

APPENDIX D
VISUAL IMPACT ASSESSMENT

DRAFT VISUAL IMPACT ASSESSMENT

**Janus Solar Project
Colusa County, California**



July 21, 2021

RWE
RWE Solar Development, LLC

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ACRONYMS AND ABBREVIATIONS

AC	alternating current
Applicant	Janus Solar PV, LLC
BESS	battery energy storage system
BLM	U.S. Bureau of Land Management
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
DC	direct current
gen-tie	generation tie
I-5	Interstate 5
KOP	key observation point
kV	kilovolt
O&M	operation and maintenance
PCS	power conditioning stations
PG&E	Pacific Gas and Electric Company
Project	Janus Solar Project
PV	photovoltaic
SR	State Route

1.0 OVERVIEW

Janus Solar PV, LLC (Applicant), a subsidiary of RWE Solar Development, LLC has applied to the Colusa County Department of Planning and Building for a Use Permit¹ to construct, operate, maintain, and decommission a photovoltaic (PV) electricity generating facility, with a battery energy storage system (BESS), and associated facilities and infrastructure, to be known as the Janus Solar Project (Project).

The Project would generate and store up to 80 megawatts alternating current (MW_{AC})² on approximately 1,024 acres of land, owned by a private landowner in unincorporated western Colusa County. To avoid environmental constraints, only approximately 768 acres of the 1,024-acre site would be used for the Project. The proposed BESS would extend the period of time each day that the Project could contribute PV-generated energy to the electrical grid. The Project would connect to the electrical grid at the existing Cortina Substation, which is owned and operated by Pacific Gas and Electric Company (PG&E), approximately 3 miles northeast of the Project site.

Tetra Tech, Inc. was retained by the Applicant to perform a Visual Impact Assessment for the Project. This Visual Impact Assessment was prepared to identify and evaluate the potential visual and aesthetic impacts associated with construction and operation of the Project.

¹ The Use Permit process allows the County to consider, in its discretion, uses that would be essential or desirable, but that are not allowed as a matter of right within a zoning district. Energy generation for off-site use is permitted within the Foothill Agriculture Zone with approval of a Use Permit.

² PV panel capacity general is measured in direct current watts; however, because the direct current output from panels must be converted to alternating current before being distributed on the electric grid, this Visual Impact Assessment reports expected capacity in terms of alternating current watts. Although preliminary estimates indicate that 80 megawatts alternating current would be the expected nominal generating capacity of the Project, the actual generating capacity would depend on the efficiency of the PV panels available at the time of construction and the layout and tracking technology approved.

2.0 PROJECT LOCATION AND SETTING

2.1 LOCATION

The Project site is located on private property in an area of Colusa County primarily used for cattle grazing (Figure 1). The Project is approximately 6.5 miles southwest of the city of Williams. State Route 20 runs about one mile from the Project site, north and west. The proposed Project would be located on three parcels totaling 1,023.9 acres of private property currently used for cattle grazing in Colusa County, California. The Project would connect to the Cortina Substation, located on Walnut Drive, approximately 3 miles northeast of the Project site. To interconnect the Project with the electrical grid, the Applicant would construct a new, 4.1-mile-long overhead, 60 kilovolt (kV) generation tie (gen-tie) line, partially located on the County's right-of-way on Walnut Drive and Spring Valley Road and partially on land administered by the United States Bureau of Reclamation (USBR), from the Project site to the point of interconnection (POI) at the Cortina Substation.

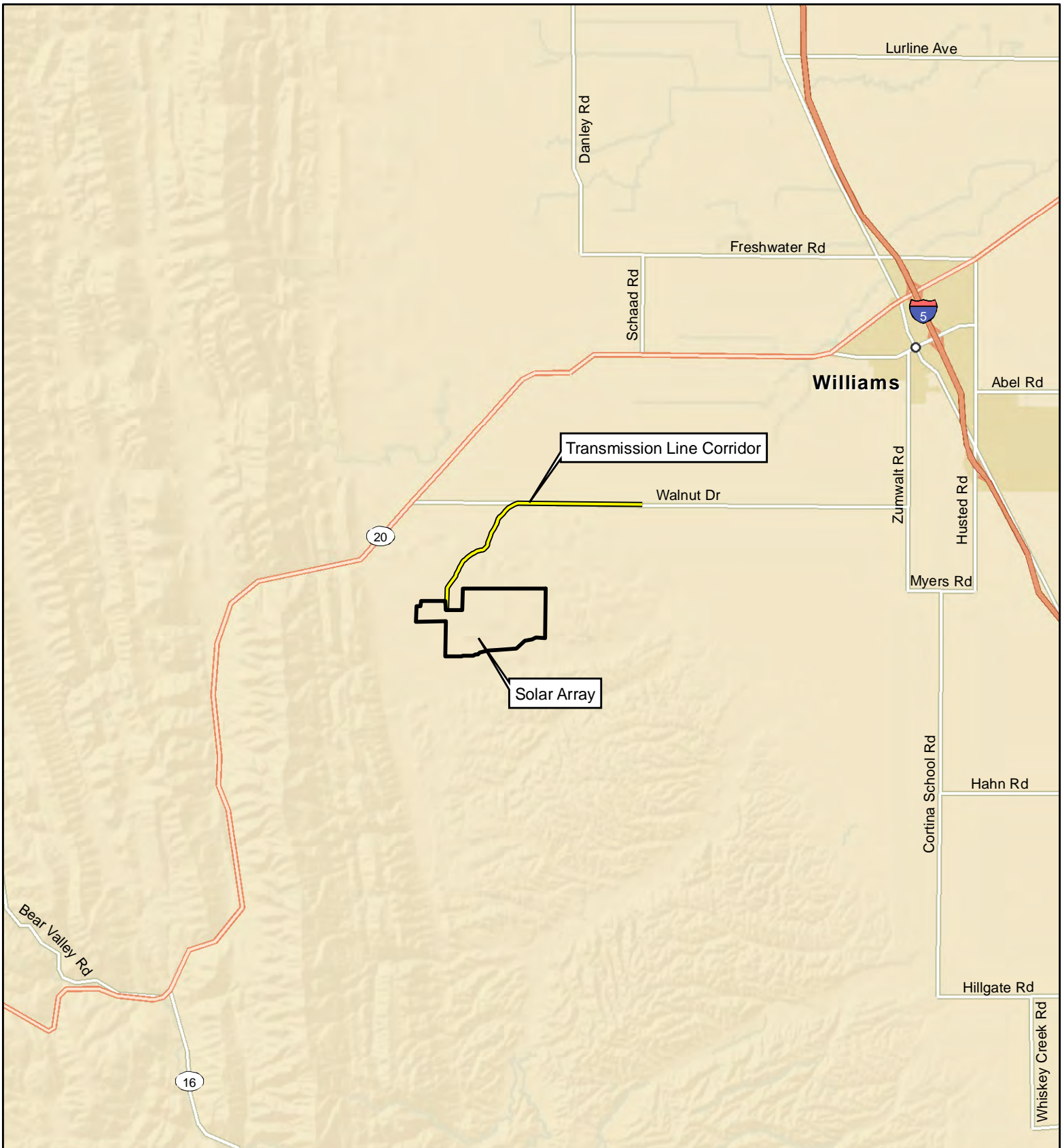
2.2 EXISTING SETTING

2.2.1 On-site Land Uses



The Project site consists of rangeland designated as Agriculture Upland in the Colusa County General Plan and zoned Foothill Agriculture (FA) by Colusa County. The gen-tie line from the Project site intersects land designated as Agriculture Upland and Agriculture General and zoned as FA and Exclusive Agriculture (EA). The Project site has also been deemed as Farmland of Local Importance by the California Department of Conservation. However, the Project site is not considered to be Prime or Unique Farmland.

2.2.2 Surrounding Land Uses

The surrounding land use is rural. Properties are currently being used for cattle grazing, agriculture, and open space. The closest residence is approximately 100 feet to the south of the Project site, and agricultural buildings occur to the west on the opposite side of Spring Valley Road.



Legend

-  Project Area: Solar Array
(also Area of Potential Significant Impact)
-  Project Area: Transmission Line Corridor
(also Area of Potential Significant Impact)



0 1 2 Miles

**Figure 1
Project Location**

Janus Solar Project
Colusa County, CA

3.0 PROJECT DESCRIPTION

3.1 DESCRIPTION OF THE PROJECT

The Project consists of three major components: a solar energy generating facility, a BESS, and the gen-tie line (Figure 2, *Site Plan*). The solar facility would include arrays of solar PV modules (or panels) and support structures, direct current (DC) electricity to alternating current (AC) electricity power inverters and transformers or power conditioning stations, and an on-site substation. Other solar facility components would include access roads, perimeter fences, telecommunications infrastructure, a meteorological data collection system, signage, lighting, stormwater facilities, and an operations and maintenance building. See Section 3.1.1 for details about the proposed solar facility.

Up to 5 acres of the solar facility site would be dedicated to the BESS. The BESS would be located adjacent to the on-site substation and contained within steel cabinets or housings. See Section 3.1.2 for details about the proposed BESS.

The on-site substation would connect to the existing Cortina Substation via an approximately 4.1-mile-long, 60 kV gen-tie line strung on approximately 59 new poles of up to 80 feet in height. The gen-tie line also would include fiber optic line for communications. See Section 3.1.3 for details about the gen-tie line that would connect the Project to the grid.

3.1.1 Solar Facility

Solar PV Generating Components

The solar facility would consist of PV solar modules (also known as panels) arranged into arrays supported by a racking system and tracker units that track the sun. A typical tracker section detail is provided in Figure 3. The PV modules on the trackers convert sunlight into electricity. When modules are mounted on tracking devices, they are referred to as trackers or tracker blocks. The trackers are organized in rows in a uniform grid pattern or solar array. The Project would include approximately 196,000 solar PV modules in multiple solar arrays interconnected to form a utility-scale PV system.

The modules may be constructed of glass encasing P-/N- type mono crystalline silicon, poly crystalline silicon, thin film or bifacial technology. Final panel selection would be determined at the detailed Project-engineering phase. The PV modules would be dark blue or black in color, with anti-reflection coating or minimal light reflection. A plastic binding material and metal frame would provide structural rigidity. The solar modules would be self-contained, durably constructed units designed to withstand exposure to the elements for a period of 35 years or longer. The solar modules would be electrically connected and grounded. The solar facility would be designed in accordance with local and state codes and regulations.

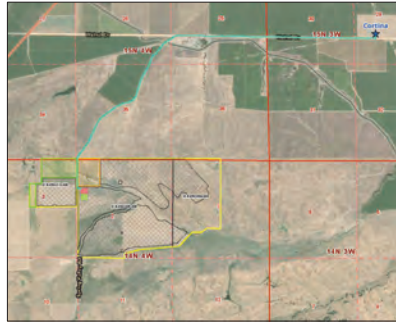
JANUS SOLAR PROJECT

Colusa County, CA

PROJECT SITE PLAN

Figure 2
Project Site Plan

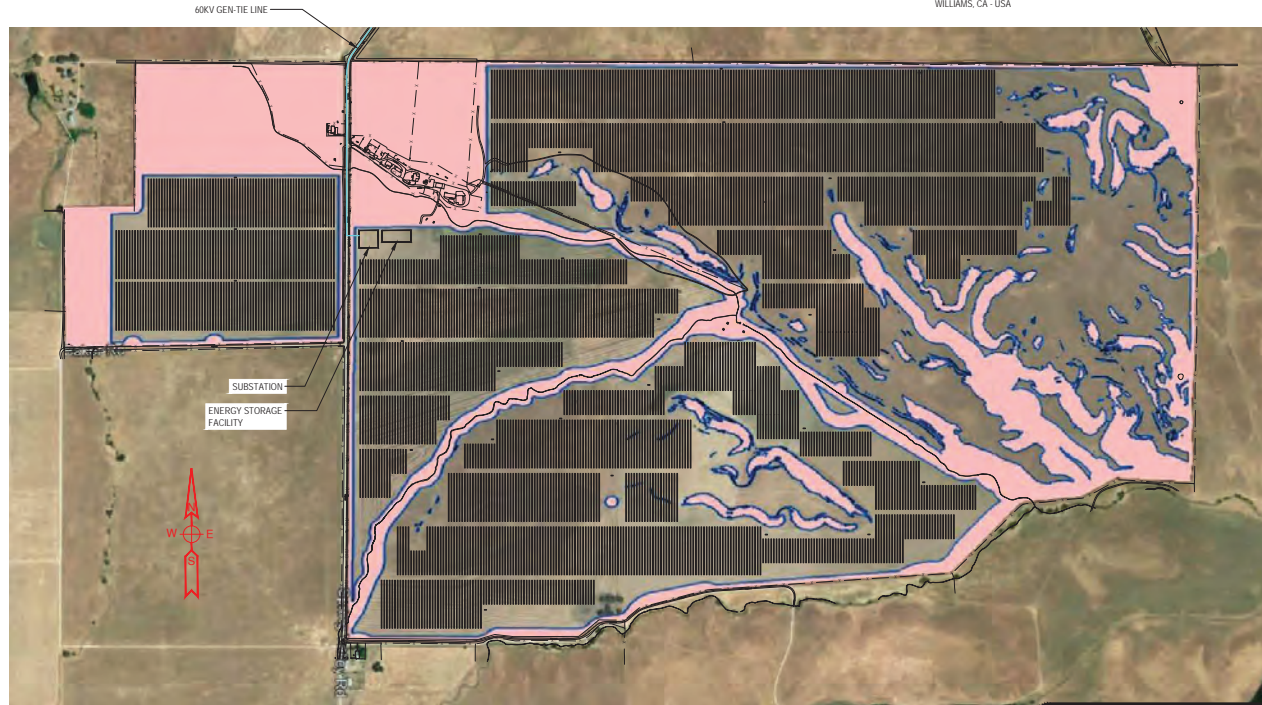
	Substation (Proposed POI)		Project Boundary
	Gen-Tie Line		Parcel
	Project Substation		Township
	Project BESS		Section
	Solar Panels		
	Owner Corral Area		
	Owner Retained Area		



SHEET INDEX	
SHEET #	SHEET NAME
E100	TITLE SHEET
E101	SITE PLAN SECTION 1
E102	SITE PLAN SECTION 2
E103	SITE PLAN SECTION 3
E104	SITE PLAN SECTION 4
E300	STANDARD DETAILS AND ELEVATIONS
E400	SINGLE LINE DIAGRAM
E500	SUBSTATION GENERAL ARRANGEMENT
E600	SUBSTATION ELEVATION
E700	BATTERY STORAGE

GENERAL NOTES	
SIGNAGE: SIGNS REQUIRED BY LOCAL AUTHORITIES WILL BE POSTED PER THE REQUIRED LOCATION, SIZE HEIGHT AND MATERIAL.	
LIGHTING: LIGHTING TO BE INSTALLED AT INGRESS AND EGRESS GATES AND AT STRATEGIC LOCATIONS AROUND THE FACILITY.	

PROJECT INFORMATION	
APPLICANT	JANUS SOLAR DEVELOPMENT, LLC
COLUSA COUNTY SECTIONS	T. 14 N. R. 4 W. M.D.B & M.
LAND TAX PARCEL/APN #	APN 018-050-013-000 APN 018-050-005-000 APN 018-050-006-000
PARCEL ACREAGE:	± 788 ACRES



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Source:
Janus Solar PV Project EIR Package,
05/07/21, E100,
Title Sheet,
Drawn by VGG SYSTEMS

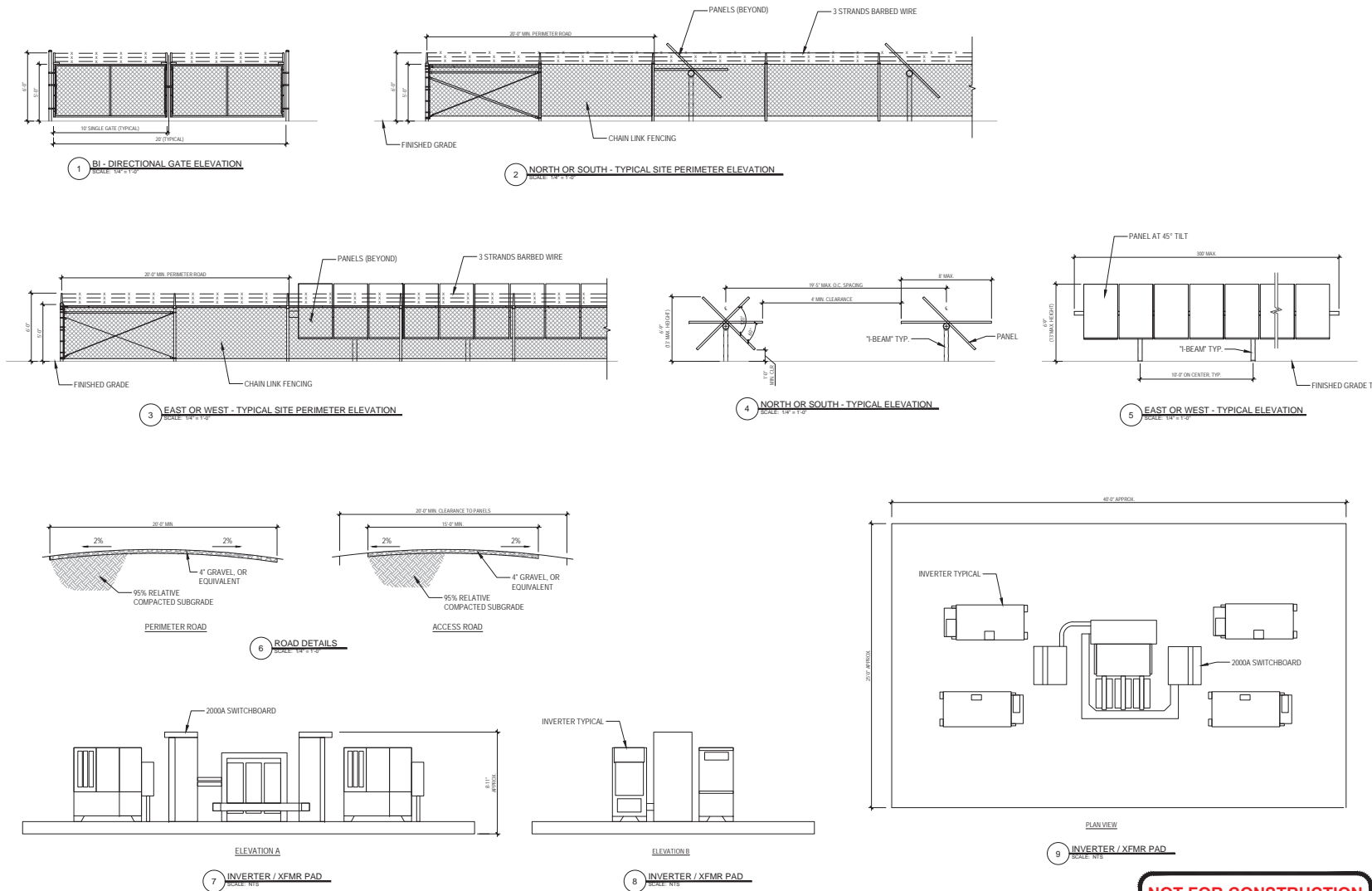
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STANDARD DETAILS AND ELEVATIONS

Figure 3
Standard Details and Elevations



Source:
Janus Solar PV Project EIR Package,
05/07/21, E300,
Standard Details and Elevations,
Drawn by VGG SYSTEMS

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The Project would utilize a single-axis tracking system designed to optimize power production of the modules by ensuring proper orientation to the sun both daily and seasonally. It captures more solar radiation and is more restrictive in the terrain slope or site constraints than a fixed tilt system. Metal piers driven into the ground by a pile-driving machine would support the single-axis tracking systems. Each tracking assembly would consist of eleven galvanized steel posts on which the frames for the PV modules rest. Each tracker would hold approximately 81 PV modules mounted on this metal framework structure and range between 6 and 13 feet above grade, depending on the topography. The trackers would be separated by sufficient distance to accommodate maintenance personnel and pursuant to design parameters that meet applicable Colusa County fire safety requirements.

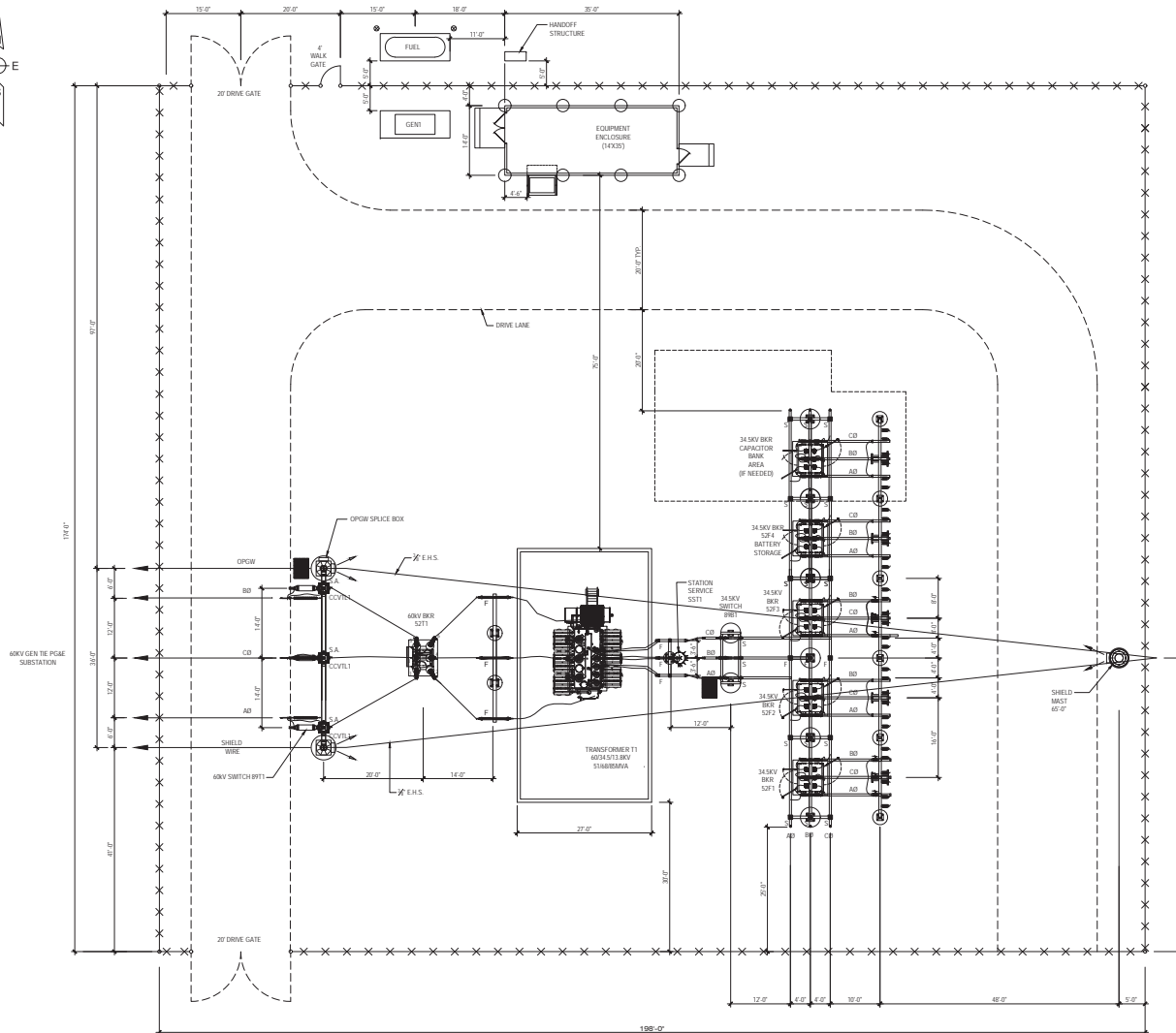
Individual PV tracker panels would be connected together in succession to create a “string” of trackers carrying DC electricity using a combiner box. Inverters in the power conditioning stations (PCS) would convert the DC electricity produced by the trackers to AC electricity. There are central or string PV inverters and separate battery inverters for an AC-coupled energy storage facility. Each PCS would consist of enclosed inverter stations and a transformer approximately 10 feet in height above grade set on concrete or steel foundations. An inverter skid elevation section (including the inverter, transformer, and switchgear) is shown in Figure 3. The PCS transformers then step-up the AC electricity to the appropriate collection level voltage (34.5 kV) for movement to the Project substation and eventual delivery to the electrical grid. The number of trackers connected to each of the PCSs would vary with module output relative to inverter size and desired output from the PCS.

The Project would require approximately multiple PCSs, depending on final design details. The number of trackers connected to each of the PCSs varies with tracker output relative to inverter size and desired output from the PCS. The PCSs would be placed strategically throughout the Project site.

Project Substation

A Project substation would be constructed in the northwest portion of the Project site; however, the final location is dependent upon final design. The substation would include a generator step-up transformer to increase the output voltage from the module blocks (34.5 kV) to the voltage of the 60-kV gen-tie line, protective relay and metering equipment, utility and customer revenue metering, lightning arrestor, disconnect, circuit breaker and a station service transformer that would provide power to the substation and its weatherproof control house. The overall footprint of the Project substation is anticipated to be approximately 3 acres with gen-tie structures up to 80 feet in height. An emergency generator for use in the event that the regional transmission system fails also would be at the substation; this emergency generator would provide emergency power until the regional transmission system restores operations. The generator would be powered by propane or diesel. A fuel tank would be immediately adjacent to the generator. Details about the substation (including a plan view and elevations of the substation, and an elevation of the control enclosure) are provided in Figures 4 and 5. The substation would have access to communication systems in the area to comply with Federal Energy Regulatory Commission/California Independent System Operator utility monitoring and control

requirements. Compliance may be accomplished by underground lines, aboveground lines, or wirelessly.



NOTES:

1. THE DRAWING IS FOR PRELIMINARY PURPOSE ONLY.
2. THE LAYOUT IS DEVELOPED USING PRELIMINARY EQUIPMENT SIZE AND ALL DIMENSIONS ARE APPROXIMATE.
3. RESULTS OF EASEMENT REPORTS, UNDERGROUND UTILITIES, HYDROLOGY AND GEOTECH REPORTS MIGHT AFFECT THE FINAL LAYOUT.
4. ACCESS ROADS AND DRIVEWAYS (TBD) WILL BE PROVIDED FOR UTILITY EQUIPMENT ACCESS.



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SUBSTATION LAYOUT

Figure 4
Substation Layout



Source:
Janus Solar PV Project EIR Package,
05/07/21, E500,
Substation General Arrangement,
Drawn by VGG SYSTEMS

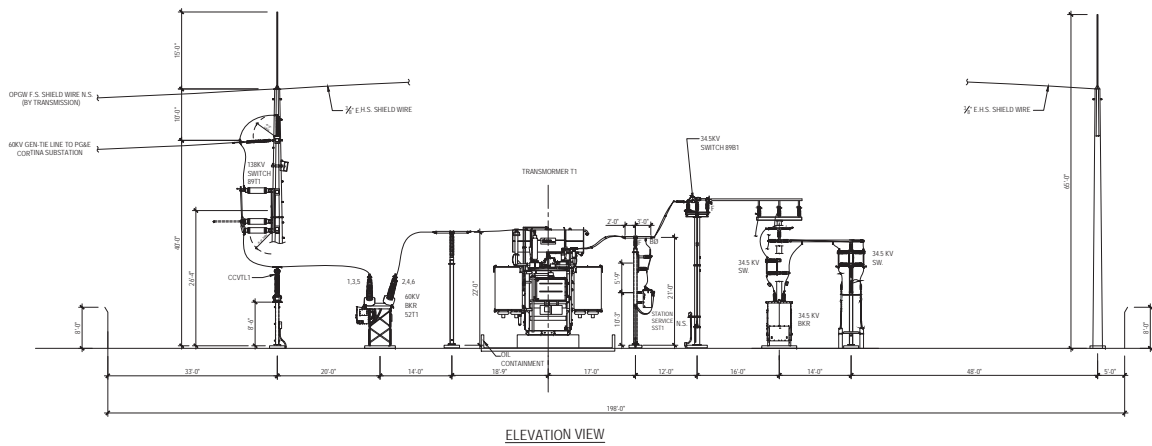
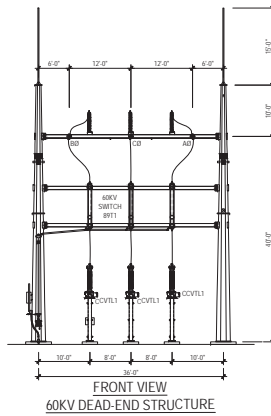
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**JANUS SOLAR
PROJECT**
Colusa County, CA

SUBSTATION
ELEVATION

Figure 5
Substation Elevation



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Source:
Janus Solar PV Project EIR Package,
05/07/21, E600,
Substation Elevation,
Drawn by VGG SYSTEMS

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Other Solar Facility Infrastructure

Operation and Maintenance Building

Operation and maintenance (O&M) activities would take place in an O&M structure located in the northwest portion of the solar facility site. The O&M facility would include office space and storage. There would also be portable toilets. Water would be trucked to the site. An equipment storage area and a gravel parking lot for employees, visitors, and emergency response vehicles would be located adjacent to the building, such that the entire O&M footprint would occupy an area up to 1 acre in size adjacent to the substation.

Meteorological Data Collection System

The Project would require several meteorological data collection systems. The systems would include a variety of instruments to collect meteorological data, which would be mounted at various locations throughout the facility. The meteorological data would be collected at the level of the solar panels or approximately 8-feet above ground level.

Telecommunications Facilities

The Project would require connection with the existing local telecommunication service. A telecommunication line would be comprised of fiber optic cable and/or a telephone line, which would be installed above and below ground, either attached to existing distribution lines or installed immediately adjacent to the Project substation. The telecommunication routes would use new poles and below ground installations. Below ground installations are usually installed 24-48 inches below grade. Aboveground lines are typically placed 6 feet below existing distribution lines or on new, adjacent wooden poles. Telecommunications may also be transmitted by a small wireless microwave antenna mounted on a pole up to 90 feet tall, which would be placed at the Project substation.

Fencing, Lighting, and Signage

Existing barbed wire fencing would be replaced with metal fencing 6–8 feet in height along the site perimeter as needed. The substation would be surrounded by a metal fence topped with barbed wire to comply with electrical codes.

Infrared security cameras, motion detectors, and/or other similar technology may be installed to allow for monitoring of the Project site through review of live, 24/7 footage. A security company also may be contracted by the Applicant for security purposes. Should the security system detect the presence of unauthorized personnel, a security representative would be dispatched to the Project site, and appropriate local authorities would be notified.

Project lighting would be installed to allow for maintenance and security. Lights would be installed at the substation. All lighting would be directed downward to minimize the potential for glare or spillover onto adjacent ownerships. All lighting would conform to applicable Colusa County outdoor lighting codes.

Project signage is proposed to allow for the identification of the Project owner and for safety and security purposes. Signage is proposed to be installed on the fence or ground mounted in the vicinity of the main entry gates. Signage would identify the Project operator and owner and

would provide emergency contact information. Small-scale signage also would be posted at the main entry gates and intermittently along the perimeter fencing on all exterior parcel boundaries, to indicate “No Trespassing” and “Private Property” for security purposes. All signage would conform to Colusa County signage requirements. No landscaping is proposed.

Access and Circulation

Access to the Project site would be via a main entrance on Spring Valley Road. An access gate would be provided at the site entry. Internal service roads would be built to access the Project, 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. Roads throughout the arrays would provide access to the inverter equipment pads and substation. The roads would be a minimum of 12 feet wide and would be sufficient for Colusa County and California Department of Forest and Fire Protection access.

3.1.2 Battery Energy Storage System

The BESS is expected to be located adjacent to the substation. Batteries would be contained within metal enclosures. The color of the metal enclosure typically varies by manufacturer and has not yet been determined. The maximum combined footprint for the BESS would be 5 acres. Key components of the BESS include batteries and battery storage system enclosures and controllers, converters, inverters, and transformers.

3.1.3 Generation Tie Line

Energy from the proposed solar arrays would be collected at the Project substation and transmitted to the existing PG&E-owned Cortina Substation. In order to interconnect the Project with the substation, the Applicant would construct a new 60 kV gen-tie line that would extend from the northeast corner of the Project site at the on-site substation, extending about 2 miles within the County’s right-of-way on Spring Valley Road to reach Walnut Drive. At Walnut Drive, the gen-tie line will collocate with Colusa County road right-of-way on existing, retrofitted or new poles to the point of interconnection at Cortina Substation. Along this route, the gen-tie line would cross the Colusa-Tehama Canal, administered by United States Bureau of Reclamation. The gen-tie line would include 59 tubular steel poles of up to 80 feet in height. The Applicant’s gen-tie construction would terminate at the PG&E Cortina Substation property line.

3.1.4 Construction

Project construction would consist of two major stages. The first stage would include site preparation, grading, and preparing staging areas and on-site access routes. The second stage would involve assembling the trackers and constructing electrical interconnection facilities. Construction is anticipated to begin in September 2022 with operation commencing in the third quarter of 2023. This analysis assumes that construction would occur during an 11-month period.

Grading and Site Preparation

Grubbing and grading would occur on the site to achieve the required surface conditions. Site preparation may include application of pre-emergent herbicides formulated to minimize impacts

on wildlife. Application would be in accordance with federal, state, and County regulations and would be applied by a state-licensed pesticide applicator.

Temporary Construction Facilities and Staging Areas

During construction, materials would be placed within the Project site boundaries adjacent to the then-current phase of construction. To prevent theft and vandalism, materials would be secured within fenced areas at all times. A storage container might be used to house tools and other construction equipment. Portable toilet facilities would be installed for use by construction workers. Waste disposal would occur in a permitted off-site facility.

Solar Facility Construction and Installation

On-site roads would be constructed per the recommendations of a site-specific geotechnical report with a durable surface or surfaced with compacted gravel. At the footing for the PCS pads, existing soil would be scarified and recompacted following recommendations of a Project-specific, site-specific geotechnical report to be prepared in late 2021.

Installing solar panels would require driving steel piles about 6 to 13 feet into the ground. In areas where the geotechnical analysis has determined that piles might not be feasible or cost-effective, conventional foundations (such as isolated spread foundations or continuous footings) might be used.

During construction, a variety of equipment and vehicles would operate on the Project site. All equipment and vehicles would comply with the noise requirements of the Colusa County General Plan Noise Standards.

Substation Construction

The Project substation would be separately fenced to provide increased security around the medium- and high-voltage electrical equipment. The substation area would be excavated, a copper grounding grid would be installed, and then the foundations for transformers and metal structures would be installed. The area first would be backfilled, compacted, and leveled, followed by an application of an aggregate rock base. Equipment would be installed and connected, including transformers, breakers, bus-work, and metal dead-end structures. The transformers contain an insulating oil. The oil tank would either be filled at the manufacturing facility and shipped to the Project site or the transformers could be shipped with the oil tank empty and filled on-site. The substation would have a site control center equipment building, which would house substation and plant control equipment, meters, battery or generator backup, and other electrical equipment which would be located in or next to the substation.

Operation and Maintenance Area

Operation and maintenance activities would take place in a new O&M structure anticipated to be located in the northwestern portion of the Project site, contingent upon final design. The driveway and parking area for the building would be compacted native soil and/or road base aggregate.

Battery Energy Storage System

Upon delivery of the BESS equipment to the Project site, a crane or forklift would be used to place the factory-assembled enclosures on steel pile, grade-beam, or concrete foundations located at the BESS facility location. The location for the facility would depend on final design. Each BESS would include power conditioning systems, electrical wiring, switching, and transformers and connect to the 34.5 kV bus in the Project substation. The electrical interconnection would be either underground or overhead, or a combination of both.

Generation Tie Line Construction and Stringing

Interconnecting the Project with the existing Cortina Substation would require new tubular steel poles of up to 80 feet in height. The precise locations of the new poles would be finalized during the Project's final design process. During construction, the location of each new pole would be surveyed and staked. Foundations for each pole would be constructed, the transmission poles erected, and transmission pole arms and insulators installed. After transmission pole installation occurs, conductor stringing and terminations would be performed to ensure that the new 60 kV gen-tie line is operating correctly. A fiber optic communication line may be strung overhead on the poles between the Project's on-site substation and the Cortina Substation.

Construction of the new transmission poles would require temporary construction areas at each new structure and at locations required for conductor stringing and pulling operations. Each stringing and pulling operation consist of a puller set-up positioned at one end and a tensioner set-up with wire reel stand truck positioned at the other end.

The dimensions of the area needed for the wire stringing set-ups associated with wire installation are variable and depend upon terrain. For this Project, these activities are expected to require an area of approximately 100-feet wide by 100-feet in length.

3.1.5 Decommissioning and Site Reclamation

The Project has an expected useful life of 35 years. It is expected to be operational in 2023 and to remain in operation through 2058. It is possible that the useful life of the Project could be extended through maintenance of existing equipment or with equipment replacement and could remain in operation beyond 2058 with further County review and approval. When operations at the site are terminated, the facility will be decommissioned. The Project site will be returned to a stable condition comparable to pre-Project conditions in accordance with applicable land use regulations in effect at that time.

Many components of the solar facility and BESS are recyclable. Panels typically consist of silicon, glass, and an aluminum frame. Tracking systems typically consist of steel and concrete, in addition to motors and control systems. All of these materials can be recycled. Numerous recyclers for the various materials to be used on the Project site operate in Colusa and other nearby counties. Metal, scrap equipment, and parts that do not have free-flowing oil can be sent for salvage. Equipment containing any free-flowing oil would be managed as waste and would require evaluation. Oil and lubricants removed from equipment would be managed as used oil, which is a hazardous waste in California.

3.1.6 Applicant Proposed Measures and Design Features

The Applicant proposes to take certain actions for the purpose of reducing the potential significance of anticipated environmental impacts of the Project. These measures are elements of the Project, either as a specific design feature or as a plan developed by the Applicant. Where the analysis of individual resources relies on these plans or design features to reduce anticipated effects, the relevant section so notes. By contrast, mitigation measures are not elements of the Project and are structured in accordance with the criteria in California Environmental Quality Act (CEQA) Guidelines Section 15370.

Solar Technology – Glare and Lighting

The Project would use solar panels that have a low profile (typically 6 feet high, but generally no more than 13 feet high at the highest point during the day) to minimize visual impacts. Solar panels are designed to be anti-reflective. Nighttime lighting impacts would be minimized by including only small lighting features that are equipped with on/off switches or motion detectors so that the amount of light emitted would be comparable to that emitted from domestic fixtures on local homes.

Wildlife-friendly Design Features

Fence posts would be capped to prevent potential entrapment of birds or other small species. Further, the design of new overhead transmission and communications lines and structures would follow the most recent Avian Power Line Interaction Committee guidance to reduce the potential for avian injury and mortality from collisions and electrocution. The proposed use of motion-activated security lighting (rather than lighting that would remain on from dusk to dawn) would reduce adverse impacts to nocturnal species, potentially including foraging, sheltering, mating and reproducing, communicating, and migrating behaviors.

Emergency Response Plan

An Emergency Response Plan would be prepared in order to train local emergency response personnel during development and operation of the facility. The Emergency Response Plan will be completed in accordance with existing state regulations (Health and Safety Code Section 25504(b); 19 California Code of Regulations Section 2731; 22 California Code of Regulations Section 66262.34(a)(4)). The contents of the Emergency Response Plan would comply with existing state regulations and include the following components:

- Developed in consultation with Fire Department and BESS supplier
- Defined roles and responsibilities
- Potential emergency scenarios including fire
- On-site training of fire personnel and on-site Project staff
- Training for local first responders, including monitoring of fire from a safe distance using infrared cameras until temperature of the affected enclosure cools to ambient temperature

Compliance with Applicable Laws and Standards

The Applicant would comply with all applicable laws and standards, including, but not limited to, those governing the use, storage, and disposal of hazardous materials; worker training and safe work practices; air quality, water quality, and BESS more generally. Similarly, site preparation and construction activities would be performed in accordance with a Stormwater Pollution Prevention Plan, or similar plan that incorporates stormwater best management practices to reduce the adverse effects of erosion and sedimentation, and herbicide would be applied by qualified personnel following product label instructions and applicable regulations. Compliance with these requirements would avoid or reduce potential adverse environmental impacts to soil, air quality, surface water and groundwater quality, human health, fire-related risk, and other environmental considerations.

3.2 METHODOLOGY

3.2.1 Visual Impact Criteria

For this analysis, the significance criteria outlined in Appendix G of the CEQA Guidelines, as amended, are applied to determine the Project's impact to existing visual resources. The CEQA-defined aesthetic issues of concern are:

- Would the proposed Project cause substantial, adverse effects on a scenic vista?
- Would the proposed Project cause substantial damage to scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway?
- In non-urbanized areas, would the proposed Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.)
- Would the proposed Project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

3.2.2 Visual Change Criteria

Visual impacts are generally defined in terms of a project's physical characteristics and potential visibility, as well as the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located. Tetra Tech, Inc. followed the contrast rating system used by the U.S. Bureau of Land Management (BLM) to objectively measure potential changes to the visual environment (BLM 1986). The BLM's contrast rating system is commonly used by federal agencies to assess potential visual resource impacts from proposed projects.

Potential visual impacts were characterized by determining the level of visual contrast introduced by the Project based on comparing existing conditions and photo simulations. Visual contrast is a means to evaluate the level of modification to existing landscape features. Existing landscape is defined by the visual characteristics (form, line, color, and texture) associated with the landform (including water), vegetation, and existing development. The level of visual contrast introduced by a project can be measured by changes in the visual characteristics that would occur as a result of project implementation. The greater the difference between the

character elements found within the existing landscape and with a proposed project, the more apparent the level of visual contrast. The following general criteria³ were used when evaluating the degree of contrast:

- *None* – The contrast is not visible or perceived.
- *Weak* – The contrast can be seen but does not attract attention.
- *Moderate* – The element contrast begins to attract attention and begins to dominate the characteristic landscape.
- *Strong* – The element contrast demands attention, would not be overlooked, and is dominant in the landscape.

3.2.3 Viewshed

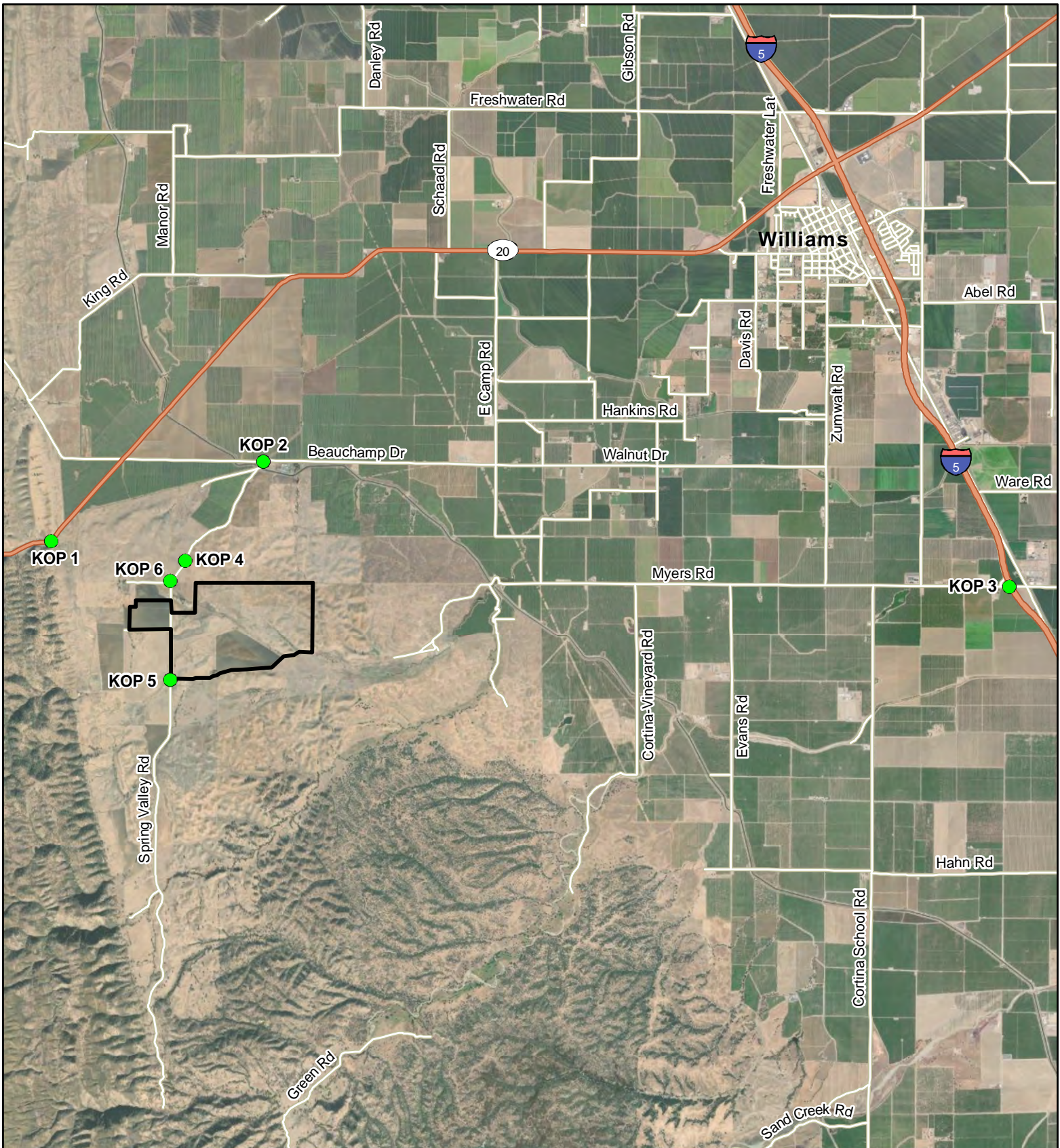
The viewshed is generally the area that is visible from an observer's viewpoint and includes the screening effects of intervening vegetation and/or physical structures. Although some portion of the Project site may be visible from a relatively large area, the degree of visibility would depend on distance and view angle. Generally, the Project site would be most visible from viewpoints within 1 mile, while site visibility would diminish as distance increases and view angle decreases. Air quality, including dust and other visible particulates, can affect visibility in the area. Distance is only one of the factors that determine visibility of a site from a viewpoint. Terrain, vegetation, and structural features can obscure views that might otherwise be available at a certain distance.

3.2.4 Key Observation Points



Key Observation Points (KOPs) were identified based on locations from which the Project infrastructure would potentially be visible and noticeable to the casual observer. The "casual observer" is considered an observer who is not actively looking or searching for the Project, but who is engaged in activities at locations with potential views of the Project, such as hiking or driving along a scenic road. If the Project infrastructure is not noticeable to the casual observer, visual impacts can be considered minor to negligible.

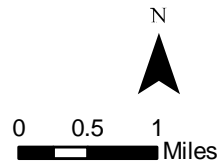
Six KOPs were selected as representative vantage points in the landscape that offer motorists traveling on area roadways and local residents' views of the proposed Project site (Figure 6). These KOPs provide views of each side of the Project site from publicly accessible areas.

³ These criteria are based on the BLM Visual Resource Management system, a process using the concept of "contrast" to objectively measure potential changes to the landscape features.



Legend

-  Project Area
-  Key Observation Point (KOP)



**Figure 6
Key Observation
Points**

Janus Solar Project
Colusa County, CA

Factors considered in the selection of KOPs included locations with sensitive viewers (e.g., local residences, motorists on nearby roadways) and potential for the Project site to be visible (e.g., distance and view angle). The KOPs were selected to capture representative vantages from Interstate 5 (I-5), local roadways, and residences.

Digital photographs were taken from the selected KOP locations to support the discussion on existing visual setting and the analysis of potential visual impacts associated with the proposed Project site (Figures 7 through 9). Photographs of existing conditions were taken on March 17, 2021 using a digital single-lens reflex Canon 5D Mark III camera.

3.2.5 Visual Simulations

Three-dimensional visual simulations from representative KOP photos were rendered to approximate the visual conditions resulting with Project implementation. Using the photographs acquired at each KOP, a three-dimensional physical massing model was created that incorporated the PV scale model, placed in array configurations as shown in Figure 2. The model was then georeferenced and placed on global positioning system–controlled site-specific photographs to create simulations that demonstrate visual changes from the Project. Figures 10 through 12 present simulated views of Project features.

4.0 ENVIRONMENTAL SETTING

4.1 REGIONAL CHARACTER

The Project is within the northwestern Sacramento Valley, which is part of the Great Central Valley Geomorphic Province (Beck and Haase 1974). The province is comprised of a large northwest trending alluvial plain situated between the Coast Ranges to the west and the Sierra Nevada Range to the east. Specifically, the Project is within the low eastern foothills of the Coast Ranges, situated in Spring Valley and near the foot of the Cortina Ridge east facing slope. The topography of the Project is slightly flat with undulating low foothills. A geographic feature, Bunker Hill, is located within the central portion of the Project. The elevation across the Project ranges from 240 to 328 feet above median sea level. Salt Creek is located near the southern Project boundary and an east to west trending ephemeral drainage (possibly a tributary of Spring Creek) crosses the southwest portion of the area of potential significant impact. The Project is roughly 12 miles west of the Sacramento River and is within the Colusa Basin Watershed which is part of the Sacramento National Wildlife Refuges Complex.

4.2 LOCAL SETTING

Elevation at the Project site ranges from approximately 44 to 101 meters. The Project site currently supports cattle grazing and grain cultivation. Vegetation on the Project site includes non-native grassland, cultivated grain fields, low growing herbaceous plants, and disturbed riparian areas and drainages with sparse native and non-native trees, as well as non-native cultivated tree rows along the proposed gen-tie.



Key Viewpoint plan

KOP 1: EXISTING CONDITIONS

Photograph Information

Time of photograph:	4:11pm
Date of photograph:	3/16/21
Weather condition:	Mostly Sunny
Viewing direction:	Southeast
Latitude:	39°6'28.12"N
Longitude:	122°18'20.09"W



KOP 2: EXISTING CONDITIONS

Photograph Information

Time of photograph:	3:33pm
Date of photograph:	3/16/21
Weather condition:	Mostly Sunny
Viewing direction:	South
Latitude:	39°07'12.69"N
Longitude:	122°15'44.95"W



JANUS SOLAR PROJECT

Colusa County, CA

EXISTING CONDITION

Figure 7
KOP 1 and KOP 2
Existing Conditions



Disclaimer: visualizations and plans are for reference only; Not for construction





Key Viewpoint plan

KOP 3: EXISTING CONDITIONS

Photograph Information

Time of photograph:	4:55pm
Date of photograph:	3/16/21
Weather condition:	Mostly Sunny
Viewing direction:	West
Latitude:	39°6'3.89"N
Longitude:	122°6'54.84"W



KOP 4: EXISTING CONDITIONS

Photograph Information

Time of photograph:	3:01pm
Date of photograph:	3/16/21
Weather condition:	Mostly Sunny
Viewing direction:	South
Latitude:	39°6'17.19"N
Longitude:	122°16'43.96"W



JANUS SOLAR PROJECT

Colusa County, CA

EXISTING CONDITION

Figure 8
KOP 3 and KOP 4
Existing Conditions



Disclaimer: visualizations and plans are for reference only; Not for construction



Key Viewpoint plan

KOP 5: EXISTING CONDITIONS

Photograph Information

Time of photograph:	12:47pm
Date of photograph:	3/16/21
Weather condition:	Sunny
Viewing direction:	North
Latitude:	39°05'11.75"N
Longitude:	122°16'54.41"W



KOP 6: EXISTING CONDITIONS

Photograph Information

Time of photograph:	11:07am
Date of photograph:	3/16/21
Weather condition:	Cloudy
Viewing direction:	East
Latitude:	39°6'5.94"N
Longitude:	122°16'54.43"W

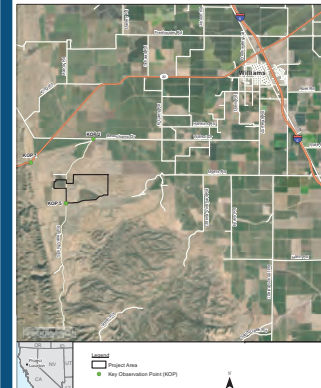


JANUS SOLAR PROJECT

Colusa County, CA

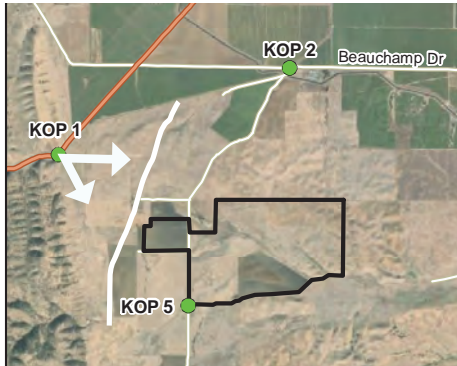
EXISTING CONDITION

Figure 9
KOP 5 and KOP 6
Existing Conditions



Disclaimer: visualizations and plans are for reference only; Not for construction





Key Viewpoint plan

EXISTING CONDITIONS



SIMULATED CONDITIONS

JANUS SOLAR PROJECT
Colusa County, CA

PHOTO
SIMULATION

Figure 10
Key Observation
Point 01:
State Highway 20

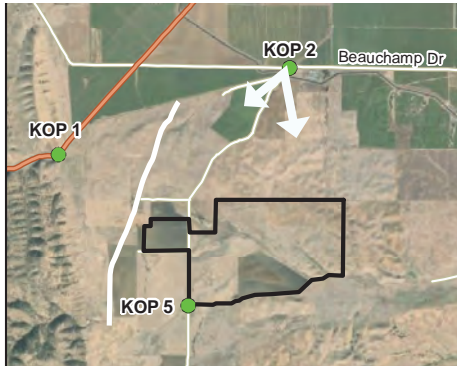


Photograph Information

Time of photograph:	4:11pm
Date of photograph:	3/16/21
Weather condition:	Mostly Sunny
Viewing direction:	Southeast
Latitude:	39°6'28.12"N
Longitude:	122°18'20.09"W

Disclaimer: visualizations and plans are for reference only; Not for construction





Key Viewpoint plan

EXISTING CONDITIONS



Project Area is obscured by existing terrain and vegetation, as indicated by yellow overlay

SIMULATED CONDITIONS



JANUS SOLAR PROJECT
Colusa County, CA

PHOTO
SIMULATION

Figure 11
Key Observation
Point 02:
Beauchamp Dr

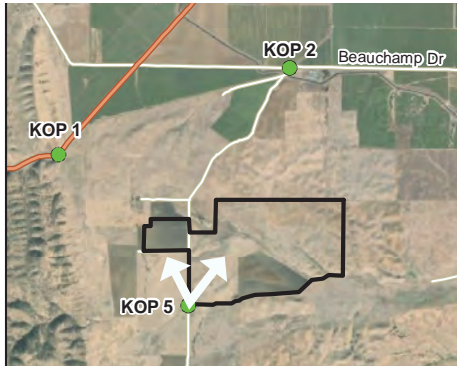


Photograph Information

Time of photograph:	3:33pm
Date of photograph:	3/16/21
Weather condition:	Mostly Sunny
Viewing direction:	South
Latitude:	39° 07' 12.69" N
Longitude:	122° 15' 44.95" W

Disclaimer: visualizations and plans are for reference only; Not for construction





Key Viewpoint plan

EXISTING CONDITIONS



SIMULATED CONDITIONS



JANUS SOLAR PROJECT
Colusa County, CA

PHOTO
SIMULATION

Figure 12
Key Observation
Point 05:
Spring Valley Rd



Photograph Information

Time of photograph:	12:47pm
Date of photograph:	3/16/21
Weather condition:	Sunny
Viewing direction:	North
Latitude:	39° 05' 11.75" N
Longitude:	122° 16' 54.41" W

Disclaimer: visualizations and plans are for reference only; Not for construction



4.3 SCENIC ROUTES / VISTA POINTS

According to the California Department of Transportation (Caltrans) Scenic Highway System Lists, there are no officially designated state scenic highways. There are two eligible sections of State Route (SR)-16 and SR-20 in Colusa County that are designated as eligible state scenic highways located approximately 6.5 miles from the Project site (Caltrans 2021). There are no Department of Transportation designated vista points on I-5 near the Project site (Caltrans 2018).

4.4 EXISTING VISUAL CHARACTER

Six KOPs were selected to assess the level of visual change resulting from the Project solar energy generation facility as described in Section 3, Project Description, on the existing environment. The location of the six KOPs are presented in Figure 6. The KOPs were selected to capture representative vantages from I-5 and Myers Road, SR-20, Beauchamp Drive, Spring Valley Road, and residences north and south of the Project site. Photographs from each KOP under existing conditions are presented in Figures 7 through 9.

4.4.1 Key Observation Point 1

KOP 1 is located on SR-20, approximately 1.1 miles northwest of the Project site. This KOP depicts views oriented southeast toward the Project site. As shown in Figure 7, the existing landscape setting is characterized by agricultural land relatively flat to moderately rolling terrain. Existing structural features include residences, agricultural buildings, fencing, and transmission lines in the foreground⁴. Vegetation includes grasses, and a few stands of trees. Dominant colors for the landscape are tans, browns, and greens while the structures are white, tan, and brown. The vegetation consists of irregular, organic forms: grasses are continuous with a few irregular shaped trees. The linear and horizontal lines associated with the structures are visible but not prominent from this viewpoint. This KOP provides a typical view for drivers traveling along SR-20, likely traveling at a high rate of speed. Considering the short duration of viewing, viewers would have a low viewer sensitivity to the visual changes in the area.

4.4.2 Key Observation Point 2

KOP 2 is located at the intersection of Beauchamp Drive and Spring Valley Road, approximately 1.3 miles north of the Project site. This KOP depicts views oriented south toward the Project site. As shown in Figure 7, the existing landscape setting is characterized by agricultural land relatively flat to gently rolling terrain. Existing structural features include Spring Valley Road and fencing in the foreground and transmission lines in the middleground. Vegetation includes grasses. Dominant colors for the landscape are green while the structures are gray and brown. The vegetation consists of the irregular, organic forms of contiguous grasses. The linear and horizontal lines associated with the structures are visible and prominent from this viewpoint. This KOP provides a typical view for drivers traveling along Beauchamp Drive and Spring Valley Road. Considering the short duration of viewing, viewers would have a low viewer sensitivity to

⁴ Depending on viewpoint topography, foreground describes an approximate area from 0 to 1 mile, middleground describes an approximate area from 1 to 3 miles, and background describes an approximate area from 3 to 15 miles from the viewpoint.

the visual changes in the area. This KOP also provides a typical view for the occupants of the residence along Beauchamp Drive. Considering the frequent viewing by local residents, viewers would have a moderate sensitivity to the visual changes in the area.

4.4.3 Key Observation Point 3

KOP 3 is located on the Myers Road overpass of I-5, approximately 7.4 miles east of the Project site. This KOP depicts views oriented west toward the Project site. As shown in Figure 8, the existing landscape setting is characterized by agricultural land and buildings with relatively flat terrain in the foreground and steeper terrain associated with the foothills of the Coast Ranges in the background. Existing structural features include roadway infrastructure, residences, agricultural buildings and equipment, fencing, and transmission lines in the foreground. Vegetation includes orchards, ornamental trees and shrubs, and row crops. Dominant colors for the landscape are greens and browns while the structures are gray, white, tan, and brown. The vegetation consists of irregular shaped, organic forms of trees and shrubs. The linear and horizontal lines associated with the structures are visible and prominent from this viewpoint. This KOP provides a typical view for drivers traveling along Myers Road or I-5, likely traveling at a high rate of speed. Considering the short duration of viewing, viewers would have a low viewer sensitivity to the visual changes in the area. This KOP also provides a typical view for the occupants of the residence on Myers Road. Considering the frequent viewing by local residents, viewers would have a moderate sensitivity to the visual changes in the area.

4.4.4 Key Observation Point 4

KOP 4 is located on Spring Valley Road, approximately 0.4 miles north of the Project site. This KOP depicts views oriented southeast toward the Project site. As shown in Figure 8, the existing landscape setting is characterized by the agricultural land with gently rolling terrain in the foreground and steeper terrain associated with the foothills of the Coast Ranges in the background. Existing structural features include Spring Valley Road, fencing, and utility pole lines in the foreground. Vegetation includes grasses and a stand of trees. Dominant colors for the landscape are tan and green while the structures are gray and brown. The vegetation consists of irregular, organic forms: grasses are continuous with the irregular shaped trees. The linear and horizontal lines associated with the structures are visible and prominent from this viewpoint. This KOP provides a typical view for drivers traveling along Spring Valley Road. Considering the short duration of viewing, viewers would have a low viewer sensitivity to the visual changes in the area.

4.4.5 Key Observation Point 5

KOP 5 is located on Spring Valley Road, immediately adjacent to the Project site. This KOP depicts views focused northeast toward the Project site. As shown in Figure 9, the existing landscape setting is characterized by agricultural land with relatively flat terrain in the foreground/middleground and steeper terrain associated with the foothills of the Coast Ranges in the background. Existing structural features include Spring Valley Road, fencing, transmission lines, and a residence and agricultural buildings. Vegetation includes grasses and occasional trees. Dominant colors for the landscape are brown and green while the structures are gray, brown, and white. The vegetation consists of irregular, organic forms: grasses are continuous with the occasional irregular shaped trees. The linear and horizontal lines associated with the

structures are visible and prominent from this viewpoint. This KOP provides a typical view for drivers traveling along Spring Valley Road. Considering the short duration of viewing, viewers would have a low viewer sensitivity to the visual changes in the area.

4.4.6 Key Observation Point 6

KOP 6 is located near Spring Valley Road, approximately 0.2 miles north of the Project site. This KOP depicts views oriented east toward the Project site. As shown in Figure 9, the existing landscape setting is characterized by agricultural land with relatively flat terrain in the foreground/middleground and rolling terrain in the background. Existing structural features include Spring Valley Road and fencing in the foreground. Vegetation includes grasses. Dominant colors for the landscape are brown, tan, and green while the structures are gray and brown. The vegetation consists of irregular, organic forms of contiguous grasses. The linear and horizontal lines associated with the structures are visible and prominent from this viewpoint. This KOP provides a typical view for drivers traveling along Spring Valley Road. Considering the short duration of viewing, viewers would have a low viewer sensitivity to the visual changes in the area. This KOP also provides a typical view for the occupants of the residence west of Spring Valley Road. Considering the frequent viewing by local residents, viewers would have a moderate sensitivity to the visual changes in the area.

5.0 REGULATORY SETTING

5.1 FEDERAL

5.1.1 National Scenic Byways Program

The National Scenic Byways Program, a part of the Federal Highway Administration, recognizes, preserves, and enhances selected roads throughout the United States as All-American Roads or National Scenic Byways based on one or more archaeological, cultural, historic, natural, recreational, and scenic qualities. According to the Federal Highway Administration's America's Byways website, there are no officially designated National Scenic Byways in the vicinity of the Project site (FHWA 2021).

5.2 STATE

5.2.1 Caltrans Scenic Highway Program

State scenic highways are those that are either officially designated as state scenic highways by Caltrans or are eligible for such designation. The scenic designation is based on the amount of natural landscape visible by motorists, the scenic quality of the landscape, and the extent to which development intrudes on the motorist's enjoyment of the view. There are two sections of SR-16 and SR-20 in Colusa County that are designated as eligible state scenic highways located approximately 6.5 miles from the Project site (Caltrans 2021). There are no Department of Transportation designated vista points on I-5 near the Project site (Caltrans 2018).

5.3 LOCAL

5.3.1 Colusa County

Community Character Element (Colusa County 2012a)

Goal CC-1: Protect the Rural Qualities that make the County and its Communities Distinct from other Counties in California, and Conserve and Enhance the Elements that Contribute to a Favorable Quality of Life

Objective CC-1B: To Maintain and Enhance the Aesthetic Beauty of the County

Policy CC 1-14: Encourage private landowners to maintain their property in a way that contributes to the attractive appearance of the County, while recognizing that many of the land uses in the County, including agriculture and light industry, require a variety of on-site structures, equipment, machinery and vehicles in order to operate effectively.

Policy CC 1-15: Preserve and enhance the rural landscape as an important scenic feature of the County.

Policy CC 1-16: Require all new development to protect the scenic beauty of the County, incorporate high quality site design, architecture, and planning so as to enhance the overall quality of the built environment in the County's communities and create a visually interesting and aesthetically pleasing built environment that respects the rural nature of the County.

Policy CC 1-17: Establish design standards, including community-specific policies, to encourage visually attractive development and lessen the visual impact of existing non-conforming uses

Conservation Element (Colusa County 2012b)

Goal CON-2: Conserve, protect, and enhance energy, air, and mineral resources.

Objective CON-2A: Use Energy Efficiently and Encourage the Use of Renewable and Sustainable Sources of Energy

Policy CON 2-4: Allow alternative energy production infrastructure (such as solar panel arrays) that limits energy generation to the amount necessary to support on-site uses in all land use designations as a principally permitted use, provided that the project complies with the following:

- Does not detract from the visual character from the area and are either screened or designed to blend with the other uses on the site...

Open Space and Conservation Element (Colusa County 2012c)

Goal OSR-1: Preserve and Protect the Natural Resources and Scenic Beauty of the County

Objective OSR 1-C: Maintain and Enhance the Quality of the County's Scenic and Visual Resources

Policy OSR 1-10: To the maximum extent feasible, maintain and protect views of the County's scenic resources, including water bodies, the Sutter Buttes, Snow Mountain, St. John Mountain, Goat Mountain, unique geologic features, and wildlife habitat areas.

Policy OSR 1-11: To the maximum extent feasible, the significant open space resources in the County, such as the western foothills, Indian Valley, and Bear Valley should remain visually undisturbed.

Policy OSR 1-12: Limit visually intrusive development near scenic resources in order to minimize visual impacts to the greatest extent feasible.

Policy OSR 1-13: Visual impacts to scenic resources, such as regional focal points, from new development or resource extraction activities shall be addressed and mitigated through the CEQA review process.

Policy OSR 1-14: Reduce light and glare from artificial lighting within open space and agricultural areas to the extent that it does not adversely impact the County's rural character.

Objective OSR 1-D: Encourage the Preservation of Scenic Vistas and Limit the Proliferation of Unsightly Signage along County Roadways and in Scenic Areas Policy

OSR 1-15: Protect roadway viewsheds with high scenic value and "rural flavor" and encourage the establishment of public viewing areas in areas with rural character and scenic beauty.

Policy OSR-1-16: Protect and preserve the following features along rural character corridors and in scenic areas to the extent appropriate and feasible:

- Trees, wildflowers, and other natural or unique vegetation
- Landforms and natural or unique features
- Views and vistas, including expansive views of open space and agricultural lands
- Historic structures (where feasible), including buildings, bridges, and signs

Policy OSR 1-17: Provide a greater number of areas along rural character corridors and in scenic areas for public access and recreation, including vistas, rest stops, or picnicking.

Policy OSR 1-18: Discourage non-agricultural or non-recreational roadside commercial and industrial activities along rural character corridors.

Policy OSR 1-19: Design new roads in hillside areas along the lines of the landscape and in a manner which minimizes visual impact from surrounding areas.

6.0 IMPACT ANALYSIS

6.1 SCENIC VISTAS

Would the proposed Project cause substantial, adverse effects on a scenic vista?

No designated scenic vistas are located within visible distance of the Project site. The Project site and surrounding area includes existing agricultural land and buildings, residences, and utility infrastructure. The Project area is not a scenic vista or visible from any designated scenic vista. No impact on scenic vistas would occur.

Level of Significance: No impact.

6.2 SCENIC HIGHWAYS

Would the proposed Project cause substantial damage to scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway?

There are no officially designated state scenic highways in the vicinity of the Project site. The sections of SR-16 and SR-20 that are designated as eligible state scenic highways are located approximately 6.5 miles from the Project site. Due to terrain and distance, the Project site is not visible from these sections of these highways, therefore, no impact to a scenic highway will occur.

Level of Significance: No impact.

6.3 VISUAL CHARACTER

In non-urbanized areas, would the proposed Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.)

The Project site is rural in character with a wide variety of visual encroachments, including scattered ranch structures, agricultural buildings and infrastructure, fencing, local electrical distribution lines and high-voltage transmission lines, and roadways.

6.3.1 Construction

The proposed Project would involve both temporary and permanent changes to the visual character of the site. Temporary changes are associated with construction activities, including construction equipment, staging, and Site construction. These visual impacts would be short-term in nature and are not considered to be significant.

6.3.2 Operation

6.3.2.1 KOP 1

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting; however, the Project would barely be visible from this location by a casual observer because of the screening of the Project site by rolling terrain and vegetation, see Figure 10. The colors, regular geometric forms and horizontal lines associated with the solar arrays and associated infrastructure would result in a visual contrast with the irregular, organic forms and colors of the existing landform and vegetation. However, the structures in the vicinity also possess horizontal and vertical lines (residences, agricultural buildings, fencing, and transmission lines). The portions of the Project that are visible would not attract attention and would be a subordinate feature in the landscape setting. This viewpoint reflects the views of drivers traveling along SR-20. These impacts would be short term for travelers because they would only be paralleling the Project site for a limited time and their focus would be on the road ahead. As the contrast is anticipated to be weak from Viewpoint 1, the visual impacts are considered minor and less than significant.

6.3.2.2 KOP 2

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting; however, the Project would not be visible from this location by a casual observer because of the screening of the Project site by rolling terrain, see Figure 11. This viewpoint reflects the views of drivers traveling along Beauchamp Drive and Spring Valley Road and the views of the occupants of the residence along Beauchamp Drive. As the Project would not be visible from this location by a casual observer, there would be no visual impacts from Viewpoint 2.

6.3.2.3 KOP 3

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting; however, the Project would barely be visible from this location by a casual observer because of the screening of the Project site by distance and vegetation. The colors, regular geometric forms and horizontal lines associated with the solar arrays and associated infrastructure would result in a visual contrast with the irregular, organic forms and colors of the existing landform and vegetation. However, the structures in the vicinity also possess horizontal and vertical lines (roadway infrastructure, residences, agricultural buildings and equipment, fencing, and transmission lines) and some are colored gray (roadway infrastructure, agricultural buildings and equipment, transmission lines). The portions of the Project that are visible would not attract attention and would be a subordinate feature in the landscape setting. This viewpoint reflects the views of drivers traveling along Myers Road or I-5. These impacts would be short term for travelers because they would only be approaching or paralleling the Project site for a limited time and their focus would be on the road ahead. As the contrast is anticipated to be weak from Viewpoint 3, the visual impacts are considered minor. This viewpoint also reflects the views of the occupants of the residence along Myers Road. The Project would not block views of the foothills of the Coast Ranges. For views from residences, while appearing as new and highly visible features, the Project infrastructure would be consistent with other horizontal and vertical lines and geometric shapes visible throughout the landscape. The contrast is anticipated

to be weak from Viewpoint 3 and the portion of the Project that would be visible would be subdominate in the landscape, therefore the contrast and the visual impact are considered to be minor and less than significant.

6.3.2.4 KOP 4

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting; however, the Project would not be visible from this location by a casual observer because of the screening of the Project site by rolling terrain. This viewpoint reflects the views of drivers traveling south along Spring Valley Road. As the Project would not be visible from this location by a casual observer, there would be no visual impacts from Viewpoint 4.

6.3.2.5 KOP 5

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting and would be visible from this location by a casual observer, see Figure 12. The colors, regular geometric forms and horizontal lines associated with the solar arrays and associated infrastructure would result in a visual contrast with the irregular, organic forms and colors of the existing landform and vegetation. However, the structures in the vicinity also possess horizontal and vertical lines (roadway, fencing, transmission lines, a residence, agricultural buildings) and some are colored gray (roadway, fencing, transmission lines). This viewpoint reflects the views of drivers traveling north along Spring Valley Road. As the Project would attract attention to the casual observer and the portion of the Project that would be visible would co-dominate the landscape, the contrast would be considered moderate. These impacts would be short term for travelers because they would only be approaching the Project site for a limited time and their focus would be on the road ahead.

This viewpoint also reflects the views of the occupants of the residence south of the Project site. For views from the residence, while appearing as new and highly visible features, the Project infrastructure would be consistent with other horizontal and vertical lines and geometric shapes visible throughout the landscape. As the Project would attract attention to the casual observer and the portion of the Project that would be visible would co-dominate the landscape, the contrast would be considered moderate. However, the Project would not block views of the surrounding agricultural open space or the foothills of the Coast Ranges. Therefore, the impacts would be less than significant.

6.3.2.6 KOP 6

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting and would be visible from this location by a casual observer. The colors, regular geometric forms and horizontal lines associated with the solar arrays and associated infrastructure would result in a visual contrast with the irregular, organic forms and colors of the existing landform and vegetation. However, the structures in the vicinity also possess gray color and horizontal and vertical lines (roadway, fencing). This viewpoint reflects the views of drivers traveling along Spring Valley Road. These impacts would be short term for travelers because they would only be approaching or paralleling the Project site for a limited time and their focus would be on the road ahead. This viewpoint also reflects the views of the occupants of the residence west of Spring Valley Road. For views from residence, while appearing as new and

highly visible features, the Project infrastructure would be consistent with other horizontal and vertical lines and geometric shapes visible throughout the landscape. As the Project would attract attention to the casual observer and the portion of the Project that would be visible would co-dominate the landscape, the contrast would be considered moderate. However, the Project would not block views of the surrounding agricultural open space or the foothills of the Coast Ranges. Therefore, the impacts would be less than significant.

Level of Significance: Less Than Significant.

6.4 LIGHT & GLARE

Would the proposed Project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

The Project is not expected to create a substantial new source of nighttime lighting or daytime glare. The proposed Project will provide external safety lighting for both normal and emergency conditions at the primary access points. Lighting will be designed to provide the minimum illumination needed to achieve safety and security and will be downward facing and shielded to focus illumination in the immediate area. All lighting associated with the proposed Project will be subject to County approval and compliance with Colusa County requirements. Therefore, the Project will have a less than significant impact associated with nighttime lighting.

Unlike solar thermal facilities, which rely on large fields of mirrors to reflect light, the potential reflection from solar PV modules is inherently low since they are designed to capture and not to reflect sunlight. PV panels have a lower index of refraction/reflectivity than common sources of glare in residential environments. The glare and reflectance levels from a given PV system are lower than the glare and reflectance levels of steel, snow, standard glass, plexiglass, and smooth water (Shields 2010). The glare and reflectance levels of modules are further reduced with the application of anti-reflective coatings. PV suppliers typically use stippled glass for panels as the “texturing” of the glass to allow more light energy to be channeled/transmitted through the glass while weakening the reflected light. With the application of anti-reflective coatings and use of modern glass technology, Project PV panels would display overall low reflectivity. In addition, because tracker systems follow the sun, the underside of the PV panels and most of the structure supporting them are shadowed throughout the day.

Moreover, light reflected from the PV panels would travel above the line of site of most, if not all, viewers. PV tracking systems position the array so that the sun’s rays are always perpendicular to the face of the panel. What light is reflected from the panels is reflected back towards the sun. During midday conditions, when the sun is high in the sky, the rays of the sun are reflected directly upwards. For example, when the sun is low on the horizon (near dawn or dusk), the sun’s angle in the sky is low; however, reflected rays would still be directed away from ground-level receptors because the maximum downward angle of the arrays would not be below 30 degrees. Similarly, and also due to their low reflectivity, the panels are not expected to cause visual impairment for motorists on area roadways or pilots arriving and departing at the Williams Airport or Colusa County Airport.

Level of Significance: Less than significant impact.

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