3.0 PROJECT DESCRIPTION

Chapter 3.0 provides a description of the Ferrell, Rockwood, Iris, and Lyons Solar Farm Projects. This chapter also defines the goals and objectives of the proposed projects, provides details regarding the individual components that together comprise the projects, and identifies the discretionary approvals required for project implementation of each of the projects.

3.1 LOCATION OF PROJECTS

The solar farm portions of the project are located on privately owned, primarily undeveloped agricultural land encompassing approximately 1,422 acres. The project area is located in southern Imperial County (County) (see Figure 3.0-1). The easternmost boundary of the project, which is the eastern boundary of the Iris site, is approximately two miles west of Calexico, California. The project area includes all or portions of Sections 6,7 Township 17 south, Range 14 east and Sections, 1,3,11,12 Township 17 south, Range 13 east, San Bernardino baseline and meridian. The geographic center of the project area roughly corresponds with 32.686 latitude, -15.600 longitude. Figure 3.0-1 illustrates the project area, which includes the solar farm sites and off-site transmission areas.

Four separate Conditional Use Permit (CUP) applications and four Variance requests which would accompany these applications have been filed with the County, which together define the project sites. The four CUP applications or individual site locations consist of the following:

- Ferrell Solar Farm (FSF);
- Rockwood Solar Farm (RSF);
- Iris Solar Farm (ISF); and
- Lyons Solar Farm (LSF)

The solar farm project sites, and including off-site transmission areas, are located adjacent to three solar farm projects including the previously approved Mount Signal and Calexico Solar Farm Projects, and the proposed Wistaria Ranch Solar Farm. The project sites border the Calexico II-B and Wistaria Ranch Solar Farms on three sides. Table 3-1 identifies the individual assessor parcel numbers (APNs) associated with the FSF, RSF, ISF, and LSF with their respective acreages, and zoning. Each individual site location comprising the project study areas is shown in Figure 3.0-2.

TABLE 3-1. PROJECT STUDY AREAS APNS, ACREAGES, AND ZONING

	APN	Acreage	Zoning
Ferrell Solar Farm	052-180-042	204.0	A2R
	059-150-001	163.1	A2R
Subtotal		*367.1*	
Rockwood Solar Farm	052-180-040	67.9	A2R, A2
	052-180-048	170.7	A2R
	052-180-064	157.7	A2R, A2
Subtotal		*396.2*	
Iris Solar Farm	059-050-002	188.1	A2R
	059-050-003	165.5	A2R, A2
	059-120-001	167.2	A2R
Subtotal		*520.8*	
Lyons Solar Farm	052-180-053	57.2	A3
	052-180-058	81.2	A2R
Subtotal		*138.4*	
Total Project Study Areas		**1,422.4**	

Figure 3.0-3 provides an index of the major project components and the details of the projects are further described and depicted below.

Figure 3.0-1. Project Location

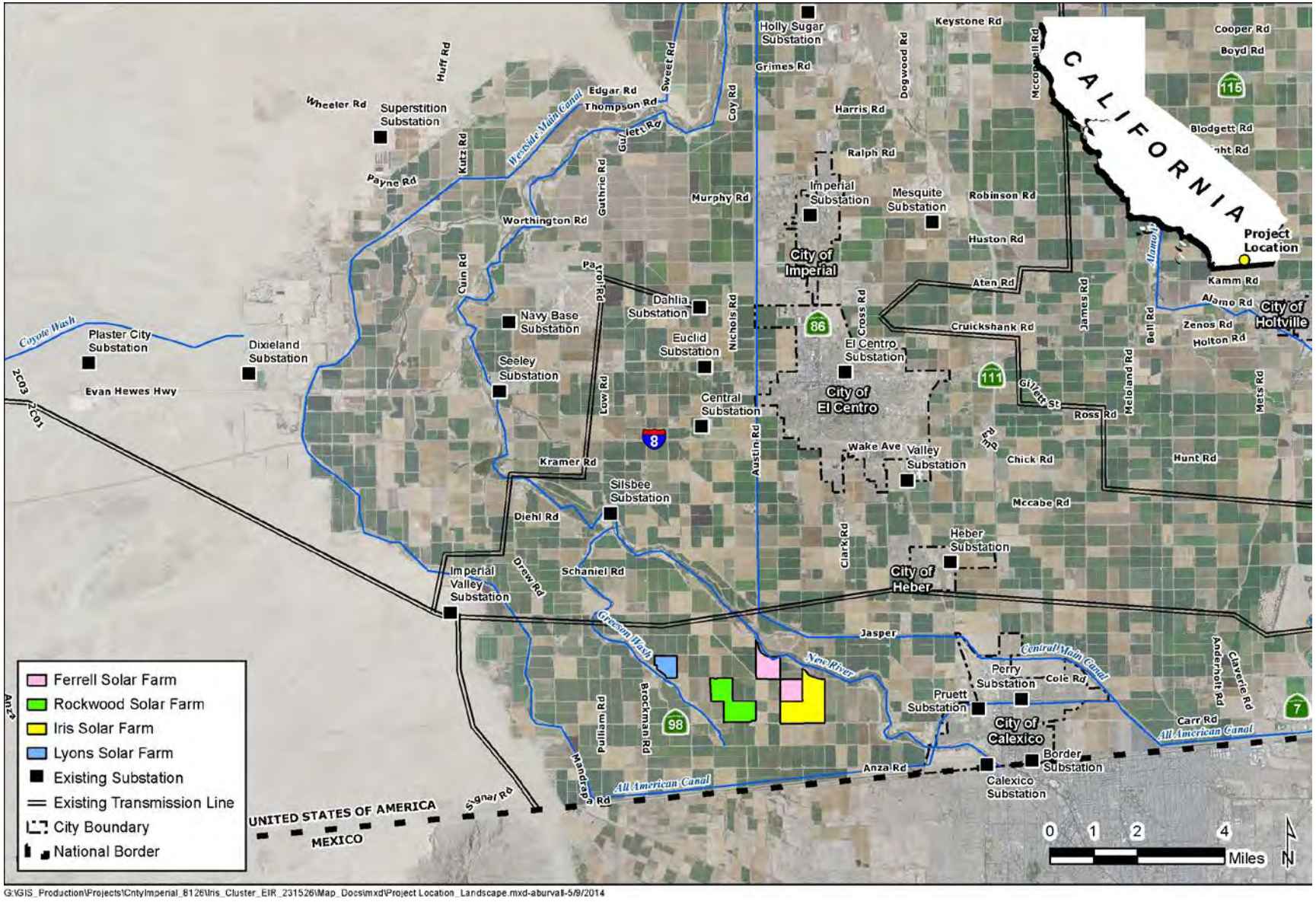

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Figure 3.0-2. Project Study Areas and Assessor Parcel Numbers

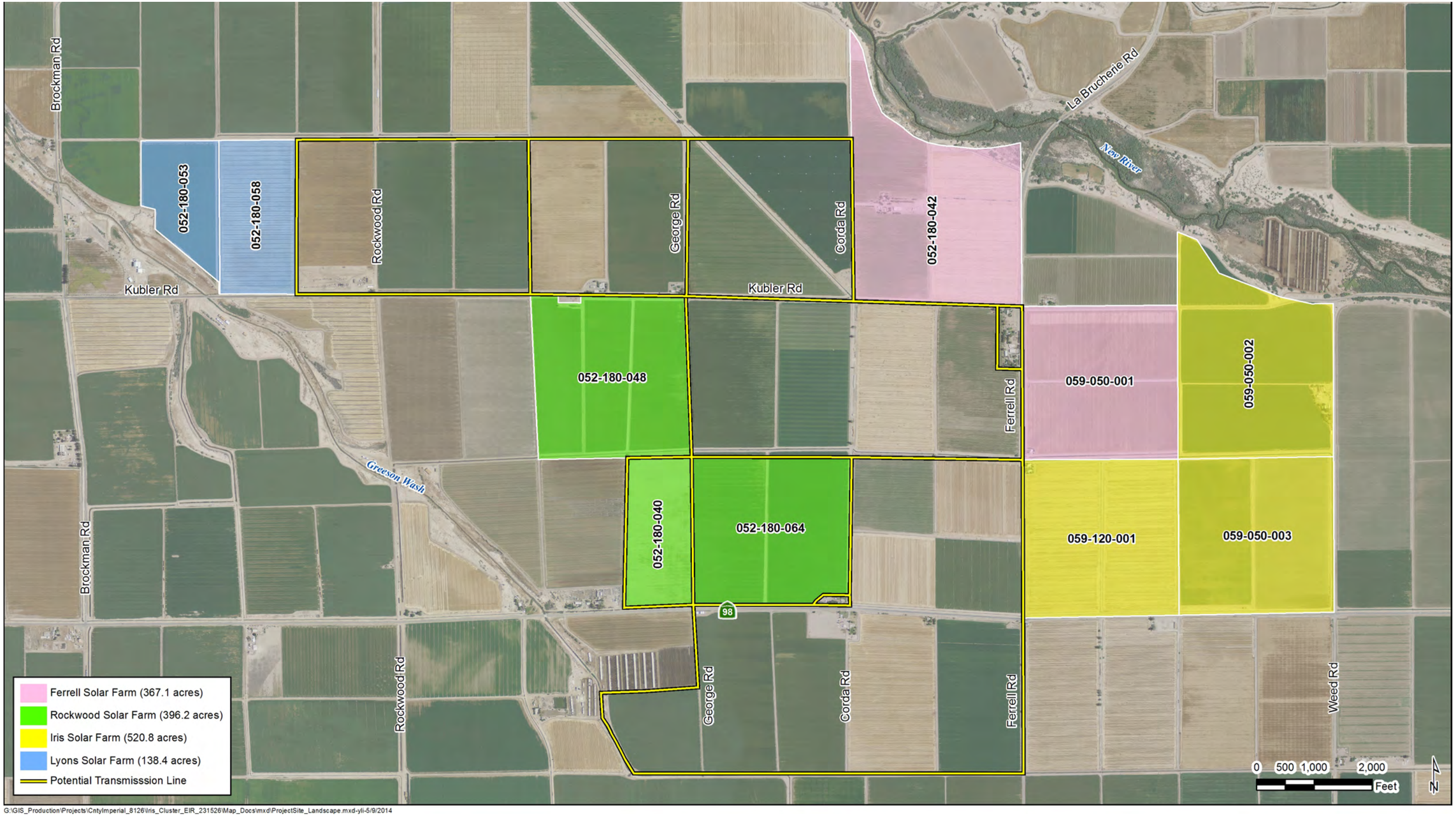

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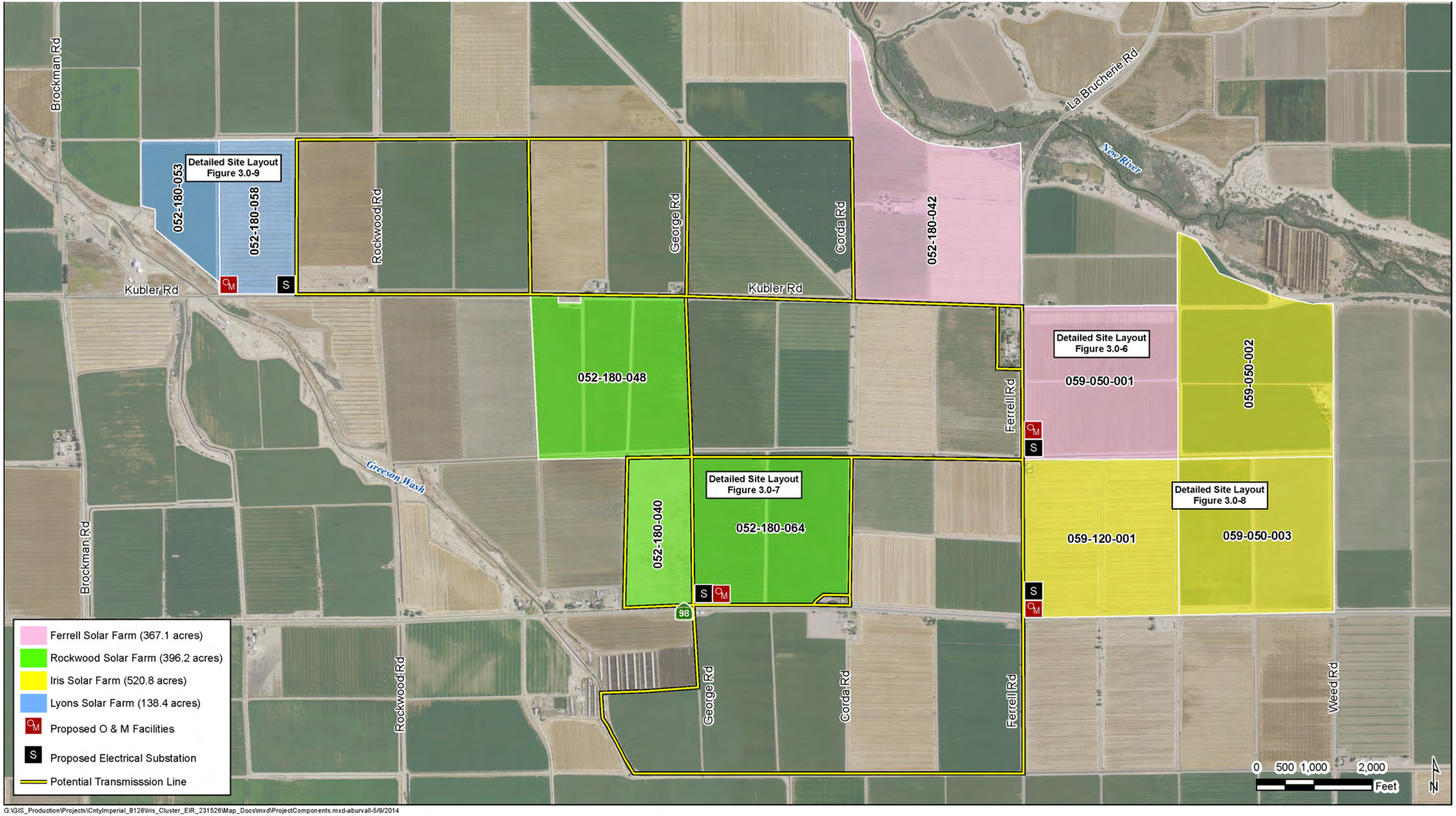
Figure 3.0-3. Index of Major Project Components



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3.1.1 Ferrell Solar Farm

The FSF project site consists of two parcels totaling 367.1 acres within the central and northern portions of the larger Iris Cluster Solar Farm project area. As shown on Figure 3.0-2a, the FSF project site is generally located between the New River to the north and the Wistaria Canal to the south, and between Corda Road to the west and a dirt road (1/2 mile east of Ferrell Road) to the east. Primary access to FSF is via South La Brucherie Road/Ferrell Road and Kubler Road. The FSF site includes the following County Assessor Parcel Numbers (APNs): 052-180-042 and 059-150-001.

3.1.2 Rockwood Solar Farm

The RSF project site consists of three parcels totaling 396.2 acres within the central portions of the larger Iris Cluster Solar Farm project area. As shown on Figure 3.0-2, the RSF is generally bounded by Kubler Road to the north, SR 98 to the south, and between a dirt road (1/2 mile east of Rockwood Road) to the west and Corda Road to the east. Primary access to the RSF occurs via Kubler Road. The RSF project site includes the following APNs: 052-180-040; 052-180-048; and 052-180-064.

3.1.3 Iris Solar Farm

The ISF project site consists of three parcels totaling 520.8 acres within the eastern portion of the larger Iris Cluster Solar Farm project area. As shown on Figure 3.0-2, the ISF is generally located between the New River to the north and SR 98 to the south, and between Ferrell Road to the west and Weed Road to the east. Primary access to the ISF is obtained via Kubler Road. The ISF project site includes the following APNs: 059-050-002; 059-050-003; and 059-120-001.

3.1.4 Lyons Solar Farm

The LSF project site location consists of two parcels totaling 138.4 acres within the western portion of the larger Iris Cluster Solar Farm project area. As shown on Figure 3.0-2, the LSF is generally located between a dirt road (1/2 mile south of Preston Road) to the north and Kubler Road to the south, and between Greeson Wash to the west and a private road to the east (1/4 mile west of Rockwood Road). Primary access to the LSF is obtained via Kubler Road. The LSF project site includes the following APNs: 052-180-053 and 052-180-058.

3.2 PROJECT OBJECTIVES

The objective of the projects is to utilize Imperial County's abundance of available solar energy (sunlight) to generate renewable energy, consistent with the County General Plan renewable energy objectives. The project applicant and the County identified the following objectives for the projects:

- Construct and operate a solar energy facility capable of producing up to 360 megawatts (MW) of electricity to help meet the State-mandated Renewable Portfolio Standard (RPS) of providing 33 percent renewable energy by 2020.
- Construct and operate a solar power facility with minimal impacts to the environment.
- Operate a facility at a location that ranks amongst the highest in solar resource potential in the nation.
- Construct a facility at a location near the U.S. border to avoid issues of leapfrog development and dividing stretches of agricultural land.
- Interconnect with electrical transmission infrastructure either planned or being constructed by other nearby projects, interconnect to the Independent System Operator (ISO) controlled transmission network, and maximize opportunities for the sharing or use of existing utility transmission corridor(s).

- Encourage economic investment and diversify the economic base for Imperial County.
- Operate a renewable energy facility that does not produce significant noise, emit any greenhouse gases, and minimizes water use.
- Help reduce reliance on foreign sources of fuel.
- Supply on-peak power to the electrical grid in California.
- Help California meet its statutory and regulatory goal of increasing renewable power generation, including greenhouse gas reduction goals of Assembly Bill (AB) 832 (California Global Warming Solutions Act of 2006).
- Sustain and stimulate the economy of Southern California by helping to ensure an adequate supply of renewable electrical energy while simultaneously creating additional construction and operations employment and increased expenditures in many local businesses.
- Contribute to Imperial County's economic growth and reputation as the renewable energy capital of the nation.

3.3 PROJECT CHARACTERISTICS

The proposed projects (FSF, RSF, ISF, and LSF facility sites) would consist of construction and operation of an expansive photovoltaic (PV) or concentrated photovoltaic (CPV) solar energy facility and supporting uses. The primary components within the solar farms will be the solar PV (or CPV) panels/arrays, operations and maintenance (O&M) facilities, and electrical substation facilities. In addition, a major component of the projects would be restoration of the project sites (including off-site transmission) to agricultural use up to 40 years.

The projects would employ the use of PV (or CPV) power systems to convert solar energy into electricity using non-reflective technology. The project facilities would consist of solar PV (or CPV) panels, inverter modules, pad mounted transformer(s), and optional, on-site O&M buildings and substation(s). Each solar project facility may have its own O&M building and substation, or may share among the projects. Up to four O&M buildings and substations are contemplated. Each O&M building would include its own emergency power, fire suppression, potable water system and septic system. Additional auxiliary facilities would include lighting, grounding, backup uninterruptable power supply (UPS) systems and diesel power generators, fire and hazardous materials safety systems, security systems, chemical safety systems, and emergency response facilities.

At build-out, the proposed projects would facilitate the generation of up to 360 MW of alternating current (AC) on a daily basis. The project facilities would provide maximum electrical output during the daytime hours, which corresponds with peak energy demands associated with air conditioning use during the summer months. This peak period closely corresponds with the time period to where the peak solar energy and solar insulation values are the highest for the project study areas. A description of each individual solar farm that comprises the proposed projects is provided in Sections 3.3.4 through 3.3.7.

TABLE 3-2. IRIS CLUSTER SOLAR PROJECT PROPOSED MEGAWATT OUTPUT

Project	Proposed Megawatt (MW)
Ferrell Solar Farm	90 MW AC
Rockwood Solar Farm	100 MW AC
Iris Solar Farm	130 MW AC
Lyons Solar Farm	40 MW AC
TOTAL	**360 MW**

3.3.1 Photovoltaic Panels/Solar Arrays

The proposed projects will utilize either PV or CPV technology. The following provides a description of each. Figure 3.0-4 provides a representative example of these types of systems.

PV Panel and CPV Panel/Mounting Configuration. The photovoltaic panels or modules (which can include, but is not limited to concentrated photovoltaic (CPV) technology) would be placed on mounting frameworks. Individual panels will be installed on either fixed-tilt or tracker mount systems (single- or dual-axis, using galvanized steel or aluminum). If the panels are configured for fixed tilt, the panels will be oriented toward the south. For tracking configurations, the panels will rotate to follow the sun over the course of the day. The panels will stand up to 30 feet high, depending on the mounting system used.

The solar array fields will be arranged in groups called "blocks", with inverter stations generally located centrally within the blocks. Blocks will produce direct electrical current (DC), which is converted to alternating electrical current (AC) at the inverter stations. The blocks are up to 500 feet by 500 feet (typical).

Each solar module would be placed on a fixed-tilt or tracker mounting structure. The foundations for the mounting structures can extend up to 20 feet below ground, depending on the structure, soil conditions, and wind loads, and may be encased in concrete or utilize small concrete footings. Final solar panel layout and spacing will be optimized for site characteristics and the desired energy profile. Panel rows will be spaced up to 90 feet apart and will comply with fire department regulations regarding minimum row spacing.

Photovoltaic energy is delivered via cable to inverter stations, generally located near the center of each block. Inverter stations are typically comprised of one or more inverter modules with a rated power of up to 2 MW each, a unit transformer, and voltage switch gear. The unit transformer and voltage switch gear are housed in steel enclosures, while the inverter modules are housed in cabinets. Depending on the vendor selected, the inverter station may lie within an enclosed or canopied metal structure, typically on a skid or concrete mounted pad. The inverter modules would receive DC electricity directly from the PV (or CPV) solar array where it is then converted to AC electricity. The transformer receives the converted AC electricity where it is subsequently stepped up to approximately 20 kV to 70 kV. The converted power is then transferred to a substation via buried electrical conduits, electrical conductor wires, and/or overhead on up to 230 kV transmission lines.

Energy Storage System

An energy storage system in the form of modular and scalable battery packs and battery control systems may be located at or near substations and/or inverter stations. The battery packs utilize non-hazardous solid state materials (i.e., lithium ion or other commercially available large-scale system) and are fully recyclable. The energy storage devices are typically housed in pad- or post-mounted metal containers. It is estimate that the energy storage system would utilize approximately one container per MW (typically approximately 40 feet long, by 11 feet wide, by 11 feet high) for each project. The actual dimensions of the container may vary depending upon the supplier chosen, with the length measuring up to approximately 60 feet.

3.3.2 Operations and Maintenance Building

The proposed projects would also include a new O&M building and parking area near the proposed substations. The O&M building would not exceed an area of approximately 5,000 square feet for each project site. The parking area would comprise an area of less than 0.25 acres. The O&M building would consist of a steel framed structure with metal siding and roof panels and painted to match the surrounding landscape (e.g., desert sand). The O&M building would include a small office, storage space, an electrical/array control room, restroom, and a compact water treatment facility. In total, the O&M facility, including parking, would require up to one half acre of land. If the O&M building is shared with an adjacent solar project, then this area would instead be covered with solar panels.

Heating, ventilation, and air-conditioning (HVAC) for the office and control area of the O&M building would consist of a ground-mounted, heat pump unit. Mechanical ventilation would be provided for the maintenance areas. Temperature control would be provided for both the equipment and personnel areas, and humidity control would be provided in the control and communications equipment rooms.

Figure 3.0-4. Representative Examples of Optional Solar Panel Configurations

Typical Fixed-tilt Solar Panel Rows

Typical Single-axis Tracking Solar Panel Rows

Typical Dual-axis Tracking Solar Panel Rows

Concentrated Photovoltaic (CPV) Solar Panel Rows

Source: 8-minute energy

3.3.3 Substations and Transmission Facilities

The interconnection for the proposed projects will occur at the 230 kV side of the San Diego Gas & Electric (SDG&E) Imperial Valley (IV) Substation, located approximately 5 miles northwest of the project area, via the existing Mount Signal Solar Farm substation and it's shared 230 kV electrical transmission line. Power from the proposed projects may first be collected at one or more shared on-site substations via overhead and/or underground collector line(s).

The substation may contain several components, including auxiliary power transformers, distribution cabinets, revenue metering systems, and voltage switching gear. Substations typically include a small control building (roughly 500 square feet) standing approximately 10 feet tall. The building is either prefabricated concrete or steel housing with rooms for the voltage switch gear/metering equipment, a room for the station supply transformer, and a separate control technology room.

A representative example of a substation is presented in Figure 3.0-5. Each substation would occupy an area of up to 500 feet by 500 feet (or approximately 5.7 acres) and would be secured by an 8-foot-high enhanced security chain-link fence. Any substation area that is not used on any of the four projects will be instead utilized for solar panels.

Figure 3.0-5.Representative Example of Typical Substation Design

3.3.4 Ferrell Solar Farm

The FSF encompasses a total of 367.1 acres and includes two parcels of land as described in Section 3.1. These parcels would be leased to the project applicant for up to 40 years, which is the anticipated duration of the project. The site layout for the FSF is illustrated in Figures 3.0-6a. In total, the FSF would facilitate the placement of up to 141,440 PV panels that would be capable of generating up to 90 MW AC.

If required, an on-site substation would be located at the northeastern corner of the intersection of Ferrell Road and a dirt road at the Wistaria Canal (see Figure 3.0-6b) and would occupy an area of up to 500 feet by 500 feet (or approximately 5.7 acres). If the substation is shared with an adjacent solar project, then this area would instead be covered with solar panels.

The O&M building for the FSF would be located near the substation at the northeastern corner of the intersection of Ferrell Road and a dirt road at the Wistaria Canal (see Figure 3.0-6b). If the O&M building is shared with an adjacent solar project, then this area would instead be covered with solar panels.

Figure 3.0-6a. Ferrell Solar Farm – Site Layout

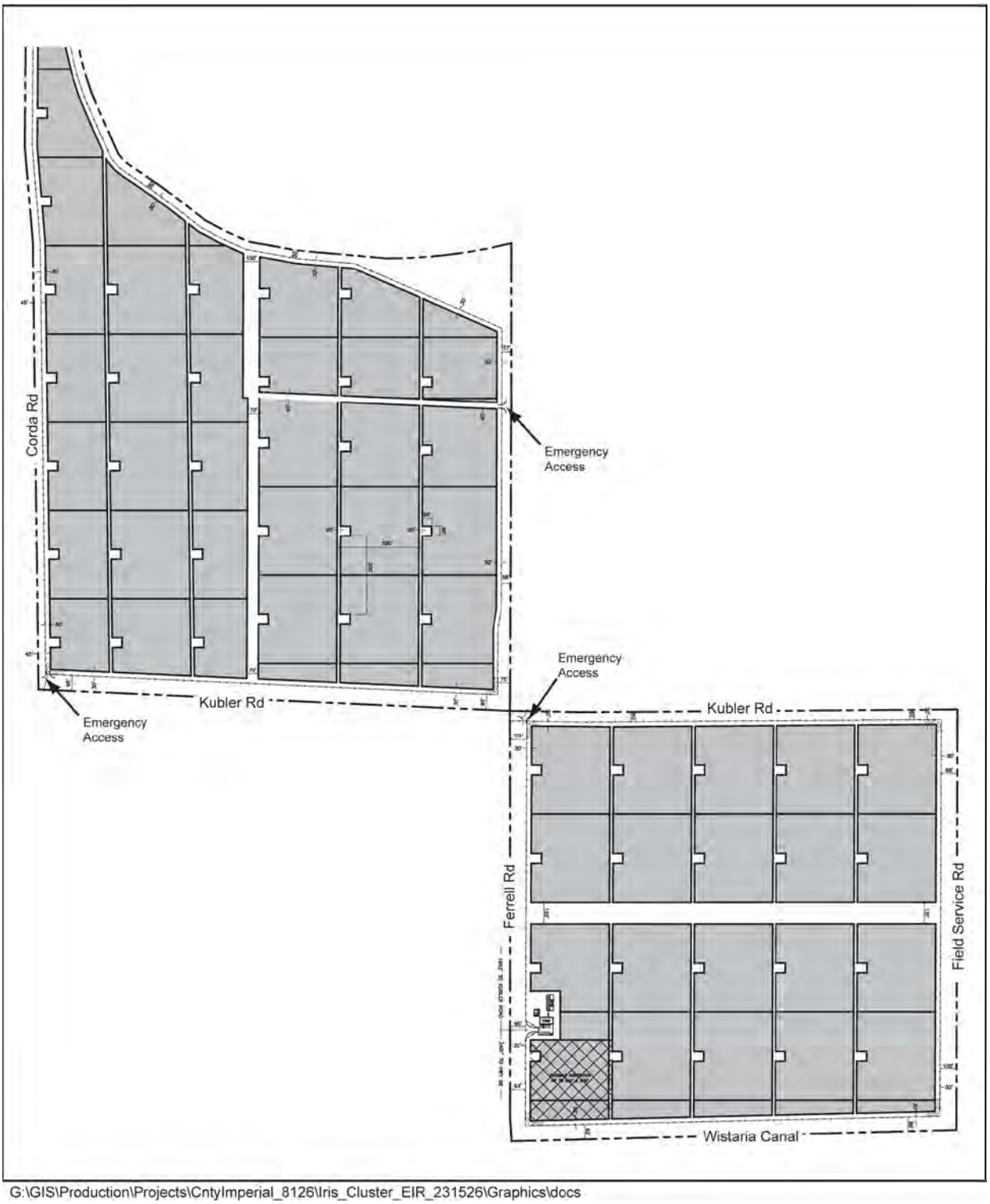
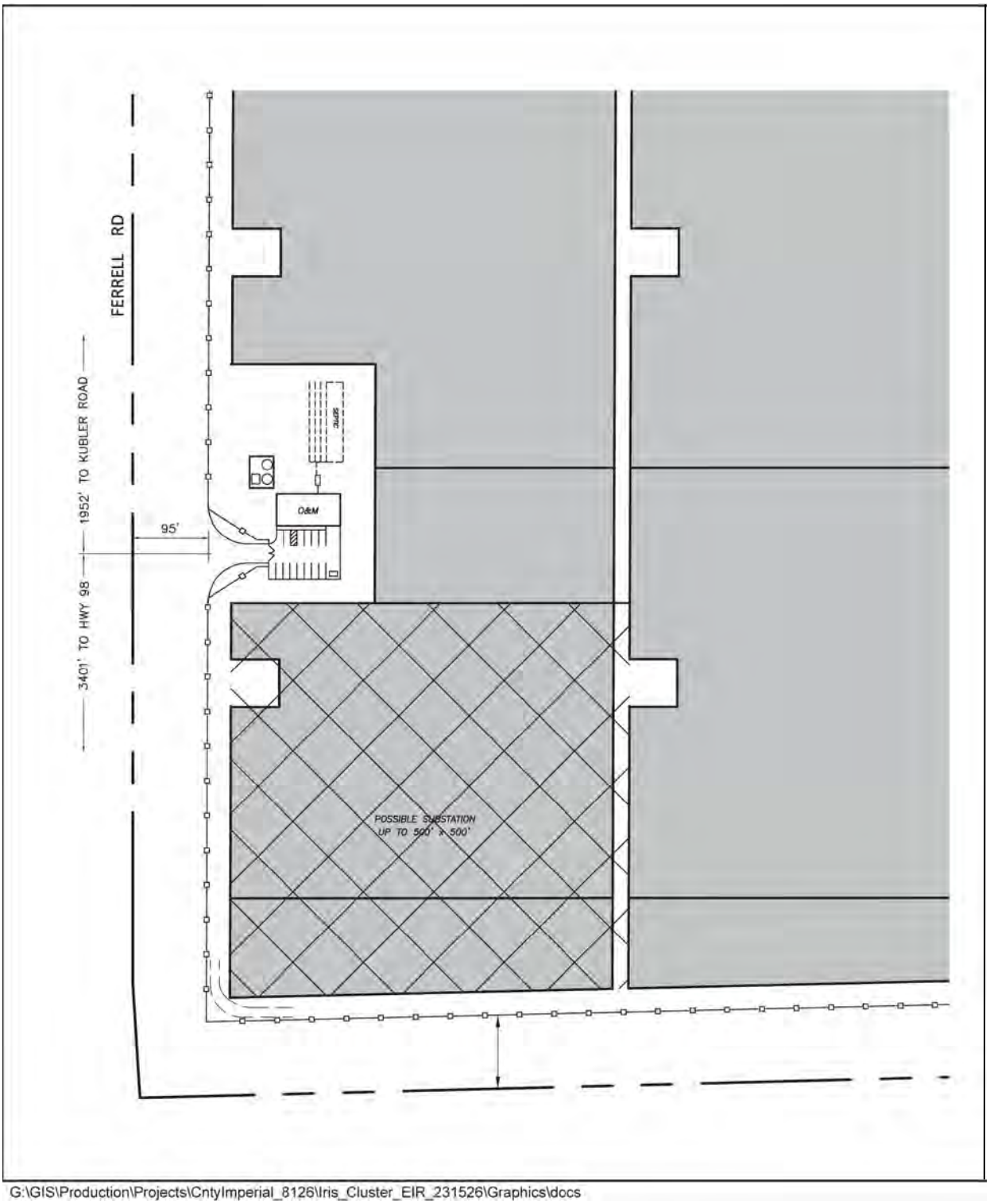


Figure 3.0-6b. Ferrell Solar Farm – O&M and Substation Facility Detail



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3.3.5 Rockwood Solar Farm

The RSF encompasses a total of 396.2 acres and includes three parcels of land as described in Section 3.1. Similar to the FSF, these parcels would be leased to the project applicant for up to 40 years, which is the anticipated duration of the project. The site layout for the RSF is illustrated in Figure 3.0-7a. In total, the RSF would facilitate the placement of up to 152,320 PV panels that would be capable of generating up to 100 MW AC depending on the technology used.

If required, an on-site substation would be located at the northeastern corner of the intersection of SR-98 and George Road (see Figure 3.0-7b). If the substation is shared with an adjacent solar project, then this area would instead be covered with solar panels.

The O&M building for the RSF would be located near the substation at the northeastern corner of the intersection of SR-98 and George Road (see Figure 3.0-7b). If the O&M building is shared with an adjacent solar project, then this area would instead be covered with solar panels.

3.3.6 Iris Solar Farm

The ISF encompasses a total of 520.8 acres and includes three parcels of land as described in Section 3.1. Similar to FSF, these parcels would be leased by the project applicant for up to 40 years, which is the anticipated duration of the project. The site layout for the ISF is illustrated in Figure 3.0-8a. In total, the ISF would facilitate the placement of up to 201,280 PV panels that would be capable of generating up to 130 MW AC depending on the technology.

If required, an on-site substation would be located at the northeastern corner of the intersection of Ferrell Road and SR-98 (see Figure 3.0-8b). If the substation is shared with an adjacent solar project, then this area would instead be covered with solar panels.

The O&M building for the ISF would be located near the substation at the northeastern corner of the intersection of Ferrell Road and SR-98 (see Figure 3.0-8b). If the O&M building is shared with an adjacent solar project, then this area would instead be covered with solar panels.

3.3.7 Lyons Solar Farm

The LSF encompasses a total of 138.4 acres and includes two parcels of land as described in Section 3.1. Similar to the FSF, these parcels would be leased by the project applicant for up to 40 years, the anticipated duration of the project. The site layout for the LSF is illustrated in Figure 3.0-9a. In total, the LSF would facilitate the placement of up to 48,960 PV panels that would be capable of generating up to 40 MW AC depending on the technology utilized.

If required, an on-site substation would be located at the southeastern corner of Kubler Road and a private road (1/4 mile west of Rockwood Road) (see Figure 3.0-9b). If the substation is shared with an adjacent solar project, then this area would instead be covered with solar panels.

The O&M building for the LSF would be located on Kubler Road at the northeastern corner of the intersection of Kubler Road and a private road (1/2 mile east of Brockman Road) (see Figure 3.0-9b). If the O&M building is shared with an adjacent solar project, then this area would instead be covered with solar panels.

3.3.8 Auxiliary Facilities

This section describes the auxiliary facilities that would be constructed and operated in conjunction with the project solar array and O&M facilities.

Figure 3.0-7a. Rockwood Solar Farm – Site Layout

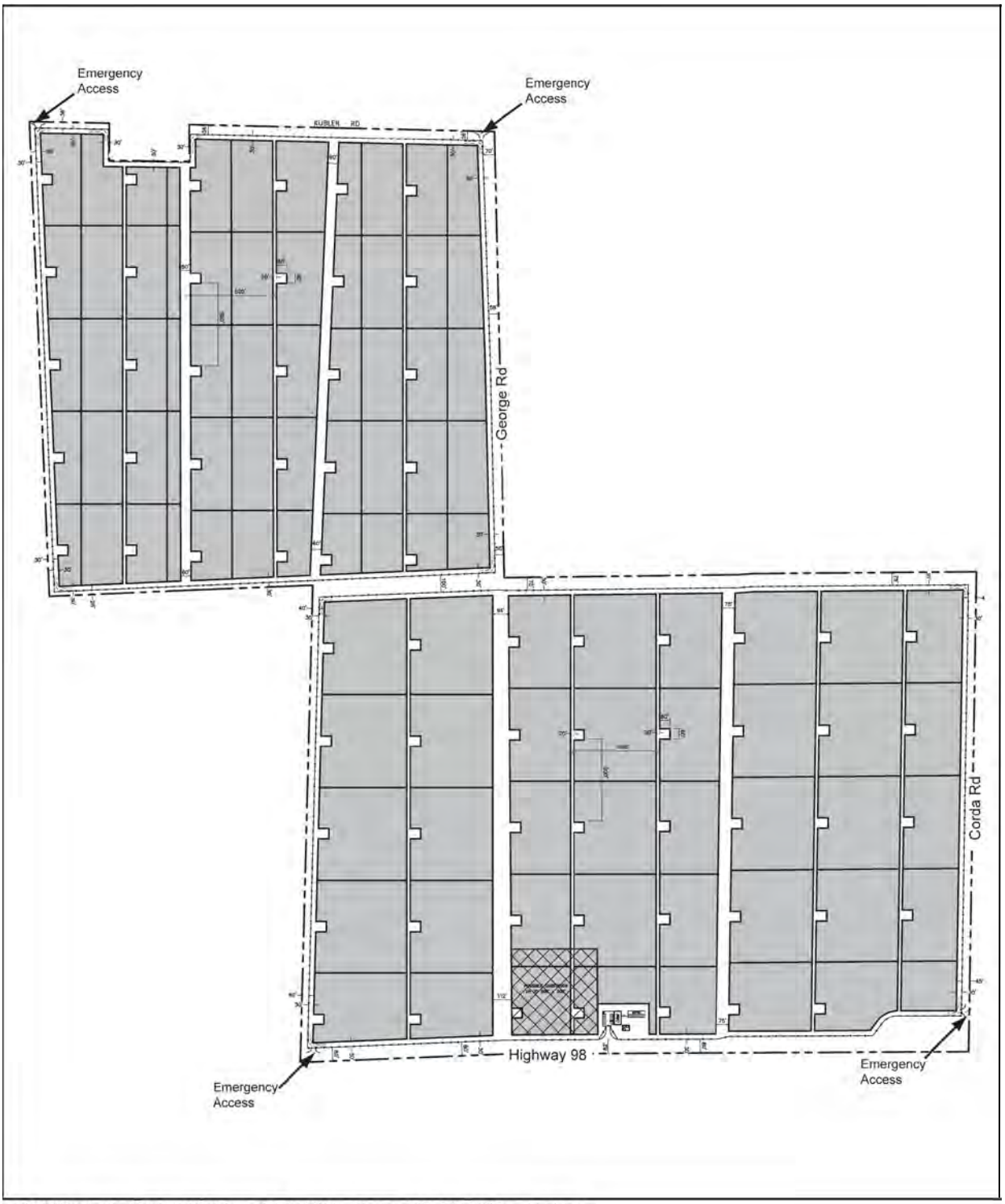

Figure 3.0-7b. Rockwood Solar Farm – O&M and Substation Facility Detail

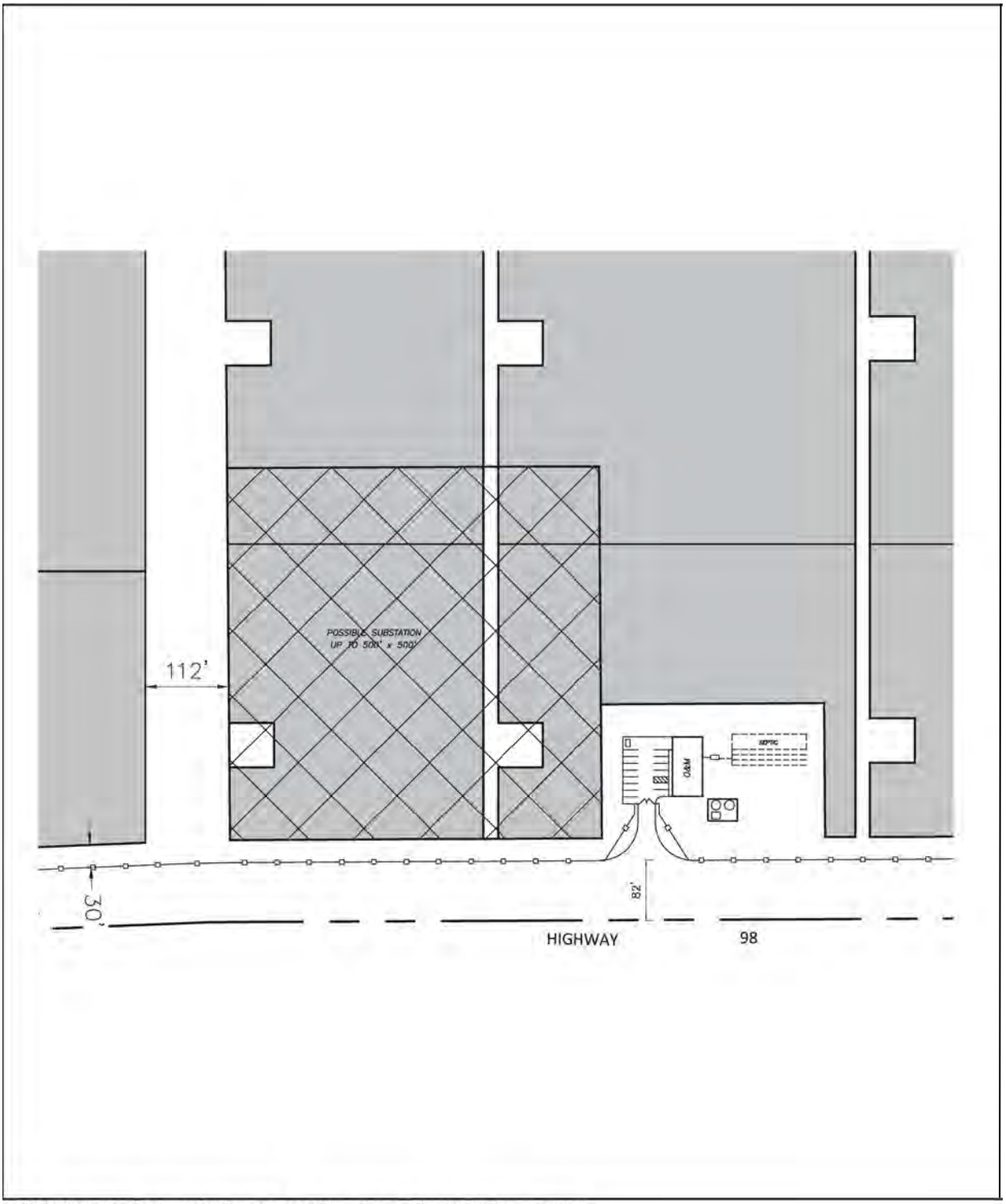

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Figure 3.0-8a. Iris Solar Farm – Site Layout

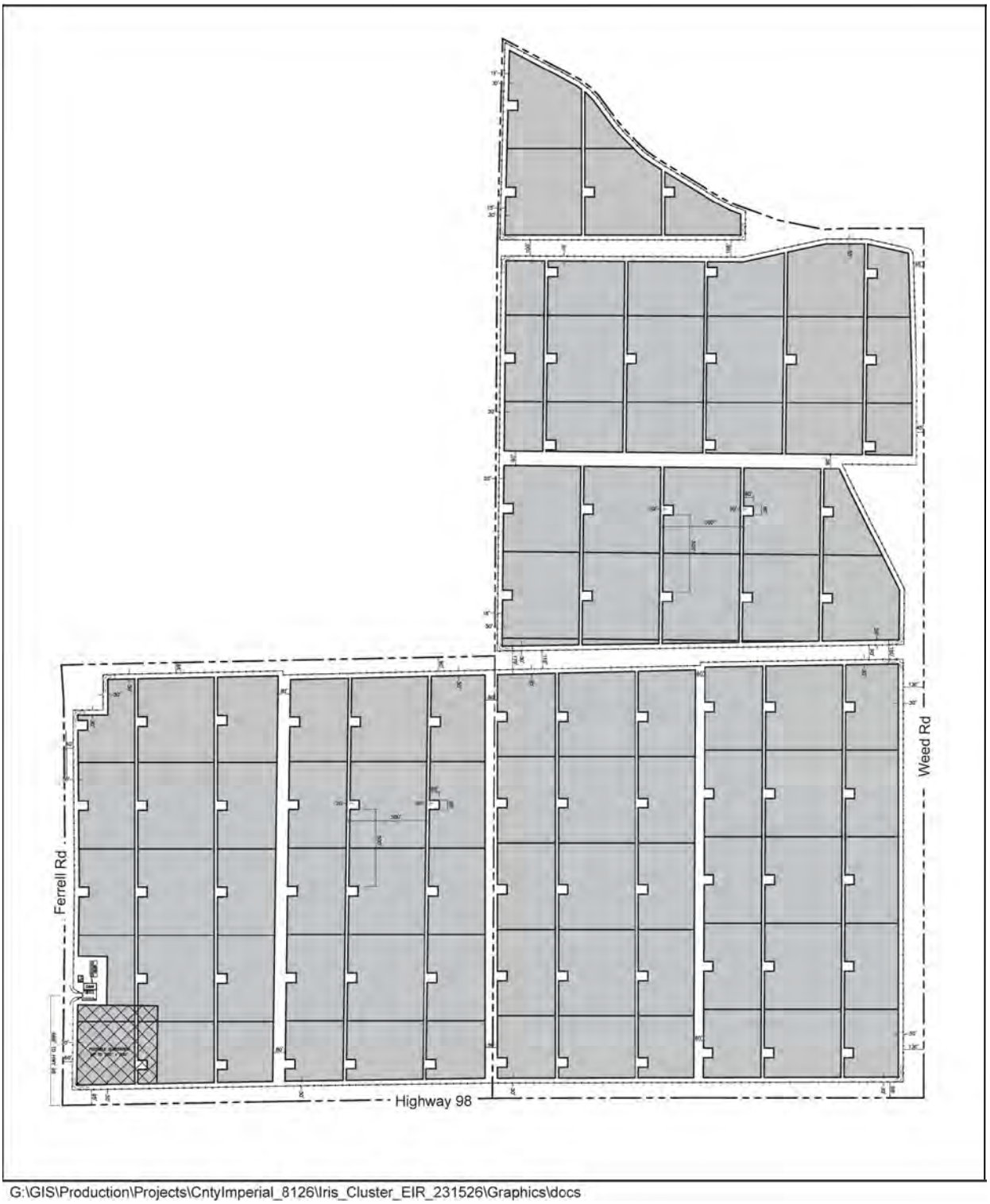

Figure 3.0-8b. Iris Solar Farm – O&M and Substation Facility Detail

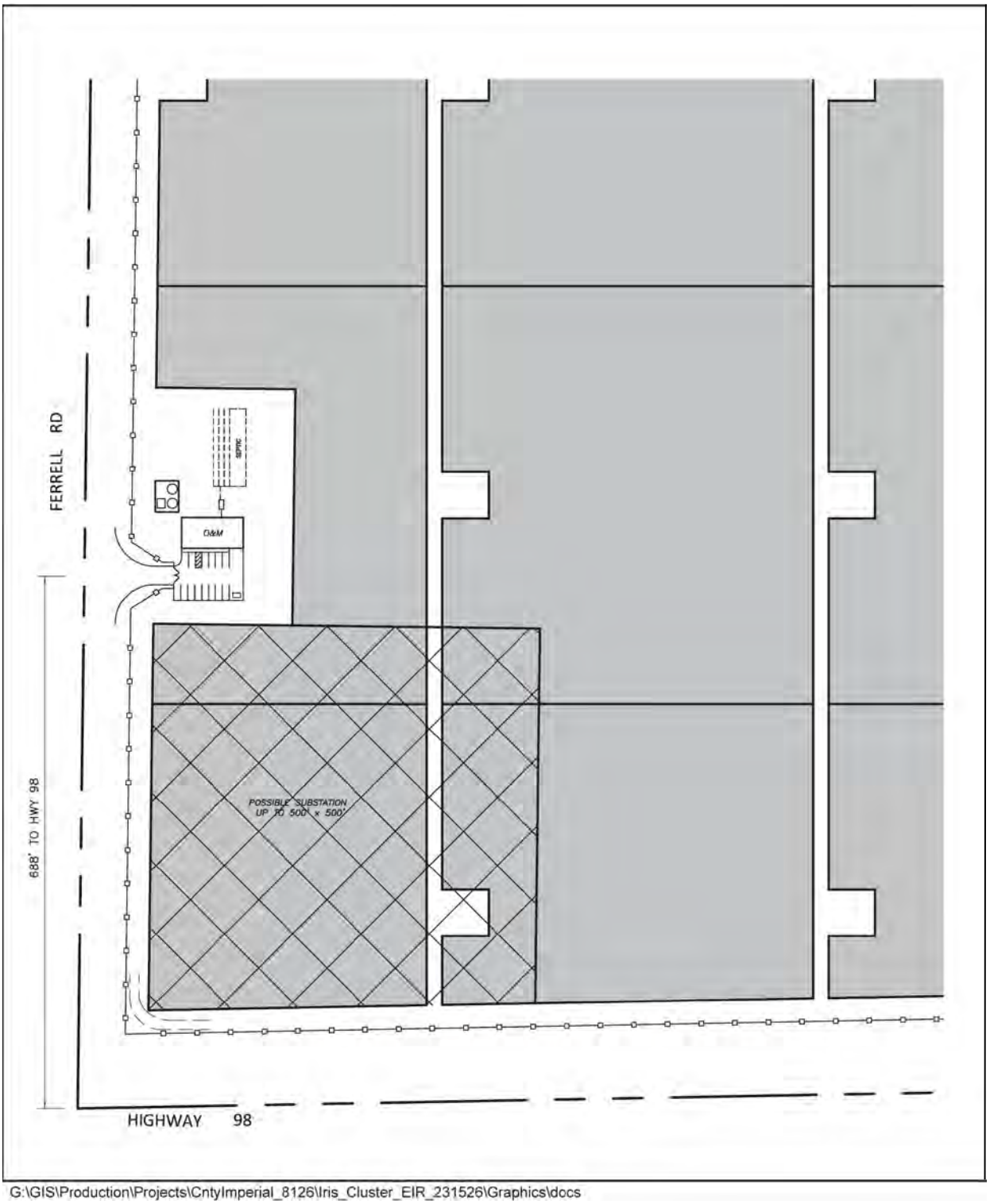

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Figure 3.0-9a. Lyons Solar Farm – Site Layout

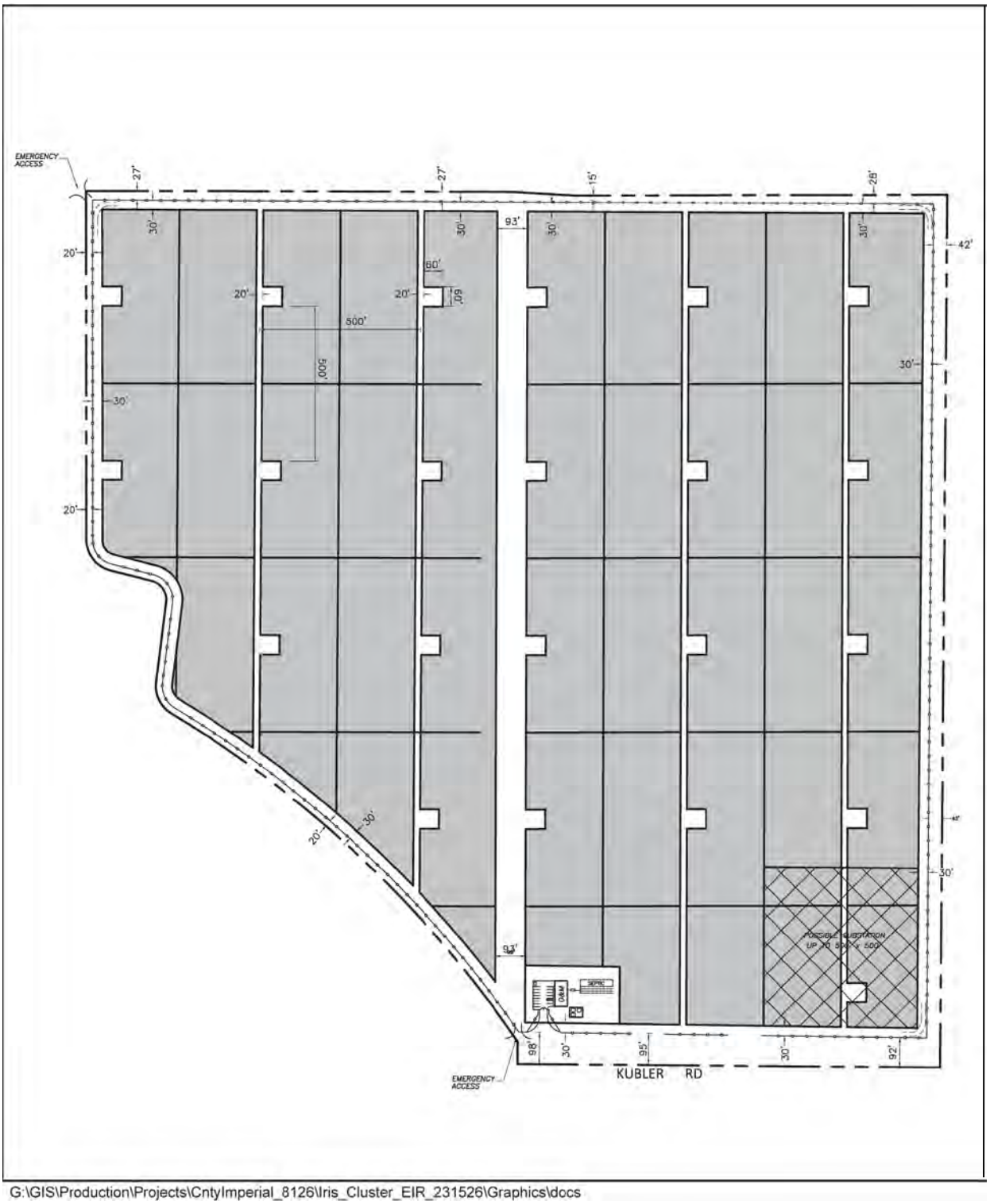

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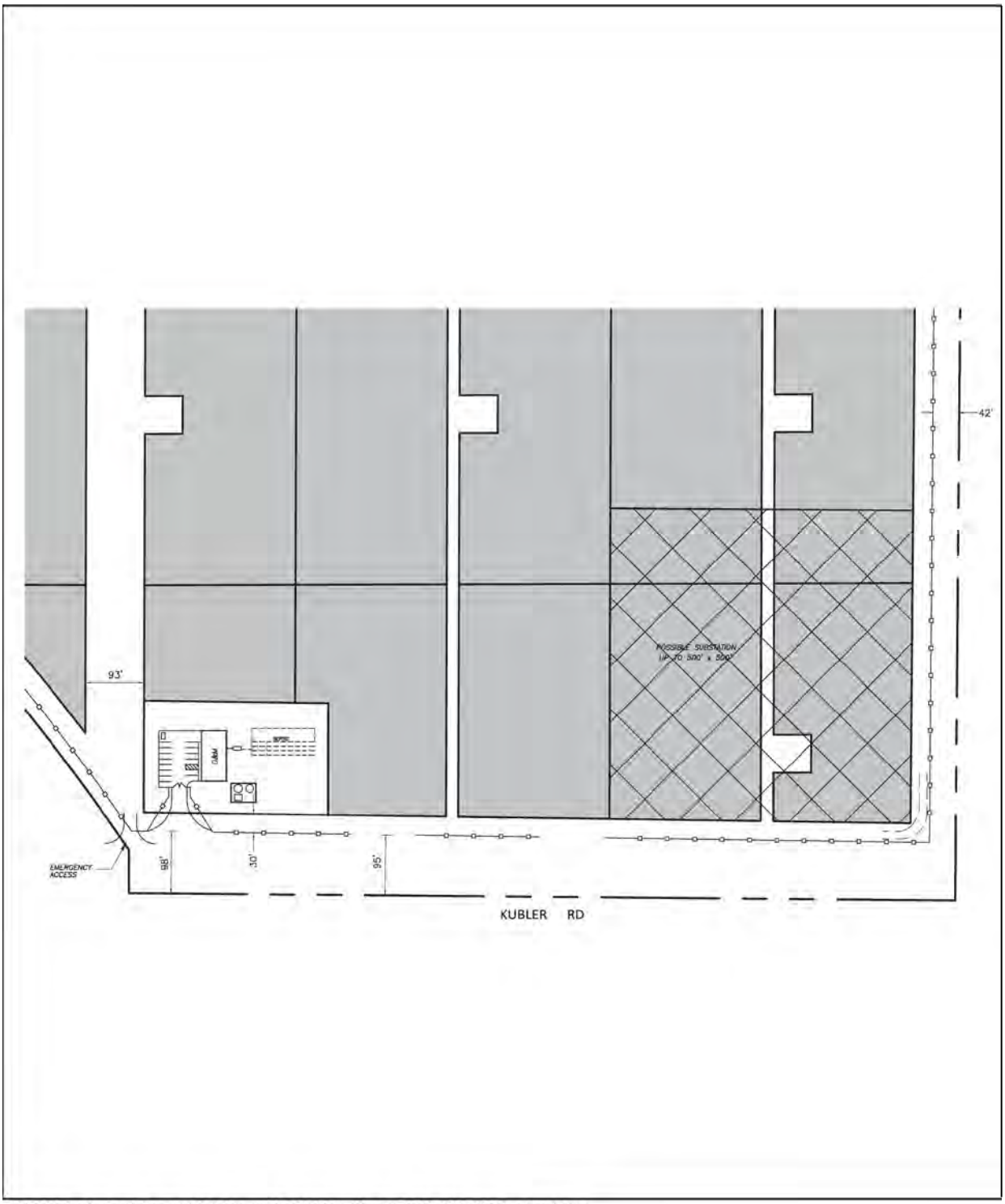
Figure 3.0-9b. Iris Solar Farm – O&M and Substation Facility Detail



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3.3.8.1 Site Security, Fencing, and Access Gates

The perimeter of the project facilities would be secured with low voltage security fencing (i.e., for security camera's and sensors), with barbed wire, and up to eight feet high along each public road. An intrusion alarm system comprised of sensor cables integrated into the perimeter fence, intrusion detection cabinets placed approximately every 1,500 feet along the perimeter fence, and an intrusions control unit, located either in the substation control room or at the O&M building, or similar technology, will be installed. Access to each of the site locations would be provided using a 20 feet minimum swinging or sliding gate. Additionally, controlled access gates would be maintained at entrances into the each of the project site locations. Emergency response personnel would be provided with manual override capability in order to access the site facilities.

3.3.8.2 Lighting System

Project lighting would include emergency egress identification and path lighting pursuant to County of Imperial Building Code Requirements. Energy-efficient lighting would be installed at the O&M building. All lighting features would be compliant with the County Zoning Ordinance.

3.3.8.3 Access Roads

To accommodate emergency access, PV or CPV panels would be spaced to maintain proper clearance. Unimproved access roads would be integrated into the project design and located within each solar array grid to facilitate access to the inverter modules and transformers. Paved access would be provided for the main access road to the parking lot and maintenance area.

3.3.8.4 Fire Protection

The projects are located within the jurisdiction of Imperial County Fire Department. On-site fire protection would be provided via portable and fixed fire suppression systems throughout each of the projects. Portable fire extinguishers would be provided at various locations throughout the solar farms, while fixed fire suppressions systems would be available in the form of dedicated 10,000-gallon on-site storage tank(s). A 10,000-gallon on-site water storage tank would be provided for each of the O&M buildings constructed, and are intended for the fire protection of the O&M buildings. The O&M building would have access to a wet-fire (i.e., water) connection to provide sufficient fire protection. Both the access and service roads (along the perimeter of the project facilities) would have turnaround areas to allow clearance for fire trucks per fire department standards (70 feet by 70 feet, and 20-foot-wide access road).

3.3.8.5 Electrical Grounding

A grounding system would be installed to permit dissipation of ground fault currents and minimize ground potential rise[1].

3.3.8.6 Dust Suppression and Erosion Control

The use of permeable soil stabilizing polymers, which would provide dust suppression and erosion control against wind and water is proposed.

3.3.9 Water Supply, Treatment, and Storage

Once the projects are operational, water would be required for domestic use, solar panel washing, fire protection, and irrigation. The projects would utilize water supplies currently delivered to the project sites by the Imperial Irrigation District (IID) and maximize the use of existing on-site water system(s).

[1] Ground potential rise is caused by electrical currents that occur at electrical substations, power plants, or high-voltage transmission lines and are injected into the earth at the grounding electrode. The resulting potential rise can cause hazardous voltage, many hundreds of yards away from the grounding electrode location.

The project applicant proposes to use 520 acre-feet per year (AFY) for operation of the projects. When compared to existing agricultural water usage at the project sites, the result is an approximately 92% decrease in annual water usage during the project operation when compared to existing conditions (see Section 4.14, Utilities/Service Systems). According to the Water Supply Assessment prepared by Development, Design & Engineering in July 2014, construction of the projects would occur over a 2-year duration, and would require approximately 1,000 AFY of water (3.3 million gallons)[2]. Operation of the projects would require approximately 520 AFY of water (1.7 million gallons). Water use during construction and operation for each of the projects is described further in Table 3-3.

TABLE 3-3. PROJECT WATER SUPPLY DEMANDS

Project	Construction Water Use (AFY)*	Operational Water Use (AFY)	Total (AFY)
FSF (2015)	500	68**	568
FSF (2016-2056)	--	136	136
RSF (2015)	500	74**	574
RSF (2016-2056)	--	147	147
ISF (2016)	500	97**	597
ISF (2017-2057)	--	193	193
LSF (2016)	500	26**	526
LSF (2017-2057)	--	51	51

Source: Development, Design & Engineering 2014.
Notes: *Each project assumes a 6-month construction window.
** Projected to use half of estimated annual usage due to 6 months of operation first year.

On-site water would be stored in above-ground steel tank(s) located in proximity to each of the O&M buildings with a storage capacity of up to 80,000 gallons. Of this total storage capacity, 10,000 gallons of water would be dedicated for fire protection for the O&M building(s). A small Point of Entry (POE) Water Treatment System may be required to reduce sediment levels prior to panel cleaning use and, if required, would be placed at the O&M building(s). The point of entry system requires filtration and disinfection treatment or an alternative treatment technology such as reverse osmosis.

3.3.10 Operations and Maintenance

The combined projects would be staffed with up to 24 full-time employees (up to six for each site) to maintain the project facilities seven days a week during normal daylight hours. Typically, up to 12 staff would work during the day shift (sunrise to sunset), and the remainder during the night shifts and weekend. To ensure optimal solar output, the solar panels would be maintained 24 hours a day/7 days a week. Each of the individual site components would be staffed by up to four employees during the day. Equipment and supply deliveries would typically occur during the week and, on average, could entail up to two daily truck trips.

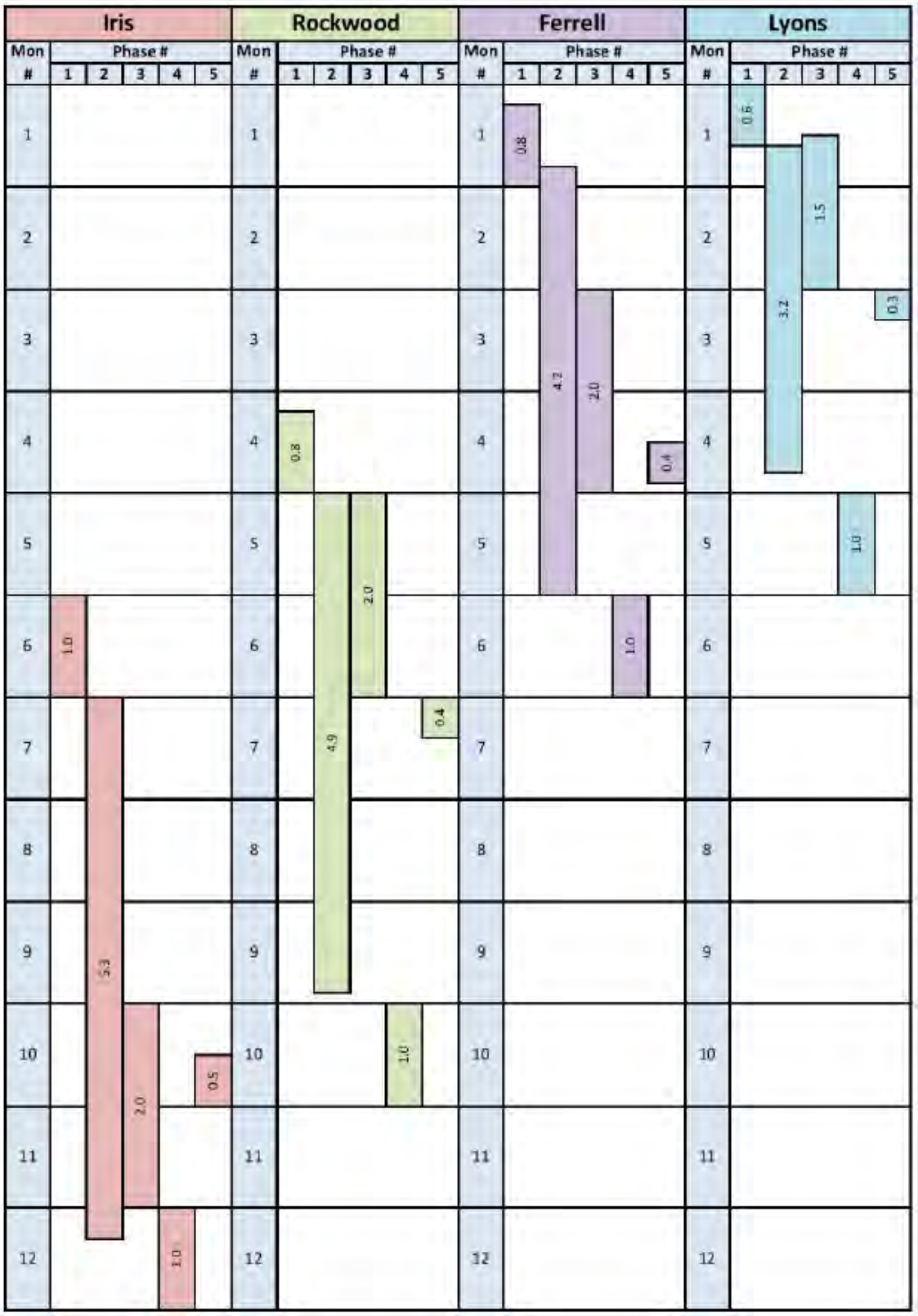
3.4 CONSTRUCTION PROCESS FOR SOLAR FARM SITES

Construction activities are proposed to start in mid-2014 and last for up to 12 months; and each separate site would be divided into five potentially overlapping broad phase activities: (1) Grading/Earthwork; (2) Solar Panel Installation; (3) O&M Building Construction; (4) Offsite Transmission Facilities; and (5) Paving. No single solar site is projected to take the entire 12 months.

The proposed phase activity distributions per project are presented in Figure 3.0-10.

[2] * one acre-foot is 325,851 gallon

Figure 3.0-10. Iris Solar Farm – Phase Activity Distributions



Final construction scheduling would be completed during engineering and contractor bidding, which may result in variations to the planned construction schedule. Typical construction activities involved in the construction of the project include:

- Materials transport;
- Site preparation (vegetation removal, and structure demolition, if necessary);
- Earthwork (grading, excavation, backfill);
- Concrete foundations (forming, rebar placement, and concrete delivery and placement) and paving;
- Structural steel work (assembly and welding);
- Electrical/instrumentation work;
- Architectural and landscaping; and
- Start up and testing.

To characterize and analyze potential construction impacts, maximum crew size, truck trips, and worker trips have been estimated, based on the expected construction activities. To support these activities, the main pieces of equipment that may be used at any one time during construction may include:

- Track-mounted excavators
- Backhoes
- Graders
- Crane(s)
- Scrapers
- Compactors
- Boring machine/drill rig
- Dump trucks
- Front-end loaders
- Water trucks
- Paver and roller
- Flat-bed delivery trucks
- Forklifts
- Concrete trucks
- Helicopters (transmission line stringing)
- Compressors/jack hammers

The typical crew size for each construction phase would be 10 to 20 people, plus inspectors. In assuming that multiple construction activities could occur simultaneously at multiple project facility sites, an average of 400 construction personnel could be present during the most intense construction periods for each phase. In addition, daily haul truck trips could average up to 55 daily trips at the height of construction. Work hours would be governed by permits issued by regulatory agencies. Roadways that would be used by construction traffic would be contingent on the location of actual construction at any given time. To the extent feasible, construction activities would occur in the dry months to minimize damage to unpaved roadways used by heavy equipment.

3.4.1 Construction and Staging Activities

Approximately 10 acres per project site would be required to allow for proper PV and/or CPV panel offloading and steel frame assembly. Although these areas have not been designated specifically for the lay down yard, it is assumed that they would be located in proximity to an O&M building; which are depicted in the site layout plans (see Figures 3.0-6 through 3.0-9).

3.4.2 Existing Utilities

The project applicant's contractors would implement an underground services alert (USA) to identify existing underground utilities and service connections prior to commencing any excavation work. Existing utility locations would be determined by hand-excavated test pits dug at locations determined and approved by the construction manager (also referred to as "potholing"). Temporary disruption of service may be required to allow for construction. Service on such lines would not be disrupted until prior approval is received from the construction manager and the service provider.

3.5 RESTORATION OF THE PROJECT STUDY AREAS

The generating facility's total useful operating life, with appropriate maintenance, repair and component replacement procedures, is expected to be up to 40 years. After the useful life of the projects, the solar facilities would be disassembled from the steel mounting frames and the site would be restored to pre-project conditions.

When the projects are decommissioned at the end of its life span, the project applicant or its successor in interest would be responsible for the removal, recycling, and/or disposal of all solar arrays, inverters, transformers and other structures on the site, and restoration of the site to a level that is commensurate with the existing agricultural use of the site (e.g., soils, infrastructure). The project applicant anticipates using the best available recycling measures at the time of decommissioning. Further, the project applicant would be required to prepare and implement an agricultural restoration plan for each site. The site restoration plans are provided as Environmental Impact Report (EIR) Technical Appendix L.

Project decommissioning would include the following activities:

- The facility would be disconnected from the utility power grid.
- Individual PV and/or CPV panels would be disconnected from the on-site electrical system.
- Project components would be dismantled and removed using conventional construction equipment and recycled or disposed of safely.
- Individual PV and/or CPV panels would be unbolted and removed from the support frames and carefully packaged for collection and return to a designated recycling facility for recycling and material reuse.
- PV and/or CPV panel support steel and support posts would be removed and recycled off-site by an approved metals recycler.
- All compacted surfaces within the project study areas and temporary on-site haul roads would be de-compacted.
- Electrical and electronic devices, including inverters, transformers, panels, support structures, lighting fixtures, and their protective shelters would be recycled off-site by an approved recycler.
- All concrete used for the substation and underground distribution system would be recycled off-site by a concrete recycler.
- Fencing would be removed and recycled off-site by an approved metals recycler.
- Gravel roads would be removed; filter fabric would be bundled and disposed of in accordance with all applicable regulations. Road areas would be backfilled and restored to their natural contour.
- Soil erosion and sedimentation control measures would be re-implemented during the decommissioning period and until the site is stabilized.

The project applicant is proposing to restore the sites with the same type of agriculture as is currently found onsite as part of the restoration effort. The success of establishment of the post-project vegetation would be evaluated in terms of percent coverage at two years after seeding with a performance standard of 80 percent or better. The performance standards and requirements for site restoration are identified in the site restoration plans (EIR Appendix L). All permits related to decommissioning would be obtained, where required.

3.6 REQUIRED PROJECT APPROVALS

3.6.1 Imperial County

The County would be required to approve the following documents pursuant to the California Environmental Quality Act (CEQA):

1. ***Approval of CUPs.*** Implementation of the solar farm projects would require the approval of four CUPs by the County to allow for the construction and operation of the proposed FSF, RSF, ISF, and LSF projects. The projects are located on a total of 10 privately-owned legal parcels zoned A-2 (General Agriculture), A-2-R (General Agriculture Rural), and A-3 (Heavy Agriculture). Pursuant to Title 9, Division 5, Chapter 9, "Solar Energy Plants" is a use that is permitted in the A-2, A-2-R, and A-3 Zones, subject to approval of a CUP. ("Transmission lines, including supporting towers, poles, microwave towers, utility substations" are permitted uses within the A-3 Zone.)

2. ***Site Plans.*** Site Plan and Architectural Review is required.

3. ***Variance.*** Variances are required for the solar energy facility sites in order to exceed the height limit for transmission towers within the A-2, A-2-R, and A-3 Zones. The existing A-2, A-2-R, and A-3 Zones allow a maximum height limit of 120 feet; whereas, transmission towers of up to 140 feet in height are proposed.

4. ***Certification of the EIR.*** After the required public review for the Draft EIR, the County will respond to written comments, edit the document, and produce a Final EIR to be certified by the Planning Commission and/or Board of Supervisors prior to making a decision on the projects.

5. ***Restoration Plans.*** The project applicant has prepared a site restoration plan for each of the four projects (EIR Appendix L). As required by the County, when the projects are decommissioned at the end of their life spans, the project applicant or its successor in interest would be responsible for implementing the restoration plan, which includes the removal, recycling, and/or disposal of all solar arrays, inverters, transformers and other structures on each of the sites, as well as restoration of the site to its pre-project condition with respect to agricultural suitability (e.g., soils, infrastructure). The County is responsible for approving the restoration plan for each project and confirming that financial assurances for each of the projects are in conformance with Imperial County ordinances.

6. ***Williamson Act Contract Cancellation****.* There are three active Williamson Act Contracts within the FSF and ISF project sites. Agricultural Preserve 160 includes the two parcels associated with Contract 2003-02 (Assessor's Parcel Numbers [APNs]: 059-050-003 and 059-120-001); and one parcel associated with Contract 2004-01 (APN: 059-050-002) within the ISF project site. One parcel associated with Contract 2003-001 (APN: 059-050-001) is also part of Agricultural Preserve 160 and is located within the FSF project site. Petitions for cancellation of these contracts were filed with the County in 2014.

Subsequent ministerial approvals may include, but are not limited to:

- Grading and clearing permits;
- Building permits;
- Septic system permits;
- Occupancy permits; and
- Encroachment permits.

3.6.2 Discretionary Actions and Approvals by Other Agencies

Responsible Agencies are those agencies that have discretionary approval over one or more actions involved with development of the project. Trustee Agencies are state agencies that have discretionary approval or jurisdiction by law over natural resources affected by a project. These agencies may include, but are not limited to the following:

- Imperial County Fire Department – Approval of Final Design of the Proposed Fire System.
- California Department of Transportation – Encroachment Permit.
- California Regional Water Quality Control Board – Notice of Intent for General Construction Permit.
- California Department of Fish and Wildlife (Trustee Agency) – Endangered Species Act Compliance, Burrowing Owl Mitigation.
- U.S. Fish and Wildlife Service – Endangered Species Act Compliance.
- Imperial Irrigation District – Encroachment Permit.
- Imperial County Air Pollution Control District – Rule 801 Compliance.

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