EXHIBIT A

CHAPTER 3
Operational Statement

3.1 Purpose of Conditional Use Permit Application

EC&R Solar Development, LLC, (EC&R) (the Applicant), is proposing to construct, operate, maintain, and decommission the Fifth Standard Solar Project Complex (the "Project") on a 1,593.52-acre[1] site in unincorporated Fresno County, 2 miles east of Interstate 5, and approximately 13 miles east of Coalinga (the "Project site"). The Project (**Figure 1**) comprises three facilities:

- Fifth Standard Solar Facility: a 150 megawatt (MW) photovoltaic (PV) solar energy generation facility that is anticipated to require up to 1,400 acres of the site.
- Stonecrop Solar Facility: a 20 MW PV facility that would be located adjacent to Fifth Standard Solar and would require less than 200 acres of the site.
- Blackbriar Battery Storage Facility: a 20 MW battery storage facility that would be located adjacent to Fifth Standard and Stonecrop, and would utilize less than 5 acres of the site.

The three facilities are proposed for processing separately, with each having its own Unclassified Conditional Use Permit so that the electricity/storage capacity from each facility could be sold separately or in combination.

3.2 Project Applicant Contact Information

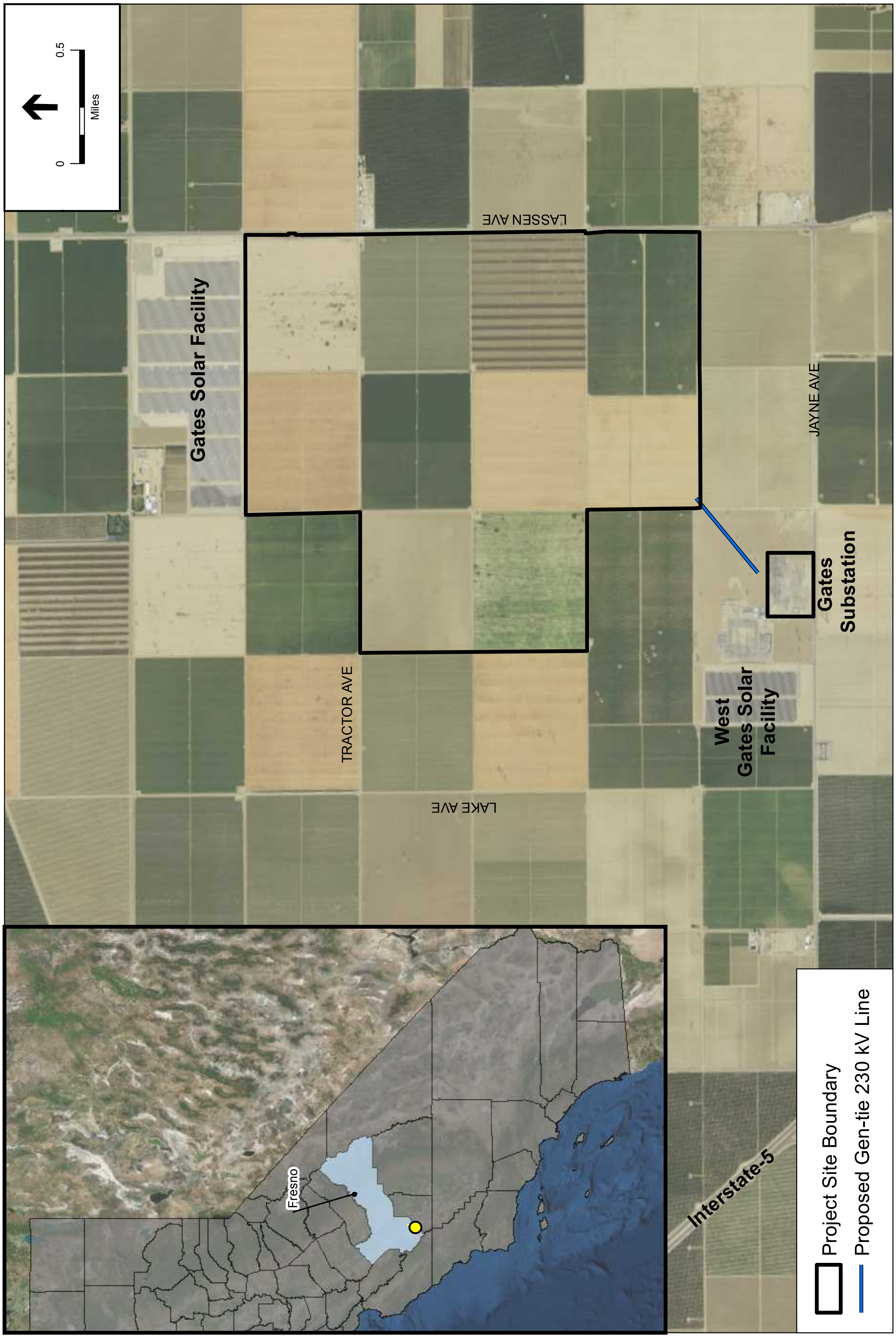
The following information should be used when contacting the Project Applicant:

Primary Contact:
Julie Watson
Environmental Science Associates
1425 N McDowell Blvd, #200
Petaluma, CA 94954
Phone: 707-796-7004
Email: JWatson@esassoc.com

Project Applicant Contact:
Matt Stucky
EC&R Solar Development, LLC
20 California Street, Suite 500
San Francisco, CA 94111
Phone: 415-278-1080
Email: matt.stucky@eon.com

[1] The acreage of the parcels as found in County assessor records equals 1,588 acre.

EXHIBIT A



SOURCE: ESRI

Fifth Standard Solar Project Complex. 120251

Figure 1

Project Location

3.3 Site Description

The Project site is located near Huron, California, in an unincorporated area of Fresno County. Lassen Avenue (California State Route 269) borders the eastern side of the property and is the only paved road in the immediate vicinity of the site. Trinity Avenue, Tractor Avenue, and Phelps Avenue intersect the site, but are not improved roads. Nearby communities include Huron (1.5 miles north), Avenal (10 miles south), Ora (11 miles west), Kettleman City (12 miles southeast), and Coalinga (13 miles west).

Surrounding land uses include farmland, the Pacific Gas and Electric Company's (PG&E's) Gates Substation and two nearby solar generating facilities (Gates Solar and West Gates Solar) (see Figure 1). The Gates Substation is located 0.4 mile southwest of the Project site. The existing West Gates Solar facility is adjacent to the Gates Substation, 0.5 mile southeast of the site. The Gates Solar facility is located to the north and immediately adjacent to the Project site. Interstate 5 (I-5) is located approximately 2 miles west of the site. The Pleasant Valley Ecological Reserve is located across I-5, 6 miles west of the site (CDFW, 2016). New Coalinga Municipal Airport is located approximately 9 miles to the west of the site.

The Project site is currently leased by EC&R Solar Development, LLC for a period of up to 35 years. The land is under the ownership of various Woolf family trusts and entities (**Table 1**).

TABLE 1
SITE OWNERSHIP

Parcel #	Ownership
075-060-15S	G3 Farming Trust
075-060-52S	Woolf Properties
075-070-01S	G3 Farming Trust
075-070-32S	Woolf Family Trust No. 1
075-070-34S	Woolf Family Trust No. 1
075-130-10S	Woolf Family Trust No. 1
075-130-12S	Woolf Family Trust No. 1
075-130-54S	Woolf Family Trust No. 1
075-130-59S	Woolf Family Trust No. 1
075-130-60S	Woolf Family Trust No. 1
075-070-35S	Woolf Family Trust No. 1
075-070-33S	Woolf Family Trust No. 1

SOURCE: Fresno County, 2016.

Land use within the Project site currently consists of actively farmed row crops, including tomatoes and wheat. Irrigation lines and access roads also occur on the Project site (**Figures 2** and **3**). Several power lines border and cross the site, including high-voltage transmission lines.

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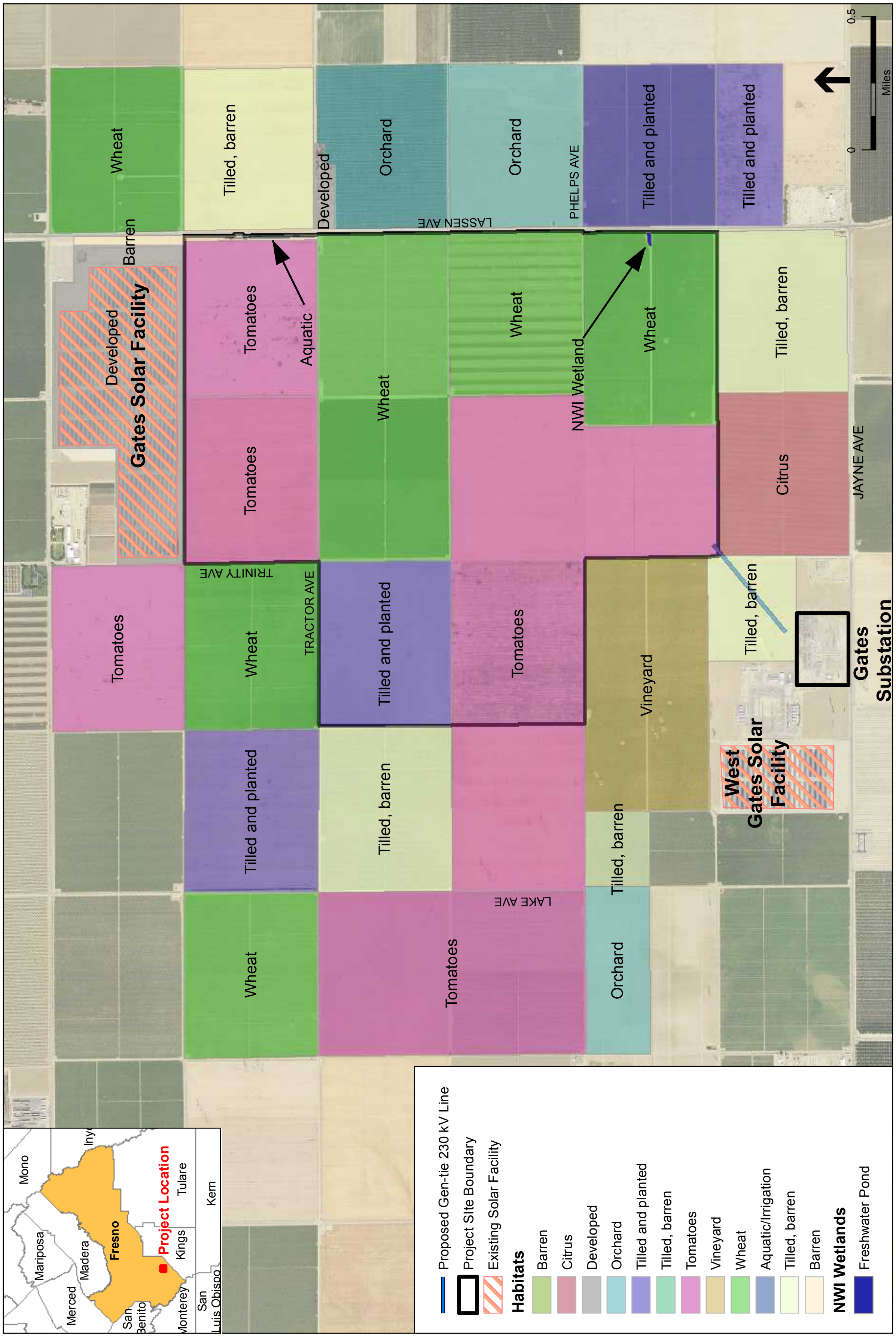


SOURCE: EC&R Solar Development, LLC, 2016 ; NWI, 2016; ESA

Fifth Standard Solar Project Complex. 120251
Figure 2
Project Site Land Use

EXHIBIT A

3a - View of Project Site from the East

3b - View of Project Site from the North

SOURCE: EC&R Solar Development, LLC

Fifth Standard Solar Project Complex . 120251

Figure 3

Site Photos

EXHIBIT A

3c - View of Project Site from the South

3d - View of Project Site from the West

SOURCE: EC&R Solar Development, LLC

Fifth Standard Solar Project Complex . 120251

Figure 3 (continued)

Site Photos

The site overlies the Westside Groundwater Subbasin, which covers more than 640,000 acres and is located within the San Joaquin Valley Groundwater Basin. There are six wells on the Project site, four of which are active. The site is within Westlands Water District boundaries and receives an allocation of surface water. This allocation is not used to irrigate the site and instead is diverted to almond crops on other land under control of the site owners. The property's existing water rights allocation would not be used for Project purposes.

The Project site is included in the area covered by the Fresno County General Plan (County of Fresno, 2000a). The entire site is zoned AE20, or "Exclusive Agricultural," as designated by the Fresno County Zoning Ordinance (County of Fresno, 2000b). All parcels upon which construction is proposed fall under Williamson Act contracts, and the entire site has a designation of "P," or "Prime Farmland," as provided by the California Farmland Mapping and Monitoring Program (FMMP, 2014) (**Figure 4**). The Applicant is currently preparing cancellation applications for the Williamson Act Contracts on the Project site.

The Federal Emergency Management Agency (FEMA) designates the Project site and surrounding area as within Zone X (FEMA, 2016). Zone X is defined as an area of "moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods." No streams or large bodies of water are present within the Project site. A potential jurisdictional wetland is located linearly in the north-south direction along the northeastern border of the Project site, adjacent to Lassen Avenue.

Soils within the Project site range from excelsior sandy loam, sandy substratum, to westhaven loam and typically include 0 to 2 percent slopes. All of the soils are moderately well-drained or well-drained (USDA, 2016). As the Project area lies in an unincorporated part of Fresno County, it is not within the Fresno County Irrigation District and is not part of a special district.

3.4 Project Description

The Project consists of three individual facilities that would be co-located on the site described above. The Fifth Standard Solar Facility is a 150 megawatt (MW) photovoltaic (PV) facility; the Stonecrop Solar Facility is a 20 MW PV facility; and the Blackbriar Energy Storage Facility is a 20 MW energy storage facility. The three facilities would share an onsite Project substation, where power generated/stored at each facility would be increased to match that of the point of interconnection at the adjacent Gates Substation. An existing transmission substation owned by PG&E (Gates Substation) is located approximately 0.4 mile southwest of the Project site at the southwest corner of West Jayne Avenue and South Lake Avenue. An overhead generation tie (gen-tie) line would convey electricity generated at the Project site to the Gates Substation for distribution to customers within the local and regional grid by PG&E. The gen-tie line would require approximately 0.5 mile of 230-kilovolt (kV), single-circuit overhead electric transmission line to connect the Project site to the Gates Substation.

Additional details of Project components are provided below and presented in **Figure 5**.

EXHIBIT A

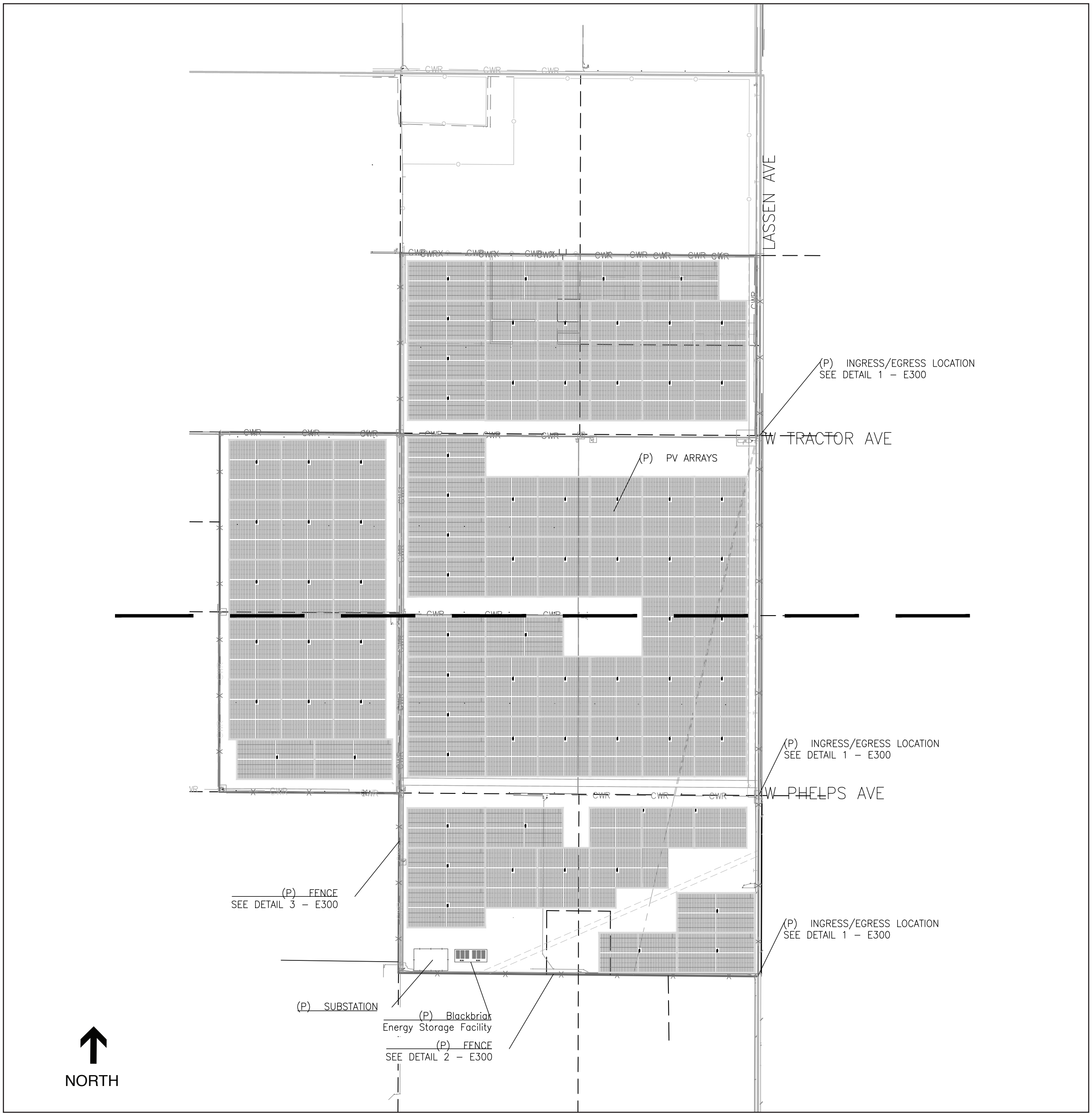
SOURCE: EC&R Solar Development, LLC, 2016; CDC, 2016

Fifth Standard Solar Project Complex. 120251

Figure 4

Williamson Act Contracted Land In the Project Area

EXHIBIT A



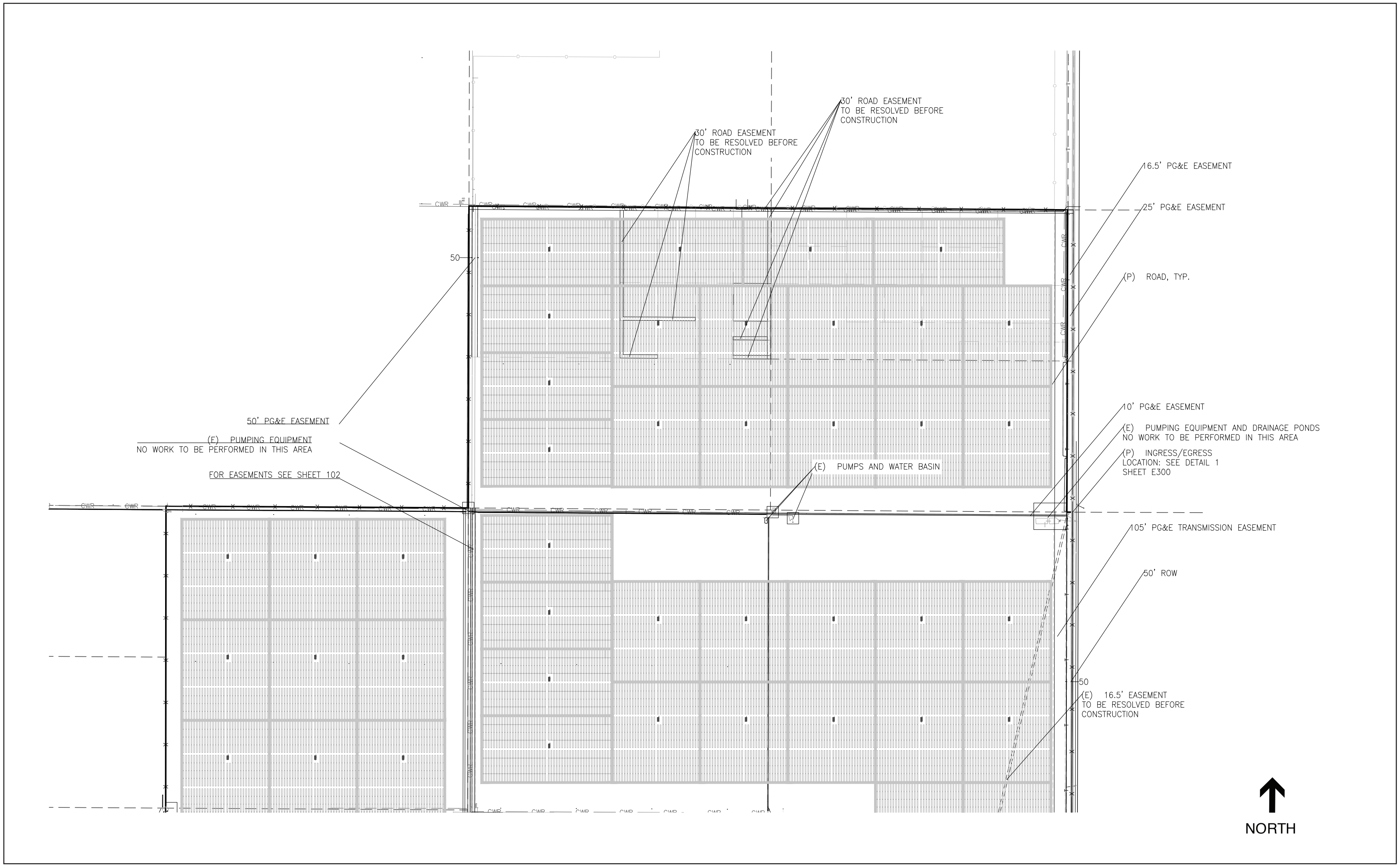
SOURCE: EC&R Solar Development, LLC

Fifth Standard Solar Project Complex . 120251

Figure 5

Plot Plan – Entire Site

EXHIBIT A



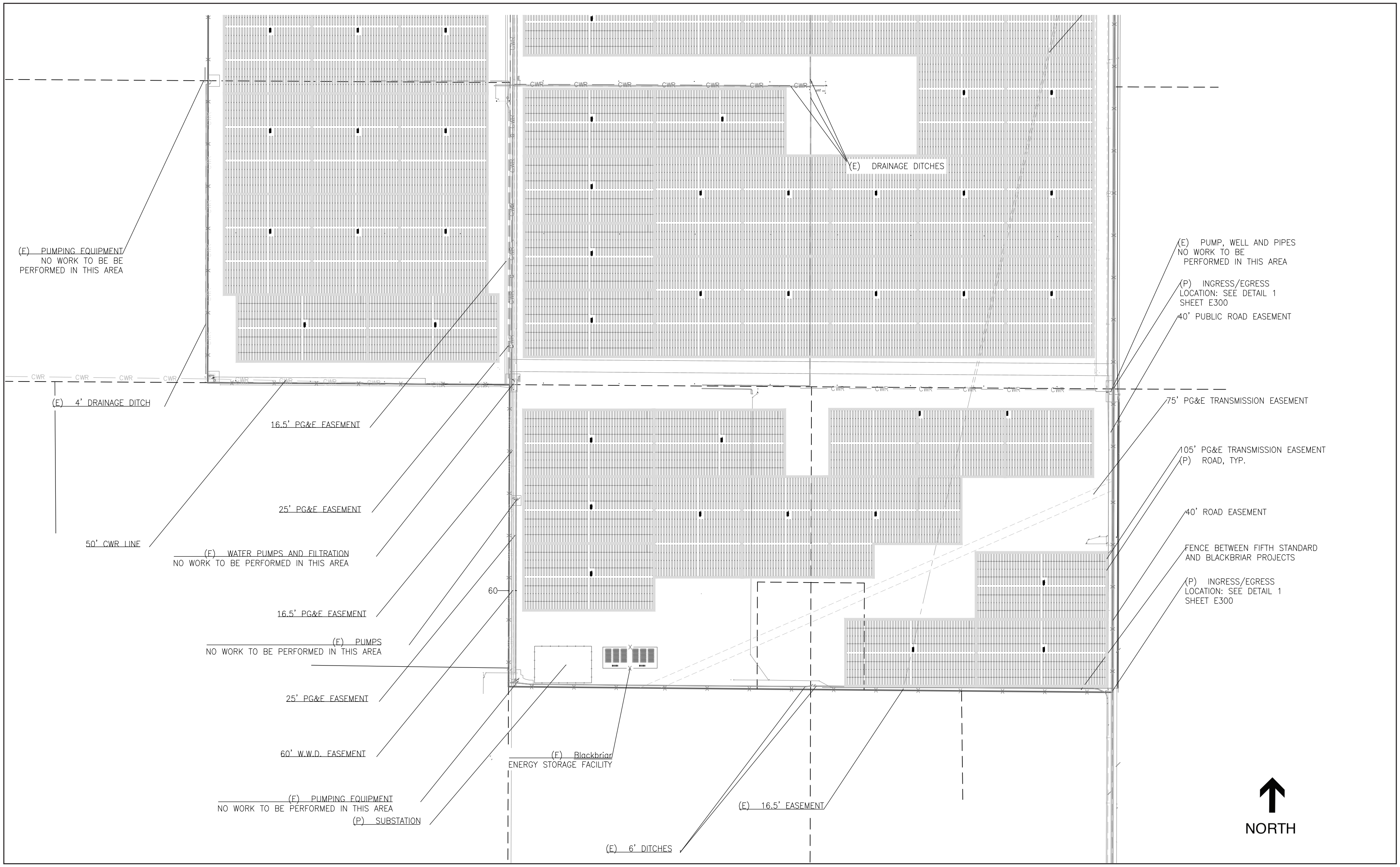
SOURCE: EC&R Solar Development, LLC

Fifth Standard Solar Project Complex . 120251

Figure 5 (continued)

Plot Plan - Northern Half of Site at Larger Scale

EXHIBIT A



SOURCE: EC&R Solar Development, LLC

Fifth Standard Solar Project Complex . 120251

Figure 5 (continued)

Plot Plan - Southern Half of Site at Larger Scale

Major components of the Project include solar PV panels and arrays; a tracker system; an onsite substation, an electrical interconnection system, and an energy storage facility (most likely utilizing batteries). These and other associated Project features are described in more detail below.

3.4.1 Photovoltaic Panels

The Project would primarily consist of PV module arrays that would generate electricity directly from sunlight. Each module, or solar panel, could measure from 44 inches to 75 inches tall and from 22 inches to 44 inches wide, depending upon final module selection. Modules would be mounted onto racking systems and arranged in north-south rows across the site. A single-axis tracking system would move each row of modules throughout the day, tracking the sun from east to west, since electricity generation is maximized when PV modules directly face the sun. Electricity generated at the arrays would be collected and delivered to the Project substation.

The total number of modules or panels would depend on the technology selected, an optimized layout, and a detailed design that takes landscape features, drainage considerations, and maintenance access into account. Thin-film PV module technology or crystalline silicon PV module technology, or both, may be incorporated into the Project.

Manufacture of the PV modules would be completed offsite and transported to the Project site. Although selection of the module has not been finalized, the general characteristics of the PV modules are that they would be covered with dark, high-light-absorbing, low-reflective glass, and would be mounted on a corrosion-resistant metal racking system.

3.4.2 Modular Power Block, Cabling and Connections

The solar panel array would contain individual modular power blocks. Individual PV panels and rows would be electrically connected together in series to carry direct current (DC) electricity. Multiple DC strings would be wired into an aboveground combiner box to merge the strings into a single high-current cable. From the combiner boxes, the cabling would be installed above ground in cable trays and underground approximately 3 feet deep to inverters mounted on small concrete pads distributed across the Project site. The inverters would change the DC output from the combiner boxes to alternating current (AC) electricity. Next, the AC electricity for the modular power block would be increased to medium voltage with a standard “step-up” transformer. The medium voltage cabling would create multiple collection circuits that would carry the electricity from the modular power blocks to the Project substation. The medium voltage collection circuits would be installed underground or on overhead poles to the substation.

The DC cable system would be laid in above-ground metal trays measuring approximately 6 inches by 6 inches running the length of the tracker rows. DC cables would exit the arrays and run in underground trenches from the arrays to inverter skids and a step-up transformer. The inverter skids would be sized and spaced according to final design and engineering requirements, with a typical skid including two to four inverters to serve up to 4 MW. The Project would use 100 to 200 inverters. The skids would be placed on a concrete foundation measuring 30 feet by

10 feet. The top of the equipment would be approximately 10 feet above the ground. There would be one such skid and foundation for each modular power block.

3.4.3 Tracker Unit

Each modular power block is typically comprised of individual tracker units. The tracker units would contain the rows of solar PV panels running in the north-south direction. The tracker units would rotate the rows of solar PV panels from east to west throughout the day, following the sun to maximize exposure to sunlight and electrical output. The rows of each tracker unit would be linked together and rotated in unison by an industrial-grade system controller and drive unit. The tracker units would include seven major components, described below:

Drive Unit. Multiple rows may be rotated with a single drive unit, or each row may be provided with its own drive. In the first scenario, multiple rows of solar PV panels would be linked by a steel drive strut, which would be oriented perpendicular to the axis of rotation. Each row would be connected to the drive strut by a torque arm, which acts as a lever, enabling the drive strut to rotate the rows together as the drive unit moves the drive strut forward and backward. The drive unit typically is mounted at the first row in a tracker unit, and consists of a bi-directional AC motor that rotates the drive strut. The drive unit would be connected to an industrial-grade variable-frequency drive that translates commands from the control computer into AC voltage that applies power to the motor, and to the drive strut and the rows.

In the other tracking system, a motor would be mounted in the middle of each row, and there would be no drive components spanning multiple rows.

Tracker Controller. The tracker controller is a self-contained industrial-grade control computer that would incorporate all of the software needed to operate the system. The controller would include a liquid crystal display (LCD) monitor that displays a combination of calibration parameters and status values, providing field personnel with a user-friendly configuration and diagnostic interface. The LCD would enable field adjustment, calibration, and testing.

PV Panels. The system would incorporate commercially-available Underwriters Laboratory (UL)-listed solar PV panels, as described above. Due to the limited rotation angles and generally flat topography in the area surrounding the Project site, the solar PV panels have no potential for reflecting the sun’s rays upon any ground-based observer offsite. These panels would be protected from impact by tempered glass and would have factory applied ultraviolet- and weather-resistant “quick connect” wire connectors.

Steel Tracking Structure. The steel tracking structure would be able to withstand high-wind conditions, site-specific wind gust and aerodynamic pressure effects, and seismic events, as required by applicable codes. The frame would be elevated to approximately 3 to 7 feet above the ground and would consist of long, horizontal beams atop vertical piles.

DC-AC Inverter. The inverter would change the electrical current from DC, which is produced in the solar cells, to AC, which is delivered to the transmission system.

Combiner Boxes. Combiner boxes would merge the DC module wiring into a single high-current cable.

Data Acquisition System. Integrated with the inverter, this system is made up of multiple components including a data logger and sensors to record AC power output. Other integrated components include equipment to record weather conditions, including ambient temperature measured in degrees Celsius (°C), incoming solar radiation measured in watts per square meter (W/m^2), and wind speed measured in meters per second (m/s). The Data Acquisition System enables system data transfer and performance monitoring, either locally or remotely.

3.4.4 Onsite Substation

The Project would include a single onsite substation, located in the southwest corner of the Project site (Figure 2). The substation dimensions would be approximately 500 feet by 320 feet. The substation would collect the medium voltage circuits that carry power from the Fifth Standard Solar, Stonecrop, and Blackbriar facilities and would contain metering equipment, switchgear, a series of fuses and circuit breakers that act as protective relays, as well as a transformer to step-up the voltage to match the voltage of the local transmission grid.

3.4.5 Electrical Interconnection

The Project would require the construction of a new 230-kV overhead gen-tie line, which would extend from the Project substation at the southwestern corner of the site. APN 075-070-34S of the Project site and PG&E-owned parcel 075-060-45SU share a common border for a distance of approximately 163 feet. EC&R has begun discussions with PG&E regarding this component of the Project. The Project gen-tie would be designed to pass from the Project site to PG&E property at this boundary, thus eliminating the need for additional easements from other private landowners.

3.4.6 Telecommunications

The Project would be designed to employ a Supervisory Control and Data Acquisition (SCADA) system. The SCADA would allow remote monitoring of the Project's operation, as well as remote operations of its critical control components. Access to the Project's SCADA system would be accomplished with wireless and/or hard-wired connections to locally available commercial service providers, i.e., a Local Exchange Carrier.

3.4.7 Meteorological Data Collection System

The Project would include a meteorological data collection system (weather station). Various sensors at the station would measure three different types of solar radiation, wind speed, wind direction, temperature, humidity, and precipitation. Data from each sensor would be collected by the station's data-logger, as well as transmitted to the Project's SCADA system for monitoring and reporting purposes.

A mobile weather station mounted on a small, flatbed trailer would likely be installed during the Project development phase. This mobile version of the station would be replaced by a permanent, ground-mounted version during Project construction.

3.4.8 Energy Storage Facility

Storage systems can assist grid operators in more effectively integrating intermittent renewable resources into the statewide grid and can assist utilities in their efforts to meet energy storage goals mandated by the California Public Utilities Commission. A 20 MW energy storage facility with a four-hour discharge duration would be constructed on the Project site. The storage system would consist of battery or flywheel banks housed in enclosures, as well as buried electrical conduit. The system would be located near the Project substation. Enclosures measuring 40 feet by 8 feet by 8.5 feet high would be installed on concrete pads designed for secondary containment, utilizing up to 5 acres of the Project site. Sixty to 70 enclosures are expected to be required, although more or less may be used, depending on the final technology selected. Transformers and HVAC systems are required and may be located either within or external to the enclosures. Alternatively, one to two buildings (rather than multiple, smaller containers) could be installed to house all of the energy storage components. The Project could use any commercially available battery technology, including but not limited to lithium ion, sodium sulfur, sodium hydride or nickel hydride.

3.4.9 Site Access and Roads

Access roads would be developed for ingress and egress to the Project site, to individual Project components, and between the solar array rows to facilitate installation, maintenance, and cleaning of the solar panels.

Primary access roads, running from the site entrance to the Project substation and to the individual facilities, as well as a perimeter road, are proposed to be graveled. Approximately 4 to 8 inches of Class 2 aggregate base would be added and compacted. The roads providing access to the inverter equipment pads would be 12 feet wide and would be sufficient for California Department of Forest and Fire Protection (CALFIRE) access (Fresno County Fire Protection District has a contract with the CALFIRE Fresno-Kings Unit for the provision of emergency services). The perimeter roads would: (i) provide a fire buffer, (ii) accommodate Project operation and maintenance (O&M) activities, and (iii) also facilitate onsite circulation for emergency vehicles. Perimeter roads would be 12 feet wide.

Additional access roads providing access to PV arrays for O&M activities would be comprised of compacted earth. For these roads, the ground would be grubbed (cleared of vegetation), scarified (loosened up), moisture conditioned, compacted, and graded with a crown in the center and a swale on the side.

Primary access to the Project site would be via Lassen Avenue. The entrance road would be improved to the following standard: 24 feet wide, two 10-foot travel lanes with two 2-foot shoulders, and an aggregate base surface. During decommissioning of the facility, it is anticipated that the same access roads would be used for removal of the facility components.

3.4.10 Lighting

Motion-sensitive directional lights would be installed to provide security and approach lighting for the substation and control-equipment enclosure or building. Manually controlled lighting would be installed for O&M activities at other Project locations, such as inverter and intermediate transformer locations. All lighting would be shielded and/or directed downward in order to minimize the potential for glare or spillover onto adjacent properties, and would meet applicable rules and code requirements for outdoor lighting. Project lighting would be in use as determined by the motion sensors, security requirements, prudent utility practices, and/or as necessary for O&M activities.

3.4.11 Security and Safety

As necessary for public safety and site security, the Applicant would install a 6- to 8-foot-high fence around the perimeter of the Project site. Landscaping may be installed at key locations to minimize visibility of Project facilities and infrastructure from outside vantage points.

Signage for safety and identification would be posted around the perimeter of the Project site. The Applicant would post all signs required by all jurisdictions with authority. All signage would conform to Fresno County signage requirements.

To ensure appropriate fire safety onsite, the Applicant would coordinate with the California Office of the State Fire Marshall (which is within CALFIRE) and the Fresno County Fire Protection District to provide appropriate PV training to fire responders, as well as to construction, operational, and maintenance staff. The intent of this training would be to familiarize both responders and workers with the codes, regulations, associated hazards, and mitigation processes related to solar power plants. To limit fire risk, maintenance would include the management and removal, as needed, of combustible vegetation on and around the Project site boundary. The Project site’s perimeter roads would also act as fire breaks. The Applicant would coordinate with the Fresno County Fire Protection District in the development of an Emergency Action Plan for the Project site.

Combustible materials within and around the Project boundary, including vegetation, would be actively managed by O&M personnel to minimize fire risks. Management of vegetation, in combination with the onsite, 12-foot-wide access roads would limit paths of any potential onsite fires. The Applicant would coordinate with the Fresno County Fire Protection District during development of an Emergency Action Plan for the site.

3.4.12 Storm Water Protection

As the Project would result in disturbance of an area greater than 1 acre, the Applicant would be required to enroll, under the State Construction General Permit, for the National Pollution

Discharge Elimination System program as there are several potentially-jurisdictional aquatic features located on the eastern fringe of the Project site, including an agricultural pond located immediately adjacent to Lassen Ave. To enroll under this permit, the Applicant would prepare a Storm Water Pollution Prevention Plan (SWPPP) that details Project information; monitoring and reporting procedures; and Best Management Practices (BMPs) (such as dewatering procedures, storm water runoff quality control measures, and concrete waste management, as necessary). The SWPPP must include measures to ensure that all pollutants and their sources are controlled; non-storm water discharges are identified and either eliminated, controlled, or treated; site BMPs are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges; and BMPs installed to reduce or eliminate pollutants after construction are completed and maintained. The SWPPP would be based on final engineering design and would include all Project components.

3.4.13 Testing and Energizing

Prior to commencement of commercial operations, commissioning and start-up activities would include testing, calibration, and any necessary troubleshooting, of all substation equipment, inverters, electricity collection systems, energy storage systems, and PV array systems. Initial equipment energization would occur upon completion of successful testing.

3.5 Project Construction

3.5.1 Schedule

Construction of the Project facilities would occur over 11 to 12 consecutive months, with an expected start in early 2019 and an anticipated completion by the end of December 2019. Within this timeframe, construction of the three individual facilities would occur according to the following schedule:

- Blackbriar Energy Storage Facility: Construction of Blackbriar is expected to begin in February 2019 and to be complete by June 2019.
- Fifth Standard Solar: Construction of Fifth Standard Solar is expected to begin in April 2019, occur simultaneously with Blackbriar construction for several months, continue beyond the completion of Blackbriar and be complete by December 2019.
- Stonecrop Solar: Construction of Stonecrop would begin after completion of Blackbriar but prior to the completion of Fifth Standard, thus running concurrently with Fifth Standard construction. Stonecrop construction is expected to begin in August 2019 and to be complete at the same time as Fifth Standard, or in December 2019.

3.5.2 Pre-Construction Activities

Pre-construction activities would comprise activities to prepare the Project site for construction, including site surveying, vegetation clearance, and grading. The Project site would be secured with the installation of chain-link fencing and gates around the site perimeter and staging and laydown areas.

During grading, erosion prevention measures would be implemented—including separation of topsoil, where topsoil is separated and stockpiled separately from subsoil and stabilized—to prevent erosion. When Project construction is complete, stripped subsoil and topsoil would be replaced as required. Other erosion and sediment control measures would include watering for dust control and soil compaction during grading and throughout construction activities. Erosion control designs for the Project would be prepared by a registered Civil Engineer in conformance with industry standards. As described in Section 3.4.12, a SWPPP would be prepared outlining the various BMPs. The erosion control plans would specify the implementation of typical erosion control devices including straw wattles, check dams, fabric blankets, and silt fencing. All erosion control materials would be biodegradable and natural fiber. Grading would be minimized as much as possible. The Project would be constructed to follow the existing topography of the Project site as much as possible to limit erosion potential and maintain existing drainage patterns.

Construction of the Project would require temporary staging and storage areas for materials and equipment during the construction process. Construction laydown and staging areas would be located within the Project site and secured by temporary, free standing chain-link fence for the duration of construction activities. Following construction, laydown and staging areas would be fully restored to as close to pre-construction conditions as possible.

Temporary and permanent site roadways would be graded and compacted prior to road construction. Final site preparation activities would comprise compaction of pad sites/foundations for the substation, inverter, and control room.

3.5.3 Construction Activities

Panels and Trackers

Solar PV panels would be manufactured offsite and shipped to the site ready for installation. Concrete pads for the drive motors would be poured using concrete from an offsite local batch plant, located within approximately 15 miles of the Project site, and electrical equipment for the array would be set in place.

Trackers would be mounted on support posts up to 18 feet long. This installation would occur by vibratory post driving, which involves inserting a steel pipe into the ground using a hydraulic vibratory post driver. The pipe would be approximately 5 inches in diameter and 18 feet in length. The posts would be set so that approximately 4.5 feet of the post would remain above grade. No blasting or rock breaking is anticipated to occur during Project construction. Small truck-mounted cranes or grade-all forklifts would move materials through the Project site and support tracker construction. Array construction would include small all-terrain vehicles to transport materials and workers on access roads and array aisles.

The process and procedures for installation of the racking system and assembly of modules would be driven by final engineering design details, but would generally include these steps:

- Installation of support standards or anchors using a hydraulic/vibratory technique, or assembly of skid system at central location, as required/necessary, for selected racking system
- Installation of any specified tracking system components
- Installation of galvanized metal racking system
- Mounting of PV solar modules to racking system
- Installation of the PV solar module strings' wire harnesses and associated hardware
- Installation of the inverters and equipment control enclosures
- Installation of the DC collector wires from string locations to inverter locations
- Installation of cable from the inverters to the Project substation
- Construction of the substation
- Construction of PG&E Transmission System interconnection facilities
- Installation and interconnection of the communications system
- Connection to local fiber optic and/or telephone network
- Installation of meteorological stations
- Final installation of site roadways upon placement of all necessary underground components

Substation

Construction work within the substation footprint would include site preparation and installation of substructures and electrical equipment. The area would be initially cleared and graded and security fenced for the duration of substation construction. Underground Service Alert would be contacted to mark the locations of existing buried utilities in the vicinity. The substation would be constructed with conventional grading and construction equipment; grading would be minimal as would minor excavation needed to provide concrete footings for the substation equipment. The substation area would be graveled with crushed rock for grounding and employee safety purposes.

3.5.4 Construction Equipment and Personnel

During construction, a variety of equipment and vehicles would be operating on the Project site. **Table 2** provides a list of the type and number of equipment and vehicles expected for construction of each of the Project components. Construction equipment would generally operate between the hours of 7 a.m. and 7 p.m., Monday through Saturday. Nighttime and weekend construction work is not expected to be required, but may occur on occasion, depending on schedule considerations.

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TABLE 2
CONSTRUCTION PHASING AND
CONSTRUCTION-RELATED EMPLOYMENT

Construction Element	Construction Phase				
	Site Preparation	Grading/ Excavation	Drainage/Utilities/ Sub-Grade	Construction	Paving
Maximum Number of Workers	50	50	100	200	20
Length of Phase (work days)	12	31	31	310	22

Construction phases of the Project are expected to overlap, and the number of construction workers on site expected to range between 20 and 300 workers per day, with the peak number of workers onsite during months 8 and 9. Workers would commute to and from the Project site on a daily basis, at an average round-trip distance of 30 miles. Local labor would be utilized to the maximum extent practicable.

TABLE 3
ON-SITE EQUIPMENT AND VEHICLE USE BY CONSTRUCTION PHASE

Equipment	Estimated Usage		
	Units	Hours/Day	Total Days
Phase 1: Site Preparation			
Tractors/Loaders/Backhoes	4	8	12
Plate Compactors	2	8	12
Crawler Tractors	2	8	12
Dumpers/Tenders	5	8	12
Forklifts	2	8	12
Generator Sets	4	8	12
Graders	2	8	12
Scraper	2	8	12
Skid Steer Loaders	2	8	12
Phase 2: Grading/Excavation			
Tractors/Loaders/Backhoes	4	8	31
Plate Compactors	2	8	31
Crawler Tractors	2	8	31
Dumpers/Tenders	5	8	31
Forklifts	2	8	31
Generator Sets	4	8	31
Graders	2	8	31
Rollers	2	8	31
Scraper	2	8	31
Skid Steer Loaders	2	8	31
Phase 3: Drainage/Utilities/Sub-Grade			
Tractors/Loaders/Backhoes	4	8	31
Plate Compactors	2	8	31
Crawler Tractors	2	8	31

TABLE 3 (Continued)
ON-SITE EQUIPMENT AND VEHICLE USE BY CONSTRUCTION PHASE

Equipment	Estimated Usage		
	Units	Hours/Day	Total Days
Phase 3: Drainage/Utilities/Sub-Grade (cont.)			
Dumpers/Tenders	5	8	31
Forklifts	2	8	31
Generator Sets	4	8	31
Graders	2	8	31
Scraper	2	8	31
Skid Steer Loaders	2	8	31
Phase 4: Construction			
Equipment	Estimated Usage		
	Units	Hours/Day	Total Days
Tractors/Loaders/Backhoes	7	8	310
Bore/Drill Rigs	10	8	310
Cement and Mortar Mixers	10	8	310
Concrete/Industrial Saws	3	4	310
Plate Compactors	1	8	310
Cranes	1	8	310
Dumpers/Tenders	5	8	310
Excavators	2	8	310
Forklifts	5	8	310
Generator Sets	4	8	310
Pavers	1	8	310
Paving Equipment	1	8	310
Rollers	1	8	310
Skid Steer Loaders	2	8	310
Trenchers	10	8	310
Phase 5: Paving			
Rollers	1	8	22

The majority of the labor force would come from nearby communities in Fresno County and Kings County. Parking for the construction workers would be in designated areas on the Project site. Carpooling for construction workers would be encouraged to reduce vehicle trips.

3.5.5 Traffic and Deliveries

Project construction traffic would primarily include the delivery of construction equipment, vehicles and materials, and daily construction worker trips. A majority of the equipment (e.g., solar PV panels, inverters, tracker steel, transmission poles, substation circuit breakers, and substation steel) would be delivered to the site in standard widths and lengths by trucks, vans or covered flatbed trailers. Substation equipment, inverter enclosures, and cranes would be delivered to the Project site on wide-load trailers. These trailers would require pilot cars and are expected to make up to two round trips during their installation period. The Applicant would facilitate materials delivery during off-peak traffic hours, and would comply with all California Department of Transportation permitting requirements if these loads are oversize.

3.5.6 Solid and Liquid Waste

During construction, the Project would involve the transport of general construction materials (e.g., concrete, aggregate, wood, metal, and fuel), as well as the materials necessary to construct the proposed PV and battery storage systems. Solid waste generated during construction would include debris such as concrete, wood, brick, glass, plastics, scrap metal, and similar material. Construction waste that is generated at the Project site would be sorted to separate recyclable and non-recyclable materials. It would be stored in dumpsters that would be serviced by a licensed solid waste hauler in the county. Non-hazardous construction debris that would be generated would be disposed of in local landfills in accordance with applicable regulations. Soils from drilling, trenching, or excavation would be screened and separated for use as backfill at the site of origin to the maximum extent possible.

A construction waste recycling program would be implemented, with the objective of recycling at least 50 percent of the Project waste (by weight). All solid construction wastes would be disposed of or recycled by qualified service providers. In order to accommodate directing of construction materials to proper end-point destinations, contractors and workers would be educated on waste sorting, appropriate recycling storage areas, and measures to reduce landfill waste.

Liquid (sanitary) wastes generated during Project construction are expected to range from 13 to 20 gallons per worker. Sanitary wastes would be contained in portable facilities, collected at least weekly, and disposed of at an offsite disposal or treatment facility. An onsite sewage system would not be constructed to treat sanitary wastes during construction.

Any hazardous wastes, in liquid or solid form, would be removed from the site by a licensed hazardous waste recycling or disposal firm.

3.5.7 Water Requirements and Supply

During Project construction, the primary use of water would be for dust control. Water would also be needed to moisture condition the soils for proper compaction at roads and foundations and for concrete mixing. During construction, especially during any grading activities, it is anticipated that up to 50,000 gallons of water would be needed on a daily basis. The total water volume used during construction may be up to 300 acre-feet.

The Project site currently has six wells, of which four are active. No new wells would be constructed as part of the Project. Construction water would be acquired from existing onsite wells.

3.6 Project Operation

3.6.1 Schedule

The solar modules at the site would operate during daylight hours seven days per week, 365 days per year. The energy storage facility could operate at any hour, but would typically operate no more than 4 hours at a time. The anticipated life of the Project would be 35 years.

3.6.2 Operations and Maintenance Activities

The plant manager and maintenance staff would perform inspections, covering each portion of the PV arrays, no less than once per month. Such inspections would be visual and at ground-level. Monthly visual inspections and annual (minimum) preventive maintenance would be performed. In accordance with Occupational Safety and Health Administration safety regulations, at least two qualified personnel would be present during all energized electrical maintenance activities at the facility. The plant manager and one technician would be onsite when such activities are required. During normal business hours when the plant manager and maintenance staff would be onsite, they would monitor the Project site to deter theft and vandalism. During all other times, offsite security personnel would monitor the Project site and provide rapid response to any incidents; visits to the site for emergency purposes are expected to occur infrequently, i.e. only a few times per year. Panel washing crews would conduct panel washing two to four times per year (as described below).

The proposed facility control and monitoring system would have two primary components: an onsite SCADA system and the accompanying sensor network. The onsite SCADA system would offer near real-time readings of the monitored devices, as well as control capabilities for the devices where applicable. Offsite monitoring/data trending systems would collect historical data for remote monitoring and analysis. The plant manager would use both onsite (local) and offsite (remote) O&M personnel to monitor the facility. Offsite personnel would be based at an existing facility, most likely in Fresno County but potentially elsewhere in California.

Local O&M personnel would use the local SCADA and monitoring system to monitor operation and control at the Project facilities. Personnel at a remote operations center would likely provide continuous monitoring coverage of the Project facilities and would respond to real-time alerts and system upsets using advanced monitoring applications. Panel washing would occur approximately two to three times per year, as needed, to clean the active surface of solar panels to optimize transmission of solar light and energy production.

The Applicant would provide landscape and related site maintenance throughout the life of the Project. This would include plant and landscape maintenance, replacement of trees or shrubs as needed, management of groundcover under the arrays, and appropriate disposal of any organic and inorganic materials used in the maintenance of the property. Non-hazardous solid waste would be collected for disposal by a licensed waste hauler and disposed of at municipal county landfills.

3.6.3 Equipment and Personnel

The full-time offsite staff for the Project is expected to consist of 1 site manager, 4 technicians, and 6 security personnel. Additional support personnel would be employed as needed. Occasionally, workers would be present at the Project site to undertake panel washing. Typical maintenance would be expected to require up to four full-time equivalent employees for panel washing. This would occur mainly during the summer months if winter rainfall is sufficient to wash the panels clean such that only a single cleaning would be required during the summer. If a winter is dry or soiling is greater than expected, more washing may be necessary with correspondingly higher staffing requirements.

3.6.4 Site Security

The Project site would be securely fenced along all perimeters with specified points of ingress and egress. In addition to the installation of a 6 to 8-foot chain-link galvanized metal fence topped with standard three-strand barbed wire, access gates to the Project site would remain locked when not in use. Offsite security personnel may be dispatched during nighttime hours or be onsite depending on security risks and operating needs.

The perimeter fence would be designed to allow ongoing movement of wildlife across the Project site. The bottom of the fence would be 5 inches above the ground on average along the entire perimeter, as measured from the top of the ground to the highest point of the bottom of the fence. Fence posts would be drilled and grouted, or driven pneumatically, depending upon site-specific soil characteristics. All fence posts will be capped to prevent the entrapment of birds and other wildlife. Final design specifications for the fence would be determined during detailed Project engineering. Vehicle access gates would be installed as necessary, with the gates to remain locked when not in use.

Security or operations personnel would be available for dispatch to the Project site 24 hours per day, 7 days a week.

3.6.5 Solid and Liquid Wastes

Operation and maintenance of the Project is not expected to generate hazardous waste on a recurring basis. The transformers proposed to be located at the Project substation would use mineral oil for cooling purposes, and certain battery technologies may include materials considered to be hazardous. Disposal of these materials, if required, would occur in accordance with applicable regulations. During normal operation, PV panels, batteries, and inverters would produce no waste.

Nonhazardous solid waste generated during operations would consist of paper, wood, plastic, cardboard, deactivated equipment and parts, defective or broken electrical materials, empty non-hazardous containers, and other miscellaneous solid wastes. Solid waste would be removed on a regular basis by the operator.

At the end of the Project life, the PV panels would be evaluated to determine their value in a secondary market. If not resold or repurposed, they would be recycled. The majority of the remaining Project components would be recycled. Equipment, such as drive controllers, inverters, transformers, and switchgear, can be either re-used or their components recycled. Poured concrete pads would be removed and recycled or reused as clean fill.

3.6.6 Water Requirements

During the life of the Project, the panels would be washed approximately two to three times per year to improve power production. Approximately 4 to 10 acre-feet per year of water would be needed for this use. No wastewater would be generated during panel washing because the water used would be absorbed into the soil or would evaporate. Water would also be consumed for dust mitigation if needed. In total, expected annual water consumption during operation would be less than 30 acre-feet per year. This consumption is compared to the roughly 3,000-4000 acre-feet for the same footprint of farmland for agricultural uses (Hanson, 2016). Similar to construction, water for operation would likely be obtained through existing onsite wells but could also be obtained from off-site sources if needed.

3.7 Decommissioning and Site Reclamation

When the Project ceases operation, the facilities would be decommissioned and dismantled and the Project site restored to a condition suitable for agricultural use. Decommissioning of the Project site would take approximately 12 months and would comprises removal of above-ground and below-ground structures; and site reclamation, including restoration of topsoil, revegetation, and seeding. Temporary erosion and sedimentation control BMPs would be implemented during the decommissioning phase of the Project. Decommissioning activities would consist of:

- Dismantling and removal of all above-ground equipment (solar panels, tracker units, transformers, substation, enclosures, etc.);
- Excavation and removal of all below-ground cabling;
- Removal of posts;
- Removal of roads;
- Break-up and removal of concrete pads and foundations;
- Scarification of compacted areas and re-grading of the Project site to pre-Project conditions.

Decommissioning of the Project would require similar water use as construction, due to water needs for dust control. Following decommissioning, the Project site would be returned to agricultural-ready use, and would thus require similar water use as existing conditions. Post-Project, it is expected that the Project site would continue in active agricultural use, which is the same as its pre-Project use, and the same as current use of adjacent parcels. To help with post-construction dust control, a re-vegetation plan would be developed and implemented to repair temporary disturbance from installation activities, and to be compatible with long-term site vegetation management.

In 2011, the Fresno County Board of Supervisors passed a new information requirement for Conditional Use Permits for solar generation facilities that involve agricultural lands. The Exhibit “A” Solar Facility Guidelines require discussion of nine topic areas, including the preparation of a Site Reclamation Plan to address issues of when and if the facility has reached its useful life and is either closed or decommissioned. Appendix C of this Conditional Use Permit Application addresses the requirements of the Fresno County Solar Guidelines.

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