

2 Project Description

Chapter 2 provides a description of the Wister Solar Energy Project. This chapter also defines the goals and objectives of the proposed project, provides details regarding the individual components that together comprise the project, and identifies the discretionary approvals required for project implementation.

The proposed project consists of three primary components: 1) solar energy generation equipment and associated facilities including a substation and access roads (herein referred to as “solar energy facility”); 2) gen-tie line that would connect the proposed on-site substation to the POI at the existing IID 92-kV “K” line; and, 3) fiberoptic cable.

2.1 Project Location

2.1.1 Solar Energy Facility and Gen-Tie Line

The project site is located approximately three miles north of Niland, a census-designated place, in the unincorporated area of Imperial County (Figure 2-1). The project site is located on one parcel of land identified as APN 003-240-001 (Figure 2-2). The parcel is comprised of approximately 640 acres of land and is currently zoned Open Space/Preservation with a Geothermal Overlay (S-2-G). The proposed solar energy facility component of the project would be located on approximately 100 acres within the northwest portion of the larger 640-acre project site parcel.

The project site is located east of the intersection of Wilkins Road and an unnamed county road. The project footprint (physical area where proposed project components are to be located) is generally located east of Wilkins Road, north of the East Highline Canal, and west of Gas Line Road.

2.1.2 Fiberoptic Cable

The proposed project includes approximately two miles of fiberoptic line from the proposed on-site substation to the existing Niland Substation, located at 402 Beal Road in Niland. Figure 2-3 shows the alignment of the proposed fiberoptic cable.

Figure 2-2. Project Site



- LEGEND**
- Project Site (Assessor Parcel No. 003-240-001)
 - Solar Energy Facility Location
 - Access Road

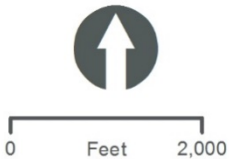
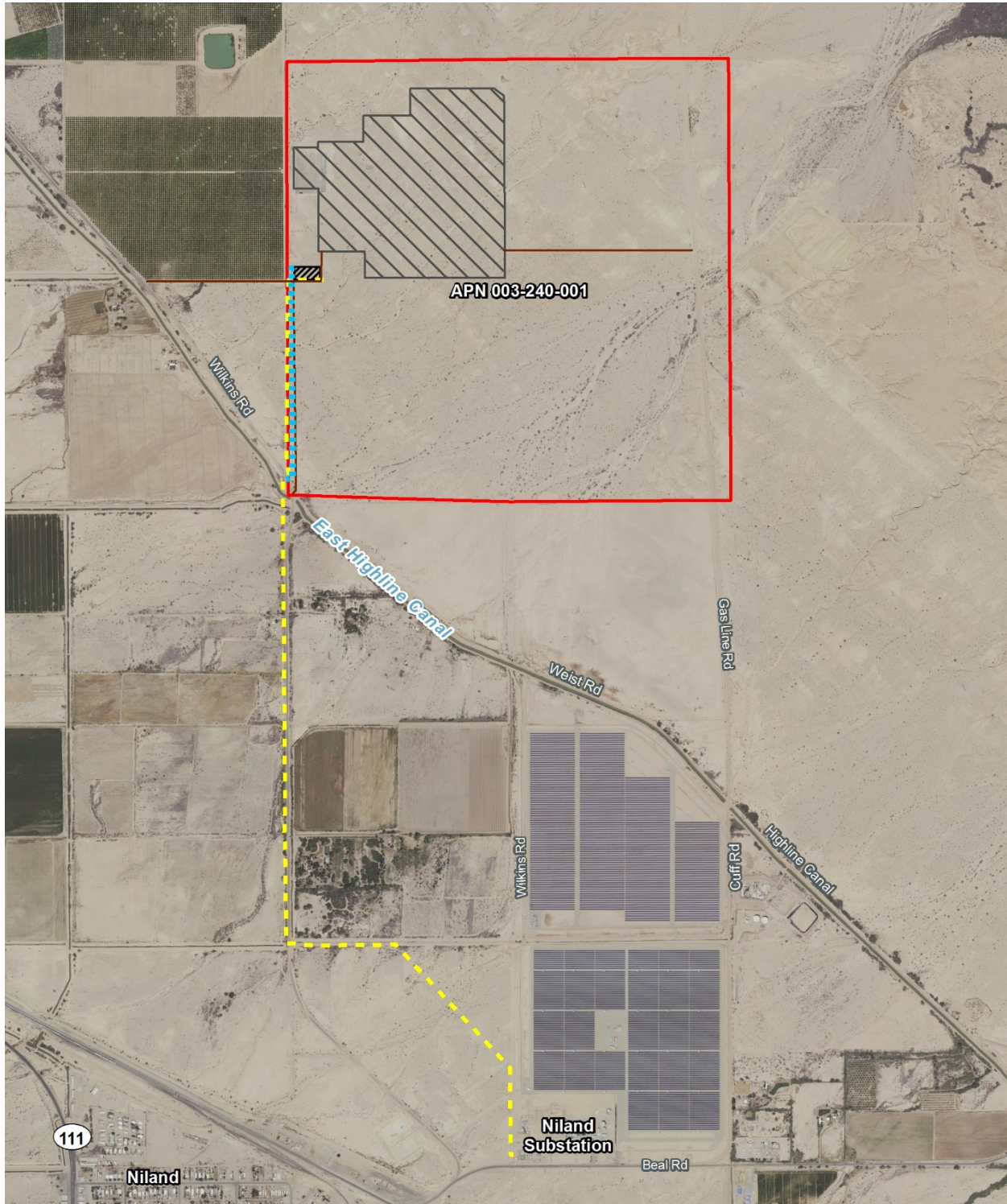






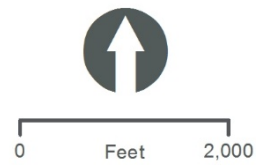


Figure 2-3. Fiberoptic Cable and Gen-Tie Alignment



LEGEND

-  Project Site (Assessor Parcel No. 003-240-001)
-  Solar Energy Facility Location
-  Substation
-  Fiberoptic Cable Alignment
-  Gen-tie Alignment
-  Access Road



2.1.3 Renewable Energy Overlay Zone

In 2016, the County adopted the Imperial County Renewable Energy and Transmission Element, which includes an RE Zone (RE Overlay Map). This General Plan element was created as part of the California Energy Commission Renewable Energy Grant Program to amend and update the County's General Plan to facilitate future development of renewable energy projects.

The County Land Use Ordinance, Division 17, includes the RE Overlay Zone, which authorizes the development and operation of renewable energy projects with an approved CUP. The RE Overlay Zone is concentrated in areas determined to be the most suitable for the development of renewable energy facilities while minimizing the impact on other established uses. CUP applications proposed for specific renewable energy projects not located in the RE Overlay Zone would not be allowed without an amendment to the RE Overlay Zone.

The County's General Plan and Land Use Ordinance allows for renewable energy projects proposed on land classified as a non-RE Overlay zone if the renewable energy project: 1) would be located adjacent to an existing RE Overlay Zone; 2) is not located in a sensitive area; 3) is located in proximity to renewable energy infrastructure; and, 4) and would not result in any significant environmental impacts.

As shown on Figure 3-1, APN No. 003-240-001 (the project site) is located outside, but immediately adjacent to the RE Overlay Zone. Therefore, the applicant is requesting a General Plan Amendment and Zone Change to add APN No. 003-240-001 to the County's RE Overlay Zone. The underlying "Recreation" General Plan designation would remain.

2.2 Project Objectives

- Construct, operate and maintain an efficient, economic, reliable, safe and environmentally sound solar-powered electricity generating facility.
- Help meet California's RPS requirements, which require that by 2030, California's electric utilities are to obtain 50 percent of the electricity they supply from renewable sources.
- Generate renewable solar-generated electricity from proven technology, at a competitive cost, with low environmental impact, and deliver it to the local markets as soon as possible.
- Develop, construct, own and operate the Wister Solar Energy Facility, and ultimately sell its electricity and all renewable and environmental attributes to an electric utility purchaser under a long-term contract to meet California's RPS goals.
- Utilize a location that is in close proximity to an existing switching station and powerlines.
- Minimize and mitigate any potential impact to sensitive environmental resources within the project area.

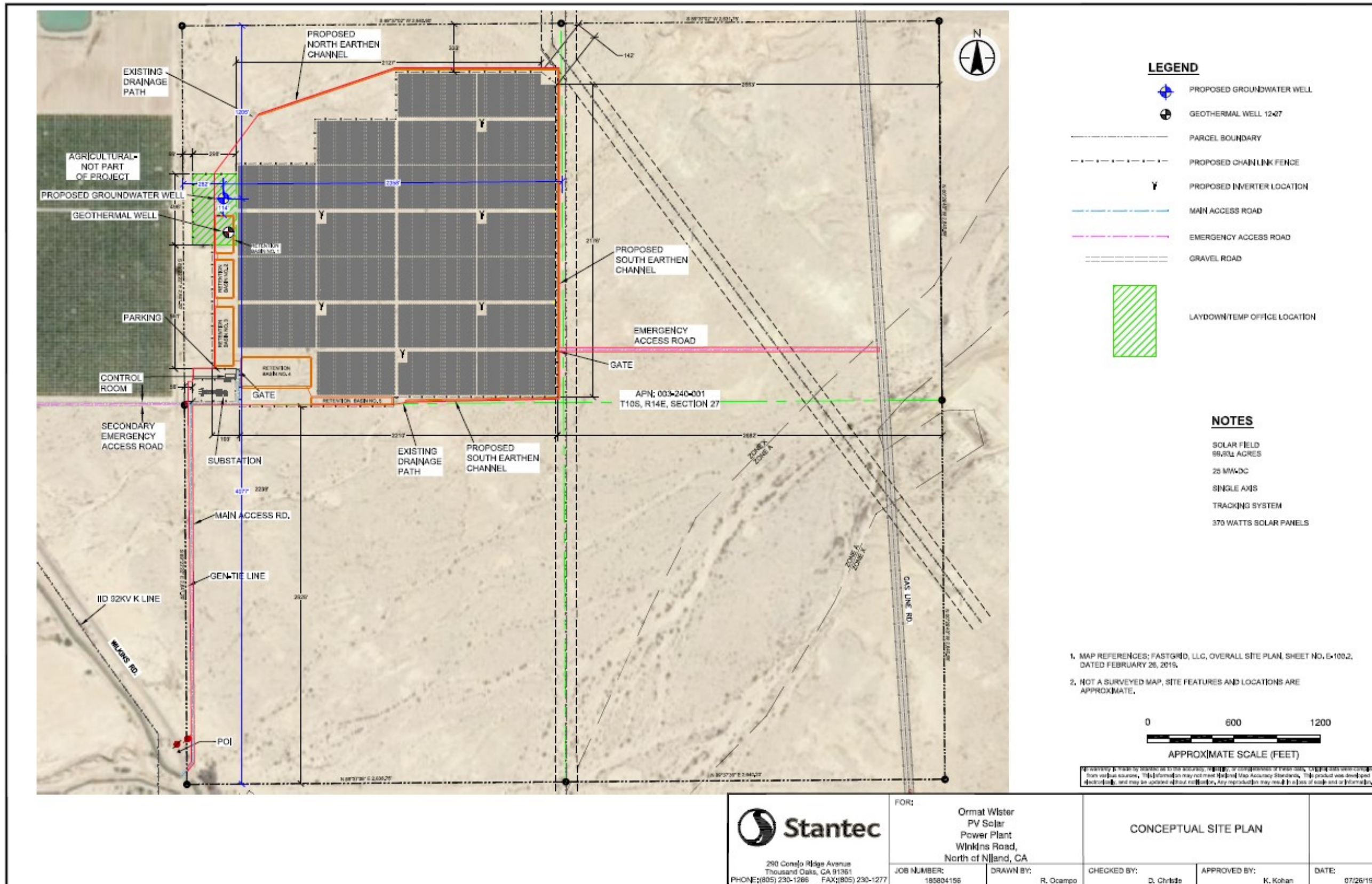
2.3 Project Characteristics

The proposed Wister Solar Energy Facility Project involves the construction and operation of a 20 MW PV solar energy facility on approximately 100 acres within APN No. 003-240-001 (privately-owned land) north of Niland. The proposed solar energy project would be comprised of solar PV panels on single-axis horizontal trackers, an on-site substation and inverters, transformers, and underground electrical cables. Figure 2-4 depicts the proposed site plan.

The power produced by the proposed project would be conveyed to the local power grid via an on-site 92-kV substation, which will be tied directly to the Imperial Irrigation District's 92-kV transmission line. A gen-tie line would connect the Wister substation to the POI at the existing IID 92-kV "K" line.

The project applicant has secured a Power Purchase Agreement (PPA) with San Diego Gas and Electric for the sale of power from the project.

Figure 2-4. Preliminary Site Plan



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2.3.1 Photovoltaic Panels/Solar Arrays

PV solar cells convert sunlight directly into direct current (DC) electricity. The process of converting light (photons) to electricity (voltage) in a solid-state process is called the PV effect. A number of individual PV cells are electrically arranged and connected into solar PV modules, sometimes referred to as solar panels.

The solar PV generating facility would consist of 3.5 foot by 4.8-foot PV modules (or panels) on single-axis horizontal trackers in blocks that each hold 2,520 PV panels. Figure 2-5 provides a representative example of single-axis horizontal trackers. The panels would be oriented from east to west for maximum exposure and the foundation would be designed based on soil conditions, with driven piles as the preferred method. The PV modules would be made of a poly-crystalline silicon semiconductor material encapsulated in glass. Installation of the PV arrays would include installation of mounting posts, module rail assemblies, PV modules, inverters, transformers and buried electrical conductors. Concrete would be required for the footings, foundations and pads for the transformers and substation work.

PV modules would be organized into electrical groups referred to as “blocks.” The proposed project would consist of 12 blocks. Every two blocks will be collected to an inverter and would typically encompass approximately 8 acres, including a pad for one transformer and one inverter. Approximately 96 acres of ground disturbance, including acreage for 12 blocks, is required for the proposed project. The proposed project would include design elements (e.g., non- or anti-reflective material) to reduce the potential glare impacts on adjacent sensitive receptors (e.g. local residents, aircraft, traveling public on adjacent County roads).

The electrical output from the PV modules would be low voltage DC power that would be collected and routed to a series of inverters and their associated pad-mounted transformers. Each array would have one inverter and one transformer, which are collectively known as a Power Conversion Station (PCS). The inverters would convert the DC power generated by the panels to alternating current (AC) power and the pad mounted transformers step up the voltage to a nominal level. The outputs from the transformers are grouped together in PV combining switchgear, which in turn supplies the switchyard, where the power is stepped up to 92-kV for interconnection with the transmission system.

Figure 2-5. Representative Example of Typical Single-Axis Tracking Solar Panels



2.3.2 Substation

The proposed Wister Substation would be a new 92/12-kV unstaffed, automated, low-profile substation. The dimensions of the fenced substation would be approximately 300 feet by 175 feet. The enclosed substation footprint would encompass approximately 1.2 acres of the approximately 640-acre project parcel. As shown on Figure 2-4, the proposed Wister Substation site would be located at the northwest quarter of the parcel, immediately southwest of the solar field. The California Building Code and the Institute of Electrical and Electronics Engineers (IEEE) 693, Recommended Practices for Seismic Design of Substations, will be followed for the substation's design, structures, and equipment. A representative example of a substation is presented on Figure 2-6.

Figure 2-6. Representative Example of Typical Substation Design



2.3.3 Fiberoptic Cable

A proposed fiberoptic line from the proposed Wister Substation would be connected with the existing Niland Substation approximately two miles to the south, which would then be added to connect the proposed Wister Substation to the region's telecommunications system. Overall, this would provide Supervisory Control and Data Acquisition (SCADA), protective relaying, data transmission, and telephone services for the proposed Wister Substation and associated facilities. New telecommunications equipment would be installed at the proposed Wister Substation within the Mechanical and Electrical Equipment Room (MEER). As shown on Figure 2-3, the proposed fiber optic telecommunications cable would utilize existing transmission lines to connect to the Niland Substation. The length of the proposed fiber optic telecommunications cable route would be approximately two miles.

2.3.4 Gen-Tie Line

As shown on Figure 2-4, a proposed gen-tie line would connect the Wister substation to the POI at the existing IID 92-kV "K" line. The proposed gen-tie line would originate at the proposed Wister substation and would terminate at the POI, at a distance of approximately 2,500 feet to the south-southwest. Steel poles, standing at a maximum height of 70 feet tall, will be spaced approximately every 300 feet along the route, and would support the 92-kV conductor and fiberoptic cable to the POI. Construction of the 2,500-foot gen-tie line to the POI would utilize overland travel via an all-weather improved access road along the entire route.

2.3.5 Auxiliary Facilities

This section describes the auxiliary facilities that would be constructed and operated in conjunction with the solar facility.

Site Security and Fencing

The project site would be fenced with a 6-foot high chain link security fence topped with barbed wire. Points of ingress/egress would be accessed via locked gates.

Lighting System

Minimal lighting would be required for operations and would be limited to safety and security functions. All lighting would be directed downward and shielded to confine direct rays to the project site and muted to the maximum extent consistent with safety and operational necessity (Title 9, Division 17, Chapter 2: Specific Standards for all Renewable Energy Projects, of the County's Zoning Ordinance).

Access

A total of three access roads will service the proposed project. Access to the project site from the east would be located off Gas Line Road. Access to the solar energy facility portion of the project site from the west would include two routes: one route north from the southwest corner of the parcel off Wilkins Road (main access road), and another route off Wilkins Road just south of the existing orchard to the west of the project. These two access roads from the west would both lead to the same gate at the project site.

All access roads would be constructed with an all-weather surface, to meet the County Fire Department's standards, and lead to a locked gate that can be opened by any emergency responders. The access and service roads would also have turnaround areas at any dead-end to allow clearance for fire trucks per fire department standards (70 feet by 70 feet and 20-foot-wide access road). Figure 2-4 illustrates the project site layout and access points.

An all-weather surface access road, to meet the County's standards, would surround the perimeter of the site, as well as around solar blocks no greater than 500 by 500 feet.

Groundwater Well

The proposed project may utilize groundwater available at the project site for project construction, and potentially limited operational activities. A groundwater well would be constructed and operated near the existing geothermal well pad (and proposed project construction staging area) located in the north-western portion of the project site. Figure 2-4 depicts the location of the proposed groundwater well.

2.4 Project Construction

2.4.1 Construction Sequence

Construction activities would be sequenced and conducted in a manner that addresses storm water management and soil conservation. During construction, electrical equipment would be placed in service at the completion of each 2,500-kilowatt (kW) power-block. The activation of the power-blocks is turned over to interconnection following the installation of transformer and interconnection equipment upgrades. This in-service timing is critical because PV panels can produce power as soon as they are exposed to sunlight, and because the large number of blocks and the amount of time needed to commission each block requires commissioning to be integrated closely with construction on a block-by-block basis.

Construction would generally occur during daylight hours, Monday through Friday. However, non-daylight work hours may be necessary to make up schedule deficiencies, or to complete critical construction activities. For example, during hot weather, it may be necessary to start work earlier to avoid pouring concrete during high ambient temperatures. If construction is to occur outside of the County's specified working hours, permission in writing will be sought at the time. Construction of the proposed project would occur in phases beginning with site preparation and grading and ending with equipment setup and commencement of commercial operations. Overall, construction would consist of three major phases over a period of approximately 6-9 months:

1. Site Preparation, which includes clearing grubbing, grading, service roads, fences, drainage, and concrete pads; (1 month)
2. PV system installation and testing, which includes installation of mounting posts, assembling the structural components, mounting the PV modules, wiring; (7 months) and
3. Site clean-up and restoration. (1 month)

To support these activities, the main pieces of equipment that may be used during construction are listed in Table 2-1.

Construction activities would be conducted in a manner consistent with Imperial County Codified Ordinance. Noise generating sources in Imperial County are regulated under the County of Imperial Codified Ordinances, Title 9, Division 7 (Noise Abatement and Control). Noise limits are established in Chapter 2 of this ordinance. Under Section 90702.00 of this rule, average hourly noise in residential areas is limited to 50 to 55 A-weighted decibel (dB(A)) from 7 a.m. to 10 p.m., and to 45 to 50 dBA from 10 p.m. to 7 a.m. There are no sensitive noise receptors (e.g., residences, schools) within or adjacent to the project site.

2.4.2 Workforce

The temporary on-site construction workforce would consist of laborers, electricians, supervisory personnel, support personnel and construction management personnel. The average number of construction workers would be approximately 50-60 people per day.

2.4.3 Materials

The proposed project would require general construction materials (i.e., concrete, wood, metal, fuel, etc.) as well as the materials necessary to construct the proposed PV arrays and which are readily available and accessible locally. Most construction waste is expected to be non-hazardous and to consist primarily of cardboard, wood pallets, copper wire, scrap steel, common trash and wood wire spools and can be disposed of safely in local sanitary landfills. Although field equipment used during construction activities could contain various hazardous materials (i.e., hydraulic oil, diesel fuel, grease, lubricants, solvents, adhesives, paints, etc.), these materials are not considered to be acutely hazardous and would be used and disposed of in accordance with the manufacturer's specifications and all applicable County regulations.

Each PV module would be constructed out of poly-crystalline silicon semiconductor material encapsulated in glass. Construction of the PV arrays will include installation of support beams, module rail assemblies, PV modules, inverters, transformers, and underground electrical cables. Concrete will be required for the footings, foundations, pads for transformers, and substation equipment. Concrete will be purchased from a local supplier and transported to the proposed project site by truck. The

poly-crystalline silicon housing the inverters will have a precast concrete base. Final concrete specifications will be determined during detailed design engineering in accordance with applicable building codes.

Table 2-1. Example Construction Equipment

Equipment	Use
1-ton crew trucks	Transport construction personnel
2-ton flatbed trucks; flatbed boom trucks	Haul and unload materials
Mechanic truck	Service and repair equipment
Aerial bucket trucks	Access poles, string conductor, and other uses
Shop vans	Store tools
Bulldozers	Grade pole sites; reclamation
Truck-mounted diggers or backhoes	Excavate
Small mobile cranes (12 tons)	Load and unload materials
Large mobile cranes (75 tons)	Erect structures
Transport	Haul poles and equipment
Drill rigs with augers	Excavate and install fences
Semi tractor-trailers	Haul structures and equipment
Splice trailers	Store splicing supplies
Air compressor	Operate air tools
Air tampers	Compact soil around structure foundations
Concrete trucks	Pour concrete
Dump trucks	Haul excavated materials/import backfill
Fuel and equipment fluid trucks	Refuel and maintain vehicles
Water trucks	Suppress dust and fire

2.4.4 Site Preparation

Project construction would include the renovation of existing dirt roads to all-weather surfaces (to meet the County standards) from Wilkins Road just south of the orchard, and a new road would be graded west from Gas Line Road and a new road graded north from the southwest corner of the parcel off Wilkins Road. Construction of the proposed project would begin with clearing of existing brush and installation of fencing around the project boundary. A 20 foot road of engineering-approved aggregate will surround the site within the fencing.

Material and equipment staging areas would be established on-site within an approximate 4-acre area. The staging area would include an air-conditioned temporary construction office, a first-aid station and other temporary facilities including, but not limited to, sanitary facilities, worker parking, truck loading and unloading, and a designated area for assembling the support structures for the placement of PV modules. The location of the staging area would change as construction progresses throughout the project site. The project construction contractor would then survey, clear and grade road corridors in order to bring equipment, materials, and workers to the various areas under construction within the project site. Road corridors, buried electrical lines, PV array locations and locations of other facilities

may be flagged and staked in order to guide construction activities. In addition, water truck reloading stations would be established for dust control.

2.4.5 Start-up

PV system installation would include earthwork, grading and erosion control, as well as erection of the PV modules, mounting posts and associated electrical equipment. The PV modules require a moderately flat surface for installation and therefore some earthwork, including grading, fill, compaction and erosion control, may be required to accommodate the placement of PV arrays, concrete for foundations, access roads and/or drainage features.

Construction of the PV arrays would be expected to take place at a rate of approximately 0.10 MW per day. Construction of the PV arrays would include installation of the mounting posts, module assemblies, PV modules, inverters, transformers and buried electrical conductors.

The module assemblies would then be cut off at the appropriate heights since the center posts must be completely level. Field welding would be required to attach the module assemblies to the top of the mounting posts.

Finally, the PV panels would be attached to the module assemblies. Heavy equipment lifters (e.g., forklift) would be required to place the module assemblies in position, while welding and cutting equipment would be necessary to cut off the posts at the appropriate height.

2.4.6 Construction Water Requirements

The proposed project is anticipated to take approximately 6-9 months from the commencement of the construction process to complete. Construction water (non-potable) needs would be limited to earthwork, soil conditioning, dust suppression, and compaction efforts. During construction, on-site groundwater is proposed to be utilized. Approximately 900,000 gallons (2.76 acre-feet [af]) of water (40,909 gallons per work day) would be required during the first phase of construction for site preparation and grading and would be obtained from the proposed on-site groundwater well. The second phase of construction (PV system installation and testing) would take approximately 6 months and require approximately 2,130,000 gallons (6.54 af) of water (16,136 gallons per work day) and also be derived from the proposed on-site groundwater well. Water usage would then be reduced to approximately 300,000 gallons (0.92 af) (13,636 gallons per workday) of water required during the last phase of the construction (clean-up and restoration). Therefore, the proposed project would require a total of 3,330,000 gallons (10.22 af) of water during the construction period.

2.4.7 Dust Suppression

The project would comply with all applicable air pollution and dust control regulations. During the construction phase of the project, standard dust control measures would be used to mitigate emissions of fugitive dust. These may include watering or applying dust reducers with low environmental toxicity to suppress dust during construction.

2.4.8 Clean-up and Demobilization

After construction is complete, all existing County and private roads utilized would be left in a condition equal to or better than their preconstruction condition. All other areas disturbed by construction activities would be recontoured and decompacted.

Waste materials and debris from construction areas would be collected, hauled away, and disposed of at approved landfill sites. Cleared vegetation would be shredded and distributed over the disturbed site as mulch and erosion control or disposed of offsite, depending on agency agreements. Rocks removed during foundation excavation would be redistributed over the disturbed site to resemble adjacent site conditions. Interim reclamation would include re-contouring of impacted areas to match the surrounding terrain, and cleaning trash out of gullies. Equipment used could include a blader, front-end loader, tractor, and a dozer with a ripper.

A covered portable dumpster would be kept on site during the construction period to contain any trash that can be blown away. After completion of the proposed project, the project engineer would complete a final walk-through and note any waste material left on site and any ruts or terrain damage or vegetation disturbance that has not been repaired.

2.5 Operations and Maintenance

Once fully constructed, the proposed project would be operated on an unstaffed basis and be monitored remotely, with periodic on-site personnel visitations for security, maintenance and system monitoring. Therefore, no full-time site personnel would be required on-site during operations and employees would only be on-site four times per year to wash the panels.

As the project's PV arrays produce electricity passively, maintenance requirements are anticipated to be very minimal. Any required planned maintenance activities would generally consist of equipment inspection and replacement and would be scheduled to avoid peak load periods. Any unplanned maintenance would be responded to as needed, depending on the event.

Estimated annual water consumption for operation and maintenance of the proposed project, including periodic PV module washing, would be approximately 0.81 acre-feet per year (afy). As discussed previously, the project will utilize groundwater from a proposed on-site groundwater well.

2.6 Facility Decommissioning

Solar equipment has a lifespan of approximately 20 to 25 years. At the end of the project's operation term, the applicant may determine that the project should be decommissioned and deconstructed. Should the project be decommissioned, concrete footings, foundations, and pads would be removed using heavy equipment and recycled at an off-site location. All remaining components would be removed, and all disturbed areas would be reclaimed and recontoured.

2.7 Required Project Approvals

2.7.1 Imperial County

The following are the primary discretionary approvals required for implementation of the project:

1. **Approval of CUP – Solar Energy Facility.** Implementation of the project would require the approval of a CUP by the County to allow for the construction and operation of the proposed solar energy facility project. The project site is located on one privately-owned legal parcel zoned Open Space/Preservation with a Geothermal Overlay (S-2-G). Pursuant to Title 9, Division 5, Chapter 19, the following uses are permitted in the S-2 zone subject to approval of a CUP from Imperial County: *Major facilities relating to the generation and transmission of electrical energy provide[d] such facilities are not under State or Federal law, to [be] approved*

exclusively by an agency, or agencies of the State or Federal government, and provided such facilities shall be approved subsequent to coordination review of the Imperial Irrigation District for electrical matters. Such uses shall include but be limited to the following:

- *Electrical generation plants*
 - *Facilities for the transmission of electrical energy (100-200 kV)*
 - *Electrical substations in an electrical transmission system (500 kv/230 kv/161 kv)*
2. **Approval of CUP – Groundwater Well.** Pursuant to Title 9 Division 21: Water Well Regulations, §92102.00, the Applicant will be required to obtain a CUP for the proposed on-site groundwater well. As required by §92102.00, no person shall (1) drill a new well, (2) activate a previously drilled but unused well, (unused shall mean a well or wells that have not been used for a 12 month) period by installing pumps, motors, pressure tanks, piping, or other equipment necessary or intended to make the well operational, (3) increase the pumping capacity of a well, or (4) change the use of a well, without first obtaining a CUP through the County Planning & Development Services Department.
 3. **General Plan Amendment.** An amendment to the County’s General Plan, Renewable Energy and Transmission Element is required to implement the proposed project. CUP applications proposed for specific renewable energy projects not located in the Renewable Energy (RE) Overlay Zone would not be allowed without an amendment to the RE Overlay Zone. APN No. 003-240-001 (in which the solar energy facility will be located), is immediately adjacent to, but outside of the RE Overlay Zone; therefore, the applicant is requesting a General Plan Amendment to include/classify APN No. 003-240-001 into the RE Overlay Zone. The underlying “Recreation” General Plan designation would remain.
 4. **Zone Change.** The project site (APN No. 003-240-001) is located immediately adjacent to, but outside of the RE Overlay Zone; therefore, the applicant is requesting a zone change to include/classify APN No. 003-240-001 (which includes the solar energy facility) into the RE Overlay Zone.
 5. **Variance.** A Variance is required to exceed the height limit for transmission towers within the S-2 zone. The existing S-2 zone allows a maximum height limit of 40 feet, whereas implementation of the project may involve the construction of transmission towers of up to 70 feet in height. Therefore, a Variance for any structure exceeding the existing maximum height limit of 40 feet would be required.
 6. **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 Board of Supervisors prior to making a decision on approval or denial of the project.

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

- Grading and clearing permits
- Building permits
- Reclamation plan
- Encroachment permits
- Transportation permit(s)

2.7.2 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:

- California RWQCB – Notice of Intent for General Construction Permit, CWA 401 Water Quality Certification
- ICAPCD – Fugitive Dust Control Plan, Rule 801 Compliance
- CDFW (Trustee Agency) – ESA Compliance, Section 1600 Streambed Alteration Agreement
- USFWS – ESA Compliance
- USACE – Section 404 of the CWA Permit

2.7.3 Potential Actions/Approvals by Other Agencies

The proposed fiber optic cable may require actions or approvals by the following agency:

- IID – for any approvals related to the fiber optic cable