consistency with the Imperial County AQMP is typically determined by two standards: (1) whether the project would exceed assumptions contained in the AQMP; and (2) whether the project would increase the frequency or severity of violation of existing air quality violations, contribute to new violations, or delay the timely attainment of air quality standards or interim reductions as specified in the AQMP.

1. The AQMP assumes specific emissions from the operation of certain land uses, i.e., residential, retail, office, institutional, industrial, and agricultural. The project would somewhat change the existing land use from agricultural to industrial (solar farm); however, the project would not exceed the assumptions contained in the AQMP.
  
2. The Salton Sea Air Basin (SSAB) is a federal and California nonattainment area for O<sub>3</sub> precursor pollutants (volatile organic compounds [VOC] and nitrogen oxides [NO<sub>x</sub>]) and PM<sub>10</sub> pollutants. For the CO pollutant, the SSAB is in attainment with

both state and federal standards. Based on these existing non-attainment air quality conditions, operation and construction emissions of these pollutants from the proposed project are addressed.

#### *Construction Emissions*

Construction of the project would result in the generation of respirable dust (PM<sub>2.5</sub> and PM<sub>10</sub>) and involve the use of diesel-powered equipment, which generates CO and precursors for O<sub>3</sub>. The ICAPCD thresholds, adopted for project operations, are not applicable to construction activities since the ICAPCD has adopted, as part of the November 2007 ICAPCD Rules and Regulations, standard mitigation measures for construction emissions that must be followed regardless of predicted total construction emissions for a project. Therefore, the ICAPCD does not provide thresholds of significance for project construction; thus, project construction emissions are not quantified. Compliance with the ICAPCD Rules and Regulations will insure that construction emissions remain less than significant.

#### *Operation Emissions*

Operation of the project would involve minor new land uses: the conversion of agricultural to industrial (solar farm) uses with negligible stationary air emission sources, with minor mobile sources from maintenance activities. The project would result in a lower potential level of operational emissions than the existing agricultural land use potential because there would be little or no operation of the diesel engine powered equipment typical for agricultural operations. The project would generate minor vehicle trips for facility maintenance; therefore, the project would generate minor traffic increases on roadways below capacity. The ICAPCD has adopted a CEQA Air Quality Handbook, which includes recommended thresholds of significance for project operations. However, operational emissions are anticipated to be minimal, and thus not necessary to calculate for comparison against the thresholds. Therefore, the project would not result in significant air quality impacts due to project operation.

Since the project would conform to the requirements of the ICAPCD rules, particularly Regulation VIII, the impact would be less than significant and no mitigation measures are required.

#### **b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

**Less Than Significant Impact.** During construction, a temporary increase in emissions is anticipated due to the use of heavy equipment and soil disturbance. ICAPCD has adopted standard mitigation measures for construction emissions that must be followed regardless of predicted total construction emissions for a project. Compliance with the ICAPCD's Regulation VIII, would reduce nuisance dust throughout the duration of construction and ensure that the impact remains less than significant..

Construction of the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Implementation of the

ICAPCD standard mitigation measures would reduce project-generated emissions to less than significant level.

**c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

**Less Than Significant Impact.** As shown in the preceding analysis, the project would comply with the ICAPCD's Regulations VIII. The project would be consistent with the Imperial County's AQMP, which is the Basin's long-range air quality planning document. Thus, the project would have a less than significant impact on cumulative regional and local air quality.

**d) Expose sensitive receptors to substantial pollutant concentrations?**

**Less Than Significant Impact.** Sensitive receptors in proximity to the project area would be the residents of the community of Niland, approximately 400 feet southwest of the project site. During construction, pollutant emissions, in particular PM<sub>10</sub> and PM<sub>2.5</sub>, in the immediate vicinity of the project site may be slightly greater than at other times without construction activities. However, the sensitive receptors are beyond the range of exposure to the emissions. Implementation of ICAPCD's Regulation VIII would reduce these nuisance emissions. Therefore, the potential pollutant concentrations are not expected to be substantial given compliance with Regulation VIII to control fugitive dust and the short-term nature of the construction.

**Greenhouse Gases:**

Currently, there are no adopted thresholds of significance methodologies established for determining impacts related to a project's potential contribution to global climate change in CEQA documents. Therefore, greenhouse gas (GHG) impact analysis does not directly apply to the questions in the discussion above.

Greenhouse gases (GHGs) are defined as any gas that absorbs infrared radiation in the atmosphere. Common GHGs include water vapor, carbon dioxide (CO<sub>2</sub>), methane, nitrous oxides (N<sub>2</sub>O), chloroflucarbons (CFCs), hydrogluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>), ozone and aerosols (Hendrix, Wilson, et. al., 2007). GHGs are emitted by both natural processes and human activities, and lead to the trapping and buildup of heat in the atmosphere near the earth's surface, commonly known as the "Greenhouse Effect." There is increasing evidence that GHGs and the Greenhouse Effect are leading to global warming and climate change (U.S. Environmental Protection Agency [EPA], 2007). "The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the State from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems" (California Health & Safety Code, Division 25.5, Part 1). The primary source of GHGs in the United States is energy-use related, primarily including activities involving fuel combustion.

In 2006, in response to concerns related to global warming and climate change, the California State Legislature adopted Assembly Bill 32 (AB 32), the “California Global Warming Solutions Act of 2006.” AB 32 focuses on reducing GHGs in California and requires the California Air Resources Board (CARB), the State agency charged with regulating statewide air quality, to adopt rules and regulations that would achieve greenhouse gas emissions equivalent to State-side levels in 1990 by 2020 (Hendrix, Wilson, et. al., 2007). In addition, two State-level Executive Orders have been enacted by the Governor (Executive Order S-3-05, signed June 1, 2005, and Executive Order S-01-07, signed January 18, 2007) that mandate reductions in GHG emissions.

As mentioned above, currently there are no adopted thresholds of significance or specific methodologies established for determining impacts related to a project’s potential contribution to global climate change in CEQA documents. However, within the context of CEQA, it is generally accepted that a single project does not typically generate enough GHG emissions to significantly influence global climate change (Hendrix, Wilson, et. al., 2007). As such, it has been recommended that global climate change be addressed within the context of cumulative impacts until further guidelines, methodologies and thresholds of significance are established (Hendrix, Wilson, et. al., 2007).

As addressed above, SSAB is currently designated non-attainment for some air quality standards that have been established at State and federal levels, including ozone and particular matter of 10 microns or less. The SSAB’s goal is to make consistent progress towards reaching attainment with the majority of emissions that influence global climate change, and is expected to make progress towards the goals of AB 32 and Executive Orders S-3-05 and S-01-07.

As stated above, the proposed project would result in temporary, construction-related impacts related to air quality. However, all of these impacts are less than significant and none of them would be anticipated to impede or negatively contribute to the overall progress that the State and ICAQMD are making towards attainment and the GHG emission reduction timeframes that have been established by AB 32 and Executive Orders S-3-054 and S-01-07, which extend well beyond the period of the proposed project’s principal air quality impacts due to construction. In addition, the proposed project would not be expected to result in a cumulatively considerable net increase in criteria pollutants. Therefore, construction of the proposed project would not be anticipated to result in any cumulatively significant impacts related to the SSAB’s future baseline condition for GHGs and global climate change. Once operational, GHG emissions related to the proposed project would be negligible and GHG-related cumulative impacts would be less than significant or none.

**e) Create objectionable odors affecting a substantial number of people?**

**No Impact.** Operation of trucks and construction equipment may generate standard odors associated with fuel combustion. However, these odors dissipate rapidly in the atmosphere and would exist only temporarily in proximity of the equipment and vehicles. Therefore, the proposed project would not generate objectionable odors affecting a substantial number of people. No impact would occur.



#### IV. BIOLOGICAL RESOURCES

Would the project:

- a) **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

**Less than Significant Impact with Mitigation Incorporated.** For Areas 4-1, 4-2, 4-3, and 4-4, California Burrowing Owl Consortium (CBOC) preliminary Phase II surveys for burrowing owls were conducted in May 2007 and subsequent Phase II and Phase III surveys were conducted in September 2007 by Aspen Environmental Group (Aspen) (see Appendix C1 and Appendix C2). Monitoring activities continued from October 29, 2007 to December 7, 2007. Several owls were detected on Areas 4-1 (north and south) and 4-4 during these surveys. Active burrowing owl burrows were observed on all sites in the 2007 surveys conducted by Aspen. The total number of owls present in these areas as well as in Area 4-5 will be determined in the burrowing owl preconstruction surveys conducted 30 days prior to the grading.

Since no burrowing owl surveys were conducted in Area 4-5 by Aspen, a protocol burrowing owl survey was conducted in this area in August 2008 by EDAW. Seven areas with burrowing owls were observed, four of these areas were observed on the project site and within the 500' buffer zone. It was determined that three pairs of owls (with juveniles) were present on the project site and one pair (with juveniles) was present in the buffer zone during the focused survey conducted here (see Appendix C3, Burrowing Owl Survey Letter Report).

No protocol level surveys were conducted by EDAW biologists for Areas 4-1 through 4-4. However, a general biological site reconnaissance was performed in August 2008 (see Appendix C4, Biological Resources Reconnaissance Report). A pair of burrowing owls was observed during this survey on Area 4-1.

The total number of pairs of burrowing owls present on the property will vary over time and previous surveys by Aspen show that the size of the population fluctuates. Within Area 4-5, three colonies of burrowing owls were observed on-site and one colony within the 500-foot buffer. Colony sizes were observed to be between three to five owls, likely each colony consisted of a breeding pair with associated juveniles. On Area 4-2, two burrowing owls were observed. The following mitigation measures, adapted from the California Department of Fish and Game (CDFG) Guidance on burrowing owl mitigation (CDFG 1995), are proposed:

- BR-1** No disturbance within 50 meters (approximately 160 feet) of owls at occupied burrows during the non-breeding season of September 1 through January 31 or within 75 meters (approximately 250 feet) during the breeding season of February 1 through August 31 shall occur during construction. Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that

juveniles from the occupied burrows are foraging independently and are capable of independent survival.

- BR-2** Vegetation removal shall be limited during construction to maintain a minimum of 6.5-acre foraging habitat for occupied on-site burrows.
- BR-3** After the preconstruction survey(s) a burrowing owl mitigation plan shall be prepared by a qualified biologist describing possible site specific shelter-in-place measures, workers training, and/or other measures which may be implemented in addition to, or in lieu of, any of the measures described here with the approval of the CDFG.
- BR-4** Preconstruction surveys of the proposed areas of ground disturbance within the project site and a 150-meter (approximately 500-foot) buffer zone around the proposed areas of ground disturbance shall be conducted within the 30 days prior to construction of any area of ground disturbance to determine the presence of existing active burrows and owls. If ground disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the proposed areas of ground disturbance shall be resurveyed. Any owls observed during this survey shall receive the same compensation as identified in BR-7, below.
- BR-5** Biological monitoring shall occur during construction activity.

#### **Passive Relocation and Off-site Mitigation**

- BR-6** Destruction of any occupied burrow shall only be undertaken pursuant to a management plan approved by the CDFG. When destruction of occupied burrows is unavoidable, existing unsuitable burrows shall be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site.
- BR-7** A burrowing owl survey shall be prepared prior to the issuance of the initial building permit that requires acquisition and preservation of 6.5 acres of suitable habitat for each burrowing owl pair or solitary individual observed to offset the loss of foraging and burrow habitat on the project site (calculated on a 100-meter {approximately 300-foot} foraging radius around the burrow). To the extent practical, the protected lands shall be adjacent to occupied burrowing owl habitat and at a location acceptable to the CDFG.
- BR-8** To the extent possible, construction activities shall occur outside the breeding season. A biological monitor will be present during all construction related activities. If construction does occur during the breeding season, no disturbance shall occur within 75 meters of active nests and all active burrowing owl nests shall be monitored to ensure that construction activities do not increase the likelihood of nest abandonment.

Implementation of Mitigation Measures BR-1 through BR-8 would reduce the impact to less than significant.

Two other sensitive species were observed during the focused burrowing owl survey: loggerhead shrike (*Lanius ludovicianus*; CDFG Species of Special Concern) and Cooper's hawk (*Accipiter cooperii*; CDFG Species of Special Concern). Breeding habitat for Cooper's hawk occurs off-site and impacts to these areas for the project are not anticipated. The observed loggerhead shrikes are likely breeding on-site in shrubs and areas of dense cover. Implementation of the following mitigation options for loggerhead shrikes would reduce the impact to less than significant.

**BR-9** During the breeding season, on-site loggerhead shrike and active nests shall be avoided through biological monitoring.

**BR-10** If construction is to occur during breeding season, a nesting bird survey shall be conducted prior to construction and the active nests shall be avoided until the young have fledged.

**b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

**Less than Significant Impact with Mitigation Incorporated.** See discussion in item c, below.

**c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

**Less than Significant Impact with Mitigation Incorporated.** The project site is located within Disturbed (Agriculture/Urban) area<sup>10</sup>. A general biological site reconnaissance was performed in August 2008 on Areas 4-1 through 4-5 (see Appendix C3, Biological Resources Reconnaissance Report). A focused burrowing owl survey was conducted on Area 4-5 (see item d) below for analysis). A habitat map of the project site is shown in Figure 13.

Vegetation on the project site consisted of sparse Mojave creosote bush scrub habitat (*Larrea tridentate*), honey mesquite (*Prosopis glandulosa*), salt bush (*Atriples* spp.), salt cedar (*Tamarix ramosissima*), and perennial shrubs, such as cheesebush (*Ambrosia [=Hymenoclea] salsola*). The off-site riparian area consisted mainly of non-native invasive species such as *Arundo donas* and salt cedar, with some palms. Patches of nonnative grasses and nonvegetated areas, including a dry desert wash occur within Area 4-5. The 24-acre land (Area 4-3 west) was added to the project site at a later date. This area was not surveyed, but is assumed to have similar habitat and therefore, similar biological resources to the adjacent areas that were surveyed. Habitat here is likely sparse Mojave creosote scrub, with suitable habitat for burrowing owl and possible drainages.

<sup>10</sup> Imperial County, Planning/Building Department. Conservation/Open Space Element. Figure 1 – Habitat Map.

Several drainages, some with non-native riparian species (tamarisk) were observed throughout the site. These drainages would be modified to control flows with the proposed project and would have potential to cause significant adverse impacts. The vegetation in the drainage within Area 4-4 provides roosting habitat for birds. The East Highline Canal is on the western side of Area 4-5 and intersects with the southwestern corner of Area 4-5. Further to the north and east of the site is the Coachella Canal. Consultation with the Corps of Engineers is necessary to determine whether federal jurisdiction exists and a Section 404 permit is required. Federal jurisdiction would exist if the aquatic features in site drainages are determined to be hydrologically connected to the canal. If the features are determined hydrologically isolated, then no federal jurisdiction would exist.

Relative to California Department of Fish and Game jurisdiction, it is anticipated that the major unnamed drainages that traverse the property (as shown on Figure 13) are subject to state jurisdiction and may require a Streambed Alteration Agreement.

In order to mitigate any adverse impacts on site drainages, consultation with the agencies will be conducted and appropriate permits obtained as required by law. The following measures are proposed:

- BR-11** Prior to construction activities within the drainages on-site, the U.S. Army Corps of Engineers will be consulted for jurisdictional determination. Should a permit be required, the Applicant will work with U.S. Army Corps of Engineers to establish permit requirements and compensation.
- BR-12** Prior to construction the Applicant will consult with and file for any required Streambed Alteration Agreement under Section 1602 of the California Fish and Game Code.
- BR-13** A detailed erosion control plan shall be approved by the Department of Public Works.
- BR-14** A Storm Water Pollution Control Plan shall be prepared and implemented in accordance with state and local regulations.

**d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery/breeding sites?**

**Less than Significant Impact with Mitigation Incorporated.** The project site is not part of a wildlife corridor. Five pairs of burrowing owls were observed by EDAW biologists within the project site (Areas 4-5 and 4-1) during the 2008 surveys (see Appendix C3, Burrowing Owl Survey Letter Report) and several other pairs were observed on Areas 4-1 (north and south) and 4-4 by Aspen Environmental Group in 2007. Implementation of the following Mitigation Measures BR-15 through BR-19 would reduce the impacts to less than significant.

## On-site Avoidance

- BR-15** Biological monitoring shall occur during the construction phase of the project to ensure that disturbance of active burrowing owl burrows is avoided.
- BR-16** Construction activities shall be limited to outside the breeding season for burrowing owls (construction activities to occur between September 1<sup>st</sup> and January 31<sup>st</sup>) whenever possible. If this is not possible, avoidance of active nests and adjacent foraging areas will occur within 75 meters of active burrows. Biological monitoring will be conducted during all construction activities to ensure that nest abandonment does not occur due to construction related activities.
- BR-17** Structures elevated above the height of the solar panels shall be designed and constructed to discourage perching by raptor bird species.
- BR-18** The removal of native vegetation shall be limited.

## Off-site Mitigation

- BR-19** See BR-7.

During the June 2007 Burrowing Owl Survey, conducted by Aspen, an active bat colony (species unknown) was identified at the rail road crossings on the northern edge of Area 4-1 south parcel. The following mitigation measure is proposed to reduce the impact to less than significant:

## Bat Colonies

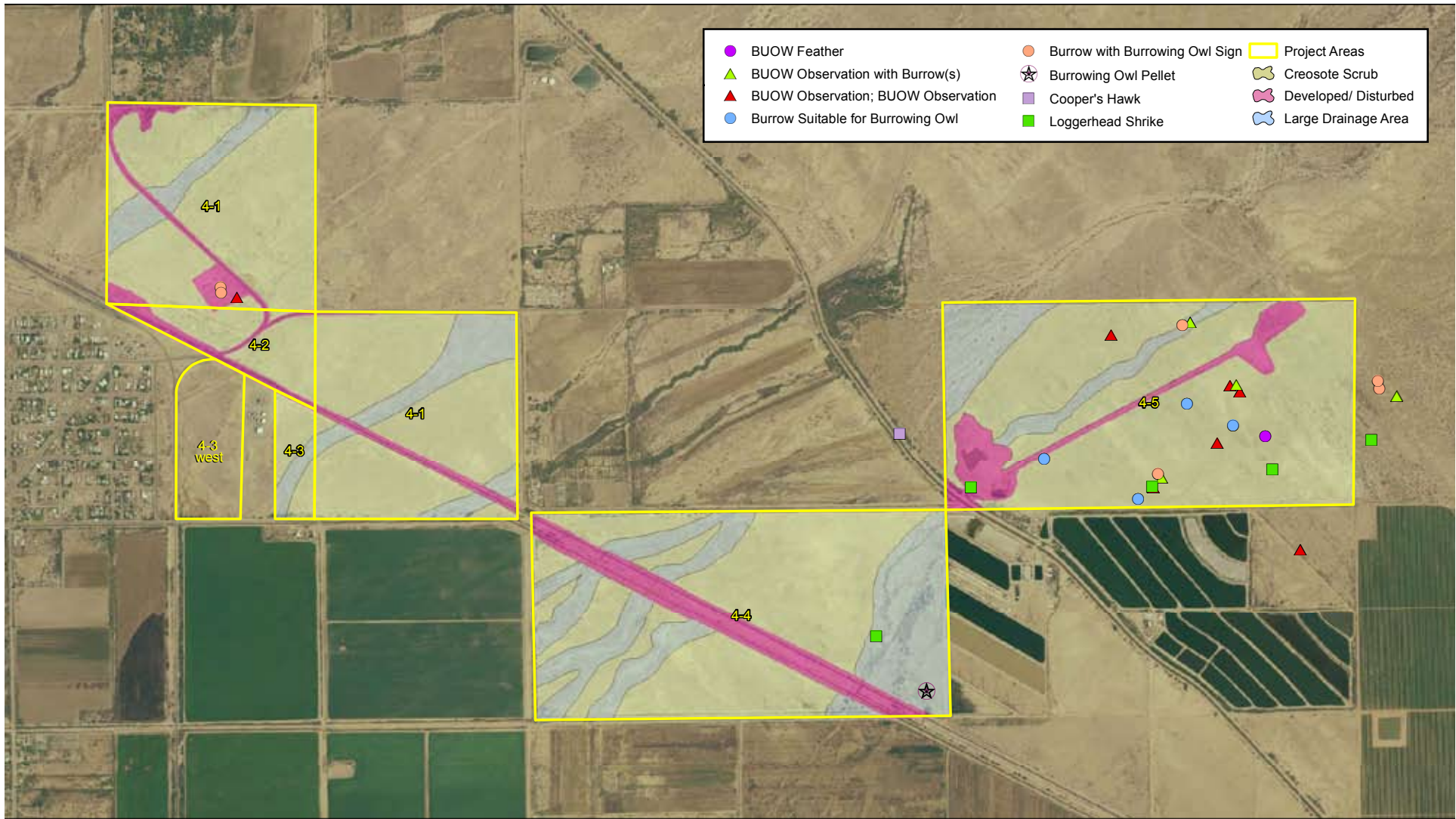
- BR-20** If construction is to occur from the beginning of April until the end of August (when dependent young bats are vulnerable to disturbances) then two weeks prior to construction activities, a qualified biologist will perform preconstruction surveys of bridge structures that are directly and indirectly impacted by the project for breeding bat species. If found, breeding bat colonies will be avoided from April until the end of August.

**e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (e.g., oak trees or California walnut woodlands)?**

**No Impact.** No local policies or ordinances protecting biological resources were determined to exist within Imperial County. No impact would occur.

**f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

**No Impact.** The project site is not within an area with an existing or proposed Habitat Conservation Plan. No impact would occur.



source: NAIP 2005



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## V. CULTURAL RESOURCES

### Would the project:

- a) **Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?**

**Less Than Significant with Mitigation Incorporated.** See discussion in item *b*, below.

- b) **Cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations Section 15064.5?**

**Less Than Significant with Mitigation Incorporated.** On August 12, 2008, a search of the Sacred Lands File (SLF) at the Native American Heritage Commission and cultural resources records at the Southeast Information Center (SEIC) were initiated to determine if any previously recorded sacred lands and cultural resources were present in the area. Both searches included the project area and a 1-mile radius around the project area (see Appendix D1, Cultural and Architectural Resources Survey Report). The SLF did not indicate any sacred land present within the project area or 1-mile radius. The cultural resources records search listed previous studies as well as previously recorded cultural resources within the project area. The results of the records search indicated that most of the project area had not been previously surveyed. Thirteen surveys have been undertaken within the search area and 27 previously recorded cultural resources have been recorded within the search area. Of the 27, eight are located within the project area limits. These sites include four prehistoric cultural resources and four historic cultural resources. Prehistoric resources in the project area include a village site (CA-OMP-120), a temporary camp site (CA-OMP-6854), and two pottery scatters (CA-IMP-3098 and CA-IMP-3099). Historic resources in the project area include the Southern Pacific Railroad (CA-IMP-3424H), the East Highline Canal (CA-IMP-7835), and two historic refuse scatters (CA-IMP-7829 and CA-IMP-8639H). In addition to the resources reported in the project area, several cultural resources are located near the project area boundaries. These include site CA-IMP-3179H (First National Bank Building), CA-IMP-6183 (a pottery sherd), and CA-IMP-6855 (lithic scatter). While not located in the project area, these resources indicate what types of resources may be encountered during a field survey of the project area.

According to CEQA, a resource may be significant if it meets any one of the following criteria:

- 1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- 2) Is associated with the lives of persons important in our past;
- 3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- 4) Has yielded, or may be likely to yield, information important in prehistory or history.



Pedestrian field surveys to identify archaeological and architectural resources were undertaken between August 19 and 28, 2008 and on September 17, 2008 (see Appendix D1, Cultural and Architectural Resources Survey Report). The survey was initiated to determine if any previously unrecorded cultural or architectural resources were located within the project area. The architectural survey also included parcels immediately adjacent to the project footprint. While the records search indicated that several surveys had taken place within the project area, much of the project area had not been subjected to systematic surveys. EDAW's field analysis of the project area included a physical survey of all accessible portions of the project area. The survey included linear transects of each portion of the project area. The pedestrian survey resulted in the identification of 36 cultural resources. Thirty-one were newly identified cultural resources (7 prehistoric sites, 18 historic sites, and 6 buildings). The remaining five cultural resources were five previously recorded archaeological sites identified during the records search. Three previously recorded sites could not be relocated during the survey. In addition, 28 isolated artifacts were identified within the project area. Of the 36 sites identified in the project area, nine are eligible or recommended potentially eligible for inclusion to the CRHR and 28 are recommended not eligible for inclusion to the California Register of Historical Resources (CRHR). The majority of the resources located in the study area were historic in nature, likely dating to the construction and maintenance of the railroad or the use of nearby Camp Dunlop, a military base that was in use during World War II. Most sites were located in the northwest portion of Area 4-1, but sites were observed in all four sections of the project area.

The results of the survey indicate that the project area contains numerous cultural resources, but the majority of sites are recommended not eligible for inclusion to the CRHR. Portions of the Union Pacific Railroad (CA-IMP-3424H) have been listed as eligible for inclusion in the National Register of Historic Places (NRHP), making the railroad eligible for inclusion in the CRHR. However, the portions of the railroad within the project area have not been evaluated for their eligibility for inclusion in the CRHR. The East Highline Canal has been recommended eligible for NRHP inclusion because it is part of the All American Canal System (Hanna 2000; Harris 2000; Schaefer 2001). Because the canal has been recommended eligible for NRHP inclusion, it is also eligible for CRHR inclusion. In addition, as part of the East Highline Canal System, NS-26 (unnamed irrigation canal that runs northwest-southeast for a distance of 1 mile through the project area before joining with the East Highline Canal) is part of the All American Canal System and is potentially eligible for inclusion to the CRHR. If avoided, no alteration or demolition will occur to the sites.

Five prehistoric sites (CA-IMP-6854, NS-14, NS-15, NS-19, and NS-25) are potentially eligible for the CRHR under Criterion 4 because they may contribute information important to prehistory. NS-31, a potentially significant historical resource, is located on an adjacent parcel to the project footprint. Implementation of the proposed project may result in an indirect impact to the historical resource with the potential visual intrusion of new structures altering its tradition setting. However, compliance with CEQA Section 15064.5, and implementation of the following Mitigation Measures would reduce the potential impacts to less than significant.

- CR-1** Prior to surface disturbance, an evaluation program shall be conducted of the cultural resource sites identified on the property which may be eligible for inclusion to the California Register of Historical Resources (CRHR) by a qualified archaeologist in accordance with the provisions of CEQA Section 15064.5 to determine the appropriate treatment of the resources.
- CR-2** During ground disturbing activities near cultural resources sites determined to be eligible for the CRHR, archaeological monitoring shall be undertaken.
- CR-3** The archaeological monitor shall have the authority to re-direct construction equipment in the event archaeological resources potentially eligible for the CRHR are encountered.
- CR-4** In the event archaeological resources potentially eligible for the CRHR are encountered, surface disturbing work in the immediate vicinity of the discovery shall temporarily halt until appropriate treatment of the resource is determined by a qualified archaeologist in accordance with the provisions of CEQA Section 15064.5.

**c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

**Less Than Significant with Mitigation Incorporated.** The project site is mapped entirely as the Holocene Lake Cahuilla beds. Typically comprised of sandy silt, these lakebeds are extensive in the Salton Trough, and can reach as much as 250 feet thick. Both the thickness of the Lake Cahuilla beds and the minimal impacts proposed by this project make it highly unlikely that the Plio-Pleistocene sediments underlying the lake beds will be impacted<sup>11</sup>.

A search for paleontological records of the project area and a 10-mile radius was completed at the San Diego Museum of Natural History<sup>12</sup> (see Appendix D2, Paleontological Literature Search). No fossil localities have been previously collected from within a 1-mile radius of the project site.

Paleontological resources are considered to be significant if they provide new data on fossil animals, distribution, evolution or other scientifically important information. Holocene invertebrates and vertebrates from the Lake Cahuilla beds represent significant, scientifically important, non-renewable paleontological resources. Since the Holocene Lake Cahuilla sediments are known to be as much as 250 feet deep, Pleistocene sediments are not likely to be impacted.

However, in the event that previously undiscovered paleontological resources are encountered during project construction, implementing the following Mitigation Measures would reduce the impact to less than significant.

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<sup>11</sup> Cogstone Resource Management Inc., Paleontological Literature Search for the Niland Solar Energy Project, Imperial County, California, August 2008.

<sup>12</sup> Ibid.

- CR-5** In the event potentially significant paleontological resources are encountered, the contractor shall halt surface disturbing activities in the immediate area and notify LADWP.<sup>13</sup>
- CR-6** LADWP shall retain a qualified paleontological monitor to make an immediate evaluation of the significance and appropriate treatment of the encountered paleontological resources.
- CR-7** Construction activities may continue on other parts of the site while evaluation and treatment of the discovered paleontological resources takes place.<sup>14</sup>
- CR-8** Prior to construction, a qualified principal investigator for paleontology (graduate degree with a specialization in paleontology and more than 5 years of experience) shall be retained to detail the sampling program and to maintain professional standards of work.
- CR-9** Areas with construction impacts greater than 1 foot in depth into the Lake Cahuilla beds shall be subject to an intensive paleontological sampling program to recover samples, stratigraphic columns and other data to contribute new information to science. A minimum of 20 samples (maximum of 100) shall be collected and the experts shall identify the contents and obtain the radiometric dates. All results shall be included in a final report to be filed with the client, lead agency and repository (San Diego Natural History Museum). All materials meeting significance criteria under CEQA shall be curated in an accredited museum facility along with a copy of the report.

**d) Disturb any human remains, including those interred outside of formal cemeteries?**

**Less Than Significant with Mitigation Incorporated.** A records search indicated that human remains had been encountered at archaeological sites located on the project area. None of these human remains were observed during a field survey of the project area. However, the project area is located at the ancient shoreline of Lake Cahuilla and sites known to have human remains have been recorded along the shoreline. Though no human remains were observed on the project area, the presence of buried human remains exists within the project area. Compliance with CEQA Section 15064.5, and implementation of the following Mitigation Measures would ensure a less than significant impact.

- CR-10** In the event that any human remains or related resources are discovered, such resources shall be treated in accordance with federal, State, and local regulations and guidelines for disclosure, recovery, relocation, and preservation, as appropriate, including CEQA Guidelines Section 15064.5(e).

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<sup>13</sup> CEQA Guidelines. CCR, Title 14, Chapter 3, Article 5, Section 15064.5. 2007.

<sup>14</sup> Ibid.

- CR-11** As required by CEQA Guidelines Section 156064.5(e), discovery of human remains shall be evaluated by the county coroner of the nature of the remains and cause of death. If the remains are determined to be of Native American origin, the Native American Heritage Commission shall be asked to determine the descendants who are to be notified or, if unidentifiable, to established procedures for burial.

## VI. GEOLOGY AND SOILS

### Would the project:

- a) **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**
- i) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

**Less Than Significant Impact.** As with most of southern California, the project site is located in a seismically active region and has the potential to be subjected to ground shaking hazards associated with earthquake events on active faults throughout the region. The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Alquist-Priolo Special Studies Zone Act has three main provisions: 1) directs the State of California Division of Mines and Geology to compile detailed maps of the surface traces of known active faults. These maps include both the best known location where faults cut the surface and a buffer zone around the known trace(s); 2) requires property owners (or their real estate agents) to formally and legally disclose that their property lies within the zones defined on those maps before selling the property; and 3) prohibits new construction of houses within these zones unless a comprehensive geologic investigation shows that the fault does not pose a hazard to the proposed structures.

The project site is not located within a fault rupture zone or within a currently established Alquist-Priolo Earthquake Fault Zone.<sup>15,16</sup> No known active faults traverse the project site. However, several potentially active faults are located in the project vicinity. The San Andreas Fault Zone lies approximately 15 miles northwesterly of the proposed project site. The Hidden Springs, Salton Creek, Hot Springs Fault, and the San Jacinto Fault Zone are west of the proposed project area, as well. There are also a number of active faults directly south of the proposed project area. These include the Wienart Fault, Rico Fault, Superstition Hills Fault, Superstition Mountain Fault, the Brawley Seismic Zone, and the Imperial Fault Zone.<sup>17</sup>

<sup>15</sup> California Geological Survey. *Alquist-Priolo Earthquake Fault Zones*. Available at: [http://www.conservation.ca.gov/cgs/rghm/ap/Map\\_index/Pages/county.aspx](http://www.conservation.ca.gov/cgs/rghm/ap/Map_index/Pages/county.aspx)

<sup>16</sup> Geosphere Consultants, Inc. Phase I Geotechnical Reconnaissance Report Proposed Niland Group Photovoltaic Power Plant Project, Niland Area, Imperial, California. Page 8. June 2008.

<sup>17</sup> Southern California Data Center. *Faults of Southern California*. Available at: <http://www.data.scec.org/faults/sofault.html>

Accordingly, the potential for surface rupture at the site is low. The proposed project would construct a solar power plant of ground-mounted PV arrays and an office building on approximately 970 acres of LADWP-owned land. As such, all proposed project structures would be designed and constructed in accordance with the latest version of the California Building Code, the Uniform Building Code, and all other applicable federal, state, and local codes, and neither people nor structures would be exposed to potential substantial adverse effects from fault rupture. The impact would be less than significant.

## ii) Strong seismic ground shaking?

**Less Than Significant With Mitigation Incorporated.** The proposed project may expose people or structures to adverse effects associated with strong seismic ground shaking. As previously stated, the project site is not located within a fault rupture zone or within a currently established Alquist-Priolo Earthquake Fault Zone.<sup>18,19</sup> However, the proposed project site is located within the seismically active Southern California region, and like all locations within the area, is subject to strong seismic ground shaking. Additionally, more small to moderate earthquakes have occurred in the Imperial Valley area than along any other section of the San Andreas Fault system. The deep, sediment-filled geologic structure of the Imperial Valley makes the area particularly susceptible to severe earthquake damage.<sup>20</sup>

As discussed in Item VI(a)(i) above, all proposed project structures, which include critical structures such as an office building and electrical switching gear, would be designed and constructed in accordance with the latest version of the California Building Code, the Uniform Building Code, and all other applicable federal, state, and local codes relative to seismic criteria. In accordance with the recommendations of the reconnaissance level geotechnical evaluation, mitigation measure GS-1 is provided to require preparation of a design-level geotechnical analysis prior to issuance of building permits. The impact would be less than significant with mitigation incorporated.

**GS-1** Prior to the construction, the solar energy developer shall prepare a design-level geotechnical investigation that includes comprehensive subsurface exploration, appropriate laboratory testing, and detailed evaluation of potential geotechnical constraints to critical project structures.

## iii) Seismic-related ground failure, including liquefaction?

**Less Than Significant With Mitigation Incorporated.** Liquefaction typically occurs when loose sand and silt that is saturated with water behave like a liquid when shaken by an earthquake. Earthquake waves cause water pressures to increase in the sediment and the sand grains to lose contact with each other,

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<sup>18</sup> California Geological Survey. *Alquist-Priolo Earthquake Fault Zones*. Available at: [http://www.conservation.ca.gov/cgs/rghm/ap/Map\\_index/Pages/county.aspx](http://www.conservation.ca.gov/cgs/rghm/ap/Map_index/Pages/county.aspx)

<sup>19</sup> Geosphere Consultants, Inc. Phase I Geotechnical Reconnaissance Report Proposed Niland Group Photovoltaic Power Plant Project, Niland Area, Imperial, California. Page 8. June 24, 2008.

<sup>20</sup> County of Imperial. *Imperial County General Plan, Seismic and Public Safety Element*.

leading the sediment to lose strength and behave like a liquid. The soil can lose its ability to support structures, flow down even very gentle slopes, and erupt to the ground surface to form sand boils. Many of these phenomena are accompanied by settlement of the ground surface — usually in uneven patterns that damage buildings, roads and pipelines. According to the Seismic and Safety Element of the Imperial County General Plan, the geologically young, unconsolidated sediments of the Salton Trough are subject to failure during earthquakes. Liquefaction, and related loss of foundation support, is a common hazard.<sup>21</sup>

In addition, preliminary geotechnical investigations were conducted for this study. The limited laboratory test results indicated that near surface soils are sensitive to liquefaction when saturated with water. As a result of the general seismicity of the area and the potential for groundwater to be present at the site, susceptibility to liquefaction and seismically induced settlement should be further evaluated.<sup>22</sup> The project would be in compliance with the latest version of the California Building Code, the Uniform Building Code, and all other applicable federal, state, and local codes. The implementation of Mitigation Measure GS-1 would reduce the impact to less than significant.

#### iv) Landslides?

**No Impact.** The proposed project would not expose people or structures to adverse effects associated with landslides. Landslides occur when masses of rock, earth, or debris move down a slope. Landslides are caused by disturbances in the natural stability of a slope. They can accompany heavy rains or follow droughts, earthquakes, or volcanic eruptions. Construction activities, such as grading, can accelerate landslide activity. Slope and material failure often results from failing to utilize precautionary measures to stabilize slopes or cutting into the failure plane of an existing landslide.<sup>23</sup>

The proposed project site is relatively flat with no significant natural or graded slopes. Preliminary field reconnaissance, as well as a review of published literature and aerial photographs, conducted for the proposed project site did not identify any landsliding on the proposed project site or adjacent property.<sup>24</sup> The project site is not mapped as an area susceptible to landslides.<sup>25</sup> No impact would occur.

#### b) Result in substantial soil erosion or the loss of topsoil?

**Less Than Significant Impact.** The proposed project would not result in substantial soil erosion or the loss of topsoil. Construction of the proposed project would result in ground surface disturbance during excavation and grading that could create the potential for erosion to occur. The topsoil from any onsite borrow areas would be stockpiled and

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<sup>21</sup> Ibid.

<sup>22</sup> Geosphere Consultants, Inc. Phase I Geotechnical Reconnaissance Report Proposed Niland Group Photovoltaic Power Plant Project, Niland Area, Imperial, California. Page 8. June 24, 2008.

<sup>23</sup> County of Imperial. *Imperial County General Plan, Seismic and Public Safety Element.*

<sup>24</sup> Geosphere Consultants, Inc. Phase I Geotechnical Reconnaissance Report Proposed Niland Group Photovoltaic Power Plant Project, Niland Area, Imperial, California. Page 9. June 24, 2008.

<sup>25</sup> County of Imperial. *Imperial County General Plan, Seismic and Public Safety Element.*

replaced over the disturbed area during site restoration. Since the proposed project site is greater than one acre, LADWP's construction contractor must prepare and comply with a Storm Water Pollution Prevention Plan (SWPPP), which would include erosion control measures. In addition, LADWP's construction contractor must comply with a Storm Water Construction Activities General Permit and obtain a National Pollution Discharge Elimination System (NPDES) Permit. Compliance with existing regulations would reduce impacts due to soil erosion to a less than significant level. After construction of PV panels, the project site would be stabilized and landscaped, and no significant soil erosion or loss of topsoil is expected to occur.

Additionally, the project would be in compliance with the latest version of the California Building Code, the Uniform Building Code, and all other applicable federal, state, and local codes. The impact would be less than significant.

**c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?**

**Less Than Significant With Mitigation Incorporated.** As previously discussed, the project site is not located within a fault rupture zone or within a currently established Alquist-Priolo Earthquake Fault Zone.<sup>26,27</sup> No active faults traverse the project site. The potential for landslides in Imperial County is low to moderate along the western edge of the County, outside of the proposed project area. The project site is not mapped as an area susceptible to landslides. The proposed project would be located in areas that are essentially flat, where the potential for landslides does not exist. According to the Imperial County Seismic and Safety Element, the proposed project site is located in an area that is susceptible to liquefaction.

However, the project would be in compliance with the latest version of the California Building Code, the Uniform Building Code, and all other applicable federal, state, and local codes. The implementation of Mitigation Measure GS-1 would reduce the impact to less than significant by providing important structural design parameters to alleviate these hazards to critical structures.<sup>28</sup>

**d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?**

**Less Than Significant With Mitigation Incorporated.** Expansive soils generally result from specific clay minerals that expand when saturated and shrink in volume when dry. Generally, expansive soils contain a high percentage of clay particles. Expansive soils can occur in any climate; however, arid and semi-arid regions are subject to more extreme cycles of expansion and contraction than more consistently moist areas.

Preliminary laboratory tests performed on representative samples of the near surface soils obtained from the proposed project site indicate that while the near surface soils

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<sup>26</sup> California Geological Survey. *Alquist-Priolo Earthquake Fault Zones*. Available at: [http://www.conservation.ca.gov/cgs/rghm/ap/Map\\_index/Pages/county.aspx](http://www.conservation.ca.gov/cgs/rghm/ap/Map_index/Pages/county.aspx)

<sup>27</sup> Geosphere Consultants, Inc. Phase I Geotechnical Reconnaissance Report Proposed Niland Group Photovoltaic Power Plant Project, Niland Area, Imperial, California. Page 8. June 24, 2008.

<sup>28</sup> Ibid.

are expected to have a low expansion potential, the underlying lake deposits have a high to very high expansion potential.<sup>29</sup> The solar panel supports consist of concrete ballasts resting on grade and are generally not susceptible to soil expansion or shrinkage. However, building and heavy equipment foundations could be adversely affected by expansive soils. Implementation of Mitigation Measures GS-1 and GS-2 would reduce the impact to less than significant by providing important structural design parameters to alleviate these hazards on critical structures.

**GS-2** Incorporate special design and construction features, such as concrete pad footings, pile foundations, or other engineering refinements for critical structure foundations in order to minimize the adverse effects of potential post construction soil volume changes, consistent with design-level geotechnical recommendations.

Additionally, as stated in Mitigation Measure GS-1, prior to the construction of the proposed project, a geotechnical investigation will be prepared that will include specific recommendations for geotechnical issues associated with the project critical structures. All geotechnical recommendations shall be incorporated into the project design and adhered to during the construction of the project. The impact would be less than significant.

**e) Have soils incapable of adequately supporting use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?**

**No Impact.** The proposed project would tie into the existing water and sewer systems for both construction and operation of the proposed project. Sewage treatment is provided by the Niland Sanitation District, while potable water is supplied by the Southern California Water Company. During construction, Niland Sanitation District and, if necessary, a septic system will serve the sewage needs. Use of a septic system will require the applicant to obtain a permit, which would require site-specific soil percolation test. Golden State will serve the water needs. If extraction of groundwater is needed, a permit under Imperial County Groundwater Ordinance (Title 9 Division2) would be obtained. Therefore, no impact with regard to the capability of soils to adequately support the use of septic tanks or alternative wastewater disposal systems would occur.

## **VII. HAZARDS AND HAZARDOUS MATERIALS**

### **Would the project:**

**a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

**Less Than Significant Impact.** Implementation of the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. The proposed project will include pad-mounted transformers for each 5-acre, 500 kW block of panels, and an inverter. The transformers will include oil (containing no PCB). Another proposed project

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<sup>29</sup> Geosphere Consultants, Inc. Phase I Geotechnical Reconnaissance Report Proposed Niland Group Photovoltaic Power Plant Project, Niland Area, Imperial, California. Page 10. June 24, 2008.



element includes construction of a 6-foot high chain link fence topped with a two strand electrical component. Construction of the proposed project is anticipated to occur at a pace between 10 and 25 MW per month, which will occupy between 25 and 160 acres at any given time.

Construction activities would be short-term and one-time in nature, and would involve the limited transport, storage, use and disposal of hazardous materials. Some examples of hazardous materials handling include on-site fueling/servicing of construction equipment and the transport of fuels, lubricating fluids, and solvents. An onsite concrete batch plant will be set up to produce concrete for the solar panel foundation blocks. Concrete from this plant will also service building or structure footings/foundations and pads for inverters, transformers, and substation equipment. These types of materials are not acutely hazardous, and all storage, handling, and disposal of these materials are regulated by the California Department of Toxic Substances Control (DTSC), Environmental Protection Agency (EPA), the Occupational Safety & Health Administration (OSHA), the Imperial County Fire Department, and the Imperial County Health Department. All construction activities involving hazardous materials would be subject to federal, state, and local health and safety requirements involving the transport, use, and disposal. The impact would be less than significant.

The proposed project is not anticipated to generate industrial wastes or toxic substances during operation. The PV arrays will be routinely analyzed and optimized. The PV arrays will not include any moving parts and maintenance requirements, such as PV array washing, will be very minimal. Operation of the proposed project would continue to involve the limited transport, storage, use and disposal of hazardous materials including the use of diesel and gasoline operated vehicles, lubricating fluids, and solvents. All hazardous materials used at the project site would be stored, handled, and disposed of in accordance with local, county, and state laws that protect public safety. The impact would be less than significant.

The proposed project incorporates the use of use of electrified fencing components. As currently planned, the six foot chain link fence would have a two strand electrical component at the top. This electric component provides electric shock hazard to humans and wildlife that physically contact the wire. It is proposed to provide appropriate signage to prevent accidental contact. It would be extremely low amperage electrified wires, with relatively high voltage, enough to discourage scaling.

**b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

**Less Than Significant Impact.** The proposed project would not create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Construction activities would be short-term and one-time in nature, and would involve the limited transport, storage, use and disposal of hazardous materials. All construction activities involving hazardous materials would be subject to federal, state, and local health and safety requirements pertaining to the transportation, usage, and disposal. The impact would be less than significant.

Operation of the proposed project is not anticipated to generate industrial wastes or toxic substances during operation. However, the proposed project would continue to involve limited transportation, storage, usage and disposal of hazardous materials including the use of diesel and gasoline operated vehicles, lubricating fluids, and solvents. All hazardous materials used at the project site would be stored, handled, and disposed of in accordance with local, county, and state laws that protect public safety. The impact would be less than significant.

**c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?**

**No Impact.** The proposed project is located on approximately 970 acres of LADWP-owned land adjacent to and east of the community of Niland, California. The proposed project site would not produce hazardous emissions or materials within one-quarter mile of an existing or proposed school. There is a school and a childcare facility identified within one mile of the proposed project. The Niland Headstart childcare service is located less than a half mile west of the proposed project site. Grace Smith Elementary School is located approximately less than one mile west of the proposed project site.

Electric generation facilities and their specific components, such as substations and transmission lines, create electric and magnetic fields (also referred to as electric and magnetic fields; EMF). EMF are invisible lines of force that surround any electrical device and are also produced from the flow of electricity through wires. These fields generally increase in strength as the voltage or current increases. The fields decrease in strength as distance from the source increases.

Relative to the potential health effects of EMF, the California Public Utilities Commission is unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences. The agency has vowed to continue studying such relationships and issue new policy relative to protection of public health exposure to EMF as warranted.

The proposed project would not create significant impacts on human health due to EMF exposure. The proposed substation and transmission line components would not be situated adjacent to residential areas, schools, or daycare centers.

Construction activities would be short-term and one-time in nature, and would involve limited transportation, storage, usage and disposal of hazardous materials. Project construction vehicles would avoid passing these school and childcare facilities. Operation of the proposed project is not anticipated to generate industrial wastes or toxic substances during operation. In addition, all activities involving hazardous materials would be subject to federal, state, and local health and safety requirements involving transportation, usage, and disposal. No adverse impacts would occur.

**d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

**No Impact.** The proposed project would not be located on a site that is included on a list of hazardous materials sites and would not create a significant hazard to the public or the environment. Per a search on the California Department of Toxic Substances Control (DTSC) database, Envirostor, the proposed project site did not contain any listed contaminated sites.<sup>30</sup> One site was identified outside the proposed project site. The Chocolate Mountain Naval Aerial Gunnery Range, northeast of the proposed project site, is a federally owned facility managed by the Marine Corps Air Station (MCAS) in Yuma, Arizona. As such, the proposed project does not pose a potential for upset of contamination due to project construction activities. Contaminated soil from an abandoned oil well or underground storage tank is not present at the proposed project site. No adverse impacts would occur.

The proposed project site does not contain any leaking underground storage tank (LUST) clean up sites, land disposal sites, military cleanup site, or any State Water Board Cleanup Sites. However, there were five underground storage tank (USTs) sites identified located west of the proposed project vicinity. Four LUSTs were identified and have been remediated. Their cases were closed. One site was a permitted underground storage tank (UST) facility. Also, there was one cleanup site identified, the Union Pacific Railroad – Wister, which is less than a half mile from the proposed project site. The site is currently being assessed for soil contamination.<sup>31</sup>

The proposed project site is not included on the Cortese list, Superfund Site list, or other lists compiled pursuant to Section 65962.5 of the Government Code.<sup>32,33,34</sup> As such, the proposed project would not create a significant hazard to the public or the environment relative to hazardous materials. No impacts would occur.

**e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

**No Impact.** The proposed project would not result in a safety hazard for people residing or working in the project area related to hazards associated with aviation operations. The proposed project site is not located within two miles of a public airport or within an airport land use plan. Calipatria Municipal Airport is the closest regional airport, which is approximately 7.5 miles south of the proposed project area

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<sup>30</sup> Department of Toxic Substances Control – EnviroStor website. EnviroStor is a DTSC Brownfields site database, which provides a list of formerly-contaminated properties that have been released for reuse and where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites. Website <http://www.envirostor.dtsc.ca.gov/public/default.asp>, accessed August 2008.

<sup>31</sup> California Environmental Protection Agency, State Water Resources Control Board. Website <http://geotracker.waterboards.ca.gov/>, accessed August 2008.

<sup>32</sup> Department of Toxic Substances Control. *DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List)*. Website [http://www.dtsc.ca.gov/SiteCleanup/Cortese\\_List.cfm](http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm), accessed August 2008.

<sup>33</sup> EPA. *CERCLIS Hazardous Waste Sites*. Website <http://www.epa.gov/superfund/sites/cursites/index.htm>, accessed August 2008.

<sup>34</sup> EPA. *National Priorities List*. Website <http://www.epa.gov/superfund/sites/npl/index.htm>, accessed August 2008.

in the City of Calipatria. The proposed project is also located approximately 18 miles north of Brawley Municipal Airport and 28 miles north of Imperial County Airport. Both serve as general aviation facilities. No impacts would occur.

**f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

**No Impact.** The project site is not located within the vicinity of a private airstrip. The project would be located on approximately 970 acres of LADWP-owned land. No impacts would occur.

**g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**No Impact.** The proposed project would not impair or physically interfere with an adopted emergency response plan or a local, state, or federal agency's emergency evacuation plan. The project would be located on approximately 970 acres of LADWP-owned land. No temporary or permanent street closures are planned as part of the project. Staging areas for construction would be located within LADWP-owned land. The project site will include two staging areas of approximately 30 acres each and proposed roads, which will be primarily used during construction and rarely during operation. Emergency access to the project site would not be adversely impacted during construction. No significant impacts would occur.

**h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

**Less Than Significant Impact.** The project would be located on approximately 970 acres of LADWP-owned land. The potential for a major fire in the unincorporated areas of Imperial County is generally low. However, a fire hazard exists at the fuel storage farm located within the project vicinity (northwest corner of Area 4-3). Fire protection is primarily handled by the Niland Fire District with a Fire Chief and Captain (salaried) and volunteer fire fighters.<sup>35</sup>

In the event of a fire, assistance from various fire departments within the County would be required. Imperial County has existing fire stations at the following locations for initial response into the area of the proposed project.<sup>36</sup>

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<sup>35</sup> County of Imperial. *Imperial County General Plan, Niland Urban Area Plan*.

<sup>36</sup> Imperial County Fire Departments. Website <http://www.firedepartments.net/county/CA/ImperialCounty.html>, accessed August 2008.

**Table VII-1  
Imperial County Fire Stations**

<b>Fire Station</b>	<b>Address</b>	<b>Type of Fire Department</b>	<b>Staffing</b>	<b>Distance Away</b>
Niland Fire District	8071 Luxor Ave. Niland, CA 92257	Mostly Volunteer	23	0.5 miles east
Calipatria Fire Department	125 N Park Ave. Calipatria, CA 92233	Mostly Volunteer	13	8.5 miles south
Westmorland Fire Department	230 W Main St. Westmorland, CA 92281	Volunteer	21	20 miles southwest
Imperial County Fire Department	2514 La Brucherie Rd. Imperial, CA 92251	Mostly Volunteer	42	31.3 miles south

The project would follow all Occupational Safety and Health Administration (OSHA) and CalOSHA requirements for its construction and operating activities. A safety compliance director will be assigned to the project to ensure that safety is given high priority.

The project would be in compliance with the latest version of the California Building Code, the Uniform Building Code, and all other applicable federal, state, and local codes relating to fire safety and fire prevention. The proposed project would adhere to the Imperial County Subdivision Ordinance, which includes provisions used to reduce the risk of fire by securing, as a condition of subdivision of land, water systems of adequate size and pressure for fire fighting, and adequate roadway widths for emergency service vehicle access, including maneuverability of fire trucks.<sup>37</sup> As such, the impact would be less than significant.

## VIII. HYDROLOGY AND WATER QUALITY

### Would the project:

#### a) Violate any water quality standards or waste discharge requirements?

**Less Than Significant Impact.** To comply with state law, water quality standards and waste discharge requirements during construction would need to be addressed in the project design and construction phase pursuant to Order 99-08-DWQ (i.e., the Construction General Permit) (see Appendix E, Hydrology and Water Quality Report). This Order requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared in accordance with the National Pollution Discharge Elimination System (NPDES) regulations. This plan would require further approval by the County of Imperial, Department of Planning and Public Works. The SWPPP would establish Best Management Practices (BMPs) for construction of the solar facilities, including source, erosion, sediment, and non-storm water controls to be installed and maintained throughout construction.

<sup>37</sup> County of Imperial. *Imperial County General Plan, Seismic and Public Safety Element.*

The SWPPP is a standard requirement for development projects under the Construction General Permit (once coverage is obtained from the RWQCB) and with implementation, would ensure compliance with water quality standards and water discharge requirements if properly designed and implemented. Proper implementation of the SWPPP would reduce or eliminate construction-related water quality impacts to less than significant. Accordingly, the BMPs presented in the construction and design notes on Sheet G-002 (see Appendix A, Site Plan, Drainage and Erosion Control Plans, notes 11 – 13), with particular attention to project drawing Sheet C-501 (see Appendix A, Site Plan, Drainage and Erosion Control Plans) for installation notes would assist in protecting water quality during construction. In addition, the following general protective measures would need to be installed prior to construction:

**Sediment Controls:** The primary water quality pollutant of concern during construction activities would be potential sedimentation effects from soil-disturbing activities, such as clearing/grubbing and grading/excavation. Sediment control BMPs would need to be deployed prior to initiating project construction activities. Sediment controls would need to be implemented along the drainage perimeter of the disturbed soil areas, at the toe of the slopes, and at applicable drainage inlets to the municipal separate stormwater system (MS4). All sediment control materials would need to remain onsite year-round until construction is completed. BMPs would need to be upgraded and regularly inspected during the rainy season (October 1 through April 30) and modified or enhanced when determined necessary by the site inspections. Sediment controls would (at a minimum) include silt fencing and/or fiber rolls along the perimeter of disturbed areas, gravel bags, inlet filters, or check dams at all existing storm drain inlets that accept project drainage.

Perimeter silt fence or similar sediment controls would specifically be required along the East Highline Canal (part of the All American Canal System), which runs diagonally between the northeast corner of Area 4-4 and southwest corner of Area 4-5. Project construction activities must not be allowed to produce discharges of any type (raw material spills, runoff, concrete wash water, etc.) into the Canal.

**Erosion Controls:** Erosion control materials would be needed for disturbed areas including slopes and project stockpiles. Fiber rolls and gravel bags would be required to decrease runoff flow rates on-site and provide erosion protection on bare slopes. Fiber rolls also would be required along construction access roads to prevent water from under-cutting the sub-base.

**Tracking Controls:** A stabilized construction entrance would need to be established at each of the four construction site entrances/exits from adjacent public roadways (Wilkins Road, Beal Road, and two off East Noffsinger Road).

**General Site and Material Management:** Construction-related materials that pose a threat to water quality would need to be stored at designated staging areas and within approved, proper containment. Pollutant source materials would be required to be stored off-ground and under covered areas. Spill kits also would be required at the staging areas and on select equipment for

immediate access depending on the type and number of equipment used. Concrete washout areas would need to be properly constructed for full containment of waste, monitored daily, and emptied once reaching three-quarters capacity. Trash and construction related debris would need to be cleaned up daily and disposed of in proper containers.

Specific protective measures during project construction would need to include: Regular site and BMP inspections before, during, and following storm events. BMPs that are found to be deficient or not operating properly would need to be adjusted, modified, or otherwise supplemented to achieve proper water quality protection. These inspections and water quality protection measures would be conducted in compliance with SWPPP requirements.

Sanitary waste facilities would be ensured by engaging a licensed subcontractor to deliver, maintain, and remove portable toilets during construction. Impacts associated with these facilities would be reduced to less than significant levels provided that:

- The toilets would be emptied at least weekly and dyed chemicals would be used to ensure that the smallest leaks are detected promptly.
- The sanitary waste contractor supplies secondary containment for the facilities.
- Provision for sanitary waste spills is available on site.

Specific post-construction protective measures for water quality during operation of the solar project would need to include: Compliance with water quality standards relative to the Colorado River Basin Plan-Region 7 (Resolution No. 94-18), and the Non Point Source Management Plan (Resolution No. 88-123).

The Basin Plan and Non Point Source Management Plan would require the project to maintain protective measures throughout operations to ensure no impacts to local water quality. Compliance with these Resolutions would serve to protect local water quality during solar farm operations. Other aspects of the permanent drainage features are discussed in greater detail in responses (c), (d), and (e) below.

Niland Sanitation District, and if necessary, a septic system will serve the sewage needs during the construction process. During the operation of the proposed project, it will be in compliance with the Niland Department of Public Works for suitable waste-disposal options for permanent sewer connections. Portions of the project site are within the Niland Urban Area, and the Niland Urban Plan requires new nonagricultural development to be serviced by the Southern California Water Company, unless other arrangements are proposed<sup>38</sup>. The project site is located within Golden State's service area for the town of Niland and Golden State will serve the water needs during construction and operation. If extraction of groundwater is needed, a permit under Imperial County Groundwater Ordinance (Title 9 Division 2) would be obtained. Therefore, compliance with existing regulations and the aforementioned general protective measures would reduce the impact to less than significant.

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<sup>38</sup> County of Imperial. Imperial County General Plan. Niland Urban Area Plan. November 19, 1996.

- b) **Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?**

**Less Than Significant Impact.** Golden State is the water service provider in the project area and it is under the auspices of this entity that the water supply would be provided (see Section XVI b) Utilities and Service Systems for more information about project water demand). Groundwater recharge potential would be preserved through the incorporation of the detention/retention proposed to control onsite drainage. If necessary, a permit under the Groundwater Ordinance (Title 9 Division 2) would be obtained. Less than significant impact would occur.

- c) **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?**

**Less Than Significant With Mitigation Incorporated.** The proposed project would not alter the course of a stream or river but would involve grading and filling portions of the 100-year floodplain. The project would disturb a portion of the adjacent wash located at the northwest corner of Area 4-5. Proper implementation of the project SWPPP would prevent on-site soil erosion and siltation during construction of the project. The project SWPPP and project drawing sheets C-500 and C-501 (see Appendix A, Site Plan, Drainage and Erosion Control Plans) would describe the steps needed to adequately reduce erosion and siltation on-site during construction.

Additionally, a 2.75 acre-foot detention/retention basin would be constructed on the southeast corner of Area 4-5 to control storm water runoff from entering the East Highline Canal. The project also would fill in three subareas of Area 4-5. Implementation of the following Mitigation Measures would reduce the construction related impacts to less than significant:

**HWQ-1** A water quality technical report or equivalent drainage study shall be prepared to identify whether the wash designated by FEMA as a 100-year floodplain is considered jurisdictional water that would require an Army Corps of Engineers (ACOE) Section 404 (dredge and fill) permit.

The project site will be developed with solar panels and appurtenant facilities. The potential significant impact of placing the proposed solar panels within and outside the floodplain would be reduced to less than significant level by implementing the following Mitigation Measure:

**HWQ-2** Other disturbed areas of the project footprint outside of the FEMA-designated 100-year floodplain shall require proper drainage controls to properly convey runoff to the detention/retention basins.

**HWQ-3** In addition to the project drawings C-202 through C-213 (see Appendix A, Site Plan, Drainage and Erosion Control Plans) that are related to perimeter drainage controls and detention/retention systems, project



drainage studies and design details shall be prepared to determine drainage and erosion control suitability.

Compliance with the applicable County and Imperial Irrigation District codes for grading and hydrology protection and implementation of the above mitigation measures would reduce the potential water quality impacts to less than significant.

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?**

**Less Than Significant With Mitigation Incorporated.** Implementation and maintenance of adequate BMPs (as prescribed in Sheet C-501[see Appendix A, Site Plan, Drainage and Erosion Control Plans] and in accordance with the project SWPPP) would properly control the erosion and siltation to protect water quality. As described above, a portion of the project would be constructed in the 100-year floodplain, which would involve grading and filling of the associated wash to provide level ground for project construction. As a result, existing drainage would be modified by the recontouring of the affected areas, the installation of perimeter drainage ditches, and the construction of detention/retention basins. In addition, solar panel blocks are proposed in the wash located in the northwest corner of Area 4-5. In addition to the implementation of the adequate BMPs, Mitigation Measures HWQ-1 through HWQ-4 would ensure that the footings would not compromise the flood waters associated with the upgradient drainage features. The impacts would be less than significant.

- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

**Less Than Significant Impact.** This project would include a stormwater drainage and runoff control system. Impervious surface area would increase as a result of the project. The permanent post-construction storm water management system (Sheets C-200 through C-213 [see Appendix A, Site Plan, Drainage and Erosion Control Plans]) will be prepared and will have proper drainage design. Discharges from the detention/retention basins would comply with the Basin Plan and Non Point Source Management Plan to ensure no impacts to local water quality.

Polluted runoff would be minimized through the proper implementation of the project's SWPPP and post-construction BMPs (i.e., detention/retention facilities, drainage swales, etc.). Post-construction BMPs would be designed for runoff treatment and the removal of pollutants prior to offsite discharge. SWPPP-compliant waste management practices would minimize storm water contact with potential pollutants and prevent waste discharges. Hazardous materials would be used, stored, handled, and would be clearly marked and segregated from the nonhazardous waste materials in accordance with all applicable regulations. Spills would be cleaned up immediately using dry methods and disposed of properly. A concrete washout facility would be constructed and maintained by the contractor for proper waste management and disposal. Excess concrete and concrete washout slurries would be discharged to the washout facility for drying prior to disposal. The

washout facility would include an impervious liner to protect against infiltration to the ground and a cover to prevent rainwater from filling the containment. Implementation of the project's SWPPP and post-construction BMPs would ensure less than significant impact.

**f) Otherwise substantially degrade water quality?**

**Less Than Significant Impact.** Implementation of adequate and proper construction and post-construction BMPs (as described above) would reduce the potential significant impacts to local water quality to less than significant.

**g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**

**No Impact.** The proposed project would consist entirely of solar panel and associated facilities. No residential development would occur, therefore no impact is anticipated. However, a permanent office structure would be expected to support operations and maintenance at the project site. This structure would be outside of the 100-year floodplain and wash area. No impact would occur.

**h) Place within a 100-year flood area structures to impede or redirect flood flows?**

**No Impact.** As documented on Sheet C-100 (see Appendix A, Site Plan Drainage and Erosion Control Plans), a flood zone is located northeast of Area 4-4 and northwest of Area 4-5. Of Area 4-5, three (3) solar panel blocks would be situated within this flood zone, Block 79 completely and Blocks 80 and 90 partially (see Sheet C-101 [see Appendix A, Site Plan Drainage and Erosion Control Plans]). The panels would be elevated off-ground with only the footings at ground level. The footings are approximately 2.5 square feet each and would not be expected to impede or redirect flood flows in the wash, particularly since the panel would also be situated on elevated fill within the wash. In addition, adjacent to the flood zone and following the East Highline Canal, an existing levee controls surface water runoff and reduces the chance of overflow from the canal into project Area 4-4. There are no other structures proposed within the 100-year flood area. No impact would occur.

**i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?**

**No Impact.** The proposed project would not have an impact on the structural integrity of the existing East Highline Canal Levee. Although not associated with project features, the project would consider the potential failure of the East Highline Canal when locating the permanent office building. No impact would occur.

**j) Inundation by seiche, tsunami, or mudflow?**

**No Impact.** The most likely location for a significant seiche to occur in the area is the Salton Sea (3 miles from project site); however no significant seiches have occurred to date. No impacts would be anticipated relative to tsunamis or mudflows, as no topographical features or water bodies capable of producing such events occur within the project site vicinity. No impact would occur.

## IX. LAND USE AND PLANNING

### Would the project:

#### a) Physically divide an established community?

**Less Than Significant Impact.** The proposed solar power generation facility would be located within the boundaries of the LADWP Niland property. Besides the roads, Union Railroad Tracks, and supporting facilities, the project site is undeveloped. Construction and operation of the proposed project would not result in physical division of an established residences or communities in the vicinity of the project area. The impact would be less than significant.

#### b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

**Less Than Significant Impact.** The proposed project site has the General Plan designations of Light Industry, Urban Area, and Agriculture,<sup>39</sup> (see Figure 15, Land Use Map). Light Industry refers to industrial plants, and storage, distribution, and administrative facilities. Urban Area is characterized by a full level of urban services; in particular, public water and sewage systems, and contains or proposes a broad range of residential, commercial, and industrial uses. The Agricultural category is intended to preserve lands for agricultural production and related industries. No land shall be removed from the Agriculture category except for annexation to a city, where needed for use by a public agency, for geothermal purposes, where a mapping error may have occurred, or where a clear long term economic benefit to the County can be demonstrated through the planning and environmental review process.

Areas 4-1, 4-2, and 4-3 of the proposed project site are located within the Niland Urban Area, and they have land use designations of Light Industry and Medium Agriculture<sup>40</sup>. Light use refers to industrial plants, and storage, distribution, and administrative facilities, for uses engaged in manufacturing, compounding, processing, assembling, packaging, treatment, or fabrication of materials and products. Medium Agriculture use includes all agricultural crop production such as field, forage, tree groves, vines, and other plant crops intended to provide food or fiber, as well as flowers and field or container plants including ornamental, landscape, agricultural, and native plants.

Niland Urban Area Plan's Goal 3 of the G. Conservation states, "The County shall seek to achieve maximum conservation practices and maximum development of renewable alternative sources of energy."<sup>41</sup> The proposed project would meet this goal by developing a solar photovoltaic facility.

The proposed project site has the zoning designations of M-1 (Light Industrial Area), A-2 (General Agricultural Area), and U (Urban Areas) Overlay<sup>42, 43</sup>. M-1 designates

<sup>39</sup> County of Imperial. Imperial County General Plan, Land Use Element. Approved January 29, 2008.

<sup>40</sup> County of Imperial. Imperial County General Plan. Niland Urban Area Plan. November 19, 1996.

<sup>41</sup> Ibid.

<sup>42</sup> Imperial County, Planning & Development Services Department. Codified Ordinance, Title 9, Division 5, Zoning Areas Established. Available at [http://municipalcodes.lexisnexis.com/codes/imperial\\_co/](http://municipalcodes.lexisnexis.com/codes/imperial_co/). Accessed August 8, 2008.

areas for wholesale commercial, storage, trucking, assembly type manufacturing and other similar light industrial uses. A-2 designates areas that are suitable and intended primarily for agricultural uses (limited) and agricultural related compatible uses (Land Use Ordinance Section 90508.00). U zone is intended to be an Overlay zone to designate areas that are within an Urban area of an incorporated city or an Urban area as designated on the County General Plan (Land Use Ordinance Section 90501.08).

The project site's land use categories of the General Plan are compatible with the zoning districts of the site<sup>44</sup>. Solar energy use is permitted in the M-1 zone and solar energy electrical generator use is permitted in A-2 zone with a conditional use permit (CUP). Also, the proposed project would comply with the Niland Urban Plan. Thus, the proposed project would not conflict with an applicable land use plan upon obtaining a CUP. The impact would be less than significant.

**c) Conflict with any applicable habitat conservation plan or natural community conservation plan?**

**No Impact.** The proposed project would not conflict with any habitat conservation plan. The site is not within a habitat conservation community or a natural community conservation area. No impact would occur.

**X. MINERAL RESOURCES**

**Would the project:**

**a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

**No Impact.** See discussion in item *b*, below.

**b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

**No Impact.** The proposed project would not result in the loss of a locally important mineral resource. A wide variety of minerals are found throughout Imperial County. Gold, gypsum, sand, gravel, lime, clay, and stone have the highest economic value and are presently extracted for profit in the County. Industrial materials are also readily available, including kyanite, mineral fillers (clay, limestone, sericite, mica, and tuff), salt, potash, calcium chloride, manganese, and sand<sup>45</sup>. However, the project site is not located on significant mineral or energy deposits<sup>46</sup>. Locally important mineral resources are not located on or near the site. No impact would occur.

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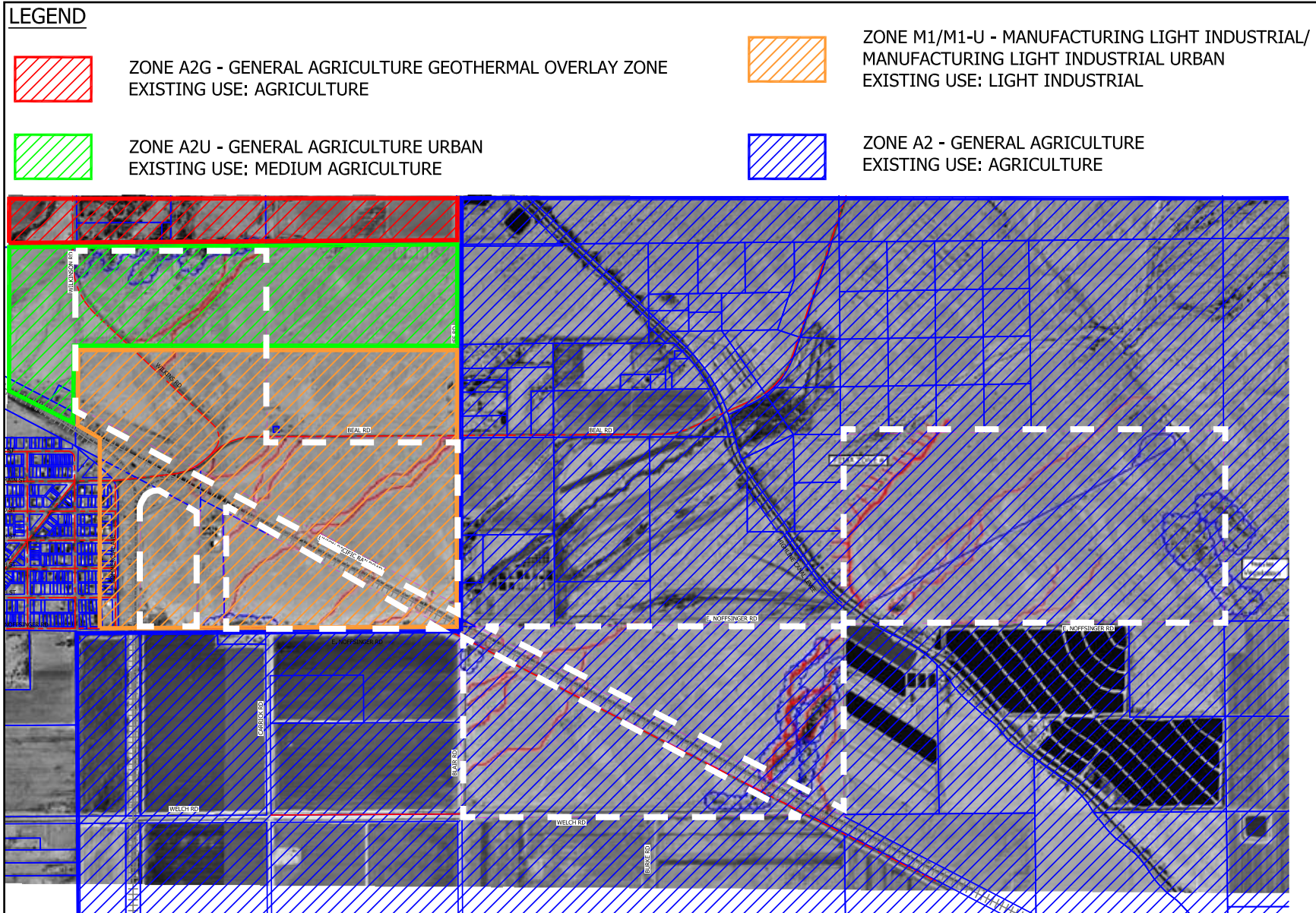
<sup>43</sup> Imperial County, Planning & Development Services Department. Niland Zoning Map, Map #11. 1998.

<sup>44</sup> County of Imperial. *Imperial County General Plan, Land Use Element*. Approved January 29, 2008.

<sup>45</sup> County of Imperial. *Imperial County General Plan, Conservation/Open Space Element*.

<sup>46</sup> U. S. Geological Survey. Mineral Resources On-Line Spatial Data. <http://mrddata.usgs.gov/>, accessed August 25, 2008.

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**Figure 14**  
**Land Use Map**

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**XI. NOISE**

**a) Exposure of persons to or generation of noise levels in excess of applicable standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

**Less Than Significant Impact.** The Imperial County Noise Ordinance, Title 9, Division 7, Section 90702.00 specifically regulates construction noise and limits construction activities. Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB Leq, averaged over an eight (8) hour period, at the nearest sensitive receptor. For extended length construction times, construction may not exceed 75 dB Leq averaged over a 1 hour period.

During construction of the proposed project, noise levels in the vicinity would increase due to the use of construction equipment and vehicles (see Appendix F, Noise Report). Typical construction vehicles and equipment can generate short-term maximum noise levels in the order of 89 dBA at a distance of 50 feet when the equipment is under maximum load. Due to the nature of the project’s anticipated construction activity, with breaks and repositioning of equipment, hourly noise levels at 50 feet are assumed to average no more than 85 dBA Leq from the centroid (middle of an activity) of the each work area. The project construction activities of fine grading, utility trenching, and PV module installation would likely generate average noise levels less than 85 dBA Leq.

The residences in proximity to the proposed construction area are located adjacent to the southwest corner of Area 4-1, approximately 400 feet from the nearest residence to the nearest point of construction activity. At 400 feet, 85 dBA Leq would reduce with distance to approximately 67 dBA Leq without noise barriers such as structures or topography. Thus, noise levels at the nearest residences would not exceed Imperial County’s most stringent allowable construction noise level limit of 75 dB Leq averaged over a 1 hour period for daytime activities under the Imperial County Noise Ordinance.

Section 90702.00 of the Noise Ordinance also regulates sound level limits at property lines and states that it is unlawful for any person to cause noise by any means to the extent that the applicable 1-hour average sound level set out in Table XI-1 is exceeded, at any location in the County of Imperial on or beyond the boundaries of the property on which the noise is produced.

**Table XI-1  
Applicable Noise Limits**

<b>Land Use Zone</b>	<b>Time of Day</b>	<b>One Hour Average Sound Level (decibels)</b>
1. Residential: All R-1	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
2. Residential: All R-2	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
3. Residential: R-3, R-4 & all other residential	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
4. All commercial	7 a.m. to 10 p.m.	60



Land Use Zone	Time of Day	One Hour Average Sound Level (decibels)
	10 p.m. to 7 a.m.	55
5. Manufacturing, all other industrial, including agricultural & extraction industry	(anytime)	70
6. General industrial	(anytime)	75

Source: County of Imperial 2003

Note: The sound level limit between two zoning districts (different land uses) shall be measured at the property line between the properties.

Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of subsection A of this section, measured at or beyond six feet from the boundary of the easement upon which the equipment is located.

The constructed facilities would produce noise intermittently during maintenance activities from personnel, equipment, and vehicles on the project site, and are anticipated to emit negligible noise levels from the PV solar system due to the lack of generator or turbine operation, which is anticipated to be less than the ambient noise level due to existing area noise sources (e.g., the adjacent rail line operation). The project site is zoned as 5, Manufacturing, all other industrial, including agricultural & extraction industry, from Table 1 from Section 90702.00 of the Noise Ordinance, which provides an allowable 1-hour average noise level from the project site at its property line of 70 dBA at anytime (24 hours per day/7 days per week).

Therefore, the project would not result in the generation of new noise levels in excess of noise standards.

**b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?**

**Less Than Significant Impact.** Minor vibration or groundborne noise may be generated from the operation of heavy vehicles and machinery during minor earthmoving and trenching activities; no pavement breaking or pile driving is anticipated. Operation of the constructed facilities would not include any substantial new vibration sources. Railway operation adjacent to and in between the residences and the project site is expected to generate vibration and groundborne noise.

Construction vibration is dependent upon the amount and type of construction and the distance between construction activities and the nearest vibration-sensitive receptor. With the exception of pile driving, construction equipment vibration levels from construction activities are below the threshold of annoyance at distance greater than 25 feet.

The nearest residential structures are located more than 400 feet from proposed construction activities. The residences are at sufficient distances that any project vibrations would not be perceptible. Thus, groundborne vibrations associated with the project would not result in significant impacts.

**c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

**No Impact.** The project would not result in a substantial permanent increase in ambient noise levels in the project vicinity. The constructed facilities would produce some short-term noise during maintenance activities from personnel, equipment, and vehicles on the project site; and is anticipated to emit negligible noise levels from the PV solar system, which are anticipated to be less than the ambient noise level due to existing area noise sources (e.g., the adjacent rail line operation).

**d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Less Than Significant Impact.** As previously stated, construction activities would result in increased noise levels on the project site. Construction equipment could generate noise levels up to 85 dBA Leq at 50 feet from the centroid of the each work area. However, construction noise levels would attenuate with distance to not exceed the allowable noise level limits at the nearest residence during daytime activities under the Imperial County Noise Ordinance. While there would be a temporary increase in ambient noise levels during construction, the impact would be less than significant due to the magnitude being less than the ordinance limits.

**e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

**No Impact.** The nearest airport to the project site is the Imperial County Airport, located approximately 25 miles to the south. Therefore, the project would not expose people to excessive noise levels.

**f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?**

**No Impact.** The project site is not located within the vicinity of a private airstrip. Therefore, the project would not expose people residing or working in the project area to excessive noise levels.

## **XII. POPULATION AND HOUSING**

### **Would the project:**

**a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

**No Impact.** The proposed project involves construction of solar energy generation facility. The project does not include construction of new homes or businesses nor extension of roads or other infrastructure that would substantially induce population growth.

The construction workforce is estimated to be 100-150 workers at its peak. Due to the temporary duration of the construction, it would be reasonable to assume that most project-related construction workers would not relocate their households as a result of working on the proposed project. Construction-phase employment, therefore, would not result in substantial increase to the local or regional population or specific increase in demand for housing.

Operation of the proposed solar power generation facility would require minimal number of employees on site, which would not induce substantial population growth. No impact would occur.

**b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

**No Impact.** Construction and operation of the proposed project would occur within the LADWP Niland property. There is no existing housing within the project property, and the project does not require removal of housing. Therefore, construction and operation of the proposed project would not displace substantial number of existing housing in the area and would not necessitate the construction of replacement housing elsewhere. No impact would occur.

**c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

**No Impact.** Construction and operation of the proposed project would occur within the LADWP Niland property. There is no existing housing within the project property, and the project does not require removal of housing. Therefore, construction and operation of the proposed project would not displace substantial numbers of people and would not necessitate the construction of replacement housing elsewhere. No impact would occur.

### **XIII. PUBLIC SERVICES**

**a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:**

**i) Fire protection?**

**No Impact.** Fire protection is handled by the Niland Fire District with a Fire Chief and Captain and volunteer fire fighters. The construction and operation of the proposed project would not include any characteristics or create fire hazards that would increase the need for fire protection. Similarly, the PV panels and ancillary equipment represents a negligible increase in fire potential. However, the solar energy developer will have a fire prevention plan approved per applicable County regulations. In addition, the proposed project would not result in substantial increases in population, which would increase the demand for fire services. Therefore, no impact would occur.

**ii) Police protection?**

**No Impact.** Construction and operation of the proposed solar power generation facility would not increase the need for police services. There are no residential, commercial, industrial, or recreational land uses proposed as part of the project, which could substantially increase the demand for police services.

The County Sheriff's Substation is located in the township providing police protection service to area residents. The Sheriff has cooperative agreements with the cities of Calipatria and Brawley to provide backup support in certain emergencies on an "as available" basis<sup>47</sup>. There will be 24-hour on-site security during construction and operation of the project. The access to the project site will be limited to project-related staff. LADWP's security group will design and procure the complete security system and assist the construction in its installation in accordance with the latest LADWP security requirements. No impact would occur.

**iii) Schools?**

**No Impact.** The proposed project consists of developing a solar power generation facility. No feature of the project would generate a demand for school services. The proposed project does not include a housing component and it would not increase the employment substantially. Therefore, it would not increase student enrollment levels in the area. No impact would occur.

**iv) Parks?**

**No Impact.** The proposed project consists of developing a solar power generation facility. Besides the several new O&M staff on-site, no population increase in the project area is anticipated. No impact would occur.

**v) Other public facilities?**

**No Impact.** The primary objective of the proposed project is to construct and operate a solar power generation facility. No population increase in the project area would result from the proposed project. No new housing or businesses would be constructed as part of the project to induce population growth. Therefore, no substantial adverse physical impact to other public facilities would occur.

**XIV. RECREATION**

**Would the project:**

**a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

**No Impact.** Implementation of the proposed project would not increase the use of existing neighborhood or regional parks or other recreational facilities. Neither the

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<sup>47</sup> Imperial County General Plan , Niland Urban Area Plan, Planning & Development Services Department, County of Imperial. Approved on April 19, 1994, revisions adopted on November 19, 1996.

construction nor operation of the proposed project would generate any additional population that would increase the use of existing neighborhood or regional parks or other recreational facilities. Since the proposed project would not increase the demand for recreational facilities or eliminate any existing recreational facilities, no impact would occur.

**b) Include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment?**

**No Impact.** The proposed project consists of developing a solar power generation facility. The proposed project does not include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment. The project site would be occupied by a facility that is devoted primarily to solar power generating. No impact would occur.

**XV. TRANSPORTATION/TRAFFIC**

**Would the project:**

**a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?**

**Less Than Significant.** Operation of the proposed project would not cause any increase in traffic in relation to the existing traffic load and capacity of the street system because it would not increase beyond current levels the number of workers or vehicles required to operate facilities. The proposed project will produce electricity with no moving parts, allowing for minimal maintenance requirements. Routine maintenance and inspection of the PV panels is anticipated to require minimal maintenance staff on site. Typical work schedules are expected to be during daylight hours only. There will also be 24-hour on-site security.

Construction of the proposed facilities could result in temporarily increased traffic volumes associated with construction activities and reduced roadway capacities during brief periods of time. Construction of the proposed project would involve clearing and fencing of the two staging areas, which would be approximately 30 acres. The proposed project would also involve trenching in order to bury electrical cables in conduit between inverters, transformers, and the substation. Additionally, solar support structures will arrive in containers on tractor-trailers at the staging area, where the containers will be transferred by crane onto smaller vehicles and brought to the construction location. Graded roadways in selected locations within the proposed project area will be constructed in order to bring equipment and materials from the staging area to the construction area. These temporary access roads that will be constructed within the proposed project area will be heavily used during construction and rarely used during operation. For Area 4-1 (Northwest Parcel), the proposed access road would be located along Wilkins Road and the Union Pacific Railroad. For Area 4-1 (Southeast Parcel), it is located along East Beal Road. For Area 4-4, it is located along East Noffsinger Road. In Area 4-5, the proposed

accessed road is located on East Noffsinger Road. There are no proposed access roads for Area 4-3 (see Figure 16, Temporary and Permanent Road Layout).

Construction of the proposed project is anticipated to have a workforce of 100-150 workers at its peak. However, this condition would be temporary, related to only the construction phase of the proposed project. The proposed project would not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. As such, the impact would be less than significant.

**b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?**

**Less Than Significant.** Operation of the proposed project would not substantially increase the amount of daily traffic or exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways. Following construction, the proposed project is anticipated to generate a similar number of vehicle trips compared to existing conditions and would not create significant impacts in relation to existing traffic load and street capacity or level of service standards. Operation of the proposed project would create less than significant impacts.

As previously stated, construction of the proposed project is anticipated to have a workforce of 100-150 workers at its peak. This condition would be temporary, related to only the construction phase of the proposed project. The proposed project would not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. As such, the impact would be less than significant.

**c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

**No Impact.** The proposed project would not result in a change in air traffic patterns. The proposed project site is not located within 2 miles of a public airport or within an airport land use plan. Calipatria Municipal Airport is the closest regional airport, which is approximately 7.5 miles south of the proposed project area in the City of Calipatria. The construction and operation of the proposed project would not generate air traffic. Further, the proposed project would not include any high-rise structures that could act as a hazard to aircraft navigation. No impacts would occur.

**d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

**No Impact.** Implementation of the proposed project would not increase hazards due to design features or incompatible uses. The proposed project includes construction of PV panels located on approximately 970 acres of LADWP-owned land. The proposed project site is partially zoned for light manufacturing and general agriculture use.<sup>48,49</sup> Both uses allow for solar energy generation. As such, the

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<sup>48</sup> County of Imperial. *Imperial County General Plan*. Zoning Maps, Map #11. 1998.

<sup>49</sup> County of Imperial. County of Imperial Codified Ordinances. Website [http://municipalcodes.lexisnexis.com/codes/imperial\\_co/](http://municipalcodes.lexisnexis.com/codes/imperial_co/). Accessed August 8, 2008.

proposed project would not conflict with existing zoning. There would be no construction of new off-site roads or modifications to existing off-site roads. No incompatible uses on off-site roads would result from the proposed project.

Operation of the proposed project would not substantially increase the amount of daily traffic or exceed a level of service standard established by the county congestion management agency for designated roads or highways. As previously stated, construction of the proposed project is anticipated to have a workforce of 100-150 workers at its peak. Construction-related impacts would be temporary. As such, no impacts would occur.

**e) Result in inadequate emergency access?**

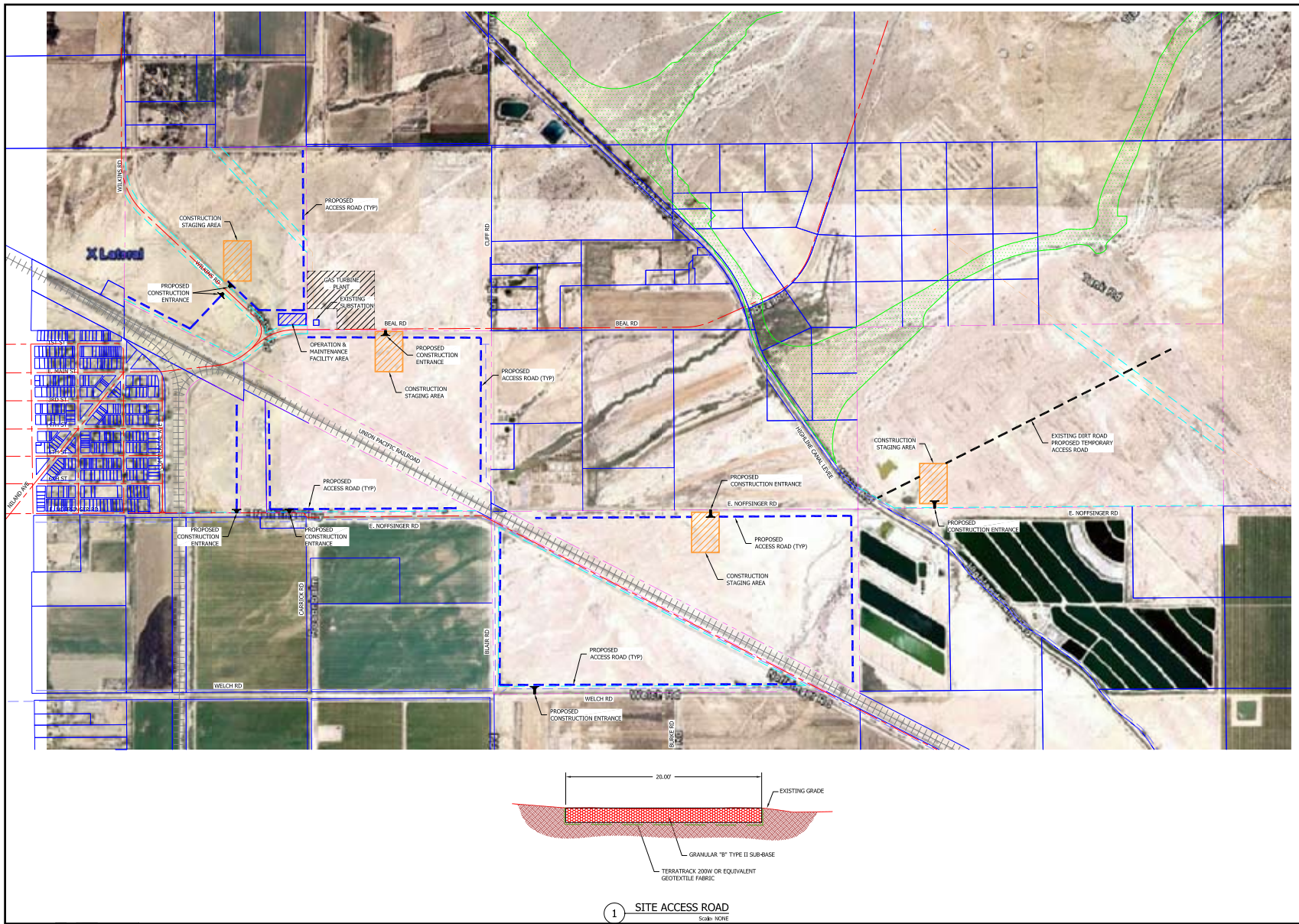
**No Impact.** The proposed project would not result in inadequate emergency access. The proposed project would not hinder emergency access in the area, as no road closures are proposed as part of the project. All construction activities and staging would take place on approximately 970 acres of LADWP-owned land. The project would comply with applicable Fire Department regulations and California Building Standards Code requirements. During project operation, the existing access roads would provide emergency access to the site. Therefore, operation of the proposed project would not result in inadequate emergency access. No impact would occur.

**f) Result in inadequate parking capacity?**

**No Impact.** Implementation of the proposed project would not result in inadequate parking capacity. During construction, worker vehicle parking would occur within the LADWP property and no parking would be required on roadways outside of the project site. During project operation, no additional employees would be located on the project site necessitating additional demand for parking. As such, no impact to parking capacity in the project site and the vicinity would occur.

**g) Would the project conflict with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?**

**No Impact.** The proposed project would not conflict with adopted policies supporting alternative transportation. Construction activities would take place entirely within the LADWP property and would not require the removal or relocation of alternative transportation facilities (i.e., bus stops and bike lanes). Once construction activities are complete in a work area, routine maintenance and inspection of the PV panels is anticipated to require minimal maintenance staff on site. Accordingly, no impacts to alternative transportation would occur.



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## XVI. UTILITIES AND SERVICE SYSTEMS

Would the project:

a) **Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

**Less Than Significant Impact.** The sewage treatment plant in the project area is licensed by the California Regional Water Quality Control Board for the Colorado River Basin and is handled by the Niland Sanitation District. The Niland Sanitation District maintains primary and secondary sewage treatment with sewer collection lines and outfall to evaporation ponds<sup>50, 51</sup>. Minimal amounts of wastewater would be generated by construction workers on the site during the construction period. The proposed project would generate minimal amounts of wash water during operation. As stated in Section VIII (a), assuming that an existing connection to the Niland sanitary sewer system is available and connected to the project's sanitary wastestream, no sanitary or septic waste-related impacts would be expected. If such a connection is not available, compliance with the Niland Department of Public Works for suitable waste-disposal options for permanent sewer connections would be required. Therefore, compliance with existing regulations would ensure the project impact to be less than significant.

b) **Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

**Less Than Significant Impact.** Construction and operation of the proposed project would generate only minor amounts of wastewater. During construction, sanitary wastes from the temporary work force would be provided by portable and temporary facilities. During operations, sanitary wastes generated from onsite restroom facilities would be handled through connection to the Niland sewer system and would represent a minimal increase in flow. The relatively small volume of wastewater generated at these facilities would not require the construction of new wastewater treatment facilities or expansion of existing facilities. The impact would be less than significant.

It is planned that the water supply for construction and operations be obtained from a new onsite water supply well. The construction water demand is established at approximately 9.85 acre feet (3.21 million gallons) over the entire construction period.

During the operation of the project, the solar panels would be washed several times per year, requiring approximately 0.45 acre feet per year (AFY) to 4.5 AFY. Sanitary system for approximately 10 to 12 workers would require approximately 0.2 AFY. The water needed for the construction and operation of the proposed project would be supplied under the auspices of the Golden State. The project site is located within Golden State's service area for the town of Niland. All infrastructure

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<sup>50</sup> Imperial County General Plan Overview. Planning & Development Services Department, County of Imperial.

<sup>51</sup> Imperial County General Plan, Niland Urban Area Plan, Planning & Development Services Department, County of Imperial. Approved on April 19, 1994, revisions adopted on November 19, 1996.

necessary to provide water to the project site would be funded and constructed as a part of the project. The impact would be less than significant.

**c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

**Less Than Significant Impact.** There is no storm drainage/flood control system other than the natural and the Imperial Irrigation District (IID) drainage system which flows generally westward across the project site<sup>52</sup>. The proposed project would require construction of a substantial stormwater drainage and conveyance system to protect on site uses and prevent an increase in flows downstream of the site. The stormwater protection system has been described previously and is designed to prevent adverse impacts onsite and downstream. The impact would be less than significant.

**d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

**Less Than Significant Impact.** As stated in Section b) above, the water to the project site would be supplied by Golden State. The project site is located within Golden State's service area for the town of Niland. All infrastructure necessary to provide water to the project site will be constructed as a part of the project. The solar panels will be washed periodically. It is anticipated that washing will be required several times per year, and the annual water demand for this need will be approximately between 0.45 AFY to 4.5 AFY. The impact would be less than significant.

**e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

**No Impact.** Construction and operation of the proposed project would generate only minor amounts of wastewater. The proposed project involves developing the site as a solar power generation facility. Restroom facilities would be constructed at the site. However, the relatively small volume of wastewater generated at these facilities would not result in a determination by the wastewater treatment provider that it lacked adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. No impact would occur.

**f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?**

**Less Than Significant Impact.** The County of Imperial's Public Works Department administers and operates ten Class III landfills. The nearest landfill to the project site is Niland Solid Waste Site which is expected to close in November of 2008. The next closest landfill is Hot Spa Solid Waste Site which is expected to close in March of 2027.

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<sup>52</sup> Ibid.

Construction debris would be recycled or transported to a landfill site and disposed of appropriately. In accordance with AB 939, LADWP's construction contractor would work to ensure that source reduction techniques and recycling measures are incorporated into project construction and operation. Operation of the proposed project would not result in a significant increase in personnel at the project site and would generate relatively small additional quantities of waste that would not significantly impact landfill capacities. In addition, the solar panels are prefabricated; minimum waste would be associated with their installation. The impact would be less than significant.

**g) Comply with federal, state, and local statutes and regulations related to solid waste?**

**Less Than Significant with Mitigation Incorporated.** During construction and operation of the proposed project, LADWP would comply with all County and state solid waste diversion, reduction, and recycling mandates, including compliance with the Imperial County Integrated Waste Management Plan and the following Mitigation Measure. The impact would be less than significant.

**USS-1** A Waste Management Plan shall be prepared by the landowners prior to the issuance of the initial on-site grading permit.

**XVII. MANDATORY FINDINGS OF SIGNIFICANCE**

**a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

**Less Than Significant with Mitigation Incorporated.** The project area does contain some biological resources. Implementation of Mitigation Measures BR-1 through BR-15 listed in Section IV would reduce the impacts to biological resources to less than significant. Based on the surveys conducted by the qualified archaeologist and paleontologist, the project site is sensitive for cultural resources. Implementation of Mitigation Measures CR-1 through CR-8 listed in Section V would reduce the impact to cultural resources to less than significant. Additionally, in the event that any archaeological and/or paleontological resources are discovered, such resources would be treated in accordance with Federal, State, and local regulations and guidelines for disclosure, recovery, relocation, and preservation, as appropriate, including CEQA Guidelines Section 15604.5. The impact would be less than significant with the implementation of the above mentioned Mitigation Measures.

- b) **Does the project have impacts that are individually limited, but cumulatively considerable? “Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.**

**Less Than Significant Impact.** As discussed in Items II (b, c, and d), the project would not produce substantial pollutant emissions nor result in violations of the state or federal ambient air quality standards. The project would be consistent with the Imperial County’s AQMP, which is the Basin’s long-range air quality planning document. Thus, the project would have a less than significant impact on cumulative regional and local air quality.

As discussed in Items XI (a, b, c, and d), operational noise levels associated with the proposed project would be limited to negligible noise from the PV solar system due to the lack of generator or turbine operation and minimal maintenance requirements. This noise is anticipated to be less than the ambient noise level due to existing area noise sources (e.g., the adjacent rail line operation). Thus, the proposed project would not result in a cumulatively considerable impact with respect to roadway noise. Additionally, the proposed project would not include significant stationary sources of ground-borne vibration, such as heavy equipment operations, or mobile sources of ground-borne vibration, such as heavy-duty truck travel. As such, the proposed project would not add to a cumulative vibration impact.

As discussed in Items XV (a and b), operation of the proposed project would not substantially increase the amount of daily traffic or exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways. The proposed project will produce electricity with no moving parts, allowing for minimal maintenance requirements. Routine maintenance and inspection of the PV panels is anticipated to require minimal maintenance staff on site. As such, the proposed project would not add to a cumulative traffic impact.

- c) **Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?**

**Less Than Significant With Mitigation Incorporated.** The analysis presented in this document identifies potentially significant impacts for air quality, biological resources, cultural resources, geology and soils, hydrology and water quality, noise, and traffic. However, appropriate mitigation measures (see Appendix G, Mitigation Monitoring and Reporting Program) have been identified and will be incorporated into the project design in order to reduce the impacts to less than significant. Therefore, the proposed project would not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly.

## **SECTION 5.0 LIST OF PREPARERS AND REFERENCES**

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# **Appendix A**


## **Site Plan, Drainage and Erosion Control Plans**

**OptiSolar, Inc.**

**October 2008**

# LADWP-OPTISOLAR

# NILAND SOLAR FARM


**OPTISOLAR, INC.**  
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**NILAND GROUP**  
**PHOTOVOLTAIC POWER PLANT**  
**66 MW PROJECT**

### PROJECT TEAM

**CIVIL ENGINEER:**  
 OPTISOLAR, INC.  
 2031 OPTISOLAR LANE  
 MCCLELLAN BUSINESS PARK, CA 95652

**CLIENT:**  
 OPTISOLAR, INC.  
 31302 HUNTWOOD AVENUE  
 HAYWARD, CA 94544

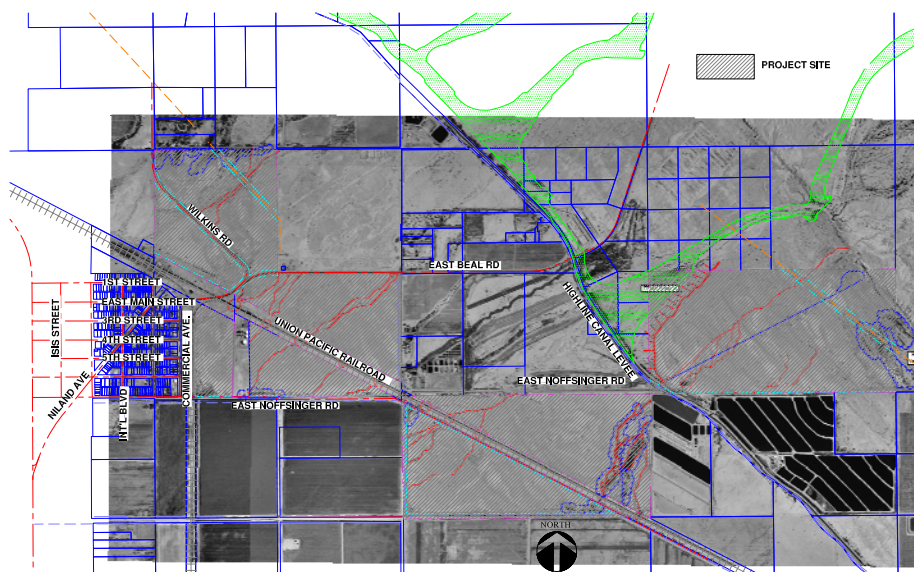
**GEOTECHNICAL ENGINEER:**  
 GEOSPHERE CONSULTANTS, INC.  
 1031 SEGOVIA CIRCLE  
 PLACENTIA, CA 92870

**CONTRACTOR:**

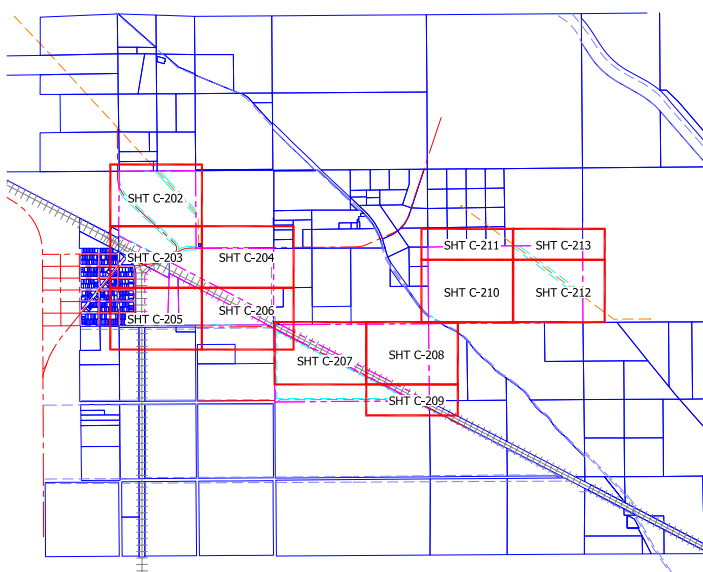
### BUILDING CODE ANALYSIS

- COUNTY OF IMPERIAL DEPT. OF PUBLIC WORKS ENGINEERING DESIGN GUIDELINES MANUAL, 2004
- IMPERIAL IRRIGATION DISTRICT HYDROLOGY MANUAL
- CALIFORNIA BUILDING CODE, 2007

### VICINITY MAP



### KEY MAP



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**GENERAL NOTES**

- COUNTY ENCROACHMENT PERMIT CONDITIONS AND PROVISIONS SHALL TAKE PRECEDENCE OVER THE APPROVED PLANS AND SPECIFICATIONS FOR ANY CONFLICTS.
- THE STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH THE IMPERIAL COUNTY STANDARDS (OR CALTRANS IF IN STATE ROW) AND AS APPROVED BY THE PUBLIC WORKS DIRECTOR (OR CALTRANS).
- LOCATION AND ELEVATION OF IMPROVEMENTS TO BE MET BY WORK TO BE DONE SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK. CONTRACTOR WILL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF ACTUAL LOCATION OF EXISTING FACILITIES.
- UTILITIES COORDINATION  
 NO LESS THAN 3 WORKING DAYS PRIOR TO ANY EXCAVATION OR TRENCHING, EACH CONTRACTOR DOING SUCH WORK SHALL CONTACT THE FOLLOWING AGENCIES SO THAT EXISTING UNDERGROUND UTILITIES MAY BE LOCATED. THE AGENCY MAY REQUIRE AN INSPECTOR TO BE PRESENT.  

1. GATEWAY CSA (PUBLIC WORKS)	(760) 482-4462
2. IMPERIAL IRRIGATION DISTRICT (POWER)	(760) 339-5280
3. IMPERIAL IRRIGATION DISTRICT (WATER)	(760) 339-5263
4. PACIFIC BELL	(800) 422-4133
5. THE GAS CO.	(800) 422-4133/(800) 227-2600
6. ADELPHIA CABLE	(800) 626-6259

 EXISTING UNDERGROUND UTILITIES  
 BEFORE EXCAVATING FOR THIS CONTRACT, VERIFY LOCATION OF UNDERGROUND UTILITIES, THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS HAS BEEN OBTAINED FROM AVAILABLE RECORDS ONLY AND MAY NOT REFLECT ALL EXISTING UTILITIES. LOCATION OF ALL EXISTING UTILITIES SHALL BE CONFIRMED BY FIELD MEASUREMENTS BY CONTRACTOR PRIOR TO CONSTRUCTION OF WORK.  
 CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOW HEREON AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.  
 ACCURATE VERIFICATION AS TO SIZE, LOCATION AND DEPTH OF EXISTING UNDERGROUND SERVICES SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL NOTIFY THE SOUTHERN CALIFORNIA GAS COMPANY, PACIFIC BELL, TELEPHONE COMPANY, IMPERIAL IRRIGATION DISTRICT AND ANY OTHER AFFECTED UTILITY AGENCIES PRIOR TO STARTING HIS WORK NEAR SUCH UTILITY FACILITIES AND SHALL COORDINATE HIS WORK WITH UTILITY REPRESENTATIVES. FOR LOCATION OF UNDERGROUND UTILITIES AND APPURTENANCES, CONTACT "UNDERGROUND SERVICE ALERT" AT 1-800-422-4133.
- IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO CONTACT THE UTILITY AGENCIES, ADVISE THEM OF THE PROPOSED IMPROVEMENTS AND BEAR THE COST OF RELOCATIONS, IF NEEDED.
- ALL SIGNS TO BE ALUMINUM WITH 3M HIGH INTENSITY TYPE REFLECTIVE FACE OR EQUIVALENT.
- CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY STRIPING, PAVEMENT MARKERS, OR LEGENDS OBLITERATED BY THE CONSTRUCTION OF THIS PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO SECURE AN ENCROACHMENT PERMIT FROM THE COUNTY OF IMPERIAL DEPARTMENT OF PUBLIC WORKS FOR ANY EXCAVATION OR CONSTRUCTION WITHIN COUNTY ROAD RIGHT-OF-WAY. FOR INSPECTIONS, 48 HOUR MINIMUM NOTICE IS REQUIRED, (760) 482-4462. ADDITIONALLY, UNDERGROUND SERVICE ALERT (USA) MUST BE CALLED TWO WORKING DAYS BEFORE THE CONTRACTOR MAY EXCAVATE. THEIR CONTACT NUMBER (800) 227-2600. ALL WORK AND MATERIALS ARE SUBJECT TO THE INSPECTION AND APPROVAL FROM THE COUNTY DEPARTMENT OF PUBLIC WORKS OR THEIR REPRESENTATIVE.
- UNLESS SPECIFICALLY INDICATED OTHERWISE METHODS EMPLOYED AND MATERIAL USED IN THE CONSTRUCTION OF ALL OFFSITE IMPROVEMENTS SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE "STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED JULY 1999". ALL WORK IS SUBJECT TO INSPECTION AND APPROVAL AS REQUIRED.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AN EXCAVATION PERMIT FROM THE STATE OF CALIFORNIA DIVISION OF SAFETY AND TO ADHERE TO ALL PROVISIONS OF THE STATE CONSTRUCTION SAFETY ORDERS AND STANDARDS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A GENERAL CONSTRUCTION ACTIVITY STORM WATER PERMIT FROM THE STATE WATER RESOURCES CONTROL BOARD DIVISION OF WATER QUALITY, CONTACT "STATE WATER RESOURCES CONTROL BOARD, DIVISION OF WATER QUALITY," ATTENTION: STORM WATER PERMIT UNIT, P.O. BOX 1977, SACRAMENTO, CALIFORNIA, 95812.
- CONSTRUCTION PROJECTS DISTURBING MORE THAN ONE ACRE MUST OBTAIN A NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT. OWNER/DEVELOPERS ARE REQUIRED TO FILE A NOTICE OF INTENT (NOI) WITH THE STATE WATER RESOURCES CONTROL BOARD, PREPARE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND MONITORING PLAN FOR THE SITE.
- EXISTING STORM DRAIN PIPES/OUTLETS WHETHER TO BE CONNECTED TO, EXTENDED, ADJUSTED, DRAINED TO, OR JUST IN PROJECT VICINITY SHALL BE REPAIRED AND/OR CLEANED TO MAKE THEM FUNCTIONAL AND ACCEPTABLE AS DIRECTED BY THE PUBLIC WORKS DIRECTOR.
- ANY EXISTING SURVEY MONUMENTS OR COUNTY RECOGNIZED BENCHMARKS SHALL BE PROTECTED BY THE CONTRACTOR. SHOULD ANY SUCH MONUMENTS OR BENCHMARKS BE REMOVED, DAMAGED, OBLITERATED OR ALTERED BY THE CONTRACTOR'S OPERATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER RESETTLEMENT OF THE SAME AS PER THE SUBDIVISION MAP ACT, THE PROFESSIONAL LAND SURVEYORS ACT AND TO THE SATISFACTION OF THE COUNTY SURVEYOR/DIRECTOR OF PUBLIC WORKS.

**GRADING NOTES**

- IMPORT MATERIAL SHALL BE OBTAINED FROM A LEGAL SITE.
- A SOILS REPORT MAY BE REQUESTED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.
- ALL MAJOR SLOPES SHALL BE ROUNDED INTO EXISTING TERRAIN TO PRODUCE A CONTOURED TRANSITION FROM CUT OR FILL FACES TO NATURAL GROUND AND ABUTTING CUT OR FILL SURFACES.
- NO PERSON SHALL EXCAVATE ON LAND SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY SUCH PROPERTY FROM SETTLING, CRACKING, EROSION SILTING, SCOUR OR OTHER DAMAGE, WHICH MIGHT RESULT FROM THE GRADING DESCRIBED ON THE PLAN. THE COUNTY WILL HOLD THE PERMITTEE RESPONSIBLE FOR CORRECTION OF NON-DEDICATED IMPROVEMENTS WHICH DAMAGE ADJACENT PROPERTY.
- SPECIAL CONDITION: IF ANY ARCHEOLOGICAL RESOURCES ARE DISCOVERED ON THE SITE OF THIS GRADING OPERATION, SUCH OPERATION WILL CEASE IMMEDIATELY AND THE PERMITTEE WILL NOTIFY THE DIRECTOR OF THE PLANNING DEPARTMENT AND THE DISCOVERY. GRADING OPERATION WILL NOT RECOMMENCE UNTIL THE PERMITTEE HAS RECEIVED WRITTEN AUTHORITY FROM THE DIRECTOR OF PLANNING TO DO SO.
- ALL GRADING SHALL CONFORM TO THE UNIFORM BUILDING CODE APPENDIX CHAP. 33, AS AMENDED BY TITLE 9 LAND USE ORDINANCE.
- ALL PROPERTY CORNERS SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AND/OR GRADING.
- DURING ROUGH GRADING OPERATIONS AND PRIOR TO THE CONSTRUCTION OF ANY PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE CONTROL SHALL BE PROVIDED TO PREVENT PONDING WATER AND DAMAGE TO CONTIGUOUS PROPERTIES.
- DUST SHALL BE CONTROLLED IN ACCORDANCE WITH THE APPROVED PM10 PLAN. APPROVAL SHALL BE BY IMPERIAL COUNTY AIR POLLUTION DISTRICT.
- NO FILL SHALL BE PLACED ON EXISTING GROUND UNTIL THE EXISTING GROUND HAS BEEN CLEARED OF WEEDS, DEBRIS, TOPSOIL AND OTHER DELTERIOUS MATERIAL.
- THE MAXIMUM ALLOWABLE CUT AND FILL SLOPES ARE 2:1, UNLESS A SLOPE STABILITY ANALYSIS AUTHORIZES A STEEPER SLOPE AND HAS BEEN APPROVED.
- A 5' WIDE BY 1' HIGH BERM, OR EQUIVALENT, SHALL BE CONSTRUCTED ALONG THE TOP OF ALL FILL SLOPES OVER 5' IN VERTICAL HEIGH. ALL SLOPES LESS THAN OR EQUAL TO 5' SHALL HAVE A BERM TO PREVENT DRAINAGE FROM ERODING SAME.
- A BROW DITCH DESIGNED TO HANDLE THE FLOWS (Q) FROM A 100-YR STORM EVENT SHALL BE CONSTRUCTED ALONG THE TOP OF ALL CUT SLOPES.
- NO OBSTRUCTION OF FLOOD PLAINS OR NATURAL WATER COURSES WILL BE PERMITTED.
- ALL EXISTING DRAINAGE COURSES ON THE PROJECT SITE MUST CONTINUE TO FUNCTION DURING STORM CONDITIONS. PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT CONTIGUOUS PROPERTIES DURING GRADING OPERATIONS.
- A SUITABLY QUALIFIED AND REGISTERED PROFESSIONAL SHALL SUBMIT A WRITTEN CERTIFICATION TO THE PUBLIC WORKS DEPARTMENT THAT THE FINAL GRADING HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS FOR ALL GRADING DESIGNATED AS "ENGINEERED GRADING". AS-BUILT PLANS SHALL BE PROVIDED PRIOR TO FINAL ACCEPTANCE.
- THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS DEPARTMENT AT LEAST 48 HOURS IN ADVANCE OF REQUESTING A FINISH LOT GRADE AND DRAINAGE INSPECTION. THIS INSPECTION MUST BE APPROVED PRIOR TO THE BUILDING PERMIT FINAL INSPECTION BY PUBLIC WORKS FOR EACH LOT.

**UTILITIES**

THE LOCATION, SIZE AND OTHER DESCRIPTIONS OF EXISTING UTILITIES INDICATED ON THESE DRAWINGS ARE BASED UPON INFORMATION AVAILABLE AT THE TIME OF DRAWING PREPARATION. NO GUARANTEE IS MADE OR INTENDED AS TO THE ACCURACY OF THIS INFORMATION.

**DEMOLITION AND EXCAVATION**

ALL ASPHALT PAVING, CONCRETE PAVING, CURBING, CONCRETE FOOTINGS, POST FOOTINGS, ROCKS OVER 4" IN SIZE, SOIL THAT WILL NOT BE REUSED FOR FILL, VEGETATION (ORGANIC MATERIALS), DEBRIS AND RUBBISH SHALL BE DISPOSED OF IN A LEGAL MANNER AS THE CONTRACTOR'S PROPERTY. ALL EDGES SHALL BE SAW-CUT FULL DEPTH TO STRAIGHT AND CLEAN LINES. DUST CONTROL SHALL BE PRACTICED THROUGHOUT DEMOLITION. THE CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF EROSION CONTROL AND THE STORM WATER BEST MANAGEMENT PRACTICE FOR CONSTRUCTION-RELATED ACTIVITIES.

**STOCKPILING AGGREGATE**

IMPORTED GRANULAR BASE AND GRAVEL SURFACING MATERIAL SHALL BE REMOVED FROM THE AREA TO BE GRADED AND STOCKPILED ON SITE FOR REPLACEMENT FOLLOWING THE GRADING WORK.

**TRENCHING**

TRENCHING SHALL BE TRUE TO LINE AND GRADE. BACKFILL OF TRENCHES IN ROADWAYS ONLY SHALL BE COMPACTED TO 95% RELATIVE DENSITY.

**TEMPORARY CONSTRUCTION HAUL ROADS**

GRAVEL ACCESS ROADS SHALL BE EXCAVATED AND THE SUB-BASE COMPACTED TO 95% SPMD. THE USE OF SEPARATION FABRICS MAY BE UTILIZED TO FACILITATE FUTURE REMOVAL AND RECOVERY OF GRANULAR MATERIALS. HAUL ROADS SHOULD HAVE AT LEAST 600mm OF CRUSHED STONE AND SHALL BE MAINTAINED DURING CONSTRUCTION.

**GEOTECHNICAL REPORT**

- REFER TO THE GEOTECHNICAL RECONNAISSANCE REPORT DATED JUNE 24, 2008 PREPARED BY GEOSPHERE CONSULTANTS, INC.
- ANY GRADING, EXCAVATION, FOUNDATION DRILLING OR OTHER EARTHWORK OPERATIONS SHALL BE PERFORMED UNDER SUPERVISION OF THE GEOTECHNICAL ENGINEER.

**LEGEND**

- -- -- -- -- PROPERTY LINE
- - - - - EASEMENT/SETBACK LINE
- 100----- EXISTING MAJOR CONTOUR (FT)
- 98----- EXISTING MINOR CONTOUR (FT)
- - - - - EXISTING TRANSMISSION LINE
- - - - - EXISTING IRRIGATION CANAL/DRAIN
- PARCEL LINES
- +++++ EXISTING RAILROAD TRACK
- EXISTING ROADWAY CENTERLINE
- ⊙ STORM DRAIN MANHOLE
- STORM DRAIN LINE

**ABBREVIATIONS**

APPROX	APPROXIMATE
CL	CENTER LINE
DWG	DRAWING
E	EASTING, EAST
EX	EXISTING
FG	FINISH GROUND
FL	FLOW LINE
FT	FEET
MAX	MAXIMUM
MW	MEGAWATT
MIN	MINIMUM
N	NORTHING, NORTH
PL	PROPERTY LINE
ROW, R/W	RIGHT-OF-WAY
S	SOUTH
SD	STORM DRAIN
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
W	WEST



**NILAND GROUP  
 PHOTOVOLTAIC POWER PLANT  
 66 MW PROJECT**

REV	DATE	DESCRIPTION

PROJ NO:	
CAD DWG FILE:	
DRAWN BY: LP	
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**GENERAL NOTES,  
 LEGEND &  
 ABBREVIATIONS**

G-002

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PROJECT ADDRESS:  
LADWP-OPTISOLAR SOLAR FARM  
NILAND  
UNINCORPORATED IMPERIAL COUNTY  
CALIFORNIA

OWNER/APPLICANT:  
LOS ANGELES DEPARTMENT OF WATER AND POWER  
111 NORTH HOPE STREET, ROOM 1044  
LOS ANGELES, CA 90012  
TEL NO. (213) 267-0385

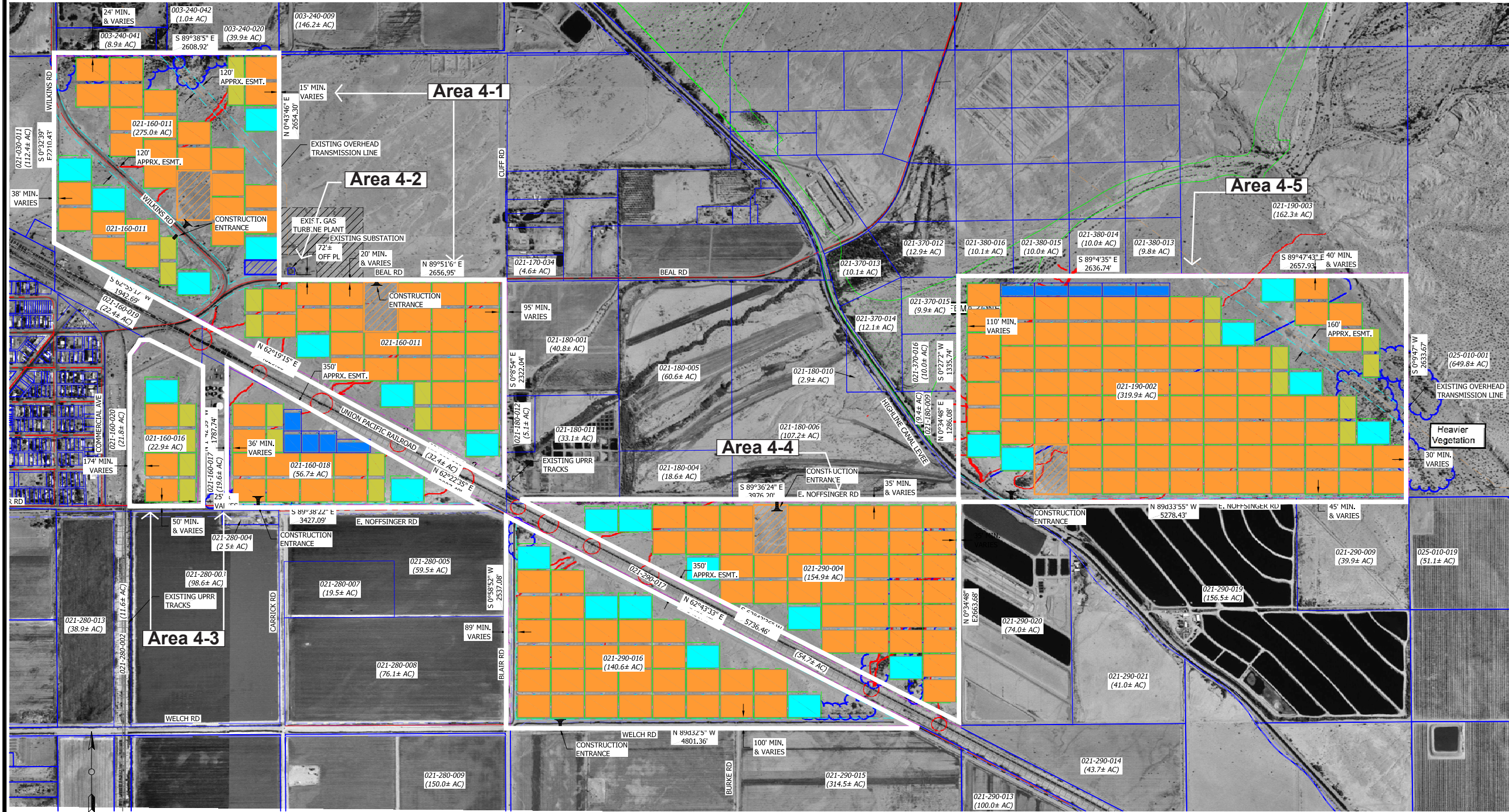
SITE STATISTICS:  
GROSS SITE AREA: 970± AC  
APNS: 021-160-011, 016, 018,  
021-290-004, 016 &  
021-190-002

LEGEND

- PROPERTY LINE
- R/W OR EASEMENT
- PARCELS
- ROADWAY CENTERLINE
- EXISTING OVERHEAD TRANSMISSION LINE
- EXISTING RAILROAD TRACKS
- EXISTING VEGETATION
- EPHEMERAL WASH
- ASSESSORS PARCEL NO.
- 500KW PV BLOCK
- 250KW PV BLOCK
- 250KW PV BLOCK
- 100KW PV BLOCK
- 100KW PV BLOCK
- FEMA FLOOD ZONE A
- CONSTRUCTION STAGING AREA
- OPERATION & MAINTENANCE FACILITY

**OPTISOLAR INC.**  
31302 HUNTWOOD AVE  
HAYWARD, CA 94544  
PHONE: 510.401.5800  
FAX: 510.401.5859

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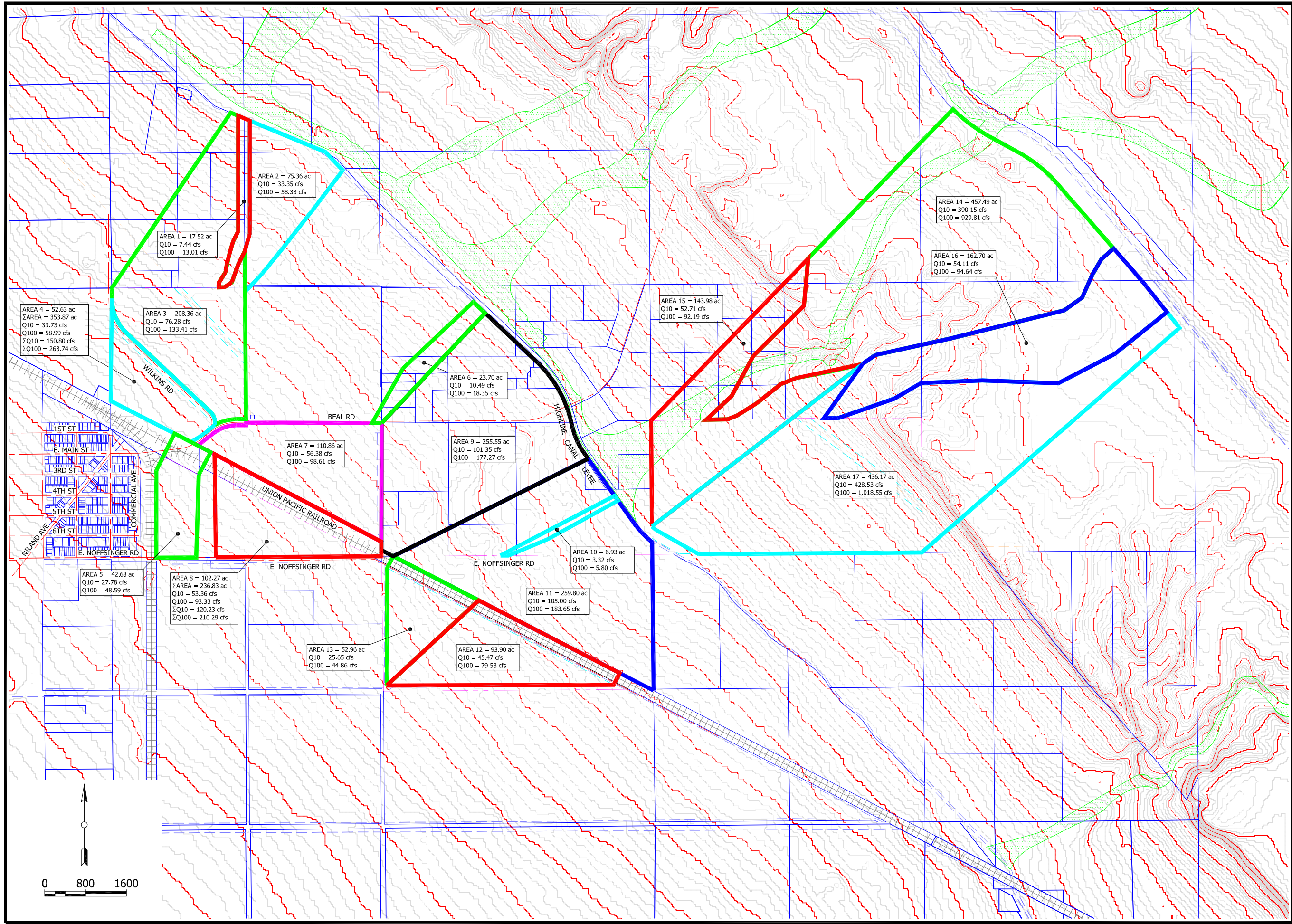
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PHOTOVOLTAIC POWER PLANT  
68 MW PROJECT  
IMPERIAL COUNTY  
CALIFORNIA

REV	DATE	DESCRIPTION

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SITE PLAN

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 PHOTOVOLTAIC POWER PLANT  
 66 MW PROJECT**

REV	DATE	DESCRIPTION

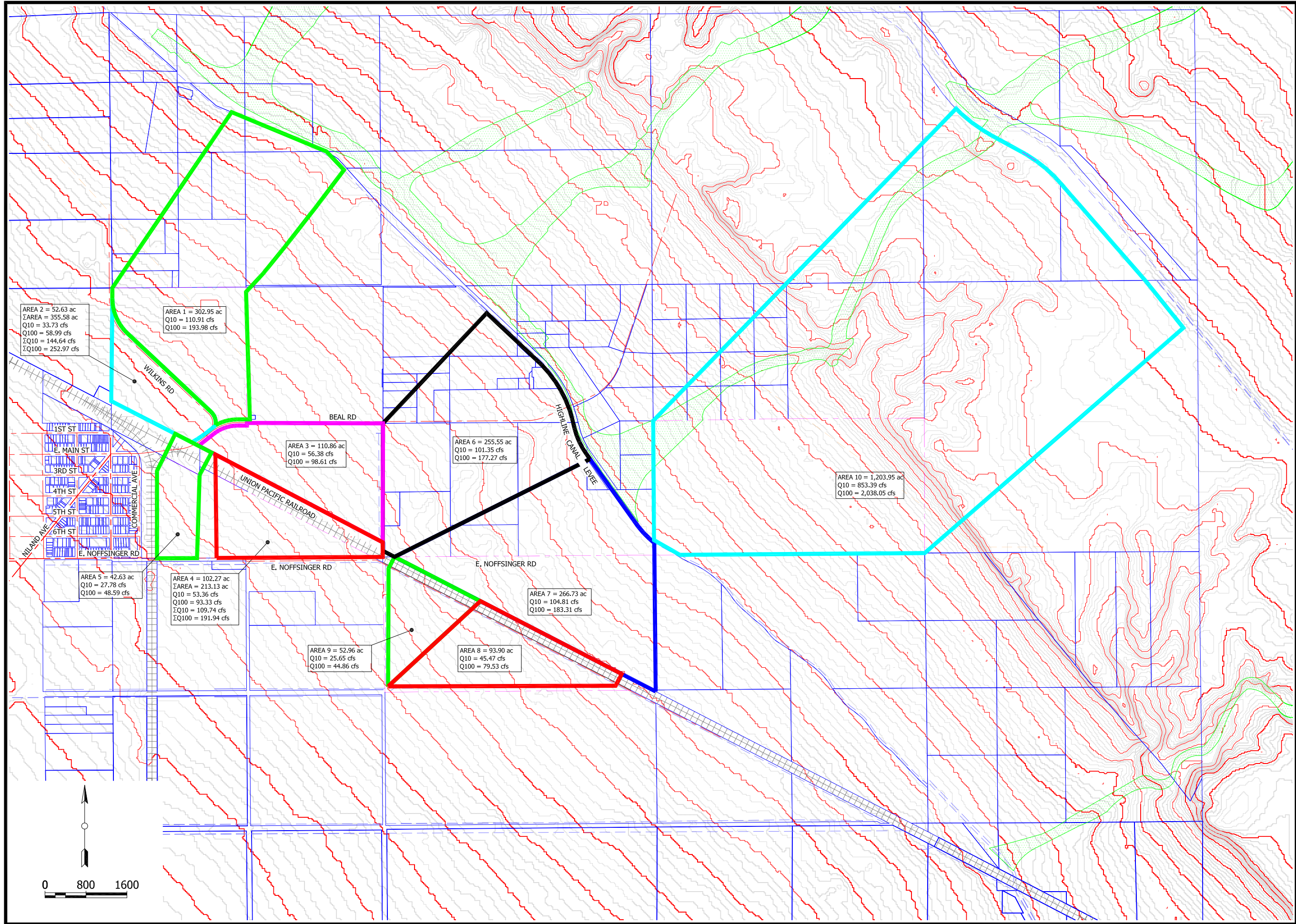
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**PROPOSED  
 WATERSHED  
 MAP**

C-201  
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PHOTOVOLTAIC POWER PLANT  
66 MW PROJECT**

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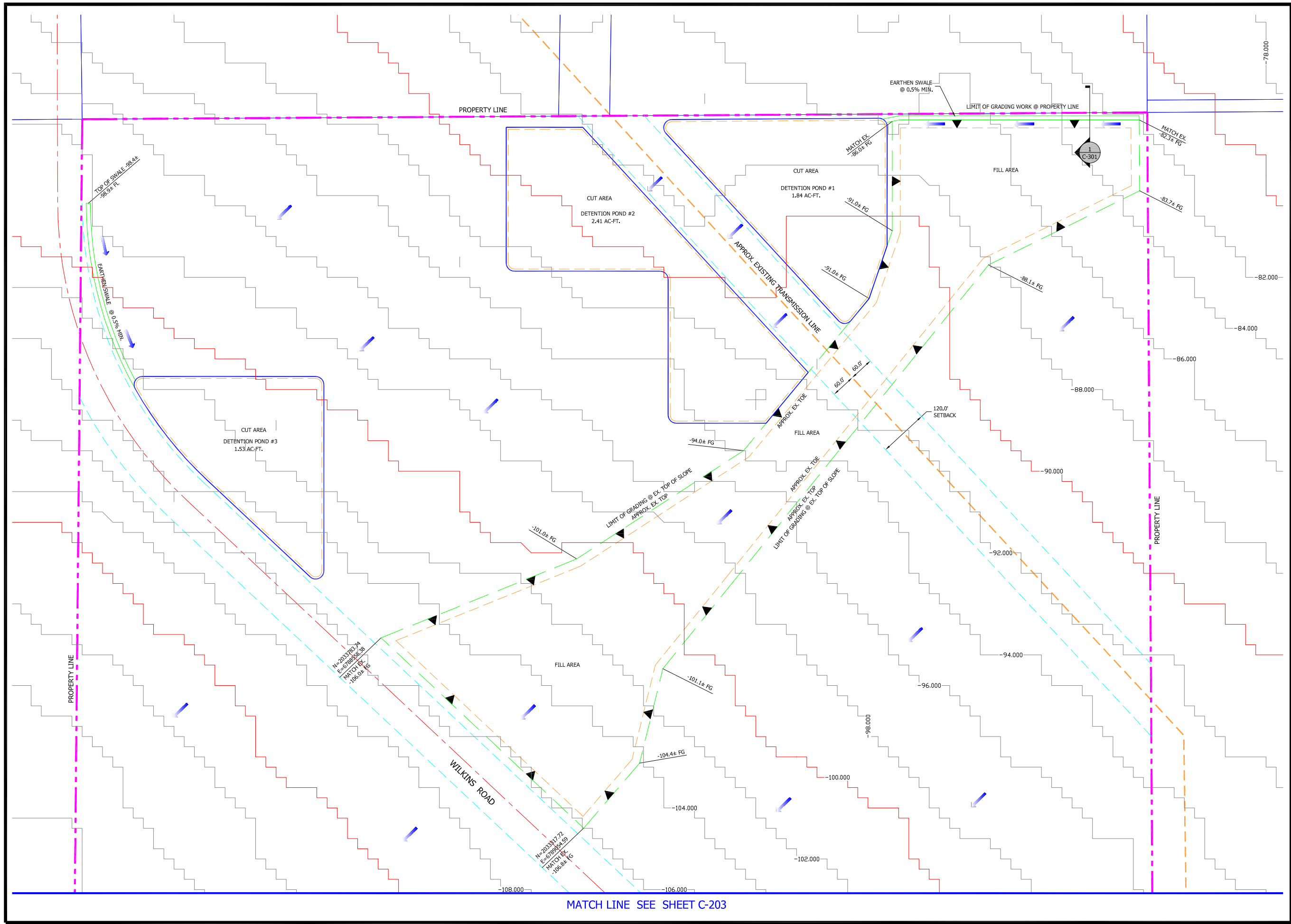
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**EXISTING  
WATERSHED  
MAP**

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 PHOTOVOLTAIC POWER PLANT  
 66 MW PROJECT**

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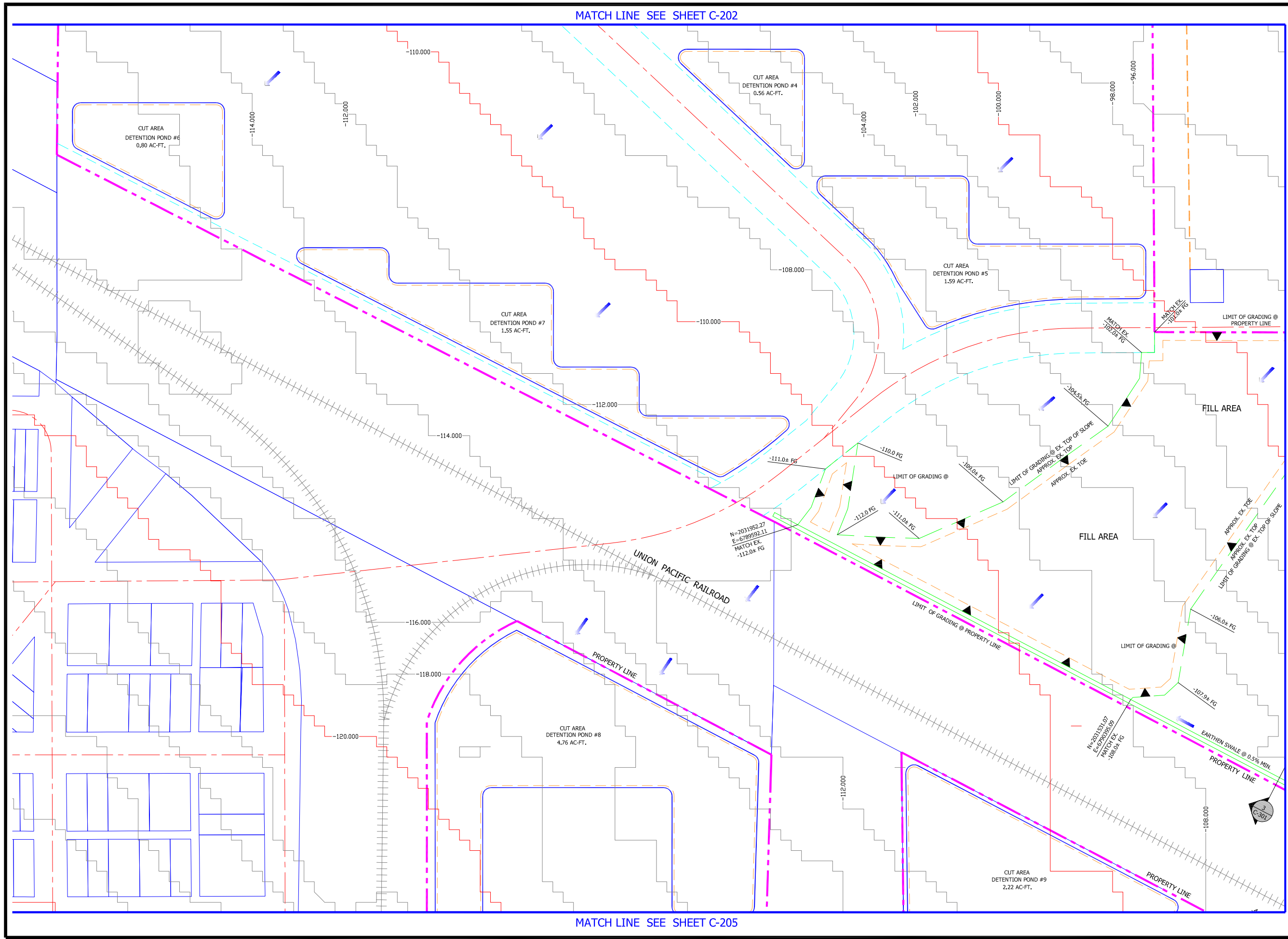
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**NILAND GROUP**  
 PHOTOVOLTAIC POWER PLANT  
 66 MW PROJECT

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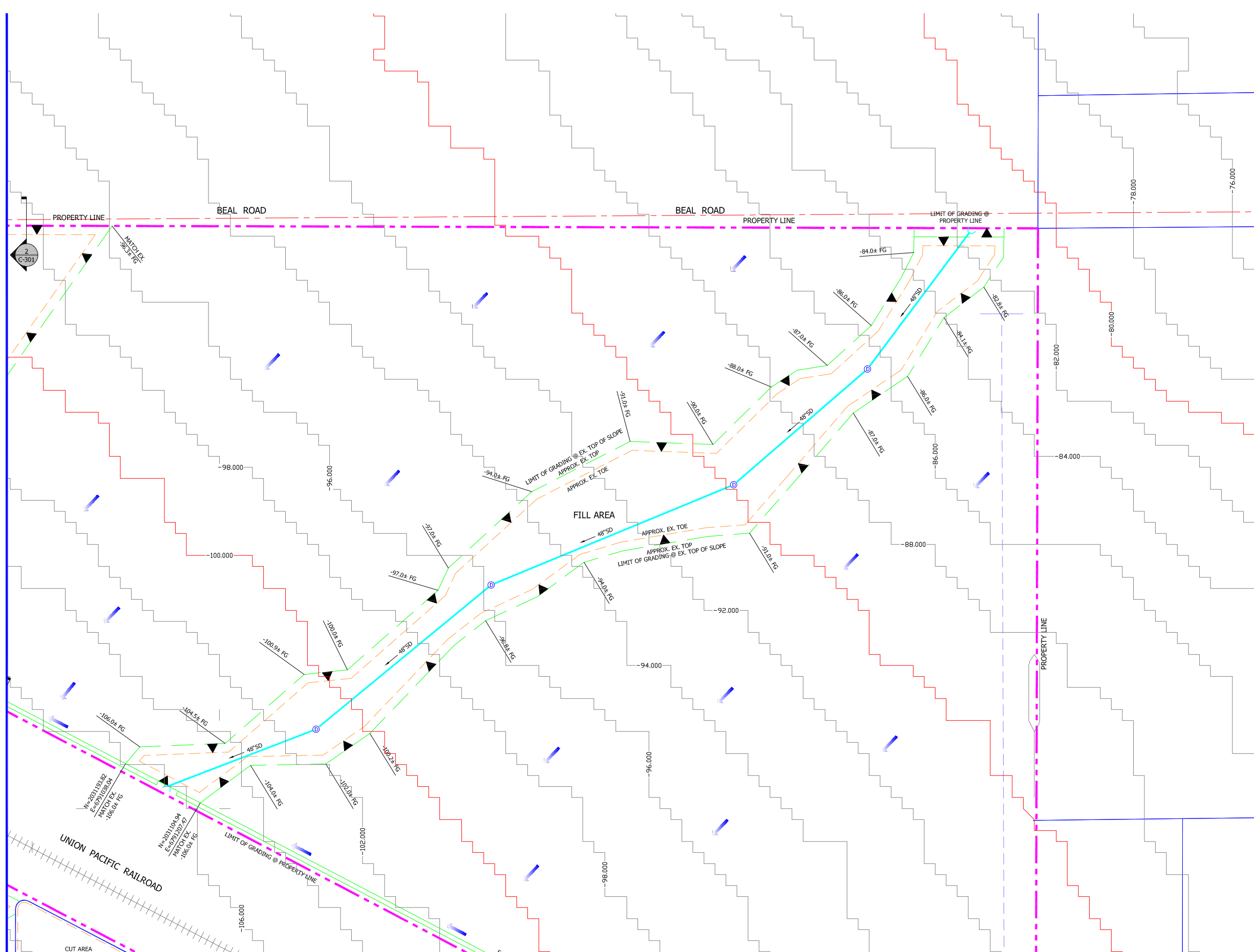
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**GRADING &**  
**DRAINAGE PLAN**

C-203  
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**NILAND GROUP**  
 PHOTOVOLTAIC POWER PLANT  
 66 MW PROJECT

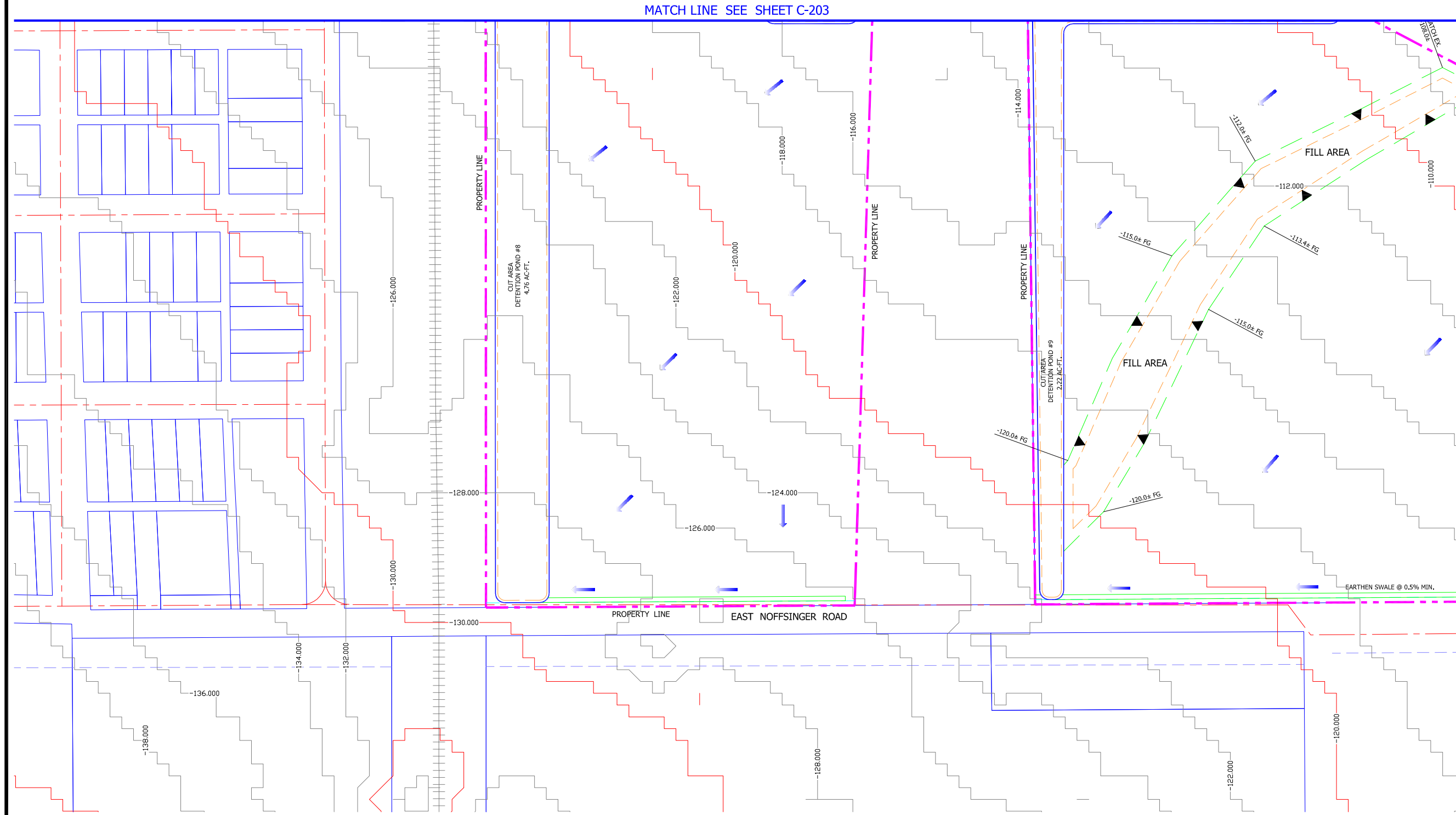
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PRELIMINARY  
 GRADING &  
 DRAINAGE PLAN

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PHOTOVOLTAIC POWER PLANT  
66 MW PROJECT

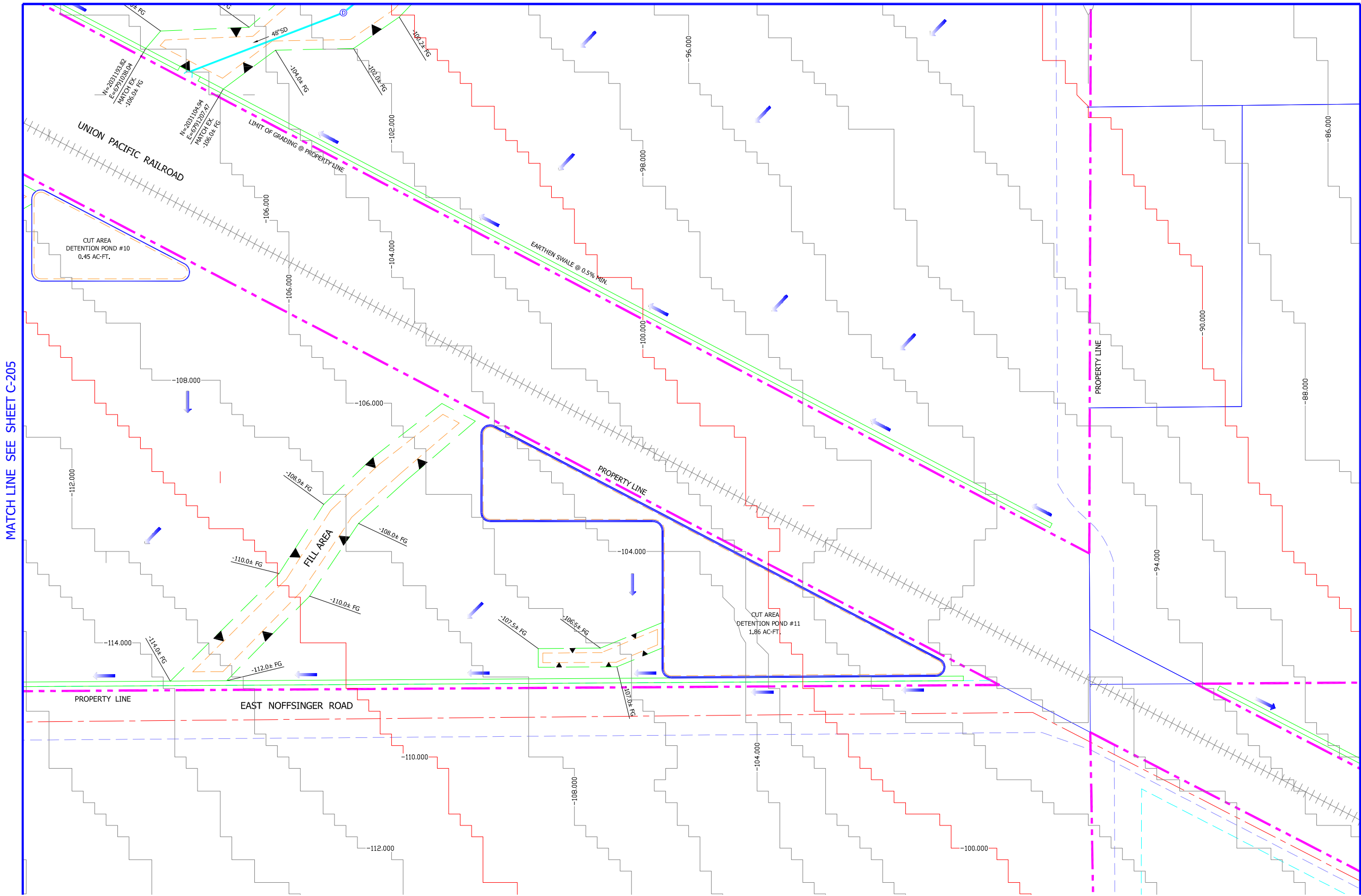
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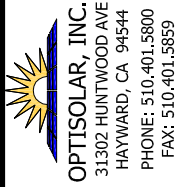
PRELIMINARY  
GRADING &  
DRAINAGE PLAN

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PHOTOVOLTAIC POWER PLANT  
66 MW PROJECT

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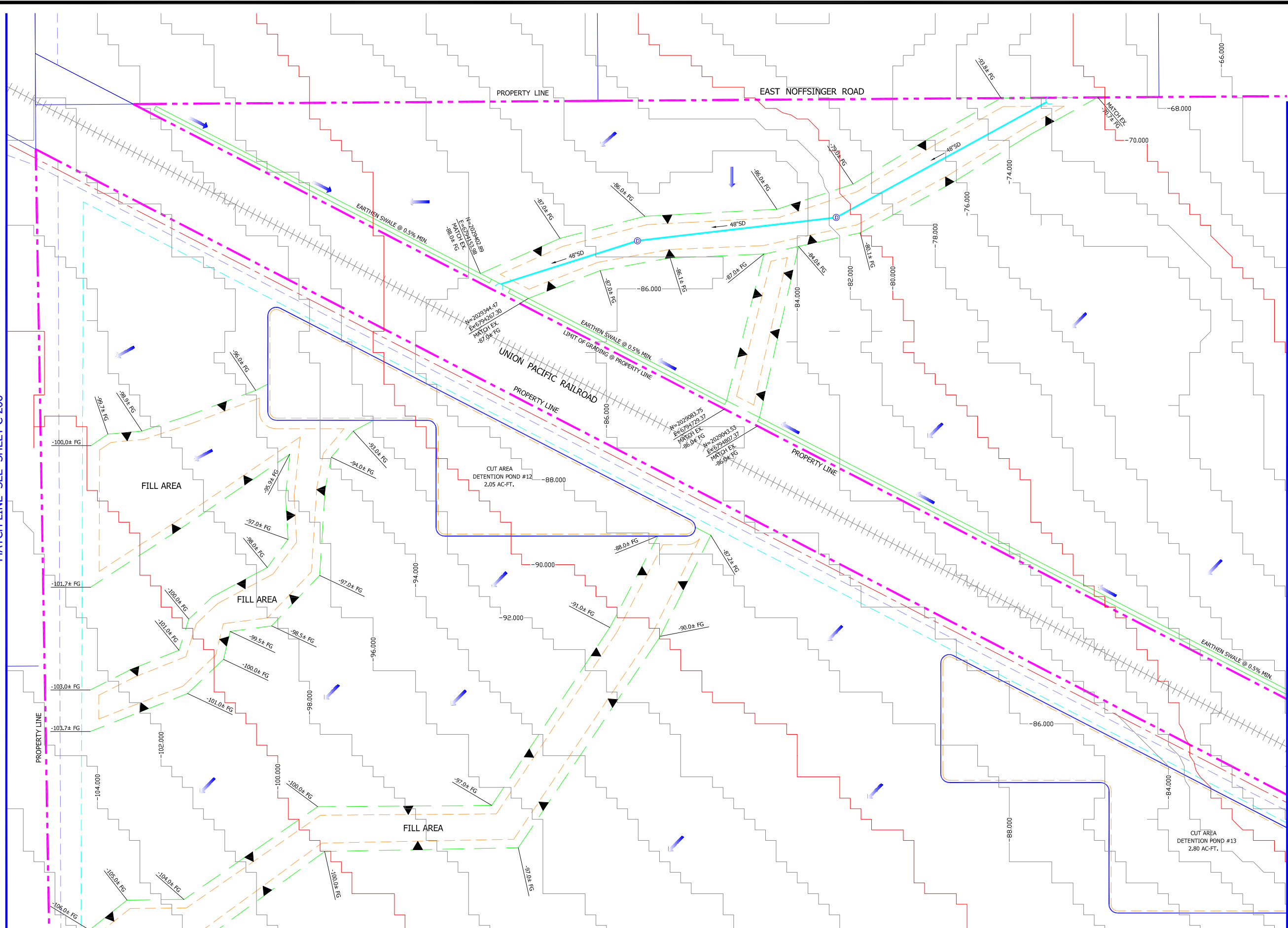
**PRELIMINARY**  
GRADING &  
DRAINAGE PLAN

C-206  
SHEET 10 OF 22

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**NILAND GROUP**  
**PHOTOVOLTAIC POWER PLANT**  
**66 MW PROJECT**

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**PRELIMINARY**  
**GRADING &**  
**DRAINAGE PLAN**

C-207  
 SHEET 11 OF 22

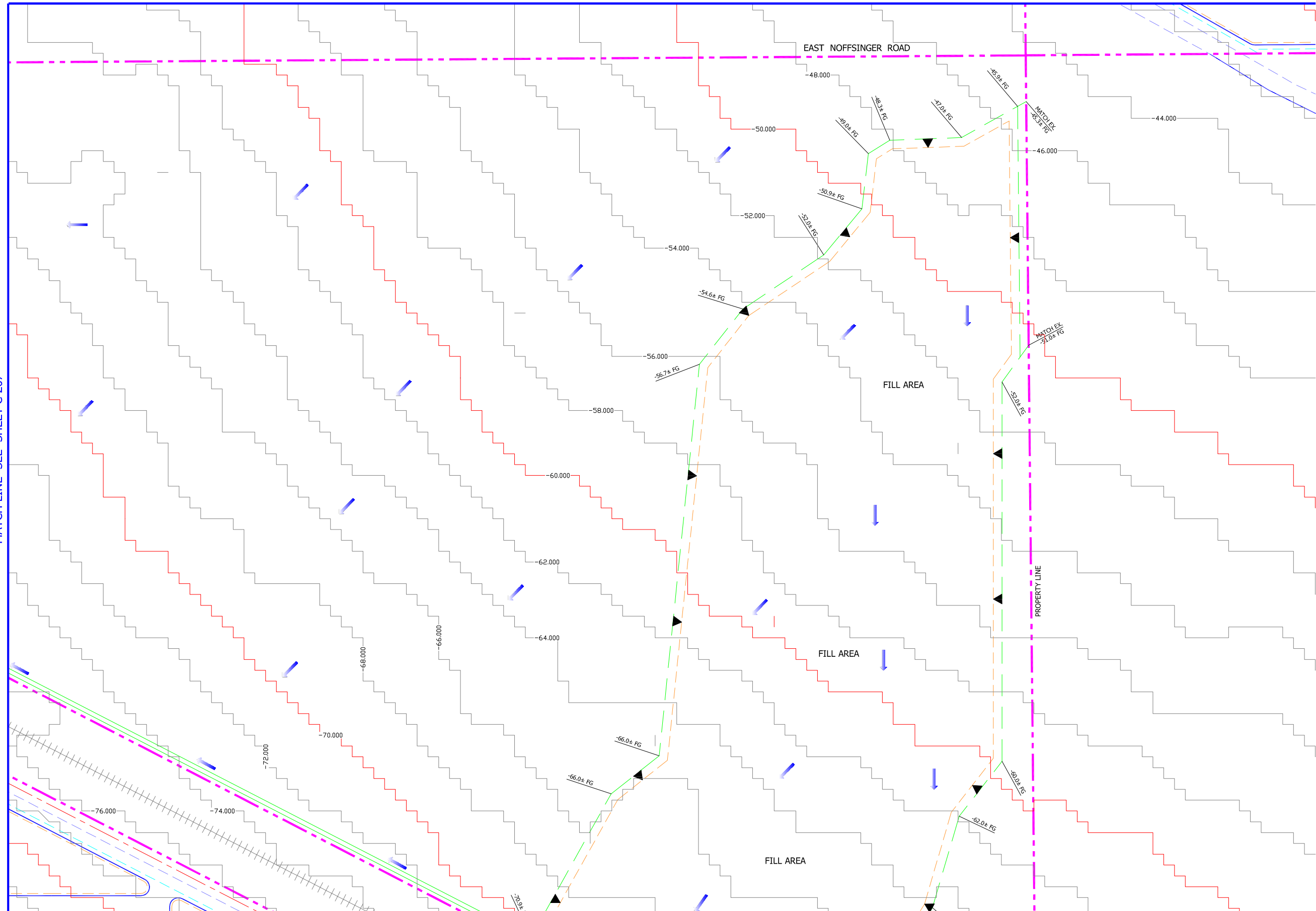
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**NILAND GROUP**  
 PHOTOVOLTAIC POWER PLANT  
 66 MW PROJECT

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**PRELIMINARY  
 GRADING &  
 DRAINAGE PLAN**

C-208

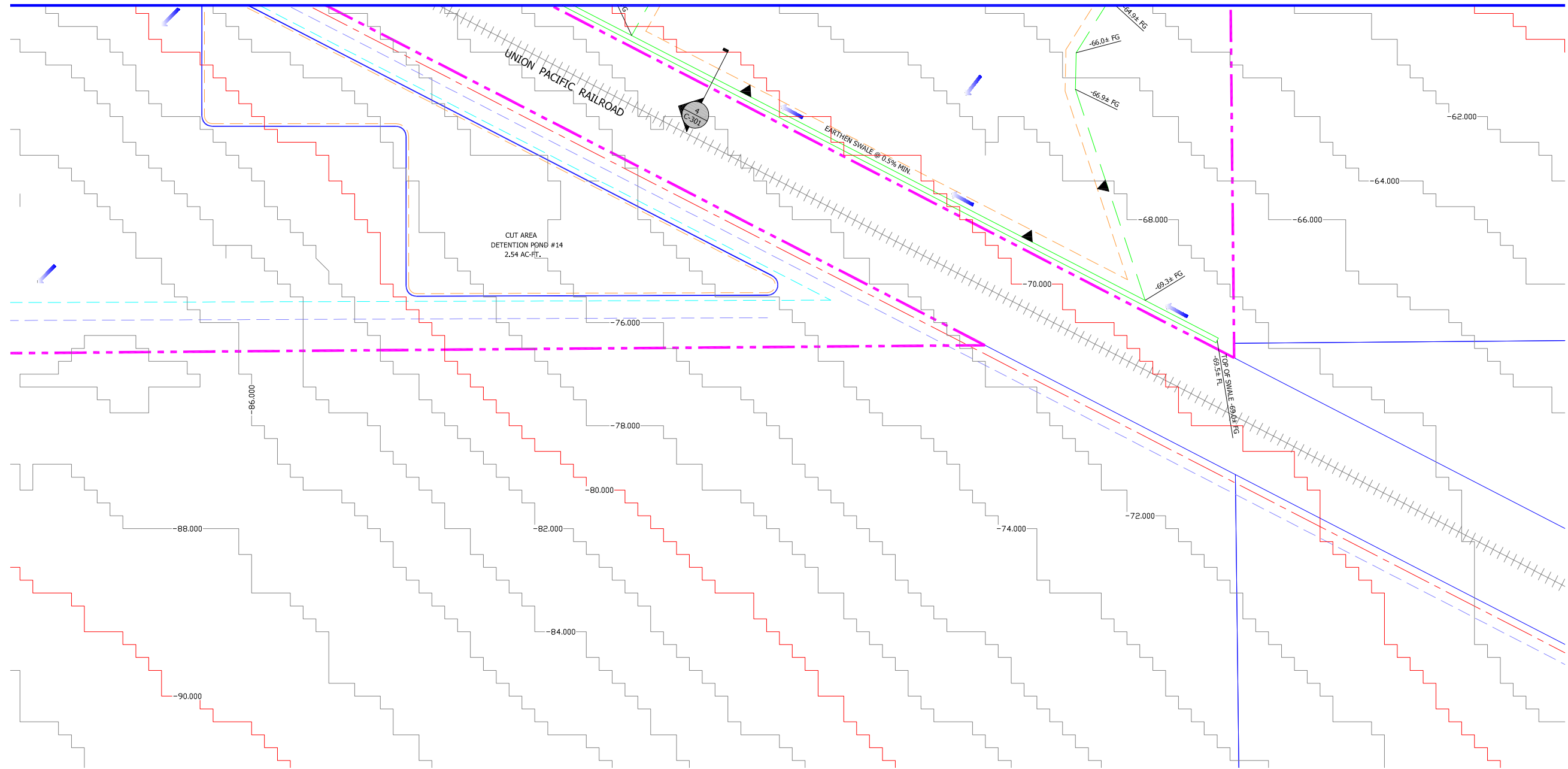
SHEET 12 OF 22

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**NILAND GROUP**  
PHOTOVOLTAIC POWER PLANT  
66 MW PROJECT

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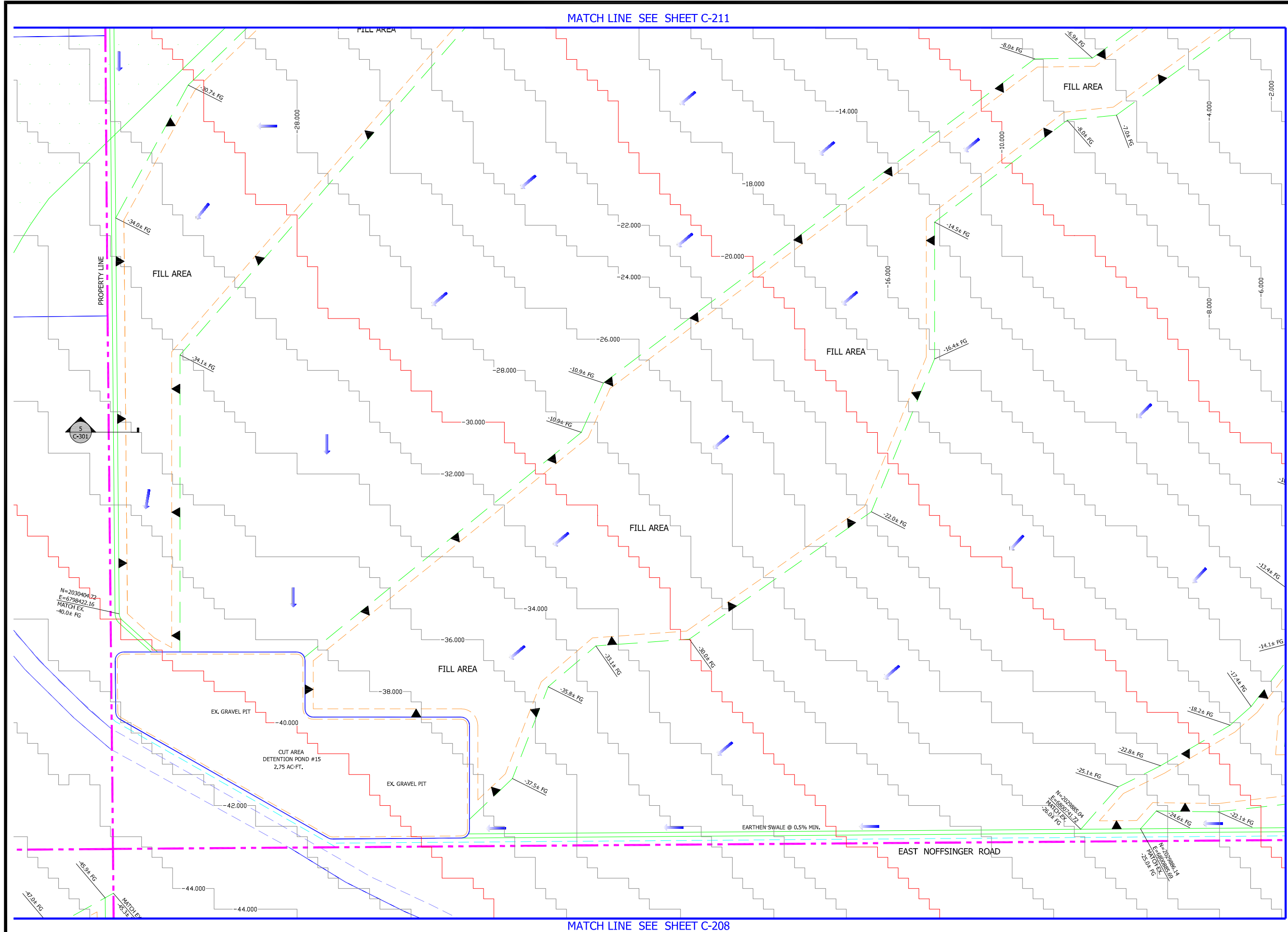
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**PRELIMINARY  
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DRAINAGE PLAN**

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SHEET 13 OF 22

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 PHOTOVOLTAIC POWER PLANT  
 66 MW PROJECT

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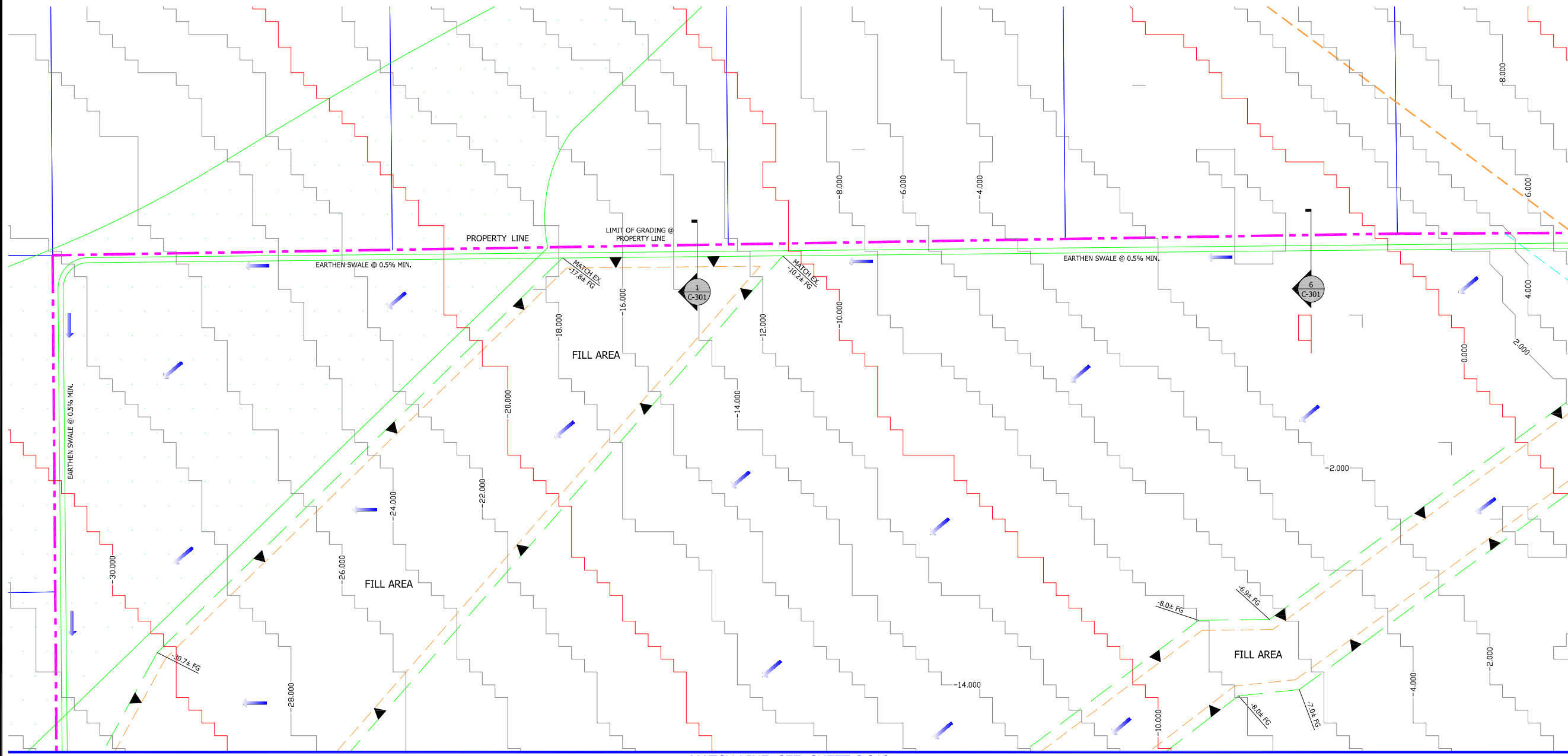
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**PRELIMINARY  
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 DRAINAGE PLAN**

C-210  
 SHEET 14 OF 22

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 PHOTOVOLTAIC POWER PLANT  
 66 MW PROJECT

REV	DATE	DESCRIPTION

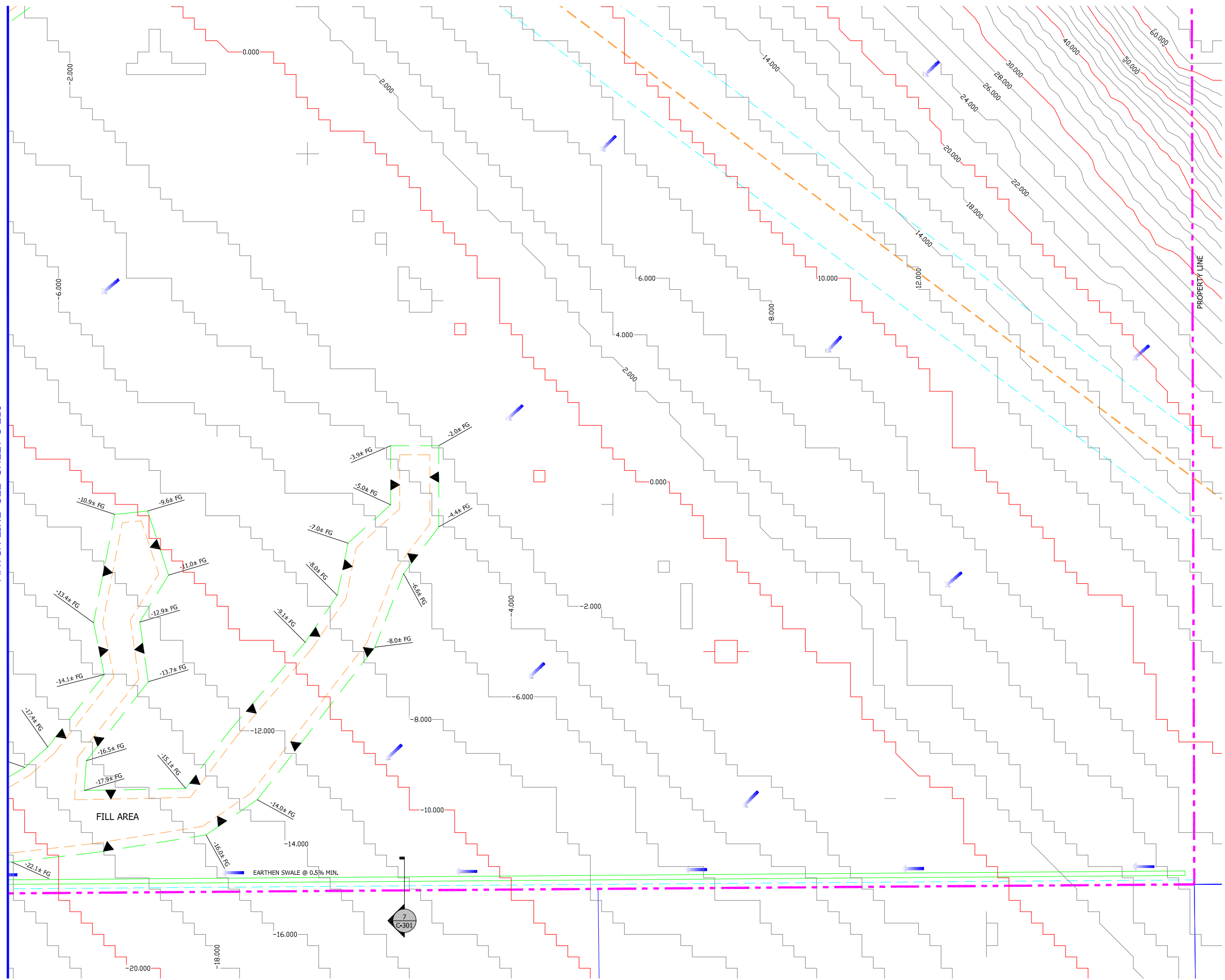
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PRELIMINARY  
 GRADING &  
 DRAINAGE PLAN

C-211  
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**NILAND GROUP**  
**PHOTOVOLTAIC POWER PLANT**  
**66 MW PROJECT**

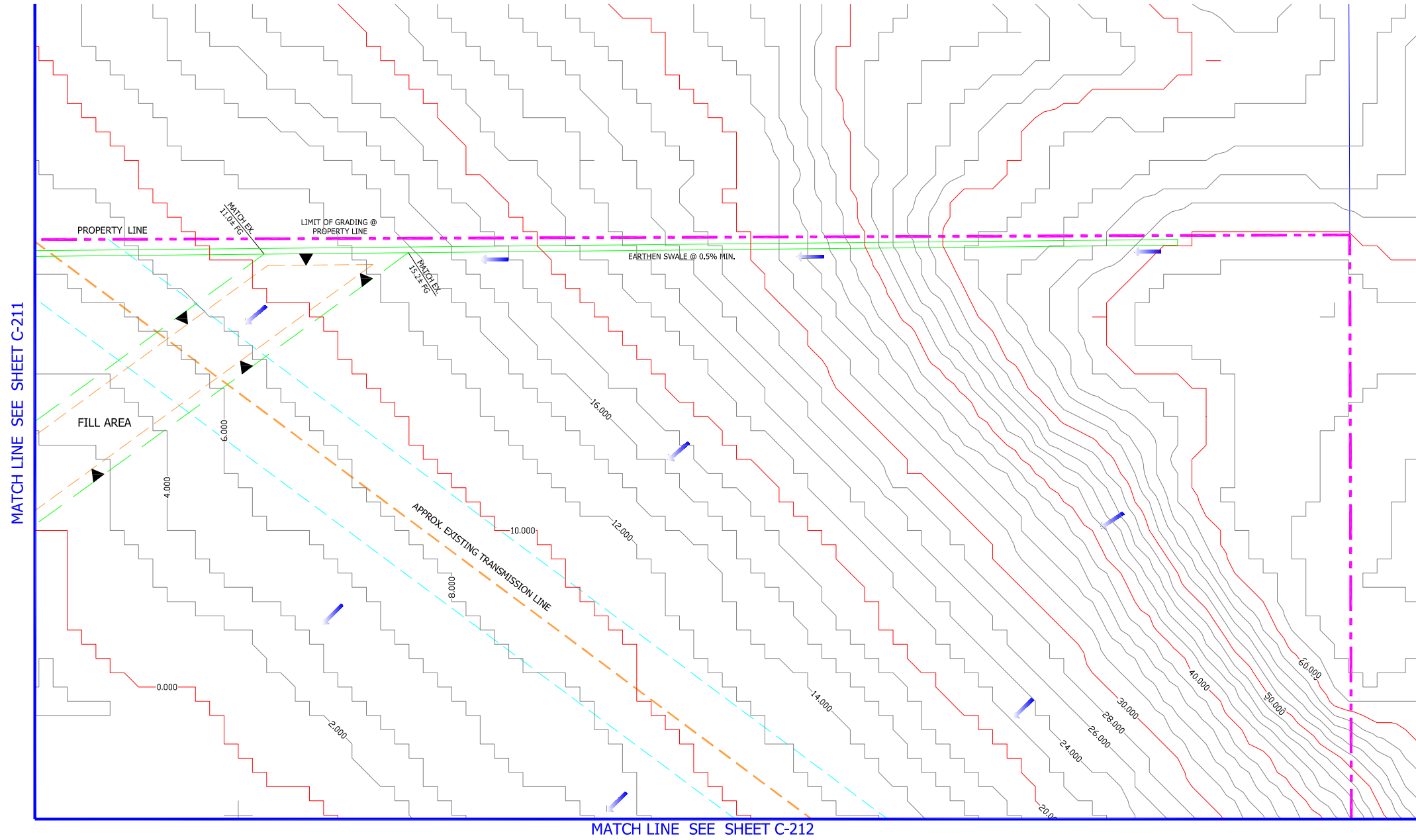
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ISSUE: 8/15/08

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**PRELIMINARY**  
**GRADING &**  
**DRAINAGE PLAN**

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**NILAND GROUP**  
 PHOTOVOLTAIC POWER PLANT  
 66 MW PROJECT

REV	DATE	DESCRIPTION

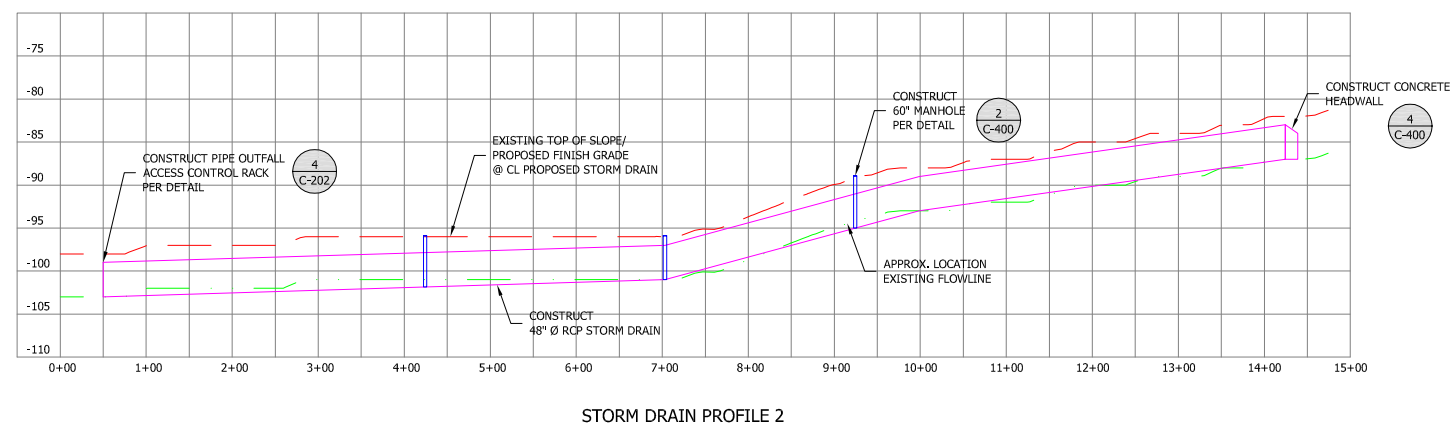
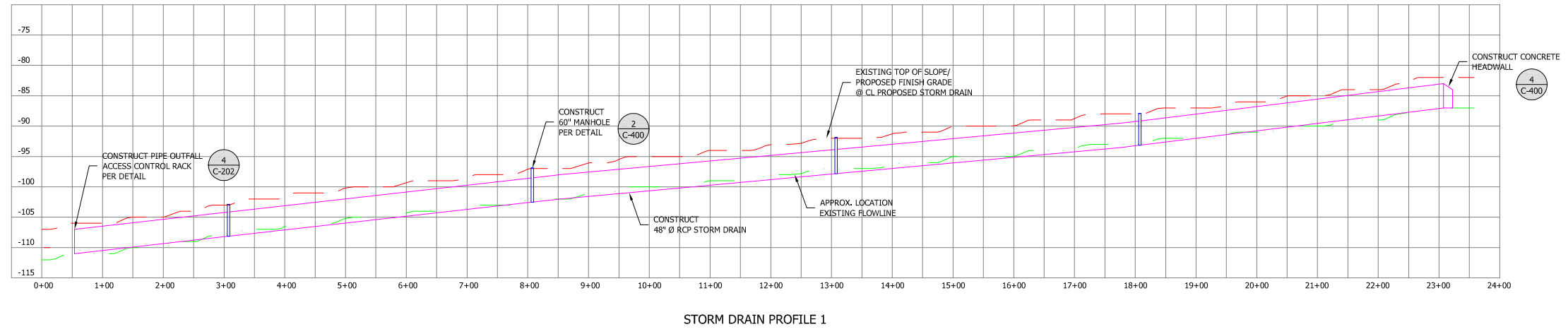
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PRELIMINARY  
 GRADING &  
 DRAINAGE PLAN

C-213  
 SHEET 17 OF 22

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**NILAND GROUP**  
**PHOTOVOLTAIC POWER PLANT**  
**66 MW PROJECT**

REV	DATE	DESCRIPTION

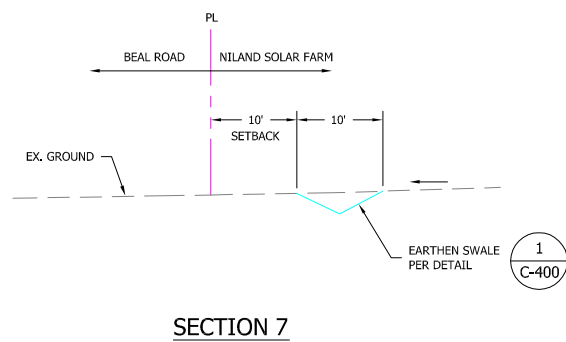
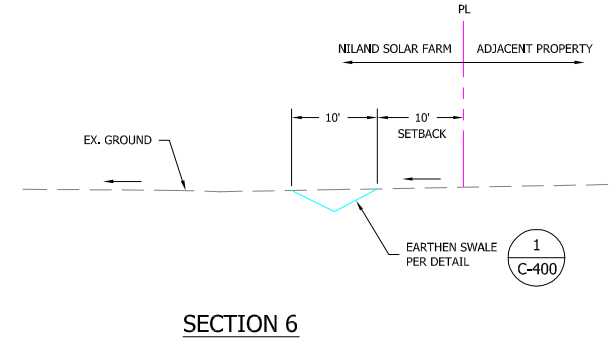
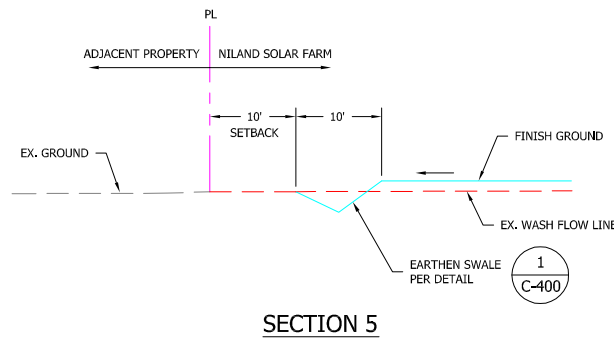
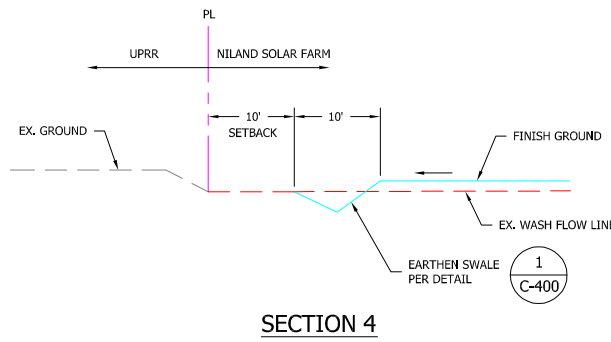
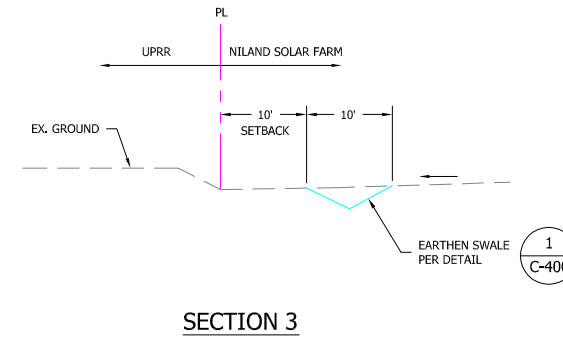
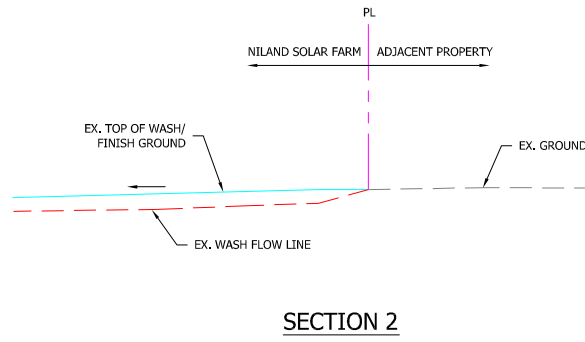
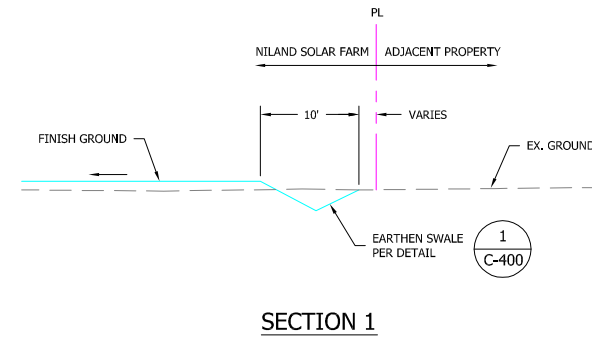
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**STORM DRAIN**  
**PROFILE**

C-300

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**NILAND GROUP  
 PHOTOVOLTAIC POWER PLANT  
 66 MW PROJECT**

REV	DATE	DESCRIPTION

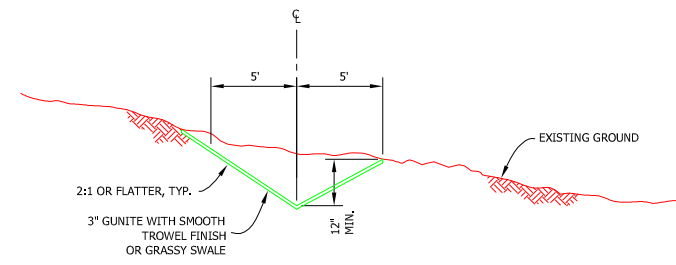
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SECTIONS

C-301

SHEET 19 OF 22

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**1 INTERCEPTOR DRAINAGE DITCH**  
Scale: NONE

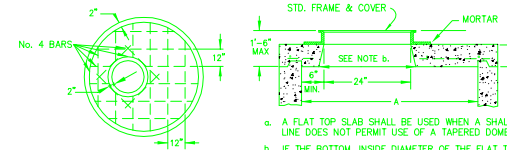
TABLE OF DIMENSIONS

A	B	T MIN.
48"	18"	6"
60"	30"	8"
72"	42"	8"
84"	54"	12"
96"	12" (FLAT)	12"

DIMENSION "B" IS A MINIMUM DIMENSION AND MAY BE GREATER IF DEPTH PERMITS. RISER SECTIONS, CONES, AND ADJUSTING RINGS SHALL CONFORM TO ASTM DESIGNATION C-478

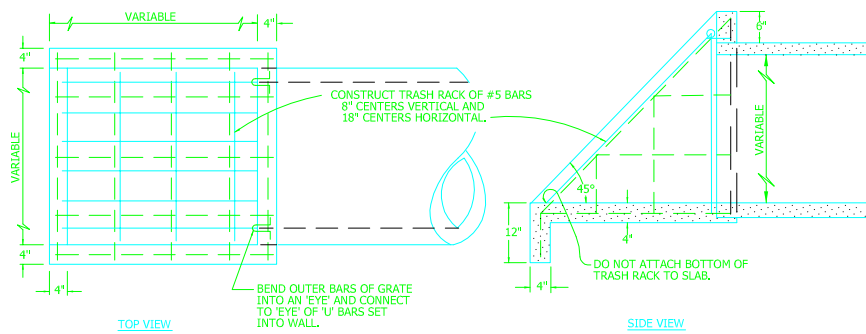
**NOTES**

- ECCENTRIC CONES SHALL BE USED WHERE SPECIFIED ON THE PLANS.
- JOINT MAY BE EITHER KEYPED OR TONGUE AND GROOVE.
- SEE SECTION 101-8 (MATERIALS) FOR JOINT COMPOUND. (ALL MANHOLE JOINTS)
- TOP OF FRAME SHALL BE 1/8 INCH BELOW ADJACENT PAVEMENT
- 0.20 FOOT MINIMUM FALL THROUGH MANHOLE.
- O.D. OF PIPE SHALL NOT EXCEED I.D. OF ITS MANHOLE BARREL



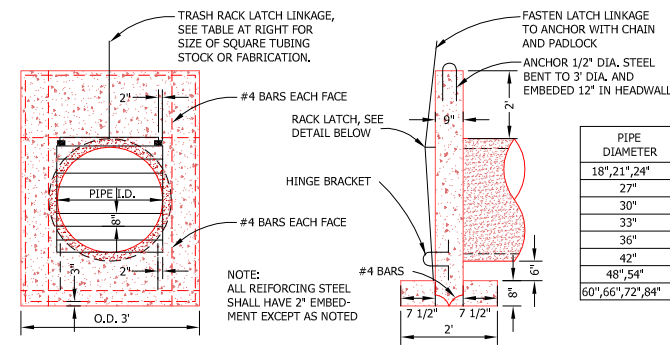
**FLAT TOP SLAB**

**2 STORM DRAIN MANHOLE**  
Scale: NONE



**NOTE:**  
ALL REINFORCING TO BE #4 @ 12" USE CLASS 'B' CONCRETE.

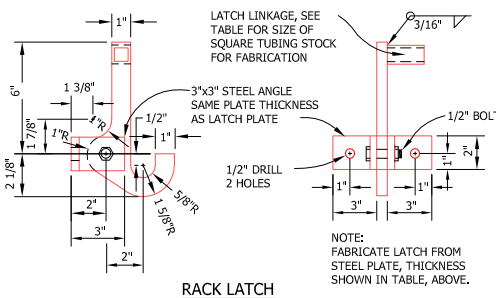
**4 CONCRETE HEADWALL**  
Scale: NONE



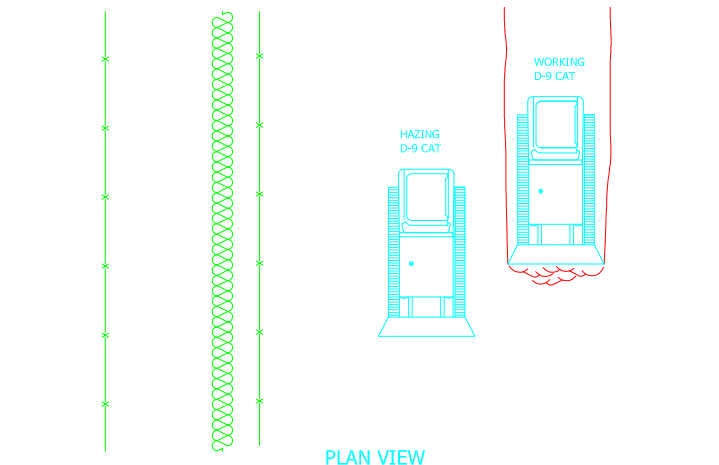
PIPE DIAMETER	RACK BAR	LATCH PLATE	LATCH LINKAGE
18", 21", 24"	#4	1/4"	1", .095" THICK
27"	#5	1/4"	1", .095" THICK
30"	#5	3/8"	1", .095" THICK
33"	#6	3/8"	1", .095" THICK
36"	#6	3/8"	1", .133" THICK
42"	#7	3/8"	1", .133" THICK
48", 54"	#7	1/2"	1", .133" THICK
60", 66", 72", 84"	#8	1/2"	1", .133" THICK

**NOTE:**

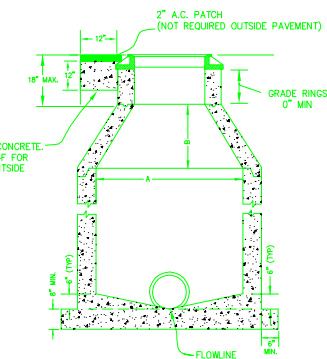
- ENTIRE RACK TO BE WELDED WITH REINFORCING STEEL OR ROUND BARS OF EQUAL DIA. WITH HORIZONTAL BARS BEING 8" CENTER TO CENTER.
- USE CLASS "B" CONCRETE.
- ROOM SHALL BE PROVIDED DOWNSTREAM TO LAY RACK FLAT.
- FASTEN LATCH BRACKET TO HEADWALL WITH 1/2"x6" BOLTS WITH HEX NUTS, OR 1/2" EXPANSION BOLTS.
- WHEN RACK IS IN THE CLOSED POSITION, THE BOTTOM RACK BAR SHALL BE TIGHT AGAINST THE TOP OF THE HINGE BRACKET SO THAT THE RACK CANNOT BE LIFTED OFF THE LATCH.
- FABRICATE HINGE BRACKET FROM #4 RE-BAR.



**5 PIPE OUTFALL ACCESS CONTROL RACK**  
Scale: NONE



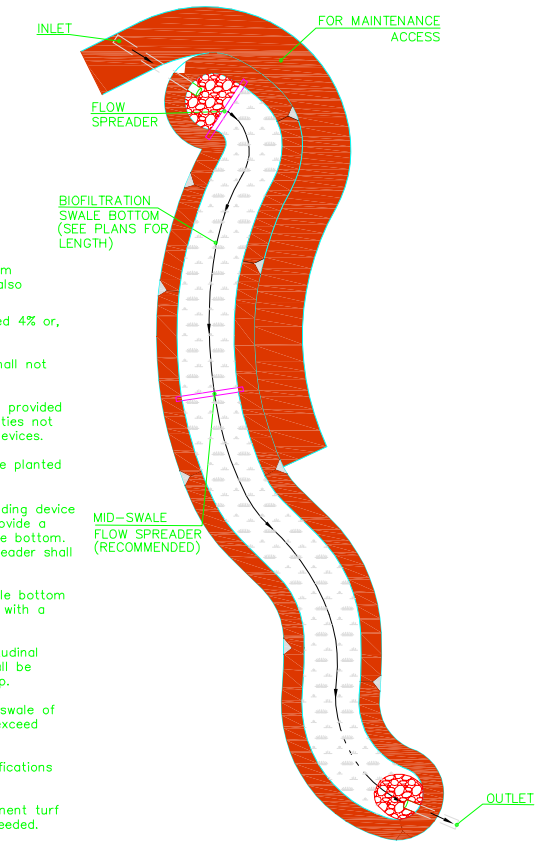
**6 CONSTRUCTION FENCE**  
Scale: NONE



**NOTE:** Longitudinal slope 1-6%. Provide underdrain for slopes <1.5%.

The standards outlined below specify optimum design elements for a successful Bioswale, also called a grassy swale.

- The swale flow line slope shall not exceed 4% or, if check dams are used, 6%
- Side slopes within the treatment area shall not exceed a 4:1 ratio.
- A 1-foot minimum of freeboard shall be provided above the design water surface for facilities not protected by high flow storm diversion devices.
- Woody or shrubby vegetation shall not be planted in the swale's active treatment area.
- The swale shall incorporate a flow-spreading device at the inlet. The flow spreader shall provide a uniform flow distribution across the swale bottom. On a swale wider than 8 feet, a flow spreader shall be installed every 100 feet.
- To minimize flow channelization, the swale bottom shall be smooth, with longitudinal slope, with a minimum bottom width of 4 feet.
- If check dams are used to reduce longitudinal slope of the swales, a flow spreader shall be provided at the top of each vertical drop.
- The maximum flow velocity through the swale of the 100-year flow condition shall not exceed 5-feet per second.
- For appropriate seed mix, refer to specifications supplied by Revegetation Consultant.
- To stabilize drainage ways, install permanent turf where immediate erosion protection is needed.

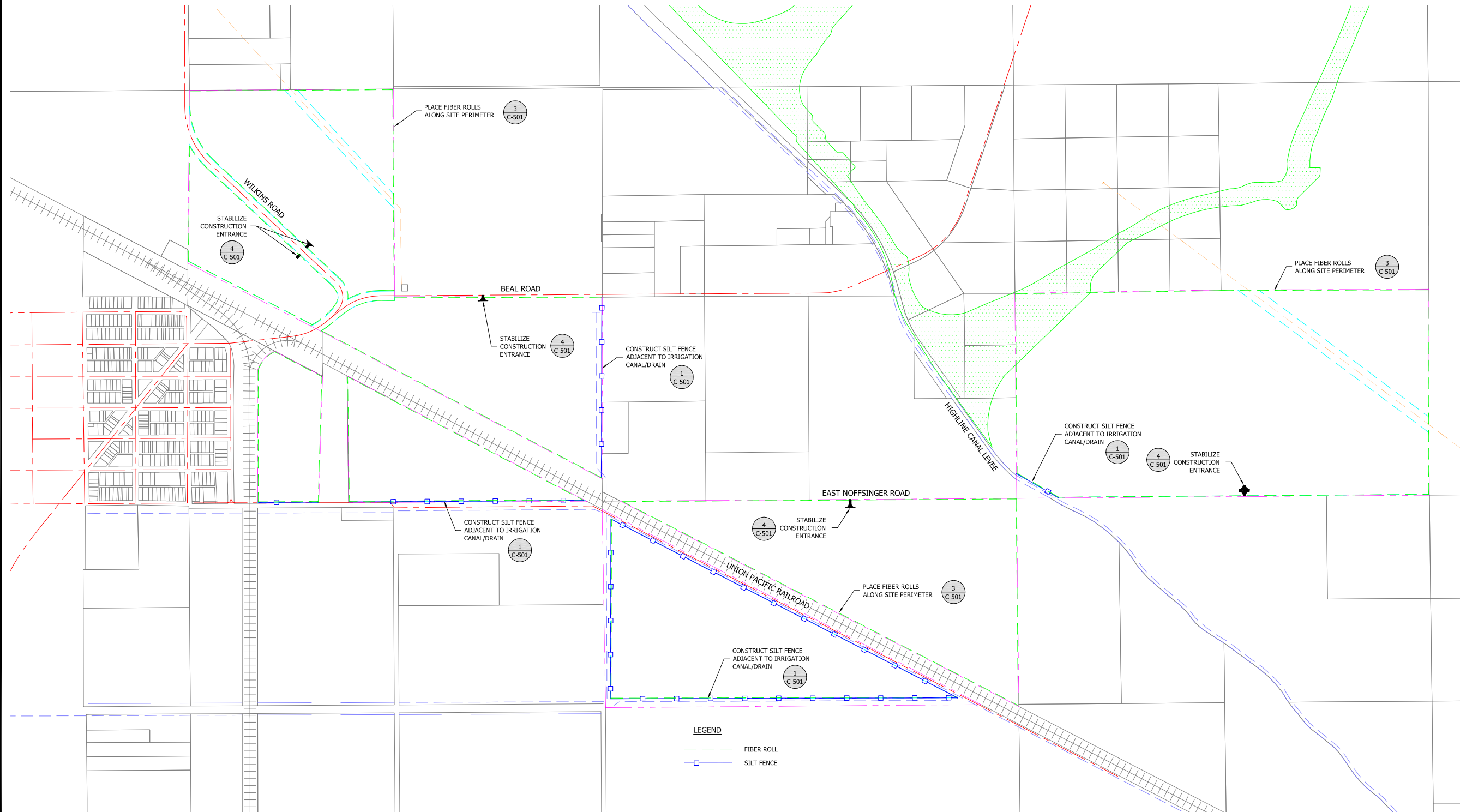


**3 BIOFILTRATION SWALE**  
Scale: NONE

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**NILAND GROUP  
 PHOTOVOLTAIC POWER PLANT  
 66 MW PROJECT**

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ISSUE: 8/15/08

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**EROSION CONTROL  
 PLAN**

C-500  
 SHEET 21 OF 22

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EROSION CONTROL  
 NOTES & DETAILS

C-501

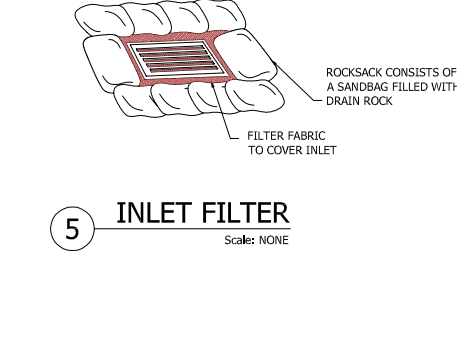
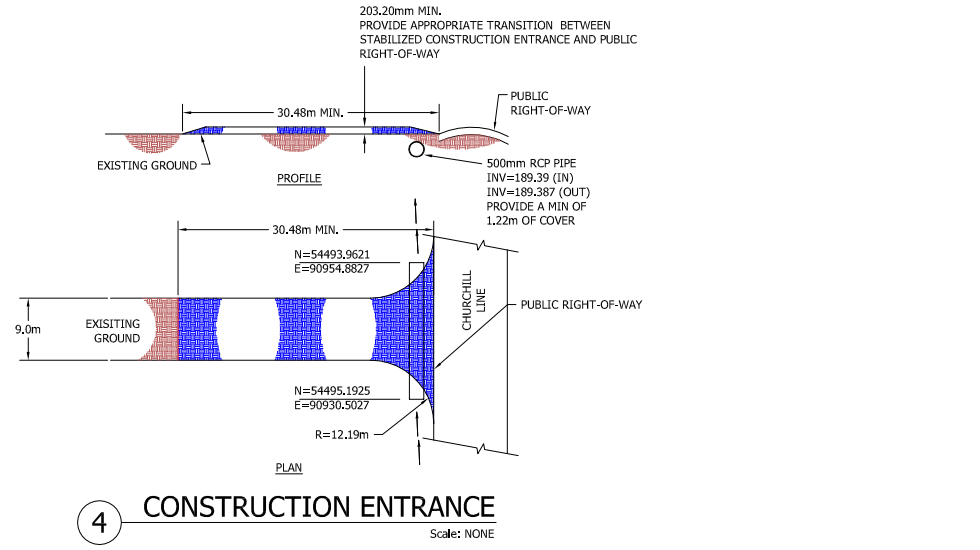
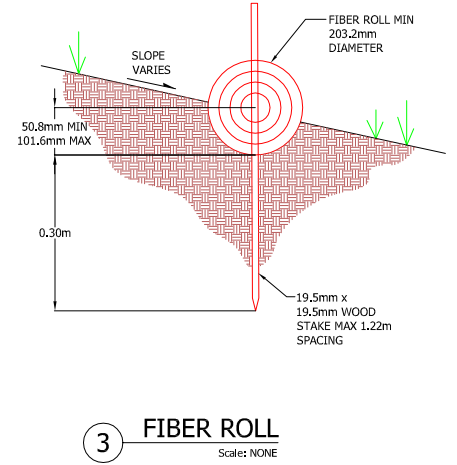
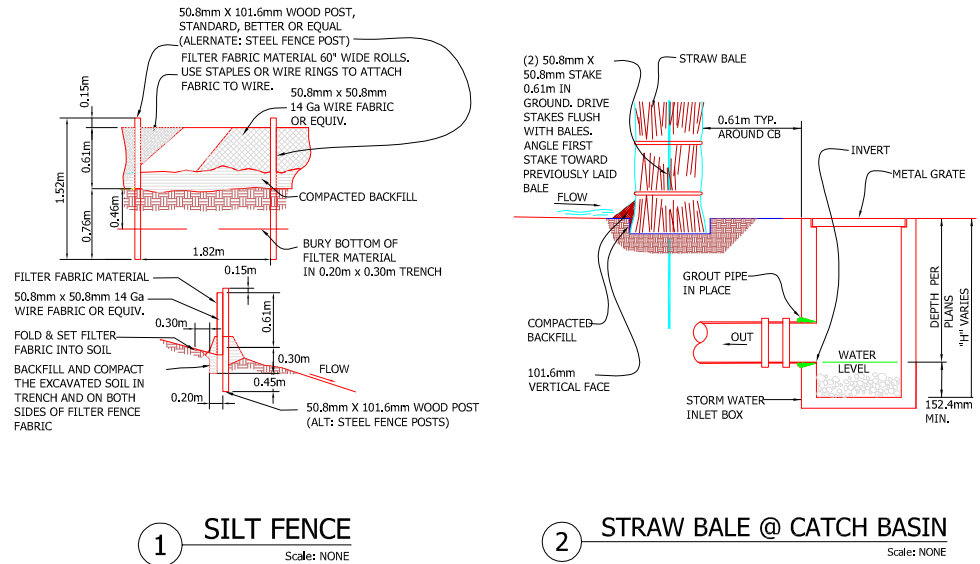
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**GENERAL GRADING NOTES:**

1. GRADING SHALL CONFORM TO APPENDIX CHAPTER 33 UBC, LATEST EDITION, AND TO THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
2. ALL EROSION CONTROL SHALL BE PLACED AS SPECIFIED ON THESE PLANS OR AS DETERMINED BY COUNTY PUBLIC WORKS INSPECTOR.
3. NON-POTABLE WATER SHALL BE SPRAYED ON ALL EXPOSED EARTH SURFACES DURING CLEARING GRADING, EARTH MOVING, AND OTHER SITE PREPARATION ACTIVITIES. THE EXPOSED EARTH SHALL BE WATERED THROUGHOUT THE DAY TO MINIMIZE DUST.
4. TARPULINS OR OTHER EFFECTIVE COVERS SHALL BE USED ON ALL STOCKPILED EARTH MATERIAL AND ON HAUL TRUCKS TO MINIMIZE DUST.
5. COUNTY OF IMPERIAL HAVE THE AUTHORITY TO STOP ALL GRADING OPERATIONS, IF, IN OPINION OF PROVINCIAL ENGINEERING DIVISION INSPECTOR, INADEQUATE DUST CONTROL MEASURES ARE BEING PRACTICED OR EXCESSIVE WIND CONDITIONS CONTRIBUTE TO FUGITIVE DUST EMISSIONS.
6. ADJACENT STREET FRONTAGES SHALL BE SWEEP AT LEAST ONCE A DAY TO REMOVE SILT AND OTHER DIRT WHICH IS EVIDENT FROM CONSTRUCTION ACTIVITIES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING CONSTRUCTION VEHICLES LEAVING THE SITE ON A DAILY BASIS TO PREVENT DUST, SILT AND DIRT FROM BEING RELEASED OR TRACKED OFFSITE.
8. DUE TO THE WEIGHTS OF THE TRUCKS, RUTTING SHOULD BE EXPECTED ON NON-PAVED SURFACES AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND LEVEL OF SURFACE AS UNITS ARE BEING DELIVERED.
9. CONSTRUCTION SHALL STOP IF CULTURAL RESOURCES ARE SUSPECTED. IT IS POSSIBLE THAT PREVIOUS ACTIVITIES HAVE OBSCURED SURFACE EVIDENCE OF CULTURAL RESOURCES. IF SIGNS OF AN ARCHEOLOGICAL SITE, SUCH AS ANY UNUSUAL AMOUNTS OF STONE, BONE, OR SHELL, ARE UNCOVERED DURING GRADING OR OTHER CONSTRUCTION ACTIVITIES, WORK SHALL BE HALTED WITHIN 100 FEET OF THE FIND AND THE PROVINCIAL INSPECTOR SHALL BE NOTIFIED. A QUALIFIED ARCHEOLOGIST SHALL BE CONSULTED FOR AN ON-SITE EVALUATION. THE ARCHEOLOGIST MAY REQUIRE ADDITIONAL MITIGATION.

**EROSION AND SEDIMENT CONTROL NOTES:**

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED BY OCTOBER 5 OR AS APPROVED BY THE PUBLIC WORKS ENGINEER.
2. STRAW BALES SHALL BE STOCKPILED ON SITE AT A RATE OF 1.5 BALES PER ACRE BY SEPTEMBER 25. MEASURES SHOULD BE TAKEN TO KEEP THE STRAW DRY.
3. ALL SLOPES GREATER THAN 10:1 SHALL BE COVERED WITH BROADCAST STRAW AT A RATE OF 50 BALES OR 4000 POUNDS PER ACRE. FOR SLOPES 4:1 OR STEEPER, STRAW SHALL BE PRESSED IN PLACE. THE PROVINCIAL ENGINEER SHALL APPROVE OTHER METHODS.
4. SLOPES STEEPER THAN 4:1 AND ADJACENT TO CITY RIGHT OF WAY, FLOOD PLAINS, NATURAL DRAINAGES, PARK LAND OR DESIGNATED OPEN SPACE SHALL BE HYDROSEEDDED.
5. ALL BARE AREAS, REGARDLESS OF SLOPE, WITHIN 50 FEET OF NATURAL DRAINAGES SHALL BE COVERED WITH STRAW AND PRESSED IN PLACE.
6. WHEN REQUIRED, BROADCAST SEED SHALL BE APPLIED.
7. 16-20-0 FERTILIZER OR EQUIVALENT SHALL BE APPLIED AT A RATE OF 500 POUNDS PER ACRE. IF HYDROSEEDING/MULCHING IS USED, SEED QUANTITIES SHALL BE INCREASED BY 30 PERCENT.
8. NO GRADING OR TRENCHING, EXCEPT AS REQUIRED FOR EROSION OR SEDIMENT CONTROL, SHALL OCCUR WITHIN 100 FEET FROM THE CENTERLINE OF PERENNIAL AND INTERMITTENT DRAINAGE SWALES BETWEEN OCTOBER 5 AND APRIL 1 EXCEPT AS APPROVED BY IMPERIAL IRRIGATION DISTRICT.
9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOLLOWING ALL STORMS TO ENSURE THAT ALL MEASURES ARE FUNCTIONING PROPERLY.
10. SEDIMENT AND TRASH ACCUMULATED IN DRAINAGES OR DETENTION BASINS SHALL BE REMOVED AS SOON AS POSSIBLE. IN ADDITION, OIL AND MATERIAL FLOATING ON WATER SURFACE MUST BE SKIMMED WEEKLY AND THE DEBRIS PROPERLY DISPOSED OF.
11. CONSTRUCTION ACTIVITIES OCCURRING BETWEEN OCTOBER 15 AND APRIL 1 SHALL HAVE EROSION AND SEDIMENT CONTROL MEASURES IN PLACE OR CAPABLE OF BEING PLACED WITHIN 24 HOURS. THE CONTRACTOR SHALL ENSURE THAT THE CONSTRUCTION SITE IS PREPARED PRIOR TO THE ONSET OF ANY STORM.
12. THE CONTRACTOR SHALL ESTABLISH A SPECIFIC SITE WITHIN THE DEVELOPMENT FOR MAINTENANCE AND STORAGE OF EQUIPMENT OR ANY OTHER ACTIVITY THAT MAY ADVERSELY CONTRIBUTE TO THE WATER QUALITY OF THE RUNOFF. THIS AREA SHALL HAVE A BERM LOCATED AROUND ITS PERIMETER. THIS AREA SHALL BE RESTORED TO ACCEPTABLE CONDITION UPON COMPLETION OF PROJECT.
13. HYDROSEEDING MAY BE CONSIDERED AS AN ALTERNATIVE TO BROADCAST STRAW SUBJECT TO THE PROVINCIAL ENGINEERING DIVISION BASED ON A REVIEW OF THE EXISTING SITE CONDITIONS (LOCATION, SLOPES, PROXIMITY TO STREAMS) AND TIME OF YEAR.





## **Appendix B**

### **Air Quality Report for the Niland Solar Energy Project**

**EDAW, Inc.**

**October 2008**

**AIR QUALITY REPORT FOR THE  
NILAND SOLAR ENERGY PROJECT INITIAL STUDY,  
NILAND, IMPERIAL COUNTY, CALIFORNIA**

***Prepared for:***

Los Angeles Department of Water and Power  
Environmental Services  
111 North Hope Street, Room 1044  
Los Angeles, California 90012

***Prepared by:***

EDAW, Inc.  
1420 Kettner Boulevard, Suite 500  
San Diego, California 92101  
(619) 233-1454

October 2008

To support the development of the air quality section of the proposed IS/MND, EDAW performed the following work:

EDAW investigated and documented the regional and local air quality conditions potentially affected by the proposed project including applicable air quality regulations (federal, California, Imperial County Air Pollution Control District (ICAPCD)), local and regional climate/topography, air pollution sources, air quality data, CEQA compliance thresholds, and area designations. The existing conditions were utilized to assess the potential impacts to air quality and regulatory compliance. Project construction and operational emissions of criteria pollutants were estimated qualitatively, as potential construction and operational emissions were expected to be minimal due to the nature of the project. EDAW developed and presented measures for reducing air emissions during construction.

### Environmental Setting

Ambient air quality conditions are based on concentrations of air pollutants including ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter with an aerodynamic diameter of 10 micrometers (0.01 millimeter) or less (PM<sub>10</sub>), and fine particulate matter (PM) with an aerodynamic diameter of 2.5 micrometers (0.0025 millimeter) or less (PM<sub>2.5</sub>). These air pollutants are commonly referred to as “criteria air pollutants” since they are the most prevalent air pollutants known to be harmful to human health. In addition to criteria pollutants, greenhouse gases (GHG) are pollutants of concern, except, unlike criteria pollutants, GHGs concentrations are not of regional or local concern, but of a global concern related to climate change.

The proposed project is located in Imperial County, California, which is located within the Salton Sea Air Basin (SSAB). Air basins are classified as either “attainment” or “nonattainment” areas for criteria pollutants based on the comparison of measured data with federal and state ambient air quality standards. The SSAB currently meets the federal and California standards for all criteria pollutants except O<sub>3</sub> and PM<sub>10</sub>. The SSAB is classified as a marginal nonattainment area for federal 8-hour O<sub>3</sub> standard and nonattainment for state 1-hour and 8-hour O<sub>3</sub> standards. For PM<sub>10</sub>, the basin is currently classified as serious nonattainment for the federal standard and nonattainment for the state standard (ARB 2007, EPA 2007).

The construction of the proposed project would include the installation of ground-mounted photovoltaic (PV) arrays over 40 to 50 percent of the approximately 970-acre project site. Since the site is determined to be relatively level and flat, minimal ground surface preparation will be required (i.e., minimal grading emissions). Trenching activities to bury electrical cables will take place within the proposed roads, or corridors between the chains of panels. These site roads will be heavily used and maintained during construction (emissions source) and rarely used during operation. Additionally, construction emissions sources will include two staging areas of approximately 30 acres. An O&M trailer or building for parts storage, security and possible project monitoring will be a permanent feature.

The federal Clean Air Act (CAA) requires each state to prepare an air quality control plan, referred to as a State Implementation Plan (SIP), to achieve, maintain and enforce federal air quality standards throughout the state. In Imperial County, the Imperial County Air Pollution Control District (ICAPCD) is the agency responsible for administering federal and state air quality laws and policies. Included in the ICAPCD's tasks is the preparation and implementation of the Imperial County portion of the SIP (the Imperial County Air Quality Management Plan (AQMP)), which includes strategies and tactics to be used to attain and maintain acceptable air quality in Imperial County; and promulgating Rules and Regulations to govern emissions from activities within their jurisdiction that may negatively affect air quality and result in nonattainment with either local, state, or federal air quality standards.

ICAPCD Rules and Regulations that would affect project construction include:

- Regulation IV – Prohibitions:
  - Rule 401 – Opacity of Emissions, which regulates opacity of emissions;
  - Rule 407 – Nuisances, which prohibits the release of air contaminants that may cause injury, detriment, nuisance, or annoyance; and
- Regulation VIII – Fugitive Dust Rules:
  - Rule 800 – General Requirements for Control of Fine Particulate Matter (PM<sub>10</sub>), which defines terms for the regulation and specifies, amongst other topics, soil stabilization and stabilization testing methods;
  - Rule 801 – Construction and Earth Moving Activities, which contains EPA-required Best Available Control Measures (BACM) to be included in the ICAPCD Non-Attainment Area Plan for attaining the NAAQS for PM<sub>10</sub>. The BACM, construction phasing, paving unpaved haul and access roads, wetting unpaved roads and reduction of vehicle speeds and trips, are required to be implemented prior to and during, construction and earthmoving operations for development projects; and
  - Rule 804 – Open Areas, which contains BACM for PM<sub>10</sub>. The BACM, applying and maintaining water or dust suppressant(s) to all unvegetated areas, establishing vegetation on all previously disturbed areas, and paving, applying and maintaining Gravel, or applying and maintaining Chemical Stabilizers/Suppressants, are required.

Regulation VIII also has requirements for developments to implement dust control plans depending on size.

Consistency with the Imperial County AQMP is typically determined by two standards: (1) whether the project would exceed assumptions contained in the AQMP; and (2) whether the project would increase the frequency or severity of violation of existing air

quality violations, contribute to new violations, or delay the timely attainment of air quality standards or interim reductions as specified in the AQMP.

1. The AQMP assumes specific emissions from the operation of certain land uses, i.e., residential, retail, office, institutional, industrial, and agricultural. The project would somewhat change the existing land use from agricultural to industrial (solar farm); however, the project would not exceed the assumptions contained in the AQMP.
2. The SSAB is a federal and California nonattainment area for O<sub>3</sub> precursor pollutants (volatile organic compounds [VOC] and nitrogen oxides [NO<sub>x</sub>]) and PM<sub>10</sub> pollutants. For the CO pollutant, the SSAB is in attainment with both state and federal standards. Based on these existing non-attainment air quality conditions, operation and construction emissions of these pollutants from the proposed project are addressed.

#### *Operation Emissions*

Operation of the project would involve minor new land uses: the conversion of agricultural to industrial (solar farm) uses with negligible stationary air emission sources, with minor mobile sources from maintenance activities. The project would result in a lower potential level of operational emissions than the existing agricultural land use potential because there would be little or no operation of the diesel engine powered equipment typical for agricultural operations. The project would generate minor vehicle trips for facility maintenance; therefore, the project would generate minor traffic increases on roadways below capacity. The ICAPCD has adopted a CEQA Air Quality Handbook, which includes recommended thresholds of significance for project operations. However, operational emissions are anticipated to be minimal, and thus not necessary to calculate for comparison against the thresholds. Therefore, the project would not result in significant air quality impacts due to project operation.

#### *Construction Emissions*

Construction of the project would result in the generation of respirable dust (PM<sub>2.5</sub> and PM<sub>10</sub>) and involve the use of diesel-powered equipment, which generates CO and precursors for O<sub>3</sub>. The ICAPCD thresholds, adopted for project operations, are not applicable to construction activities since the ICAPCD has adopted, as part of the November 2007 ICAPCD Rules and Regulations, standard mitigation measures for construction emissions that must be followed regardless of predicted total construction emissions for a project. Therefore, the ICAPCD does not provide thresholds of significance for project construction; thus, project construction emissions are not quantified. Based on the project description, considerable grading, fill, and erosion control cultivation will be required to accommodate the placement of concrete ballasts that will hold the solar arrays, access roads, and drainage features. And therefore, the project would result in significant air quality impacts due to project construction. Since the estimated

construction emissions are not available, the following measures are provided to reduce the project impact related to dust emissions.

**Mitigation Measure AQ-1: Dust/Emissions during Construction.** The project shall incorporate the following measures to minimize dust emissions:

- a. Land disturbance shall be minimized to the extent feasible.
- b. Haul trucks shall be covered when loaded with fill.
- c. Paved streets shall be swept at least once per day where there is evidence of dirt that has been carried on to the roadway.
- d. Use watering trucks to minimize dust. Watering should be sufficient to confine dust plumes to the project work areas.
- e. Active disturbed areas shall have water applied to them three times daily.
- f. Inactive disturbed areas shall be revegetated as soon as feasible to prevent soil erosion.
- g. For disturbed surfaces to be left inactive for 4 or more days that will not be revegetated, apply a chemical stabilizer per manufacturer's instruction.
- h. For unpaved roads, apply chemical stabilizers or apply water once per hour during active operation.
- i. For open storage piles that will remain onsite for 2 or more days, apply water once per hour, or install coverings.
- j. For paved road track-out, cover all haul vehicles, or comply with vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
- k. During high wind conditions (wind speeds in excess of 25 mph), cease all earthmoving activities or apply water to soil not more than 15 minutes prior to disturbing such soil.
- l. All construction equipment shall be fitted with diesel particulate filters.
- m. Install temporary dust screens along the perimeter of the project site to prevent nuisance dust from leaving the project site.
- n. Locate stockpiles and active construction staging and operational areas as far from adjacent land uses as possible.

## REFERENCES

California Air Resources Board (ARB)

2007 *California Air Quality Area Designations*. Available at <http://www.arb.ca.gov/aqd/aqd.htm>.

Imperial County Air Pollution Control District (ICAPCD)

2007 Rules and Regulations. November.

2007 CEQA Air Quality Handbook. November.

Imperial County

2008 Air Quality Management Plan. August.

U.S. Environmental Protection Agency (EPA)

2007 Green Book, Criteria Pollutant Area Summary Report. Available at <http://www.epa.gov/oar/oaqps/greenbk/anc12.html>.

## **Appendix C1**

### **Phase II and Phase III Burrowing Owl Survey Report for Debris Removal Activities within the Imperial Valley**

**LADWP & Aspen Environmental Group**

**October 2007**



**DEPARTMENT OF WATER AND POWER  
CITY OF LOS ANGELES**

**PHASE II AND PHASE III  
BURROWING OWL SURVEY REPORT  
FOR DEBRIS REMOVAL ACTIVITIES  
WITHIN THE IMPERIAL VALLEY  
October 2007**

**Prepared by:**

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**PHASE II AND PHASE III BURROWING OWL SURVEYS FOR DEBRIS REMOVAL ACTIVITIES AT  
SEVERAL WASTE SITES NEAR THE SALTON SEA AND OTHER AREAS WITHIN THE IMPERIAL  
VALLEY, CALIFORNIA**

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**1. PURPOSE/INTRODUCTION**

This report is a supplement to the June 2007 Phase II Burrowing Owl Survey Report that documented the presence of burrowing owls (*Athene cunicularia*) at several sites scheduled for debris removal activities near the Salton Sea and other areas within the Imperial Valley, California. The June 2007 report (Appendix) provided the Los Angeles Department of Water and Power (LADWP) with baseline data regarding the presence of this species in the project area and was utilized as the basis for further studies at the site. This report documents the current conditions at the debris removal sites and is intended to provide information obtained during focused California Department of Fish and Game (CDFG) Phase II and Phase III surveys for burrowing owls. The survey areas are owned and managed by the LADWP. The survey areas include portions of LADWP designated Area 1-1, Area 4-1, Area 4-2, and Area 4-4, and all of Area 4-3. These sections have been scheduled for debris removal activities and burrowing owls have been identified at several of the sites.

The September 2007 surveys observed burrowing owls and identified active burrowing owl dens at Area 4-1 North West, Area 4-1 South East, Area 4-4, and Area 1-1. Several inactive burrows were noted in Area 4-2 and Area 4-3. As these areas are adjacent to active owl territories owls likely utilize these areas for foraging or temporary refugia.

The determination of owl territories or distinct foraging areas could not be ascertained during the focused survey attempts conducted in September 2007. Repeated efforts to monitor the nest sites on four separate occasions indicated the owls became active well after sunset and could be heard leaving the burrows in the dark. Based on previous experience with this species and the prey items identified near the active burrows it is clear the animals are foraging in and adjacent to many of the agricultural fields and irrigation canals that occur in the project area. In addition, the animals likely forage opportunistically within the specific parcels.

**2. PROJECT SPONSOR**

This project is sponsored by the City of Los Angeles Department of Water and Power.

**3. CONTACT PERSON AND PHONE NUMBER**

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**4. METHODS**

Phase II and Phase III protocol level surveys were conducted at the project sites by Aspen biologists Chris Huntley and Jamie Miner and sub-contractor Brady Daniels from September 17 through September 21, 2007.

**Phase II Surveys.** Phase II surveys were conducted using identical methods to those discussed in the previous report (Appendix).

**Phase III Surveys.** Phase III protocol level surveys were conducted for 2 hours each morning (including 1 hour prior to sunrise) and 2 hours each evening (including 1 hour after sunset) throughout

the duration of the survey week. During Phase III surveys, biologists were staged near active areas where owls were present. Behaviors of individuals and/or small groups of owls were observed. Depending on the location, the biologists were able to directly observe the animals from vehicles or blinds ranging from 75 to 200 yards from the nest sites.

## 5. SURVEY LIMITATIONS

Survey conditions were generally good with warm temperatures and very light winds. Owls were noted directly in and adjacent to burrows and weather conditions were favorable for the observation of this species. However, a monsoon event resulted in heavy rainfall across the southern desert during the final morning of the surveys and limited direct owl observations. In general Phase II survey limitations were similar to those discussed in the previous report (Appendix).

The major limitation noted during the Phase III surveys was that the owls in the survey areas were most active at night, resulting in visual observations that were extremely difficult at best. Due to this reason, territories could not be completely and accurately defined. However, based on available prey distribution and abundance and suitable habitat throughout the project sites, it should be assumed that owl territories potentially encompass the entire areas of the project sites and the adjacent agricultural fields and irrigation ditches.

## 6. SITE CONDITIONS AND SURVEY RESULTS

Preliminary Phase II surveys were conducted in May 2007 and subsequent Phase II and Phase III surveys were conducted in September 2007. The surveys were conducted in the same geographic locations as the previous surveys and site conditions, including vegetation types and composition and air and ground temperatures, are similar to those discussed in the previous report (Appendix). Results from each of the designated survey areas are discussed in detail below. For the purpose of this report each site is described below in the order of the survey and the results of the survey identified for each area. Table 1 contains a summary of each individual burrow identified by area. Table 1 also contains the GPS coordinates for each burrow location.

### Area 4-1 North West Parcel

**Results:** During the September 2007 surveys, the survey area at this parcel was broadened to include the northernmost portions of the parcel. In total, six adults and two sub-adults were observed in this parcel at five separate burrows. However, it is likely that one pair (two adults) were the same pair noted on different days utilizing two adjacent burrows. The majority of burrows in the northern portion of the parcel were associated with dry, braided washes that cross the parcel in a northeast-southwest direction east of Wilkins Road. Active burrows in the southern portion of the parcel were located in proximity to two large, dry detention basins just west of Wilkins Road and a small burrow located in a spoil pile east of Wilkins Road. As previously noted, it appears that the two owls observed at burrow number 21 also utilize burrow number 20, east of Wilkins Road (Figure 2C). The individual owl observed at burrow number 18 was detected utilizing the burrows at number 21a (Figure 2C).

### Area 4-2

**Results:** Similar to the previous surveys, owl activity was not observed in this parcel. However, it is likely that owls present in the Area 4-1 Northwest parcel likely utilize the site for foraging. Furthermore, inactive burrows were detected during the most recent surveys. These burrows occurred near the north-central portion of the parcel along the border with Area 4-1 Northwest. In fact, buffer zones around inactive burrows in this area overlap the border of the two parcels.

**Table 1. Burrowing Owls/Burrows Identified in the Survey Area**

Point	Site/Figure	Active	Owl Observed	GPS Position		Notes
				Northing	Easting	
1	Site 4-1 NW Fig 2B/2C	No	No	6789913.11	2034776.27	Old wash and pellets present.
2		No	No	6789772.20	2034378.80	No sign present; potential burrow.
3		Yes	No	6789067.66	2034150.65	Fresh wash, pellets, and prey remains present; within active complex.
4		No	No	6789026.77	2034135.78	Old wash, pellets, and feathers present.
5		Yes	Yes	6789006.84	2034068.55	<b>One adult observed</b> ; fresh wash, pellets, and feathers present.
6		No	No	6788962.94	2034020.55	No sign present; potential burrow.
7		Yes	No	6788918.99	2033960.50	Fresh wash, pellets, feathers, and prey remains present.
8		No	No	6788906.92	2033854.67	No sign present; potential burrow.
9		Yes	Yes	6788626.70	2033805.36	<b>Two sub-adults observed</b> ; fresh wash, pellets, feathers, tracks, and prey remains present.
10		No	No	6789088.82	2033764.32	No sign present; potential burrow.
11		Yes	No	6788117.23	2033498.62	Fresh wash, pellets, feathers, and prey remains present.
12		No	No	6787953.87	2033367.09	No sign present; potential burrow.
13		No	No	6787825.23	2033284.99	No sign present; potential burrow.
14		No	No	6790163.33	2033220.93	Old pellets and prey remains present.
15		No	No	6789867.32	2033018.75	No sign present; potential burrow.
16		No	No	6788049.22	2033003.65	No sign present; potential burrow.
17		No	No	6787740.09	2032987.71	No sign present; potential burrow.
18		Yes	Yes	6788949.94	2032864.41	<b>One adult observed</b> ; fresh wash, pellets, feathers, tracks, and prey remains present.
19		No	No	6788332.38	2032700.03	No sign present; potential burrow.
20		Yes	Yes	6789783.70	2032688.45	<b>Two adults observed</b> ; fresh wash, pellets, tracks, and prey remains present.
21		Yes	Yes	6879406.87	2032639.11	<b>Two adults observed</b> ; fresh wash, pellets, and tracks present. These are likely the same pair as map point 20.
21a	No	No	6788674.01	2032519.48	Area of potentially high owl activity; multiple burrows present.	
22	No	No	6788996.38	2032479.69	Old wash and pellets present.	
23	No	No	6789080.49	2032407.36	No sign present; potential burrow.	
24	Site 4-2 Fig 2A/2C	No	No	6789355.83	2032310.42	No sign present; potential burrow.
25		No	No	6790189.77	2030481.82	No sign present; potential burrow.
26	Site 4-3 Fig 2D	No	No	6790156.64	2030404.82	Old wash present.
27		No	No	6789968.83	2030146.31	No sign present; potential burrow.
28		No	No	6790108.07	2030352.94	Old pellets present.
29		No	No	6790037.80	2030146.50	No sign present; potential burrow.
30	No	No	6790677.02	2030896.68	No sign present; potential burrow.	
31	Site 4-1 SE Fig 2D	No	No	6791271.03	2030204.40	No sign present; potential burrow.
32		Yes	Yes	6791558.54	2030260.92	<b>One adult observed</b> . Fresh wash, feathers, and tracks present.
33		No	No	6791770.83	2030297.07	No sign present; potential burrow.
34		No	No	6791760.74	2030237.37	No sign present; potential burrow.
35		Yes	Yes	6791438.40	2030077.40	<b>One adult observed</b> . Fresh wash, pellets, feathers, and prey remains present.
36		No	No	6791351.78	2029882.82	Difficult to detect recent activity. Burrows contained evidence of pellets and wash.
37		No	No	6791351.78	2029882.82	No sign present; potential burrow.

**SUPPLEMENTAL BURROWING OWL REPORT**  
**Imperial Valley Debris Removal Project**

Point	Site/Figure	Active	Owl Observed	GPS Position		Notes
				Northing	Easting	
38		No	Yes	6793476.77	2029073.80	One adult observed perching on bank. Numerous burrows aligned along drainage; no sign present; area of potentially high owl activity.
39	Site 4-4 Fig 4B	Yes	No	6793426.40	2028925.25	Fresh wash present.
40		Yes	Yes	6793421.20	2027907.40	Two adults and one juvenile observed; fresh wash, pellets, feathers, tracks, and prey remains present.
41		No	No	6793791.56	2027853.81	No recent sign detected. Suitable location for future owl use.
42		Yes	Yes	6793884.56	2028138.77	Two adults observed; fresh wash, pellets, feathers, and prey remains present.
43		Yes	Yes	6794184.48	2028141.04	Two adults observed; fresh wash, feathers, and prey remains present.
44		Yes	Yes	6794295.29	2028261.22	One adult observed; fresh wash, pellets, feathers, and prey remains present.
45		No	No	6794287.36	2028157.75	No sign present; potential burrow.
46		Yes	No	6794359.98	2027884.59	Fresh wash, pellets, feathers, and prey remains present.
47		No	No	6794626.60	2027912.90	No sign present; potential burrow.
48		No	No	6794626.59	2027912.86	No recent sign detected. Suitable location for future owl use.
49		Yes	Yes	6794666.95	2027944.34	One adult observed; fresh wash, pellets, feathers, tracks, and prey remains present.
50		No	No	6794663.90	2027961.21	No sign present; potential burrow.
51		No	No	6794729.20	2028203.20	Burrow contained old wash. No recent sign detected.
52		No	No	6794737.51	2028293.65	Burrow contained old wash. No recent sign detected.
53		No	No	6794869.24	2028210.86	Burrow contained old wash. No recent sign detected.
54		No	No	6794911.72	2028296.84	No sign present; potential burrow.
55		No	No	6794959.58	2028378.12	No sign present; potential burrow.
56	No	No	6795011.33	2028371.38	No sign present; potential burrow.	
57	Yes	Yes	6795166.50	2028328.00	One adult observed; fresh wash, pellets, feathers, tracks, and prey remains present.	
58	No	No	6795238.57	2028003.25	No sign present; potential burrow.	
59	No	No	6795184.71	2027875.26	Numerous burrows aligned along drainage; no sign present; area of potentially high owl activity.	
60	No	No	6795179.50	2027841.81	No sign present; potential burrow.	
61	Yes	Yes	6795173.50	2027760.84	One adult observed; fresh wash, pellets, feathers, tracks, and prey remains present.	
62	No	No	6796284.50	2027545.89	No sign present; potential burrow.	
63	Yes	No	6830888.90	1989161.93	Fresh wash, pellets, feathers, tracks, and prey remains present.	
64	No	No	6831127.52	1989086.33	No sign present; potential burrow.	
65	Site 1-1 Fig 3B	Yes	No	6830569.10	1988776.13	Fresh wash, pellets, tracks, and prey remains present.
66		No	No	6830538.49	1988738.53	No sign present; potential burrow.
67		Yes	No	6830742.91	1988682.89	Fresh wash, pellets, feathers, and track present.
68		Yes	No	6830632.52	1988630.15	Fresh wash, pellets, feathers, and prey remains present.
69		Yes	No	6830539.75	1988499.61	Fresh wash, feathers, and tracks present.
70		Yes	Yes	6830595.58	1988491.26	Three adults observed; fresh wash, pellets, feathers, tracks, and prey remains present.

Point	Site/Figure	Active	Owl Observed	GPS Position		Notes
				Northing	Easting	
71		Yes	Yes	6830751.81	1988507.97	Two adults observed; fresh wash, pellets, feathers, tracks, and prey remains present.
72		Yes	No	6830728.10	1988462.36	Fresh wash, pellets, feathers, and prey remains present.
73		Yes	No	6791351.78	2029882.82	Fresh wash, pellets, feathers, tracks, and prey remains present.
74		Yes	No	6793476.77	2029073.80	Fresh wash, pellets, feathers, tracks, and prey remains present.

**Area 4-3**

**Results:** Similar to previous results, owls were not observed at this parcel. Five inactive burrows were detected here during recent surveys. These burrows may be utilized by the owls identified during previous and recent surveys on the adjacent parcel (Area 4-1 South East). Most of the burrows are closely associated with the small wash that occurs in the area.

**Area 4-1 South East Parcel**

**Results:** Two active owl burrows with single adult owls were located in the Area 4-1 South East Parcel. In addition, a single adult owl was observed perching near a complex located near the eastern border of the site along a ravine. However this owl was not associated with an active burrow and may be tied to one of the existing burrows observed in the area. Several inactive burrows were also observed (Figure 2D). Owl activity was centered along a narrow sparsely vegetated drainage that roughly bisects the survey area.

**Area 1-1**

**Results:** Nine active owl burrows were detected south of the existing access road and along the western border of Area 1-1 (Figure 3B). These burrows were very active with large amounts of feathers and other recent signs including fresh pellets, wash, and prey remains. Burrowing owls were routinely observed in Area 1-1 during the recent survey.

**Area 4-4**

**Results:** Ten adult owls, one sub-adult (fledged juvenile) owl, and ten active burrows were observed in Area 4-4 (Figure 4B). Several of the owls were paired and closely associated with specific burrows particularly at burrow 40 (Figure 4B/Table 1). As in previous surveys of this area the owls were closely associated with the dry, unvegetated drainages that cross the area.

**7. CONCLUSION AND RECOMMENDATIONS**

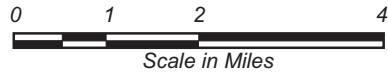
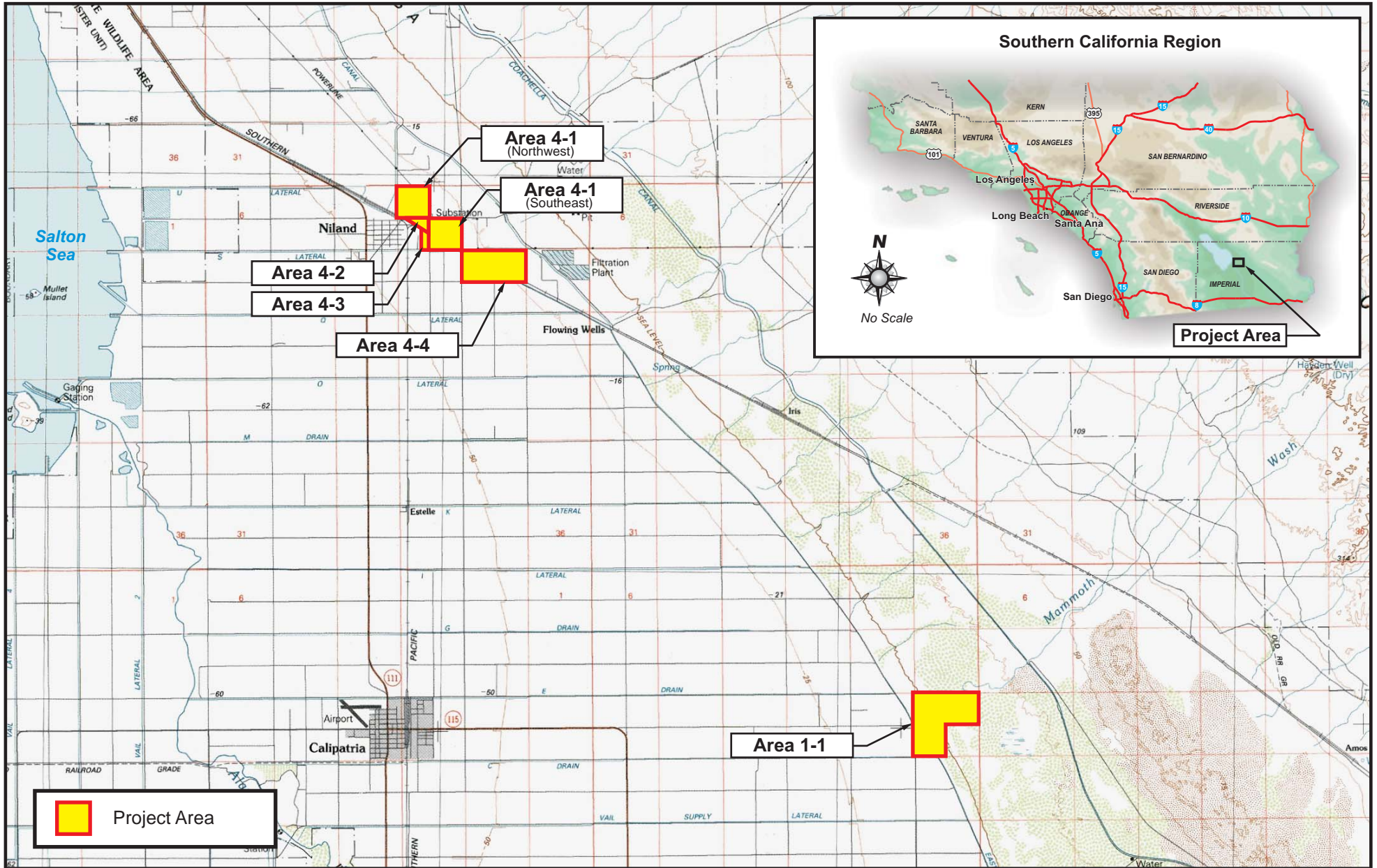
With the exception of Area 4-2 and 4-3, burrowing owls were identified at all of the proposed clean up sites. Inactive or potential burrows were present at all sites. During the September 2007 surveys a total of twenty owls were observed in the proposed clean up areas (Table 1). Active burrows identified in the project area contained one or more diagnostic signs, such as fresh pellets, wash, feathers, or prey remains. In addition, both adult and sub-adult (fledged juveniles) were observed. Based on the presence of small birds it is possible that year round nesting is occurring in this area, however, breeding activity (male calling, acrobatics) was not observed during the surveys.

Inactive or potential burrows were located in all of the proposed clean up areas and contained the same types of evidence, however, no recent signs were observed at these burrows. It is important to note that while owls were not observed at Area 4-2 and 4-3, there is potential for this species to be present or utilize these areas as foraging habitat.

The LADWP is proposing to remove debris that has been left by illegal dumping. In some cases this material occurs in close proximity to active owl burrows and wind blown material (i.e. paper, plastic, cartons, etc.) has blocked suitable burrows in the project area. The LADWP plans to remove this material outside the breeding season and avoid and minimize impacts to resident owls. While it is possible that some mechanical equipment will be used in close proximity to owl burrows the clean up activity will not result in the destruction or removal of active or inactive burrows. Qualified biologists with knowledge of this species will be present during clean up activities that occur in or adjacent to active or inactive burrows. To ensure that project related activities do not impact populations of this species, the LADWP will implement the following measures identified in the Burrowing Owl Consortium Survey Protocol and Mitigation Guidelines prior to commencement:

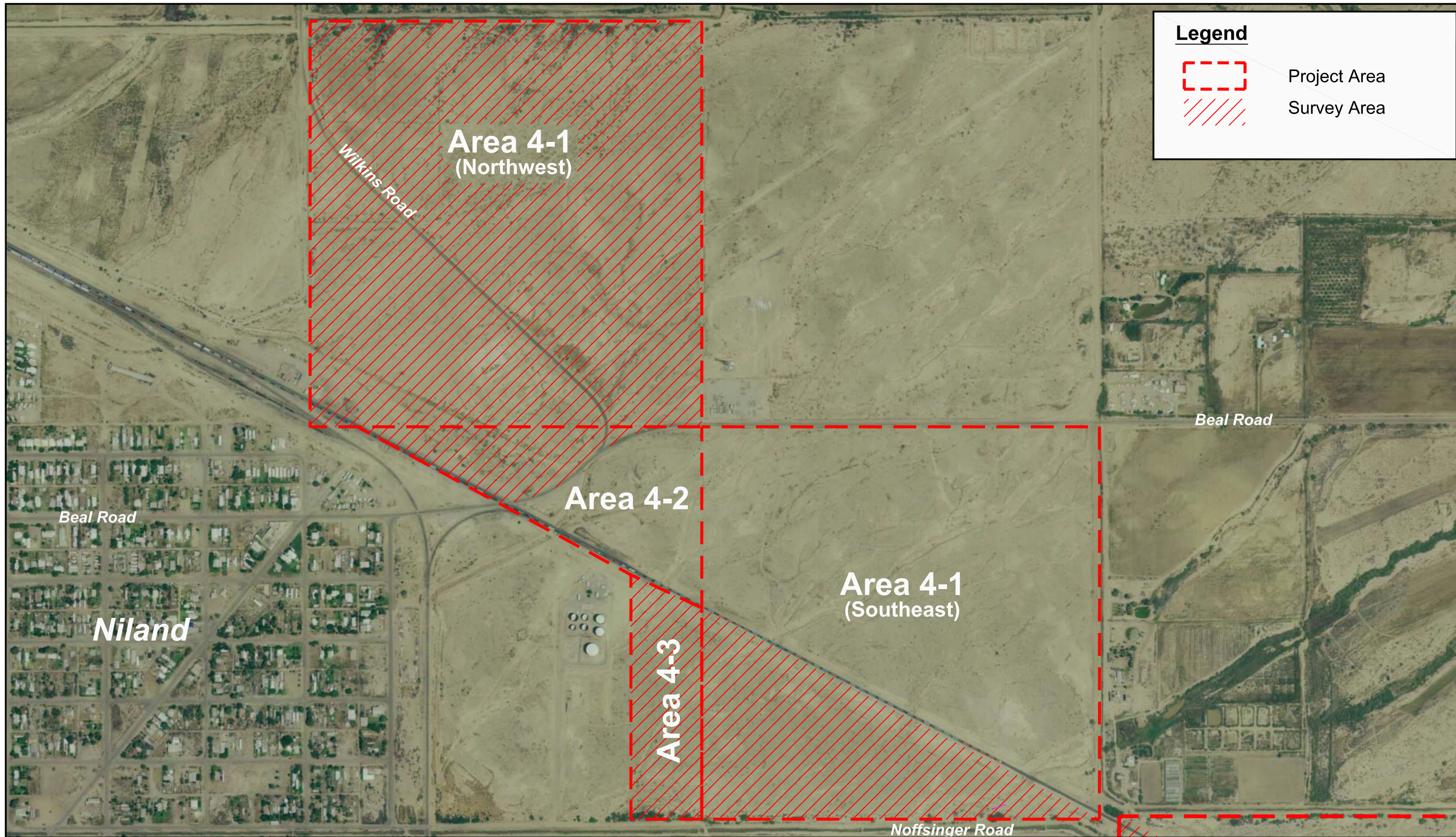
***Recommended Protocols for Burrowing Owls***

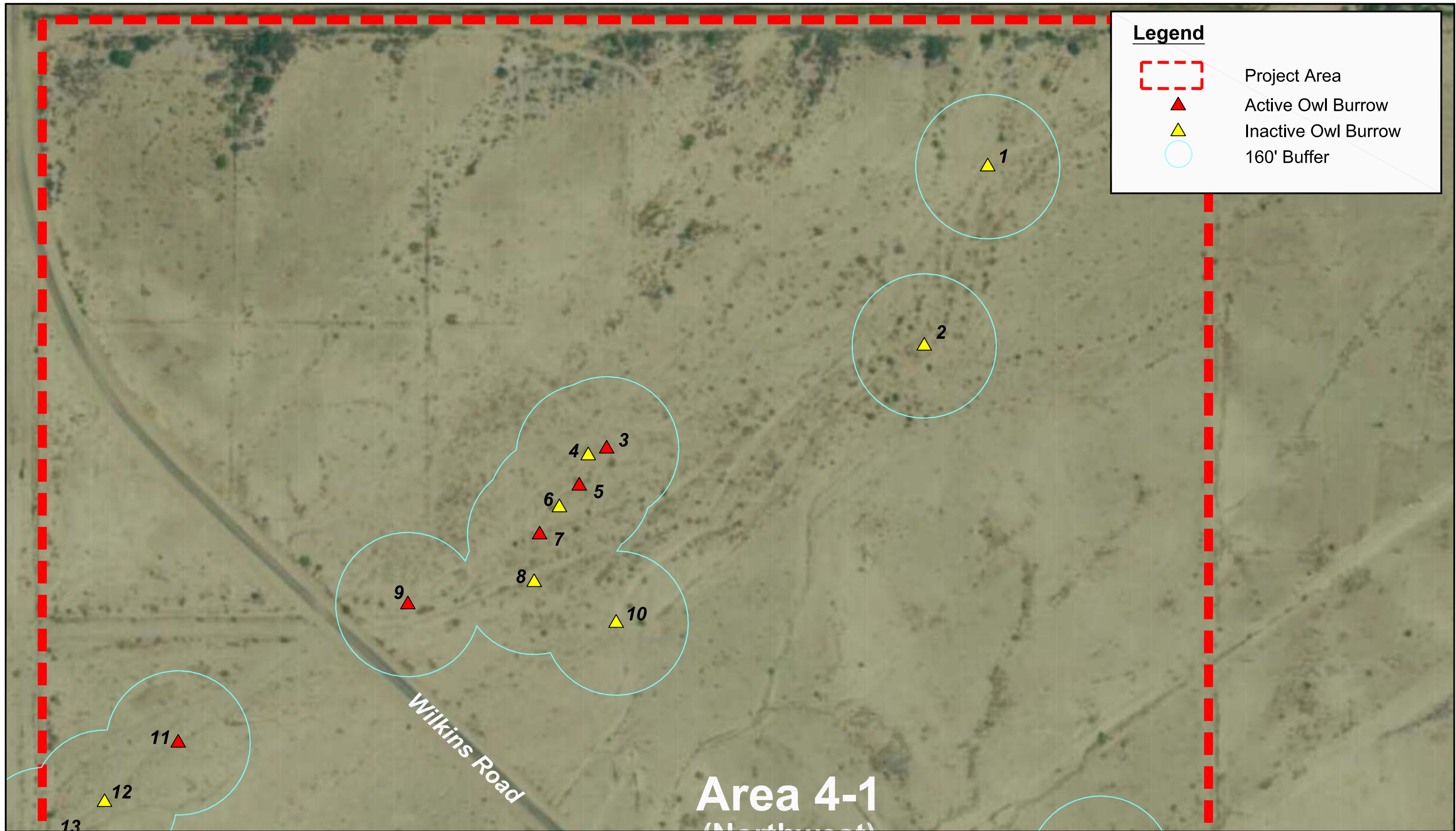
- A qualified biologist shall be present at all times during any project-related activities conducted within 160 feet of a mapped feature (active or inactive burrow) during the non-breeding season (September 15 to February 1). A 250 foot buffer is required if work is scheduled to occur during the breeding season (February 1 to September 15). Work will cease if the biologist determines that project clean up activities are disrupting the birds or believe the nest contains breeding birds.
- A qualified biologist will flag the active burrows prior to project clean up activities. Flagging will be removed at the completion of the clean up activities.
- Project-related activities shall be conducted in such a way as to maintain accessible escape routes on three sides for flushed owls. Escape routes shall consist of necessary space for owls to safely fly from one burrow to another. If the project biologist determines that clean up activities are disrupting the birds the clean up activities will cease within 160 feet of the birds until the biologist determines a clean up crew can return to the area.
- If active burrows are inadvertently damaged they will be replaced on a 1:1 ratio.







**Figure 1**  
**Project Vicinity Map with Project Location**



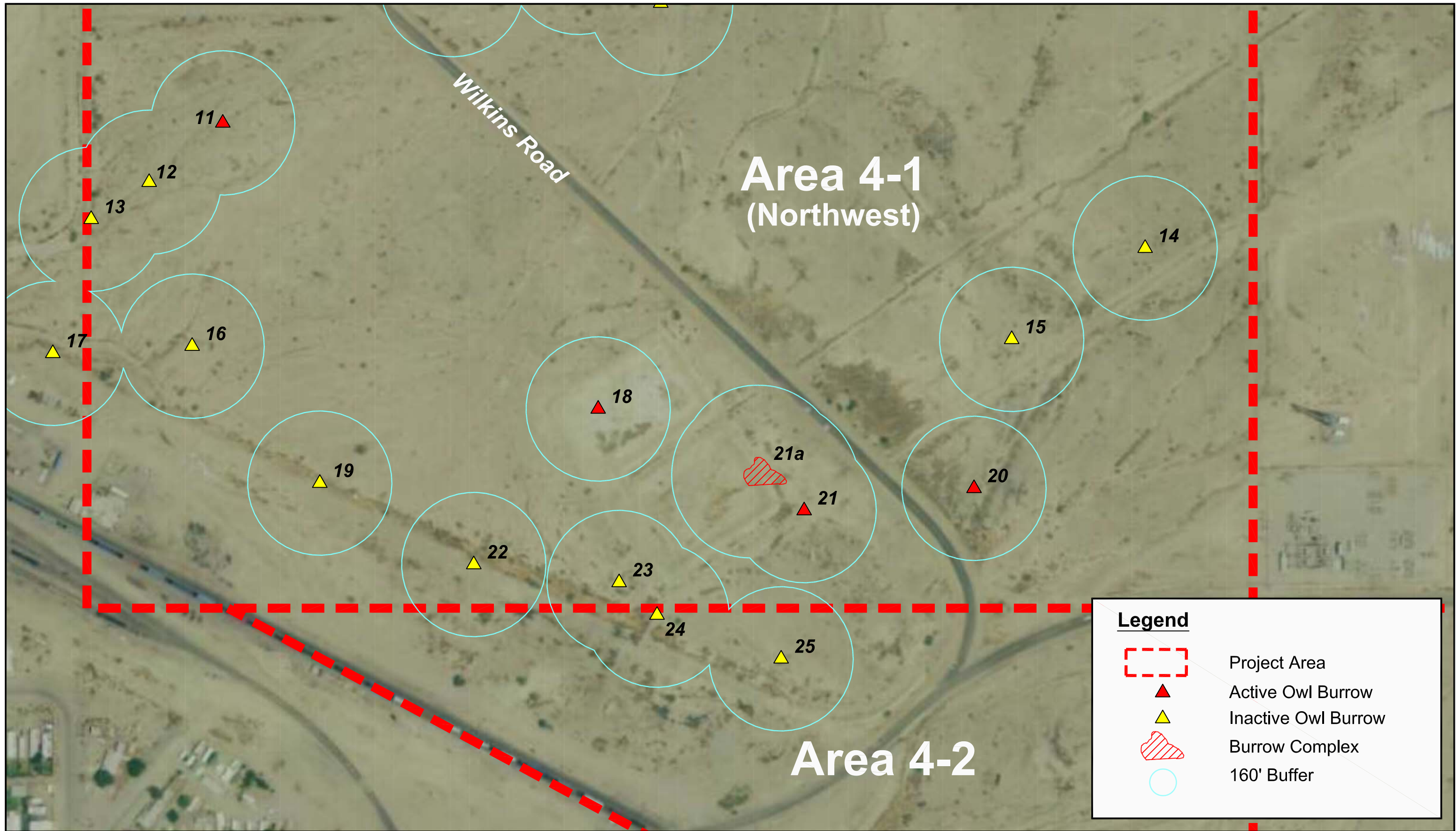









**Legend**

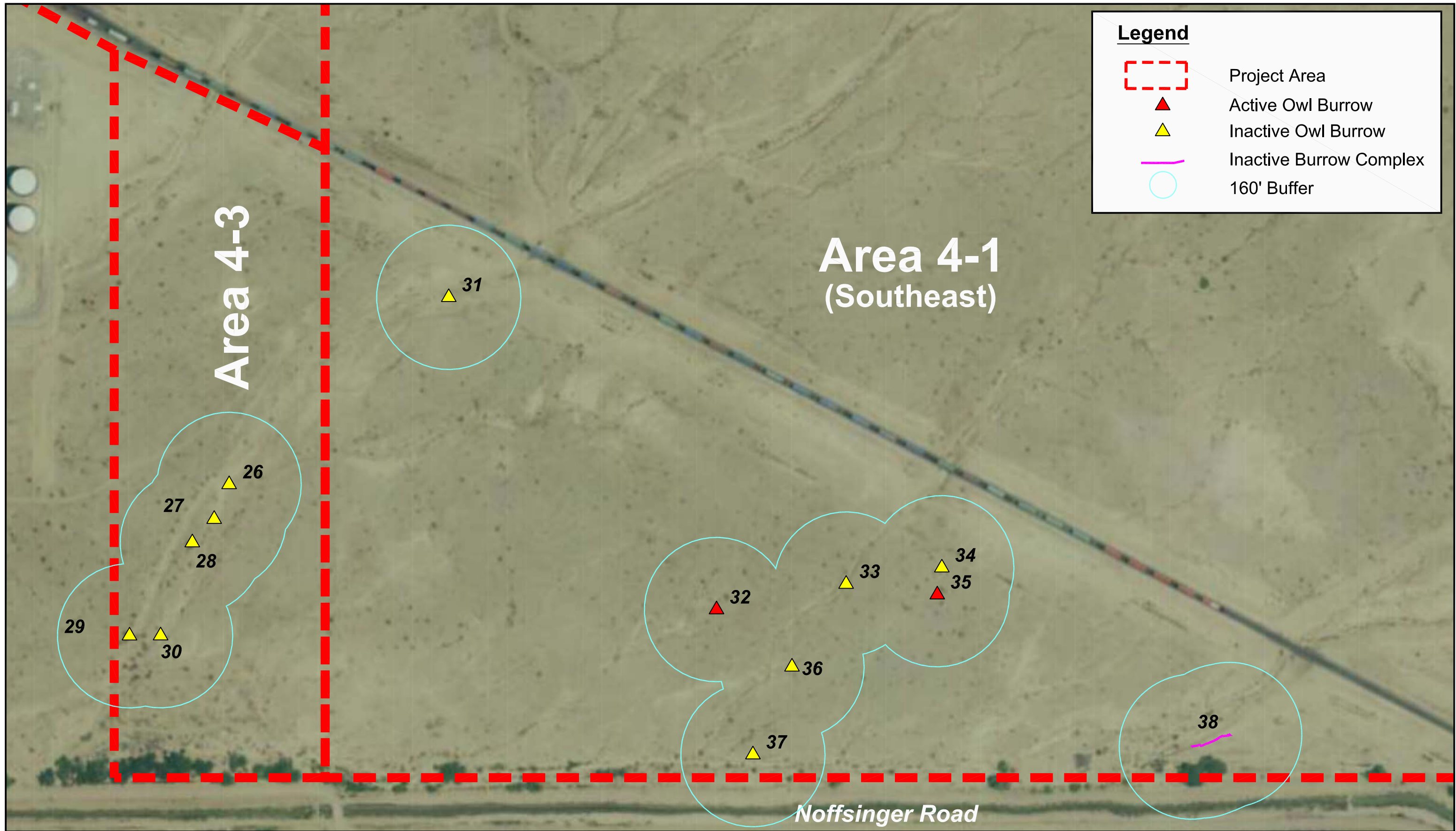
-  Project Area
-  Active Owl Burrow
-  Inactive Owl Burrow
-  160' Buffer

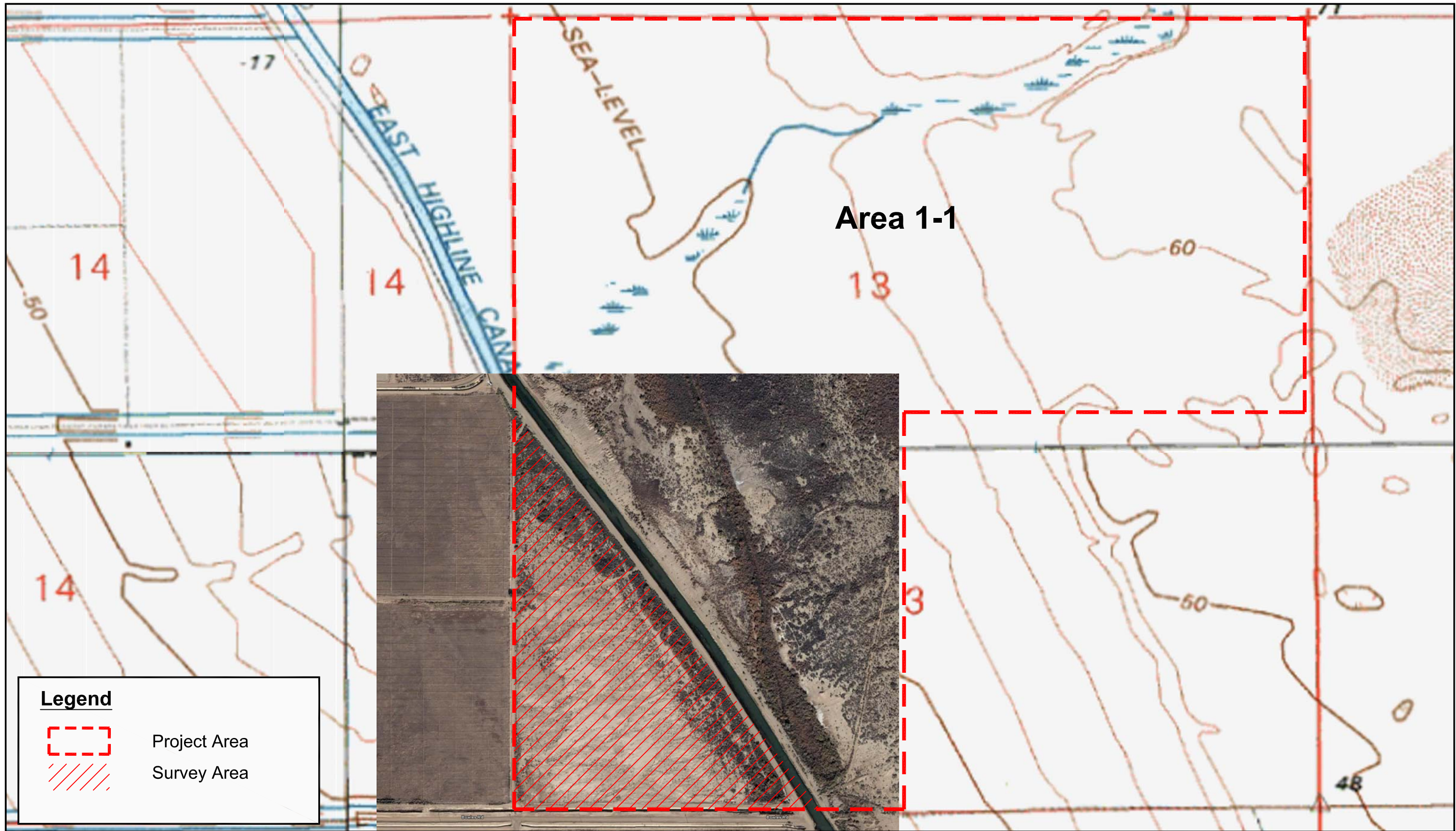
**Area 4-1**  
(Northwest)




**Legend**


-  Project Area
-  Active Owl Burrow
-  Inactive Owl Burrow
-  Burrow Complex
-  160' Buffer

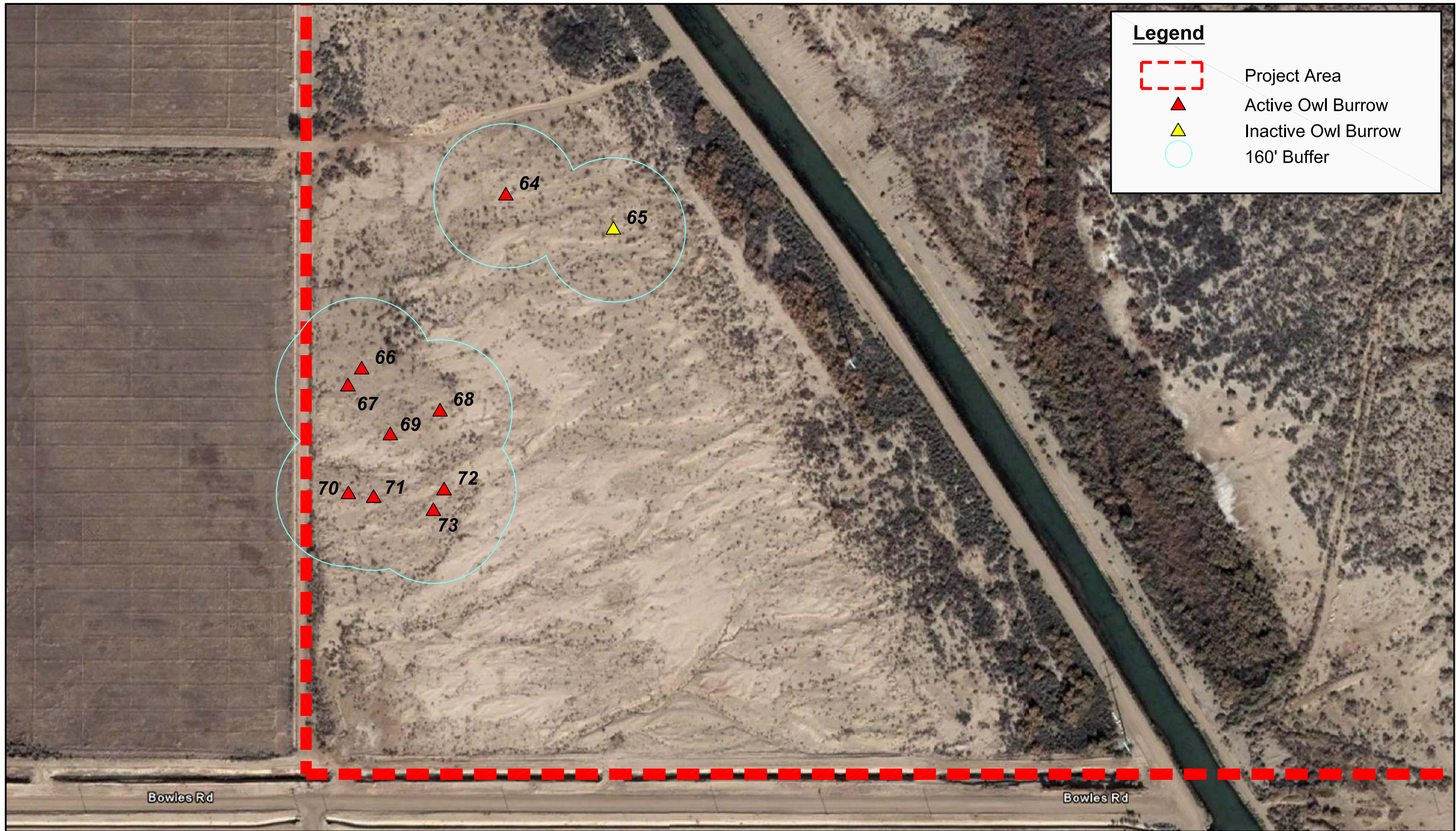


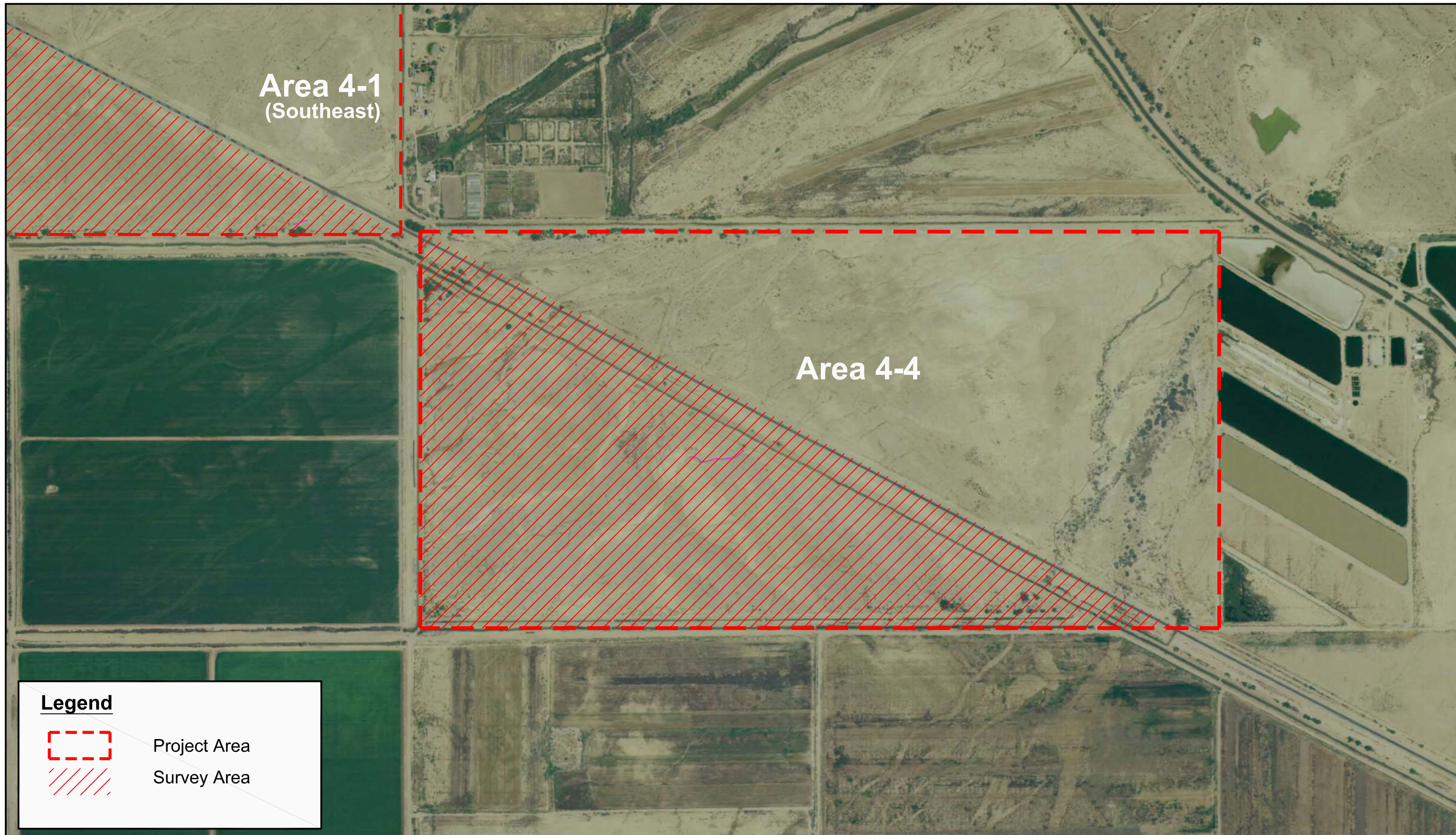


**Legend**

 Project Area

 Survey Area







Area 4-1  
(Southeast)

Area 4-4

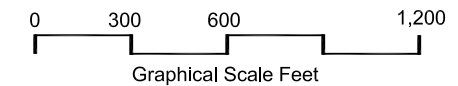
**Legend**

 Project Area

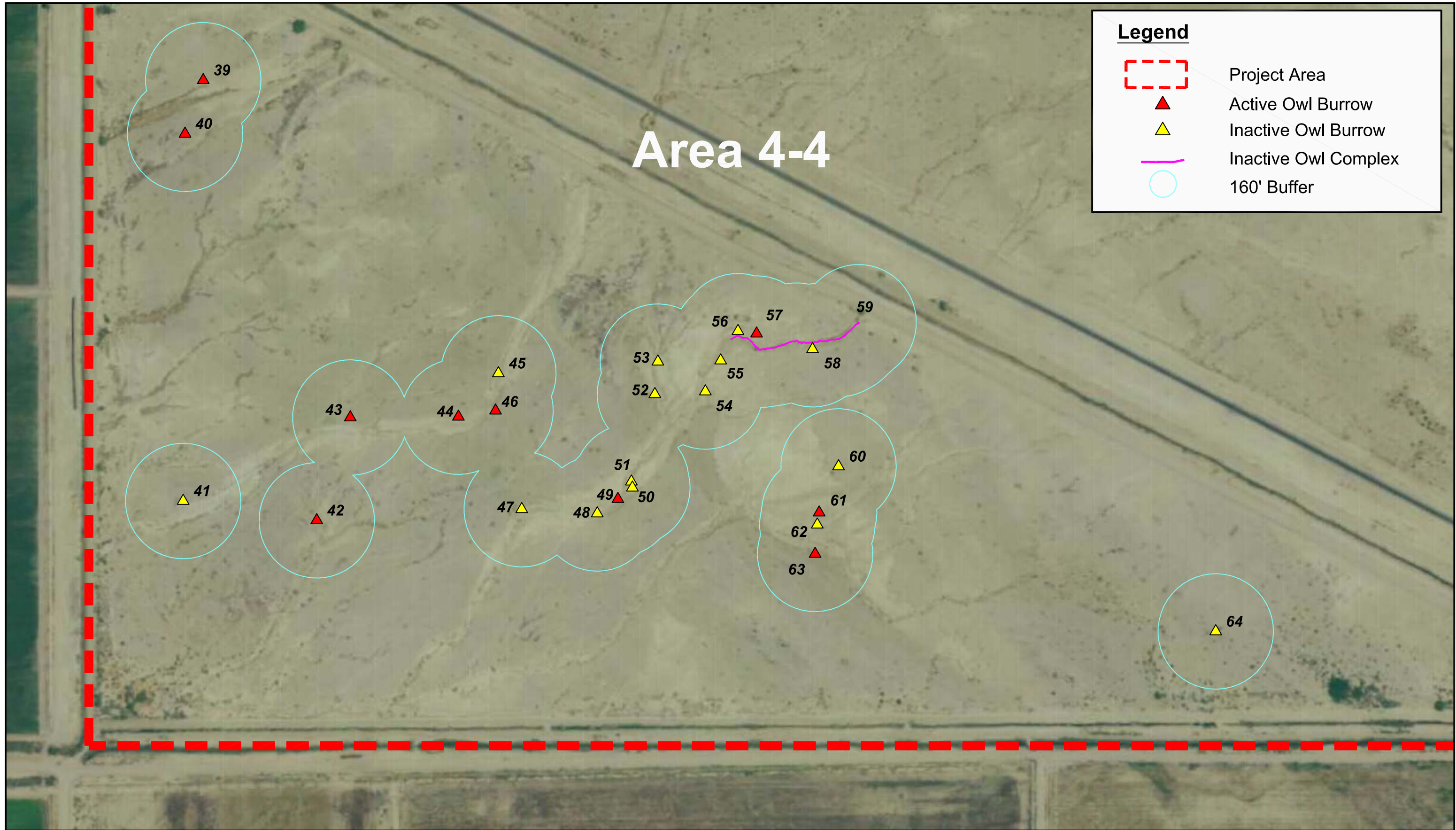
 Survey Area



Scale: 1" = 600'  
Date: October 2, 2007  
File: 1432-SaltonSeaOwl3.dwg



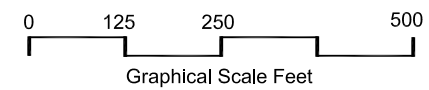
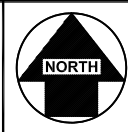
**Figure 4A**  
**Area 4-4**



**Legend**

- Project Area
- ▲ Active Owl Burrow
- ▲ Inactive Owl Burrow
- Inactive Owl Complex
- 160' Buffer

# Area 4-4



**Figure 4B**  
**Burrowing Owl Locations in Area 4-4**



## **Appendix**

### **Burrowing Owl Survey Report for Debris Removal Activities Within the Imperial Valley June 2007**

**DEPARTMENT OF WATER AND POWER  
CITY OF LOS ANGELES**

**BURROWING OWL SURVEY REPORT  
FOR DEBRIS REMOVAL ACTIVITIES  
WITHIN THE IMPERIAL VALLEY  
June 2007**

**Prepared by:**

Los Angeles Department of Water and Power  
111 North Hope Street, Room 1044  
Los Angeles, CA 90012

**Technical Assistance Provided by:**

Aspen Environmental Group  
30423 Canwood Street, Suite 215  
Agoura Hills, CA 91301



**PHASE II BURROWING OWL SURVEYS FOR DEBRIS REMOVAL ACTIVITIES AT SEVERAL WASTE  
SITES NEAR THE SALTON SEA AND OTHER AREAS WITHIN THE IMPERIAL VALLEY, CALIFORNIA**

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**1. PURPOSE/INTRODUCTION**

This report is intended to summarize the biological information obtained during focused California Department of Fish and Game (CDFG) Phase II surveys for burrowing owls (*Athene cunicularia*), a California Species of Special Concern, at several sites located in the Imperial Valley, Imperial County, California (Figure 1). The survey areas are owned and managed by the Los Angeles Department of Water and Power (LADWP). These areas include portions of LADWP designated Area 1-1, Area 4-1, Area 4-2, and Area 4-4, and all of Area 4-3. These sections have been scheduled for debris removal activities and burrowing owls have been identified at several of the sites.

In summary, burrowing owls were observed at Area 4-1 North West, Area 4-1 South East, and Area 4-4. While no owls were observed at Area 1-1, signs indicating active owl burrows were detected, including recent wash and pellets and portions of the site should be considered occupied. Owls or burrows were not identified in Area 4-2 but this area is adjacent to an occupied site (4-1 North West) and owls likely utilize this area for foraging.

The burrowing owl, is a small, diurnal species with a short tail and relatively long legs. Their prey includes insects, small birds and mammals. Burrowing owls favor flat, open grassland or gentle slopes and sparse shrubland habitats. Preferred nests are in abandoned burrows of California ground squirrels (*Spermophilus beecheyi*) and other small mammals. Owls use ground squirrel burrows and other mammal dens/burrows for shelter and nesting. These species provide nesting and refuge burrows, and can maintain areas of short vegetation height, which provide foraging habitat and allow for visual detection of avian predators. In the absence of ground squirrel populations or other burrowing species, habitats may become unsuitable for occupancy by owls. However, owls can also utilize manmade features including standpipes, irrigation pipes, rock and debris piles, or other structures that provide a nesting cavity. Burrowing owls are semi-colonial nesters, and group size is one of the most significant factors contributing to site constancy by breeding burrowing owls. The nesting season, as recognized by the CDFG, runs from February 1 through August 31, however, nesting in warm arid regions may continue year round.

Burrowing owls are usually tolerant of human activity, but they are vulnerable to burrow loss, so construction or maintenance activities that compact soil or otherwise disturb habitat should be closely monitored. The proposed project would involve removing large accumulations of trash and debris that has amassed over several areas at each project Site. These areas contain burrowing owl habitat, as documented by the observations of individual owls and active burrows.

**2. PROJECT SPONSOR**

This project is sponsored by the City of Los Angeles Department of Water and Power.

**3. CONTACT PERSON AND PHONE NUMBER**

George Faeustle  
City of Los Angeles  
Department of Water and Power  
111 North Hope Street Room 1044  
Los Angeles, CA 90012  
(213) 367-4708

#### 4. METHODS

Prior to conducting field surveys, a literature search was performed to obtain information relevant to the occurrence of burrowing owls and other sensitive species that may occur in the project region. Research included the following resources:

- California Natural Diversity Database (CNDDDB, 2007)
- USGS topographic maps
- Aerial photography of the project sites (Air Photo USA, 2007)

Phase II protocol level surveys were conducted at the project sites by Aspen biologists Chris Huntley and Jamie Miner and sub-contractor Brady Daniels on May 7 and 8, 2007. The presence or absence of burrowing owls, individual burrows, or sign (pellets, wash, feathers, prey remains) was investigated at each site in the project areas and within a 500 foot buffer zone on either side of each site where possible. Private lands adjacent to the sites were not surveyed. The survey transects were spaced 45 feet apart to allow 100 percent visual coverage of the ground surface. Transects were conducted at closer intervals where vegetation was particularly dense or where drainages occurred. All records of burrowing owl sightings, active burrows with owl signs, inactive burrows with owl signs, and possible owl burrows were noted and mapped.

#### 5. SURVEY LIMITATIONS

The focus of the surveys was to identify active owl burrows and potential habitat for burrowing owls in or adjacent to the project area. Observations or detections of the presence of specific indicators of burrowing owls (pellets, wash, feathers, prey remains, burrows) were recorded during the surveys. Based on the time of year the surveys were conducted and compared to the activity pattern of known populations of burrowing owls in the region, the potential to detect this species if present would be considered excellent. One limitation of the survey is that while owls were routinely observed during the surveys, air temperatures exceeded 100 degrees at times and it is possible that some burrowing owls may have remained inactive during the middle of the day. This may result in an underestimation of the number of owls present in the project area. However, there were recorded observations of owls during the hottest periods of the day.

#### 6. SITE CONDITIONS AND SURVEY RESULTS

The proposed project consists of four areas located near the towns of Niland and Calipatria in Imperial County, California. Located just southeast of the Salton Sea, the project region is primarily composed of desert scrub habitat with scattered agricultural fields and small agricultural communities. A tank farm, an electrical sub-station, and an active rail line are also present in the project area. Vegetation is characterized by open, scattered assemblages of broad-leaved evergreen and deciduous shrubs with less than 50 percent canopy cover. Dominant vegetation in most of the project area consists of creosote bush (*Larrea tridentata*) and saltbush (*Atriplex* spp.). Honey mesquite (*Prosopis glandulosa*) and salt cedar (*Tamarisk* spp.) are also well represented at each of the project areas; however, these species tend to occur in relatively dense thickets along the edges of the parcels close to existing irrigation canals.

Each of the designated surveys areas are discussed in detail below. For the purpose of this report each site is described below in the order of the survey and the results of the survey identified for each area. Table 1 contains a summary of each individual burrow or nesting bird identified by area. Table 2 contains the GPS coordinates for the points identified in Table 1.

**Table 1 Burrowing Owls/Active Burrows Identified in the Survey Area**

Point	Site/Figure	Physical Site Description	Active	Owl Observed	Notes
1	4-1 NW Fig 2B	Burrow located in center of site access road. Burrow consists of partially buried pipe casing.	Yes	Yes	One owl observed at this location. Burrow contained fresh wash, pellets, and feathers.
2		Complex of nine active burrows located at eastern edge of dry reservoir. Burrows face west.	Yes	No	Burrow contained recent owl sign. Owls identified adjacent to the site.
3		Burrow complex located on eastern bank of dry reservoir. Burrows face east.	Yes	Yes	Burrow contained recent owl sign. Owl flushed by site.
4		Burrow located detention basin.	No	No	Burrow contained old wash and pellets. No recent use.
5		Owl observed in scrub. No burrow detected.	No	Yes	No burrow present. Owl flushed from shrub.
6		Active den in discarded palm tree trunk.	Yes	No	Feathers, wash, and pellets. Adjacent to access road.
N/A	4-2 Fig 2A	Burrows or active dens were not observed in this area.	No	No	No owls observed. However this area is adjacent to Area 4-1 Northwest and is likely used as foraging for the owls observed in the adjacent parcel.
7	Site 4-3 Fig 2C	Rabbit warren located in sparsely vegetated desert scrub.	No	No	Burrow contained fresh rabbit pellets. Suitable location for future owl use.
8		Burrow located on drainage bank near area heavily littered with debris. Burrow lies underneath saltbush.	No	No	Burrow contained old pellets and prey remains. No recent sign detected.
9		Burrow located within small population of saltbush.	No	No	Burrow is likely a recent mammal burrow. No recent sign detected. Suitable location for future owl use.
10	Site 4-1 SE Fig 2C	Active bat colony detected under RR bridge at northern boundary of site.	N/A	N/A	Species unknown. Audible detection only. Guano present. Not in clean up area.
11		Burrow located on wash bank.	No	No	Burrow contained old pellets and wash. No recent sign detected.
12		Nighthawk nest detected in small population of creosote bush.	N/A	N/A	Pair of nighthawks flushed from nest site.
13		Burrow located on dry, sparsely vegetated wash bank.	Yes	Yes	One owl observed at this location. Burrow contained fresh pellets and wash.
14	Complex detected with three burrows on bank of dry, sparsely vegetated wash.	Maybe	No	Difficult to detect recent activity. Burrows contained evidence of pellets and wash.	
15	Site 1-1 Fig 3B	Burrow located in between hillocks. Sparsely vegetated area.	No	No	Burrow is likely a recent mammal burrow. No recent sign detected. Suitable location for future owl use.
16		Perch located on access road adjacent to project site and agricultural field. Part of a series of similar small dirt mounds.	Yes	No	Perches contained fresh pellets and wash. No burrow detected in immediate area.
17		Burrow detected in sparsely vegetated area between hillocks.	Yes	No	Burrow contained fresh pellets, wash, and prey remains.
18		Burrow detected in sparsely vegetated area between hillocks.	Yes	No	Burrow contained fresh pellets and wash.
19		Burrow located near small population of creosote bush.	No	No	Burrow is likely a recent mammal burrow. No recent sign detected. Suitable location for future owl use.
20	Site 4-4 Fig 4B	Nighthawk nest located in small population of creosote bush. Soil consists of small pebbles and sand.	N/A	N/A	Single nighthawk flushed from nest site.
21		Bird nest detected on branch of honey mesquite.	N/A	N/A	Species unknown. No eggs present, but nest appeared to be of recent use.
22		Burrow detected in small population of saltbush.	No	No	Burrow is likely a recent mammal burrow. No recent sign detected. Suitable location for future owl use.

Point	Site/Figure	Physical Site Description	Active	Owl Observed	Notes
23	Site 4-4 Fig 4B	Burrow located in between dry, unvegetated washes. No surrounding vegetation in immediate area.	Yes	Yes	One owl observed at this location. Burrow contained fresh pellets, wash, and feathers.
24		Burrow located on north bank of dry, unvegetated wash.	No	No	Burrow contained old wash. No recent sign detected.
25		Nighthawk nest detected within population of creosote bush.	N/A	N/A	One nighthawk flushed from nest. Two eggs present.
26		Burrow detected in small rill off of larger wash. Area is dry and unvegetated.	Yes	Yes	One owl observed at this location. Burrow contained fresh pellets, wash, and feathers.
27		Burrow detected under creosote bush along bank of dry wash.	Yes	Yes	One owl observed at this location. Owl was flushed and returned to burrow. Burrow contained recent pellets and wash.
28		Nighthawk nest.	N/A	N/A	Two birds observed.
29		Burrow located on bank of dry, unvegetated wash.	No	No	Burrow contained old pellets and wash. No recent sign detected.
30		Nighthawk nesting area located within area of heavy debris.	N/A	N/A	Single nighthawk flushed from nest site.
31		Complex located on bank of dry, unvegetated wash consisting of four burrows.	Yes	No	Burrows contained fresh pellets, wash, and feathers.
32		Large burrow detected in open, unvegetated area.	No	No	Burrow has likely been recently used by mammal. Evidence of past owl use detected, including old pellets and prey remains.
33		Burrow located on east edge of area with heavy debris.	No	No	Burrow contained old wash. No recent sign detected.
34		Burrow located on bank of dry, unvegetated wash.	No	No	Burrow contained old pellets and wash. No recent sign detected.
35		Burrow detected near bank of dry, unvegetated wash.	No	No	Burrow is likely used by rodent. No recent sign detected. Suitable location for future owl use.
36		Burrow detected on bank of dry, unvegetated wash.	No	No	Burrow contained old wash.
37		Burrow located on bank of dry, unvegetated wash.	Yes	No	Burrow contained fresh pellets, wash, and shredded debris.
38		Complex located with numerous burrows on both sides of dry, unvegetated wash.	No	No	Burrow contained no signs of recent use. Suitable location for future owl use and colonization.
39		Burrow detected on bank of dry unvegetated wash.	No	No	Burrow contained old wash.
40		Burrow located in dry, sparsely vegetated area.	Yes	No	Burrow contained fresh pellets, wash, and feathers.

**Table 2 GPS Point Data for Burrowing Owls/Active Burrows Identified in the Survey Area**

Point	Site	GPS Position		Active Owl Burrow	Owl Observed
		Northing	Easting		
1	4-1 NW Fig 2B	639263	3679153	Yes	Yes
2		639234	3679180	Yes	No
3		639249	3679176	Yes	Yes
4		639124	3679223	No	No
5		639431	3679159	No	Yes
6		639494	3679334	Yes	No
N/A	4-2 Fig 2A	N/A	N/A	No	No
7	Site 4-3 Fig 2C	639437	3678395	No	No
8		639465	3678398	No	No
9		639507	3678500	No	No
10	Site 4-1 SE Fig 2C	639708	3678654	N/A	N/A
11		639655	3678628	No	No
12		639705	3678519	N/A	N/A
13		639924	3678438	Yes	Yes
14		639892	3678380	Maybe	No
15	Site 1-1 Fig 3B	651955	3665849	No	No
16		651878	3665818	Yes	No
17		651895	3665794	Yes	No
18		651893	3665866	Yes	No
19		651904	3665879	No	No
20	Site 4-4 Fig 4B	640455	3677615	N/A	N/A
21		640480	3677567	N/A	N/A
22		640501	3677723	No	No
23		640498	3678032	Yes	Yes
24		640512	3678076	No	No
25		640562	3677881	N/A	N/A
26		640637	3677792	Yes	Yes
27		640608	3677707	Yes	Yes
28		640668	3677598	N/A	N/A
29		640782	3677715	No	No
30		640848	3677856	N/A	N/A
31		640760	3677800	Yes	No
32		640728	3677796	No	No
33		640899	3677816	No	No
34	640876	3677740	No	No	
35	640866	3677724	No	No	
36	640851	3677715	No	No	
37	640951	3677845	Yes	No	
38	641032	3677855	No	No	
39	641032	3677706	No	No	
40	641034	3677681	Yes	No	

#### Area 4-1 North West Parcel

**Site Conditions:** The North West parcel of Area 4-1 is located near the northeast corner of the town of Niland and is bisected by Wilkins Road (Figure 2A). The parcel is bordered to the north by a large open area of desert scrub with small sections utilized for agricultural and residential purposes. Highway 111 and the town of Niland border the parcel to the west. A rail road line is located along the south west border of the project area. A large tank farm is also present south of the parcel. An active electrical substation and desert scrub communities are present on the eastern border of the parcel. The debris consists of discarded vehicles, glass and metal debris, construction waste, and house hold items. The landscape surrounding the parcel contains various access roads and small, dry drainages that primarily trend northeast to southwest. Two dry reservoirs, located in the south-central portion of the parcel are the most prominent features of the site. Habitat at the project site is generally characterized by sparsely vegetated desert scrub. Dominant species include creosote bush, saltbush, and catclaw acacia (*Acacia greggii*). Small thickets of honey mesquite occur along the eastern edge of Wilkins Road. Russian thistle (*Salsola tragus*), tumble pigweed (*Amaranthus albus*) and bur-clover (*Medicago polymorpha*) were other common species observed in the project area. Wildlife observed in the project area include western diamond-backed rattlesnake (*Crotalus* sp.), cottontail rabbit (*Sylvilagus audubonii*), western kingbird (*Tyrannus verticalis*), and desert iguana (*Dipsosaurus dorsalis*). In addition, several pairs of common nighthawks (*Chordeiles minor*) were observed nesting at the parcel.

**Results:** Two mature burrowing owls were observed during the survey at this parcel. Figure 2B contains a detailed map of each owl and burrow location. At least two of these owls, detected west of Wilkins Road, were separate individuals. It was uncertain whether the third observed owl, detected east of Wilkins Road, was a new individual or one that may have been previously observed in the area. This individual was observed near a small population of creosote bush and no active burrows were detected in the immediate vicinity. It is likely this bird was utilizing the shrubs as cover. Several active burrows were observed at the project site, mostly associated with complexes along the edges of the reservoirs. These burrows contained signs of active utilization, including fresh pellets, wash, and feathers. One active burrow was detected on the existing access road west of Wilkins Road. This burrow consisted of a buried section of pipe casing and exhibited active signs, including recent pellets and wash. A small burrow complex with approximately nine burrows was identified on the eastern edge of the detention basin. Another active burrow was located east of Wilkins Road within a discarded, hollow palm tree trunk. This burrow exhibited signs of active use, including fresh pellets, wash, and feathers.

#### Area 4-2

**Site Conditions:** Area 4-2 is the smallest of the project sites (Figure 2A). Miscellaneous debris occurs across most of the site however it is primarily accumulated near a small earthen berm near the southwest corner of the parcel near Wilkins Road. Beal Road is located generally south of the site. An existing rail road line borders the site on the southwest. The landscape is similar to that discussed above for the Area 4-1 North West Parcel and similar plant and wildlife species occur here.

**Results:** Owl activity was not observed in this parcel. However, it is likely that owls present in the Area 4-1 Northwest parcel likely utilize the site for foraging.

#### Area 4-3

**Site Conditions:** Area 4-3 is a narrow site located adjacent and west of the Area 4-1 South East survey area (Figure 2A). This site is bordered to the west by a large open area of desert scrub habitat, and to the north by an existing rail road line. A small tank farm occurs at the northwest corner of the site. To



the south are Noffsinger Road and a small bird farm. Habitat at the project site is characterized as creosote scrub. Dominant species include creosote bush, saltbush, and catclaw acacia. A narrow thicket of honey mesquite, saltcedar, and arrowweed occur along the southern edge of the parcel. At this site the debris is primarily located along the southern border of the site adjacent to Noffsinger Road. However, an abandoned vehicle and miscellaneous debris piles occur across the site. This area is immediately north of a thick row of vegetation.

**Results:** One inactive burrow and two potential burrows were identified at this site (Figure 2C). Owls were not observed on this parcel but the burrows may be utilized by the owl identified on the adjacent parcel (Area 4-1 South East).

#### **Area 4-1 South East Parcel**

**Site Conditions:** The South East portion of Area 4-1 is located east of the town of Niland (Figure 2A) between Beal Road and Noffsinger Road. Owl surveys were conducted in a triangular shaped area located between Noffsinger Road and the existing rail road line that cross in a general northwest to southeast direction (Figure 2C). The survey area is bordered to the north by the existing rail line and open desert, to the west by Area 4-3, and to the south by Noffsinger Road. The eastern border of the survey area consists of desert scrub and agricultural land. Trash and debris are scattered intermittently across the site with small accumulations of debris near the southern border of the site where vehicle access is possible. Wildlife species occurring at this parcel include desert iguana, common nighthawk, and turkey vulture. An active bat colony (species unknown) was identified at the rail road crossings on the northern edge of the survey area.

**Results:** One active owl burrow with an adult owl was located in the Area 4-1 South East Parcel. In addition, one inactive and one potential burrow were observed (Figure 2C). This owl was observed near an active burrow which contained fresh pellets and wash. The burrow was located on the banks of a small, dry, sparsely vegetated drainage. A complex consisting of three burrows was also detected along the banks of a similar drainage. These burrows displayed signs of utilization, including pellets and wash; however, it was difficult to determine whether these were recent. Inactive burrows were located along similar drainages and within a small population of saltbush surrounded by debris. These contained signs of former use, including pellets, wash, and prey remains. A nesting pair of nighthawks was also identified in the project area.

#### **Area 1-1**

**Site Conditions:** The Area 1-1 parcel is located approximately 8 miles east of Calipatria near the East Highline Canal (Figure 3A). The survey area consists of a small triangular shaped parcel located in the southwest corner of Area 1-1. The survey area is bordered on the south by Bowles Road and the west by agricultural fields. The East Highline Canal crosses the south west portion of Area 1-1 in a general northwest to southeast direction and acts as the border of the survey area (Figure 3A and Figure 3B). A transmission line parallels the canal in the survey area. Debris is primarily restricted to the areas adjacent to the existing access road that bisects the area in an east/west direction and along the existing transmission line. Litter includes tin cans, bottles, construction debris, tires, abandoned vehicles, house hold goods, and paper waste. The general landscape is characterized by numerous small hillocks. Soils in the area are primarily soft, deep, and coarsely textured sands with localized patches of hard clay like soils exhibiting mud crack patterns, indications of seasonal pooling. Several small, dry drainages occur within the area, trending in a northeast/southwest direction. Vegetation in the project area is characterized by sparsely distributed creosote bush scrub. Saltbush and small localized populations of

grasses are scattered throughout the area. Vegetation along the East Highline Canal is dominated by a dense thicket of honey mesquite, arrowweed (*Pluchea sericea*), and the invasive tree saltcedar. Flowering annuals and grasses were poorly expressed and rarely observed during the surveys. This is likely a consequence of the near record low levels of precipitation that occurred in the region. Wildlife species observed in the area included black-tailed jackrabbit (*Lepus californicus*), red-winged blackbird (*Agelaius phoeniceus*), and turkey vulture (*Cathartes aura*). Trace evidence of mammals included coyote (*Canis latrans*) tracks and scat, a woodrat (*Neotoma fuscipes*) nest located adjacent to the canal, and vegetation subject to recent herbivory. Burrows were surprisingly low in number as the area offers suitable habitat for a wide variety of small rodents. However, arachnid burrows were numerous and many had cobwebs covering the openings. Much of the area appears to have been previously disturbed by human activity, including off highway vehicle use and hunting.

**Results:** Two active owl burrows were detected south of the existing access road in Area 1-1 (Figure 3B). These were generally associated with sparse vegetation located near the hillocks that characterize the area. These burrows exhibited signs of recent use, including fresh pellets, wash, and prey remains. Burrowing owls were not observed in Area 1-1, however due to the presence of active burrows and known occurrences of this species within one mile of the site, this area should be considered occupied. Other burrows were located nearby which appeared to have been recently used by larger mammals and may be suitable for burrowing owls. In addition, active perches were identified on a series of dirt mounds located immediately adjacent to the western edge of the area. These mounds displayed signs of recent use, including fresh pellets and wash.

#### Area 4-4

**Site Conditions:** Area 4-4 is located approximately one mile southeast of the town of Niland and the survey area measures roughly one-half square mile in area (Figure 4A). The survey area includes approximately one half of Area 4-4. An existing rail road line bisects Area 4-4 from the northwest to the southeast corners. The survey area is located south of the existing rail line. Welch Road borders the survey area to the south. The west border consists of a dry canal abutted by agricultural fields. Open areas of desert scrub to the east. The debris in the survey area is heavily concentrated in the northwest corner of the site and along the western edge of the parcel. Similar to areas discussed above, Area 4-4 contains numerous dry, unvegetated drainages that trend in a southeast to northwest direction. The habitat is characterized by sparse patches of vegetation with species typical of desert scrub communities. These include creosote bush, saltbush, honey mesquite, and catclaw acacia. Relatively dense thickets of honey mesquite are located at the northwest, southwest, and southeast corners. Soils range from coarse, soft sands to pebbles. Wildlife species occurring at the site include red-winged blackbird, desert iguana, black-tailed jackrabbit, and cottontail rabbit. At least three active nighthawk nests are present in the survey area.

**Results:** Three mature burrowing owls were observed at Area 4-4 (Figure 4B). These individuals appeared to be associated with the dry, unvegetated drainages that characterize the area and each could be directly linked to a specific burrow. Further, at least seven active burrows were detected by signs of recent use, including fresh pellets, wash, and feathers. The majority of these burrows also appeared to be associated with drainages, either occurring along the banks or in the very near vicinity.

## 7. CONCLUSION AND RECOMMENDATIONS

With the exception of Area 4-2 and 4-3, burrowing owls or potentially active burrows were identified at all of the proposed clean up sites. A total of seven owls, all individual adults, were observed (Table 1).

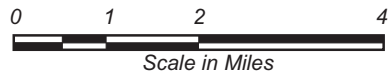
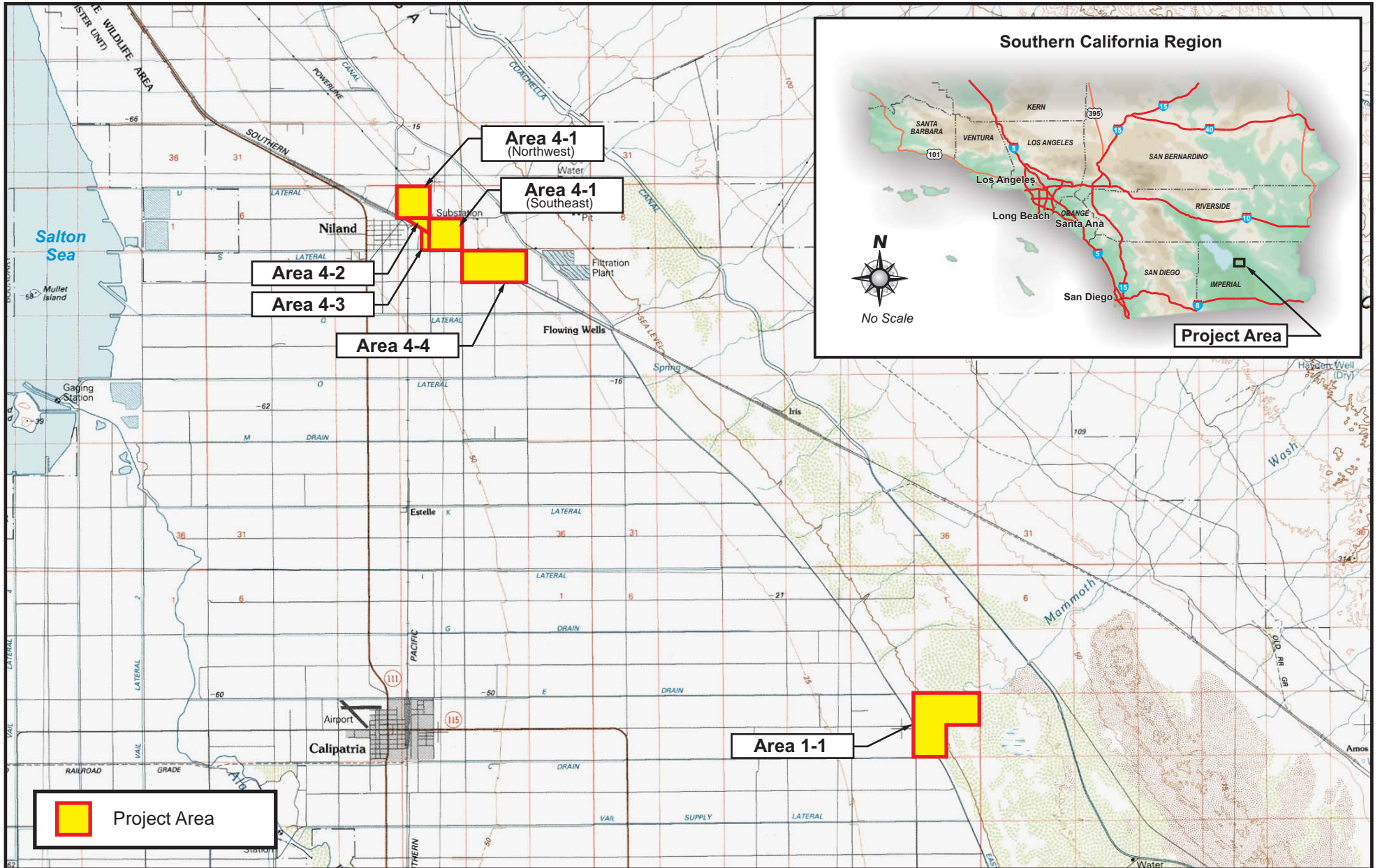
Active burrows identified in the project area contained one or more diagnostic signs, such as fresh pellets, wash, feathers, or prey remains.

Inactive burrows were located at all areas with the exception of Area 4-2 and contained the same types of evidence, however, no recent signs were observed at these burrows. It is important to note that while owls were not observed at Area 4-2 and 4-3, there is potential for this species to be present or utilize these areas as foraging habitat.

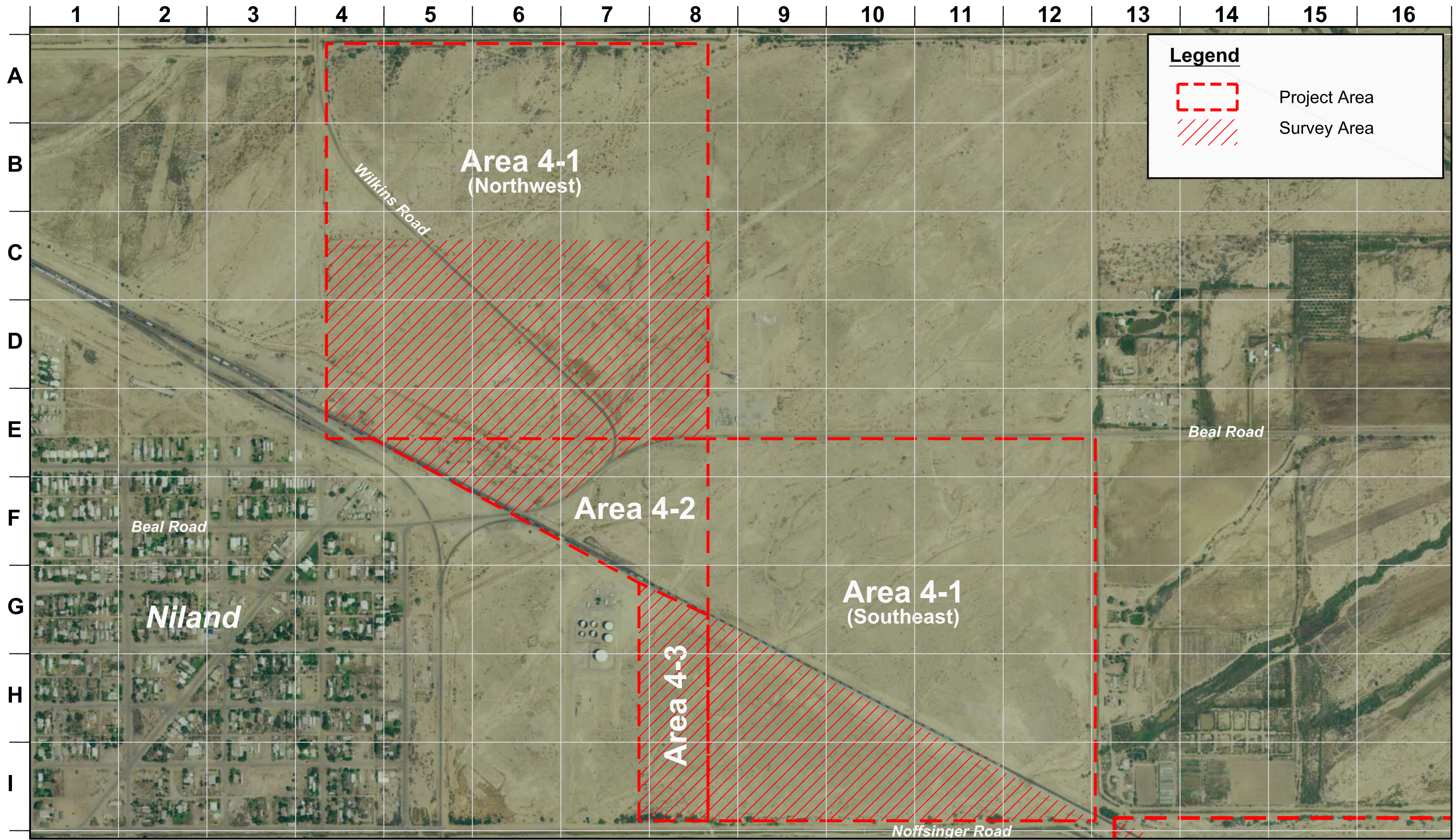
To ensure that project related activities do not impact populations of this species, the LADWP should implement the following measures identified in the Burrowing Owl Consortium Survey Protocol and Mitigation Guidelines prior to commencement:

***Recommended Protocols for Burrowing Owls***


- Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the California Department of Fish and Game (CDFG) verifies through non-invasive methods that either: 1) the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Eviction outside the nesting season may be permitted pending evaluation of eviction plans and receipt of formal written approval from the CDFG authorizing eviction.
- A 250-foot (76 m) buffer, within which no activity will be permissible, will be maintained between project activities and nesting burrowing owls during the nesting season. This protected area will remain in effect until August 31, or at the CDFG's discretion and based upon monitoring evidence, until the young owls are foraging independently.
- A pre-construction survey shall be conducted prior to clean up operations to document active burrows and establish buffers adjacent to the clean up sites.
- A qualified biologist shall be present at all times during any ground disturbance or construction activity in burrowing owl habitat if debris removal is scheduled to occur during the breeding season.
- If accidental take (disturbance, injury, or death of owls) occurs, the CDFG will be notified immediately.




**Figure 1**  
Project Vicinity Map with Project Location




**Legend**

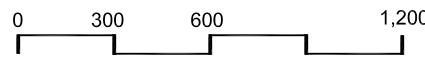
 Project Area

 Survey Area

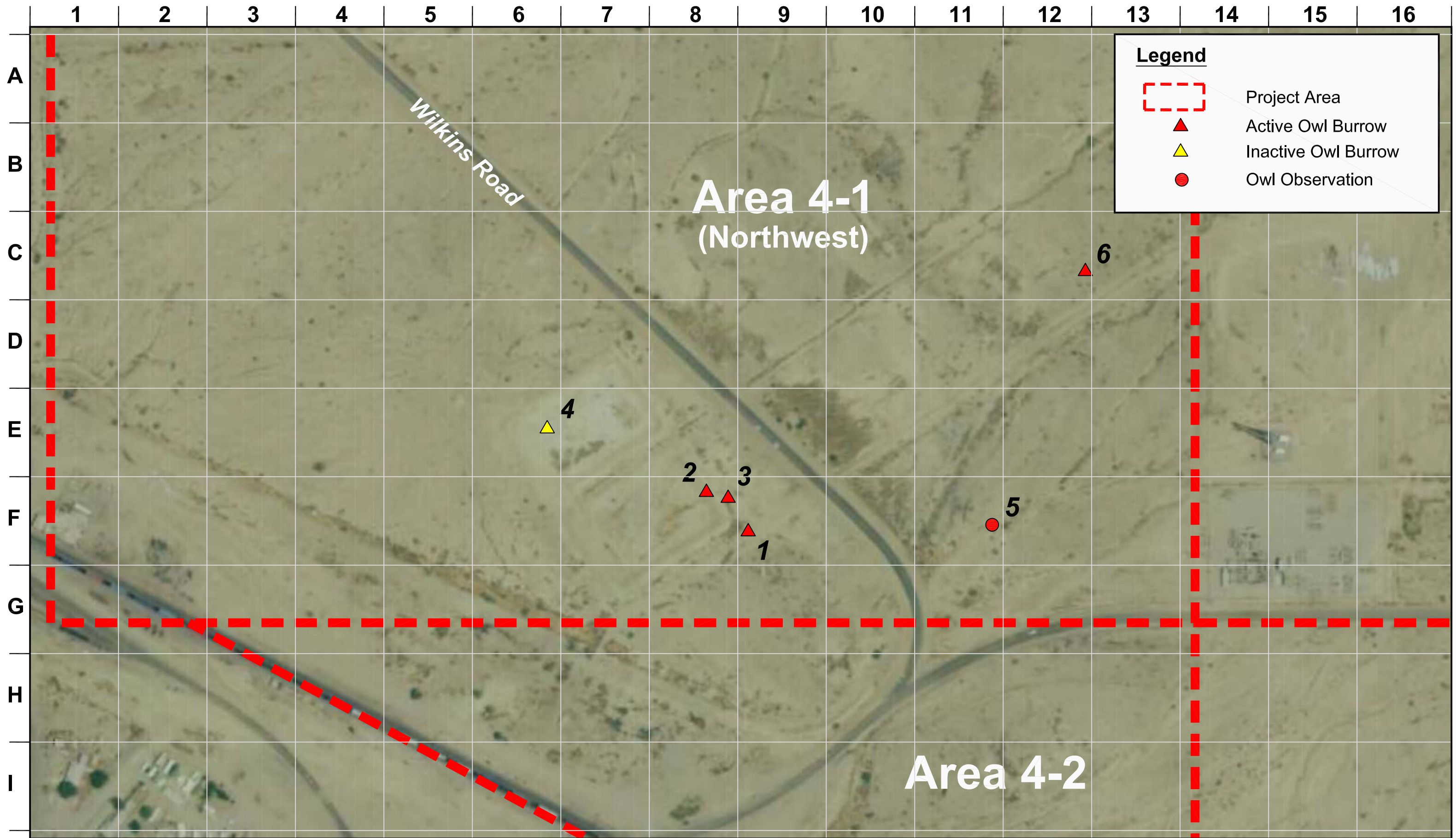
Prepared by **Aspen**  
Environmental Group

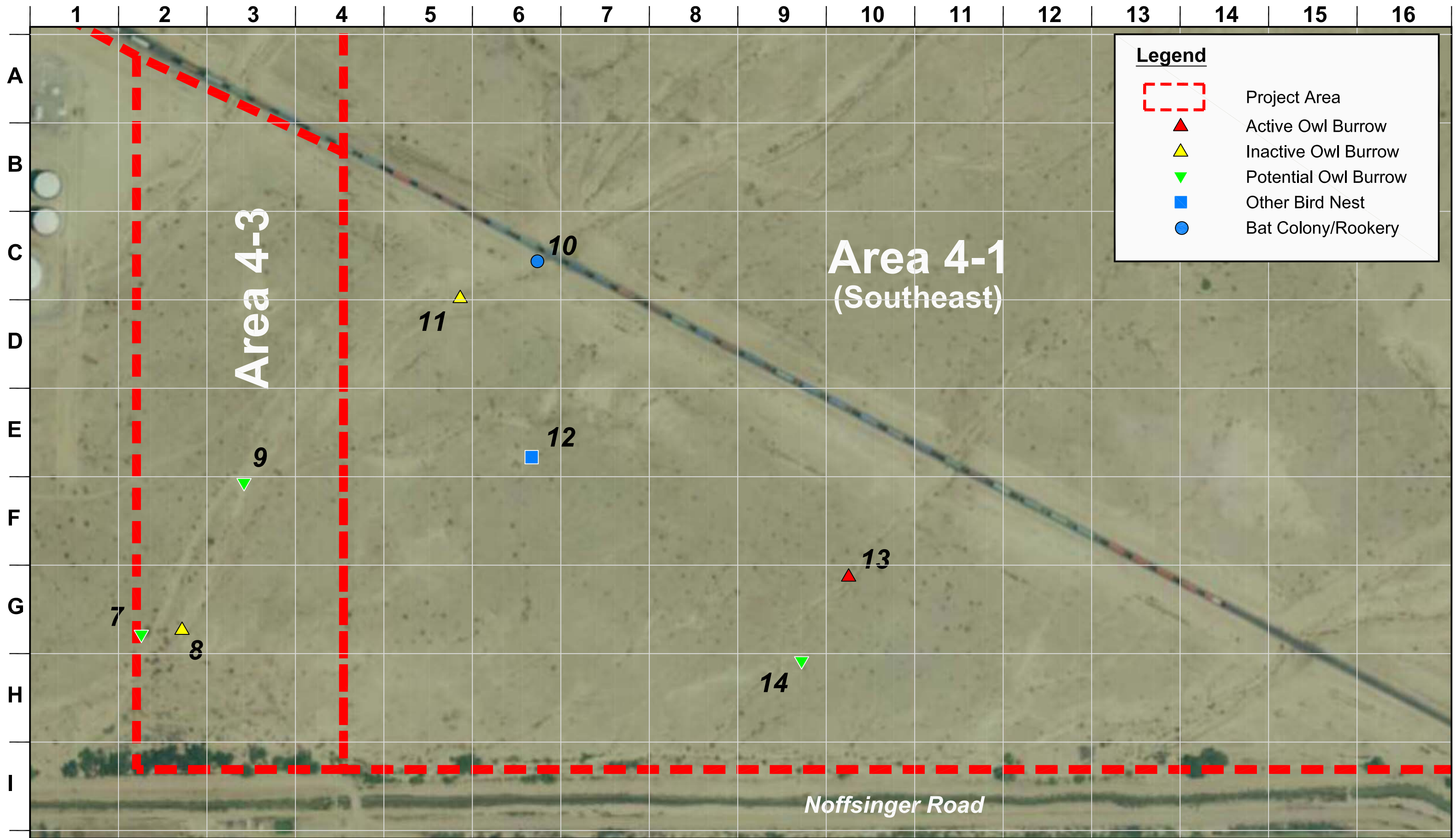
Scale: 1" = 600'  
Date: June 26, 2007  
File: 1432-SaltonSeaOwl.dwg

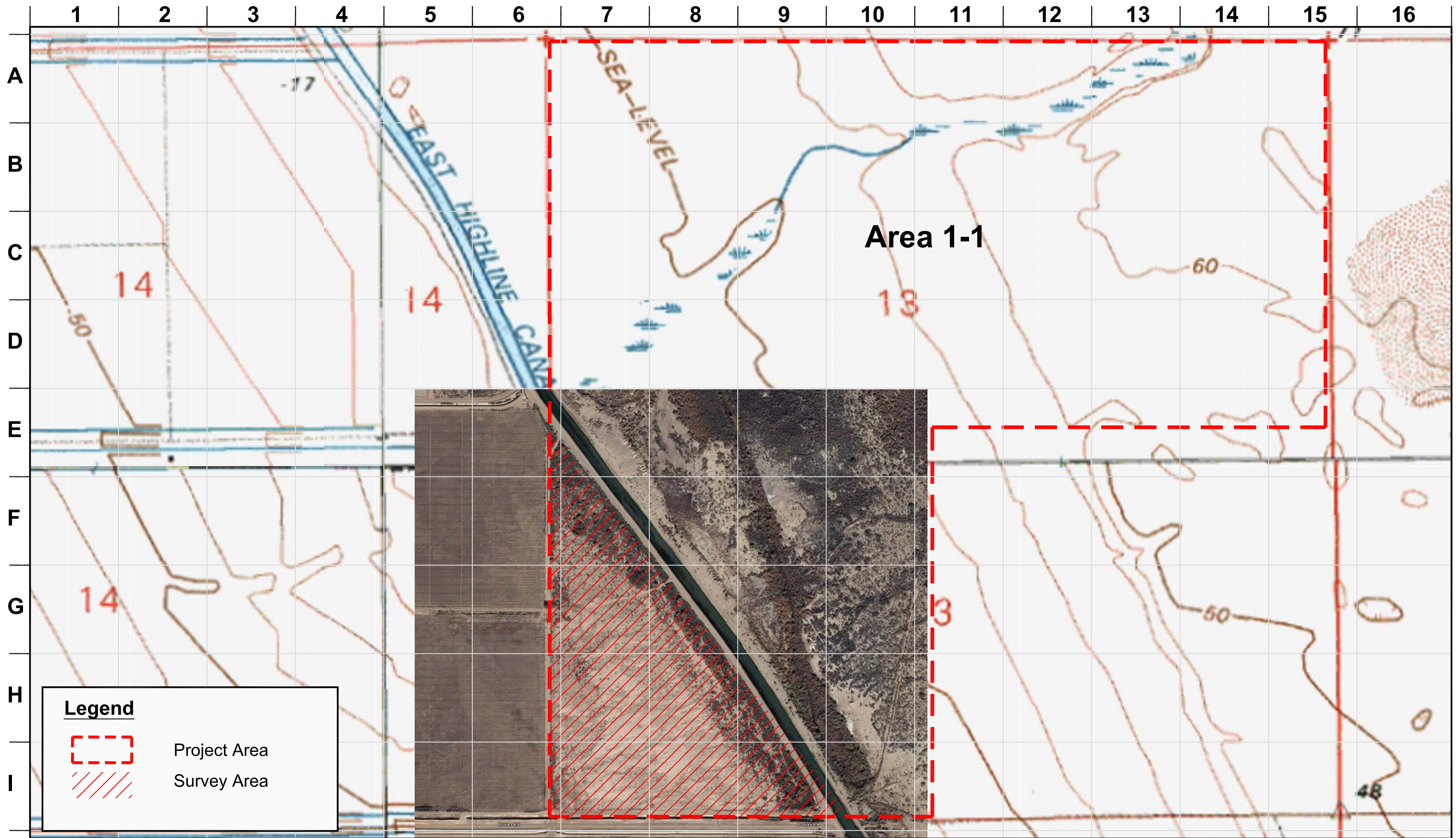
 NORTH

  
Graphical Scale Feet

**Figure 2A**  
Area 4-1, 4-2, and 4-3







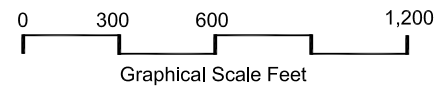
**Legend**



Project Area  
Survey Area

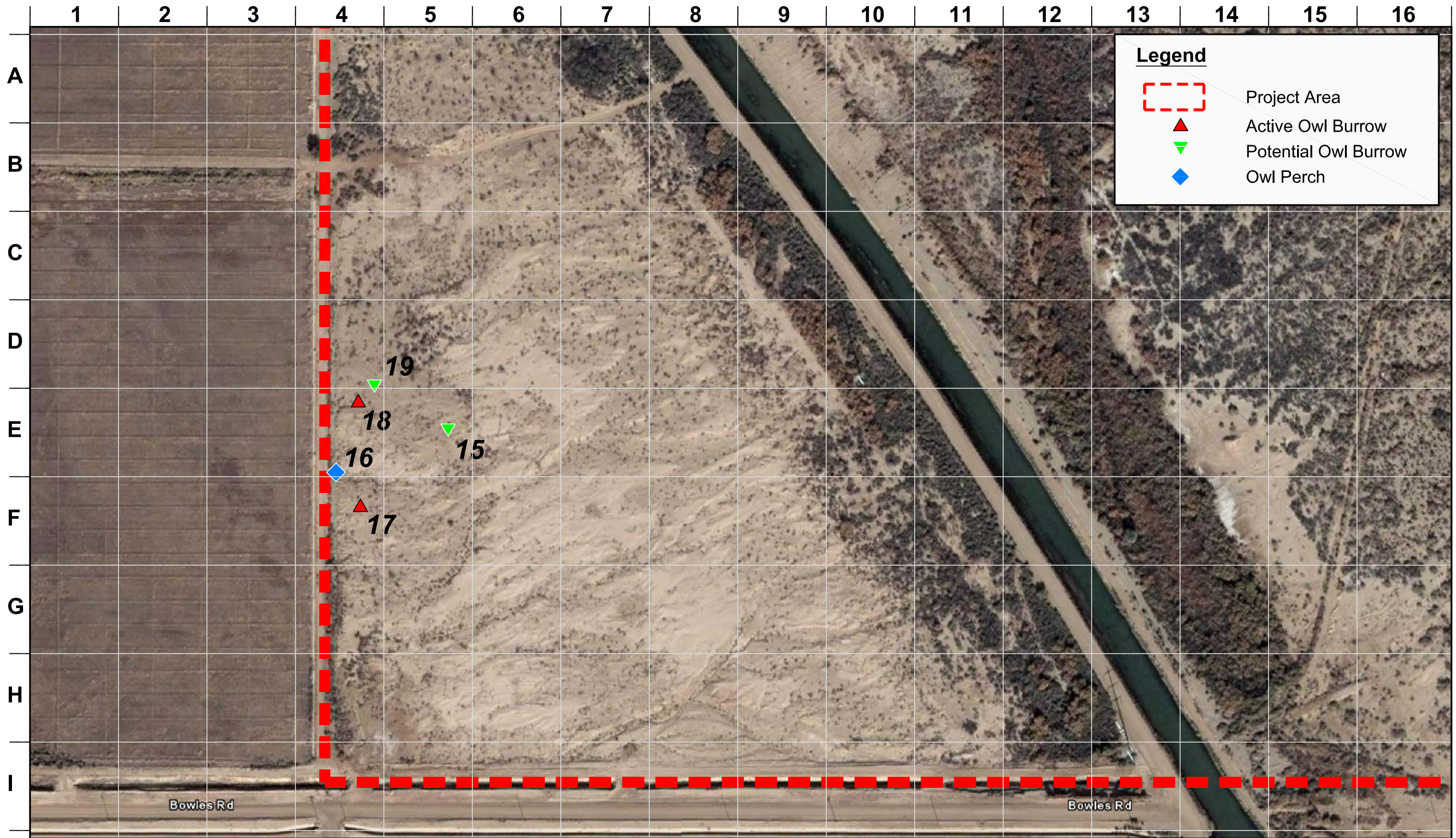


Scale: 1" = 600'  
Date: June 26, 2007  
File: 1432-SaltonSeaOwl.dwg



**Figure 3A**  
**Area 1-1**





**Legend**

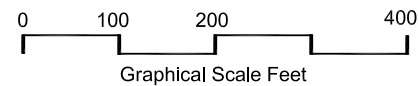
- Project Area
- ▲ Active Owl Burrow
- ▼ Potential Owl Burrow
- ◆ Owl Perch

Bowles Rd

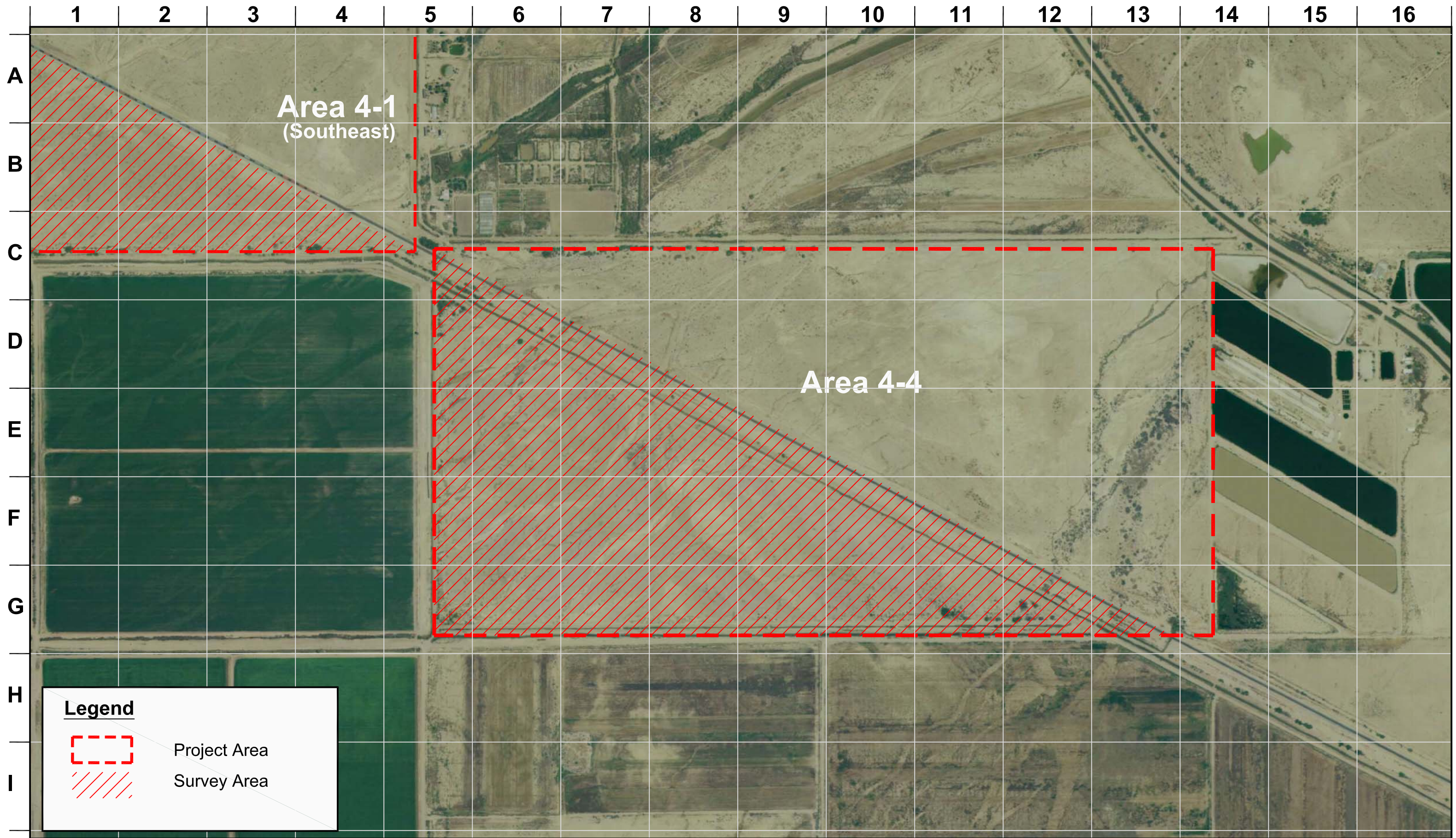
Bowles Rd

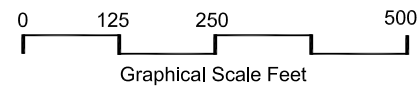
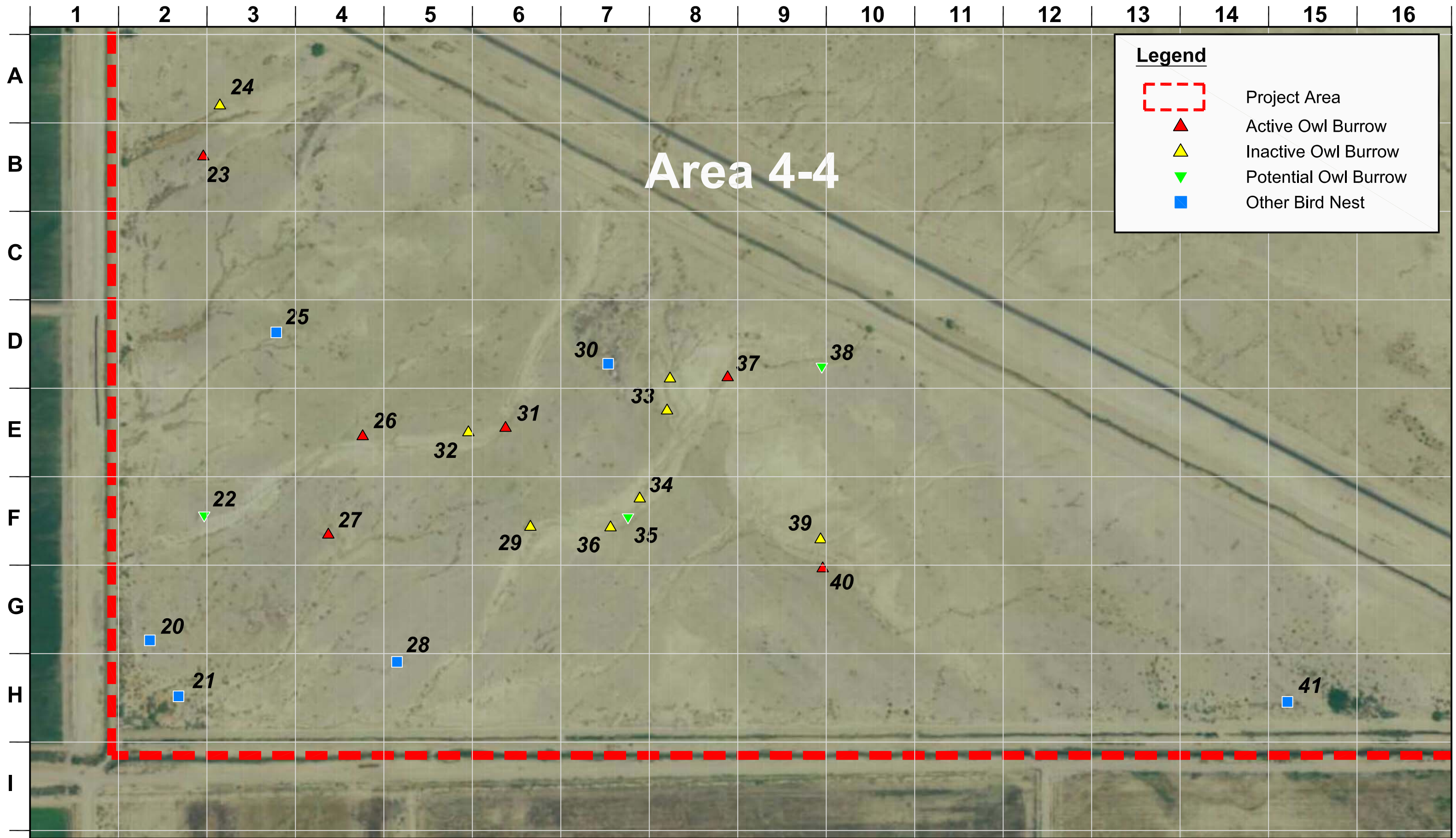


Scale: 1" = 200'  
 Date: June 26, 2007  
 File: 1432-SaltonSeaOwl.dwg



**Figure 3B**  
 Burrowing Owl Locations in Area 1-1





## **Appendix A. Photo Log**



**Photo 1.** View towards southwest at Site 4-1 (northwest parcel). Habitat in this area consists of desert scrub. Note reservoir bank in foreground.



**Photo 2.** Active owl burrow in access road at Site 4-1 (northwest parcel). Burrowing owl was observed at this burrow and active signs were detected.



**Photo 3.** Active owl burrow in discarded palm trunk at Site 4-1 (northwest parcel). Owl was observed in general vicinity of this burrow and signs of recent use were present. Note pellet in center of photo.



**Photo 4.** View towards north at Site 4-3. Habitat in this area consists of sparsely vegetated desert scrub. Note off-site tank farm in background.



**Photo 5.** View to east of Site 4-1 (southeast parcel). Note trash and debris accumulated along southern border of the site.



**Photo 6A.** View towards northeast along drainage (Site 4-1 Southeast parcel). Note the presence of numerous burrows along the drainage.



**Figure 6B.** One burrow among several within this complex drainage (Site 4-1 South east parcel).



**Photo 7.** View towards north at Site 1-1. Habitat in this area consists of desert scrub. Note hillocks in background.





**Photo 8.** Large burrow at Site 1-1. This burrow is most likely used by mammals. It would make a suitable owl burrow, although no owl signs were detected.



**Photo 9.** View north along west edge of Site 1-1. Note the small dirt mounds adjacent to the canal. These supported evidence of owl perching, including fresh pellets and wash.



**Photo 10.** Site 1-1. Note the debris present along the access road.



**Photo 11.** View north along west edge of Site 4-4. Habitat in this area consists of sparsely vegetated desert scrub with occasional thickets of honey mesquite. Note the debris accumulated in this area.



**Photo 12.** Active owl burrow at Site 4-4. Note signs of use, including fresh pellets, wash, and feathers.



**Photo 13.** Site 4-4. Owl present in center of photo.



**Photo 14.** Active complex detected at Site 4-4. This area contained numerous burrows on both sides of drainage. Note large amount of wash in center of photo.



**Photo 15.** Active burrow located at north edge of Site 4-4 near area with heavy accumulation of debris. Signs included pellets, wash, and shredded debris.

## **Appendix C2**

# **Burrowing Owl Monitoring Report for Debris Removal Activities at Several Waste Sites and Other Areas within the Imperial Valley, California**

**LADWP & Aspen Environmental Group**

**March 2008**

**DEPARTMENT OF WATER AND POWER  
CITY OF LOS ANGELES**

**BURROWING OWL MONITORING REPORT  
FOR DEBRIS REMOVAL ACTIVITIES  
AT SEVERAL WASTE SITES AND OTHER AREAS WITHIN  
THE IMPERIAL VALLEY, CALIFORNIA**

**Prepared by:**

Los Angeles Department of Water and Power  
111 North Hope Street, Room 1044  
Los Angeles, CA 90012

**Technical Assistance Provided by:**

Aspen Environmental Group  
30423 Canwood Street, Suite 215  
Agoura Hills, CA 91301

**March 2008**

# **BURROWING OWL MONITORING REPORT FOR DEBRIS REMOVAL ACTIVITIES AT SEVERAL WASTE SITES NEAR THE SALTON SEA AND OTHER AREAS WITHIN THE IMPERIAL VALLEY, CALIFORNIA**

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## **1. PURPOSE/INTRODUCTION**

This report is intended to summarize the biological monitoring for burrowing owls (*Athene cunicularia*), a California Species of Special Concern, conducted during the clean-up of several LADWP sites located in the Imperial Valley, Imperial County, California (Figure 1). This report illustrates compliance by the Los Angeles Department of Water and Power (LADWP) pursuant to the Migratory Bird Treaty Act (MBTA) and California Department of Fish and Game (CDFG) Code. Prior to any project-related activities, Aspen Environmental Group (Aspen) performed CDFG protocol-level surveys at all of the project sites. These included Phase II and III surveys, conducted in May and September 2007, respectively. The survey areas are owned and managed by LADWP and included portions of LADWP designated Area 1-1, Area 4-1, and Area 4-4, and all of Area 4-2 and Area 4-3 (Figures 2A, 3A, 4A). Surveys indicated the presence of burrowing owl and/or burrowing owl habitat at all of the project areas.

Burrowing owls can be tolerant of human activity and their presence in the Imperial Valley, adjacent to many agricultural fields, appears to support this point. However, they are vulnerable to burrow loss and human disturbance, so construction or maintenance activities that compact soil or otherwise disturb habitat should be closely monitored. Subsequently, LADWP deployed biological monitors during all project related activities.

## **2. PROJECT SPONSOR**

This project was sponsored by the City of Los Angeles Department of Water and Power.

## **3. CONTACT PERSON AND PHONE NUMBER**

Erica Blyther  
City of Los Angeles  
Department of Water and Power  
111 North Hope Street Room 1044  
Los Angeles, CA 90012  
(213) 367-2325

## **4. IMPLEMENTED PROTOCOLS**

To ensure that project related activities did not impact burrowing owl, the LADWP implemented the following measures identified in the Burrowing Owl Consortium Survey Protocol and Mitigation Guidelines prior to project commencement:

- Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the California Department of Fish and Game (CDFG) verifies through non-invasive methods that either: 1) the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Eviction outside the nesting season may be permitted pending evaluation of eviction plans and receipt of formal written approval from the CDFG authorizing eviction.
- A 250-foot (76 m) buffer, within which no activity will be permissible, will be maintained between project activities and nesting burrowing owls during the nesting season. This protected area will remain in effect until August 31 or at the CDFG's discretion and, based upon monitoring evidence, until the young owls are foraging independently.
- A pre-construction survey shall be conducted prior to clean up operations to document active burrows and establish buffers adjacent to the clean up sites.
- A qualified biologist shall be present at all times during any ground disturbance or construction activity in burrowing owl habitat if debris removal is scheduled to occur during the breeding season.

- If accidental take (disturbance, injury, or death of owls) occurs, the CDFG will be notified immediately.

Additionally, general protocol measures were strictly adhered to during project activities and operations and included:

- A biological monitor shall be present at all times during any project-related activities conducted within 160 feet of a flagged feature (active or inactive burrow).
- Project-related activities shall be conducted in such a way as to maintain accessible escape routes on three sides for disturbed owls.
- If the biological monitor determines that project activities are disrupting normal owl behavior, activities will cease within 160 feet of the owls until the monitor determines that activities can resume.

## **5. PROJECT ACTIVITIES**

The proposed project involved removing approximately 1000 tons of trash and debris that had been illegally dumped on LADWP property. Debris-removal activities were conducted between October 29 and December 7, 2007 to avoid the recognized breeding season for burrowing owls. Prior to any project activity, project personnel received an environmental briefing and handout on the life history of the burrowing owl, general protocol measures that would be implemented during the debris removal, and the consequences of non-compliance.

Several pieces of equipment were utilized during the project, including:

- Front loader
- Backhoe
- Bobcat
- 4-wheel dump truck
- 18-wheel dump truck
- 2000 gallon water truck
- (2) 2-man motorized carts
- 20 foot storage bin

Generally, project activities were restricted to the areas with large accumulations of debris. These areas were primarily located immediately adjacent to existing dirt access roads. In these areas, large equipment was used to remove the debris. Two-man carts were utilized throughout the project sites to remove scattered debris. When work was performed in and along drainages, hand-crews were employed. Activities pertaining to each project site are detailed below.

### **Area 1-1**

Debris-removal activities in this parcel were focused along the area adjacent to an existing access road that bisects the northern portion and to the dense vegetation that occurs at the eastern border of the site (Figure 2B). Minor clean up activities occurred along access roads that bound the western and southern edges of the parcel. Debris removal and staging activities occurred within 160 feet of map point 65, previously recorded as an active burrow. However, close inspection indicated that this burrow had been abandoned prior to any project operations. During project operations, only one owl was observed. This owl was observed moving between burrows at map points 71 and 72 (Figure 2B). No project activities were conducted in the vicinities of these burrows. This owl was observed in the area at the conclusion of clean up activities.

### **Area 4-1 North West Parcel**

Major clean up activities primarily occurred at the southeast portion of this parcel, on each side of Wilkins Road (Figure 3B). The front loader was utilized to remove large accumulations of trash and debris in these areas. Two owls were present during these activities at map points 18 and 20. Each of



these owls alternated between their respective burrows and the complex defined at map point 21a. Project activities did not significantly disrupt normal behavior and these owls remained on site throughout the clean up activities. The burrow at map point 20 is composed of small concrete-formed mounds. To avoid damage to this structure, crews were instructed to limit activities in the vicinity to foot traffic only. As a result, some trash and debris still remain in a small area surrounding the burrow.

Hand-crews and 2-man carts were used to remove debris along the man-made berm that bisects the southwest corner of this parcel. Although several potential burrows exist in this area, no owls were observed during project activities at this location.

#### **Area 4-1 South East Parcel**

Project activities in this parcel were focused along the southern border (Figure 3C), and flagged burrows were generally avoided. Some work was performed in the vicinity of map point 37; however, no owls were present during this time and the burrow was left fully intact.

#### **Area 4-2**

Burrowing owls or active burrows were not detected during surveys in Area 4-2. However, several potential burrows occur at this site (Figure 3D). Project activities conducted in the northern portion of this site were performed in proximity to map points 24 and 25. All activities in this area were closely monitored and no owls were present during project operations. No work was performed in the vicinities of any other flagged burrows.

#### **Area 4-3**

Major project activities in this parcel were focused along the southern border (Figure 3C), and flagged burrows were generally avoided. Hand-crews and 2-man carts were used along the drainage that supports a series of potential burrows. However, no owls were observed throughout this area during project operations and no potential burrows were damaged.

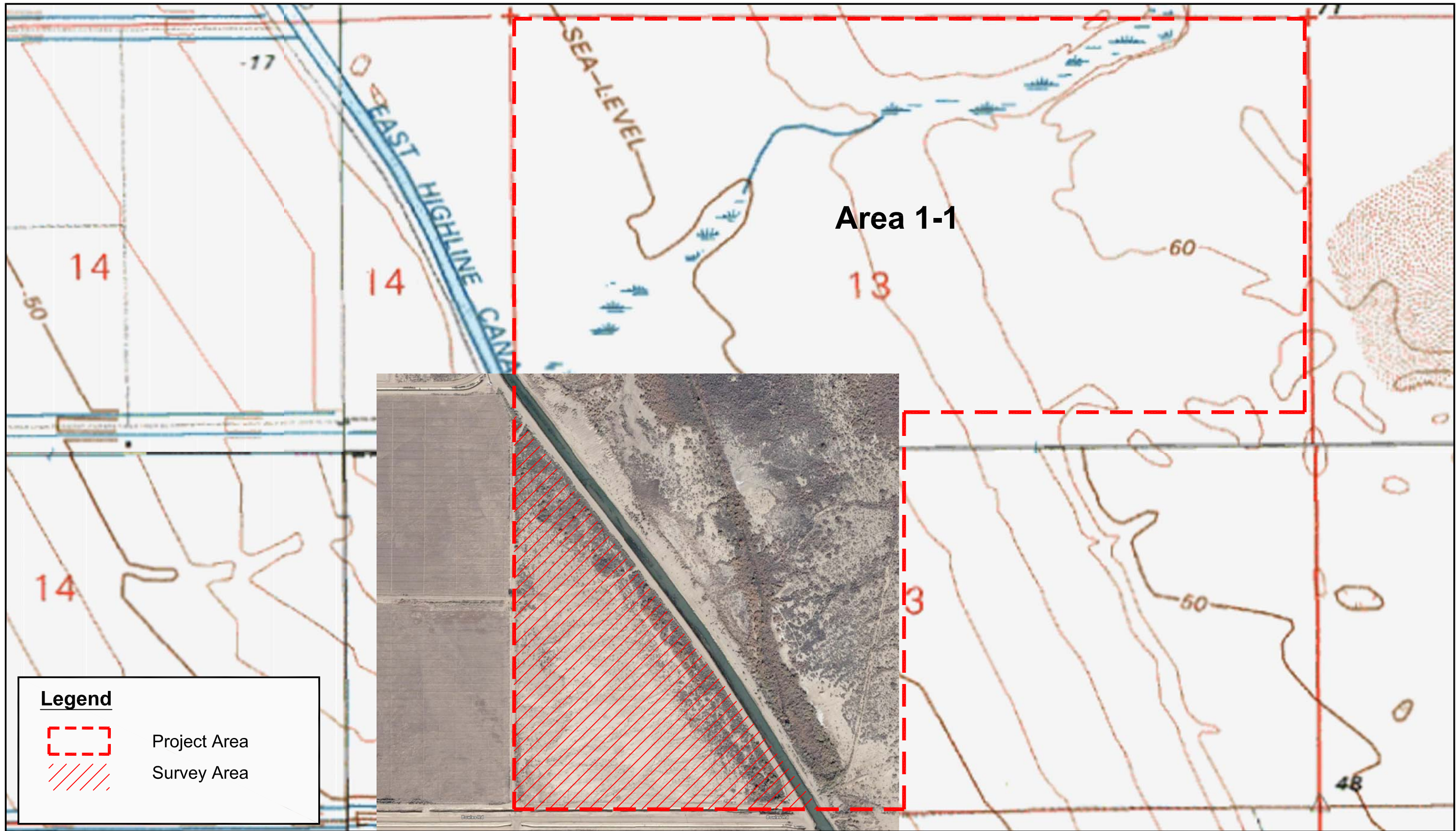
#### **Area 4-4**

Several owls were observed at this site during project activities. Subsequently, each project task was carefully monitored and buffers around flagged burrows were strictly enforced. Debris was heavily concentrated in the central portion of this parcel, situated between the two drainages that support the majority of flagged burrows (Figure 4B). All heavy equipment was utilized in this area. Additionally, this area served as a base for storage, loading, and sorting. One active burrow with an owl, which had not been previously recorded, was observed in a small debris pile adjacent to this area. This burrow was closely monitored throughout the duration of project activities and the area surrounding it was not disturbed. Two new occupied burrows were also discovered within discarded tires located adjacent to several large debris piles. It is likely that these owls had dispersed from map point 39. This point was previously recorded as a colony of four to five owls. During project operations, only two owls were observed at this burrow, indicating that at least some of the owls had likely dispersed. The two new burrows were closely monitored and the areas surrounding them were not disturbed. All other project activities at this site were conducted in such a way as to avoid the vicinities of flagged burrows.


## **6. CONCLUSIONS**


Burrowing owls were not encountered during clean up activities performed in Areas 4-1 (Southeast Parcel), 4-2, and 4-3. Burrowing owls were observed during operations in Areas 1-1, 4-1 (Northwest Parcel), and 4-4. However, avoidance protocols were implemented to limit disturbance to any owls and/or burrows encountered in these areas. These included implementing 160' buffer zones around known active

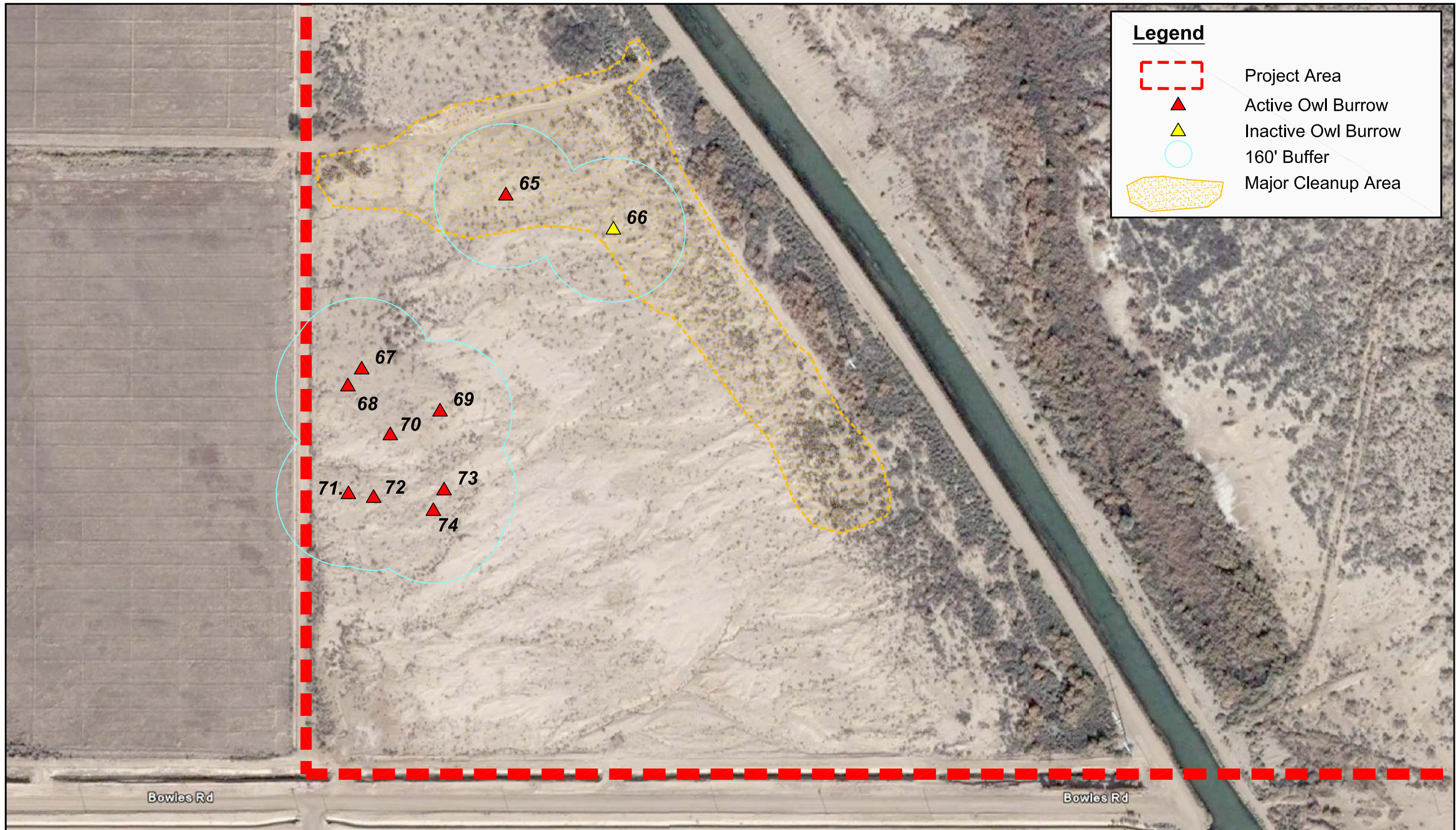
and inactive burrow locations, removing work crews from areas where owls were encountered, and providing safe and effective movement corridors for owls to utilize during project activities. Through the implementation of project avoidance and minimization measures clean up activities remained in compliance with applicable laws, ordinances, and regulations regarding the protection of burrowing owls.



**Legend**

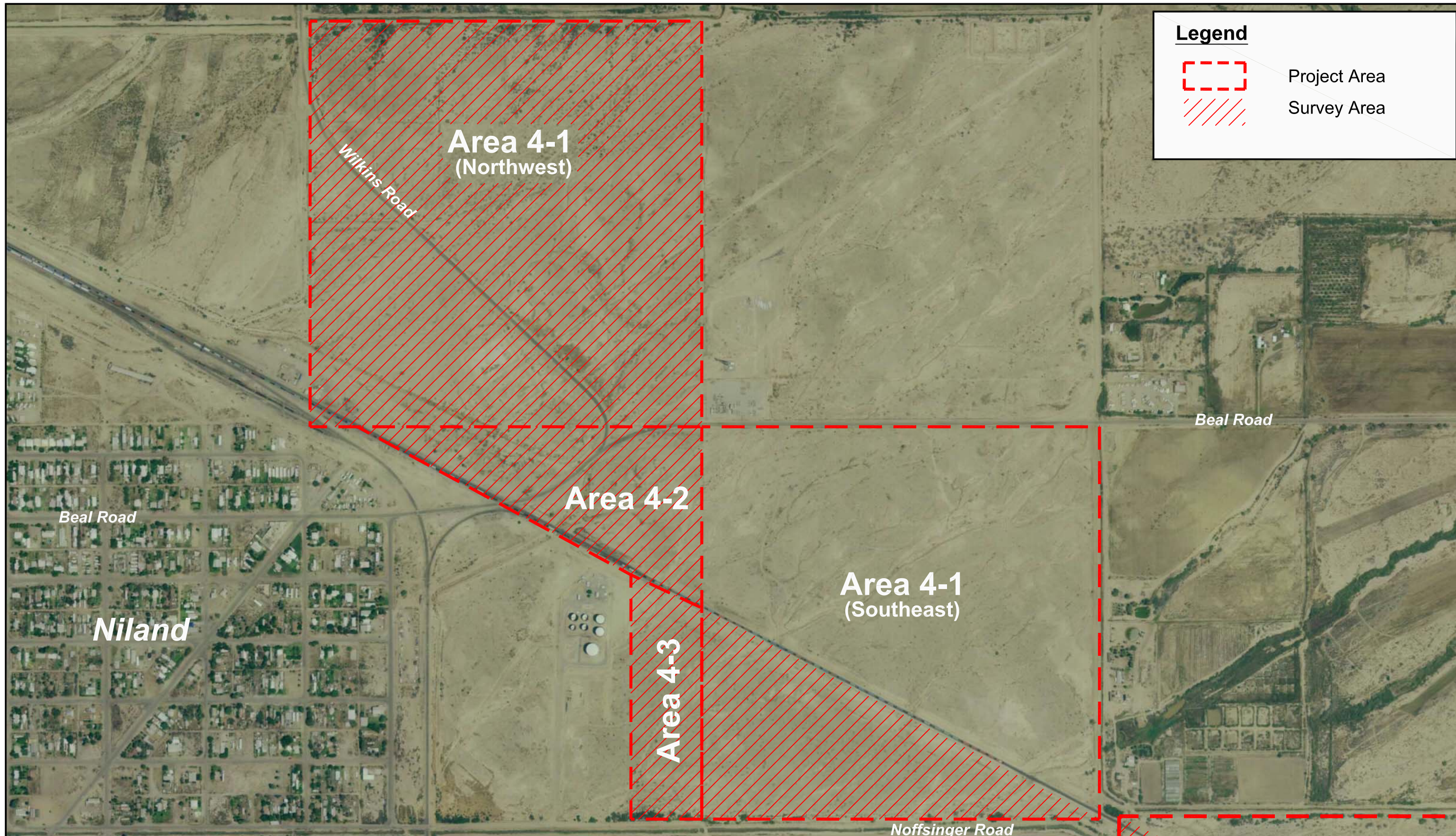
 Project Area

 Survey Area





**Legend**

- Project Area
- ▲ Active Owl Burrow
- ▲ Inactive Owl Burrow
- 160' Buffer
- Major Cleanup Area



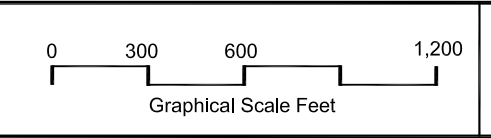
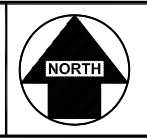
**Legend**

 Project Area

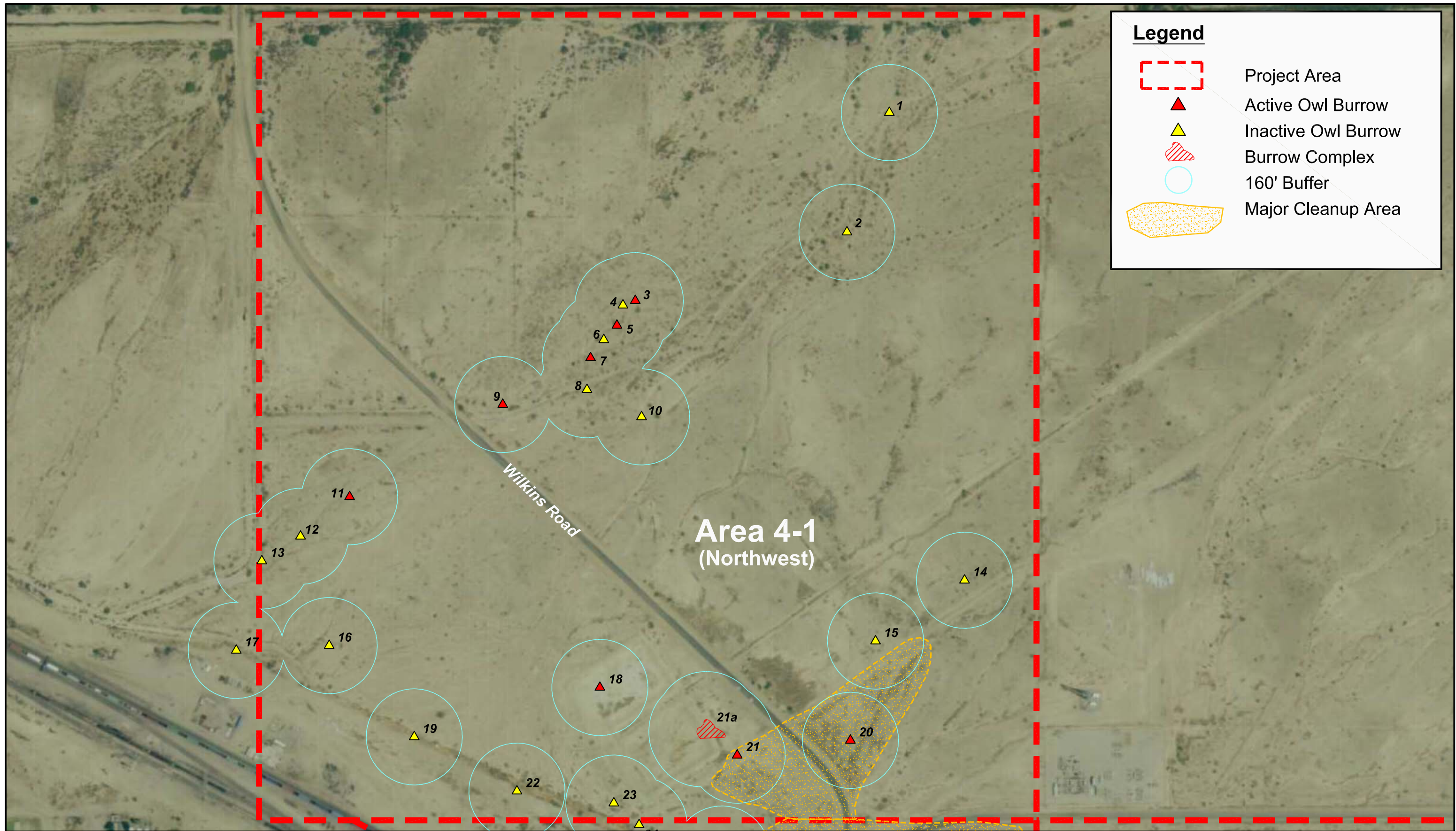
 Survey Area

Prepared by  
**Aspen**  
 Environmental Group







Scale: 1" = 600'  
 Date: February 7, 2008  
 File: 1432-SaltonSeaOwl5.dwg



**Figure 3A**  
 Area 4-1, 4-2, and 4-3

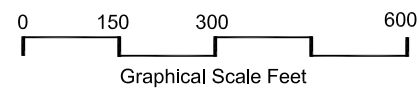


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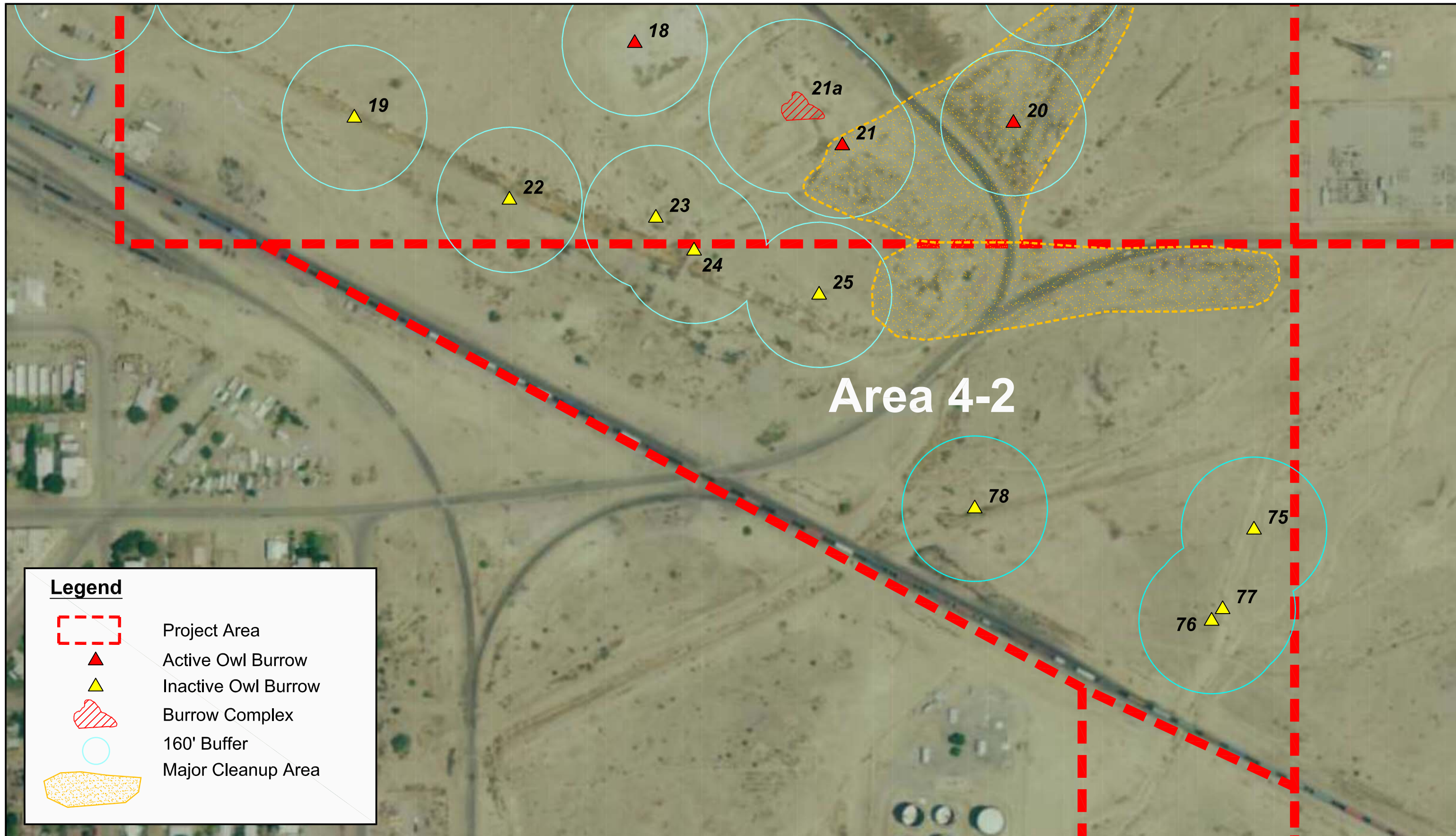
-  Project Area
-  Active Owl Burrow
-  Inactive Owl Burrow
-  Burrow Complex
-  160' Buffer
-  Major Cleanup Area

**Area 4-1  
(Northwest)**







Wilkins Road

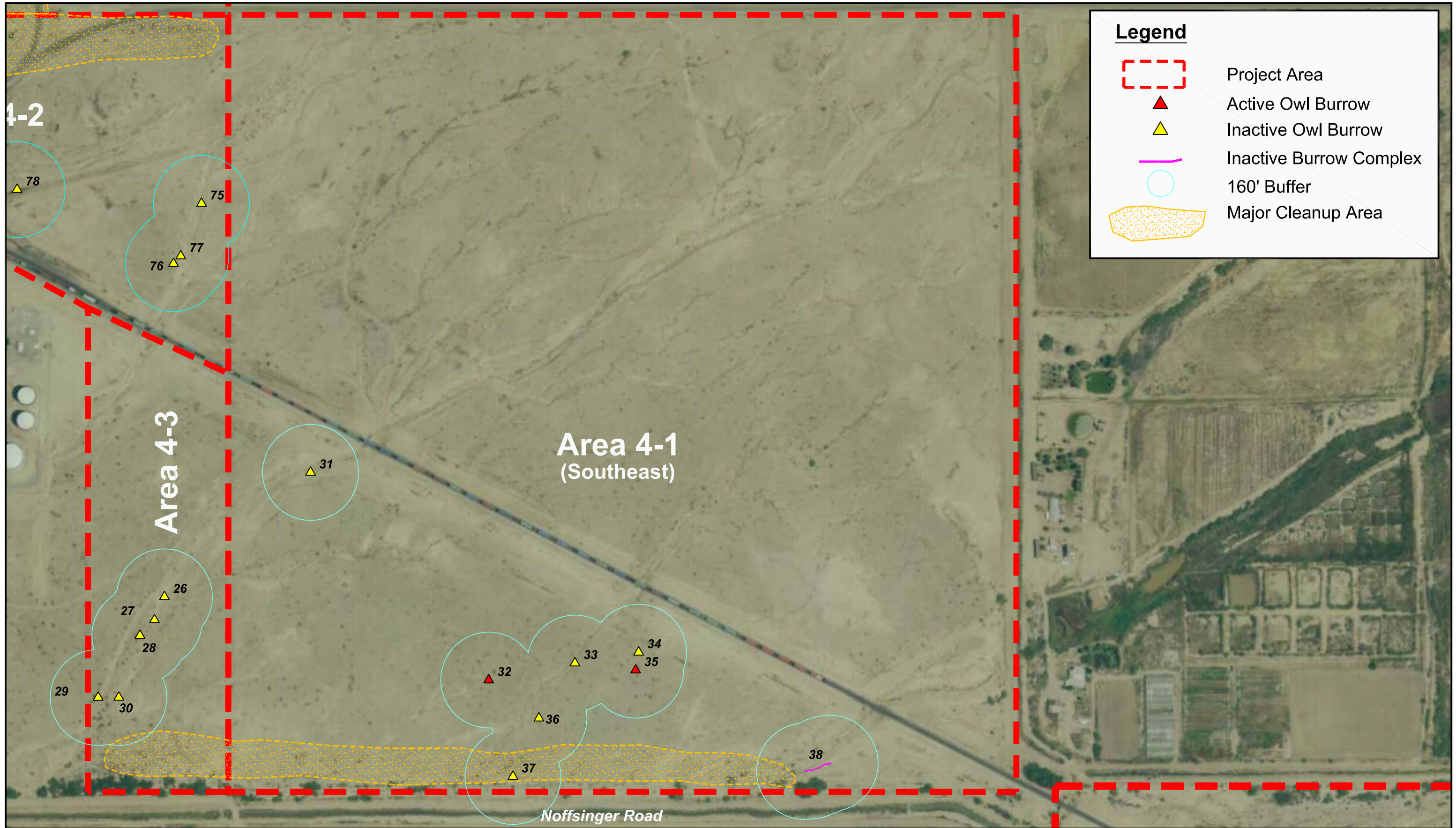


**Figure 3B**  
**Burrowing Owl Locations in Area 4-1 (Northwest)**

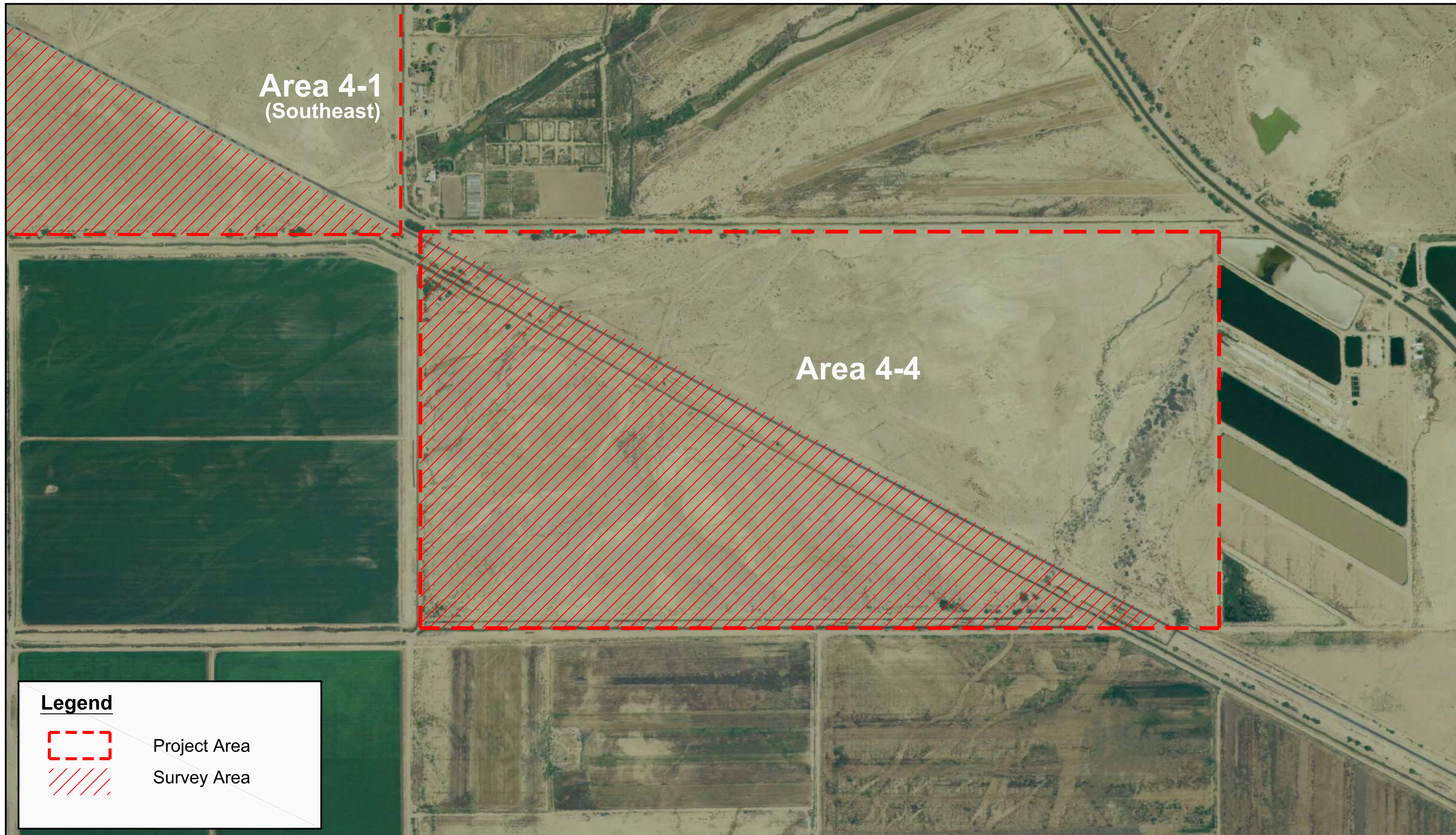


**Legend**

-  Project Area
-  Active Owl Burrow
-  Inactive Owl Burrow
-  Burrow Complex
-  160' Buffer
-  Major Cleanup Area







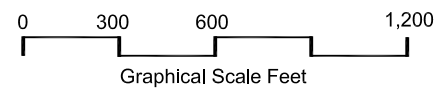
Area 4-1  
(Southeast)

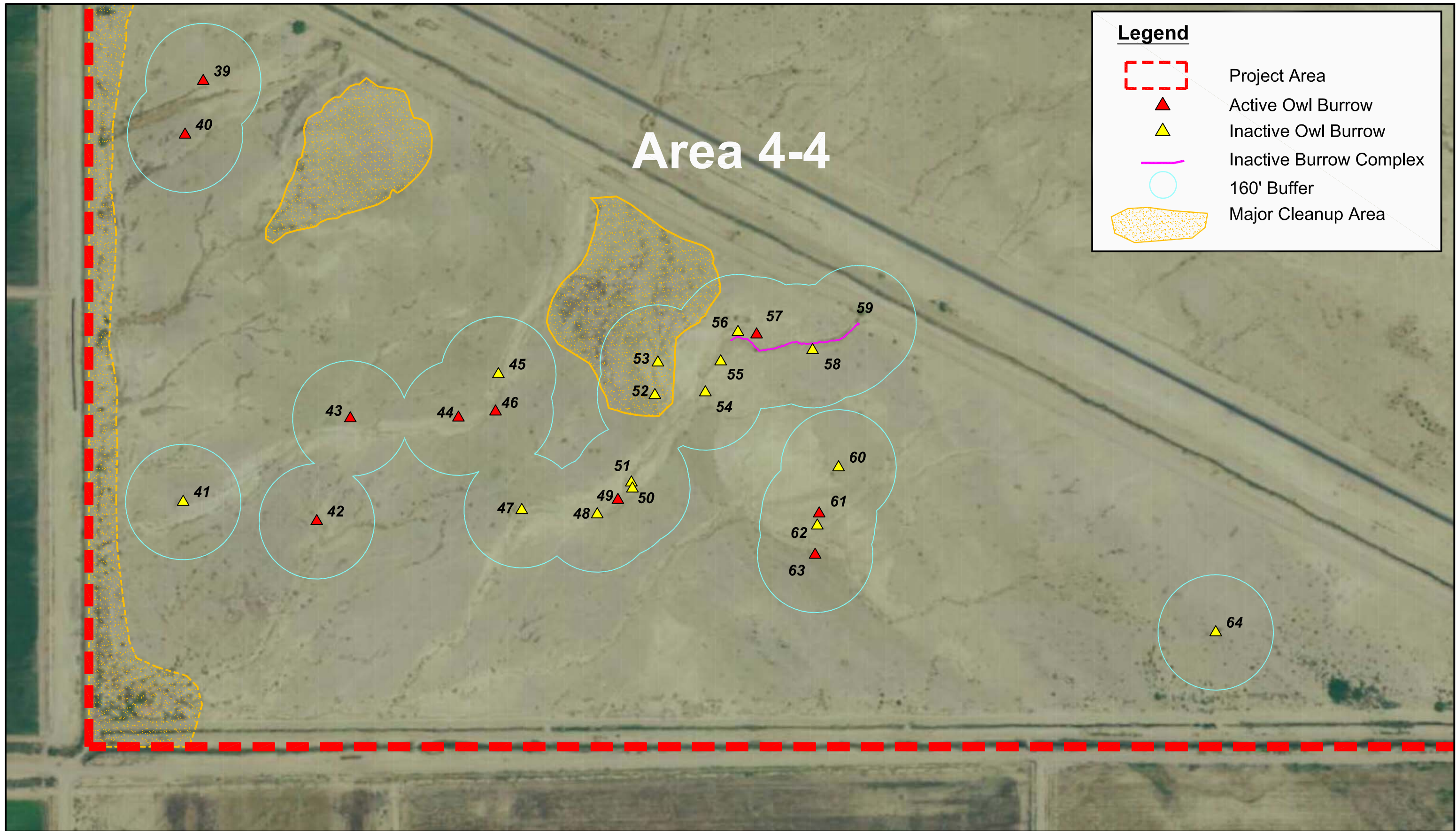
Area 4-4

**Legend**









Project Area  
Survey Area

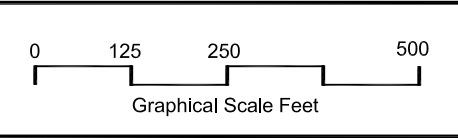




**Legend**

-  Project Area
-  Active Owl Burrow
-  Inactive Owl Burrow
-  Inactive Burrow Complex
-  160' Buffer
-  Major Cleanup Area

# Area 4-4



**Figure 4B**  
**Burrowing Owl Locations in Area 4-4**

## **Appendix C3**

# **Burrowing Owl Presence/Absence Surveys Summary Report**

**EDAW, Inc.**

**October 2008**

EDAW Inc  
1420 Kettner Boulevard, Suite 500, San Diego, California 92101  
T 619.233.1454 F 619.233.0952 www.edaw.com

October 17, 2008

Erica Blyther  
Environmental Specialist  
Los Angeles Department of Water and Power  
Water Engineering and Technical Services  
111 North Hope Street  
Los Angeles, CA 90012

**Subject: Report Summarizing Results of the Proposed Niland Solar Energy Project Burrowing Owl Presence/Absence Surveys**

Dear Ms. Blyther:

This letter summarizes results of focused western burrowing owl (*Athene cunicularia*) protocol surveys conducted by EDAW, Inc. (EDAW) within the proposed Project Niland Solar Energy Project site and surrounding area. EDAW is a consultant on this study being conducted for the Los Angeles Department of Water and Power.

### **Project Description**

The proposed solar facilities would be located on approximately 970 acres of LADWP-owned land adjacent to and east of the community of Niland, California in Imperial County (see Figure 1). LADWP and its development partner, OptiSolar Inc., propose to construct a solar power project up to 68 MW using ground-mounted photovoltaic (PV) arrays. The PV panels would cover about 40 to 50 percent of the land area. The project's basic unit will be a 12 module (½ by one meter photovoltaic element) panel. These panels will be mounted on concrete ballast and organized into 500 kilowatt blocks covering about 5 acres each. Due to the project's multi-parcel configuration, the site will also employ smaller 250 kilowatt (kW) and 100 kW blocks. The project will employ padmount transformers which will step the power from each block to 34.5 kV (thousand volts) and this power will then be transmitted to the 161 kV substation for interconnection with the local grid. It is anticipated that construction would begin within two years and that the project would be completed by 2011.

### **Project Area**

The proposed solar project is located near the community of Niland in the Imperial Valley approximately 4.5 miles east of the southeastern shoreline of the Salton Sea. The proposed solar project is located in an area characterized by a mix of rural residential, agriculture, and open desert uses. The town of Niland is located adjacent to and west of project sites. The community and neighborhood residential and commercial uses within Niland are well defined and border the project site parcels south and west of the site. Agricultural field crops occur on several parcels in the vicinity of the project site. A major rail line bisects several of the project parcels. A 161 kV transmission line connects to a substation on the north east side of Area 4-1 (southeast).

The 68 MW PV modules will be constructed and placed on LADWP-owned land in areas 4-1, 4-2, 4-3, 4-3 west, 4-4, and 4-5, known as the Niland Group near the Salton Sea in Imperial County and illustrated in Figure 5, Niland Solar Energy Project Sites Overview. Photovoltaic allows for direct conversion of light (photo) into electricity (voltaic).

For Areas 4-1, 4-2, 4-3 and 4-4 California Burrowing Owl Consortium (CBOC) preliminary Phase II surveys for burrowing owl (BUOW) were conducted in May 2007 and subsequent Phase II and Phase III surveys were conducted in September 2007 by Aspen. Monitoring activities continued from October 29, 2007 to December 7, 2007. Several owls were detected on Areas 4-1 (north and south) and 4-4 during these surveys. Active burrowing owl burrows were observed on all sites in the 2007 surveys conducted by Aspen. The total number of owls present in these areas as well as in Area 4-5 will be determined in the burrowing owl preconstruction surveys conducted 30 days prior to grading.

A protocol survey for western burrowing owl was conducted for Area 4-5 in August 2008 by EDAW and seven areas with burrowing owls were observed, four of these areas were observed on the project site and within the 500' buffer zone. It was determined that three pairs of owls (with juveniles) were present on the project site and one pair (with juveniles) was present in the buffer zone during the focused survey conducted here.

No protocol level surveys were conducted by EDAW biologists for Areas 4-1 through 4-4. A pair of burrowing owls was observed during these surveys on Area 4-1. These sites were visited to evaluate biological resources for the Environmental Impact Assessment and the results of these surveys are detailed in CEQA Initial Study and a Biological Resources Summary Letter Report (EDAW, 2008). Suggested mitigations for biological resources described in the Environmental Impact Assessment include a jurisdictional determination for on-site drainages and mitigation for burrowing owls as detailed in this report.

#### **Area 4-5 Site Description**

Area 4-5 is located to the north of an existing filtration plant close to Area 4-4. Weist Road intersects the southwest corner of the area. The land is vacant. Patches of nonnative grasses and nonvegetated areas within the project site, including a dry desert wash, occur to the east of SR-14. The East Highline Canal is on the western side of the property and intersects with the southwestern corner of the property. Further to the north and east of the site is the Coachella Canal.

Topography of the project area is generally flat, with elevations ranging from approximately 50 feet below sea level to 50 feet above sea level. There are some hilly areas in the northeastern corner of the property. Two old gravel pits occur on site, one near the southwestern corner of the property, one near the northeastern corner. The gravel pit on the southwestern corner exhibits evidence of ponding during rainfall events. Several drainages occur on-site and a jurisdictional determination is recommended.

Most on-site habitat would be classified as creosote scrub, with some areas dominated by saltbush (*Atriplex* spp.). The vegetation on-site is very sparse except in areas with invasive tamarisk (near the southwestern portion of the property in the vicinity of the old gravel pit). A dirt road traverses the property from the southwestern edge to the northeastern corner. Mojave creosote bush (*Larrea*

*tridentata*) scrub with scattered occurrences of perennial shrubs that include cheesebush (*Ambrosia* [= *Hymenoclea*] *salsola*), occurs within majority of the project area.

## **Background Information**

### **Regulatory Status**

The western burrowing owl is considered a species of special concern by the California Department of Fish and Game (CDFG) due to intensive development pressure on the species' habitat. The species is also covered under the West Mojave Plan (WEMO). However, the WEMO area does not include any part of Imperial County.

### **Habitat Status**

Habitat consists of annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974; California Burrowing Owl Consortium [CBOC] 1993). Suitable owl habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat and both natural and artificial burrows provide protection, shelter, and nests for burrowing owls. Burrowing owls typically use burrows made by mammals, such as ground squirrels or badgers, but also may use man-made structures, such as cement culverts, cement asphalt or wood debris piles, or openings beneath cement or asphalt pavement.

### **Population Status**

Burrowing owls in California are generally nonmigratory and occur mostly in the Central and Imperial Valleys, primarily in agricultural areas. Small, scattered populations occur in the Mojave desert. The West Mojave Plan documents 53 records of burrowing owls in the east Mojave desert (Campbell 2004), only 5 of which are confirmed breeding pairs. Population density seems to be correlated with prey availability, particularly small mammals (Klute et al. 2003).

## **Survey Methodology**

EDAW biologists Shelly Dayman and Katie Hall with assistance from subcontractor Bryon Cariss conducted presence/absence survey for burrowing owls between August 12<sup>th</sup> and August 16<sup>th</sup>, 2008. Shelly Dayman has over 7 years of experience conducting biological surveys; vegetation mapping; construction monitoring; and wildlife surveys for desert tortoise, western burrowing owl, and small mammals in the southwestern United States. Katie Hall has over 7 years of multi-disciplinary experience; serving as environmental scientist, ecologist, on various projects related to ecological assessment, and focused desert tortoise and avian protocol surveys. Bryon Cariss is a wildlife biologist with several years experience in California who specializes in avian surveys.

Burrowing owl surveys were performed according to the protocol established by the California Burrowing Owl Consortium (CBOC) (1993) and accepted by CDFG. A burrow survey was conducted with 100% visual coverage of the entire site including a 500-foot buffer zone surrounding Area 4-5. The

burrow survey was conducted during the dawn and dusk hours to increase the likelihood of observing owls while conducting the burrow survey. All burrows that were suitable for burrowing owls were mapped, as was all potential burrowing owl sign and all sighting of burrowing owls. All burrows with potential burrowing owl sign (white-wash, pellets, feathers, bones) were mapped using GPS units.

## **Results**

Several owls were detected on Areas 4-1 (north and south) and 4-4 during the surveys conducted by Aspen in 2007 and the results are detailed in Table 1 below. Active burrowing owl burrows were observed on all sites in the 2007 surveys conducted by Aspen (Aspen, 2008).

Burrowing owls were observed on-site during the focused surveys of Area 4-5. Four areas were observed on-site with burrowing owls associated with active burrows (labeled as 1, 2, 5 and 7 on Figure 3). In three areas owls were observed perched and/or in flight in areas not associated with permanent active burrows (3, 4 and 6 on Figure 3). Owls were observed in all four areas shown as 1, 2, 5 and 7 during the same survey on August 16<sup>th</sup>, 2008, so these four areas represent four different pairs with juveniles.

A pair of burrowing owls was observed on Area 4-1 during the CEQA evaluation of this site. The location of this pair and associated burrows is shown in Figure 5.

Dates, times, personnel, weather conditions, and results of burrowing owl observations are presented in Table 2. Copies of field data sheets are provided in Appendix A. In Area 4-5, a maximum of 17 burrowing owls (range of 0 to 5 per survey) were detected in the project area, 15 of which were within the project boundary (Figure 3). A total of 13 burrows with burrowing owl sign were identified within the project boundary and 500-foot buffer during surveys. Eight burrows with recent burrowing owl sign were detected within the project boundary. Three burrows with burrowing owl sign were detected in Area 4-4.

Seven areas (hereafter referred to as Area 1, Area 2, etc.) with burrowing owl activity were observed on Area 4-5 (Figure 3 Burrowing Owl Resources). In Area 1, as many as three owls at one time were observed. Burrowing owl burrows and satellite burrows with whitewash, feathers, pellets and bones were observed in this area. Owl activity was observed in the area on three separate occasions. In Area 2, five burrowing owls were observed at one time. Two burrows with active sign were observed here with white wash and feathers. In Area 3, one adult burrowing owl was observed approximately 120 meters south of this point. This owl was not within the 500-foot buffer zone but is noted here since the observation was made during the surveys. In Area 4, one burrowing owl was observed here then in flight towards the south. No burrows were observed associated with this observation. In Area 5, a lone adult was observed in flight from the burrow location during the first survey. Subsequently, four and possibly five owls were observed at this burrow. Two burrows with whitewash and pellets were observed at this location. In Area 6, three burrowing owls were observed in the wash and flew up the wash to the north. Area 7 is located within the 500-foot buffer zone and the burrowing owl observations occurred just outside the buffer zone. Seven large burrows with a lot of whitewash were observed here and these are likely the burrows used by the owls seen flying slightly to the east of the buffer zone.

Previous results from surveys conducted by Aspen Environmental include the following as shown in Table 1 below:

**Table 1**  
**Summary of burrowing owl data collected by Aspen Environmental**

	<b>4-1 north</b>	<b>4-2</b>	<b>4-3</b>	<b>4-1 south</b>	<b>4-4</b>
<b>Oct 2007</b>	Six adults, two sub-adults @ 5 burrows	No owls	No owls	Two active burrows, one single owl	Ten adult owls, one sub-adult and ten active
<b>June 2007</b>	Two owls, possibly three, many active burrows	No owls	No owls	One active owl burrow, adult owl	Three owls, 7 active burrows
<b>March 2008</b>	Two owls	No owls	No owls	No Owls	Several owls

Owls were not observed in Areas 4-2 or 4-3 in any of the surveys conducted by Aspen Environmental, but it is likely that owls within the area use this parcels for foraging activities. Owls were observed on parcels 4-1 North West, 4-1 South East and 4-4.



**Table 2**  
**Dates, Times, Personnel, Weather Conditions, and Observations (BUOW=burrowing owl)**

<b>Survey #</b>	<b>Date</b>	<b>Time</b>	<b>Personnel</b>	<b>Weather</b>	<b>Observations</b>
AM#1	8/12/2008	0613 - 0830	Shelly Dayman Bryon Cariss	Start 83°, 15% cloud, wind 3.2 - 4.9 mph End 92°, 5% cloud, wind 5.4 - 8.0 mph	Two BUOWs observed in flight
PM#1	8/12/2008	1719 - 1954	Shelly Dayman Byron Cariss Katie Hall	Start 108°, 10% cloud, wind 5.5 - 8.5 mph End 90°, 10% cloud, wind 6.0 mph	BUOW observed south of 500' buffer @ southern end of property
AM#2	8/13/2008	0545 - 0824	Shelly Dayman Byron Cariss Katie Hall	Start 83°, 60% cloud, wind 0 - 0.6 mph End 92°, 70% cloud, wind 5.8 - 6.9 mph	BUOW observed in flight, 4 to 5 BUOWs observed at two burrows, flushed three BUOWs near drainage
PM#2	8/13/2008	1716 - 1956	Shelly Dayman Byron Cariss Katie Hall	Start 104°, 20% cloud, wind 0.9 - 4.8 mph End N/A	Two BUOWs observed in flight near a burrow
AM#3	8/14/2008	0600 - 0932	Shelly Dayman Byron Cariss Katie Hall	Start 86°, 20% cloud, wind 1.6 - 3.2 mph End 89°, 90% cloud, ppt (light), 0.8 - 2.2 mph	BUOW observed in flight past occupied burrows observed on previous day
PM#3	8/14/2008	1718 - 1927	Shelly Dayman Byron Cariss Katie Hall	Start 97°, 30% cloud, wind 2.4 - 3.5 mph End 90°, 20% cloud, wind 1.1 - 1.3 mph	No BUOWs observed
AM#4	8/15/2008	0630 - 0845	Shelly Dayman Byron Cariss Katie Hall	Start 86°, 5% cloud, wind 3.6 - 4.5 mph End N/A	Five BUOWs observed @ burrow in wash, two owls observed @ different burrow
PM#4	8/15/2008	1700 - 1955	Bryon Cariss	Start 99°, 10% cloud, wind 2.5 mph End 90°, 10% cloud, wind 2.1 mph	Observed BUOWs at three different areas during same time frame
AM#5	8/16/2008	0540 - 1005	Bryon Cariss	Start 86°, 0% cloud, wind 5 to 10 mph End 95°, 0% cloud, wind 5 to 10 mph	Observed BUOWs at three different areas during same time frame

Two other sensitive species were observed during the focused burrowing owl survey, loggerhead shrike (*Lanius ludovicianus*; CDFG Species of Special Concern) and Cooper's hawk (*Accipiter cooperii*; CDFG Species of Special Concern). Breeding habitat for Cooper's hawk occurs off-site and impacts to these areas for the project are not anticipated. The observed loggerhead shrikes are likely breeding on-site in shrubs and areas of dense cover. All other wildlife species detected during burrowing owl surveys are listed in Appendix B.

### **Proposed Mitigation**

The total number of pairs of burrowing owls present on the property will vary over time and previous surveys by Aspen Environmental Group show that the size of the population fluctuates. Within Area 4-5, in surveys detailed here, three colonies of burrowing owls were observed on-site and one colony within the 500-foot buffer. Colony sizes were observed to be between three to five owls, likely each colony consisted of a breeding pair with associated juveniles. On Area 4-2 two burrowing owls were observed.

**The following mitigation for on-site burrowing owls is suggested:**

#### **Passive Relocation and Off-site Mitigation**

Thirty days prior to construction, a burrowing owl survey will be conducted. All burrowing owls on the project site will be passively relocated off the project site. Artificial burrows will be installed off-site to allow for the passively relocated owls to have burrows to be relocated to. These artificial burrows will be maintained for a period of five years. For each pair of burrowing owls relocated off the project site, up to 19.5 acres of off-site habitat suitable for burrowing owl will be acquired and conserved (in perpetuity), per the CDFG and CBOC mitigation guidance of the following ratios: replacement of occupied habitat with occupied habitat of 1.5 times 6.5 (9.75) acres per pair or single bird; replacement of occupied habitat with habitat contiguous to currently occupied habitat of 2 times 6.5 (13.0) acres per pair or single bird; or replacement of occupied habitat with suitable unoccupied habitat of 3 times 6.5 (19.5) acres per pair or single bird (CDFG 1995, CBOC 1993). Whenever possible, construction activity will occur outside the breeding season and a biological monitor will be present. If construction activity occurs during the breeding season all active nesting sites will be avoided within a 100 meter radius.

Passive relocation is defined in the CBOC Burrowing Owl Survey Protocol and Mitigation Guidelines and is defined as the exclusion of owls from impact zone burrows using one-way trap doors and providing natural or artificial burrows at a 1:1 or higher ratio that are beyond 50m from the impact zone and that are within or contiguous with a minimum of 6.5 acres of foraging habitat for each pair of relocated burrowing owls (if on-site mitigation is possible). If on-site mitigation is not possible then owls will be relocated off-site using the above methods, but 6.5 acres of habitat will not be maintained on-site in perpetuity, but off-site mitigation lands will be acquired at the above ratios.

Erica Blyther  
Los Angeles Department of Water and Power  
October 17, 2008  
Page 8

If you have any comments or questions regarding this letter report, please feel free to contact me or Lyndon Quon at (619) 233-1454.

Yours sincerely,

Shelly Dayman  
Wildlife Biologist

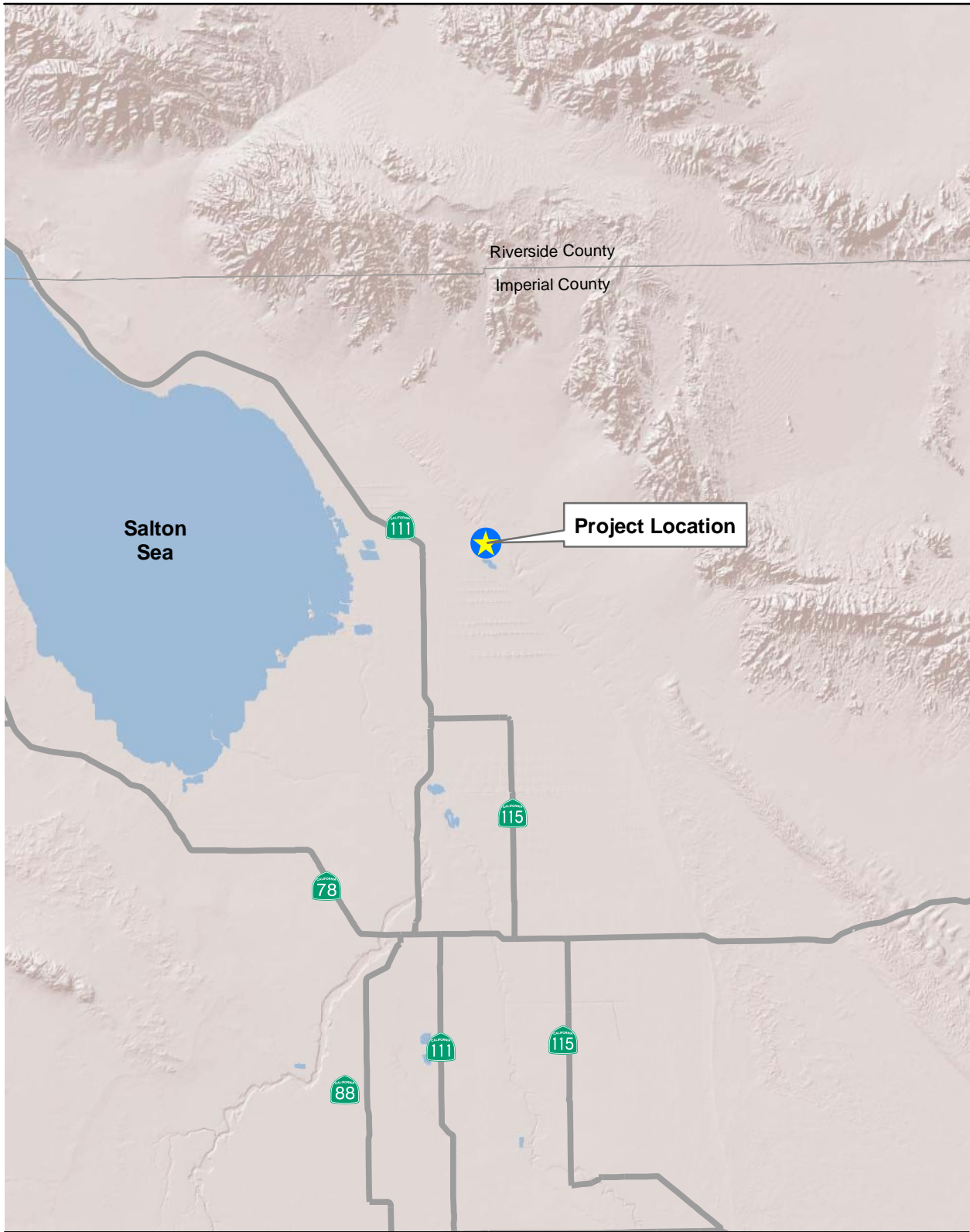
Attachments: Figure 1 – Regional/Vicinity Location Map  
Figure 2 – Project Boundary and Survey Area  
Figure 3 – Burrowing Owl Resources  
Figure 4 – Other Raptor and Special Status Species  
Figure 5 – Niland Solar Energy Project Overview  
Appendix A – Field Data Sheets  
Appendix B – Wildlife Species Detected during Burrowing Owl Surveys

### **Literature Cited**

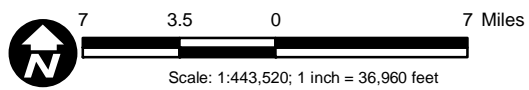
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## FIGURES





Source:



**Figure 1**  
**Regional/ Vicinity Location Map**

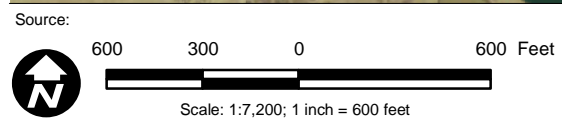
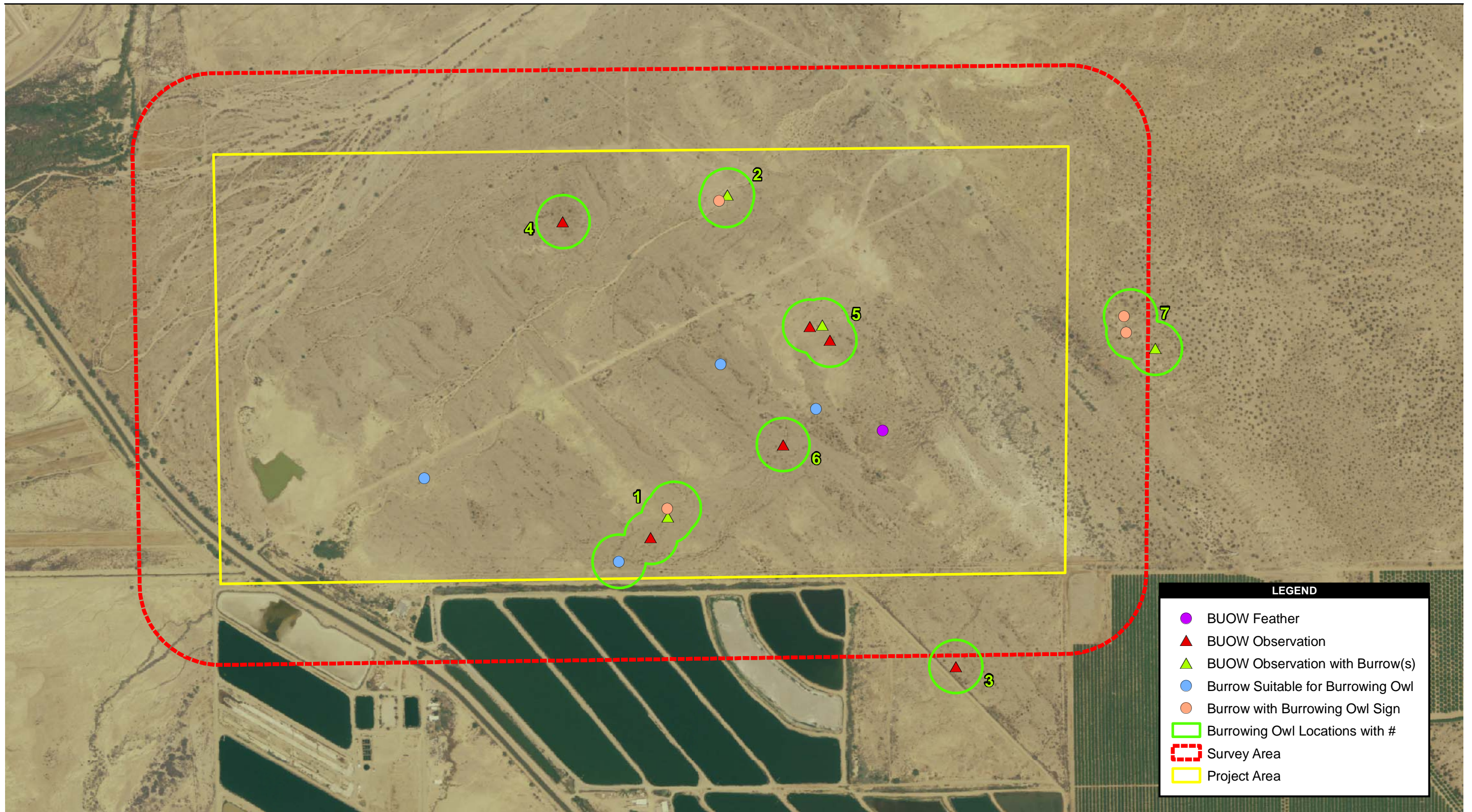


Source:  
500 250 0 500 Feet  
Scale: 1:6,000; 1 inch = 500 feet

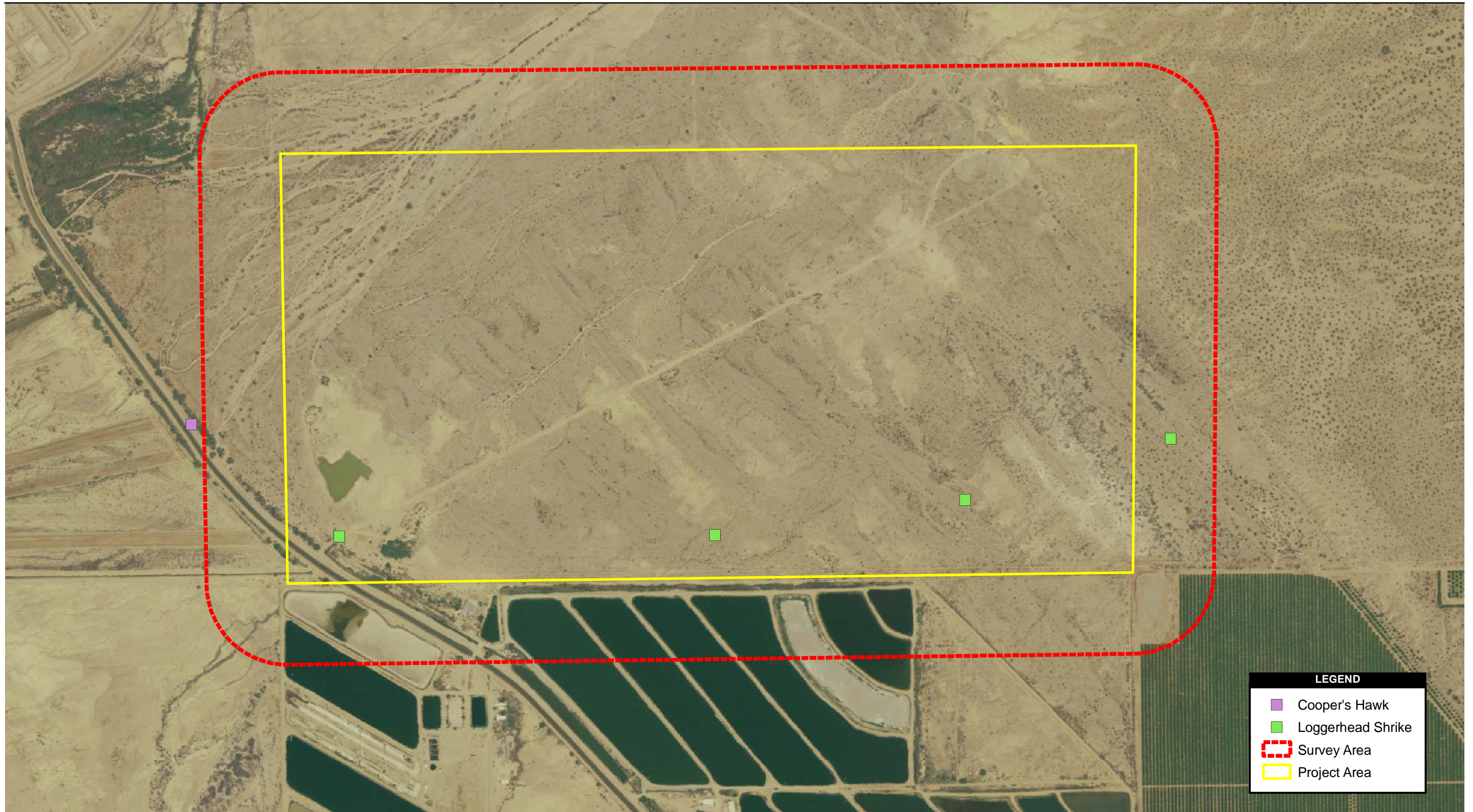
**LEGEND**  
Project Area  
Survey Area

**Figure 2**  
**Project Boundary and Survey Area 4-5**





**Figure 3**  
**Burrowing Owl Resources Area 4-5**

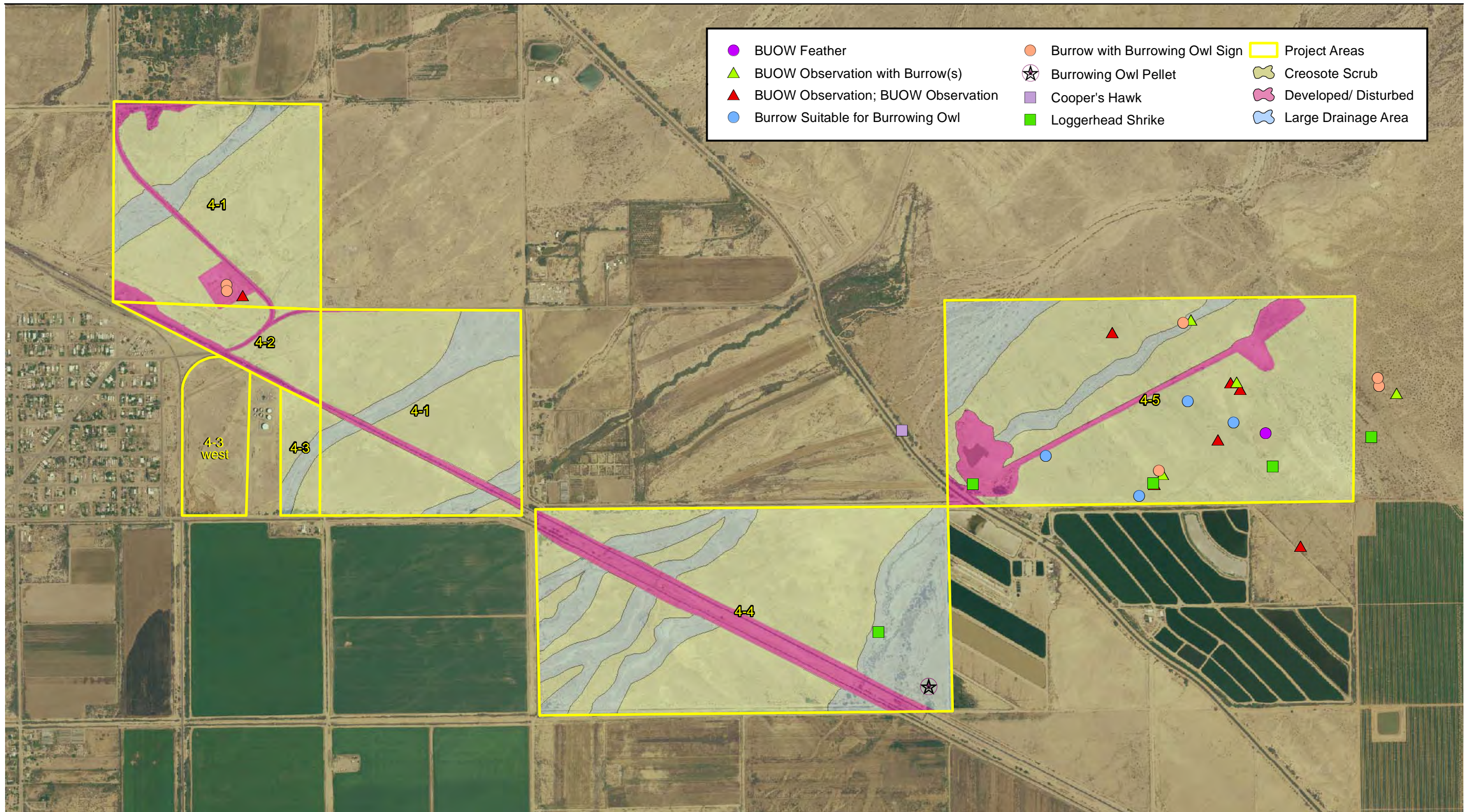


Source:  
 600 300 0 600 Feet  
 Scale: 1:7,200; 1 inch = 600 feet

**LEGEND**

- Cooper's Hawk
- Loggerhead Shrike
- Survey Area
- Project Area

**Figure 4**  
**Other Raptors and Special Status Species Area 4-5**



- |                                      |                                  |                        |
|--------------------------------------|----------------------------------|------------------------|
| ● BUOW Feather                       | ● Burrow with Burrowing Owl Sign | □ Project Areas        |
| ▲ BUOW Observation with Burrow(s)    | ★ Burrowing Owl Pellet           | ■ Creosote Scrub       |
| ▲ BUOW Observation; BUOW Observation | ■ Cooper's Hawk                  | ■ Developed/ Disturbed |
| ● Burrow Suitable for Burrowing Owl  | ■ Loggerhead Shrike              | ■ Large Drainage Area  |

Source: NAIP 2005  
 1,250 625 0 1,250 Feet  
 Scale: 1:15,000; 1 inch = 1,250 feet

**Figure 2**  
**Niland Solar Energy Project Overview**

**APPENDIX A**  
**FIELD DATA SHEETS**



FIELD JOURNAL

Job Name Niland Solar Job # 08020213.00  
 Observer S Dayman Add'l Persons Bryan Cariss  
 Date 8/12/08 Start Time 8:30AM End Time 12:30PM  
 Location Niland Solar 4-1 to 4-4  
 Habitat Description creosote scrub

Purpose of Visit CEQA checklist for parcels previously surveyed by another consultant  
 Start Weather: Temp 92°F Wind Sp/Dir From 5.4 to 8.0 mph %Clds 5 Pcp 0%

Describe Surrounding Land Uses and Discuss Wildlife Movement Corridors and Habitat Linkages.

Obs. No.	Time	Notes
PARCEL 4-4		- drainage observed on eastern side of property flowing from NE corner towards SE section of property, vegetation in drainage mainly dead & unidentifiable, live vegetation <del>the</del> was largely mesquite
		- provides roosting habitat for birds
		killdeer
		chiff swallow
		- 3 great blue herons
		- road
		- turkey vulture
		- lesser <del>kingfisher</del>
		- tamarisk
		- sidewinder
		- vegetation to west of drainage, very little vegetation
		- tamarisk at NW corner of parcel, road running along northern boundary of parcel, ponds (artificial to the east)
		BUOW pellet observed on site
		1" x 2 1/4" 4-4 BURPEL
		N 33.22 826°
		W 115.47638°
PARCEL 4-1 (south)		- two drainages, one @ SE corner, one through central portion, drainage @ SE corner connects to riparian veg to East. No rip. veg. in drainages
		v. sparse creosote scrub in upland areas
		- some tamarisk, verdin nest in tamarisk
		- riparian area (off site to west) full of arundo, tamarisk, palms
4-3		- similar upland veg as 4-1, drainage from 4-1 south flows across this parcel

Current Weather: Temp \_\_\_\_\_ Wind Sp/Dir From \_\_\_\_\_ %Clds \_\_\_\_\_ Pcp \_\_\_\_\_

FIELD JOURNAL (continued)

Job Name/No. Niland Solar 08020213-00 Observer S. Delpman Date 8/12/08

Obs. No.	Time	Notes
parcel	4-2	- BUOWS observed here on 8/13/08
BUOW7		- two adults, one on dyke, one on yellow poles
BU8 BU9		- 3 BUOW burrows - 3 BUOW burrows
		⊕ one additional BUOW directly to west
parcel	4-1	tamarisk ⊕ northern boundary, drainage from central portion of northern boundary towards the SE, splits into 3 drainages - sparse creosote scrub - white winged dove

Current Weather: Temp \_\_\_\_\_ Wind Sp/Dir From \_\_\_\_\_ %Clds \_\_\_\_\_ Pcp \_\_\_\_\_

Burrowing Owl (BW) Survey

Recorder: KHL  
 Project: Nolan Solar  
 GPS Unit: #2  
 START Time: 1720  
 END Time: 1954

Add'l Person: SJA & Brian  
 Survey Sxn: \_\_\_\_\_  
 Survey Type: BUD  
 Temp (F°): 108.0°F  
 Temp (F°): 86.0°F

Date: 8/12/08  
 Map #: \_\_\_\_\_  
 Survey 2 of \_\_\_\_\_  
 Wind/Dir: 55/85 % CC/Pcp: 10%/0  
 Wind/Dir: 6.0 % CC/Pcp: 10%/0

#1  
#2

Burrow Number	BW Presence	BW Sign Presence* (circle)	Observations (note Burrow Condition, or note BW-# activity)
BW4	—	W P T B S (Other)	too small 4 BUD, most likely 1 lat 2 burrows, animal track present
		W P T B S Other	
8/13/08		W P T B S Other	LEPH, HOPI, MODO, WUDO, COXA, TUUU, VERDIN, BUD, BTGN
		W P T B S Other	Zebra
92.8°F, 0.0/0.6 Wind		W P T B S Other	92.0°F - 5.8/6.9 wind
60% CC 0% P		W P T B S Other	70% CC / 0% P
ST 535		W P T B S Other	END 1824
		W P T B S Other	
BW 4		W P T B S (Other)	fly BUD seen, GPS at spot
		W P T B S Other	
BW 5		W P T B S Other	4 BUDs seen, possible burrow, 2 burrow entrances
		(W) P T B S Other	N 3 NW facing, interacting w/ immature COXA, unprovoked
		W P T B S Other	
BW 6		W P T B S (Other)	large mound burrow w/ (large bush, possible dog)
		W P T B S Other	
BW 7		W P T (B) S (Other)	sticks used to decorate 2 burrow entrances, 6 burrows total
		W P T B S Other	
		W P T B S Other	
BW 6		W P T B S (Other)	BW seen flying up from wash cover
		W P T B S Other	
<del>BW 7</del>		W P T B S (Other)	owl seen flying further up out of wash
		W P T B S Other	
<del>BW 8</del>		W P T B S (Other)	3rd owl seen flying out of wash
		W P T B S Other	
		W P T B S Other	
103.6°F 0.9/4.8 wind		W P T B S Other	96.0°F 2.1/4.5 wind
20% CC 0% P		W P T B S Other	20% CC 0% P
ST 9717		W P T B S Other	END 1950
BW 7		W P T B S (Other)	3 owls
CP1		W P T B S (Other)	coarse den
BW 8		(W) P T B S (Other)	burrow burrow → @ 4-1 site by burrows, sign present
BW 9		(W) P T B S Other	burrow burrow
BW 10		W P T B S Other	burrow burrow possible
BW 11		(W) P T B S Other	2 possible burrow burrow, feeder in one, other has owl
BW 12		W P (T) B S Other	1 burrow burrow active w/ tracks, feeder 3, unprovoked
BW 13		(W) P (T) B S Other	2 owls flew out of burrow
LOSH 2 / LOH 3		W P T B S Other	LOSH, LOH individual pt. →

3 owls  
one pt.

AM  
PM  
8/13/08 - COXA, BUD, CAQUAN, zebra, MODO, LEPA, Abert's Towhee?, dog, the butterfly?, alpha fox  
 8/13/08 - zebra, COXA, GTTAA, TUUU, BTGN, road runner, losh, ketrel, yellow throat





## Burrowing Owl (BW) Survey

Recorder: KIK  
 Project: N. Ind. Soler  
 GPS Unit: #2  
 START Time: 1602  
 END Time: 1932

Add'l Person: SDA & Brian  
 Survey Sxn: \_\_\_\_\_  
 Survey Type: BW  
 Temp (F°): 86.0°F  
 Temp (F°): 89.0°F

Date: 8/14/08  
 Map #: \_\_\_\_\_  
 Survey of \_\_\_\_\_  
 Wind/Dir: 1.6/3.2 % CC/Pcp: 20% - 0%  
 Wind/Dir: 1.8/2.2E % CC/Pcp: 40% - yes 61.0P

AM 5

AM 6

Burrow Number	BW Presence	BW Sign Presence <sup>1</sup> (circle)	Observations (note Burrow Condition, or note BW-# activity)
<u>BW109</u>		W P T B S Other	<u>one owl flew up from nest N direction, most likely out of burrow 8 pt. Flight back along wash post original burrow pt.</u>
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
<u>BW15</u>		W P T B S <u>Other</u>	<u>possible low burrow, mesite mammal</u>
<u>BW16</u>		W P T B S <u>Other</u>	<u>possible (2) low burrows, no sign, located in wash</u>
		W P T B S Other	
<u>970F</u> <u>2.1/3.5</u> wind		W P T B S Other	<u>30% CC 0% P</u>
<u>904</u> <u>1.1/1.8</u> wind		W P T B S Other	<u>45% CC 0% P</u>
<u>ST 1718</u>		W P T B S Other	<u>END 1934</u>
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
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		W P T B S Other	
		W P T B S Other	
		W P T B S Other	

AM 8/14/08 - cos #, yellow warbler, brewers blue bird, (CSW, mooo, tuu, BW), side-glitch  
zebra, tern, alpha looper  
 PM 8/14/08 osprey, BTJR



### Burrowing Owl (BW) Survey

Recorder: KHL  
 Project: Milvul Stan  
 GPS Unit: #2  
 START Time: 8:30  
 END Time: 1:00

Add'l Person: SDA / Brian  
 Survey Sxn: \_\_\_\_\_  
 Survey Type: \_\_\_\_\_  
 Temp (F°): 80°  
 Temp (F°): 80°

Date: 8/15/08  
 Map #: 2  
 Survey \_\_\_\_\_ of \_\_\_\_\_  
 Wind/Dir: 36/45 % CC/Pcp: 5% / 0.00  
 Wind/Dir: 61/1.6 % CC/Pcp: 3% / 0.00

Am (7)

Burrow Number	BW Presence	BW Sign Presence* (circle)	Observations (note Burrow Condition, or note BW-# activity)
BUCWO (BUW11)		W P T B S Other	5 owls seen in wash, flew NW, 2 active burrows
		W P T B S Other	
BUW11		W <u>P</u> T B S Other	3 burrows 2 owls flew N from wash, heard call
		W P T B S Other	
BU17		W P T B S Other	3 burrows w/ white wash located along sand pit road
		W <u>P</u> T <u>B</u> S Other	10 burrows, very active, saw 3 pellets, birds flying
		W P T B S Other	
BU18		W <u>P</u> T B S Other	1 active burrow N, up wash
		W P T B S Other	
COHA7		W P T B S Other	found in <del>terrible</del> immature
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
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		W P T B S Other	
		W P T B S Other	
		W P T B S Other	

8/15/08 - Alerts tower, BUO, 555R, TUNA, zebra, domestic dog, HDPI, COHA



Burrowing Owl (BW) Survey

Recorder: S. BRYON CARISS Add'l Person: \_\_\_\_\_ Date: 8-12 thru 8-15 2008  
 Project: Wiland Solar Survey Sxn: \_\_\_\_\_ Map #: \_\_\_\_\_  
 GPS Unit: \_\_\_\_\_ Survey Type: \_\_\_\_\_ Survey \_\_\_\_\_ of \_\_\_\_\_  
 START Time: \_\_\_\_\_ Temp (F°): \_\_\_\_\_ Wind/Dir: \_\_\_\_\_ % CC/Pcp: \_\_\_\_\_  
 END Time: \_\_\_\_\_ Temp (F°): \_\_\_\_\_ Wind/Dir: \_\_\_\_\_ % CC/Pcp: \_\_\_\_\_

Burrow Number	BW Presence	BW Sign Presence <sup>1</sup> (circle)	Observations (note Burrow Condition, or note BW-# activity)
		W P T B S Other	Double-crested Cormorant
		W P T B S Other	Phalacrocorax auritus
		W P T B S Other	Snowy Egret
		W P T B S Other	Egretta thula
		W P T B S Other	Turkey Vulture
		W P T B S Other	Cathartes aura
		W P T B S Other	Coopers Hawk
		W P T B S Other	Accipiter cooperii
		W P T B S Other	Osprey
		W P T B S Other	Pandion haliaetus
		W P T B S Other	American Kestrel
		W P T B S Other	Falco sparverius
		W P T B S Other	California Quail
		W P T B S Other	Callipepla californica
		W P T B S Other	Killdeer
		W P T B S Other	Charadrius vociferus
		W P T B S Other	Caspian Tern
		W P T B S Other	Sterna caspia
		W P T B S Other	White-winged Dove
		W P T B S Other	Zenaidura asiatica
		W P T B S Other	Mourning Dove
		W P T B S Other	Zenaidura macroura
		W P T B S Other	Eurasian Collared-Dove
		W P T B S Other	Streptopelia decaocto
		W P T B S Other	Greater Roadrunner
		W P T B S Other	Geococcyx californianus
		W P T B S Other	Burrowing Owl
		W P T B S Other	Athene cunicularia
		W P T B S Other	Lesser Nighthawk
		W P T B S Other	Chordeiles acutipennis
		W P T B S Other	Anna's Hummingbird
		W P T B S Other	Calyte ana
		W P T B S Other	Ladder-backed Woodpecker
		W P T B S Other	Picoides scalaris
		W P T B S Other	Western Kingbird
		W P T B S Other	Tyrannus verticalis
		W P T B S Other	Loggerhead Shrike
		W P T B S Other	Lanius ludovicianus
		W P T B S Other	

Comments



Burrowing Owl (BW) Survey

Recorder: S. Dayman  
 Project: N. Island  
 GPS Unit: #3 TUFFY  
 START Time: 6:13 AM  
 END Time: 8:30 AM

Add'l Person: Bryon Cariss  
 Survey Sxn: \_\_\_\_\_  
 Survey Type: BUOW FS  
 Temp (F°): 83°F  
 Temp (F°): 92°F

Date: 8/12/08  
 Map #: \_\_\_\_\_  
 S.I.E Survey \_\_\_\_\_ of \_\_\_\_\_  
 Wind/Dir: 32 to 4.9 mph % CC/Pcp: 15% / 0%  
 Wind/Dir: 5.4 to 8.0 mph % CC/Pcp: 5% / 0%  
 from s

Burrow Number	BW Presence	BW Sign Presence* (circle)	Observations (note Burrow Condition, or note BW-# activity)
	BUOW1	W P T B S Other	Adult, flew to NW, stopped @ X, flew further to NW
		W P T B S Other	kept looking to SE
	BUOW2	W P T B S Other	BUOW, possibly juvenile, flew to NE, likely part
		W P T B S Other	of same pair/family
	FEATHER1	W P T B S Other	feather w picture
	BO1	W P T (B) S Other	burrow, small ~ 8x10" possible use by BUOW
		W P T B S Other	but unlikely
	LOSH1	W P T B S Other	pair of loghead shrieked on bush, Tetodynina puka?
		W P T B S Other	(pic of burrow), possible nesting behavior
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
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		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
Comments			



Burrowing Owl (BW) Survey - Other Species Observations

Recorder: \_\_\_\_\_  
 Project: Harper Lake

Add'l Person: \_\_\_\_\_  
 Survey Sxn: \_\_\_\_\_

Date: \_\_\_\_\_  
 Map #: \_\_\_\_\_

Species Abb.	Observations
	downweed
	cheeseweed
	cross-st. bush
	ammi's chie
	match. egg
	buckwheat
	turkey vulture
	loggerhead shrike - (Pt 201)
	- Burrow → adult ⊕ possible juvenile
	Coyote
	tamarisk
	Krats
	cliff willow
	great blue heron
	mesquite - possibly honey mesquite
	white winged dove
	mourning dove
	ringed dove (white)
	verdin
	CA quail
	black tailed jackrabbit
	desert cottontail

Comments



















Recorder: S. BRYON CARISS Add'l Person: \_\_\_\_\_ Date: Aug 16 2008  
 Project: Niland Salar Survey Sxn: \_\_\_\_\_ Map #: \_\_\_\_\_  
 GPS Unit: Garmin #2 Survey Type: BUOW FS Survey \_\_\_\_\_ of \_\_\_\_\_  
 START Time: 5:40 Temp (F°): 86°F Wind/Dir: 5-10 mph SE % CC/Pop: 0% / 0  
 END Time: 10:05 Temp (F°): 95°F Wind/Dir: 5-10 mph SE % CC/Pop: 0% / 0

Burrow Number	BW Presence	BW Sign Presence <sup>1</sup> (circle)	Observations (note Burrow Condition, or note BW-# activity)
BUOW11	Yes	W P T B S Other	Began by observing BUOW11. At my cautious approach, a single owl flew from BUOW11 to BU18 paused for a moment and flew off. As I moved to BUOW5 to confirm presence there also I heard 2 separate owls chatter from that location so I returned to BUOW11. After an observation from 6:14 to 6:55A and an approach no other owls were observed at BUOW11, BU17 and BU18. Waypoint ODG is a test
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
BUOW8	Yes	W P T B S Other	On approaching BUOW8 a single owl was observed ~60m from burrow flying away from it while I was still 226m from BUOW8. I remained there and from my position could also observe BU7 where I saw no activity. I saw no further activity near BUOW8 until I approached and 2 owls were seen flying away from within 10m of the burrow entrance at 8:05A. The bird list needs to be corrected from California Quail to Gambel's Quail <i>Callipepla gambelii</i> . Two new birds for the list are Horned Lark <i>Eremophila alpestris</i> and Black Phoebe <i>Sayornis nigricans</i> .
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
BUW10	Yes	W P T B S Other	On approaching BUW10 two owls were seen flying from an area within 20m of the burrow while I was still 333m from burrow. They both perched near the top of Larrea shrubs and one remained there while the other dropped to the ground as I approached obliquely to within 253m of burrow at 15:41 down. Over an hour later the owls were still there and no other owls were observed. More birds for the list are Lesser Yellowlegs <i>Tringa melanoleuca</i> and White-faced Ibis <i>Plegadis chini</i>
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	

Comments

<sup>1</sup>BW Sign = W-Whitewash, P-Pellets, T-BW Tracks, B-Bones (from degraded pellets), S-Slicks



## **APPENDIX B**

### **WILDLIFE SPECIES DETECTED DURING BURROWING OWL SURVEYS**



## Wildlife Species Detected during Burrowing Owl Surveys

Scientific Names	Common Names
<b>Birds</b>	
Order Caprimulgiformes	Nightjars, Pootoos, Frogmouths, etc.
Family Caprimulgidae	
<i>Chordeiles acutipennis</i>	lesser nighthawk
Order Charadriiformes	
Family Charadriidae	
<i>Charadrius vociferus</i>	killdeer
Family Scolopacidae	
<i>Tringa flavipes</i>	lesser yellowlegs
Family Sternidae	
<i>Sterna caspia</i>	Caspian tern
Order Ciconiiformes	Herons, Egrets, Storks, etc.
Family Ardeidae	
<i>Ardea herodias</i>	great blue heron
<i>Egretta thula</i>	snowy egret
Family Cathartidae	
<i>Cathartes aura</i>	turkey vulture
Family Threskiornithidae	
<i>Plegadis chihi</i>	white-faced ibis
Order Columbiformes	Pigeons, Doves, Solitaires and Dodos
Family Columbidae	
<i>Streptopelia decaocto</i>	Eurasian collared-dove
<i>Zenaida asiatica</i>	white-winged dove
<i>Zenaida macroura</i>	mourning dove
Order Cuculiformes	
Family Cuculidae	
<i>Geococcyx californianus</i>	greater roadrunner
Order Falconiformes	Diurnal Birds of Prey
Family Falconidae	
<i>Accipiter cooperii</i>	Cooper's hawk*
<i>Falco sparverius</i>	American kestrel
<i>Pandion haliaetus</i>	osprey
Order Galliformes	
Family Odontophoridae	
<i>Callipepla gambelii</i>	Gambel's quail
Order Passeriformes	Perching Birds
Family Alaudidae	
<i>Eremophila alpestris</i>	horned lark
Family Corvidae	
<i>Corvus corax</i>	common raven

Scientific Names	Common Names
<b>Birds (continued)</b>	
Family Emberizidae	
<i>Euphagus cyanocephalus</i>	Brewer's blackbird
<i>Pipilo aberti</i>	Abert's towhee
Family Fringillidae	
<i>Carpodacus mexicanus</i>	house finch
Family Hirundinidae	
<i>Petrochelidon pyrrhonota</i>	cliff swallow
<i>Tachycineta bicolor</i>	tree swallow
Family Icteridae	
<i>Icterus spp.</i>	oriole
<i>Quiscalus mexicanus</i>	great-tailed grackle
Family Laniidae	
<i>Lanius ludovicianus</i>	loggerhead shrike*
Family Parulidae	
<i>Dendroica petechia</i>	yellow warbler
Family Remizidae	
<i>Auriparus flaviceps</i>	verdin
Family Sylviidae	
<i>Polioptila melanura</i>	black-tailed gnatcatcher
Family Tyrannidae	
<i>Sayornis nigricans</i>	black phoebe
<i>Tyrannus verticalis</i>	western kingbird
Order Pelecaniformes	
Family Phalacrocoracidae	
<i>Phalacrocorax auritus</i>	double-crested cormorant
Order Piciformes	
Family Picidae	
<i>Picoides scalaris</i>	ladder-backed woodpecker
Order Strigiformes	
Family Strigidae	
<i>Athene cunicularia</i>	burrowing owl*
Order Trochiliformes	
Family Trochilidae	
<i>Calypte anna</i>	Anna's hummingbird

<b>Mammals</b>	
Order Carnivora	
Family Canidae	Flesh-eaters
<i>Canis latrans</i>	coyote
Order Lagomorpha	Rabbits, Hares and Pikas
Family Leporidae	
<i>Sylvilagus audubonii</i>	desert cottontail
<i>Lepus californicus</i>	black-tailed jackrabbit
Order Rodentia	Gnawing Mammals
Family Heteromyidae	
<i>Dipodomys spp.</i>	kangaroo rat
<b>Reptiles</b>	
Order Squamata	Lizards and Snakes
Family Crotaphytidae	
<i>Gambelia wislizenii</i>	long-nosed leopard lizard
Family Phrysonomatidae	
<i>Callisaurus draconoides</i>	zebra-tailed lizard
<i>Uta stansburiana</i>	side-blotched lizard
Family Teiidae	
<i>Aspidoscelis tigris</i>	western whiptail

\*CDFG Species of Special Concern

\*\*Listed under Federal or California State Endangered Species Act



**Appendix C4**

**Biological Resource Reconnaissance Report**

**EDAW, Inc.**

**October 2008**

EDAW Inc  
1420 Kettner Boulevard, Suite 500, San Diego, California 92101  
T 619.233.1454 F 619.233.0952 www.edaw.com

October 18, 2008

Erica Blyther  
Environmental Specialist  
Los Angeles Department of Water and Power  
Water Engineering and Technical Services  
111 North Hope Street  
Los Angeles, CA 90012

**Subject: Report Summarizing Results of the Proposed Niland Solar Energy Project Biological Resources Reconnaissance Report**

Dear Ms. Blyther:

This letter summarizes results of focused biological reconnaissance level surveys conducted by EDAW, Inc. (EDAW) within the proposed Project Niland Solar Energy Project site and surrounding area. EDAW is a consultant on this study being conducted for the Los Angeles Department of Water and Power.

**Project Description**

The proposed solar facilities would be located on approximately 970 acres of LADWP-owned land adjacent to and east of the community of Niland, California in Imperial County (see Figure 1). LADWP and its development partner, OptiSolar Inc., propose to construct a solar power project up to 68 MW using ground-mounted photovoltaic (PV) arrays. The PV panels would cover about 40 to 50 percent of the land area. The project's basic unit will be a 12 module (½ by one meter photovoltaic element) panel. These panels will be mounted on concrete ballast and organized into 500 kilowatt blocks covering about 5 acres each. Due to the project's multi-parcel configuration, the site will also employ smaller 250 kilowatt (kW) and 100 KW blocks. The project will employ padmount transformers which will step the power from each block to 34.5 kV (thousand volts) and this power will then be transmitted to the 161 kV substation for interconnection with the local grid. It is anticipated that construction would begin within two years and that the project would be completed by 2011.

**Project Area**

The proposed solar project is located near the community of Niland in the Imperial Valley approximately 4.5 miles east of the southeastern shoreline of the Salton Sea. The proposed solar project is located in an area characterized by a mix of rural residential, agriculture, and open desert uses. The town of Niland is located adjacent to and west of project sites. The community and neighborhood residential and commercial uses within Niland are well defined and border the project site parcels south and west of the site. Agricultural field crops occur on several parcels in the vicinity of the project site. A major rail line bisects several of the project parcels. A 161 kV transmission line connects to a substation on the north east side of Area 4-1 (southeast).

The 68 MW PV modules will be constructed and placed on LADWP-owned land in areas 4-1, 4-2, 4-3, 4-3 west, 4-4, and 4-5, known as the Niland Group near the Salton Sea in Imperial County and illustrated in Figure 2 Niland Solar Energy Project Sites Overview. Photovoltaic allows for direct conversion of light (photo) into electricity (voltaic).

A general biological reconnaissance survey was conducted for Areas 4-1 through 4-5. The 23-acre site (Area 4-3 west) was added to the project site (Figure 2) at a later date, and therefore, was not surveyed but is assumed here to be similar to the adjacent areas that were surveyed and would therefore have similar mitigation requirements.

In Areas 4-1, 4-2, 4-3 and 4-4 California Burrowing Owl Consortium (CBOC) preliminary Phase II surveys for burrowing owl (BUOW) were conducted in May 2007 and subsequent Phase II and Phase III surveys were conducted in September 2007 by Aspen. Monitoring activities continued from October 29, 2007 to December 7, 2007. Several owls were detected on Areas 4-1 and 4-4 during these surveys. Active burrowing owl burrows were observed on all sites in the 2007 surveys conducted by Aspen. The total number of owls present in these areas as well as in Area 4-5 will be determined in the burrowing owl preconstruction surveys conducted 30 days prior to grading.

Since no burrowing owl surveys were conducted in Area 4-5 by Aspen Environmental, a protocol survey for western burrowing owl was conducted for in this area in August 2008 by EDAW and the results are included here. No protocol level surveys were conducted by EDAW biologists for Areas 4-1 through 4-4 and in the additional area. A pair of burrowing owls was observed during reconnaissance level biological surveys on Area 4-2.

The purpose of the reconnaissance level surveys was to evaluate biological resources for the Environmental Impact Assessment and the results of these surveys are detailed here (EDAW, 2008). Suggested mitigations for biological resources described here include a jurisdictional determination for on-site drainages and mitigation for burrowing owls as detailed in this report and in the burrowing owl letter report (EDAW, 2008).

### **Survey Methodology**

EDAW biologists Shelly Dayman and Katie Hall with assistance from subcontractor Bryon Cariss conducted presence/absence survey for burrowing owls between August 12<sup>th</sup> and August 16<sup>th</sup>, 2008 as well as general biological reconnaissance surveys. Shelly Dayman has over 7 years of experience conducting biological surveys; vegetation mapping; construction monitoring; and wildlife surveys for desert tortoise, western burrowing owl, and small mammals in the southwestern United States. Katie Hall has over 7 years of multi-disciplinary experience; serving as environmental scientist, and ecologist, on various projects related to ecological assessment, and focused desert tortoise and avian protocol surveys. Bryon Cariss is a wildlife biologist with several years experience in California who specializes in avian surveys.

In Area 4-5 a focused burrowing owl survey was conducted. Burrowing owl surveys were performed according to the protocol established by the CBOC (1993) and accepted by the California Department of Fish and Game (CDFG). A burrow survey was conducted with 100% visual coverage of the entire

site including a 500-foot buffer zone surrounding Area 4-5. The burrow survey was conducted during the dawn and dusk hours to increase the likelihood of observing owls while conducting the burrow survey. All burrows that were suitable for burrowing owls were mapped, as was all potential burrowing owl sign and all sighting of burrowing owls. All burrows with potential burrowing owl sign (white-wash, pellets, feathers, bones) were mapped using GPS units.

In Areas 4-1 through 4-4, a general biological reconnaissance survey was conducted. General habitat notes, floral and faunal observations and rough maps were prepared. Drainages were noted as was vegetation within and adjacent to drainages. The additional area (shown in Figure 2) was not surveyed, but is assumed to have similar habitat and biological resources as adjacent areas that were surveyed.

## **Results**

### **Habitat**

Vegetation on the project site consisted of sparse Mojave creosote bush scrub habitat (*Larrea tridentate*), honey mesquite (*Prosopis glandulosa*), salt bush (*Atriplex* spp.), salt cedar (*Tamarix ramosissima*), and perennial shrubs, such as cheesebush (*Ambrosia [=Hymenoclea] salsola*). The off-site riparian area consisted mainly of non-native invasive species such as giant reed (*Arundo donax*) and salt cedar, with some palms. Patches of nonnative grasses and nonvegetated areas, including a dry desert wash occur within Area 4-5.

### **Area 4-1 Site Description**

Area 4-1 consists of two areas. One to the north of Area 4-2, called 4-1 (north) and one to the east of 4-2, called 4-1 (south). Wilkins Road bisects 4-1 (north) and Beal Road is on the northern boundary of 4-1 (south). The land is generally flat and vacant in both areas.

Three burrowing owls were observed on Area 4-1 (north), one was observed on the dyke, one on the yellow poles adjacent to a gas meter and one directly to the west of these individuals. Several large burrows were observed associated with the burrowing owl observations. As many as six adult owls with two sub-adults were observed here during surveys conducted by Aspen (October 2007).

Vegetation on Area 4-1 (north) consisted of sparse creosote bush scrub. A drainage exists in the central portion of the northern boundary of the site and flows toward the southeast. This drainage splits into three drainages. Riparian vegetation was not observed in association with the drainages on-site. On the northern boundary of the 4-1 (north), some non-native invasive salt cedar (*Tamarix ramosissima*) trees are present.

On Parcel 4-1 (south) two drainages were observed, one at the southeastern corner and one through the central portion of the site. One adult owl was observed on this parcel during two separate surveys conducted by Aspen Environmental (October 2007, June 2007). The drainage at the southeastern corner connects to riparian vegetation (off-site) to the east, but no riparian vegetation was observed on-site. The off-site riparian area consisted mainly of non-native invasive species such as *Arundo donax*

and salt cedar, with some palms. Very sparse Mojave creosote scrub was observed in the upland areas on-site with some salt cedar.

#### **Area 4-2 Site Description**

Main Street of Niland, California enters area 4-2, the road then bisects into Beal Road and Wilkins Road. Wilkins Road extends into 4-1 north and Beal Road borders the northern portion of 4-1 south. This area is vacant and generally flat and is a small area. Sparse creosote scrub habitat was observed within this area. Two burrowing owls were observed just north of Area 4-2 in Area 4-1 (north). No owls were observed on this parcel during surveys conducted by Aspen Environmental (2007).

#### **Area 4-3 Site Description**

Area 4-3 is a small area to the west of Area 4-1 (south) and just south of Area 4-2. It is a small area. Habitat observed on this parcel was sparse Mojave creosote scrub and was similar to that observed on Area 4-1 (south). A drainage bisects this area (connects to the drainage on 4-1 south). Riparian vegetation was not observed within the drainage. No owls were observed on this parcel during surveys conducted by Aspen Environmental (2007).

The 23-acre land (Area 4-3 west) was added to the project site at a later date and is shown in Figure 2. This area was not surveyed, but is assumed to have similar habitat and therefore similar biological resources to the adjacent areas that were surveyed. Habitat here is likely sparse Mojave creosote scrub, with suitable habitat for burrowing owl and possible drainages.

#### **Area 4-4 Site Description**

This large area is to the southwest of Area 4-5 and is separated from Area 4-5 by the East Highline Canal. A drainage exists on the eastern side of the property and flows from the northeast corner towards the southeastern portion of the property. The vegetation observed in the drainage was mainly dead and unidentifiable; the live vegetation observed here was honey mesquite (*Prosopis glanulosa*). The vegetation in the drainage provides roosting habitat for birds.

To the west of the drainage, vegetation was extremely sparse and consisted of very few creosote bushes (*Larrea tridentata*). Salt cedar (*Tamarix ramosissima*) was observed at the northwestern corner of Area 4-4.

A burrowing owl pellet was observed on-site. It is likely that burrowing owls are present here. During surveys conducted by Aspen Environmental, ten adult owls and one sub-adult with ten active burrows were observed on this property (October, 2007).

#### **Area 4-5 Site Description**

Area 4-5 is located to the north of an existing filtration plant close to Area 4-4. Weist Road intersects the southwest corner of the area. The land is vacant. Patches of nonnative grasses and nonvegetated areas within the project site, including a dry desert wash, occur to the east of SR-14. The East Highline

Canal is on the western side of the property and intersects with the southwestern corner of the property. Further to the north and east of the site is the Coachella Canal.

Topography of the project area is generally flat, with elevations ranging from approximately 50 feet below sea level to 50 feet above sea level. There are some hilly areas in the northeastern corner of the property. Two old gravel pits occur on site, one near the southwestern corner of the property, one near the northeastern corner. The gravel pit on the southwestern corner exhibits evidence of ponding during rainfall events. Several drainages occur on-site and a jurisdictional determination is recommended.

Most on-site habitat would be classified as creosote scrub, with some areas dominated by saltbush (*Atriplex* spp.). The vegetation on-site is very sparse except in areas with invasive salt cedar (*Tamarix ramosissima*) (near the southwestern portion of the property in the vicinity of the old gravel pit). A dirt road traverses the property from the southwestern edge to the northeastern corner. Mojave creosote bush (*Larrea tridentata*) scrub with scattered occurrences of perennial shrubs that include cheesebush (*Ambrosia [=Hymenoclea] salsola*), occurs within majority of the project area.

### **Burrowing Owls**

Several owls were detected on Areas 4-1 and 4-4 during the surveys conducted by Aspen in 2007 and as many as ten adult owls and one sub-adult owl was observed here (Aspen, October 2007 report). Active burrowing owl burrows were observed on all sites in the 2007 surveys conducted by Aspen (Aspen, 2008).

Burrowing owls were observed on-site during the focused surveys of Area 4-5 by EDAW in 2008. Four areas were observed on-site with burrowing owls associated with active burrows were observed in this area and within the buffer zone. A pair of burrowing owls was observed on Area 4-1 during the CEQA evaluation of this site.

Copies of field data sheets for the survey conducted by EDAW in 2008 are provided in Appendix A. In Area 4-5, a maximum of 17 burrowing owls (range of 0 to 5 per survey) were detected in the project area, 15 of which were within the project boundary. A total of 13 burrows with burrowing owls sign were identified within the project boundary and 500-foot buffer during surveys. Eight burrows with recent burrowing owl sign were detected within the project boundary. Three burrows with burrowing owl sign were detected in Area 4-4 although a burrow survey of this area was not conducted in 2008 by EDAW biologists.

### **Sensitive Habitat (Riparian Habitat) and/or Wetlands**

Several drainages, some with non-native riparian species (tamarisk) were observed throughout the site. These drainages would be modified to control flows with the proposed project and would have potential to cause significant adverse impacts. The vegetation in the drainage within Area 4-4 provides roosting habitat for birds. The East Highline Canal is on the western side of Area 4-5 and intersects with the southwestern corner of Area 4-5. Further to the north and east of the site is the Coachella Canal. Consultation with the Corps of Engineers is necessary to determine whether federal jurisdiction exists. Federal jurisdiction would exist if the aquatic features in site drainages are determined to be

hydrologically connected to the canal. If the features are determined hydrologically isolated, then no federal jurisdiction would exist.

### **Sensitive Species**

Two other sensitive species were observed during the focused burrowing owl survey, loggerhead shrike (*Lanius ludovicianus*; CDFG Species of Special Concern) and Cooper's hawk (*Accipiter cooperii*; CDFG Species of Special Concern). Breeding habitat for Cooper's hawk occurs off-site and impacts to these areas for the project are not anticipated. The observed loggerhead shrikes are likely breeding on-site in shrubs and areas of dense cover. The mitigation for impacts to loggerhead shrikes on-site will be mitigated by avoidance of active nests during the breeding season through biological monitoring and avoidance of these nests if construction is to occur during the breeding season. All other wildlife species detected during burrowing owl surveys are listed in Appendix B.

### **Wildlife Corridors and/or Native Wildlife Nursery/Breeding Sites**

The project site is not part of a wildlife corridor. Five pairs of burrowing owls were observed by EDAW biologists within the project site (Areas 4-5 and 4-1) during the 2008 surveys and several other pairs were observed on Areas 4-1 and 4-4 by Aspen Environmental Group in 2007.

### **Proposed Mitigation**

#### **Burrowing Owl**

The total number of pairs of burrowing owls present on the property is unknown since surveys were conducted by Aspen Environmental in 2007 and the population size fluctuates over time. Within Area 4-5, three colonies of burrowing owls were observed on-site and one colony within the 500-foot buffer. Colony sizes were observed to be between three to five owls, likely each colony consisted of a breeding pair with associated juveniles. On Area 4-2 two burrowing owls were observed.

**The following mitigations for on-site burrowing owls are suggested:**

#### **Passive Relocation and Off-site Mitigation**

Thirty days prior to construction, a burrowing owl survey will be conducted. All burrowing owls on the project site will be passively relocated off the project site. Artificial burrows will be installed off-site to allow for the passively relocated owls to have burrows to be relocated to. These artificial burrows will be maintained for a period of five years. For each pair of burrowing owls relocated off the project site, up to 19.5 acres of off-site habitat suitable for burrowing owl will be acquired and conserved (in perpetuity), per the CDFG and CBOC mitigation guidance of the following ratios: replacement of occupied habitat with occupied habitat of 1.5 times 6.5 (9.75) acres per pair or single bird; replacement of occupied habitat with habitat contiguous to currently occupied habitat of 2 times 6.5 (13.0) acres per pair or single bird; or replacement of occupied habitat with suitable unoccupied habitat of 3 times

6.5 (19.5) acres per pair or single bird (CDFG 1995, CBOC 1993). All construction activity will occur outside the breeding season and a biological monitor will be present.

Passive relocation is defined in the CBOC Burrowing Owl Survey Protocol and Mitigation Guidelines and is defined as the exclusion of owls from impact zone burrows using one-way trap doors and providing natural or artificial burrows at a 1:1 or higher ratio that are beyond 50m from the impact zone and that are within or contiguous with a minimum of 6.5 acres of foraging habitat for each pair of relocated burrowing owls (if on-site mitigation is possible). If on-site mitigation is not possible then owls will be relocated off-site using the above methods, but 6.5 acres of habitat will not be maintained on-site in perpetuity, but off-site mitigation lands will be acquired at the above ratios.

The following mitigation measures will be incorporated to reduce impacts to burrowing owls to less than significant:

- BR-1** No disturbance within 50 meters (approximately 160 feet) of owls at occupied burrows during the non-breeding season of September 1 through January 31 or within 75 meters (approximately 250 feet) during the breeding season of February 1 through August 31 shall occur during construction. Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- BR-2** Vegetation removal shall be limited during construction to maintain a minimum of 6.5-acre foraging habitat for occupied on-site burrows.
- BR-3** After the preconstruction survey(s) a burrowing owl mitigation plan shall be prepared by a qualified biologist describing possible site specific shelter-in-place measures, workers training, and/or other measures which may be implemented in addition to, or in lieu of, any of the measures described here with the approval of the CDFG.
- BR-4** Preconstruction surveys of the proposed areas of ground disturbance within the project site and a 150-meter (approximately 500-foot) buffer zone around the proposed areas of ground disturbance shall be conducted within the 30 days prior to construction of any area of ground disturbance to determine the presence of existing active burrows and owls. If ground disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the proposed areas of ground disturbance shall be resurveyed. Any owls observed during this survey shall receive the same compensation as identified in BR-7, below.
- BR-5** Biological monitoring shall occur during construction activity.



**Passive Relocation and Off-site Mitigation**

- BR-6** Destruction of any occupied burrow shall only be undertaken pursuant to a management plan approved by the CDFG. When destruction of occupied burrows is unavoidable, existing unsuitable burrows shall be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site
- BR-7** A burrowing owl survey shall be prepared prior to the issuance of the initial building permit that requires acquisition and preservation of 6.5 acres of suitable habitat for each burrowing owl pair or solitary individual observed to offset the loss of foraging and burrow habitat on the project site (calculated on a 100-meter {approximately 300-foot} foraging radius around the burrow). To the extent practical, the protected lands shall be adjacent to occupied burrowing owl habitat and at a location acceptable to the CDFG.
- BR-8** To the extent possible, construction activities shall occur outside the breeding season. A biological monitor will be present during all construction related activities. If construction does occur during the breeding season, no disturbance shall occur within 75 meters of active nests and all active burrowing owl nests shall be monitored to ensure that construction activities do not increase the likelihood of nest abandonment.

**Loggerhead Shrike**

Impacts to loggerhead shrike will be mitigated by a nesting bird survey prior to construction (if construction occurs during the nesting season); avoidance of any active nests until the young have fledged. This will be achieved through biological monitoring of the site during the nesting season.

**Sensitive Habitat (Riparian Habitat) and/or Wetlands**

Relative to California Department of Fish Game jurisdiction, it is anticipated that the major unnamed drainages that traverse the property are subject to state jurisdiction and may require a Streambed Alteration Agreement.

In order to mitigate any adverse impacts on site drainages, consultation with the agencies will be conducted and appropriate permits obtained as required by law. The following measures are proposed:

- BR-10** Prior to construction activities within the drainages on-site, the U.S. Army Corps of Engineers will be consulted for jurisdictional determination. Should a permit be required, the Applicant will work with U.S. Army Corps of Engineers to establish permit requirements and compensation.
- BR-11** Prior to construction the Applicant will consult with and file for any required Streambed Alteration Agreement under Section 1602 of the California Fish and Game Code.

- BR-12** A detailed erosion control plan shall be approved by the Department of Public Works.
- BR-13** A Storm Water Pollution Control Plan shall be prepared and implemented in accordance with state and local regulations.

### **Wildlife Corridors and/or Native Wildlife Nursery/Breeding Sites**

The project site is not part of a wildlife corridor. Implementation of the following Mitigation Measures BR-9, BR-14 through BR-18 would reduce the impacts to the five pairs of burrowing owls were observed on-site by EDAW biologists (Areas 4-5 and 4-1) during the 2008 surveys (see Appendix C3, Burrowing Owl Survey Letter Report) and several other pairs were observed on Areas 4-1 and 4-4 by Aspen Environmental Group in 2007 to less than significant.

#### **On-site Avoidance**

- BR-14** Biological monitoring shall occur during the construction phase of the project to ensure that disturbance of active burrowing owl burrows is avoided.
- BR-15** Construction activities shall be limited to outside the breeding season for burrowing owls (construction activities to occur between September 1<sup>st</sup> and January 31<sup>st</sup>) whenever possible. If this is not possible, avoidance of active nests and adjacent foraging areas will occur within 75 meters of active burrows. Biological monitoring will be conducted during all construction activities to ensure that nest abandonment does not occur due to construction related activities.
- BR-16** Structures elevated above the height of the solar panels shall be designed and constructed to discourage perching by raptor bird species.
- BR-17** The removal of native vegetation shall be limited.

#### **Off-site Mitigation**

- BR-18** See BR-9.

During the June 2007 Burrowing Owl Survey, conducted by Aspen, an active bat colony (species unknown) was identified at the rail road crossings on the northern edge of Area 4-1 south parcel. The following mitigation measure is proposed to reduce the impact to less than significant:

Erica Blyther  
Los Angeles Department of Water and Power  
October 18, 2008  
Page 10

## **Bat Colonies**

**BR-19** If construction is to occur from the beginning of April until the end of August (when dependent young bats are vulnerable to disturbances) then two weeks prior to construction activities, a qualified biologist will perform preconstruction surveys of bridge structures that are directly and indirectly impacted by the project for breeding bat species. If found, breeding bat colonies will be avoided from April until the end of August.

If you have any comments or questions regarding this letter report, please feel free to contact me or Lyndon Quon at (619) 233-1454.

Yours sincerely,

Shelly Dayman  
Wildlife Biologist

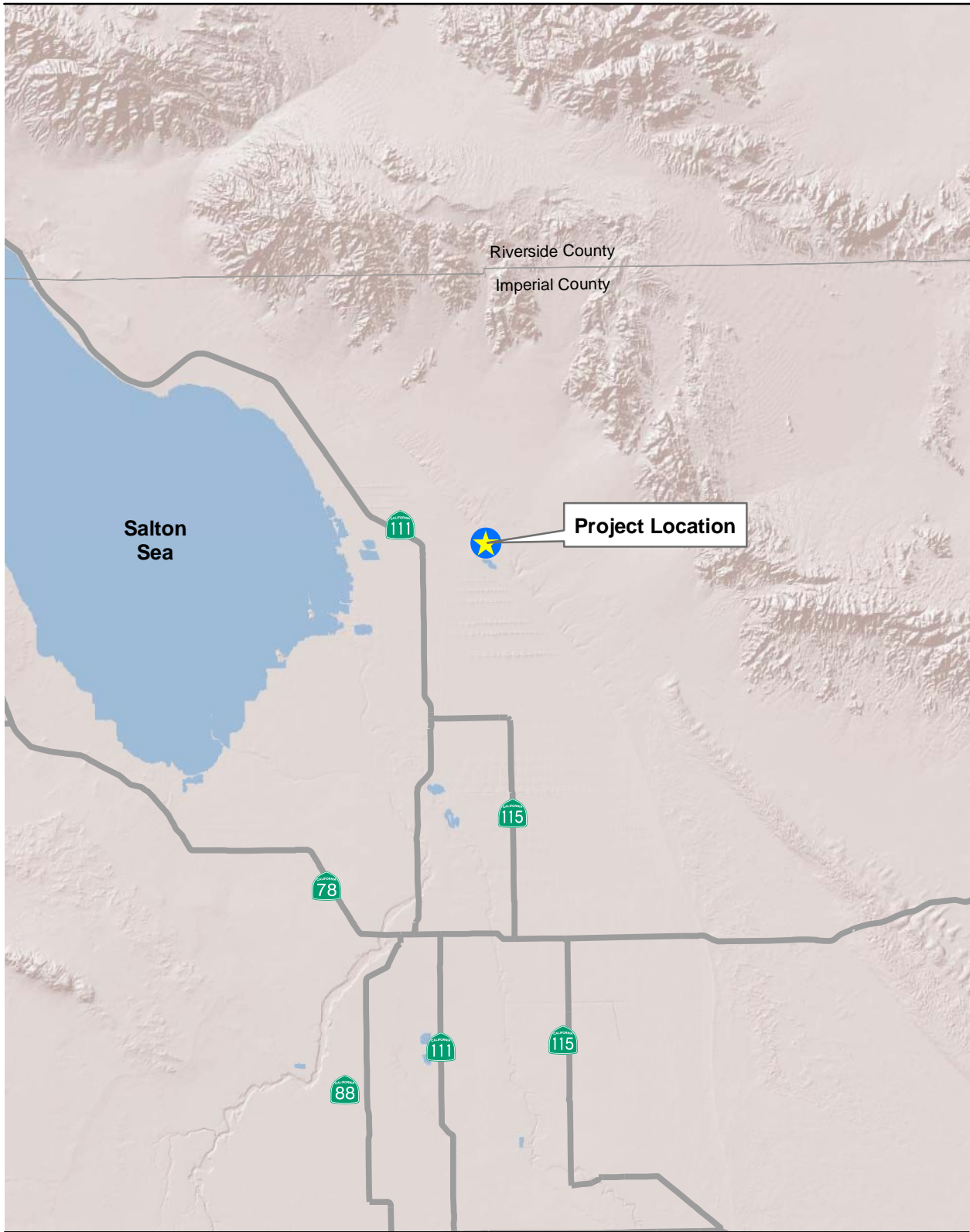
Attachments: Figure 1 – Regional/Vicinity Location Map  
Figure 2 – Niland Solar Energy Project Overview  
Appendix A – Field Data Sheets  
Appendix B – Wildlife Species Detected during Burrowing Owl Surveys  
Appendix C – CNDDDB Records Search

### **Literature Cited**

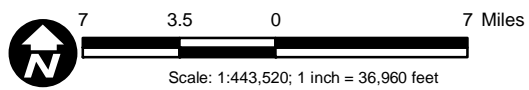
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## FIGURES





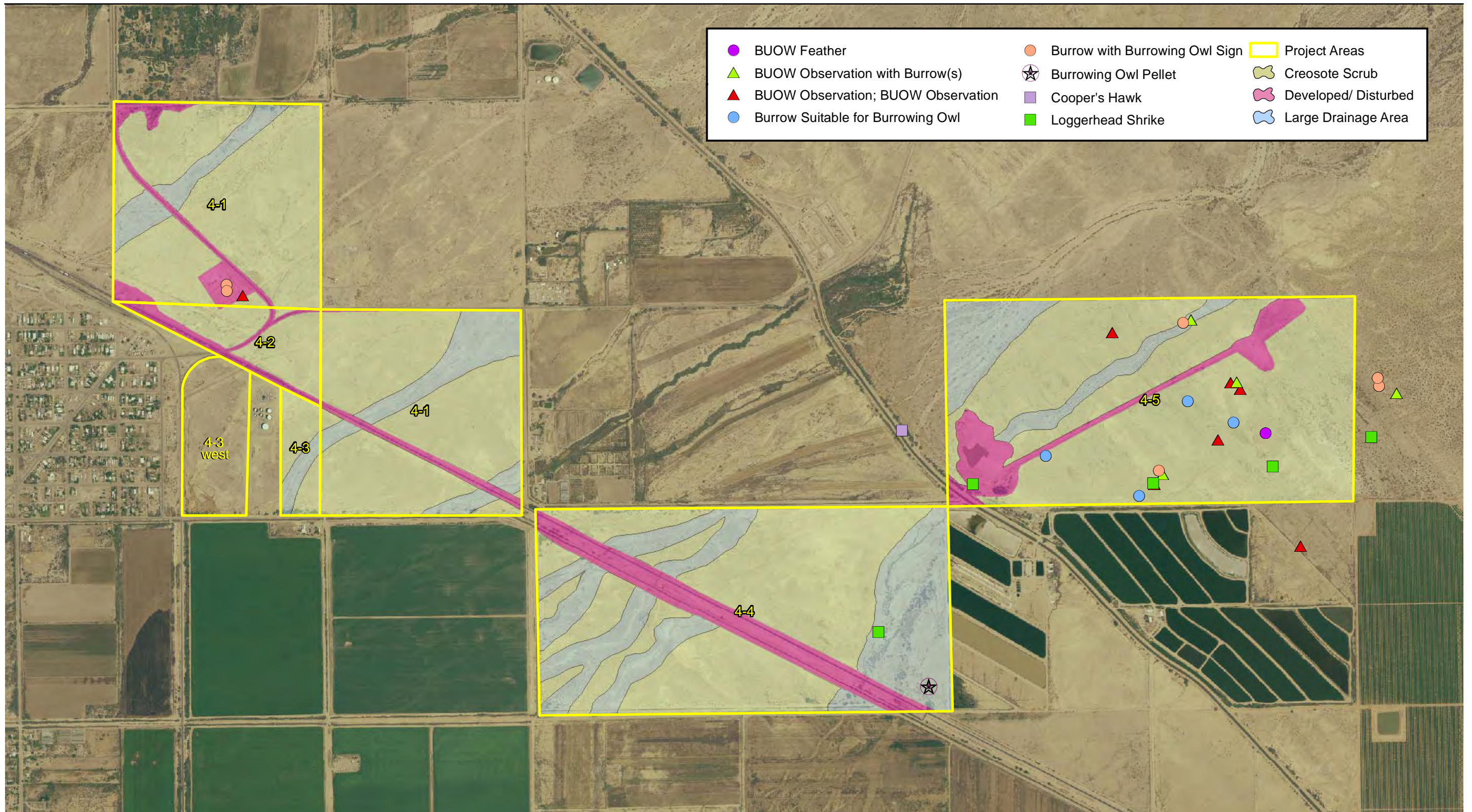
Source:



**Figure 1**  
**Regional/ Vicinity Location Map**

Nilan Solar MND

Path: P:\2008\08020213 Nilan Solar MND\6.0 GIS\6.2 Project Directory\6.2.5 Layout\Site\_4\_5\_Aerial\_11x17.mxd, 08/22/08, SorensenJ



- |                                      |                                  |                        |
|--------------------------------------|----------------------------------|------------------------|
| ● BUOW Feather                       | ● Burrow with Burrowing Owl Sign | □ Project Areas        |
| ▲ BUOW Observation with Burrow(s)    | ★ Burrowing Owl Pellet           | ☞ Creosote Scrub       |
| ▲ BUOW Observation; BUOW Observation | ■ Cooper's Hawk                  | ☞ Developed/ Disturbed |
| ● Burrow Suitable for Burrowing Owl  | ■ Loggerhead Shrike              | ☞ Large Drainage Area  |

Source: NAIP 2005  
 1,250 625 0 1,250 Feet  
 Scale: 1:15,000; 1 inch = 1,250 feet

**Figure 2**  
**Niland Solar Energy Project Overview**

Niland Solar MND

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**APPENDIX A**  
**FIELD DATA SHEETS**



FIELD JOURNAL

Job Name Niland Solar Job # 08020213.00  
 Observer S Dayman Add'l Persons Bryon Cariss  
 Date 8/12/08 Start Time 8:30AM End Time 12:30PM  
 Location Niland Solar 4-1 to 4-4  
 Habitat Description creosote scrub

Purpose of Visit CEQA checklist for parcels previously surveyed by another consultant  
 Start Weather: Temp 92°F Wind Sp/Dir From 5.4 to 8.0 mph %Clds 5 Pcp 0%

Describe Surrounding Land Uses and Discuss Wildlife Movement Corridors and Habitat Linkages.

Obs. No.	Time	Notes
PARCEL 4-4		- drainage observed on eastern side of property flowing from NE corner towards SE section of property, vegetation in drainage mainly dead & unidentifiable, live vegetation <del>the</del> was largely mesquite
		- provides roosting habitat for birds
		killdeer
		chiff swallow
		- 3 great blue herons
		- road
		- turkey vulture
		- lesser <del>kingfisher</del>
		- tamarisk
		- sidewinder
		- vegetation to west of drainage, very little vegetation
		- tamarisk at NW corner of parcel, road running along northern boundary of parcel, ponds (artificial to the east)
		BUOW pellet observed on site
		1" x 2 1/4" 4-4 BURPEL
		N 33.22 826°
		W 115.47638°
PARCEL 4-1 (south)		- two drainages, one @ SE corner, one through central portion, drainage @ SE corner connects to riparian veg to East. No rip. veg. in drainages
		v. sparse creosote scrub in upland areas
		- some tamarisk, verdin nest in tamarisk
		- riparian area (off site to west) full of arundo, tamarisk, palms
4-3		- similar upland veg as 4-1, drainage from 4-1 south flows across this parcel

Current Weather: Temp \_\_\_\_\_ Wind Sp/Dir From \_\_\_\_\_ %Clds \_\_\_\_\_ Pcp \_\_\_\_\_

FIELD JOURNAL (continued)

Job Name/No. Niland Solar 08020213-00 Observer S. Delpman Date 8/12/08

Obs. No.	Time	Notes
parcel	4-2	- BUOWS observed here on 8/13/08
BUOW7		- two adults, one on dyke, one on yellow poles
BU8 BU9		- 3 BUOW burrows - 3 BUOW burrows
		⊕ one additional BUOW directly to west
parcel	4-1	tamarisk ⊕ northern boundary, drainage from central portion of northern boundary towards the SE, splits into 3 drainages - sparse creosote scrub - white winged dove

Current Weather: Temp \_\_\_\_\_ Wind Sp/Dir From \_\_\_\_\_ %Clds \_\_\_\_\_ Pcp \_\_\_\_\_

Burrowing Owl (BW) Survey

Recorder: KHL  
 Project: Nolan Solar  
 GPS Unit: #2  
 START Time: 1720  
 END Time: 1954

Add'l Person: SJA & Brian  
 Survey Sxn: \_\_\_\_\_  
 Survey Type: BUD  
 Temp (F°): 108.0°F  
 Temp (F°): 86.0°F

Date: 8/12/08  
 Map #: \_\_\_\_\_  
 Survey: 2 of \_\_\_\_\_  
 Wind/Dir: 55/85 % CC/Pcp: 10%/0  
 Wind/Dir: 6.0 % CC/Pcp: 10%/0

#1  
#2

Burrow Number	BW Presence	BW Sign Presence* (circle)	Observations (note Burrow Condition, or note BW-# activity)
BUD 4	—	W P T B S (Other)	too small 4 BUD, most likely 1 lat 2 burrows, animal track present
8/13/08		W P T B S Other	LEPH, HOPI, MODO, WUDO, COXA, TUUU, VERDIN, BUD, BTGN
92.8°F, 0.0/0.6 Wind		W P T B S Other	92.0°F - 5.8/6.9 wind
60% CC 0% P		W P T B S Other	70% CC / 0% P
ST 535		W P T B S Other	END 1824
BUD 4		W P T B S (Other)	fly BUD seen, GPS at spot
BUD 5		W P T B S Other	4 BUDs seen, possible burrow, 2 burrow entrances
		(W) P T B S Other	N 3 NW facing, interacting w/ immature COXA, unprovoked
BUD 6		W P T B S (Other)	large mound burrow w/ (large bush, possible dog)
BUD 7		W P T (B) S (Other)	sticks used to decorate 2 burrow entrances, 6 burrows total
BUD 6		W P T B S (Other)	BW seen flying up from wash cover
<del>BUD 7</del>		W P T B S (Other)	owl seen flying further up out of wash
<del>BUD 8</del>		W P T B S (Other)	3rd owl seen flying out of wash
103.6°F 0.9/4.8 wind		W P T B S Other	96.0°F 2.1/4.5 wind
20% CC 0% P		W P T B S Other	20% CC 0% P
ST 4717		W P T B S Other	END 1950
BUD 7		W P T B S (Other)	3 owls
CP1		W P T B S (Other)	coarse den
BUD 8		(W) P T B S (Other)	bud burrow → @ 4-1 site by burrows, sign present
BUD 9		(W) P T B S Other	bud burrow
BUD 10		W P T B S Other	bud burrow possible
BUD 11		(W) P T B S Other	2 possible bud burrow, feeder in one, other has owl
BUD 12		W P (T) B S Other	1 bud burrow active w/ tracks, feeder 3, owl
BUD 13		(W) P (T) B S Other	2 owls flew out of burrow
LOSH 2 / LOH 3		W P T B S Other	LOSH, LOH individual pt. →

3 owls  
one pt.

AM  
PM  
8/13/08 - COXA, BUD, CAQUAN, zebra, MODO, LEPA, Abert's Towhee?, dog, the butterfly?, alpha fox  
 8/13/08 - zebra, COXA, BTGN, TUUU, BTGN, road runner, losh, ketrel, yellow throat













Burrowing Owl (BW) Survey

Recorder: S. BRYON CARISS Add'l Person: \_\_\_\_\_ Date: 8-12 thru 8-15 2008  
 Project: Wiland Solar Survey Sxn: \_\_\_\_\_ Map #: \_\_\_\_\_  
 GPS Unit: \_\_\_\_\_ Survey Type: \_\_\_\_\_ Survey \_\_\_\_\_ of \_\_\_\_\_  
 START Time: \_\_\_\_\_ Temp (F°): \_\_\_\_\_ Wind/Dir: \_\_\_\_\_ % CC/Pcp: \_\_\_\_\_  
 END Time: \_\_\_\_\_ Temp (F°): \_\_\_\_\_ Wind/Dir: \_\_\_\_\_ % CC/Pcp: \_\_\_\_\_

Burrow Number	BW Presence	BW Sign Presence <sup>1</sup> (circle)	Observations (note Burrow Condition, or note BW-# activity)
		W P T B S Other	Double-crested Cormorant
		W P T B S Other	Phalacrocorax auritus
		W P T B S Other	Snowy Egret
		W P T B S Other	Egretta thula
		W P T B S Other	Turkey Vulture
		W P T B S Other	Cathartes aura
		W P T B S Other	Coopers Hawk
		W P T B S Other	Accipiter cooperii
		W P T B S Other	Osprey
		W P T B S Other	Pandion haliaetus
		W P T B S Other	American Kestrel
		W P T B S Other	Falco sparverius
		W P T B S Other	California Quail
		W P T B S Other	Callipepla californica
		W P T B S Other	Killdeer
		W P T B S Other	Charadrius vociferus
		W P T B S Other	Caspian Tern
		W P T B S Other	Sterna caspia
		W P T B S Other	White-winged Dove
		W P T B S Other	Zenaidura asiatica
		W P T B S Other	Mourning Dove
		W P T B S Other	Zenaidura macroura
		W P T B S Other	Eurasian Collared-Dove
		W P T B S Other	Streptopelia decaocto
		W P T B S Other	Greater Roadrunner
		W P T B S Other	Geococcyx californianus
		W P T B S Other	Burrowing Owl
		W P T B S Other	Athene cunicularia
		W P T B S Other	Lesser Nighthawk
		W P T B S Other	Chordeiles acutipennis
		W P T B S Other	Anna's Hummingbird
		W P T B S Other	Calypte anna
		W P T B S Other	Ladder-backed Woodpecker
		W P T B S Other	Picoides scalaris
		W P T B S Other	Western Kingbird
		W P T B S Other	Tyrannus verticalis
		W P T B S Other	Loggerhead Shrike
		W P T B S Other	Lanius ludovicianus
		W P T B S Other	

Comments

























Recorder: S. BRYON CARISS Add'l Person: \_\_\_\_\_ Date: Aug 16 2008  
 Project: Niland Salar Survey Sxn: \_\_\_\_\_ Map #: \_\_\_\_\_  
 GPS Unit: Garmin #2 Survey Type: BUOW FS Survey \_\_\_\_\_ of \_\_\_\_\_  
 START Time: 5:40 Temp (F°): 86°F Wind/Dir: 5-10 mph SE % CC/Pop: 0%/0  
 END Time: 10:05 Temp (F°): 95°F Wind/Dir: 5-10 mph SE % CC/Pop: 0%/0

Burrow Number	BW Presence	BW Sign Presence <sup>1</sup> (circle)	Observations (note Burrow Condition, or note BW-# activity)
BUOW11	Yes	W P T B S Other	Began by observing BUOW11. At my cautious approach, a single owl flew from BUOW11 to BU18 paused for a moment and flew off. As I moved to BUOW5 to confirm presence there also I heard 2 separate owls chatter from that location so I returned to BUOW11. After an observation from 6:14 to 6:55A and an approach no other owls were observed at BUOW11, BU17 and BU18. Waypoint ODG is a test
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
BUOW8	Yes	W P T B S Other	On approaching BUOW8 a single owl was observed ~60m from burrow flying away from it while I was still 226m from BUOW8. I remained there and from my position could also observe BU7 where I saw no activity. I saw no further activity near BUOW8 until I approached and 2 owls were seen flying away from within 10m of the burrow entrance at 8:05A. The bird list needs to be corrected from California Quail to Gambel's Quail <i>Callipepla gambelii</i> . Two new birds for the list are Horned Lark <i>Eremophila alpestris</i> and Black Phoebe <i>Sayornis nigricans</i> .
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
BUW10	Yes	W P T B S Other	On approaching BUW10 two owls were seen flying from an area within 20m of the burrow while I was still 333m from burrow. They both perched near the top of Larrea shrubs and one remained there while the other dropped to the ground as I approached obliquely to within 253m of burrow at 15:41 down. Over an hour later the owls were still there and no other owls were observed. More birds for the list are Lesser Yellowlegs <i>Tringa melanoleuca</i> and White-faced Ibis <i>Plegadis chini</i>
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	
		W P T B S Other	

Comments

<sup>1</sup>BW Sign = W-Whitewash, P-Pellets, T-BW Tracks, B-Bones (from degraded pellets), S-Slicks





## **APPENDIX B**

### **WILDLIFE SPECIES DETECTED DURING BURROWING OWL SURVEYS**



## Wildlife Species Detected during Burrowing Owl Surveys

Scientific Names	Common Names
<b>Birds</b>	
Order Caprimulgiformes	Nightjars, Potoos, Frogmouths, etc.
Family Caprimulgidae	
<i>Chordeiles acutipennis</i>	lesser nighthawk
Order Charadriiformes	
Family Charadriidae	
<i>Charadrius vociferus</i>	killdeer
Family Scolopacidae	
<i>Tringa flavipes</i>	lesser yellowlegs
Family Sternidae	
<i>Sterna caspia</i>	Caspian tern
Order Ciconiiformes	Herons, Egrets, Storks, etc.
Family Ardeidae	
<i>Ardea herodias</i>	great blue heron
<i>Egretta thula</i>	snowy egret
Family Cathartidae	
<i>Cathartes aura</i>	turkey vulture
Family Threskiornithidae	
<i>Plegadis chihi</i>	white-faced ibis
Order Columbiformes	Pigeons, Doves, Solitaires and Dodos
Family Columbidae	
<i>Streptopelia decaocto</i>	Eurasian collared-dove
<i>Zenaida asiatica</i>	white-winged dove
<i>Zenaida macroura</i>	mourning dove
Order Cuculiformes	
Family Cuculidae	
<i>Geococcyx californianus</i>	greater roadrunner
Order Falconiformes	Diurnal Birds of Prey
Family Falconidae	
<i>Accipiter cooperii</i>	Cooper's hawk*
<i>Falco sparverius</i>	American kestrel
<i>Pandion haliaetus</i>	osprey
Order Galliformes	
Family Odontophoridae	
<i>Callipepla gambelii</i>	Gambel's quail
Order Passeriformes	Perching Birds
Family Alaudidae	
<i>Eremophila alpestris</i>	horned lark
Family Corvidae	
<i>Corvus corax</i>	common raven

Scientific Names	Common Names
<b>Birds (continued)</b>	
Family Emberizidae	
<i>Euphagus cyanocephalus</i>	Brewer's blackbird
<i>Pipilo aberti</i>	Abert's towhee
Family Fringillidae	
<i>Carpodacus mexicanus</i>	house finch
Family Hirundinidae	
<i>Petrochelidon pyrrhonota</i>	cliff swallow
<i>Tachycineta bicolor</i>	tree swallow
Family Icteridae	
<i>Icterus spp.</i>	oriole
<i>Quiscalus mexicanus</i>	great-tailed grackle
Family Laniidae	
<i>Lanius ludovicianus</i>	loggerhead shrike*
Family Parulidae	
<i>Dendroica petechia</i>	yellow warbler
Family Remizidae	
<i>Auriparus flaviceps</i>	verdin
Family Sylviidae	
<i>Polioptila melanura</i>	black-tailed gnatcatcher
Family Tyrannidae	
<i>Sayornis nigricans</i>	black phoebe
<i>Tyrannus verticalis</i>	western kingbird
Order Pelecaniformes	
Family Phalacrocoracidae	
<i>Phalacrocorax auritus</i>	double-crested cormorant
Order Piciformes	
Family Picidae	
<i>Picoides scalaris</i>	ladder-backed woodpecker
Order Strigiformes	
Family Strigidae	
<i>Athene cunicularia</i>	burrowing owl*
Order Trochiliformes	
Family Trochilidae	
<i>Calypte anna</i>	Anna's hummingbird

<b>Mammals</b>	
Order Carnivora	
Family Canidae	Flesh-eaters
<i>Canis latrans</i>	coyote
Order Lagomorpha	Rabbits, Hares and Pikas
Family Leporidae	
<i>Sylvilagus audubonii</i>	desert cottontail
<i>Lepus californicus</i>	black-tailed jackrabbit
Order Rodentia	Gnawing Mammals
Family Heteromyidae	
<i>Dipodomys spp.</i>	kangaroo rat
<b>Reptiles</b>	
Order Squamata	Lizards and Snakes
Family Crotaphytidae	
<i>Gambelia wislizenii</i>	long-nosed leopard lizard
Family Phrysonomatidae	
<i>Callisaurus draconoides</i>	zebra-tailed lizard
<i>Uta stansburiana</i>	side-blotched lizard
Family Teiidae	
<i>Aspidoscelis tigris</i>	western whiptail

\*CDFG Species of Special Concern

\*\*Listed under Federal or California State Endangered Species Act

**APPENDIX C**  
**CNNDB RECORDS SEARCH**

Species	Common Name	Federal Listing	State Listing	CDFG Listing	CNPS	Suitability of Habitat On-site
<b>Mammals</b>						
<i>Antrozous pallidus</i>	pallid bat			SC		Not expected. No suitable roosting areas (rocky areas).
<i>Eumops perotis californicus</i>	western mastiff bat			SC		Not expected. No suitable roosting habitat on-site.
<i>Lasiurus cinereus</i>	hoary bat					Not expected. Very few trees on-site (only tamarisk).
<i>Macrotus californicus</i>	California leaf-nosed bat			SC		Not expected. No suitable roosting habitat on-site.
<i>Nyctinomops femorosaccus</i>	pocketed free-tailed bat			SC		Not expected. No high cliffs on-site.
<i>Ovis canadensis nelsoni</i>	Nelson's bighorn sheep					Not expected. No rocky steep areas on-site.
<i>Taxidea taxus</i>	American badger			SC		Moderate. No evidence of this species observed on-site during burrowing owl surveys.
<b>Birds</b>						
<i>Charadrius montanus</i>	mountain plover			SC		Moderate. Not observed in burrowing owl surveys.
<i>Dendroica petechia brewsteri</i>	yellow warbler			SC		Not expected. No riparian areas on-site.
<i>Gelochelidon nilotica</i>	gull-billed tern			SC		Not expected. No sandy islets on-site.
<i>Hydroprogne caspia</i>	Caspian tern					Not expected. No gravely/sandy beaches on-site.
<i>Icteria virens</i>	yellow-breasted chat			SC		Not expected. No riparian areas on-site.
<i>Laterallus jamaicensis coturniculus</i>	California black rail		Threatened			Not expected. No freshwater habitat on-site.
<i>Polioptila melanura</i>	black-tailed gnatcatcher					Observed on-site. Likely nests in areas off-site.
<i>Rallus longirostris yumanensis</i>	Yuma clapper rail	Endangered	Threatened			Not expected. No freshwater habitat on-site.

<i>Rynchops niger</i>	black skimmer			SC		Not expected. No islets or sandy beaches on-site.
<i>Toxostoma crissale</i>	Crissal thrasher			SC		Moderate. Dense mesquite observed in some washes on-site. Not observed.
<b>Fish</b>						
<i>Cyprinodon macularius</i>	desert pupfish	Endangered	Endangered			Not expected. No natural ponds, springs, marshes or streams present on-site.
<i>Xyrauchen texanus</i>	razorback sucker	Endangered	Endangered			Not expected. Colorado river not present on-site.
<b>Reptiles and Amphibians</b>						
<i>Bufo alvarius</i>	Colorado River toad			SC		Not expected. No on-site canals. Moderate in adjacent canal.
<i>Gopherus agassizii</i>	desert tortoise	Threatened	Threatened			Not expected. Desert tortoise is not present in this area.
<i>Rana yavapaiensis</i>	lowland (=Yavapai, San Sebastian & San Felipe) leopard frog			SC		Not expected. No streams on-site.
<b>Plants</b>						
<i>Astragalus magdalenae</i> var. <i>peirsonii</i>	Peirson's milk-vetch	Endangered	Endangered		1B.2	Not expected. No dunes present on-site.
<i>Chamaesyce abramsiana</i>	Abrams' spurge				2.2	Moderate. Some sandy areas on-site.
<i>Colubrina californica</i>	Las Animas colubrina				2.3	Not expected. Some washes present on-site, but no steep rocky ravines.
<i>Croton wigginsii</i>	Wiggins' croton				2.2	Not expected. No sand dunes or sandy arroyos on-site.
<i>Helianthus niveus</i> ssp. <i>tephrodes</i>	Algodones Dunes sunflower		Endangered		1B.2	Not expected. No desert dunes on-site.
<i>Koeberlinia spinosa</i> ssp. <i>tenuispina</i>	slender-spined all-thorn				2.2	Not expected. No sandy washes and/or riparian woodland on-site.



<i>Nemacaulis denudata</i> var. <i>gracilis</i>	slender cottonheads				2.2	Not expected. No dunes on-site.
<i>Opuntia munzii</i>	Munz's cholla				1B.3	Not expected. Site elevation is near sea level, this species is found 150-600M elevation.
<i>Palafoxia arida</i> var. <i>gigantea</i>	giant spanish-needle				1B.3	Not expected. No dunes on-site.
<i>Pholisma sonoreae</i>	sand food				1B.2	Not expected. No dunes on-site.
<i>Salvia greatae</i>	Orocopia sage				1B.3	Not expected. No broad alluvial bajadas observed on-site.
<i>Senna covesii</i>	Coves' cassia				2.2	Not expected. Elevation on-site close to sea level, this species found at 200 to 1070M.
<i>Xylorhiza cognata</i>	Mecca-aster				1B.2	Not expected. No steep canyon slopes on-site.

# **Appendix D1**

## **Cultural and Architectural Resources Survey Report**

**EDAW, Inc.**

**October 2008**

**CULTURAL AND ARCHITECTURAL RESOURCES  
SURVEY REPORT FOR THE NILAND SOLAR ENERGY PROJECT  
INITIAL STUDY NILAND, IMPERIAL COUNTY, CALIFORNIA**

***Prepared for:***

Los Angeles Department of Water and Power  
Environmental Services  
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Los Angeles, California 90012

***Prepared by:***

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***Authors:***

Matthew Tennyson, M.A., R.P.A.  
Staff Archaeologist

With contributions by  
M.K. Meiser, M.A.

***Restricted Distribution***

Area Surveyed: 970 acres

USGS 7.5 Quadrangles: Niland, CA; Iris, CA

October 2008

Keywords: Archaeological survey; positive results; Union Pacific Railroad; East Highline Canal; Niland; Imperial County; Salton Sea; Lake Cahuilla; historic refuse scatter; lithic scatter; pottery scatter; deflated hearth; temporary campsite



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## EXECUTIVE SUMMARY

The Los Angeles Department of Water and Power proposes to build a photovoltaic power plant near the town of Niland in Imperial County, California. As part of the environmental review in accordance with CEQA, cultural and architectural resources surveys were conducted by EDAW between August 19 and 28, 2008 and on September 17, 2008. Prior to any field surveys, records searches at the Native American Heritage Commission and the Southeast Information Center were consulted to determine if any previously recorded cultural or historical resources had been reported within the project footprint. The records search indicated that eight cultural resources had been recorded within the project footprint and that the majority of the area had not been surveyed for cultural and architectural resources.

The survey resulted in the identification of 31 previously unrecorded cultural resources (seven prehistoric sites, eighteen historic sites, and six historic buildings) and the update to site forms of five previously recorded sites. Three sites reported in the project area could not be relocated.

Of the sites identified within the project area, eight are recommended potentially eligible for inclusion to the California Register of Historical Resources (CRHR). These sites include three obsidian lithic scatters (NS-14, NS-15, and NS-19), one site containing three sandstone hearths (NS-25), a residence that likely dates to the early 20<sup>th</sup> century (NS-31), two canals (NS-26 and CA-IMP-7835), and a prehistoric habitation site (CA-IMP-6854). If it is impossible to avoid impacts to these resources, an evaluation program will be necessary in order to determine if they are eligible for inclusion to the CRHR. If any of the sites are found to be eligible, appropriate mitigation measures would be needed to address impacts from the project. For archaeological resources, this typically would involve data recovery.



# CHAPTER 1

## INTRODUCTION

The Los Angeles Department of Water and Power (LADWP) is planning to construct a solar energy power plant on approximately 970 acres near the town of Niland in Imperial County, California. The project includes the installation of solar panels and transformers in order to generate photovoltaic power. EDAW undertook a cultural resources and architectural survey of the project area. The survey included a cultural resources records search to identify any previously recorded sites and a pedestrian survey of the project footprint to update previously recorded sites and identify newly recorded sites.

### PROJECT DESCRIPTION

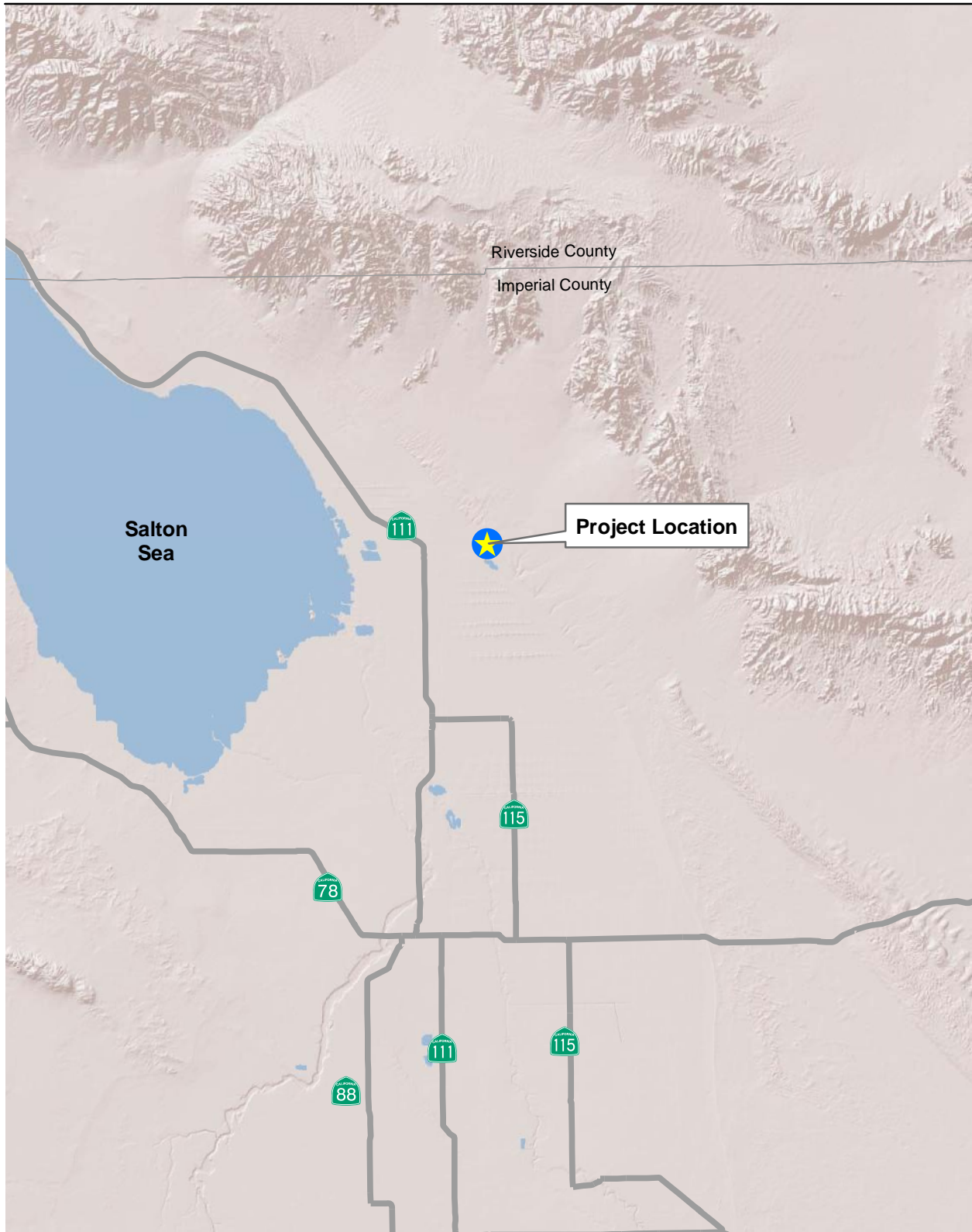
The proposed Niland Solar Energy Project is located east and southeast of the Salton Sea in the town of Niland in Imperial County, California (Figure 1). LADWP proposes to construct and operate a 68 MW photovoltaic (PV) power plant to assist the agency in meeting the renewable portfolio standards. LADWP has enlisted a solar energy development partner, OptiSolar, to assist with project design, development, and construction. Environmental review of the project must conform to the California Environmental Quality Act (CEQA). Part of the project requires the assessment of cultural resources to determine if any cultural resources eligible for the California Register of Historical Resources (CRHR) exist within the project area.

The project would include PV panels mounted on steel support structures that are anchored in at-grade concrete ballasts. The panels are very low profile, with the high end of the slightly tilted panel less than 3 feet above the ground. Each panel consists of 12, one meter by one-half meter glass PV modules. Central to each 5-acre, 500 kw block of panels would be a pad-mount transformer, which would increase the 600-volt panel output to 34.5 kV, and the inverter, which would convert the direct current (DC)-generated sun power to alternating current (AC).

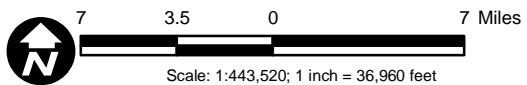
The 68 MW PV modules would be constructed and placed on LADWP-owned land in Areas 4-1, 4-2, 4-3, 4-4, and 4-5, known as the Niland Group, near the town of Niland in Imperial County (Figure 2). PV power generation allows for direct conversion of light (photo) energy into electric (voltaic) energy.

### Detailed Site Parcel Descriptions

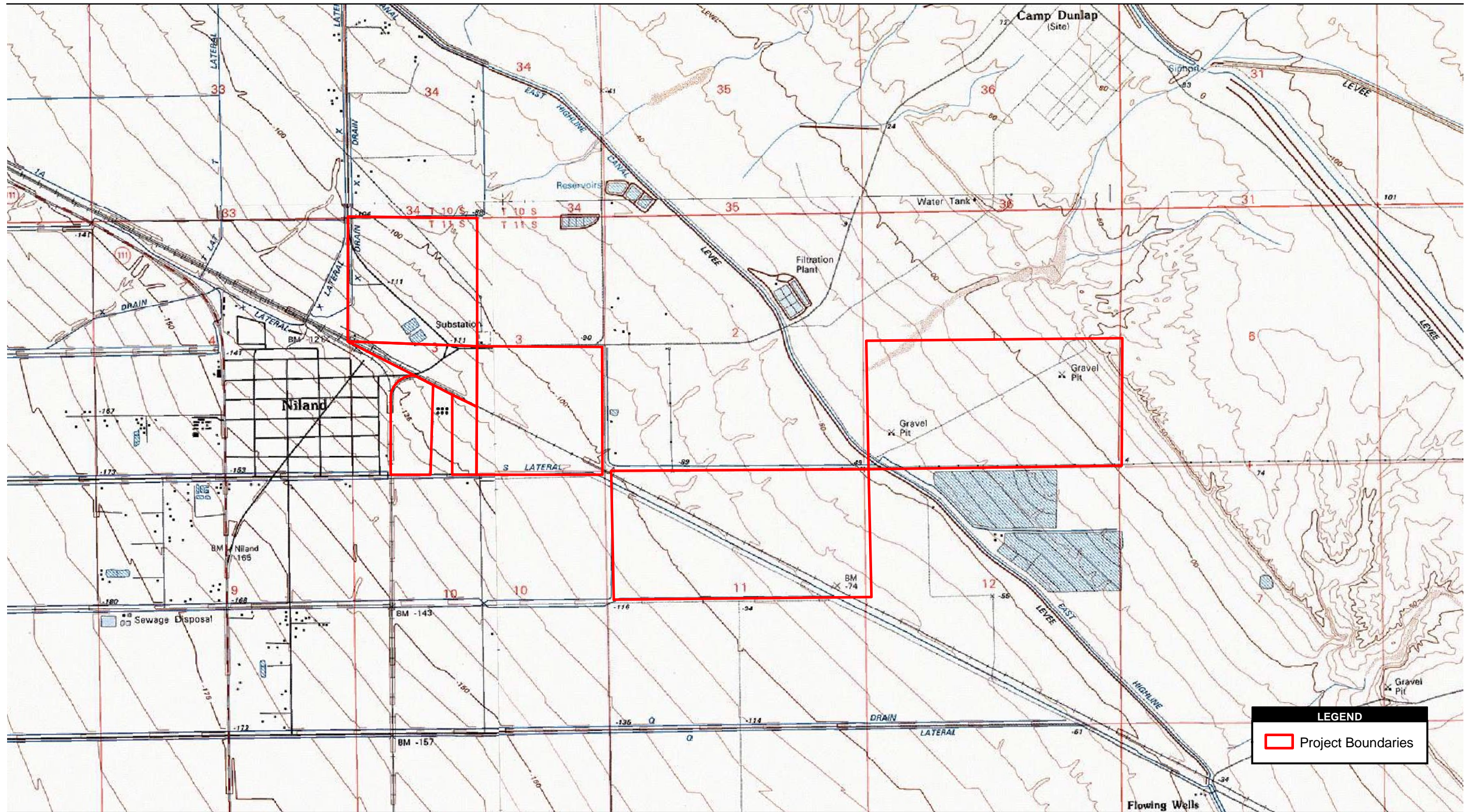
The project area is divided over five separate parcels of land, designated Areas 4-1 through 4-5. These areas are located east of Niland and occupy portions of a rectangular area that is 1.5 miles by 3 miles (Figure 2).



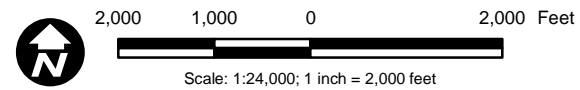
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**Figure 1**  
**Regional Vicinity Location Map**



Source: USGS 7.5' Topographic Quadrangle, Niland 1976, Iris 1992, Wister 1976, Iris Wash 1992



**LEGEND**  
 Project Boundaries

**Figure 2**  
**Project Location Map**



#### ***Area 4-1***

Area 4-1 is divided into two parcels: one north of the Niland (the northwestern parcel) and one east of Niland (the southeastern parcel). The northwestern parcel is approximately 140 acres in area and is crossed by Wilkins Road. The southeastern parcel is approximately 156 acres and is bounded by Noffsinger Road to the south. It is bisected by the Union Pacific Railroad. The two parcels are located next to an existing substation and both parcels are vacant.

#### ***Area 4-2***

Area 4-2 is located between the Area 4-1 parcels. It occupies approximately 38 acres and has a triangular-shaped boundary. It is bounded to the north by the Area 4-1 northwestern parcel and the western boundary of the Area 4-1 southeastern parcel. Its southern boundary is the Union Pacific Railroad. East Main Street intersects the area. The land is vacant.

#### ***Area 4-3***

Area 4-3 is a parcel located south of Area 4-2 and to the immediate west of the southeastern parcel of Area 4-1. It occupies approximately 24 acres of vacant land. Area 4-3 is divided by several cylindrical tanks and an access road that leads to Noffsinger Road. The larger of the two areas is to the west and is bounded by Noffsinger Road to the south and a portion of the Union Pacific Railroad to the north and west. The smaller of the two areas is bounded to the east by the southeastern parcel of Area 4-1 and to the north by the Union Pacific Railroad.

#### ***Area 4-4***

Area 4-4 is the southernmost parcel. It is located to the southwest of Area 4-1 and is approximately 294 acres in area. Noffsinger Road, the Union-Pacific Railroad, and an unnamed canal all bisect the area. The parcel is vacant and surrounded by agricultural fields.

#### ***Area 4-5***

Area 4-5 is located northeast of Area 4-4. It occupies a vacant area of approximately 320 acres near agricultural land east of Niland. Weist Road and the East Highline Canal intersect the southwestern corner of the area. The northeastern portion of the parcel is located along the 40-foot contour, which is the ancient shoreline of Lake Cahuilla.

### **Regulatory Setting**

CEQA applies to proposed projects initiated by, funded by, or requiring discretionary approvals from State or local government agencies. The proposed renewable energy project at Niland constitutes a project as defined by CEQA (California Public Resources Code §§21000 et seq.). LADWP and the County of Imperial are the co-lead agencies for the compliance with CEQA because pursuant to CEQA Guidelines §15367, “‘Lead Agency’ means the public agency which has the principal responsibility for carrying out or approving a project.” The proposed solar energy project is considered a “project” under CEQA.

As the co-lead agencies for this project, LADWP and the County must complete an environmental review to determine if the proposed project could create significant adverse environmental impacts. To fulfill the purpose of CEQA, this Initial Study has been prepared to assist in making that determination. Based on the information and analysis contained in this Initial Study, LADWP and the County, as the co-lead agencies, have concluded that a Mitigated Negative Declaration (MND) would be the proper level of analysis for this project.

## **Report Organization**

A records search encompassed a 1,075-acre area east of Niland as well as a 1-mile buffer around the project area. The results of the records search indicated that eight previously recorded sites were located within the project footprint and the pedestrian survey identified 36 cultural resources. This report details the results of the records search and pedestrian survey of the project footprint, including recommendations of eligibility of sites to the California Register of Historical Resources (CRHR).

## **Project Personnel**

Rebecca Apple, M.A., R.P.A., served as project manager for the cultural resources portion of the project. Matthew Tennyson, M.A., R.P.A., served as field director and primary report author. The architectural survey was completed by M.K. Meiser, M.A. and served as contributor to this report. Resumes for project personnel are included in Appendix A.



## **CHAPTER 2 NATURAL AND CULTURAL CONTEXT**

### **NATURAL SETTING**

The Niland Solar Project is located within the Colorado Desert east of the town of Niland in eastern Imperial County. Although much of the area around the project area is undeveloped, nearby uses include mining, agriculture, State Highway 78, State Highway 111, the Coachella Canal, the East Highline Canal, and the Union Pacific Railroad (Plate 1).



**Plate 1. Overview of Niland, CA**

The Colorado Desert is the largest and most arid subdivision of the Sonoran Desert. The climate of the region is characterized by hot, dry summers and mild winters. Summer temperatures top 100 degrees Fahrenheit on average, dropping to the low 70s at night. In the winter, temperatures are mild, mostly in the 50s and 60s. Little rain falls in the area, with the average accumulation just under 3 inches. Water is found in the form of occasional springs and wells, and sporadically in the numerous seasonal drainages. It is thought that the climatic conditions at lower elevations of the Colorado Desert have remained much the same since the Late Pleistocene (Cole 1986).

The Colorado Desert contains a variety of biogeographic subregions that reflect differences in terrain, hydrologic features, and biota. Within this setting, the project area is situated in a lowland area at the base of alluvial fans emerging from the Chocolate Mountains that only rarely carry water. Elevations within the project area vary from approximately 45 feet above mean sea level to 120 feet below mean sea level. Alluvial terraces emanating from the Chocolate Mountains create generally northeast-southwest-trending washes. Some of the areas near the project area are fairly active and contain cobbles of varying sizes. In the upland portions of the alluvial fans, more stable surfaces contain patches of well-developed desert pavement. Within the project area, much of the alluvial sediments vary from compacted desert pavements to loosely compacted sands resulting from active alluvial deposition.

One area in which prehistoric cultural materials appear to be concentrated is the high shoreline of ancient Lake Cahuilla, which was located at the northeastern portion of Area 4-5 and would have encompassed the present-day Salton Sea. The lake covered much of the Imperial Valley and created an extensive lacustrine environment. Lake Cahuilla experienced several fill-recession episodes before it finally dried up about 300 years ago. Recessional shorelines are evident throughout the project area, especially in Areas 4-4 and 4-5. In 1905, the Colorado River overflowed into the Salton Basin creating the present-day Salton Sea.

The geology of the region is a mix of igneous and metamorphic rock, with deposits of alluvium. A variety of lithic materials are present near the project area. Native peoples exhibited a marked preference for fine-grained materials for tool manufacture. Many of the lithic reduction stations found within the project area are the finer-grained cryptocrystalline silicates and obsidian. A prominent obsidian source near the project area is obsidian butte, which is located approximately 8.5 miles to the southwest of the project area on the southeastern shore of the Salton Sea. It is likely that obsidian observed in the project area was collected from this source. Clast size varies, but knappable materials tend to be found as locally available angular cobbles 15 cm or less in size. Desert pavement covers many of the terraces. These pavements vary considerably in their relative degree of development and stability, and many have been damaged by heavy vehicle traffic through the project area. The pavements are typically composed of very small cobbles and pebbles. At the western edge of the project area, very sandy areas near the Lake Cahuilla shoreline exist.

Creosote bush scrub is the most widespread vegetation type in the Sonoran Desert, and it covers large expanses of the Colorado Desert. This plant community is dominated by creosote bush (*Larrea tridentata*) and salt bush (*Atriplex canescens*) occurring where the soil is more alkaline. With the exception of sparse creosote scrub, cactus, and ocotillo (*Fouquieria splendens*), little vegetation is present on the desert pavement. The washes support a more lush growth of ironwood (*Olneya tesota*), blue palo verde (*Cercidium floridum*), creosote bush, mesquite (*Prosopis* sp.), smoke trees (*Psoralea spinosa*), and brittlebush (*Encelia farinosa*).

Fauna commonly found in the area include bobcat (*Lynx rufus*); coyote (*Canis latrans*); and numerous small mammals, such as black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus auduboni*), and mice (*Peromyscus* sp.), along with various reptiles and birds.

## CULTURAL CONTEXT

### Prehistory

The prehistory of the Colorado Desert region can be divided into three major periods of occupation: Paleoindian, Archaic, and Late Prehistoric/Patayan. An earlier preprojectile point (pre-Paleoindian) culture has been suggested by some (e.g., Childers and Minshall 1980), but there is little evidence to support the claims for an early man or “Malpais” pattern. The term Malpais itself originated with Rogers (1939), who used it to refer to ancient-looking tools and cleared circles. Most of these are now classified as San Dieguito.

The first well-documented cultural tradition in the Colorado Desert region is the San Dieguito-Lake Mojave Tradition (12,000 to 7,000 years before present [B.P.]), which occurred during a time when the regional climate was cooler/moister than the present (Warren and Crabtree 1986). The associated artifact assemblage consists of percussion-flaked core and flaked-based tools such as crescentics, choppers, planes, and scrapers, as well as leaf-shaped projectile points and the distinctive Lake Mojave and Silver Lake projectile points. In the California deserts most of these materials are found along the edges of extinct lakes or streams. A number of sites consisting of trails and cleared areas in and near the Chocolate Mountains have been posited to date to this tradition. Few of these sites have temporally diagnostic artifacts; thus, temporal placement of them is based primarily on degree of weathering and patination (Hayden 1976; Rogers 1939).

The Archaic period (7000 to 1500 B.P.) can be divided into two temporal complexes: the Pinto complex (7000 to 4000 B.P.) and the Amargosa complex (4000 to 1500 B.P.). In general, the Archaic period saw an increase in groundstone tools, perhaps indicative of an increasing exploitation of plant resources. Smooth slabs of groundstone are reported for the earlier Pinto complex, along with distinctive Pinto series spear points. The Amargosa complex is characterized by the presence of fine, pressure-flaked Elko and Humboldt series and Gypsum-type projectile points, leaf-shaped points, knives, flake scrapers, drills, choppers, and hammerstones. Manos and basin metates were common, and the mortar and pestle were introduced late in this period.

The Patayan or Late Prehistoric period dates from approximately 1500 B.P. to the historic period. Marked economic and settlement pattern changes characterize this period. Along the Colorado River subsistence expanded to include floodplain horticulture. The bow and arrow were introduced, and burial practices shifted from inhumations to cremations.

In addition to a preceramic phase, three phases of the Patayan pattern have been identified. These are associated with changes in ceramic types and the filling and desiccation of Lake Cahuilla. Patayan I began approximately 1200 B.P. with the introduction of pottery and appears to be primarily limited to the Colorado River. The Patayan II phase coincides with the infilling of Lake Cahuilla around 950 years ago. The lake covered much of Imperial Valley and created an extensive lacustrine environment and is thought to have attracted people from the Colorado River. New pottery types appeared as a result of local production along the lakeshore and technological changes

in the Colorado River area. Lake Cahuilla experienced several fill-recession episodes. The last phase, Patayan III, began around 500 B.P. as the lake receded. Colorado Buff became the predominant pottery type, both in the desert and along the river, although several Patayan II types continued (Waters 1982).

## **Ethnohistory**

The Colorado Desert is an arid region that has supported relatively small groups of people during ethnohistoric times. To the southwest, the Tipai (which included the Desert Kumeyaay) were known to occupy the area around the New and Alamo rivers. Lands to the north and west of the Chocolate Mountains were the territory of the Desert Cahuilla. Along the Colorado River a number of groups hunted and farmed, to the northeast the Mohave, to the east the Hachidhoma, and to the south the Quechan. The Chocolate Mountain portion of the desert appears to have been largely used as an area of transit shared by the native peoples who inhabited the surrounding region. Major trails in the vicinity included the Cocomaricopa along the eastern side of the Chocolate Mountains and the Indian Pass-San Sebastian trail just south of the Range (Pigniolo et al. 1997). Among the more mobile of the groups were the Quechan who used the Colorado Desert as a transportation corridor to sacred areas and their relatives farther north on the Colorado River (Woods 1984). Oral traditions of the region often include tales of travel (Kroeber 1925).

A number of feature types are associated with spiritually significant trails: Spirit Breaks are typically constructed by placing several cobbles in a line across or alongside trails. The purpose is to deflect spiritual beings that may be attempting to follow someone utilizing a trail (Rogers 1966:51). Spirit Deflectors are short dead-end trails that fork off of a main trail. The function of spirit deflectors is thought to be similar to spirit breaks. Cairns or Shrines consist of piles of small rocks often with sherds of pottery. They were created by travelers passing by who contributed a small offering in the hopes of protection against sickness, injury, or fatigue. Milky Quartz Shatter is often associated with geoglyphs and along spiritually significant trails. This white rock type was associated with purity and was shattered as part of a personal purification ritual as one approached spiritually powerful places (Altschul and Ezzo 1994:55; Pigniolo et al. 1997:116; Underwood 2004). Geoglyphs are large abstract or figurative images scraped into desert pavement or made by aligning cobbles. The larger clusters of geoglyphs are thought to be associated with the *Kuruk* or mourning ceremony among Yuman speakers, the most significant event of their ceremonial calendar, while smaller geoglyphs may be associated with smaller ceremonies (Altschul and Ezzo 1994).

## **History**

The Spanish began to explore parts of California in the 1500s, but the desert area encompassed by the project area was largely avoided. Even after parties of Spanish explorers and later Mexican soldiers entered the region, the primary routes of travel passed north and south of the Chocolate Mountains. Unlike the Spanish and Mexican periods (1500s-1848), the Anglo-American period (1848-present) included travel through the Imperial Valley as evidenced in the Bradshaw Trail north of the project area. This overland stage route was first scouted in 1862. Between 1862 and 1877,

the trail was used by miners to haul goods to and from the gold fields at La Paz. By 1868, the Castle Dome cutoff through the southern portion of the range connected Smith's route (surveyed along the southwestern margin of the range in 1857) with the mines at Picacho (Warren and Roske 1981).

Prior to 1805, Spanish and Mexican miners had worked in eastern Imperial County on a limited basis. The first mining activity by Anglo-Americans started in the 1850s (Burney et al. 1993). A major influence to the development of the Imperial Valley was the completion of the Southern Pacific Railroad (today the Union Pacific) in 1877. The railroad brought water to the valley, allowing agriculture to develop prior to the construction of canals. Railroad towns also sprang up along the line in support of commerce and transportation between Los Angeles and Yuma. One such town was Niland, which is adjacent to the project area. A spur from the Southern Pacific, constructed between 1902 and 1904 between Niland and Calexico, helped expand the valley's economy and development (Hendricks 1971).

The railroad prompted Imperial Valley to be more closely tied to Los Angeles, despite its geographic proximity to San Diego. The Cuyamaca Mountains made it difficult to construct a railroad from San Diego to Yuma. Though the San Diego and Arizona Railway was completed in 1919, its isolation and independent development had already resulted in Imperial Valley to seceding from San Diego to become Imperial County by 1907 (Hendricks 1971).

Completion of the Southern Pacific Railroad also had a major influence on mining activities. Mining areas were established in several of the mountain ranges, including the Chocolate and Cargo Muchacho mountains (Woodall et al. 1993). A discovery of gold in 1884 prompted a rush to the area (Burney et al. 1993).

Despite early productivity, by 1905 much of the easily accessible ore was exhausted. To the south in the Cargo Muchacho Mountains, corporations were formed to fund the expense of deep mining operations (Norris and Carrico 1978). Another flurry of mining activity occurred between 1936 and 1940.

Mining was not just limited to the search for gold. There are records of mining activity in search of such minerals as manganese, silver-lead deposits, uranium, and sulfur (Morton 1977). The Paymaster District located in the Mount Barrow area, which operated between 1867 to 1880, was the largest producer of silver-lead in Imperial county (Cleland et al. 2005). Mining in the Chocolate Mountains was most intense between 1890 and 1910 and again in the 1930s (Morton 1977; Rice et al. 1996).

During World War II, large portions of the desert served as training grounds for troops to be sent to the campaign in Africa, under the command of General Patton. This period began in 1942 and ended in 1944 when personnel shortages forced the training area to close (Bischoff 2000). Evidence of their activities is found in the form of rock constructions, fox holes, and ration cans (von Werlhof and von Werlhof 1977). In addition, there are records of large-scale maneuvers between full

divisions of troops. This type of activity would be evidenced by tank tracks, minefields, concertina wire, tank traps, road blocks, and built fortifications (Bischoff 2000).

Camp Dunlap was constructed in 1942 to facilitate military training during World War II. The camp was the southeastern limit of the communications zone for the Desert Training Grounds, and housed troops receiving special desert training (Bischoff 2000). After the war, the camp was maintained by a dwindling number of troops until it was ultimately dismantled in 1956.

Since its closure, Camp Dunlap has been transformed into a community known as Slab City. Slab City is a community of people camping on the concrete slabs of the former buildings of Camp Dunlap. Many of them residents live there during the winter months, but others live freely year round. Though there is no electricity or running water, residents generate power through solar panels and get water in nearby Niland. One of the significant features of Slab City is Salvation Mountain, an approximately three story-high mound constructed of tires, hay bales, adobe, and acrylic paint containing Bible verses (Plate 2). Salvation Mountain has been declared a folk art shrine by the Folk Art Society of America and has been awarded a plaque, indicating that Salvation Mountain is a Folk Art Site Worthy of Protection and Preservation. Salvation Mountain has also been recognized as a national treasure in the United States Senate (Boxer 2002; [www.folkart.org](http://www.folkart.org) 2006; Yust 1999).



**Plate 2. Salvation Mountain**

## CHAPTER 3 METHODS

### RECORDS SEARCH

Prior to the field survey of the project area, a search of the Sacred Lands File (SLF) at the Native American Heritage Commission and cultural resources records at the Southeast Information Center (SEIC) was initiated to determine whether any previously recorded cultural resources were present in the area. The records search included the project area and a 1-mile radius around the project area. The SLF did not indicate any cultural resources present within the project area or 1-mile radius.

A cultural resources records search was conducted at the SEIC on August 12, 2008. The search identified previous studies as well as previously recorded cultural resources within the project area. However, the results of the records search indicated that most of the project area had not been previously surveyed. Thirteen surveys have been undertaken within the search area and 27 previously recorded cultural resources have been recorded within the search area. Of the 27 cultural resources, 8 are located within the project area limits.

Surveys within the project area and 1-mile radius are listed in Table 1. Previously recorded cultural resources recorded within the project area and 1-mile radius are listed in Table 2.

The records search identified 27 cultural resources within the search area. Of the 27, eight are located within the project area. These sites include four prehistoric cultural resources and four historic cultural resources. Prehistoric resources in the project area include a village site (CA-IMP-120), a temporary camp site (CA-IMP-6854), and two pottery scatters (CA-IMP-3098 and CA-IMP-3099). Historic resources in the project area include the Southern Pacific Railroad (CA-IMP-3424H), the Highline Canal (CA-IMP-7835), and two historic refuse scatters (CA-IMP-7829 and CA-IMP-8639H).

In addition to the resources reported in the project area, several cultural resources are located near the project area boundaries. These include site CA-IMP-3179H (First National Bank Building), CA-IMP-6183 (a pottery sherd), and CA-IMP-6855 (lithic scatter). While not located in the project area, these resources indicate what types of resources may be encountered during a field survey of the project area.

**Table 1. Previous Surveys Undertaken within the Records Search Area**

<b>Author</b>	<b>Date</b>	<b>Title</b>	<b>NADB Number</b>
Bell	1974	An Archaeological Survey of the Proposed Right-of-Way of the Realignment of the Coachella Canal	1100003
Caltrans	1989a	Archaeological Survey Report of the Niland Material Site, Imperial County, California	1100433
Caltrans	1989b	East Salton Sea Material Sites Quartz, Chuckwalla, Niland, Standard, and Miter: Biological Survey Report	1100734
Caltrans	1990	Mining and Reclamation Plan for the Niland Material Site (Imperial County)	1100733
Carl	2000	Imperial Irrigation District BN-BS Line Survey of Biological Resources	1101041
County of Imperial	1984	Draft Environmental Impact Report for the Niland Geothermal Energy Program	1100320
Dolan	1998	A Cultural Resources Inventory of the M Transmission Line Pole Replacement Project, Imperial Irrigation District, Imperial County, California	1100659
Jones and Stokes	1999	Cultural Resources Inventory Report for Williams Communications, Inc. Fiber Optic Cable System Installation Project, Riverside, California to the California/Arizona Border, Riverside, San Bernardino, and Imperial Counties, California	1101042
Jones and Stokes	2000	Final Cultural Resources Inventory Report for Williams Communications, Inc. Fiber Optic Cable System Installation Project, Riverside, California to the California/Arizona Border, Riverside, San Bernardino, and Imperial Counties, California Volume I	1101043
Pinto	1989	Environmental Impact Mitigation: Methods, Fieldwork Results, and Interpretation of Archaeological Sites Affected by Construction and Operation of the Imperial Irrigation District Coachella-Midway-East Mesa 230-kV Transmission Line Project, Riverside and Imperial Counties, California	1100438
Singer, Atwood, and Gomes	1993	Cultural Resource Records Search for Southern California Gas Company Line 6902 South Imperial County, California	1100476
Taylor	1987	Archaeological Survey Report and National Register of Historic Places Eligibility Assessment Imperial Irrigation District Coachella-Midway-East Mesa 230 kV Transmission Line Project, Riverside and Imperial Counties, California	1100387
von Worlhof	1983	Archaeological Examinations of the Republic Geothermal, Inc., 49MW Plant Site Near the Salton Sea	1100291



**Table 2. Previously Recorded Cultural Resources within the Records Search Area**

Site Number (CA-IMP-)	Site Type	In Project Area	
		Yes	No
120	Prehistoric Village Site	X	
1077	Clay Pot		X
3098	Pottery Scatter	X	
3099	Pottery Scatter	X	
3179H	First National Bank		X
3181H	WW II Airplane Repair Shop		X
3182H	Sentry Box at Camp Dunlap		X
3424H	Southern Pacific Railroad	X	
5246	Prehistoric Village Site		X
C-15	Prehistoric Village Site		X
6181I	Isolate Flake		X
6183I	Pottery Sherd		X
6495	Lithic and Pottery Scatter		X
6663	Pottery Scatter		X
6676	Temporary Campsite		X
6854	Temporary Campsite	X	
6855	Lithic Scatter		X
6856	Lithic Scatter		X
6857	Lithic Scatter		X
6858	Shell Scatter		X
6859	Temporary Campsite		X
6882	Temporary Campsite		X
6983	Isolate Chopper		X
7829	Historic Refuse Scatter	X	
7835	Highline Canal	X	
8166	Niland to Calexico Railroad		X
8639H	Historic Refuse Scatter	X	

## **FIELD METHODS**

An intense pedestrian field survey to identify archaeological and architectural resources was undertaken between August 19 and August 28, 2008, and on September 17, 2008. The survey was conducted to determine whether any previously unrecorded cultural or architectural resources were located within the project area. The architectural survey also included parcels immediately adjacent to the project footprint. While the records search indicated that several surveys had taken place within the project area, much of the project area had not been subjected to systematic surveys. EDAW's field analysis of the project area included a physical survey of all accessible portions of the project area. The survey included linear transects. Each member of the survey crew was spaced 15 meters apart to ensure complete coverage of the project area and the global positioning system (GPS) was used to establish each transect distance. Much of the project area is bounded by constructed facilities such as roads, railroads, or irrigation ditches. Ground visibility was good to excellent throughout the project area.

Archaeological sites encountered in their primary context during the pedestrian field survey were recorded on California Department of Parks and Recreation Primary Record forms (Form DPR 523A) and Archaeological Site forms (Form 523C). Sketch maps were prepared, UTM coordinates were noted (in NAD 83) using a GPS device, and photographs were taken of each site location. Temporary site numbers were assigned to each site to identify it with the project (i.e., NS-1 would identify the first site identified on the Niland Solar project).

Archaeological sites encountered in a secondary context (i.e., resources had been moved or redeposited after their initial deposition) were recorded on Primary Record forms only. In addition, UTM coordinates were noted and photographs were taken of each site location to document the secondary nature of the deposit.

Architectural structures encountered during the field survey were recorded on Primary Record forms. Temporary site numbers were assigned and photographs were taken of each structure.

Isolated finds were not recorded on Primary Record forms. UTM coordinates were noted using a GPS device and photographs were taken of each of isolated find.

## **EVALUATION CRITERIA**

Once the survey was completed, the results were documented in a cultural and architectural resources report. This report outlines the results of the survey and provides statements of significance for each resource. Site forms were prepared for each new site encountered and previously recorded site forms were updated. All site forms are included in this report in Appendix B.

According to CEQA, a resource may be significant if it meets any one of the following criteria:

- 1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- 2) Is associated with the lives of persons important in our past;
- 3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;
- 4) or Has yielded, or may be likely to yield, information important in prehistory or history.



## CHAPTER 4 RESULTS

The pedestrian filed survey documented 36 cultural sites. This included the identification of 31 new archaeological sites. In addition, site forms for five previously recorded archaeological sites were updated during the survey. This chapter describes each of the archaeological sites observed during the survey, including newly recorded sites, previously recorded sites, and isolated finds. A significance statement is included with each site description, outlining whether the site is recommended eligible for inclusion to the CRHR based on observations made during the survey.

The majority of the resources located in the study area were historic in nature, likely dating to the construction and maintenance of the railroad or the use of nearby Camp Dunlop. Most sites were located in the northwestern portion of Area 4-1, but sites were observed in all five portions of the project area.

Sites observed during the field survey are listed below in Table 3. The table lists the site number and the area in which it is located, and provides a brief description of the site by type.

**Table 3. Cultural Resources Identified in the Project Area**

<b>Site Number</b>	<b>Work Area</b>	<b>Site Type</b>
CA-IMP-3424H	4-1, 4-2, and 4-4	Union Pacific Railroad
CA-IMP-6854	4-5	Pottery and Lithic Scatter
CA-IMP-7829	4-4	Historic Refuse Scatter
CA-IMP-7835	4-5	East Highline Canal
CA-IMP-8639H	4-1, 4-2	Historic Refuse Scatter
NS-1	4-3	Historic Refuse Scatter
NS-3	4-1	Pottery Scatter
NS-4	4-2	Historic Refuse Scatter
NS-5	4-1	Historic Refuse Scatter
NS-6	4-1	Historic Refuse Scatter
NS-7	4-1	Water Retention Basins
NS-8	4-1	Historic Refuse Scatter
NS-9	4-1	Historic Refuse Scatter
NS-10	4-1	Historic Refuse Scatter
NS-11	4-1	Historic Refuse Scatter
NS-13	4-1	Historic Refuse Scatter
NS-14	4-1	Lithic Scatter
NS-15	4-1	Lithic Scatter
NS-17	4-1	Historic Refuse Scatter

<b>Site Number</b>	<b>Work Area</b>	<b>Site Type</b>
NS-18	4-5	Pottery and Lithic Scatter
NS-19	4-5	Lithic Scatter
NS-20	4-1	Historic Refuse Scatter
NS-22	4-4	Historic Refuse Scatter
NS-23	4-4	Lithic Scatter
NS-24	4-4	Historic Refuse Scatter
NS-25	4-4	Deflated Hearth
NS-26	4-1, 4-2, and 4-4	Canal
NS-27	4-4	Historic Refuse Scatter
NS-28	N/A	Adobe Structure
NS-29	N/A	Craftsmen Vernacular Building
NS-30	N/A	L-Shaped Residence
NS-31	N/A	Folk Victorian House
NS-32	N/A	Ranch-style Building
NS-33	N/A	Warehouse
NS-34	4-3	Historic Refuse Scatter
NS-35	4-3	Historic Refuse Scatter

### **Previously Recorded Sites**

A records search indicated that eight previously recorded sites were located within the project area. During the survey, five of these resources were relocated but three could not be relocated. Relocated sites included the Union Pacific Railroad, a pottery and lithic scatter, the East Highline Canal, and two historic refuse scatters. Sites that could not be relocated were two pottery scatters and one village site originally recorded by Malcolm Rogers.

#### ***CA-IMP-120***

CA-IMP-120 was originally recorded by Malcolm Rogers in 1930. At that time he identified sandstone slab house circles (some rectangular in shape), cremations (with associated burial items), and mussel roasting pits. Rogers also noted large, at least 16-in-diameter ironwood trees and a large drainage bisecting the site. According to records kept at the SEIC, CA-IMP-120 is located in the project area near the ancient shoreline of Lake Cahuilla.

EDAW archaeologists were unable to relocate the site during the survey. The site was not located at the reported UTM coordinates. In addition, neither large ironwood trees nor a large drainage were located near the reported site location. It is possible that the site has been misplotted since Rogers originally recorded it and is in fact located near a large wash north and west of the current project area.

### ***CA-IMP-3098***

CA-IMP-3098 is a pottery scatter recorded by J. McManus in 1978. At that time, two pottery sherds were identified. The site record indicates that at that time, both sherd were collected. EDAW archaeologists visited the site location to confirm that no other pottery was present at the site. No cultural materials were observed at the site location during the survey.

### ***CA-IMP-3099***

CA-IMP-3099 is a pottery scatter recorded by B. Hunter in 1978. At that time, three buff ware pottery sherds that were separated by less than one meter were identified. The site record indicates that one of the sherds was collected. EDAW archaeologists visited the site location during the current survey. No cultural materials were observed at the site location or immediate area. It is possible that the two remaining sherds have been displaced or looted since their original recordation.

### ***CA-IMP-3424H***

CA-IMP-3424H is a segment of the Union Pacific Railroad (historically part of the Southern Pacific Railroad) that was constructed in the 1870s (Myrick 1992). The railroad was recorded by S. Ashkar in 1999. This portion of the railroad is part of a standard gauge railroad that runs across California. Historically, the Southern Pacific Railroad travelled through Imperial Valley between Los Angeles and Yuma and has been in active use since its construction. In the 1990s, Union Pacific purchased the line.

A 2.3-mile portion of the Union Pacific Railroad is within the project area. The entire length of track is a standard narrow gauge track that has been maintained and updated since its initial construction. Features associated with the railroad include a railroad crossing at Main Street in Niland, which include modern crossing gates and lights. Another feature of the railroad is a power line featuring glass insulators. The line parallels the track throughout the project area. While there is no specific data as to when the power line was constructed, the presence of glass insulators suggests that it was constructed by at least the 1930s.

Portions of the Southern Pacific Railroad and Union Pacific Railroad have been listed as eligible for inclusion to the National Register of Historic Places (NRHP). As such, the railroad meets the requirements for inclusion to the CRHR. While the portion of the railroad within the project area has not been evaluated for inclusion to the CRHR, it is potentially eligible under Criterion 1. The Southern Pacific Railroad allowed agriculture and mining to develop in the Imperial Valley and linked communities such as Niland to Los Angeles. As such, the railroad made a significant contribution to the broad patterns of California history. The section of the railroad within the project area cannot be associated with individuals important to California's past and is recommended not eligible under Criterion 2. The railroad has been maintained and upgraded over time and does not embody a distinct type or method of construction and is recommended not eligible under Criterion 3. The railroad is unlikely to contribute information important to prehistory or history and is recommended not eligible under Criterion 4.

### ***CA-IMP-6854***

This site was recorded by Theresa Bowers in 1992 as a temporary campsite for the exploitation of Lake Cahuilla. Artifacts at the site included choppers, flaked stone knives, pumice abraders, pottery sherds, quartz fragments, flakes, hammerstones, and cores. Features identified included surface soil burns and clamshell clusters. The site was reported above the shoreline of Lake Cahuilla over a 100 m N-S by 50 m E-W area.

EDAW archaeologists visited the site location during the current survey and were only able to relocate a single buff ware body sherd. Alluvial and Aeolian processes may have buried portions of the site and several ephemeral dunes are present at the site location. In addition, there is evidence of heavy off-road vehicle use throughout the area, which may have disturbed and redistributed portions of the site.

Based on observations in the field, CA-IMP-6854 is recommended not eligible for inclusion to the CRHR under all Criteria 1 through 3 and potentially eligible under Criterion 4. The site cannot be associated with the events that have made a significant contribution to California's past (Criterion 1). Furthermore, the site cannot be associated the lives of individuals important to California history (Criterion 2). The site does not embody the characteristics of a distinct type or style (Criterion 3).

Previous observations at CA-IMP-6854 indicated that an extensive village site was present. While extensive cultural materials were not observed at the site during the current survey, it is possible that the site has been buried under ephemeral dunes. If the site is buried, it is likely to yield information important to prehistory as a site located on the shoreline of Lake Cahuilla. As such, CA-IMP-6854 is potentially eligible under Criterion 4.

### ***CA-IMP-7829***

Site CA-IMP-7829 is a historic refuse scatter consisting of cans, glass, ceramics, and bricks. The site was originally recorded by C. Bowden-Renna in 1998, who noted approximately five meat tins, 30 sanitary cans, and 20 evaporated milk cans. Other artifacts included solarized glass, cobalt glass fragments, and bottle bases with maker's marks dating to the early 20th century. Artifacts were scattered over an 82 ft north-south by 52 ft east-west area with the majority of artifacts concentrated in a smaller area at the center of the site.

EDAW relocated the site during the current survey. At that time, all artifacts that had been listed on the previous site record were noted. No changes in the site's context or integrity were observed.

The site was recommended not eligible for inclusion to the CRHR under all criteria when it was originally recorded (Dolan 1998). Based on observations made during the current survey, EDAW concurs with the original assessment and recommends the site not eligible under all criteria.

### ***CA-IMP-7835***

CA-IMP-7835 is the East Highline Canal, a canal that runs from the Alamo Canal to just north of Niland. It was constructed before 1914 and was incorporated into the All-American Canal System



(constructed between 1933 and 1938) when it opened in 1940. East Highline Canal was recommended eligible for NRHP inclusion as part of the All-American Canal System (Hanna 2000; Harris 2000).

A small portion of the East Highline Canal crosses the project area on the southern edge of Highline Canal Road/Weist Road. The canal runs for 330 feet from northwest to southeast. The canal measures 42 ½ feet across and has no concrete lining or riprap. The walls of the canal are earthen and no stop gates or check gates are present within the project area.

The East Highline Canal has been recommended eligible for inclusion to the NRHP as part of the All-American Canal System (CA-IMP-7130H) (Schaeffer 2001). However, the portion within the project area has never been formally evaluated. Portions that have been evaluated include east of El Centro (Apple et al. 2006; Dolan 2005; Hanna 2000; Harris 2000; Schaeffer 2001). As part of the All-American Canal System, CA-IMP-7835 is eligible for inclusion to the NRHP and CRHR. It is eligible under Criterion 1 because it is associated with the development of Imperial County in the early 20<sup>th</sup> century, an event that had a significant impact on agriculture in California's past.

### ***CA-IMP-8639H***

CA-IMP-8639H is a large trash scatter originally recorded by Sander (2007) and Sander and Maxon (2007). The site was identified as a 12-acre scatter of historic and modern trash. The oldest refuse was concentrated in a 0.5-acre area approximately 385 feet away from the railroad tracks and was dated to the 1940s. EDAW archaeologists relocated the site during the current survey. Since it was originally recorded, CA-IMP-8639H has expanded, with more debris being noted to the west of the original site boundaries. The refuse deposits are located over a 1,350 ft N-S by 2,380 ft E-W area. Overall, EDAW archaeologists noted a minimum of 96 individual refuse piles over the entire site area. Modern and historic refuse was intermixed and it appears that the dump is still in active use.

The site was originally recommended not eligible for CRHR inclusion (Sander and Maxon 2007). Since it was originally recorded, the boundaries of CA-IMP-8639H have expanded, but its status as an ineligible site remains the same. EDAW concurs with the original assessment and recommends that expanded area not eligible for CRHR inclusion under all criteria.

### **Newly Recorded Sites**

Newly recorded sites were encountered in all areas of fieldwork. The majority of the sites encountered were historic refuse deposits, but prehistoric sites were observed as well. Other historic sites encountered included canals, railroads, and isolated military debris. Prehistoric sites included lithic scatters and pottery scatters. One site with three deflated hearths was also encountered.

### ***NS-1***

NS-1 is a single event historic refuse deposit. The site consists of 14 cans and 38 glass fragments from at least three individual vessels scattered over a 32 ft north-south by 20 ft east-west area. Thirteen of the cans were sanitary cans, nine of which were opened with a can opener. One was

knife cut and one had punched holes. One can had an unknown opening method and one sanitary can was crushed. All sanitary cans measured 4 ½ in by 3 in. The final can at the site was an evaporated milk vent hole filler can measuring 2 ½ in by 2 ½ in. Glass at the site consisted of 13 brown glass fragments from a 1-gallon Clorox bottle. A second vessel consisted of 24 brown glass bottle fragments that included a screw top lip, neck fragment, body fragments, and a base with “PACIF.../...L.../...ANGE.../CAL...” The base had an Owen’s ring, indicating that it post-dates 1903. The final glass fragment was a clear body fragment.

Based on the artifact assemblage at NS-1, this refuse deposit likely dates to the early 20<sup>th</sup> century. Sanitary cans were a primary can type in California between 1898 and 1911 (Rock 1987: 22). Additionally, the Owens ring on one of the bottle fragments indicates it was made by an automatic bottle machine, which dates to 1903 (Toulouse 1971: 393).

NS-1 is recommended not eligible for inclusion to the CRHR under all criteria. The site cannot be associated with events significant to the broad patterns of California history (Criterion 1). Furthermore, the site cannot be associated with individuals important to California’s past (Criterion 2). Artifacts at NS-1 do not embody a distinct type or style and they do not possess high artistic value (Criterion 3). Lastly, NS-1 is unlikely to yield information that is important to prehistory or history (Criterion 4).

### **NS-3**

NS-3 is small prehistoric pottery scatter consisting of a total of seven body sherds located on the surface over a 1.5 m north-south by 5 m east-west area. The site sits on low dune next to an unnamed seasonal drainage and does not appear to have a subsurface component. The site is also near an actively used dirt road and there is evidence of off-road vehicle use in the area. Six of the body sherds have a red interior and tan exterior with visible temper. The sherds range in size from 5.7 cm by 3.3 cm to 2.6 cm by 2.2 cm. The remaining sherd is a buffware body sherd measuring 7 cm by 5 cm. It is tan on both the interior and exterior and small grains area visible in the temper.

Based on the observed artifacts at the site, NS-3 is recommended not eligible for inclusion to the CRHR under all criteria. It cannot be associated with events significant to the broad patterns of California’s history (Criterion 1) and it cannot be associated with persons important to California’s past (Criterion 2). The pottery does not embody distinctive characteristics of a type, period, region, or method of construction and does not represent the work of a master or possess high artistic values (Criterion 3). Lastly, the site is not likely to yield information that is important to prehistory or history (Criterion 4).

### **NS-4**

NS-4 is an historic refuse scatter and concrete foundation that is may be related to the adjacent railroad. The site measures 154 ft north-south by 320 ft east-west. Historic refuse observed at the site included numerous glass fragments (including clear, brown, olive green, aqua, cobalt blue, milky, and amethyst). No identifying marks were observed on any of the glass fragments. Other artifacts at the site were large pieces of iron that are likely related to the construction and

maintenance of the railroad, metal barrel straps, and metal rebar. While the exact function of the concrete foundation cannot be determined, it is the only remaining structure of six that used to be adjacent to the railroad according to the 1956 U.S. Geological Survey (USGS) Niland Topographic Quadrangle (indicating that it is at least 50 years old). The concrete foundation measures 13 feet north-south by 22 feet east-west and 2 ½ feet high. There is evidence the structure that once stood there was a restroom, as six drains and pieces of porcelain were visible on the structure. This may indicate that the foundation was once part of a series of buildings that were part of a railroad stop in Niland. The site has been heavily impacted by recent blading in the area. Many of the historic resources have been pushed into small piles. In addition, off-road vehicle use is visible in the area.

Based on observations made during the survey, NS-4 is recommended not eligible for inclusion to the CRHR under all criteria. The site cannot be directly associated with events significant to the broad patterns of California's history and it cannot be associated with persons important to California's past (Criteria 1 and 2). Furthermore, it does not represent the distinctive characteristics of a type, period, region or method of construction, and it does not represent the work of a master or possess high artistic value (Criterion 3). It is not likely to yield information that is important to prehistory or history (Criterion 4).

#### ***NS-5***

NS-5 is a single event historic refuse scatter consisting of 19 tin cans, one glass bottle, and two metal straps over a 9 ft north-south by 2 ½ ft east-west area. The site is located in a disturbed area below a modern berm that has been established near the Union Pacific Railroad. Cans and bottles at the site are eroding out of an unnamed seasonal drainage that parallels the berm.

Thirteen of the 19 cans were crushed and could not be measured. Of the remaining six cans, two are evaporated milk cans that measure 2 ½ in by 2 ½ in and feature punched holes for opening while the other four sanitary cans that measure 4 ⅞ in by 3 in in diameter. All four were church key opened. Two metal straps observed at the site measured 1 ¼ in wide. The lone bottle found at NS-5 was manufactured using an automatic bottle machine with a "5/EC" on the base. While the mark cannot be placed temporally, the automatic bottle machine indicates that it postdates 1903.

NS-5 is recommended not eligible for inclusion in the CRHR under all criteria. It cannot be related to events significant to the broad patterns of California's history (Criterion 1) and it cannot be associated with the lives of persons important to California's past (Criterion 2). The site does not represent a distinctive type or period and does not have high artistic value (Criterion 3). Lastly, it is unlikely that NS-5 will yield information important to prehistory or history (Criterion 4).

#### ***NS-6***

NS-6 is a single event historic refuse scatter that likely dates to the early to middle part of the 20th century. The site consists of 23 cans and at least five glass bottles (one aqua and four clear). Of the 23 cans, 11 were crushed and could not be measured. The remaining 12 consisted of one sanitary can measuring 4 ½ in by 3 in, five sanitary cans measuring 4 ½ in by 3 ½ in, one fragmentary can measuring 5 ½ in by 5 ¼ in, three evaporated milk cans (2 ½ in by 2 ½ in) that are punch hole

opened, and two square ham tins with twist-open tops measuring 6 ½ in by 4 ½ in by 1 ½ in. No complete bottles were observed at the site. The aqua bottle at the site consisted of base, body, and rim shards with no observable maker's marks. Two of the bottles had no markings at all. The remaining two bottles included two intact bases that were manufactured with an automatic bottle machine and featured "DIGIORGIO WINE CO. DIGIORGIO CALIF" on the heel. DiGiorgio Wine Company began operation in the 1930s after the end of prohibition.

Based on the artifacts observed at NS-6, the site is recommended not eligible for inclusion to the CRHR under all criteria. The site is not directly associated with broad patterns of California's history (Criterion 1) and it cannot be directly associated with persons important to California's past (Criterion 2). No elements of the site embody the distinct characteristics of a type or method of construction and do not possess high artistic value (Criterion 3) and the site is unlikely to yield information that is important to prehistory or history (Criterion 4).

### ***NS-7***

NS-7 consists of two currently dry water retention reservoirs with earthen walls located between the Union Pacific Railroad and the existing Imperial Irrigation District (IID) Niland gas turbine plant. The reservoirs appear on the 1956 Niland USGS Topographic Quadrangle, indicating that they are at least 50 years old.

The exterior of each reservoir is built above ground and the interior is below ground surface. Reservoir 1 is the more northern of the two. The exterior berms of Reservoir 1 are as follows:

- north – 5 feet above surface
- east – 6 feet above surface
- south – 3 feet above surface
- west – 4 feet above surface

The center of Reservoir 1 is 11 feet below surface at an elevation of -111 ft amsl.

The exterior berms of Reservoir 2 are as follows:

- north – 5 feet above surface
- east – 3 feet above surface
- south – 5 feet above surface
- west – 3 feet above surface

The center of Reservoir 2 is 14 feet below surface at an elevation of -114 amsl.

The reservoirs have been impacted by off-road vehicle use (Plate 3). Tracks are evident in both reservoirs. Other impacts are due to heavy equipment use near the area. The site is located adjacent to the Union Pacific Railroad, and the surrounding area has been heavily impacted by construction debris.



**Plate 3. Reservoir 2 at NS-7**

NS-7 is recommended not eligible for inclusion to the CRHR under all criteria. The site is not related to events that have made a significant contribution to California's history (Criterion 1). NS-7 cannot be directly related to individuals important to California's past (Criterion 2). The reservoirs at NS-7 do not represent the characteristics of a distinct type or style and they do not possess high artistic value (Criterion 3). NS-7 is also unlikely to yield information that is important to prehistory or history and is not eligible under Criterion 4.

### **NS-8**

NS-8 is an historic refuse deposit comprised of two artifact concentrations. The site measures 25 ft north-south by 146 ft east-west. Concentration 1 measures 12 ½ ft north-south by 26 ½ ft east-west and consists of 18 cans and the fragmentary remains of two glass vessels. Fourteen of the cans in Concentration 1 are crushed. The remaining four are of different sizes. One is 2 in by 3 ¾ in with an unknown opening method, one is 4 in by 2 ¾ in with an unknown opening method, one is a sanitary can that is 4 in by 3 in and is knife punched, and one is 6 in by 3 in and was opened with a can opener (possibly a P38). Glass fragments are from at least one brown glass bottle and a clear drinking glass. The brown glass bottle is a whiskey bottle with no maker's mark and the drinking glass has no identifying marks.

Concentration 2 measures 16 ft north-south by 12 ft east-west and contains fragments of brown, olive, and clear glass vessels. All glass is fragmentary, but the number of lips and bases indicates that at least six bottles are present at the site. One brown bottle base indicates that it was made by an automatic bottle machine, indicating it was manufactured after 1903. Other artifacts within Concentration 2 are one whiteware bowl fragment and seven cans. Two cans are tobacco tins measuring 4 ½ in by 3 in by 1 in with hinge openings. There are no striker plates or embossing on the tins. The remaining cans consist of can lids, two of which measure 2 ½ in, one that is 2 ¾ in, one that is 3 in, and one that is 4 ½ in.

Based on the artifact assemblage at NS-8, it is likely that this refuse deposit dates to the early to middle 20th century. The site is recommended not eligible for CRHR inclusion under all criteria. The site does not contribute to the broad patterns of California's history and cannot be associated with persons important to California's past (Criteria 1 and 2). Furthermore, the site does not represent a distinctive style or type and does not represent the work of a master or have high artistic value (Criterion 3). Finally, the site is not likely to contribute important information to prehistory or history (Criterion 4).

### ***NS-9***

NS-9 is a large historic refuse scatter that has been displaced from its original location and mixed with modern refuse as well. Historic bottles and cans and modern debris are piled to the immediate south of a dirt road leading from Wilkins Road to the Niland power plant. Refuse has been pushed into piles as well as into an unnamed seasonal drainage near the road. The refuse deposit covers an area 60 ft north-south by 625 ft east-west. Cans observed included evaporated milk cans, sanitary cans, meat tins, and tobacco tins. Fragmentary glass was observed, including clear, brown, aqua, milky, and cobalt blue. Because the historic artifacts have been redeposited into push piles with modern debris, it is impossible to determine how many dumping episodes are represented at this location and the site or sites no longer retain integrity.

Because the integrity of the site has been compromised, NS-9 is recommended not eligible for CRHR inclusion under all criteria. The site cannot be associated with the broad patterns or events of California's history and cannot be associated with individuals important to California's past (Criteria 1 and 2). The site does not represent a distinct style or type and cannot be recommended under Criterion 3. Lastly, because the integrity of the site has been severely compromised, NS-9 cannot yield information that is important to prehistory or history (Criterion 4).

### ***NS-10***

NS-10 is a single event historic refuse scatter located on an ephemeral dune. The site is comprised primarily of evaporated milk cans, but one glass bottle is present as well. A total of 32 tin cans were recorded at the site. Twenty-three of the cans were evaporated milk cans measuring 2 ½ in by 2 ½ in with punched hole openings. The remaining cans included five tobacco tins measuring 4 ½ in by 3 in by 1 in, three sanitary cans measuring 4 ½ in by 3 ½ in (all of which were opened using a jab and lift method), and one meat tin measuring 2 ¾ in by 3 in by 3 ½ in. The only glass at the site was a

square clear glass bottle base measuring 3 in by 2 in. There was no identifying mark on the base, but it was manufactured by an automatic bottle machine, indicating that it post-dates 1903.

NS-10 is a refuse deposit similar to others found in the immediate area and throughout the desert region of southern California. It is not associated with events significant to the broad patterns of California's history (Criterion 1). It cannot be associated with the lives of persons important to California's past (Criterion 2). It does not embody the distinctive characteristics of a type, period, region, or method of construction or represent the work of an important individual (Criterion 3). It is unlikely to yield information that is important to prehistory or history (Criterion 4). Based on observations in the field, NS-10 is recommended not eligible for CRHR inclusion.

### ***NS-11***

This site is an historic refuse scatter that has been redeposited and intermixed with modern debris. The site consists of historic cans and glass fragments pushed into a pile with modern ceramics, glass bottles, and car parts. Cans at the site include sanitary cans and matchstick filler cans, which date to the early 20th century. Historic glass consists of a single amethyst glass fragment, which pre-dates 1921. There is evidence of off-road vehicle use in the area, which may have contributed to the disturbances of this deposit.

Because of disturbances to NS-11, the site no longer retains integrity and is not recommended for inclusion to the CRHR. The site has not made a significant contribution to the broad patterns of California's history and cannot be directly associated to individuals important to California's past (Criteria 1 and 2). The site does not represent the characteristics of a distinct type or style (Criterion 3). Lastly, the site has been disturbed since its original deposition and is unlikely to yield information that is important to prehistory or history (Criterion 4).

### ***NS-13***

This site is an historic refuse scatter that consists of one complete glass jar, glass fragments, and five crushed tin cans. The site is located between two ephemeral washes over a 22 ft north-south by 18 ft east-west area. The only intact artifact at this site is a clear mason jar measuring 6 <sup>5</sup>/<sub>8</sub> in by 3 <sup>1</sup>/<sub>8</sub> in. A maker's mark located on the base of the jar is an interlocked "L" and "M." The mark belongs to Latchford-Marble Glass Company, which was in use between 1939 and 1957 (Toulouse 1971: 332). Other glass at the site includes part of a Royal Crown soda bottle, a clear bottle lip with a screw top, a fragment of olive glass that reads "PROPE...", and brown glass bottle fragments. All artifacts were located on the surface or within one of the two washes adjacent to the site.

NS-13 is recommended not eligible for inclusion to the CRHR under all criteria. The site does not contribute to the broad patterns of California history (Criterion 1). Also, the site cannot be associated with persons important to California's past (Criterion 2). NS-13 does not embody the characteristics of a type or style or represent the work of an important creative individual (Criterion 3). NS-13 is not likely to yield information that is important to prehistory or history (Criterion 4).

#### ***NS-14***

NS-14 is lithic scatter that consists completely of obsidian flakes and cores over a 27.5 m north-south by 8.2 m east-west area (Plate 4). A total of 51 obsidian flakes and one obsidian core were observed at the site. Thirty of the flakes are densely concentrated in a 1 m by 1 m area while the remaining 21 are dispersed throughout the site. The flakes range in size from 2.5 cm by 2 cm to 10 cm by 7 cm. The core is located at the northern end of the site and measures 15 cm by 12 cm.



**Plate 4. NS-14 Overview to the north**

Most of the lithics at the site are primary and secondary flakes, indicating that this is a lithic procurement/reduction site. A lack of tool fragments and tertiary flakes suggests that the site is not a tool production site. All artifacts appear to be on the surface, but subsurface deposits may exist as well. Impacts are evident near the site as well. Eight push piles of dirt border the site to the south and southeast and piles of debris are located beyond them. There is also evidence of construction vehicle use in the form of large tire tracks near the site.

NS-14 is not recommended eligible for inclusion to the CRHR under Criteria 1 through 3 and is potentially eligible for inclusion under Criterion 4. The site does not relate to events that have made a significant contribution to California's history (Criterion 1) and it is not associated with



individuals important to California's past (Criterion 2). The site does not embody a distinct style or type, and it does not represent the work of a master (Criterion 3). Finally, it is possible that obsidian at NS-14 may be able to answer questions about regional chronological and hydrological events, such as recession of Lake Cahuilla. NS-14 is located below the 40-foot contour, and obsidian hydration analysis may yield information as to when the lake was expanding or receding in prehistory. Because so many obsidian artifacts are at the site, it is likely that reliable dates can be obtained through obsidian hydration.

### ***NS-15***

NS-15 is an obsidian lithic scatter that includes 264 flakes and four cores primarily located in a 19 m north-south by 22 m east-west area (Plate 5). The dimensions of the entire site are 47 m north-south by 46 m east-west and the site is located on the east side of Wilkins Road. Additional obsidian flakes were noted on the west side of the road. All of the flakes observed on the surface were primary and secondary flakes. No evidence of tool manufacture was noted on any flakes at the site. Flakes range in size from 1.9 cm by 1.4 cm to 4.6 cm by 5.1 cm. All four cores are located in the lithic concentration.



**Plate 5. NS-15 Overview to the south**

NS-15 is not recommended for inclusion to the CRHR under Criteria 1 through 3 and is potentially eligible under Criterion 4. NS-15 does not relate to events or persons important to California's past (Criteria 1 and 2). The site does not embody the characteristics of a distinct type or style and it does not represent the work of a master or possess high artistic value (Criterion 3). NS-15 is potentially eligible for CRHR inclusion under Criterion 4 because the density of obsidian artifacts may contribute to information important to prehistory. Since NS-15 is located below the 40-foot contour, dates obtained through obsidian hydration can reveal when lithics at NS-15 were made and may indicate prehistoric levels of Lake Cahuilla.

### ***NS-17***

This site is a single event historic refuse scatter consisting of 13 tin cans,  $\frac{1}{8}$  in wire mesh measuring 16 in by 7 in, brown bottle glass from a Clorox bottle, and a clear bottle base and heel fragment over an 18 ft north-south by 21 ft east-west area. Of the 13 tin cans at the site, six are sanitary cans. Two of the sanitary cans measure 4 in by 3 in and are punch hole opened while the other four measure  $4\frac{3}{4}$  in by 3 in and are church key opened. The remaining seven cans are crushed and could not be measured. Both the Clorox bottle fragments and clear bottle base contain an Owens-Illinois maker's mark. The mark on the Clorox bottle dates to between 1929 and 1954 while the mark on the clear bottle base was used beginning in 1954 (Toulouse 1971: 403), indicating that this refuse deposit likely dates to the mid-1950s.

NS-17 is recommended not eligible for inclusion to the CRHR under all criteria. It is not associated with events that have made a significant contribution to the broad patterns of California's history and it is not associated with the lives of persons important to California's past (Criteria 1 and 2). The site does not embody the characteristics of a type of period or posses high artistic value (Criterion 3). Finally, the site is unlikely to yield information that is important to prehistory or history (Criterion 4).

### ***NS-18***

NS-18 is a widely dispersed pottery and lithic scatter that measures 10 m north-south by 1.5 m east-west. Pottery at the site includes two red-brown body sherds and four body sherds with tan exteriors and gray interiors concentrated in a 1 m by 1 m area. All pottery sherds feature fine-grained tempers. The only lithic observed at the site is a single gray CCS flake measuring 6 cm by 2 cm. The site is located below a recessional shoreline of Lake Cahuilla near the 40-foot contour. All artifacts were located on the surface and it does not appear that a subsurface deposit exists at this site. It is possible that these artifacts were deposited at this location by alluvial actions. There are active ephemeral washes throughout the area which may have deposited these artifacts at this site.

Based on artifacts observed at NS-18, the site is recommended not eligible for inclusion to the CRHR. It cannot be associated with events significant to California's past (Criterion 1). Furthermore, it cannot be associated with persons important to California's past (Criterion 2). The site does not embody a distinct type or style (Criterion 3) and it is unlikely that the site will contribute information important to prehistory or history (Criterion 4).

### ***NS-19***

This site is a lithic scatter that consists of obsidian flakes, a core, and a tool just below the 40-foot contour. Unmodified obsidian is also present at the site. A total of 85 pieces of obsidian were observed loosely scattered over a 10.5 m north-south by 35 m east-west area (Plate 6). Eighty-three flakes were observed at the site, most of which were primary or secondary. Flakes ranged in size from 1.7 cm by 3 cm to 0.7 cm by 0.8 cm. The two remaining pieces of obsidian were a spent obsidian core and a flake tool. The flake tool measured 5.2 cm by 3.2 cm and features a unifacially retouched edge. NS-19 is located to the immediate north of a dirt road and there is active off-road vehicle use in the area. Some obsidian was noted in a modern berm, indicating that the site has been disturbed since its deposition.



**Plate 6. NS-19 Overview to the north**

NS-19 is recommended not eligible for inclusion in the CRHR under Criteria 1 through 3 and potentially eligible for inclusion under Criterion 4. The site cannot be directly associated with events or persons important to California's past (Criteria 1 and 2) and the site does not represent a distinct type or style (Criterion 3). However, the large amount of obsidian at the site may yield important chronological data about Lake Cahuilla (Criterion 4). Obsidian hydration analysis on

several artifacts from the site will establish reliable dates for the site and may yield new information about the recession of the lake.

### ***NS-20***

This site is a single event historic refuse scatter located over a 14 ft north-south by 32 ft east-west area. The site consists mostly of tin cans and bailing wire but glass artifacts are present as well. Forty-two tin cans were observed at NS-20, 30 of which were crushed. The remaining 12 cans included one sanitary can measuring 4  $\frac{3}{8}$  in by 3 in, four sanitary cans measuring 4  $\frac{3}{4}$  in by 2  $\frac{3}{4}$  in, and seven oil cans measuring 7 in by 4  $\frac{1}{2}$  in. All the oil cans are punch hole opened and one is embossed with “SAE 10” on the lid. Glass at the site includes an RC Cola bottle with a crown top lip manufactured by an automatic bottle machine and fragments of cobalt blue, olive green, brown, and clear glass. Maker’s marks were observed on three base fragments. One is an Owens-Illinois mark dating to between 1929 and 1954 (Toulouse 1971: 403). The second is a version of the Anchor Hocking Glass Corporation mark that has been used since 1938. It is likely that it is closer to 1938 rather than later because the mark did not bear the name of the company, a feature that was adopted later (Toulouse 1971: 48). The final maker’s mark is a version of the Maywood Glass Company mark that was used between 1940 and 1958 (Toulouse 1971: 357).

Based on the artifact assemblage, NS-20 is recommended not eligible for inclusion to the CRHR. The site does not contribute to events that have made significant contributions to California’s history (Criterion 1). Furthermore, NS-20 cannot be directly related to persons important to California’s past (Criterion 2). The site does not represent a distinct type or style (Criterion 3) and is unlikely to yield information that is important to prehistory or history (Criterion 4).

### ***NS-22***

This site is an historic refuse deposit that has been redeposited by an active alluvial wash. The site is located in an active wash and artifacts have been scattered over a 36 ft north-south by 11 ft east-west area with most artifacts in a 8 ft north-south by 6 ft east-west area due to the presence of a creosote bush that has prevented the artifacts from washing away completely. A total of 27 cans were identified at the site, 17 of which were crushed. The remaining 10 cans consisted of four evaporated milk cans that were punch hole opened ( 2  $\frac{1}{2}$  in by 2  $\frac{1}{2}$  in), five sanitary cans measuring 4 in by 3 in, and one ham tin measuring 7  $\frac{1}{4}$  in by 5 in by 3  $\frac{1}{2}$  in and embossed with a “P.” Glass at the site included fragments of six clear glass vessels with no identifying marks and one clear square bottle base with a Maywood Glass Company marker’s mark dating to 1958 (Toulouse 1971: 357). Other artifacts observed at the site included a fragment of a whiteware bowl with no maker’s mark and the soles of a pair of rubber-soled shoes with metal boot nails attached.

Based on the context of the refuse deposit, NS-22 is recommended not eligible for inclusion to the CRHR under all criteria. It cannot be associated with events that have contributed to the broad patterns of California’s history (Criterion 1) and it cannot be associated with individuals important to California’s past (Criterion 2). The site does not embody a unique type or style and is not eligible under Criterion 3. Lastly, the site is no longer in its primary context and is unlikely to contribute

important information pertaining to prehistory or history and cannot be recommended under Criterion 4.

### **NS-23**

NS-23 is a lithic and pottery scatter located to the immediate south of a recessional shoreline of Lake Cahuilla. The site consists of seven lithics and one piece of pottery on a deflated and compacted surface. Lithics include six chalcedony flakes and one piece of debitage widely dispersed over a 33.5 m north-south by 16 m east-west area. Lithics range in size from 3 cm by 4.5 cm to 2.5 by 1.5 cm. The only piece of pottery observed at the site was a neck fragment of a piece of redware pottery measuring 6 cm by 5.5 cm. No fire-affected rock was observed at the site location and no artifacts were observed on the recessional shoreline.

NS-23 is recommended not eligible for inclusion in the CRHR under all criteria. The site cannot be associated with events important to California's history (Criterion 1). Furthermore, the site cannot be associated with the lives of persons important to California's past (Criterion 2). The site does not represent a specific type, period, or style (Criterion 3). Lastly, the site sits on a deflated, compact surface, indicating that there is no subsurface deposit. It is unlikely to yield any further information important to prehistory or history (Criterion 4).

### **NS-24**

NS-24 is a single event historic refuse scatter consisting of 10 cans widely dispersed over at 25 ft north-south by 15 ft east-west area. Seven of the cans are crushed and could not be measured. The remaining cans are all sanitary cans measuring 4 ½ in by 3 in that were opened by punched holes. There is evidence of off-road vehicle use in the area and some of the cans have been redeposited due to alluvial actions.

Based on the number and condition of the artifacts, NS-24 is recommended not eligible for inclusion to the CRHR under all criteria. The site cannot be associated with events or persons important to California's history (Criteria 1 and 2) and tin cans do not embody a distinct type or style (Criterion 3). Lastly, the context of the site has been compromised and it is unlikely that the site will yield any information important to prehistory or history (Criterion 4).

### **NS-25**

NS-25 is the remains of three deflated hearths with associated lithics, pottery, and fish bones over a 14 m N-S by 16 m E-W area (Plate 7). The site is located on an alluvial plain descending west from the Chocolate Mountains. The hearths sit below the ancient shoreline of Lake Cahuilla, indicating that they date to one of the lake's recessional episodes. Feature 1 is the largest of the three hearths, measuring 2.6 m north-south by 2.9 m east-west and is composed of fire-affected sandstone. Artifacts associated with Feature 1 include one CCS hammerstone, two CCS flakes, five different types of pottery (including rim and body sherds), and fish bones.



**Plate 7. NS-25 Feature 1**

Feature 2 (Plate 8) is located immediately east of Feature 1. It consists of fire-affected sandstone over a 1.2 m north-south by 1.3 m east-west area. No artifacts were observed in association with this feature.

Feature 3 (Plate 9) is a small hearth 6 meters to the east of Feature 2. It is composed of fire-affected sandstone over a 2 m N-S by 1 m E-W area. No artifacts were associated with this feature. Feature 3 has been impacted by a heavy equipment vehicle, possibly a construction vehicle. Tire tracks are located on the eastern edge of the feature and may have removed portions of the hearth or associated artifacts.

In addition to artifacts at the site, associated pottery was noted to the southeast of the site as well. Two body sherds were noted 35 m away from the site. They are located near an ephemeral drainage and may have been displaced through alluvial actions. Both sherds are reddish brown with small grains of sand in the temper.



**Plate 8. NS-25 Feature 2**



**Plate 9. NS-25 Feature 3**

NS-25 contains the only prehistoric hearths observed in the project area. In addition to the three features, several types of associated artifacts were noted. Based on observations in the field, NS-25 is recommended not eligible for inclusion to the CRHR under Criteria 1 through 3, and is potentially eligible under Criterion 4. The site does not contribute to the events significant to the broad patterns of California's history (Criterion 1). In addition, the site cannot be related to persons whose lives are important to California's past (Criterion 2). The site does not represent a distinct type or style (Criterion 3). Fire-affected rocks and associated artifacts are embedded in the ground and a subsurface deposit is possibly located at NS-25. In addition, NS-25 may yield radiocarbon dates that can provide information about the recession and expansion of Lake Cahuilla in prehistory. Because of the information NS-25 may provide, the site is potentially eligible under Criterion 4.

### ***NS-26***

NS-26 is the "S" lateral irrigation canal that runs northwest-southeast for a distance of 1 mile through the project area from the East Highline Canal (CA-IMP-7835) to the southeast (Plate 10). The canal parallels Noffsinger Road between the Salton Sea (approximately 5 miles west of Niland) and the intersection of the canal and the East Highline Canal. The canal enters the project area at the intersection of Noffsinger Road and Blair Road. Within the project area, the canal is located on the north side of Noffsinger Road between Noffsinger Road and the Union Pacific Railroad and continues beyond the project area boundary. The canal measures 20 feet across and has earthen walls rather than concrete lining. Within the project area, there are no features associated with the canal, but a stop gate is located just outside the project area. It is labeled "S LAT 2" and has a wheel that can start or stop the flow of water in the canal.



**Plate 10. NS-26**



The canal appears on the 1956 Niland USGS Topographic Quadrangle, indicating that it is at least 50 years old. However, based on observations in the field and a lack of information sufficient information about its history, there is insufficient data to evaluate this site. The canal is connected to the East Highline Canal (CA-IMP-7835), which is part of the All-American Canal System. The All-American Canal is listed on the NRHP (Schaeffer 2001). As such, NS-26 is potentially eligible for inclusion to the CRHR. It is recommended that the canal be avoided during construction activities associated with the project.

### ***NS-27***

NS-27 is an area of disturbance where historic refuse has been intermixed with modern debris (Plate 11). In addition, there is evidence that debris has been recently removed. Tire tracks from heavy equipment are evident on the surface, and modern and historic debris have been displaced by the mechanical equipment. It is not possible to tell how many historic refuse sites were impacted, but the remnants of at least 10 refuse deposits were observed on the surface. Disturbed artifacts included sanitary cans, evaporated milk cans, glass bottles, and historic ceramics. Many of these deposits likely date to between the early and middle 20<sup>th</sup> century. The disturbed area measures 100 ft north-south by 410 ft east-west.



**Plate 11. Disturbances at NS-27**

Because the area has been highly impacted by heavy equipment use, NS-27 is recommended not eligible for CRHR inclusion under all criteria. The site cannot be associated with events of persons important to California's past (Criteria 1 and 2). The site does not exhibit any evidence of a distinct type or style and does not possess high artistic value (Criterion 3). Lastly, due to the high level of disturbance, NS-27 is unlikely to yield information that is important to prehistory or history and is not eligible under Criterion 4.

### **NS-28**

This building is located north of the intersection of Comercial Street and Main Street, near a railroad junction northeast of Niland on parcel 021-160-020-000 (Plate 12). The one-story L-shaped structure consists of a concrete foundation, adobe walls, horizontal wood beam rafters, and wood rough-framed window and door penetrations. The building is divided into two rooms.



**Plate 12. NS-28 Overview**

The construction date of this building is unknown, although it may be associated with the Southern Pacific Railroad, which began operation in the area after 1902 and presently functions as the Union Pacific Railroad. Potentially associated with the railroad, this building has no interior evidence of its

original function. It is now abandoned and no longer functional. It does not appear to have had any major alterations; the missing roof, fenestration, and doors indicate long-term deterioration of the building.

The potential function of this building if associated with the railroad would have been minor and indirectly significant. It is therefore not eligible for the CRHR under Criterion 1. This building does not appear to have an association with any persons significant in history; therefore, it is not eligible under Criterion 2. This building does not embody distinctive characteristics of its type, period, or method of construction; nor does it represent the work of a master or possess high artistic value; therefore, it is not eligible under Criterion 3. It has neither yielded nor is likely to yield important information in prehistory or history, and is not eligible under Criterion 4. This building is recommended not eligible for inclusion to the CRHR.

### ***NS-29***

Within the Griffins Nest Pheasant Ranch at 395 East Noffsinger Road (APN 021-280-004-000), southeast of Niland, this is a rectangular, side-gabled, one-story building along the southern boundary of the property (Plate 13). The building has clapboard siding, double-hung windows, exposed eaves and rafters, and an asphalt roof. The building appears to be in poor condition with missing glazing and deterioration at the roofline. It appears to be the only building with vernacular Craftsman elements on the property.

The one-story vernacular Craftsman building dates ca. 1920s-1940s. The building has a continuous addition projecting to the east, also with a side gable. It does not appear to have had any major alterations to fenestration or door openings. Associated with the Griffins Nest Pheasant Ranch, this building appears to have been a residential building. It appears that this building predates the adjacent buildings and structures.

Farming in this area has been a significant factor in the development of the region, but the house does not convey sufficient association with that development, nor is it associated with significant historic events; it is not eligible for the CRHR under Criterion 1. This building does not appear to have an association with any persons significant in history; therefore, it is not eligible under Criterion 2. This building does not embody distinctive characteristics of its type, period, or method of construction; nor does it represent the work of a master or possess high artistic value. It is not eligible under Criterion 3. It has neither yielded nor is likely to yield information important to prehistory or history, and is not eligible under Criterion 4. It is recommended not eligible for inclusion to the CRHR.



**Plate 13. NS-29 Overview**

***NS-30***

Built ca. 1950s-1980s, the farmhouse located on parcel 021-180-011-000 is a one-story, L-shaped, wood-framed residential building with a low-pitched cross-gabled roof, a full-length covered porch, and side shed roofs that cover adjacent work areas (Plate 14). The main roof appears to have had plywood sheathing and standing seam metal cladding at one time. The exterior walls are board-and-batten. Windows appear to be single-hung and modified. Many alterations, including the addition of porch roofs and lattice dividers, occurred at unknown dates. This building is abandoned and in very poor condition.

Farming in this area has been a significant factor in the development of the region, but the farm does not date to nor convey sufficient association with that significant development, nor is it associated with significant historic events; it is not eligible for the CRHR under Criterion 1. This building does not appear to have an association with any persons significant in history; therefore, it is not eligible under Criterion 2. This building does not embody distinctive characteristics of its type, period, or method of construction; nor does it represent the work of a master or possess high artistic value. It is not eligible under Criterion 3. It has neither yielded nor is likely to yield information important to prehistory or history, and is not eligible under Criterion 4. It is recommended not eligible for inclusion to the CRHR.



**Plate 14. NS-30 Overview**

***NS-31***

Built ca. 1900-1910s, this Folk Victorian house is set back from Cuff Road and is surrounded by mature trees on parcel 021-180-001-000 (Plate 15). The one-story building has a square floor plan with a hipped gable roof. The foundation consists of concrete pier footings, the exterior walls are clad in clapboard, and the roof is wood-shingled with overhanging exposed eaves and decorative curvilinear brackets. The western front façade has a central entrance flanked by large two-over-two sash double hung windows. The southern side façade contains two individual two-over-two sash and three ribboned two-over-two sash double-hung windows. The eastern rear façade has had its clapboard stripped and a door opening boarded (the clapboard is present in the yard). The northern façade was inaccessible. This building does not appear to have undergone any major alterations. The removal of the clapboard at the rear of the building appears recent and as part of a repair. Original features of the building appear intact.



**Plate 15. NS-31 Overview**

This building appears to date to the significant period of development initiated with the advent of the Southern Pacific Railroad beginning in 1902. Associated with that era of development, this building is a significant cultural resource for the region and may be eligible for the CRHR under Criterion 1. This building does not appear to have an association with any specific persons significant in history; therefore, it is not eligible under Criterion 2. This building embodies vernacular characteristics of Folk Victorian-style architecture; although it does not represent the work of a master or possess high artistic value, it is a rare example of this style in the area and may be eligible under Criterion 3. It has neither yielded nor is likely to yield information important to prehistory or history, and is not eligible under Criterion 4.

The building retains significant integrity to convey its provenance dating to the early 20th century and the arrival of the railroad and settlers into the area. The materials and setting are intact and in good condition. This building is recommended eligible for inclusion to the CRHR under Criteria 1 and 3.

***NS-32***

Built ca.1960s-1970s, this Ranch-style building on parcel 021-170-034-000 is one story with a rectangular plan and rear wing set on a concrete foundation, a dual-pitch roof, beige brick siding and

aluminum windows (Plate 16). The southern front façade has three single-car garage bays to the west; a central breezeway; two tripartite aluminum windows to the east. The red, built-up roof has a moderate overhang. The building does not appear to have undergone any significant alterations.



**Plate 16. NS-32 Overview**

Built in the latter half of the 20th century (ca.1960s-1970s), this building is associated with the adjacent trailer park. It appears to be a residence and possibly a center for amenities for the trailer camp on the lot. The development of trailer parks and lifestyle in the region is significant; however, the modern function of this building is only indirectly significant to that development. It is therefore not eligible for the CRHR under Criterion 1. This building does not appear to have an association with any persons significant in history; therefore, it is not eligible under Criterion 2. This building does not embody distinctive characteristics of its type, period, or method of construction; nor does it represent the work of a master or possess high artistic value. It is not eligible under Criterion 3. It has neither yielded nor is likely to yield information important to prehistory or history, and is not eligible under Criterion 4. It is recommended not eligible for inclusion to the CRHR.

### **NS-33**

This two-story warehouse is located at the corner of 5th Street and Comercial Street in Niland. The warehouse construction date is estimated at ca. 1920s-1940s (Plate 17). Rectangular in plan, the building has a concrete foundation, stucco walls, and a corrugated metal, medium-pitch gable roof. The walls at the roofline are coved with no overhang above. The majority of window and door penetrations are boarded and obscured. The north façade has a central entrance/loading dock that is elevated over a concrete footing with steps on the sides, accessed by a sliding carriage door, covered by a shed-roofed porch, covered in clay roof tiles. Each façade has an access door or loading dock and boarded window penetrations. Both the north and west façades appear to have had secondary roofs that are now removed. The building has had additional roofs on the north and west façades that are no longer extant. The concrete dock at the western entrance is damaged and deteriorating.



**Plate 17. NS-33 Overview**

It appears to have functioned as a warehouse, a commercial building, or a light industrial building. It is in proximity to the spur off of the Union Pacific Railroad line across Comercial Street. The style and materials of the building suggest a vernacular commercial form of the Spanish Eclectic style, a popular type from the 1920s to the 1940s.

The development of the railroad and related commerce and industry were significant factors in the history of the region, but this warehouse does not convey sufficient association with that theme, nor



is it associated with significant historic events; it is not eligible for the CRHR under Criterion 1. This building does not appear to have an association with any persons significant in history; therefore, it is not eligible under Criterion 2. This building does not embody distinctive characteristics of its type, period, or method of construction; nor does it represent the work of a master or possess high artistic value. It is not eligible under Criterion 3. It has neither yielded nor is likely to yield information important to prehistory or history, and is not eligible under Criterion 4. It is recommended not eligible for inclusion to the CRHR.

#### ***NS-34***

This site is a single event historic refuse deposit consisting primarily of cans. Construction activities in the area and an ephemeral drainage have redeposited the artifacts over time. Cans at the site include sanitary cans, evaporated milk cans, the lid of an oil drum, oil cans, and fruit cans. Other metal artifacts observed were a metal wash basin and corrugate metal sheeting. Glass included two clear mason jars with an Owens-Illinois maker's mark dating to between 1929 and 1954 (Toulouse 1971: 403). Artifacts are scattered over an 8 ft north-south by 50 ft east-west area.

Based on disturbances to the area, NS-34 is recommended not eligible for inclusion to the CRHR under all criteria. The site does not relate to events that are significant to California's past (Criterion 1). Furthermore, the site cannot be associated with individuals important to California's history (Criterion 2). The site does not represent a distinct type or style (Criterion 3). Lastly, the site is not likely to yield any information that is important to prehistory or history (Criterion 4).

#### ***NS-35***

NS-35 is an historic refuse scatter that has been redeposited due to its location in an active alluvial wash. Tin cans have been moved throughout the wash and are currently scattered over a 20 ft north-south by 32 ft east-west area. A total of 23 cans were observed in the area, consisting of sanitary cans, tobacco tins, and a wind key meat tin. A metal wash basin was also observed. Modern debris includes concrete that has been deposited at the site. The largest piece of concrete measures 7 ft by 3 ft and has a metal pipe protruding from the side, likely dumped there as part of a construction debris pile.

NS-35 no longer retains integrity and is recommended not eligible for CRHR inclusion. The site does not relate to events or individuals important to California's past (Criteria 1 and 2) and the site does not embody the characteristics of a distinct type or style (Criterion 3). Lastly, since the site no longer retains integrity, it is unlikely it will contribute important information to prehistory or history (Criterion 4).

#### **Isolates**

During the survey a total of 28 isolated artifacts were identified. The location of each isolate was noted and photographs were taken for documentary purposes. Isolates encountered during the survey are listed in Table 4.

**Table 4. Isolated Artifacts Identified in the Project Area**

<b>Isolate No.</b>	<b>Description</b>
1	Aqua insulator
2	Clear medicine bottle
3	Aqua insulator
4	Quartz flake
5	Hole-in-top can
6	Amethyst glass fragment
7	Pottery
8	Cobalt blue glass fragment
9	Clear glass bottle
10	Blue on white porcelain fragment
11	Aqua insulator
12	2 cans: 1 food, 1 milk
13	Bifacial mano
14	Aqua insulator
15	Aqua insulator
16	Aqua insulator
17	Red ware pottery sherd
18	Aqua insulator
19	Automobile parts
20	Amethyst glass bottle
21	Green glass bottle
22	Tobacco tin
23	Obsidian flake
24	2 Chalcedony flakes
25	1 Chalcedony flake
26	Obsidian flake
27	Sanitary can
28	Sanitary can

The cultural resources and architectural survey resulted in the identification of a total of 31 previously unidentified cultural resources and the update of site forms for five previously recorded sites within the project area. Three previously recorded sites could not be relocated during the survey. In addition, a total of 28 isolated artifacts were identified within the project area. Of the 31 new resources identified in the project area six are potentially eligible for inclusion to the CRHR and 25 are recommended not eligible for inclusion to the CRHR. Two of the five sites whose forms were updated are already eligible for the CRHR and one is potentially eligible for inclusion to the

CRHR. The remaining two sites whose forms were updated are recommended not eligible for inclusion to the CRHR.

The results of the survey indicate that the project area is highly sensitive for cultural materials. Portions of the Union Pacific Railroad (CA-IMP-3424H) have been listed as eligible for inclusion in the National Register of Historic Places (NRHP), making the railroad eligible for inclusion in the CRHR. However, the portions of the railroad within the project area have not been evaluated for their eligibility for inclusion in the CRHR.

The East Highline Canal has been recommended eligible for NRHP inclusion because it is part of the All-American Canal System (Hanna 2000; Harris 2000). Because the canal has been recommended eligible for NRHP inclusion, it is also eligible for CRHR inclusion.



## CHAPTER 5 CONCLUSIONS AND MITIGATION MEASURES

The cultural resources and architectural survey resulted in the identification of a total of 36 cultural resources. Five of the resources are previously recorded sites within the project area. Thirty-one are newly identified cultural resources (seven prehistoric sites, eighteen historic sites, and six buildings). Three previously recorded sites could not be relocated during the survey. In addition, a total of 28 isolated artifacts were identified within the project area. Of the 36 sites identified in the project area, nine are eligible or recommended potentially eligible for inclusion to the CRHR and 28 are recommended not eligible for inclusion to the CRHR.

The results of the survey indicate that the project area contains numerous cultural resources, but the majority of sites are recommended not eligible for inclusion to the CRHR (Table 5). If they are not significant resources for the purposes of CEQA, no significant impacts will occur. Sites that are potentially eligible will require an evaluation program order to determine if they are eligible for inclusion to the CRHR.

Portions of the Union Pacific Railroad (CA-IMP-3424H) have been listed as eligible for inclusion in the NRHP, making the railroad eligible for inclusion in the CRHR. The East Highline Canal has been recommended eligible for NRHP inclusion as part of the All-American Canal System (Hanna 2000; Harris 2000; Schaefer 2001). Because the canal has been recommended eligible for NRHP inclusion, it is also eligible for CRHR inclusion. In addition, as part of the East Highline Canal System, NS-26 is part of the All-American Canal System and is potentially eligible for inclusion to the CRHR.

If avoided, no alteration or demolition will occur to the sites. Five prehistoric sites (CA-IMP-6854, NS-14, NS-15, NS-19, and NS-25) are potentially eligible for the CRHR under Criterion 4 because they may contribute information important to prehistory. If they are found to be significant, archaeological data recovery will be necessary in order to address impacts to these resources.

NS-31, a potentially significant historical resource, is located on an adjacent parcel to the project footprint. No alteration or demolition will occur to the resource. Implementation of the proposed project may result in an indirect impact to the historical resource with the potential visual intrusion of new structures altering its traditional setting. However, mitigation measures (e.g., vegetation screening) may diminish the impacts under CEQA to less-than-significant.

**Table 5. Management Recommendations**

<b>Site Number</b>	<b>Work Area</b>	<b>Site Type</b>	<b>Eligibility Recommendation</b>	<b>Management Recommendation</b>
CA-IMP-3424H	4-1, 4-2, and 4-4	Union Pacific Railroad	Eligible	Avoid
CA-IMP-6854	4-5	Pottery and Lithic Scatter	Potentially Eligible	Avoid or data recovery
CA-IMP-7829	4-4	Historic Refuse Scatter	Not Eligible	None
CA-IMP-7835	4-5	East Highline Canal	Eligible	Avoid
CA-IMP-8639H	4-1, 4-2	Historic Refuse Scatter	Not Eligible	None
NS-1	4-3	Historic Refuse Scatter	Not Eligible	None
N3-3	4-1	Pottery Scatter	Not Eligible	None
NS-4	4-2	Historic Refuse Scatter	Not Eligible	None
NS-5	4-1	Historic Refuse Scatter	Not Eligible	None
NS-6	4-1	Historic Refuse Scatter	Not Eligible	None
NS-7	4-1	Water Retention Basins	Not Eligible	None
NS-8	4-1	Historic Refuse Scatter	Not Eligible	None
NS-9	4-1	Historic Refuse Scatter	Not Eligible	None
NS-10	4-1	Historic Refuse Scatter	Not Eligible	None
NS-11	4-1	Historic Refuse Scatter	Not Eligible	None
NS-13	4-1	Historic Refuse Scatter	Not Eligible	None
NS-14	4-1	Lithic Scatter	Potentially Eligible	Avoid or data recovery
NS-15	4-1	Lithic Scatter	Potentially Eligible	Avoid or data recovery
NS-17	4-1	Historic Refuse Scatter	Not Eligible	None
NS-18	4-5	Pottery and Lithic Scatter	Not Eligible	None
NS-19	4-5	Lithic Scatter	Potentially Eligible	Avoid or data recovery
NS-20	4-1	Historic Refuse Scatter	Not Eligible	None
NS-22	4-4	Historic Refuse Scatter	Not Eligible	None
NS-23	4-4	Lithic Scatter	Not Eligible	None
NS-24	4-4	Historic Refuse Scatter	Not Eligible	None
NS-25	4-4	Deflated Hearth	Potentially Eligible	Avoid or data recovery
NS-26	4-1, 4-2, and 4-4	Canal	Potentially Eligible	Avoid
NS-27	4-4	Historic Refuse Scatter	Not Eligible	None
NS-28	Adjacent to 4-2	Adobe Structure	Not Eligible	None
NS-29	Adjacent to 4-2	Craftsman Vernacular Building	Not Eligible	None
NS-30	Adjacent to 4-2 and 4-4	L-Shaped Residence	Not Eligible	None
NS-31	Adjacent to 4-1	Folk Victorian House	Potentially Eligible	Avoid or data recovery
NS-32	Adjacent to 4-1	Ranch-style Building	Not Eligible	None
NS-33	Adjacent to 4-3	Warehouse	Not Eligible	None
NS-34	4-3	Historic Refuse Scatter	Not Eligible	None
NS-35	4-3	Historic Refuse Scatter	Not Eligible	None

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**APPENDIX A**  
**KEY PERSONNEL RESUMES**



REBECCA MCCORKLE APPLE, RPA  
Principal/Manager, Cultural Resources Group/  
Senior Archaeologist

#### SUMMARY

Expertise with CEQA/NEPA requirements  
Experience with Section 106 compliance and mitigation programs  
Over 20 years experience in cultural resource management

#### EDUCATION

MA, Anthropology, San Diego State University, 1990  
BA, Anthropology, San Diego State University, 1978

#### AFFILIATIONS

Society for American Archaeology  
Society for California Archaeology

#### CERTIFICATIONS

Register of Professional Archaeologists  
Certified Archaeology Consultant, County of San Diego

#### ACADEMIC AWARDS AND SCHOLARSHIPS

Phi Kappa Phi  
Phi Beta Kappa  
University Scholar, 1987 and 1988

#### PAPERS AND PUBLICATIONS

*Mapping and Managing Pathway to the Past.* Paper presented at the 22nd Annual ESRI International User Conference, San Diego, California (2002).

*Introduction to Recent Archeological Investigations at the Salton Sea Test Base, Imperial County California.* Proceedings of the Society for California Archaeology, Volume 12. Fresno, California (1999).

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*A Lake Mojave Period Site Near Silver Lake, California* (with A. York). Presented at the 26th Annual Meeting of the Society for California Archaeology, Pasadena (1992).

*Recent Archaeological Investigations in the North Las Vegas Valley* (with J.H. Cleland and M.S. Kelly). In *Crossing the Borders: Quaternary Studies in Eastern California and Southwestern Nevada*. San Bernardino County Museum Association Special Publication (1991).

Preliminary Project Results of the San Diego County Studies for the Southwest Powerlink Transmission Project. Presented at the 17th Annual Meeting of the Society for California Archaeology, San Diego (1983).

Rebecca Apple has over 20 years of experience in cultural resource management and serves as senior archaeologist for EDAW. Her experience includes managing cultural resources compliance efforts for large complex projects. She is knowledgeable in the procedures and guidelines associated with implementation of NHPA and CEQA. She has managed numerous cultural resource projects, including prehistoric, historic, and ethnographic studies. She has directed inventories, evaluations, data recovery efforts, and monitoring programs. She has also prepared management plans and conducted feasibility studies. Her work frequently includes consultation with municipal, state, and federal agencies, as well as Native American representatives and the public. As part of interdisciplinary teams, she has managed cultural resources investigations and authored cultural resource sections for ISs, EAs, EIRs, and EISs. Her experience includes cultural resource investigations for pipelines, transmission lines, power plants, highways, landfills, water resource facilities, military installations, and commercial and residential development.

#### ENERGY AND TRANSMISSION PROJECTS

Beacon Solar, California City, CA  
Task Manager

CLIENT: ENSR/Beacon Solar, LLC/FPL

Responsible for oversight of archaeological and architectural surveys, technical reports, coordination with CEC staff, and preparation of AFC sections for a 2,000-acre solar project.

Yuma Lateral Pipeline Project, Yuma, AZ

Project Manager

CLIENT: North Baja LLC (TransCanada)

Responsible for cultural services, conducting records searches, archival research, Native American consultation, and survey of the preferred alignment. Identified resources included the Yuma Valley Railroad, a National Register-eligible property.

Harper Lake Cultural Resources Constraints Study,

San Bernardino County, CA

Task Manager

CLIENT: ENSR/Harper Lake, LLC

Responsible for field reconnaissance and constraints analysis for a proposed 3,300-acre specific plan area. Potential development included a diary and energy park.

North Baja Pipeline Project, Ehrenberg, Arizona to Mexican Border

Project Manager

CLIENT: Foster Wheeler

Responsible for cultural services, conducting records searches, archival research, Native American consultation, survey of the preferred alignment and alternatives, site evaluation, and data recovery.

DeAnza Pipeline Constraints and Permitting Analysis,

Ehrenberg, AZ to Calexico, CA

Resource Manager

CLIENT: AEP

Responsible for cultural services, providing information on distribution of natural and cultural resources along the proposed pipeline corridor in report

REBECCA MCCORKLE APPLE

format, with accompanying maps showing these resources and other constraints.

SEMPRA On-call Cultural Services, CA

Resource Manager

CLIENT: **SEMPRA**

Resource manager for cultural resource task orders. Most recent task order dealt with artifact curation for a City project.

Imperial Irrigation District Cultural Survey, Imperial County, CA

Project Manager

CLIENT: **Imperial Irrigation District**

Responsible for cultural resources component of two transmission line studies. Survey and testing were conducted in conjunction with pole replacement along the R and L transmission lines.

Mead-Adelanto Transmission Line, Clark County, NV,

and San Bernardino County, CA

Resource Manager

CLIENT: **Los Angeles Department of Water and Power**

Cultural resource survey.

Sycamore Canyon Substation to Rancho Carmel Substation 69-kV

Transmission Line Project, San Diego County, CA

Project Manager

CLIENT: **San Diego Gas & Electric**

Responsible for cultural resources component of a PEA document for submittal to the CPUC that evaluated the potential environmental impacts of a proposed 69-kV transmission line.

Coso Known Geothermal Resource Area, Inyo County, CA

Resource Manager

CLIENT: **Los Angeles Department of Water and Power**

Responsible for data recovery investigations at two geothermal well-pads located in the Sugarloaf Mountain Obsidian Source National Register District.

Santa Ynez Unit Development, Santa Barbara County, CA

Field Director

CLIENT: **Exxon Corporation**

Supervised data recovery excavations of a prehistoric coastal site.

Big Creek Expansion Project Transmission Line, South Central, CA

Data Manager

CLIENT: **Southern California Edison**

Responsible for cultural resource impact assessment of alternative routes for a proposed transmission line from the Big Creek Hydroelectric Project in the Sierras to the Los Angeles Basin.

Kern River Gas Transmission Project, WY, UT, NV, and CA

Task and Resource Manager

CLIENT: **Kern River Gas Transmission Company**

Inventory, evaluation, data recovery, and construction monitoring for California portion of this Class I overview.

Argus Cogeneration Expansion, San Bernardino and Inyo Counties, CA

Project Archaeologist

CLIENT: **Kerr-McGee**

Supervised cultural resource survey and documentation for a water pipeline.



REBECCA MCCORKLE APPLE

Geothermal Public Power Line Project, North Central CA  
Resource Manager

CLIENT: Sacramento Municipal Utility District

Responsible for cultural resource surveys for a proposed transmission line from the Geysers Geothermal Area to Sacramento.

Southwest Powerlink 500-kV Transmission Line EIR/EIS,  
Imperial and San Diego Counties, CA

Resource Manager

CLIENT: San Diego Gas & Electric

Participated in Section 106 compliance activities, including data recovery, analysis, and report preparation.

#### MILITARY PROJECTS

Integrated Cultural Resources Management Plan and Cultural Affiliation Study, Chocolate Mountains Aerial Gunnery Range, Marine Corps Air Station Yuma, Riverside, and Imperial Counties, CA  
Co-Principal Investigator

CLIENT: U.S. Navy, Naval Facilities Engineering Command, Southwest and MCAS Yuma

Preparing an ICRMP for CMAGR to guide cultural resources compliance efforts to facilitate CMAGR mission. ICRMP will summarize existing inventory and provide a process to streamline the inventory and evaluation process. Components of the ICRMP are a Regional Archaeological Research Design and a Cultural Affiliation Study.

Archaeological Evaluation of Sites on San Clemente Island,  
Los Angeles County, CA

Principal Investigator

CLIENT: U.S. Navy Southwest Division and Navy Region Southwest  
Responsible for National Register of Historic Places Evaluation of four archaeological sites on San Clemente Island.

Cultural Resources Survey and Evaluation for Spring Hill and Associated Access Roads, Riverside County, CA

Principal Investigator

CLIENT: U.S. Navy, Naval Facilities Engineering Command, Southwest and MCAS Yuma

Directed archaeological resource survey of proposed facility to improve communications for aircraft and vehicles with the Chocolate Mountain Aerial Gunnery Range (CMAGR). Two sites were evaluated for eligibility to the National Register of Historic Places. One site appeared to contain very limited information potential and did not qualify for the NRHP. Site CA-RIV-8236 appeared to possess information relevant to addressing regional research issues and was recommended eligible for the NRHP.

Integrated Cultural Resources Management Plan Naval Base Point Loma, San Diego, CA

Project Manager

CLIENT: U.S. Navy, Naval Facilities Engineering Command and Naval Base Point Loma

Preparing an ICRMP for CMAGR to guide cultural resources compliance efforts to facilitate CMAGR mission. ICRMP will summarize existing inventory and provide a process to streamline the inventory and evaluation process. Components of the ICRMP are a Regional Archaeological Research Design and a Cultural Affiliation Study.

REBECCA MCCORKLE APPLE

Archaeological Survey for the Chocolate Mountains Aerial Gunnery Range Central Training Area, Marine Corps Air Station Yuma, Imperial County, CA

Resource Manager

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Responsible for cultural resource survey of proposed central training area on CMAGR. The 1,580-acre survey identified four sites on R-2507S and four on R-2507 N. One of the sites on the South Range (the remains of a ranch complex) and three of the sites on the North Range (rock art, ceramics scatter, and a rock ring) were identified as potentially eligible for the National Register of Historic Places.

Chocolate Mountains Aerial Gunnery Range: Cultural Resources Survey of 12 Targets and Monitoring of 14 Archaeological Sites, Riverside and Imperial Counties, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Directed cultural resource survey of 1,523 acres and site monitoring program on CMAGR. Inventoried site types were lithic scatters, trail segments, pot-drops, rock features, and a mining area. Monitoring program included lithic scatters, rock art, cleared circles, mining complexes, and a segment of historic road.

Cultural Resources Survey of Six Areas on the Chocolate Mountains Aerial Gunnery Range, Imperial County, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Directed cultural resource survey of proposed Forward Air Reporting Position, range access, and target areas.

Evaluation of 24 Sites at the Chocolate Mountains Aerial Gunnery Range, Imperial County, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Responsible for National Register of Historic Places evaluation of 24 sites in the Chocolate Mountains.

Historic and Archaeological Resources Protection Plan, Chocolate Mountain Aerial Gunnery Range, Imperial and Riverside Counties, CA

Project Manager

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Directed archival archaeological research and field visit for the Chocolate Mountain Aerial Gunnery Range. Prepared HARP Plan for the installation.

Evaluation of Two Sites, MCAS Yuma, AZ

Project Manager

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Evaluation of two archaeological sites near the MCAS Yuma airfield.

San Clemente Island Operations Management Plan EIS, Naval Auxiliary Air Field, San Clemente Island, Los Angeles County, CA

Resource Manager

CLIENT: U.S. Navy, Southwest Division and SRS Technologies

Assessed current cultural resource inventory and supplemented in specific areas. Project involved preparation of technical report documenting inventory efforts, including shipwreck study. Impact analysis conducted for existing and proposed military operations on San Clemente Island.

REBECCA MCCORKLE APPLE

Indefinite Quantity Contract for Cultural Resource Services, CA and AZ  
Project Manager

CLIENT: U.S. Navy, Southwest Division

Contract manager for multiple task orders on a variety of projects involving archaeological surveys and archaeological evaluations throughout California and Arizona. Tasks include managing budget, overseeing staff, acting as point of contact, and preparation of final reports.

Archaeological Support for Environmental Assessment of Wind Farm Project, Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County, CA

Resource Manager

CLIENT: U.S. Navy, Southwest Division

Prepared cultural resource portion of the EA and placed protective signs at nine archaeological sites near or adjacent to the Wind Farm construction area.

Special Warfare Training and Range Survey, Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County, CA

Senior Archaeologist

CLIENT: U.S. Navy, Southwest Division

Performed cultural resource survey of proposed training ranges on San Clemente Island. Prepared technical report in support of an EA.

Evaluation of Six Sites near the Missile Impact Range, Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County, CA

Project Manager

CLIENT: U.S. Navy, North Island, Natural Resources Office

Provided technical assistance for the NRHP evaluation of six archaeological sites on the Central Plateau of San Clemente Island.

Historic and Archaeological Resources Protection Plan, MCAS Yuma, AZ

Project Manager

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Directed archival archaeological research and building inventory for MCAS Yuma. Lead author on Historic and Archeological Resources Protection Plan for the installation.

Pumped-Hydro Storage Wind/Energy System, Naval Auxiliary Air Field, San Clemente Island, Los Angeles County, CA

Resource Manager

CLIENT: U.S. Navy, Southwest Division

Relocated and recorded 76 archaeological sites in proposed water storage and wind/energy development area. Prepared existing conditions report.

Tactical Aircrew Combat Training System Range Upgrade, MCAS Yuma, AZ

Project Manager

CLIENT: U.S. Navy, Southwest Division

Performed cultural resource survey of proposed transmission line and 17 threat emitter stations. Prepared testing plan.

Cultural Resource Inventory Survey at Salton Sea Test Base, Imperial County, CA

Project Archaeologist

CLIENT: U.S. Navy, Southwest Division

Conducted intensive cultural resource survey for approximately 6,000 acres and evaluation program for 170 sites. Survey and test excavations were conducted in compliance with the NHPA, NAGPRA, and other federal regulations.

REBECCA MCCORKLE APPLE

Historic and Archeological Resources Protection Plans, Los Angeles, Imperial, and San Diego Counties, CA  
Resource Manager

CLIENT: U.S. Navy, Southwest Division

Prepared HARP Plans for the following six Naval installations: Morris Dam Test Facility, Azusa; Naval Air Facility, El Centro; Naval Shipyard, Long Beach; Point Loma Complex, San Diego; Naval Station, San Diego; and the Naval Radio Receiving Facility, Imperial Beach.

Cultural Resources Technical Studies, MCAS Yuma, Yuma Training Range Complex, AZ and CA

Project Archaeologist

CLIENT: U.S. Navy, Southwest Division

Directed cultural resource sample survey in the Chocolate Mountains Gunnery Range.

Mission Trails Regional Park Explosive Ordnance Demolition Environmental Assessment, San Diego County, CA

Project Manager

CLIENT: U.S. Army Corps of Engineers

Directed cultural resource survey in support of an environmental assessment addressing the removal of ordnance from the former location of Camp Elliott.

Archeological Survey of Sierra I Impact Area, MCB Camp Pendleton, San Diego County, CA

Resource Manager

CLIENT: U.S. Marine Corps

Performed cultural resource survey of approximately 2,500 acres on the northern portion of MCB Camp Pendleton.

#### WATER PROJECTS

Emergency Storage Project, San Diego County, CA

Resource Manager

CLIENT: San Diego County Water Authority

Responsible for the cultural Resources Evaluation Program and Treatment Program. Assisted SDCWA with Native American consultation, implementation of a programmatic agreement, and coordination with ACOE. Project involved evaluation of over 20 cultural resources including San Vicente Dam. Under a Historic Properties Treatment Plan prepared by EDAW, research designs were prepared and carried out for prehistoric and historic period resources. Treatment measures included data recovery, site stabilization, and preparation of Historic American Engineering Record documentation for San Vicente Dam. Prepared Public Interpretive Plan.

North City Water Treatment Plant, San Diego, CA

Resource Manager

CLIENT: City of San Diego Water Department

Managed cultural resource component of the North City Water Treatment Plant EIR. Project included survey and limited testing.

Balboa Park Wastewater Treatment, San Diego County, CA

Archaeologist

CLIENT: City of San Diego

Participated in cultural resource documentation for a facility siting study.

Mission Valley Water Reclamation Plant, San Diego County, CA

Resource Manager

CLIENT: City of San Diego

Responsible for archaeological testing and monitoring program in an area of potential archaeological sensitivity.

REBECCA MCCORKLE APPLE

North Metro Interceptor Sewer, San Diego County, CA  
 Resource Manager  
 CLIENT: City of San Diego  
 Responsible for cultural resource investigations for constraints analysis of proposed sewer alignments.

Freeman Junction, Kern County, CA  
 Resource Manager  
 CLIENT: Los Angeles Department of Water and Power  
 Responsible for the survey of portions of 1<sup>st</sup> Los Angeles Aqueduct for cap strengthening project.

Eastern Sierra Hydroelectric Relicensing, Mono and Inyo Counties, CA  
 Field Director  
 CLIENT: Southern California Edison  
 Participated in assessment of 22 sites within three hydroelectric project areas.

Pit 3, 4, and 5 Hydroelectric Relicensing Project, Shasta County, CA  
 Project Archaeologist  
 CLIENT: Pacific Gas and Electric Company  
 Directed limited data recovery efforts at six archaeological sites threatened by shoreline erosion prior to stabilization.

Rose Canyon Trunk Sewer EIR, San Diego County, CA  
 Archaeologist  
 CLIENT: City of San Diego  
 Conducted windshield reconnaissance and records search and prepared overview for proposed sewer.

Pamo Dam and Reservoir, San Diego County, CA  
 Archaeologist  
 CLIENT: San Diego County Water Authority  
 Assisted in preparation of research design and conducted archaeological monitoring of geotechnical investigations.

Reservoir 657-2, San Diego County, CA  
 Archaeologist  
 CLIENT: Otay Water District  
 Supervised survey and report preparation of proposed covered reservoir site in Spring Valley.

Mokelumne River Hydroelectric Relicensing, Alpine, Amador, and Calaveras Counties, CA  
 Crew Chief  
 CLIENT: Pacific Gas and Electric Company  
 Participated in archaeological test excavations and NRHP evaluations.

#### TRANSPORTATION PROJECTS

Southern Nevada Supplemental Airport EIS, Clark County, NV  
 Co-Principal Investigator  
 CLIENT: ENSR, VHB, and Clark County Department of Aviation  
 Responsible for cultural resource inventory of over 17,000 acres for a BLM and transfer. Class III survey also included Radar and Navaid facilities and retention basins. Class I studies for multiple alternatives. Project involved consultation with BLM, USFS, FAA, SHPO, Native American groups, and 106 other interested parties.

REBECCA MCCORKLE APPLE

SR-76 East, San Diego County, CA

Principal Investigator

CLIENT: CALTRANS and SANDAG

Responsible for the cultural resource inventory and evaluation program for the SR-76 East widening project. Oversaw the survey of three alternative routes for archaeological and architectural resources, along with Extend Phase I excavations, ASR, HRER, and HPSR.

SR-56, San Diego County, CA

Resource Manager

CLIENT: City of San Diego

Responsible for the cultural resource evaluation program for the SR-56 EIR. Evaluated 16 sites along two alternative freeway alignments.

La Costa Avenue/I-5 Interchange, San Diego County, CA

Project Archaeologist

CLIENT: Caltrans

Directed an archaeological survey of proposed interchange improvements in the City of Carlsbad. The project requires close coordination with City and Caltrans staff.

SA 680/SF 728 Roadway Project Environmental Studies/EIR,  
San Diego County, CA

Project Archaeologist

CLIENT: County of San Diego

Directed the test excavation and NRHP evaluation of four sites on the proposed project alignment. These investigations addressed the potential association of the sites with the Harris Site Complex.

SR-79, Riverside County, CA

Resource Manager

CLIENT: Riverside County Transportation Commission

Responsible for cultural resource investigations for widening and realigning two highway segments. Prepared cultural resource sections for ISs and coordinated archaeological survey reports, historic architectural survey reports, and historic study report.

Victorville La Mesa/Nisqually Road Overpass,

San Bernardino County, CA

Project Archaeologist

CLIENT: City of Victorville

Supervised survey and prepared positive archaeological survey report and historic property survey report.

#### LANDFILL AND WASTE-RELATED PROJECTS

Elsmere Canyon Landfill, Los Angeles County, CA

Project Archaeologist

CLIENT: Elsmere Corporation

Directed cultural resource assessment for the EIR/EIS.

Southwest San Diego Landfill Siting Study, San Diego County, CA

Resource Manager

CLIENT: County of San Diego

Responsible for cultural resource assessments of potential landfill sites throughout the southwestern quadrant of San Diego County. Ranked the relative sensitivity of each potential site.

REBECCA MCCORKLE APPLE

## LAND DEVELOPMENT PROJECTS

Heber Dunes Off-Highway Vehicle Park, Imperial County, CA  
Cultural Resources Project Manager

CLIENT: State of California Department of Parks and Recreation Off-Highway Motor Vehicle Recreation Division

State Parks recently acquired Heber Dunes and is in the process of preparing a General Plan and EIR for the Park. As part of these efforts approximately 350 acres were inventoried for cultural resources.

Laborde Canyon Off-Highway Vehicle Park, Riverside County, CA  
Cultural Resources Project Manager

CLIENT: State of California Department of Parks and Recreation Off-Highway Motor Vehicle Recreation Division and Riverside County Economic Development Authority

The areas of the SVRA that would be open to some level of OHV use would cover approximately 1,480 acres within the 2,640-acre Laborde Canyon site. EDAW was contracted to conduct environmental studies for the Laborde Canyon site, including a cultural resource records search and an intensive cultural resources pedestrian survey of the proposed OHV park. Two prehistoric sites and the Lockheed Facility (Beaumont Site No. 2) were recorded within the study area during the survey. A preliminary assessment of the complex at Beaumont Site No. 2 was made to determine eligibility for the California Register of Historical Resources.

Data Recovery for Goat Canyon Retention Basin Border Field State Park, San Diego County, CA  
Cultural Resources Project Manager

CLIENT: State of California Department of Parks and Recreation

Conducted data recovery under stringent time constraints based on wildlife issues and construction schedule. Excavation of 50 units at CA-SDI-16,047 Locus B indicated that the site was a buried temporary camp whose occupants exploited littoral, near-shore, and terrestrial subsistence resources. Data recovery investigations successfully collected data important in local and regional prehistory. The identification of a single component locus dating to the Archaic-Late transition is an important contribution.

Fairbanks Country Villas, San Diego, CA  
Project Manager

CLIENT: Del Mar Land Management Company

Prepared testing plan and implemented testing program for proposed residential development.

Inmate Reception Center, San Diego County, CA  
Project Manager

CLIENT: County of San Diego

Responsible for testing and data recovery of half a city block in downtown San Diego.

343 Sansome Street, San Francisco County, CA  
Project Archaeologist

CLIENT: Gerald D. Hines Interests

Participated in archaeological data recovery excavations at a Gold Rush-period site in downtown San Francisco.

North Las Vegas Land Transfer, Clark County, NV  
Project Archaeologist

CLIENT: City of North Las Vegas

Directed cultural resource survey of 4,000-acre land transfer from the BLM to the City of North Las Vegas.

REBECCA MCCORKLE APPLE

Apex Industrial Park, Clark County, NV  
 Project Archaeologist  
 CLIENT: Kerr-McGee  
 Conducted archaeological survey and NRHP evaluations for BLM land transfer.

Walnut Hills Subdivision, San Diego County, CA  
 Archaeological Monitor  
 CLIENT: Fargo Industries  
 Conducted archaeological monitoring of site preparation and grading in San Marcos.

Alcoholism Service Center, San Diego County, CA  
 Project Archaeologist  
 CLIENT: Fellowship Center, Inc.  
 Conducted archaeological survey of proposed rehabilitation center adjacent to Mission San Luis Rey in Oceanside.

## OTHER PROJECTS

Peñasquitos Park, San Diego County, CA  
 Archaeologist  
 CLIENT: County of San Diego  
 Participated in survey, including documentation of three adobes.

Old Town State Historic Park, San Diego County, CA  
 Archaeologist  
 CLIENT: California Department of Parks and Recreation/FIR  
 Participated in excavation before placement of underground utilities in San Diego.

Rancho Guajome Adobe, San Diego County, CA  
 Archaeologist  
 CLIENT: County of San Diego  
 Participated in excavation, cataloging, and analysis for work conducted before building stabilization efforts.

Anza Borrego Desert State Park, Riverside County, CA  
 Archaeologist  
 CLIENT: California Department of Parks and Recreation  
 Participated in resource inventory survey.

Glamis Imperial Project, Imperial County, CA  
 Archaeologist  
 CLIENT: Glamis Imperial Corporation  
 Conducted cultural resource survey for proposed gold mine.

Fort Cady Boric Acid Mining and Processing Facility,  
 San Bernardino County, CA  
 Project Archaeologist  
 CLIENT: Fort Cady Minerals Corporation  
 Directed survey, testing, and evaluation of 24 sites in Newberry Springs.

Rialto-to-El Paso Fiber Optics Cable, San Bernardino and  
 Riverside Counties, CA  
 Archaeologist  
 CLIENT: U.S. Sprint  
 Conducted cultural resource survey along western extent of project.



REBECCA MCCORKLE APPLE

## SELECTED REPORTS

*A View Across the Cultural Landscape of the Lower Colorado Desert: Cultural Resource Investigations for the North Baja Pipeline Project* (with Jamie Cleland). Prepared for TetraTech and North Baja, LLC. EDAW, Inc., San Diego (2003).

*Cultural Resources Evaluation for the North Baja Gas Pipeline* (with C. Dolan, J. Underwood, and J.H. Cleland). Prepared for Foster Wheeler Environmental, Inc. EDAW, Inc., San Diego (2001).

*Historical and Archeological Resources Protection Plan (HARP) for the Chocolate Mountain Aerial Gunnery Range, Imperial County, California* (with J.H. Cleland). Prepared for U.S. Navy Southwest Division, Naval Facilities Engineering Command. EDAW, Inc., San Diego (2001).

*Archaeological Resources Evaluation Report State Route 56 Between Coast and Foothill, City of San Diego, California* (with J.H. Cleland, A. York, T. Wahoff, and D. James). Prepared for the City of San Diego. KEA Environmental, Inc., San Diego (1997).

*Archeological Survey and Evaluation Program for the Salton Sea Test Base, Imperial County, California* (with A. York, A. Pignolo, J.H. Cleland, and S. Van Wormer). Prepared for U.S. Navy, Southwest Division, Naval Facilities Engineering Command. KEA Environmental, Inc., San Diego (1997).

*Two Sides of the River: Cultural Resources Technical Studies Undertaken as Part of Environmental Documentation for Military Use of the MCAS Yuma Training Range Complex in Arizona and California* (with G. Woodall, L. Peterson, and J.S. Bruder). Prepared for the Southwest Division Naval Facilities Engineering Command and MCAS Yuma. Dames & Moore Intermountain Cultural Resource Services Research Paper No. 5, San Diego (1993).

*Bank Stabilization at Lake Britton: Limited Data Recovery* (with A. MacDougall). Prepared for Pacific Gas and Electric. Dames & Moore, San Diego (1990).

*Kern River Pipeline Cultural Resource Survey Report* (with J.H. Cleland, A.L. York, and P. Friedman). Submitted to the Federal Energy Regulatory Commission. Dames & Moore, San Diego (1990).

*Sugarloaf Mountain in Prehistory: Archaeological Testing and Data Recovery for the Exploratory Drilling Program II and the Unit No. 1 Project* (with J.H. Cleland and E. Nilsson). Prepared for the Los Angeles Department of Water and Power. Dames & Moore, San Diego (1990).

*An Archaeological Research Design for the Evaluation of Cultural Resources in Pamo Valley, San Diego, California* (with J.H. Cleland, J.R. Cook, and J. Schaefer). Wirth Environmental Services, a Division of Dames & Moore, San Diego (1985).

MATTHEW TENNYSON, M.A., RPA  
Staff Archaeologist

#### EDUCATION

BA, Archaeology, History (Minor), Boston University

MA, Anthropology, San Diego State University  
Thesis Title: "Straight Out of Dixie": An Analysis of the Architecture of the Nate Harrison Cabin

#### AFFILIATIONS

Society for American Archaeology  
Society for Historical Archaeology  
Society for California Archaeology

#### CERTIFICATIONS

Register of Professional Archaeologists (RPA)

#### HONORS AND AWARDS

Phi Kappa Phi Honors Society San Diego State University Chapter

Norton Allen Scholarship, San Diego State University Department of Anthropology, Spring 2006

Ethics Bowl – Society for American Archaeology 71<sup>st</sup> Annual Meeting San Juan, Puerto Rico

Mr. Tennyson has seven years of archaeological experience in historic and prehistoric archaeology and is currently a Staff Archaeologist for EDAW's San Diego office. He has spent the last five years working in California on archaeological and historical projects across California and Nevada. His experience includes archaeological data recovery, survey, monitoring, report production, and historic research for private, city, county, state, and federal clients.

Mr. Tennyson also has experience teaching Archaeology and Anthropology at the University level, teaching introductory level classes as well as instructing students in archaeological field schools. He also has experience in laboratory analysis and artifact curation of archaeological collections.

Mr. Tennyson has made public presentations regarding his archaeological work. He has authored or co-authored several articles and reports based on his work in both the academic and public sectors. He currently specializes in historical resources, including the assessment and recordation of historic archaeological sites and historic structures.

#### PREVIOUS EXPERIENCE

Southern Nevada Supplemental Airport EIS, Jean, NV  
Staff Archaeologist  
Client: ENSR

Staff Archaeologist for a cultural resources survey of a proposed airport in southern Nevada. The project included surveying and recording prehistoric and historic archaeological sites in the Ivanpah Valley region of southern Nevada. Additional duties included authorship of report sections and historic research related to early European and American exploration, early roads, the development of railroads, and the history of mining in the area.

Beacon Solar Energy Project, California City, CA  
Staff Archaeologist/Historian  
Client: ENSR

Archaeologist and Historian for proposed solar power plant near California City, CA. Project duties included survey of pipeline alignments in order to assess potential impacts to historic structures in the area, historic research related to early exploration and the development of various social and economic activities in the Mojave Desert region, and assistance in the production of historical architecture and archaeological resources reports.

Communication Archaeological Services Project Williams, Elko, NV  
Archaeologist

Client: Williams Communications  
Archaeological Technician responsible for the testing of sites along a communications line outside Elko, Nevada. Project duties included survey, relocation, testing, and recordation of sites along Highway 80.

Mojave River Pipeline Reaches 4A and 4B, Daggett, CA  
Archaeologist

Client: Mojave Water Agency  
Archaeological Technician for a water pipeline in Daggett, Ca. Project duties included survey of the proposed alignment, recordation of historic resources, historical research, archaeological monitoring for prehistoric and

MATTHEW TENNYSON

historic resources, laboratory analysis, cataloging and curation, and report production.

Lost Horse DMND  
Staff Archaeologist  
Client: City of Indio

Project Archaeologist responsible for historical research, survey, and report for proposed water tank and pipeline near the City of Indio.

Jolly Boy Tavern Data Recovery, Old Town, San Diego, CA  
Staff Archaeologist

Client: California Department of State Parks  
Staff archaeologist for excavation of early 19<sup>th</sup> century adobes located at the Jolly Boy Tavern in Old Town San Diego. Project duties included the excavation of trenches to uncover the historic foundations of adobes, on-site interpretations, and coordination with State Parks Archaeologists.

El Cajon Animal Shelter Survey and Testing, El Cajon, CA  
Archaeologist

Client: City of El Cajon  
Staff Archaeologist of the survey and testing of milling features located near the El Cajon Animal Shelter. Project duties included locating and recording bedrock milling features and test excavation units to determine the depths of cultural materials at the site.

Testing of Lithic Quarry at CA-SDI-13655, Camp Pendleton, CA  
Archaeologist

Client: U.S. Navy, NAVFAC SW, San Diego  
Staff Archaeologist for the testing of a quarry site located on Camp Pendleton USMC Base. Additional duties included laboratory analysis of lithic materials, artifact cataloging and curation, and assistance in report production.

Tijuana River Valley, San Diego, San Diego County, CA  
Archaeologist

Client: San Diego County Department of Parks and Recreation  
Staff Archaeologist for proposed trail alignments in the Tijuana River Valley Regional Park, San Diego, CA. Project duties included the identification and recordation of historic and prehistoric cultural resources.

Market Street Village, San Diego, CA  
Archaeologist

Client: Market Street Village Developers  
Laboratory Technician and Curation Coordinator for late 19<sup>th</sup> and early 20<sup>th</sup> artifacts recovered during archaeological monitoring for a condominium in downtown San Diego. Project duties included cataloging and curating recovered archaeological resources, artifact quantification and analysis, and assistance in report productions

Talega Community Development Project, San Clemente, CA  
Archaeologist

Client: Talega Associates  
Archaeological Technician for various sites at the Talega master-planned community. Project Duties included archaeological excavation of CA-ORA-907, archaeological and paleontological monitoring of construction activities, laboratory analysis of cultural materials, and the design and installation of cultural resources display at the Vista Del Mar Elementary School.

MATTHEW TENNYSON

Lassen National Park Field Treatment, Lassen County/Plumas County, CA

Archaeologist

Client: National Park Service

Archaeological Technician for pre-burn survey to relocate and record new cultural resources as well as updates for previously recorded cultural resources. Project duties included survey of hiking trails and open areas in Lassen Volcanic National Park and coordination of field crews.

Armstrong Ranch Development Project, Santa Ana, CA

Archaeologist

Client: Shea Homes

Archaeological Monitor for proposed townhome development at the Armstrong Ranch in Santa Ana, CA.

Orange County Water District West End, Orange County, CA

Archaeologist

Client: Orange County Water District

Archaeological Monitor for the installation of new water pipeline running from Orange, CA to Huntington Beach, CA.

Encino Water Quality Improvement Project, Los Angeles County, CA

Archaeologist

Client: Los Angeles County Department of Public Works

Archaeological Monitor at the Encino Reservoir during construction activities in association with improvements to the reservoir.

Tustin Field 1 (Tustin PA 20) Development Project, Tustin, CA

Archaeologist

Client: John Laing Homes

Archaeological Monitor for historic and prehistoric cultural materials encountered during grading activities. Duties included construction monitoring and recordation of prehistoric artifacts encountered during grading.

Tustin Field 2 (Tustin PA 21) Development Project, Tustin, CA

Archaeologist

Client: John Laing Homes

Archaeological Monitor and lead contact with the client. Duties included construction monitoring and recordation of historic artifacts encountered during grading.

#### SELECTED REPORTS

Peak to Playa: Southern Nevada Supplemental Airport Environmental Impact Statement Cultural Resources Report, Clark County, Nevada. Contributing author with James Cleland and Christy Dolan. EDAW, San Diego (2008)

Beacon Solar Energy Project Historic Architectural Resources Report, Kern County, California. Contributing author with Jennifer Hirsch. EDAW, San Diego (2008)

Beacon Solar Energy Project Archaeological Resources Report, Kern County, California. Contributing author with Rebecca Apple and Wayne Glenny. EDAW, San Diego (2008)

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Monitoring and Mitigation of Seventeen Historic Features at CA-SDI-17,581, San Diego, California. Co-authored with Alex Wesson and Kevin Hunt. SWCA Environmental Consultants (2006)

Identification and Documentation of Unassociated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony of a Late Period Kumeyaay Archaeological Collection. Co-authored with Dr. Lynn Gamble, San Diego State University (2005)

Cultural Resources Reconnaissance of the Vereecken Property, Winchester Hills, Riverside County, California. SWCA Environmental Consultants (2004)

Archaeological Monitoring And Historic Trash Recovery During Grading For The Tomlinson Park Development, Located In Brea, Orange County, California. Co-authored with Joan Brown. SWCA Environmental Consultants (2003)

TRINA MEISER  
Architectural Historian

#### SUMMARY

Historic preservation planner and architectural historian

#### EDUCATION

MA, Historic Preservation Planning, Cornell University, 2003

BA, History, Kenyon College, 1998

#### AFFILIATIONS

California Preservation Foundation

National Trust for Historic Preservation

Trina Meiser is a historic preservation planner and an architectural historian for EDAW. She has 5 years experience surveying and documenting historic structures, districts, and sites, and she has evaluated historic buildings and plans for sites in the Northeast, the Midwest, and the South. She has completed National Register for Historic Places nominations, historic structures reports, and Federal Rehabilitation Tax Credit applications, and she has consulted on a variety of historic structure rehabilitation plans for Section 106 review. Her background is based on a solid knowledge of architectural history, architectural styles and terminology, building materials conservation, and the historic preservation movement. She has lead seminars on architectural styles and their characteristics and has presented the history of historic preservation. Her experience in historic preservation planning provides a strong understanding of federal, state, and local historic preservation laws. She has a thorough knowledge of the Secretary of the Interior's Standards for the Treatment of Historic Properties and their functions in historic preservation planning.

Ms. Meiser's areas of interest include urban and agricultural planning history and historic district and neighborhood revitalization projects. She is a member of the California Preservation Foundation, the National Trust for Historic Preservation, and several regional historical societies and preservation organizations.

#### HISTORIC PRESERVATION PLANNING

SR-76 Mission to I-15 Historic Resources Research, San Diego, CA

Architectural Historian

CLIENT: Caltrans

Conducted fieldwork to record and evaluate ranching buildings and residences. Currently summarizing results for inclusion in a historic resources evaluation report and historic property survey report.

Main Street Bridge Replacement Project, Temecula, CA

Architectural Historian

CLIENT: City of Temecula

Conducted a survey and historical research of historic resources in Old Town Temecula adjacent to the Main Street Bridge. Results were recorded on DPR forms and in a historical resources survey report per Caltrans guidelines.

Ramona Air Center EIR, Ramona, CA

Architectural Historian

CLIENT: TCR Properties

Conducted a survey and historical research of structures more than 50 years old to evaluate and document historic resources. Results were recorded on DPR forms and summarized for inclusion in the project EIR.

National Register Eligibility Assessment for Naval Base Ventura

County, Port Hueneme, CA

Architectural Historian

CLIENT: U.S. Navy, Southwest Division

Recorded and evaluated 18 buildings at the Naval Construction Training Center at Port Hueneme for eligibility to the National Register. Conducted research on the Disaster Recovery Training School for incorporation into the historical context. Completed DPR forms and incorporated findings in a historic resources evaluation report.

TRINA MEISER

SFVAMC EA Seismic Upgrades, San Francisco, CA

Architectural Historian

CLIENT: Department of Veterans Affairs

Consulted with designers for the rehabilitation and retrofit of two 1930s-era Art Deco Veterans Affairs buildings. Reviewed plans and rehabilitation standards to evaluate design of new additions and alterations.

301 University Avenue Historical Evaluation and Technical Report,  
San Diego, CA

Architectural Historian

CLIENT: Allen, Matkins, Leck, Gamble, Mallory &amp; Matsis, LLP

Evaluated the condition and integrity of the former supermarket building dating from 1942. Prepared historic resources evaluation report and DPR forms. Summarized findings for inclusion in the 301 University Uptown EIR.

Disaster 1604-DR-MS, Biloxi, MS

Architectural Historian

CLIENT: Federal Emergency Management Agency, Region VI

Ms. Meiser recorded the condition and integrity of multiple properties affected by Hurricane Katrina and performed photo documentation. Determined if structures were eligible for National Register designation. Results were summarized in a report and through a series of maps generated in GIS. Work was done prior to joining EDAW.

Disaster 1604-DR-MS, Biloxi, MS

Historic Preservation Specialist

CLIENT: Federal Emergency Management Agency, Region VI

Ms. Meiser completed Section 106 review and coordinated with the State Historic Preservation Office to ensure that all projects funded by FEMA complied with federal regulations and the National Historic Preservation Act. Evaluated buildings, structures, roadways, and sites for NRHP eligibility. Work was done prior to joining EDAW.

Ithaca Downtown Commercial Historic District National Register  
Eligibility Nomination, Ithaca, NY

Historic Preservation Specialist

CLIENT: City of Ithaca

Ms. Meiser completed research and documentation of downtown commercial buildings dating from the 1830s to the 1930s. Document included architectural descriptions of each building. Successful nomination to the National Register. Work was done prior to joining EDAW.

University Avenue Historic District National Register Eligibility  
Assessment, Ithaca, NY

Historic Preservation Specialist

CLIENT: City of Ithaca

Ms. Meiser completed documentation included in the survey and nomination of this residential historic district with resources dating from the 1860s to the 1950s. Work was done prior to joining EDAW.

Historic Ithaca's State Theatre Restoration Project, Ithaca, NY  
Preservation Planner

CLIENT: Historic Ithaca, Inc.

Ms. Meiser evaluated restoration designs for compatibility with the historic character of the resource and for compatibility with the *Secretary of the Interior's Standards for Rehabilitation*. Construction management for aesthetic and ADA accessibility modifications. Work was done prior to joining EDAW.

TRINA MEISER

The Clinton House, Ithaca, NY  
Preservation Planner

CLIENT: Historic Ithaca, Inc.

Ms. Meiser evaluated designs for compatibility with the historic character of the resource and for compatibility with the *Secretary of the Interior's Standards for Rehabilitation*. Compiled and prepared Part 1 of the Federal Rehabilitation Tax Credit Application. Oversaw construction management for aesthetic modifications. Work was done prior to joining EDAW.

The Delaware, Lackawanna and Western Train Station National  
Register Eligibility Nomination, Ithaca, NY  
Historic Preservation Specialist

CLIENT: City of Ithaca

Ms. Meiser composed historic context statement and architectural description for historic train station. Photo documented building and submitted the application to the State Office of Historic Preservation. Work was done prior to joining EDAW.

Fort Totten, Bayside, Queens, NY  
Historic Preservation Specialist

CLIENT: New York City Department of Parks and Recreation

Ms. Meiser organized a volunteer event to perform restoration work on Officers' Quarters at retired military site on the East River. Work was done prior to joining EDAW.

Athens Exchange Hotel Stagecoach Livery Historic Structure Report  
Analysis, Athens, PA  
Preservation Planner

CLIENT: Town of Athens, PA

Ms. Meiser conducted comprehensive assessment of exterior and interior spaces of 1860's livery structure. Identified character defining features and compiled historic context statement. Photo documented building and developed recommendations for treatment and maintenance. Work was done prior to joining EDAW.



Appendix B

Confidential

## **Appendix D2**

### **Paleontological Literature Search**

**Cogstone Resource Management Inc.**

**August 2008**



**Cogstone** Resource Management Inc.  
Paleontology • Archaeology • History

**PALEONTOLOGICAL LITERATURE SEARCH FOR  
THE NILAND SOLAR ENERGY PROJECT,  
IMPERIAL COUNTY, CALIFORNIA**

**Submitted to:**

EDAW  
2737 Campus Drive  
Irvine, California 92612

**Authors:**

Kim Scott and Sherri Gust

**Principal Investigator:**

Sherri Gust  
Qualified Principal Paleontologist

**August 2008**

***Cogstone Project Number:*** 1644

***Type of Study:*** Paleontological Literature Search

***USGS Quadrangle:*** Niland and Iris, 7.5'

***Key Words:*** Quaternary lake, Lake Cahuilla beds, Pleistocene, Holocene, solar energy facility

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## EXECUTIVE SUMMARY

Cogstone Resource Management Inc. was retained by EDAW to provide a paleontological literature search of potential impacts due to the proposed construction of the Niland Solar Energy Project by the Los Angeles Department of Water and Power. The proposed site is located in and near Niland in Imperial County, California. This study was requested by the Los Angeles Department of Water and Power to meet their responsibilities as the co-lead agency under the California Environmental Quality Act (CEQA).

The proposed site of the Niland Solar Energy Plant is located in sections 1, 3, and 11 of Township 11 South, Range 14 East of the Niland and Iris USGS 7.5' Quadrangles. Proposed impacts include the construction of a new substation, trenching for cables, and minor grading for the solar arrays and road access.

The project is mapped entirely as the Holocene Lake Cahuilla beds. Typically comprised of sandy silt, these lakebeds are extensive in the Salton Trough, and are known to be up to 250 feet thick. Both the thickness of the Lake Cahuilla beds and the minimal impacts proposed by this project make it highly unlikely that the Plio-Pleistocene sediments underlying the lake beds will be impacted.

A search for paleontological records was completed at the San Diego Museum of Natural History, with online databases, and in published materials. The project area and a ten-mile radius were searched for resources. No fossil localities have been previously collected from within a one-mile radius of the target property.

Holocene paleontological resources from the Lake Cahuilla beds are known from two San Diego Museum of Natural History localities in El Centro, a Los Angeles County Museum paleontological locality in La Quinta, and several San Bernardino County Museum localities in the northern Salton Trough region. Fossils recovered from these sites include freshwater diatoms, land plants, sponges, ostracods, mollusks, fish and small terrestrial vertebrates.

Holocene invertebrates and vertebrates from the Lake Cahuilla beds represent significant, scientifically important, non-renewable paleontological resources. Areas with impacts greater than one foot in depth into the Lake Cahuilla beds should be subject to an intensive sampling program to recover samples, stratigraphic columns and other data to contribute new information. Since the Holocene Lake Cahuilla sediments are known to be as much as 250 deep, Pleistocene sediments are not likely to be impacted.

## INTRODUCTION

### PURPOSE OF STUDY

Cogstone Resource Management Inc. was retained by EDAW to provide a paleontological literature search of potential impacts due to the proposed construction of the Niland Solar Energy Project by the Los Angeles Department of Water and Power. The proposed site is located in and near Niland in Imperial County, California (Figure 1). This study was requested by the Los Angeles Department of Water and Power to meet their responsibilities as the co-lead agency under the California Environmental Quality Act (CEQA).

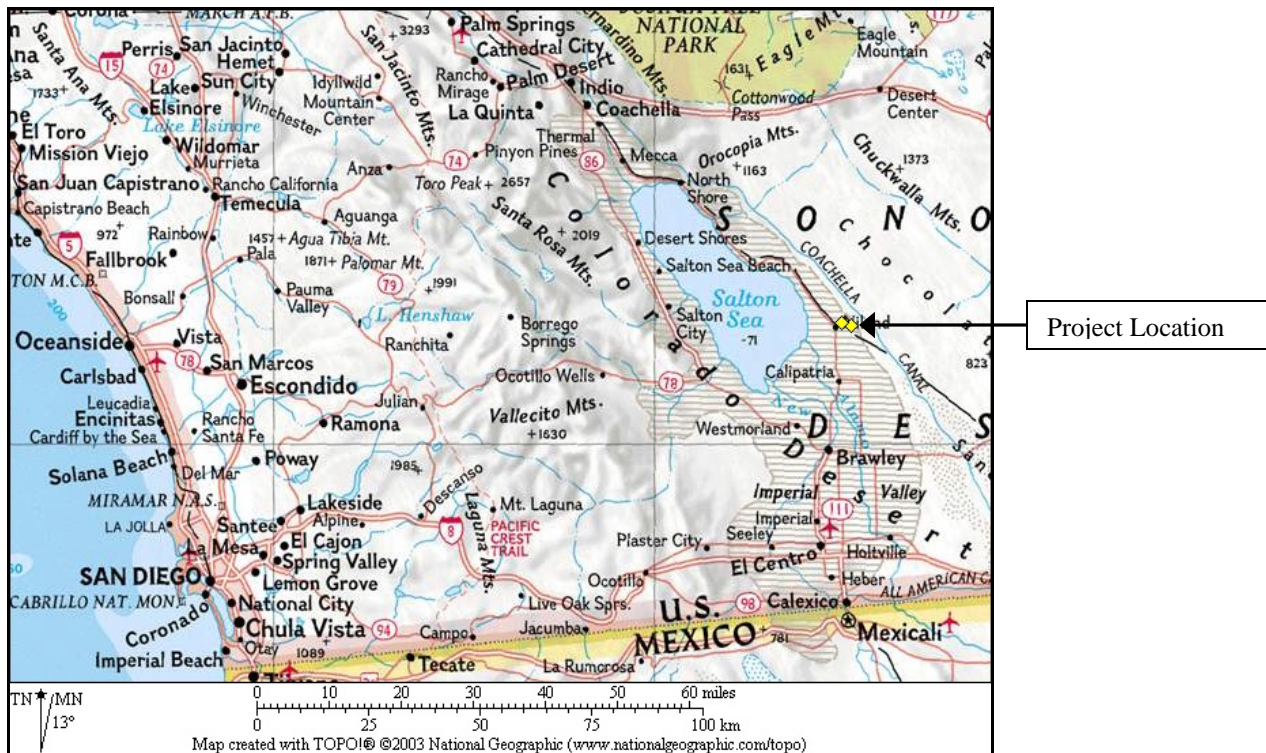


Figure 1. Regional Location Map

### PROJECT DESCRIPTION

The proposed site of the Niland Solar Energy Plant is located in sections 1, 3, and 11 of Township 11 South, Range 14 East of the Niland and Iris USGS 7.5' Quadrangles (Figure 2). Proposed impacts include the construction of a new substation, trenching for cables, and minor grading for the solar arrays and road access.

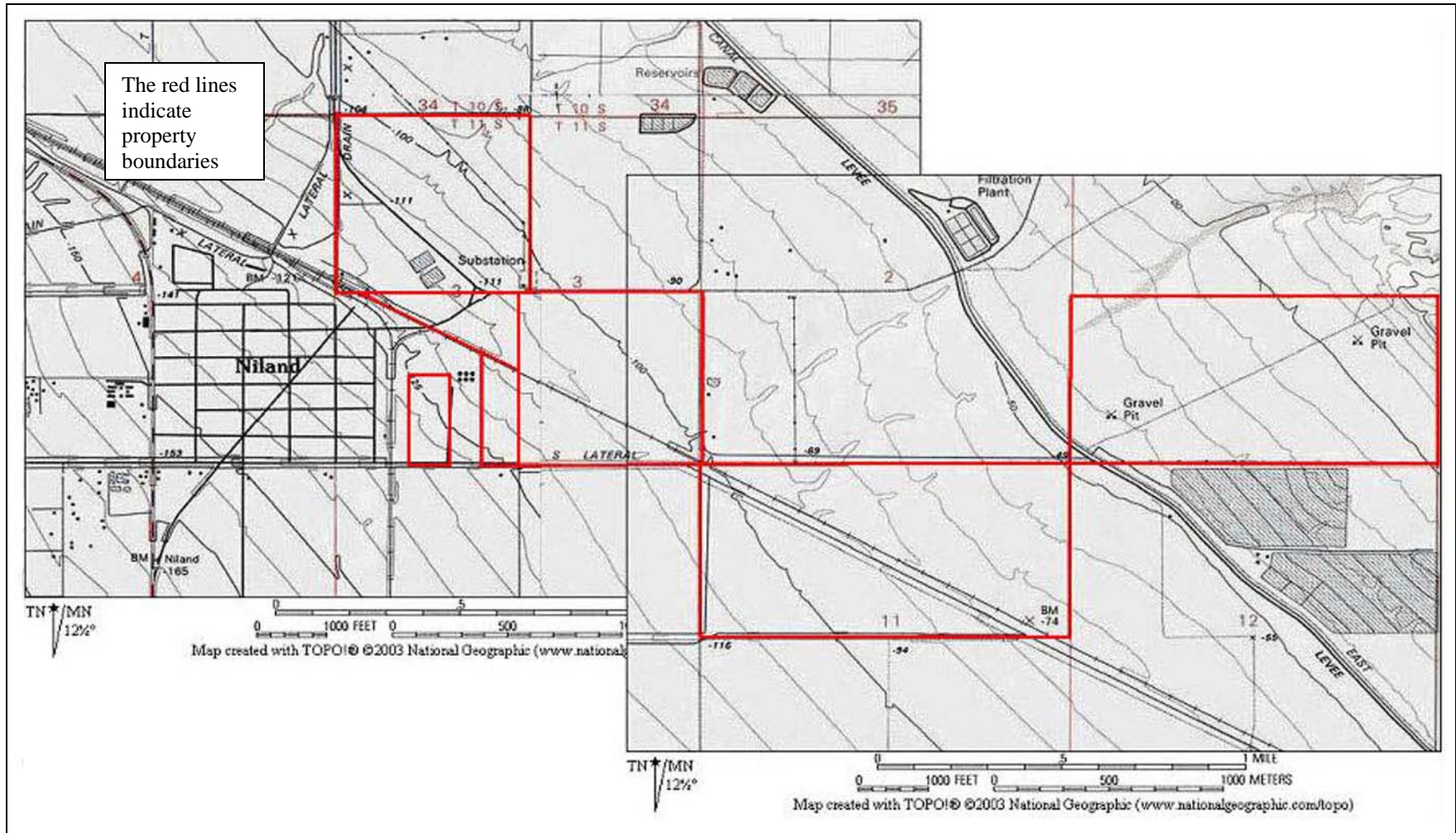


Figure 2. Project Location

## **PROJECT PERSONNEL**

Cogstone Resource Management, Inc. conducted these studies. Sherri Gust served as the Principal Investigator for the project, wrote the recommendations and edited the report. Gust is an associate of the Vertebrate Paleontology and Rancho La Brea sections of the Natural History Museum of Los Angeles County, has a BLM paleontology permit and certification as a qualified paleontologist in numerous California counties. She has an M.S. in Anatomy (Evolutionary Morphology) from the University of Southern California, a B.S. in Anthropology from the University of California, Davis and over twenty-five years of experience in California.

The majority of this report was written by Kim Scott. Scott has a B. S. in Geology with an emphasis in Paleontology from the University of California at Los Angeles and over 10 years of experience. Further qualifications of project personnel are provided (Appendix A).

## **REGULATORY ENVIRONMENT**

### **STATE LAWS AND REGULATIONS**

The following state laws and regulations are applicable to this project (Caltrans 2003).

#### **California Environmental Quality Act of 1970 (CEQA) (PRC § Section 21000 et seq.)**

CEQA declares that it is state policy to "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental effects of a proposed project. In the event that a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered. If paleontological resources are identified as being within the proposed project area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.



## **DEFINITION OF SIGNIFICANCE FOR PALEONTOLOGICAL RESOURCES**

Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated can determine the scientific significance of paleontological resources. Fossils are considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life;
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

As so defined, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy.

Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important. Paleontological remains are recognized as nonrenewable resources significant to the history of life (Scott and Springer 2003).

## **BACKGROUND**

### **GEOLOGICAL SETTING**

The proposed project site is situated near the eastern edge of an extensional basin that parallels the San Andreas Fault Zone through the Coachella Valley from the Indio area to the Pacific Ocean south of the Gulf of California. In Riverside and Imperial counties, this extensional basin is named the Salton Trough. The Salton Trough lies below sea level and is an active continental rift. It is surrounded on three sides by mountains and bounded to the southeast by the Colorado River delta. Generally the Colorado River delta has blocked marine water from entering the Salton Trough from the Sea of Cortez. However, at times river water has spilled over creating freshwater lakes (Van de Kamp 1973, Waters 1983, Maloney 1986).

Sediments from these deposits include the Plio-Pleistocene Borrego and Palm Springs formations, the Pleistocene Brawley Formation, and the Holocene Lake Cahuilla beds (Rogers 1965, Strand 1962, Jennings 1967). Today, the Salton Sea is merely the salt rich remnant of this large freshwater lake (Figure 3).

### **STRATIGRAPHY**

The project is mapped entirely as the Holocene Lake Cahuilla beds (Figure 4). Typically comprised of sandy silt, these lakebeds are extensive in the Salton Trough, and can reach as much as 250 feet thick. These lacustrine sediments were deposited during each of at least seven high stands of Lake Cahuilla, each high stand resulting from flooding of the Salton Trough by inflow from the Colorado River (Waters 1983). Fluvial sediments in the area were laid down during the intervening lake low stands when the lake bed was dry. These alternating lacustrine and fluvial sediments, termed the Lake Cahuilla Beds, are not associated with any human activity and thus are paleontological, rather than archaeological, in spite of age.

Both the thickness of the Lake Cahuilla beds and the minimal impacts proposed by this project make it highly unlikely that the Plio-Pleistocene sediments underlying the lake beds will be impacted.

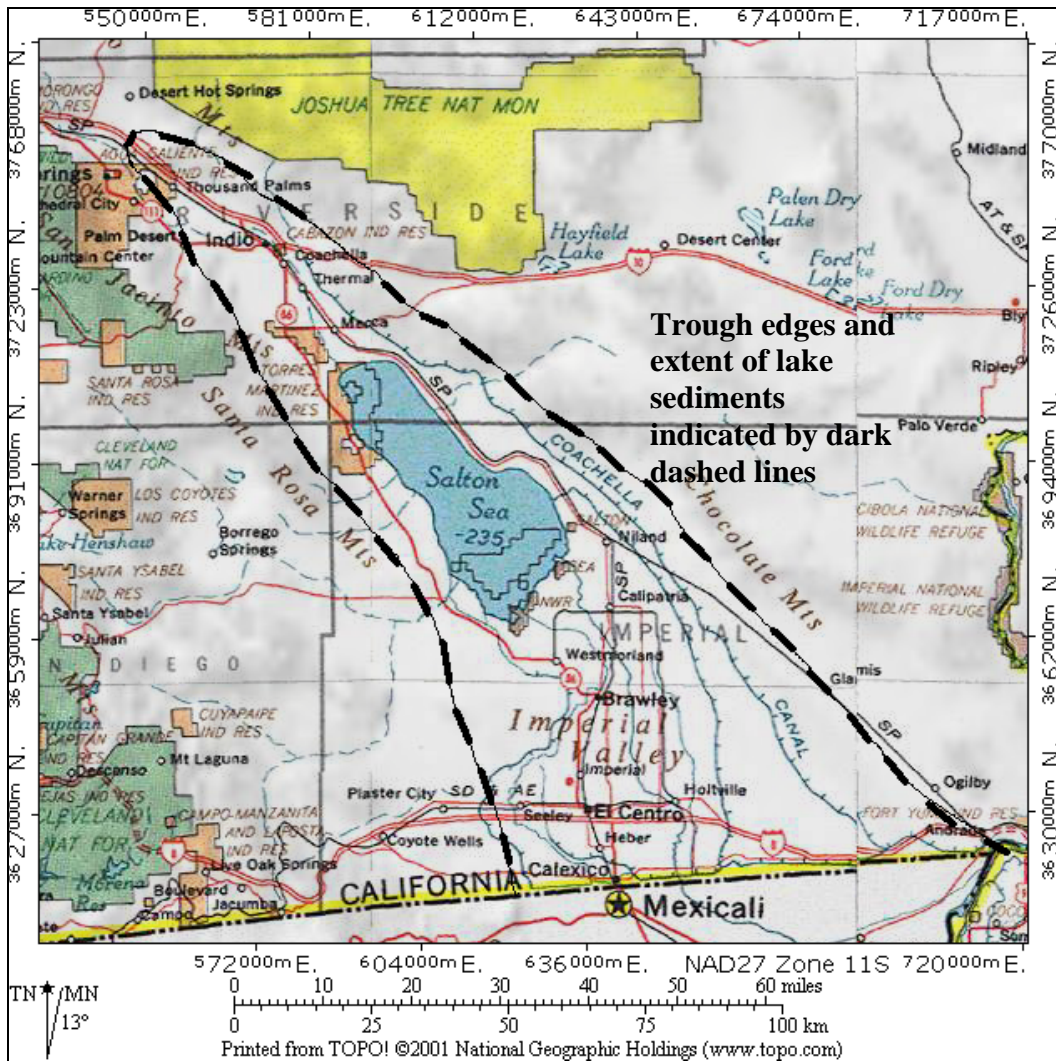


Figure 3. The Salton Trough

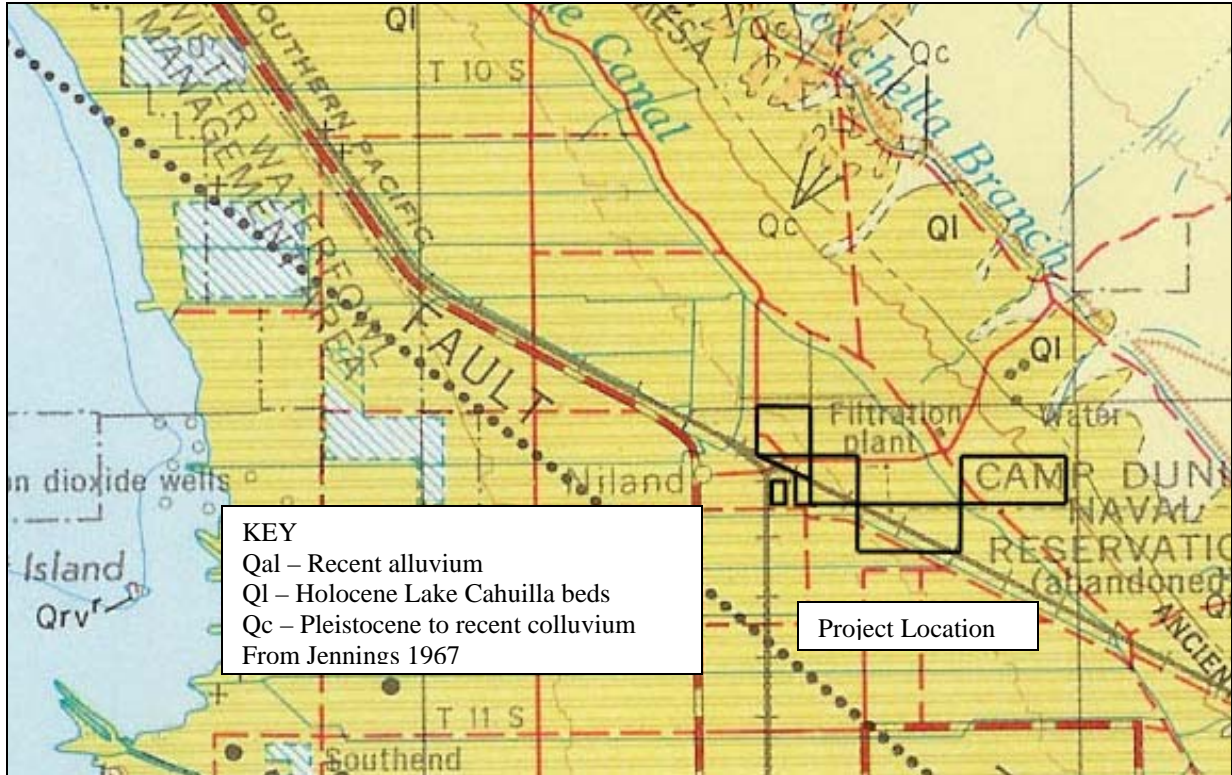
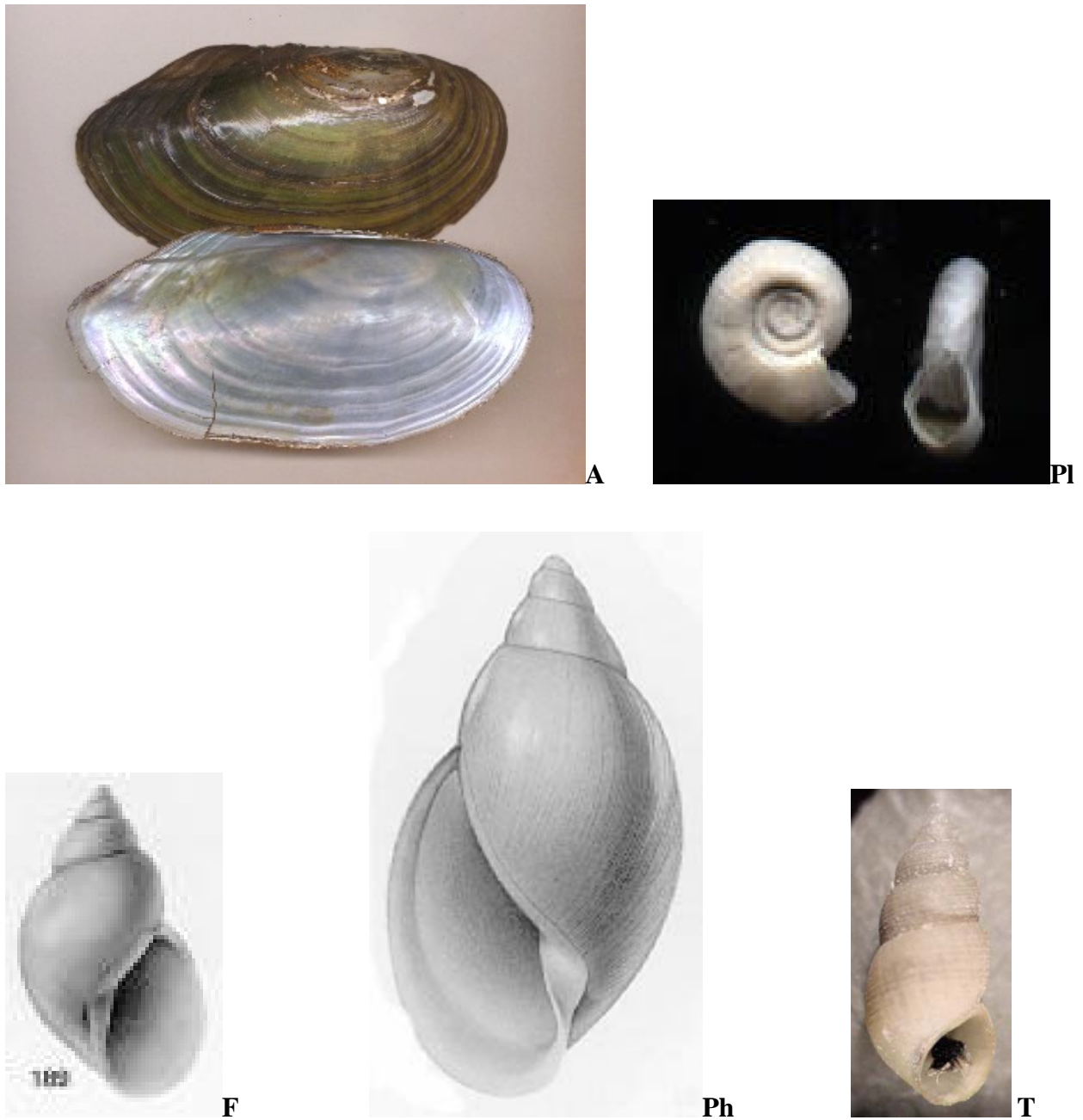


Figure 4. Project geological formations

## RECORD SEARCHES

A search for paleontological records was completed at the San Diego Museum of Natural History, with online databases, and in published materials. The project area and a ten-mile radius were searched for resources. No fossil localities have been previously collected from within a one-mile radius of the target property (Randall 2008, LACMIP 2008, UCMP 2008, Hay 1927, Jefferson 1991a, b).

Holocene paleontological resources from the Lake Cahuilla beds are known from two San Diego Museum of Natural History localities in El Centro (Randall 2008), a Los Angeles County Museum paleontological locality in La Quinta (Whistler et al. 1995), and several San Bernardino County Museum localities in the northern Salton Trough region (Scott 2004a,b, Scott 2006). Fossils recovered from these sites include freshwater diatoms, land plants, sponges, ostracods, mollusks, fish and small terrestrial vertebrates. The most abundant resources recovered are freshwater clams (*Anodonta californiensis*, *Pisidium* sp.), freshwater snails (*Tryonia protea*, *Fossaria* sp, cf. *F. parva*, *Physella concolor*, *Physella humerosa*, and *Planorbella tenuis*), and bony fish (Osteichthys, Cyprinidae).



**Figure 5. Large scale images of representatives of the following genera: *Anodonta* (A), *Planorbella* (Pl), *Fossaria* (F), *Physella* (Ph), and *Tryonia* (T).**

## **POTENTIAL PALEONTOLOGICAL RESOURCES**

Paleontological resources are considered to be significant if they provide new data on fossil animals, distribution, evolution or other scientifically important information. Holocene invertebrates and vertebrates from the Lake Cahuilla beds represent significant, scientifically important, non-renewable paleontological resources. Since the Holocene Lake Cahuilla sediments are known to be as much as 250 deep, Pleistocene sediments are not likely to be impacted.

## **RECOMMENDATIONS**

A qualified principal investigator for paleontology (graduate degree with a specialization in paleontology and more than five years of experience) should be retained to detail the sampling program once final construction plans are available and to maintain professional standards of work. Areas with construction impacts greater than one foot in depth into the Lake Cahuilla beds should be subject to an intensive paleontological sampling program to recover samples, stratigraphic columns and other data to contribute new information to science. A minimum of 20 samples up to a maximum of 100 should be collected, the contents identified by experts and radiometric dates obtained. All results must be included in a final report to be filed with the client, lead agency and repository. All materials meeting significance criteria under CEQA should be curated in an accredited museum facility along with a copy of the report. The San Diego Natural History Museum is recommended as the most appropriate repository.

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## **APPENDIX A: QUALIFICATIONS**

**SHERRI GUST**

Cogstone Paleontology Archaeology History

Registered Professional Archaeologist & Qualified Paleontologist

**EDUCATION**

- 1994 M. S., Anatomy and Cell Biology (Evolutionary Morphology), University of Southern California, Los Angeles
- 1979 B. S., Anthropology (Physical), University of California, Davis

**SUMMARY QUALIFICATIONS**

Gust has more than 28 years of experience in California, acknowledged credentials for meeting national standards and is certified/qualified in all southern California cities and counties that maintain lists.

**SELECTED REPORTS AND PROJECTS**

2008 Gust, S., and K. Scott. **Paleontological and Archaeological Assessment and Mitigation Plan for the Cold Canyon Landfill Expansion Project, San Luis Obispo, California.** Performed paleontological and archaeological record searches, research, survey and prepared assessment, impact analysis and EIR section for County of San Luis Obispo under subcontract to the Morro Group.

2007 Gust, S., A Glover, and K Scott. **Paleontological and Archaeological Assessment Report for the Adelanto Gateway Project, City of Adelanto, California.** Performed paleontological and archaeological record searches, research, survey, recorded sites and prepared assessment report with recommendations for City of Adelanto under subcontract to RBF Consulting.

2007 Gust, S., and K. Scott. **Paleontological Evaluation for the Owens Valley PM10 Planning Area Demonstration of Attainment State Implementation Plan, Inyo County, California.** Performed paleontological survey and impact evaluation for Great Basin Unified Air Pollution Control District under subcontract to Sapphos Environmental, Inc.

2007 Gust, S., S. McCormick and K. Scott. **Paleontological and Archaeological Assessment Report for the Metrolink Expansion Services Project at Fullerton Station, City of Fullerton, California.** Performed record searches, Native American consultation and survey and prepared evaluation report for OCTA under contract to Parsons Brinckerhoff Orange.

2005 Scott, K. and S. Gust. **Paleontological Resources of the Highway 138 West Expansion, San Bernardino County, California.** Performed record search and survey and prepared combined paleontological resources identification study, evaluation and mitigation plan for Caltrans District 8 under subcontract to Applied Earthworks Inc.

2006 Scott, K. and S. Gust. **Paleontological Resources of the Interstate 80 Median and Auxillary Lanes Project, Sacramento, California.** Performed record searches, research, survey and prepared combined paleontological resources identification study/evaluation and mitigation plan for URS Oakland under contract to Caltrans District 3.

2005 Scott, K. and S. Gust. **Paleontological Resources of the Highway 138 West Expansion, San Bernardino County, California.** Performed record search and survey and prepared combined paleontological resources identification study, evaluation and mitigation plan for Applied Earthworks Inc. under contract to Caltrans District 8.

**KIM SCOTT**

Cogstone Paleontology Archaeology History  
Paleontology Field & Lab Director

**EDUCATION**

In progress M.S., Biology (Paleontology), California State University, San Bernardino  
2000 B.S., Geology (Paleontology), University of California, Los Angeles

**SUMMARY**

Scott has more than 10 years of experience in California paleontology. She is a qualified geologist and field paleontologist with extensive survey, monitoring and fossil salvage experience. In addition she has special skills in fossil preparation (cleaning and stabilization) and preparation of stratigraphic sections and other documentation for fossil localities.

**SELECTED REPORTS AND PROJECTS**

2008 Gust, S., and K. Scott. **Paleontological and Archaeological Assessment and Mitigation Plan for the Cold Canyon Landfill Expansion Project, San Luis Obispo, California.** Performed paleontological and archaeological record searches, research, survey and prepared assessment, impact analysis and EIR section for County of San Luis Obispo under subcontract to the Morro Group.

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2007 Gust, S., and K. Scott. **Paleontological Evaluation of 2008 Supplemental Control Requirements for the Owens Valley PM10 Planning Area Demonstration of Attainment State Implementation Plan, Inyo County, California.** Performed paleontological survey and impact evaluation for Great Basin Unified Air Pollution Control District under subcontract to Sapphos Environmental, Inc.

2007 Gust, S., S. McCormick and K. Scott. **Paleontological and Archaeological Assessment Report for the Metrolink Expansion Services Project at Fullerton Station, City of Fullerton, California.** Performed record searches, Native American consultation and survey and prepared evaluation report for OCTA under contract to Parsons Brinckerhoff Orange.

2005 Scott, K. and S. Gust. **Paleontological Resources of the Highway 138 West Expansion, San Bernardino County, California.** Performed record search and survey and prepared combined paleontological resources identification study, evaluation and mitigation plan for Caltrans District 8 under subcontract to Applied Earthworks Inc.

2005 Scott, K. and S. Gust. **Archaeological and Paleontological Resource Assessment Report for the Rich Haven Project, Ontario, California.** Performed paleontological and archaeological record searches, research, survey and prepared assessment, impact analysis and recommendations for the City of Ontario under subcontract to RBF Consulting.

**Appendix E**

**Hydrology and Water Quality Report**

**EDAW, Inc.**

**October 2008**

**HYDROLOGY AND WATER QUALITY REPORT FOR THE  
NILAND SOLAR ENERGY PROJECT INITIAL STUDY, NILAND,  
IMPERIAL COUNTY, CALIFORNIA**

***Prepared for:***

Los Angeles Department of Water and Power  
Environmental Services  
111 North Hope Street, Room 1044  
Los Angeles, California 90012

***Prepared by:***

EDAW, Inc.  
1420 Kettner Boulevard, Suite 500  
San Diego, California 92101  
(619) 233-1454

October 2008

## **ENVIRONMENTAL SETTING**

The project alignment occurs within the Imperial Hydrological Unit (HU). The project is located within the Salton Sea Transboundary Watershed (USGS Hydrologic Unit 18100200), which is the Priority Watershed in the Colorado River Basin Region. It encompasses one-third of the region (about 8,360 square miles) and contains five (out of a total of six) of the Region's impaired surface waterbodies. Most of the watershed is in Imperial County. The watershed has been identified as a Category I (impaired) Watershed under the 1998 California Unified Watershed Assessment. The watershed contains five main surface waterbodies: the Salton Sea, the New River, the Alamo River, the Imperial Valley Agricultural Drains, and the Coachella Valley Stormwater Channel. The Salton Sea is approximately 3 miles from project site.

The Salton Sea is California's largest lake, with approximately 360 square miles of water surface and 105 miles of shoreline. The surface of the sea lies approximately 232 feet below mean sea level (MSL). One of the major functions of the Salton Sea is to serve as a sump for agricultural wastewater for the Imperial and Coachella Valleys. Executive Order of Withdrawal (Public Water Reserve No. 114, California No. 26), signed in 1928, designated lands within the Salton Basin below elevation 220 feet below MSL as storage for wastes and seepage from irrigated lands in the Imperial Valley. Approximately 75 percent of the freshwater inflow to the sea is agricultural drain water from Imperial Valley. Because the Salton Sea has no outlets, salts are concentrated within it and nutrients enhance the formation of eutrophic conditions. The Sea supports a National Wildlife Refuge and is a critical stop on the Pacific Flyway for migrating birds, including several state- and federal-listed endangered and threatened species. The Salton Sea National Wildlife Refuge was established in 1930 to preserve wintering habitat for waterfowl and other migratory birds. However, catastrophic die-off of birds and fish between 1992 and 1997 indicate the Sea is in serious trouble, and may be unable to support these beneficial uses in the future.

The New River originates in Mexico, flows through the City of Mexicali, Mexico, continues through the City of Calexico in the United States, and travels northward about 60 miles until it empties into the Salton Sea. The New River carries urban runoff, untreated and partially treated municipal wastes, untreated and partially treated industrial wastes, and agricultural runoff from the Mexico. In addition, the River carries urban runoff, agricultural runoff, treated industrial wastes, and treated, disinfected and non-disinfected domestic wastes from the Imperial Valley.

The Alamo River also originates in Mexico and flows northward across the border for about 50 miles until it empties into the Salton Sea. The Alamo River is dominated by agricultural return flows from Imperial Valley.

The Imperial Valley Agricultural Drain system comprises over 1,450 miles of surface drains, which discharge into the Alamo and New Rivers and the Salton Sea. The drains primarily carry agricultural runoff from the Imperial Valley that contains pesticides, nutrients, selenium, and silt in amounts that violate water quality standards.

Waters associated with the proposed project footprint include the East Highline Canal.

## **ANALYSIS**

To comply with state law, water quality standards and waste discharge requirements during construction would need to be addressed in the project design and construction phase pursuant to Order 99-08-DWQ (i.e., the Construction General Permit. This Order requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared by an registered Civil Engineer in accordance with the National Pollution Discharge Elimination System (NPDES) regulations. This plan would require further approval by the County of Imperial, Department of Planning and Public Works. The SWPPP would establish Best Management Practices (BMPs) for construction of the solar facilities, including source, erosion, sediment, and non-storm water controls to be installed and maintained throughout construction.

The SWPPP is a standard requirement for development projects under the Construction General Permit (once coverage is obtained from the RWQCB) and with implementation, would ensure compliance with water quality standards and water discharge requirements if properly designed and implemented. Proper implementation of the SWPPP would reduce or eliminate construction-related water quality impacts to a level that is less than significant. Accordingly, the BMPs presented in the construction and design notes on Sheet G-002 (see Appendix A of Initial Study), with particular attention to project drawing Sheet C-501 (see Appendix A of Initial Study), for installation notes would assist in protecting water quality during construction. However, the following general protective measures would need to be installed prior to construction:

**Sediment Controls:** The primary water quality pollutant of concern during construction activities would be potential sedimentation effects from soil-disturbing activities, such as clearing/grubbing and grading/excavation. Sediment control BMPs would need to be deployed prior to initiating project construction activities. Sediment controls would need to be implemented along the drainage perimeter of the disturbed soil areas, at the toe of the slopes, and at applicable drainage inlets to the municipal separate stormwater system (MS4). All sediment control materials would need to remain onsite year-round until construction is completed. BMPs would need to be upgraded and regularly inspected during the rainy season (October 1 through April 30) and modified or enhanced when determined necessary by the site inspections. Sediment controls would (at a minimum) include silt fencing and/or fiber rolls along the perimeter of disturbed areas, gravel bags, inlet filters, or check dams at all existing storm drain inlets that accept project drainage.

Perimeter silt fence or similar sediment controls would specifically be required along the East Highline Canal (part of the All American Canal System), which runs diagonally between the northeast corner of Area 4-4 and southwest corner of Area 4-5. Project construction activities must not be allowed to produce discharges of any type (raw material spills, runoff, concrete washwater, etc.) into the canal.



Erosion Controls: Erosion control materials would be needed for disturbed areas including slopes and project stockpiles. Fiber rolls and gravel bags would be required to decrease runoff flow rates on-site and provide erosion protection on bare slopes. Fiber rolls also would be required along construction access roads to prevent water from undercutting the sub-base.

Tracking Controls: A stabilized construction entrance would be needed to be established at each of the four construction site entrances/exits from adjacent public roadways (Wilkins Road, Beal Road, and two off East Noffsinger Road).

General Site and Material Management: Construction-related materials that pose a threat to water quality would need to be stored at designated staging areas and within approved, proper containment. Pollutant source materials would be required to be stored off-ground and under covered areas. Spill kits also would be required at the staging areas and on select equipment for immediate access depending on the type and number of equipment used. Concrete washout areas would need to be properly constructed for full containment of waste, monitored daily, and emptied once the reaching three-quarters capacity. Trash and construction related debris would need to be cleaned up daily and disposed of in proper containers.

Specific protective measures during project construction would need to include:

Regular site and BMP inspections before, during, and following storm events. BMPs that are found to be deficient or not operating properly would need to be adjusted, modified, or otherwise supplemented to achieve proper water quality protection. These inspections and water quality protection measures would be conducted in compliance with SWPPP requirements.

Sanitary waste facilities would be ensured by engaging a licensed subcontractor to deliver, maintain, and remove portable toilets during construction. Impacts associated with these facilities would be reduced to less-than-significant levels provided that:

- The toilets would be emptied at least weekly and dyed chemicals would be used to ensure that the smallest leaks are detected promptly;
- The sanitary waste contractor supplies secondary containment for the facilities; and
- Provision for sanitary waste spills is available on site.

Specific post-construction protective measures for water quality during operation of the solar farm would need to include:

Compliance with water quality standards relative to

- the Colorado River Basin Plan- Region 7 (Resolution No. 94-18) and
- the Non Point Source Management Plan (Resolution No. 88-123).

The Basin Plan and Non Point Source Management Plan would require the project to maintain protective measures throughout operations to ensure no impacts to local water

quality. Compliance with these Resolutions would serve to protect local water quality during solar farm operations.

Assuming that an existing connection to the Niland sanitary sewer system is available and connected to the projects sanitary wastestream, no sanitary or septic waste-related impacts would be expected. If such a connection is not available, compliance with the Niland Department of Public Works for suitable waste-disposal options for permanent sewer connections would be required.

Water supply during facility construction and operation would be supplied by one of two possible methods. It is planned to connect to the potable water system of the Golden State Water Company. The water company is in the process of evaluating ability to serve. Should a water connection not be possible, a groundwater well would be constructed upon issuance of the appropriate County permit. Groundwater recharge potential would be preserved through the incorporation of the detention/retention proposed to control onsite drainage.

The proposed project would not alter the course of a stream or river but would involve grading and filling portions of the 100-year floodplain. The project would disturb a portion of the adjacent wash located at the northwest corner of Area 4-5. Proper implementation of the project SWPPP would prevent on-site soil erosion and siltation during construction of the project. The project SWPPP and project drawing sheets C-500 and C-501 (see Appendix A of Initial Study) would describe the steps needed to adequately reduce erosion and siltation on-site during construction.

A 2.75 acre-foot detention/retention basin would be constructed on the southeast corner of Area 4-5 to control storm water runoff from entering the East Highline Canal. The project also would fill in three subareas of Area 4-5. A water quality technical report or equivalent drainage study would be needed that identifies whether the wash is considered a jurisdictional water that would require an Army Corps of Engineers (ACOE) Section 404 (dredge and fill) permit.

Other disturbed areas of the project footprint outside of the 100-year floodplain would not have similar 404 permitting concerns, but would require proper drainage controls to properly convey runoff to the detention/retention basins. Although project drawings C-202 through C-213 (see Appendix A of Initial Study) do illustrate perimeter drainage controls and detention/retention systems, drainage design details will be finalized through the design and permit process.

The project would need to comply with applicable County and Imperial Irrigation District codes for grading and hydrology protection to reduce potential water quality impacts to less-than-significant levels.

Provided adequate BMPs (as prescribed in Sheet C-501 [see Appendix A of Initial Study] and in accordance with the project SWPPP) are implemented and maintained, erosion and siltation would be properly controlled to protect water quality. As described above, a

portion of the project would be constructed in the 100-year floodplain, which would involve grading and filling of the associated wash to provide level ground for project construction. As a result, existing drainage would be modified by the recontouring of the affected areas, the installation of perimeter drainage ditches, and the construction of detention/retention basins. These features need to be suitably designed and described to determine definitive runoff characteristics. Current drainage plans will be finalized through the permit process, including adequate detail for detention/retention basin discharge points, sizing calculations, and other supporting details.

In addition, solar panel blocks proposed in the wash located in the northwest corner of Area 4-5 would likely require additional permanent erosion control measure to ensure the footings are not compromising the flood waters associated with the upgradient drainage features.

This project would include a stormwater drainage and runoff control system. However, the capacity of existing drainage infrastructure was not available for this analysis. Impervious surface area would increase as a result of the project but sufficient design details are not available to assess the appropriateness of site runoff management. The permanent post-construction storm water management system (Sheets C-200 through C-213 of Appendix A of IS) indicate that proper drainage design has been considered, but verification is not possible based on the information provided. Discharges from the detention/retention basins would need to comply with the Basin Plan and Non Point Source Management Plan to ensure no impacts to local water quality.

Polluted runoff would be minimized through the proper implementation of the project's SWPPP and post-construction BMPs (i.e., detention/retention facilities, drainage swales, etc.). Post-construction BMPs would be designed for runoff treatment and the removal of pollutants prior to offsite discharge. SWPPP-compliant waste management practices would minimize storm water contact with potential pollutants and prevent waste discharges. Hazardous materials would be used, stored, handled, and be clearly marked and segregated from the nonhazardous waste materials in accordance with all applicable regulations. Spills would be cleaned up immediately using dry methods and disposed of properly. A concrete washout facility would be constructed and maintained by the contractor for proper waste management and disposal. Excess concrete and concrete washout slurries would be discharged to the washout facility for drying prior to disposal. The washout facility would include an impervious liner to protect against infiltration to the ground and a cover to prevent rainwater from filling the containment.

The proposed project would consist entirely of solar panel and associated facilities. No residential development would occur, therefore no impact is anticipated. However, a permanent office structure would be expected to support operations and maintenance at the project site. This structure would be outside of the 100-year floodplain and wash area, but should be located at the highest elevation within the project area. The exact location of this structure is not clear relative to the information and designs provided. As documented on Sheet C-100 (see Appendix A of Initial Study), a flood zone is located northeast of Area 4-4 and northwest of Area 4-5. Of Area 4-5, three (3) solar panel

blocks would be situated within this flood zone, Block 79 completely and Blocks 80 and 90 partially (see Sheet C-101 of Appendix A of IS). The panels would be elevated off-ground with only the footings at ground level. The footings are approximately 2.5 square feet each and would not be expected to impede or redirect flood flows in the wash, particularly since the panel would also be situated on elevated fill within the wash. In addition, adjacent to the flood zone and following the East Highline Canal, an existing levee controls surface water runoff and reduces the chance of overflow from the canal into project Area 4-4. There are no other structures proposed within the 100-year flood area.

The proposed project would not have an impact on the structural integrity of the existing East Highline Canal Levee. Although not associated with project features, the project should consider the potential failure of the East Highline Canal when locating the permanent office building.

The most likely location for a significant seiche to occur in the area is the Salton Sea (3 miles from project site); however no significant seiches have occurred to date. No impacts would be anticipated relative to tsunamis or mudflows, as no topographical features or water bodies capable of producing such events occur within the project site vicinity.

**Appendix F**

**Noise Report**

**EDAW, Inc.**

**September 2008**

**NOISE REPORT FOR THE  
NILAND SOLAR ENERGY PROJECT INITIAL STUDY,  
NILAND, IMPERIAL COUNTY, CALIFORNIA**

***Prepared for:***

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September 2008

To support the development of the noise section of the proposed Initial Study, EDAW performed the following work:

EDAW investigated and documented the local noise environment potentially affected by the proposed project including applicable noise regulations (federal, California (CEQA), and the Imperial County and town of Niland general plan noise element and noise ordinances); and the proximity and type of sensitive noise receptors (housing, hospitals, schools, and protected noise sensitive species habitat). Local noise sources and proximity were identified including railroad, roadway, and airport facilities and traffic; agricultural and industrial activities and facilities. CEQA compliance thresholds, and noise/land use compatibility designations and guidelines were identified. The existing conditions were utilized to assess the potential impacts to noise sensitive receptors and local noise regulatory compliance. Construction and operational noise of the proposed facilities was predicted using noise data for similar facilities, equipment, and activities. No acoustical enclosures or propagation barriers were deemed needed. Predicted project construction and operational noise levels would attenuate (lessen) by distance to the nearest noise sensitive receptors, which were a substantial distance away and would not exceed CEQA significance thresholds. EDAW presented measures for avoiding or minimizing potential impacts. The noise assessment was performed to meet ICAPCD/CEQA requirements for the proposed project; not for the requirements of the California Energy Commission (CEC) permit regulations.

### Environmental Setting

The proposed project is located in a regionally remote area but adjacent to and northeast of the town of Niland. The project site is separated from the town by an active railway line approximately 300 feet from the nearest residence, and approximately 100 feet from the project site. Residences, as well as schools, churches, hospitals, convalescent (nursing) homes, hotels, and certain parks, are land uses considered noise sensitive receptors which may be adversely affected by excessive noise. Protected animal species, such as bird species, and their habitat may also be considered sensitive noise receptors if located near construction and operational noise sources, especially during the species' breeding seasons.

Noise is unwanted or objectionable sound, which can cause general annoyance, speech interference, sleep disturbance, or hearing impairment. Noise levels are measured as decibels (dB) on a logarithmic scale, and weighted to frequencies audible by humans ("A weighted") and indicated as dBA. Instantaneous noise levels are averaged for noise regulations as the equivalent 1-hour noise level (dBA Leq) and the community noise equivalent level (CNEL) over a 24 hour period. CNEL averaging includes weighting for evening and nighttime noise to account for greater human sensitivity to noise during those hours.

Projects in Imperial County are subject to federal, state and local laws, ordinances, regulations, and standards that apply to noise impacts. Those that apply to the proposed project are identified below.

The State of California does not promulgate a statewide noise standard, but requires that each county include a Noise Element within their General Plan for noise control. CEQA requires that significant environmental impacts be identified, and that such impacts be eliminated or mitigated to the extent feasible. CEQA Guidelines suggest that noise changes in excess of standards, a substantial permanent increase above background, or a substantial temporary or periodic increase could be significant. Section XI of Appendix G of CEQA Guidelines (Cal. Code Regs., tit. 14, App. G) sets forth some characteristics that may signify a potentially significant impact.

Specifically, a significant effect from noise may exist if a project would result in:

- exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;
- exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- substantial permanent increase in ambient noise levels in the proposed project vicinity above levels existing without the proposed project; or
- substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the proposed project.

If a local jurisdiction does not set quantitative limits on construction noise, noise due to construction activities is usually considered to be less than significant in terms of CEQA compliance if:

- Construction activity is temporary; and
- Use of heavy equipment and noisy activities is limited to daytime hours.

The CEC has interpreted the CEQA criteria such that noise produced by the permitted power-producing facility that causes an increase of more than 10 dBA in the background noise level (L90) at a noise sensitive receptor during the quietest hours of the night is usually considered a significant effect. An increase of less than 5 dBA is typically considered an insignificant impact, while an increase from 5 to 10 dBA may be considered significant, depending on the specific circumstances. The CEC defines the potential noise impact area to be where there is a potential for a total noise increase of 5 dBA or more at noise-sensitive receptors and requires that proposed project noise levels be estimated for this area.

Imperial County addresses noise impacts through its General Plan and Codified Ordinances. The Noise Element of the Imperial County General Plan provides a program for incorporating noise issues into the land use planning process, with a goal of minimizing adverse noise impacts to noise sensitive receptors. The Noise Element specifies construction hours and noise limits, and the acceptable property line operational noise levels at various land uses for day, evening, and night periods for the County Noise Ordinance.



Noise generating sources in Imperial County are regulated under the County of Imperial Codified Ordinances, Title 9, Division 7 (Noise Abatement and Control). Property line and construction noise limits are established in this ordinance. Property line noise limits apply to noise generation from one property to an adjacent property with the existence of a sensitive receptor (if no receptor, an exception or variance to the standards may be appropriate). These standards do not apply to construction noise. The County may act to restrict disturbing, excessive, or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area. The following is the applicable portion of the County of Imperial’s Noise Abatement and Control Ordinance, and Table 1 highlights the Applicable Noise Limits related to the ordinance.

“Section 90702.00 Sound Level Limits. It is unlawful for any person to cause noise by any means to the extent that the applicable one-hour average sound level set out in the following table is exceeded, at any location in the county of Imperial on or beyond the boundaries of the property on which the noise is produced.”

**Table 1 Applicable Noise Limits**

<b>Land Use Zone</b>	<b>Time of Day</b>	<b>One Hour Average Sound Level (decibels)</b>
1. Residential: All R-1	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45
2. Residential: All R-2	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
3. Residential: R-3, R-4 & all other residential	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
4. All commercial	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
5. Manufacturing, all other industrial, including agricultural & extraction industry	(anytime)	70
6. General industrial	(anytime)	75

Source: County of Imperial 2003.

The sound level limit between two zoning districts (different land uses) shall be measured at the property line between the properties.

Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of subsection A of this section, measured at or beyond six feet from the boundary of the easement upon which the equipment is located.

Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB Leq, averaged over an eight (8) hour period, at the nearest sensitive receptor. This assumes a construction period of days or weeks, relative to an individual sensitive receptor. For extended length construction times, construction may not exceed 75 dB Leq averaged over a one (1) hour period. Construction equipment operation shall be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday. No commercial construction operations are permitted on Sunday or holidays.

### *Construction Noise*

The Imperial County Noise Ordinance, Title 9, Division 7, Section 90702.00 specifically regulates construction noise and limits construction activities. Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB Leq, averaged over an eight (8) hour period, at the nearest sensitive receptor. For extended length construction times, construction may not exceed 75 dB Leq averaged over a one (1) hour period.

During construction of the project, noise levels in the vicinity would increase due to the use of construction equipment and vehicles. Typical construction vehicles and equipment can generate short-term maximum noise levels in the order of 89 dBA at a distance of 50 feet when the equipment is under maximum load. Due to the nature of the project's anticipated construction activity, with breaks and repositioning of equipment, hourly noise levels at 50 feet are assumed to average no more than 85 dBA Leq from the centroid (middle of an activity) of the each work area [The project construction activities of fine grading, utility trenching, and PV module installation would likely generate average noise levels less than 85 dBA Leq].

The residences in proximity to the proposed construction area are located adjacent to the southwest corner of Area 4-1, approximately 400 feet from the nearest residence to the nearest point of construction activity. At 400 feet, 85 dBA Leq would attenuate (lessen) with distance to approximately 67 dBA Leq without noise barriers such as structures or topography. Thus, noise levels at the nearest residences would not exceed Imperial County's most stringent allowable construction noise level limit of 75 dB Leq averaged over a one (1) hour period for daytime activities under the Imperial County Noise Ordinance.

### *Operation Noise*

Section 90702.00 of the Noise Ordinance also regulates sound level limits at property lines and states that it is unlawful for any person to cause noise by any means to the extent that the applicable one-hour average sound level set out in the Table 1 is exceeded, at any location in the county of Imperial on or beyond the boundaries of the property on which the noise is produced.

The constructed facilities would produce noise intermittently during maintenance activities from personnel, equipment, and vehicles on the project site, and is anticipated to emit negligible noise levels from the PV solar system due to the lack of generator or turbine operation, which is anticipated to be less than the ambient noise level due to existing area noise sources (e.g., the adjacent rail line operation). The project site is zoned as: 5. Manufacturing, all other industrial, including agricultural & extraction industry, from Table 1 from Section 90702.00 of the Noise Ordinance, which provides an allowable 1-hour average noise level from the project site at its property line of 70 dBA at anytime (24 hours per day/7 days per week).

## REFERENCES

County of Imperial, Planning Department

- 1993 Noise Element of the General Plan. January 1.
- 2007 Codified Ordinances, Title 9, Division 7, Chapter 2, Section 9070200.00  
Sound Level Limits. December 4.

# **Appendix G**

## **Mitigation Monitoring and Reporting Program**

**EDAW, Inc.**

**October 2008**

## MITIGATION MONITORING AND REPORTING PROGRAM

### Niland Solar Energy Project

(Conditional Use Permit #/APNs 021-160-011, 021-160-016, 021-160-018, 021-290-004, 021-290-016, 021-190-002)

The following measures are for the proposed project pursuant to the Mitigated Negative Declaration and shall be incorporated into the conditions of the Conditional Use Permit #. This mitigation monitoring and reporting program is prepared pursuant to CEQA Guidelines, Section 15074, subparagraph (d) as follows:

#### I. Aesthetics

**1) Mitigation Measure:** Prior to construction, the solar developer's final site plan will include design elements to reduce the potential glare impacts on the adjacent sensitive receptors (Mitigation Measures AES-1).

(Monitoring Agencies: County Planning & Development Services Department)

#### II. Biological Resources

**1) Mitigation Measure:** No disturbance within 50 meters (approximately 160 feet) of owls at occupied burrows during the non-breeding season of September 1 through January 31 or within 75 meters (approximately 250 feet) during the breeding season of February 1 through August 31 shall occur during construction. Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival (Mitigation Measure BR-1).

**2) Mitigation Measure:** Vegetation removal shall be limited during construction to maintain a minimum of 6.5-acre foraging habitat for occupied on-site burrows (Mitigation Measure BR-2).

**3) Mitigation Measure:** After the preconstruction survey(s) a burrowing owl mitigation plan shall be prepared by a qualified biologist describing possible site specific shelter-in-place measures, workers training, and/or other measures which may be implemented in addition to, or in lieu of, any of the measures described here with the approval of the CDFG (Mitigation Measure BR-3).

**4) Mitigation Measure:** Preconstruction surveys of the proposed areas of ground disturbance within the project site and a 150-meter (approximately 500-foot) buffer zone around the proposed areas of ground disturbance shall be conducted within the 30 days prior to construction of any area of ground disturbance to determine the presence of existing active burrows and owls. If ground disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the proposed areas of ground disturbance shall be resurveyed. Any owls observed during this survey

shall receive the same compensation as identified in BR-7, below (Mitigation Measure BR-4).

**5) Mitigation Measure:** Biological monitoring shall occur during construction activity (Mitigation Measure BR-5).

**6) Mitigation Measure:** Destruction of any occupied burrow shall only be undertaken pursuant to a management plan approved by the CDFG. When destruction of occupied burrows is unavoidable, existing unsuitable burrows shall be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site (Mitigation Measure BR-6).

**7) Mitigation Measure:** A burrowing owl survey shall be prepared prior to the issuance of the initial building permit that requires acquisition and preservation of 6.5 acres of suitable habitat for each burrowing owl pair or solitary individual observed to offset the loss of foraging and burrow habitat on the project site (calculated on a 100-meter {approximately 300-foot} foraging radius around the burrow). To the extent practical, the protected lands shall be adjacent to occupied burrowing owl habitat and at a location acceptable to the CDFG (Mitigation Measure BR-7).

**8) Mitigation Measure:** To the extent possible, construction activities shall occur outside the breeding season. A biological monitor will be present during all construction related activities. If construction does occur during the breeding season, no disturbance shall occur within 75 meters of active nests and all active burrowing owl nests shall be monitored to ensure that construction activities do not increase the likelihood of nest abandonment (Mitigation Measure BR-8).

**9) Mitigation Measure:** During the breeding season, on-site loggerhead shrike and active nests shall be avoided through biological monitoring (Mitigation Measure BR-9).

**10) Mitigation Measure:** If construction is to occur during breeding season, a nesting bird survey shall be conducted prior to construction and the active nests shall be avoided until the young have fledged (Mitigation Measure BR-10).

**11) Mitigation Measure:** Prior to construction activities within the drainages on-site, the U.S. Army Corps of Engineers will be consulted for jurisdictional determination. Should a permit be required, the Applicant will work with U.S. Army Corps of Engineers to establish permit requirements and compensation (Mitigation Measure BR-11).

**12) Mitigation Measure:** Prior to construction the Applicant will consult with and file for any required Streambed Alteration Agreement under Section 1602 of the California Fish and Game Code (Mitigation Measure BR-12).

**13) Mitigation Measure:** A detailed erosion control plan shall be approved by the Department of Public Works (Mitigation Measure BR-13).

**14) Mitigation Measure:** A Storm Water Pollution Control Plan shall be prepared and implemented in accordance with state and local regulations (Mitigation Measure BR-14).

**15) Mitigation Measure:** Biological monitoring shall occur during the construction phase of the project to ensure that disturbance of active burrowing owl burrows is avoided (Mitigation Measure BR-15).

**16) Mitigation Measure:** Construction activities shall be limited to outside the breeding season for burrowing owls (construction activities to occur between September 1<sup>st</sup> and January 31<sup>st</sup>) whenever possible. If this is not possible, avoidance of active nests and adjacent foraging areas will occur within 75 meters of active burrows. Biological monitoring will be conducted during all construction activities to ensure that nest abandonment does not occur due to construction related activities (Mitigation Measure BR-16).

**17) Mitigation Measure:** Structures elevated above the height of the solar panels shall be designed and constructed to discourage perching by raptor bird species (Mitigation Measure BR-17).

**18) Mitigation Measure:** The removal of native vegetation shall be limited (Mitigation Measure BR-18).

**19) Mitigation Measure:** If construction is to occur from the beginning of April until the end of August (when dependent young bats are vulnerable to disturbances) then two weeks prior to construction activities, a qualified biologist will perform preconstruction surveys of bridge structures that are directly and indirectly impacted by the project for breeding bat species. If found, breeding bat colonies will be avoided from April until the end of August (Mitigation Measure BR-20).

(Monitoring Agencies: CA Department of Fish & Game; U.S. Fish & Wildlife Service; Department of Public Works; RWQCB)

### **III. Cultural Resources**

**1) Mitigation Measure:** Prior to surface disturbance, an evaluation program shall be conducted of the cultural resource sites identified on the property which may be eligible for inclusion to the California Register of Historical Resources (CRHR) by qualified archaeologist in accordance with the provisions of CEQA Section 15064.5 to determine the appropriate treatment of the resources (Mitigation Measure CR-1).

**2) Mitigation Measure:** During ground disturbing activities near cultural resources sites determine to be eligible for the CRFR, archaeological monitoring shall be undertaken (Mitigation Measure CR-2).

**3) Mitigation Measure:** The archaeological monitor shall have the authority to re-direct construction equipment in the event archaeological resources potentially eligible for the CRHR are encountered (Mitigation Measure CR-3).

**4) Mitigation Measure:** In the event archaeological resources potentially eligible for the CRHR are encountered, surface disturbing work in the immediate vicinity of the discovery shall temporarily halt until appropriate treatment of the resource is determined by a qualified archaeologist in accordance with the provisions of CEQA Section 15064.5 (Mitigation Measure CR-4).

**5) Mitigation Measure:** In the event potentially significant paleontological resources are encountered, the contractor shall halt surface disturbing activities in the immediate area and notify LADWP (Mitigation Measure CR-5).

**6) Mitigation Measure:** LADWP shall retain a qualified paleontological monitor to make an immediate evaluation of the significance and appropriate treatment of the encountered paleontological resources (Mitigation Measure CR-6).

**7) Mitigation Measure:** Construction activities may continue on other parts of the site while evaluation and treatment of the discovered paleontological resources takes place (Mitigation Measure CR-7).

**8) Mitigation Measure:** Prior to construction, a qualified principal investigator for paleontology (graduate degree with a specialization in paleontology and more than 5 years of experience) shall be retained to detail the sampling program and to maintain professional standards of work (Mitigation Measure CR-8).

**9) Mitigation Measure:** Areas with construction impacts greater than 1 foot in depth into the Lake Cahuilla beds shall be subject to an intensive paleontological sampling program to recover samples, stratigraphic columns and other data to contribute new information to science. A minimum of 20 samples (maximum of 100) shall be collected and the experts shall identify the contents and obtain the radiometric dates. All results shall be included in a final report to be filed with the client, lead agency and repository (San Diego Natural History Museum). All materials meeting significance criteria under CEQA shall be curated in an accredited museum facility along with a copy of the report (Mitigation Measure CR-9).

**10) Mitigation Measure:** In the event that any human remains or related resources are discovered, such resources shall be treated in accordance with federal, State, and local regulations and guidelines for disclosure, recovery, relocation, and preservation, as appropriate, including CEQA Guidelines Section 15064.5(e) (Mitigation Measure CR-10).

**11) Mitigation Measure:** As required by CEQA Guidelines Section 15064.5(e), discovery of human remains shall be evaluated by the county coroner of the nature of the remains and cause of death. If the remains are determined to be of Native American origin, the Native American Heritage Commission shall be asked to determine the descendants who are to be notified or, if unidentifiable, to established procedures for burial (Mitigation Measure CR-11).

(Monitoring Agencies: County Planning & Development Services Department; IVC Museum; Indian Tribes)

#### **IV. Geology and Soils**

**1) Mitigation Measure:** Prior to the construction, the solar energy developer shall prepare a design-level geotechnical investigation that includes comprehensive subsurface exploration, appropriate laboratory testing, and detailed evaluation of potential geotechnical constraints to critical project structures (Mitigation Measure GS-1).



**2) Mitigation Measure:** Incorporate special design and construction features, such as concrete pad footings, pile foundations, or other engineering refinements for critical structure foundations in order to minimize the adverse effects of potential post construction soil volume changes, consistent with design-level geotechnical recommendations (Mitigation Measure GS-2).

(Monitoring Agencies: County Planning & Development Services Department, Department of Public Works)

## **V. Hydrology and Water Quality**

**1) Mitigation Measure:** A water quality technical report or equivalent drainage study shall be prepared to identify whether the wash designated by FEMA as a 100-year floodplain is considered jurisdictional water that would require an Army Corps of Engineers (ACOE) Section 404 (dredge and fill) permit (Mitigation Measure HWQ-1).

**2) Mitigation Measure:** Other disturbed areas of the project footprint outside of the FEMA-designated 100-year floodplain shall require proper drainage controls to properly convey runoff to the detention/retention basins (Mitigation Measure HWQ-2).

**3) Mitigation Measure:** In addition to the project drawings C-202 through C-213 (see Appendix A2 Drainage and Erosion Control Plans) that are related to perimeter drainage controls and detention/retention systems, project drainage studies and design details shall be prepared to determine drainage and erosion control suitability (Mitigation Measure HWQ-3).

(Monitoring Agencies: County Public Works Department; Imperial Irrigation District)

## **VI. Utilities and Service Systems**

**1) Mitigation Measure:** A Waste Management Plan shall be prepared by the landowners prior to the issuance of the initial on-site grading permit (Mitigation Measure USS-1).

(Monitoring Agencies: County EHS/Health Department, Local Enforcement Agency; Department of Public Works)