VISUAL RESOURCES ANALYSIS

RUGGED SOLAR PROJECT
MAJOR USE PERMIT MODIFICATION

BOULEVARD, CALIFORNIA

PDS2017-MUP-12-007W1, PDS2017-MUP-12-007TE; PDS2017-ER-12-21-003A, PDS2017-ER-12-21-003B

APRIL 2022

Prepared for:
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EXECUTIVE SUMMARY

The Rugged Solar, LLC Solar Project ("Proposed Project" or "Project") Visual Resources Analysis provides an evaluation of potential Project impacts on existing visual resources and character of the surrounding community of Boulevard, California, in southeastern San Diego County.

The Project proponent, Rugged Solar, LLC, is preparing an application for the development and operation of an up to 74 megawatt (MW) photovoltaic (PV) solar farm to be located on privately-held lands near Boulevard. The Project requires approval from the County of San Diego for a Major Use Permit (MUP) modification (PDS2017-MUP-12-007TE) to allow for the construction, operation, and maintenance of a solar energy generation facility.

The proposed PV solar facilities would be installed on an approximately 393.3-acre portion of the approximately 763.3-acre Project site. The Project design consists of PV solar panels mounted on a collection of single-axis tracking (SAT) systems supported by machine-driven metal "I" beam or C-Channel piles; refer to Figures 2A to 2E, Major Use Permit Plot Plan. The maximum height of the top of panel would measure a minimum of 7 feet and a maximum of 12 feet at full tilt; however, in order to minimize grading, in certain cases where the ground undulates under the panels, the panel height could reach a maximum of approximately 12 feet as measured from the ground surface (the panels would not be installed on individual building pads). Small-scale building pads supporting the inverters/transformers would also be constructed within the panel fields and a substation.

With regard to visual resources, the Project would have the potential to result in the introduction of features that would significantly detract from or contrast with the visual character of the surrounding community by conflicting with visual elements or quality of an existing area (i.e., through conflicting style, size, coverage, scale, building materials, etc.). To reduce potential views of the Project elements from adjacent roadways, the proposed Project would implement mitigation that would require the planting of landscape screening along portions of the Project frontage along McCain Valley Road to minimize potential public views into the site. With implementation of the proposed mitigation, impacts would be reduced, but not to a level of less than significant. Project Design Features are also proposed to further ensure that potential Project impacts to aesthetic resources are reduced to the extent feasible.

The Project would not result in the removal of or substantial adverse change to one or more features that contribute to the valued visual character or image of the Project area, including but not limited to designated landmarks, historic resources, trees, or rock outcroppings. Furthermore, the Project would not substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from a public road, trails within an adopted County or state trail system, scenic vista or highway, or recreational area. Additionally, the Project as designed would also not result in an inconsistency with any goals, standards, or policies related to visual resources as identified in the County General Plan. The Project would also not create a new source of substantial light or glare that may adversely affect day or nighttime views in the area, and would not conflict with the requirements of the San Diego Light Pollution Code.

The Proposed Project proposes a modification to the MUP approved for the Rugged Solar Project ("Approved Project"). The Approved Project utilized a dual-axis concentrating Photovoltaic (PV) tracker

system whereas the Proposed Project would utilize a single-axis PV tracker system. The potential effects of this project, herein referred to as the "Approved Project," on visual resources were evaluated in a Visual Impact Analysis (Dudek 2013; MUP 3300-12-007, Envn. Log No. 3910-120005) and a Revised Final Program Environmental Impact Report (Revised PEIR) certified on October 14, 2015 (Dudek 2015; SCH No. 2012-121-018). Evaluation of the Approved Project identified significant and unavoidable impacts relative to visual character and quality and dark skies and glare. Mitigation Measure M-AE-PP-1 was proposed to address project design and site management techniques to reduce anticipated visual contrast and impacts to existing visual character and/or quality of the site and surroundings to the extent practicable. Additional mitigation measures to reduce the severity of project impacts associated with existing visual character and/or quality and project-generated glare were considered but were determined to be infeasible or ineffective. Therefore, even with implementation of Mitigation Measure M-AE-PP-1 and Project Design Features PDF-AE-1 through PDF-AE-5, project impacts associated with visual character and quality and dark skies and glare were determined to be significant and unmitigable.

The Revised PEIR analysis determined that the Rugged Solar project would result in a less than significant impact for all other thresholds evaluated. Implementation of Project Design Features PDF-AE-1 to PDF-AE-5 were proposed to further minimize potential project effects on existing aesthetic resources, as follows:

PDF-AE-1 In the southernmost parcel of the Rugged site, pull back project grading and remove trackers from the natural saddle that occurs on the southern parcel and would likely be visible to westbound Interstate 8 motorists. In-place existing natural vegetation shall be protected to act as a low screen and provide topographic and vegetative continuity across the saddle area while complying with the Fire Protection Plan. Additional shrub plantings (fire resistant and a maximum height 6 feet) shall also be included in the area to reinforce vegetation line across the saddle.

PDF-AE-2 Staging material and equipment storage areas, including storage sites for excavated materials, visible from nearby roads, residences, and recreational areas shall be visually screened using temporary screening fencing. Fencing shall be of an appropriate design and color for the Proposed Project location.

PDF-AE-3 The O&M building shall be painted/finished with muted-earth toned colors. Materials, coatings, or paints having little or no reflectivity shall be used whenever possible. New overhead conductors shall be non-specular in design to reduce conductor visibility, glare, and visual contrast.

PDF-AE-4 Weathered or cor-ten steel shall be used for gen-tie monopoles to reduce the potential for color contrast between structures and existing vegetation and terrain.

PDF-AE-5 Outdoor lighting at each solar farm site shall conform to County of San Diego Light Pollution Code Zone A standards for lamp type and shielding requirements. More specifically, Zone A standards shall be applicable for all Class I (i.e., lighting for assembly areas where color rendition is important) and Class II (i.e., lighting for general illumination and security) lighting at the solar farm site and all outdoor lighting fixtures shall be fully shielded and directed downward. Further, fully shielded motion sensor lighting shall be installed at the on-site

private substation yard, next to the entrance door to the substation control house, and mounted atop entrance gates and shall be turned off when no one is on site. When possible, tracker washing shall occur during evening and morning hours to reduce occurrences of dark sky illumination. Regarding operation of security measures, motion sensor infrared cameras shall be installed at the project site to avoid illumination of the site and surrounding area during nighttime hours.

Respectively, these PDFs required: 1) the pulling back of project grading from the natural on-site saddle and protecting in-place natural vegetation, in addition to requiring additional landscape plantings to further screen the saddle from view; 2) installation of temporary fencing to screen the on-site staging of materials and equipment storage during the construction phase; 3) use of earth-toned coating/paint for the O&M building and non-specular overhead conductors to reduce visibility, glare, and visual contrast and 4) installation of outdoor lighting in conformance with County of San Diego Light Pollution Code Zone A Standards for lamp type and shielding requirements and installation of motion sensor lighting and cameras. Refer to the 2015 Final EIR for the full text of these PDFs. PDF-AE-1 was proposed to reduce the visual effects of the Approved Project from Key View 4 for westbound traffic on I-8. Compared to the Approved Project, the visual effects of the Proposed Project from Key View 4 would be substantially reduced, both in height and visual contrast, to the point where the Proposed Project would not result in a potentially significant impact (refer to Section 5.5 of this report) at this key view. Therefore, PDF-AE-1 has been removed as a Project Design Feature. However, the Proposed Project will maintain PDF-AE-2 through PDF-AE-5 to further minimize potential project effects on existing aesthetic resources.

The following evaluation takes such findings of the prior analyses into consideration; however, as the Project has been redesigned, the analysis herein evaluates the Proposed Project as proposed, per CEQA requirements, against the identified significance thresholds to determine if a potential visual impact finding would remain similar to that determined for the Approved Project, or if impacts would be increased or reduced in comparison.

1. INTRODUCTION

1.1 PURPOSE

The purpose of this Visual Resources Analysis is to assess the potential visual impacts of the Project, determine the significance of the impacts in conformance with the requirements of the California Environmental Quality Act (CEQA) and the *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements (Visual Resources)*, and to propose measures to avoid, minimize, and/or mitigate potential adverse visual impacts associated with construction of the proposed Rugged Solar Project (proposed Project) on the surrounding visual environment.

The proposed Project is for the installation and operation of an up to 74 megawatt (MW) photovoltaic (PV) electrical generation facility near the community of Boulevard in southeastern San Diego County; refer to Figure 1, Regional/Local Vicinity Map, and Figure 2A, Major Use Permit Plot Plan. The Project as currently proposed will require County approval of an extension of and modification to the previously approved Major Use Permit (MUP) that currently applies to the subject site (PDS2017-MUP-12-007TE; PDS2017-MUP-12-007W1).

The Project represents an opportunity to provide the residents of Boulevard and the greater surrounding area with a source of clean energy from renewable sources. Further, the Project would provide an additional clean source of electrical power to supplement energy currently supplied by the existing power grid, thereby reducing the potential for power shortages to occur and decreasing demand on the capabilities of the existing distribution system.

A Visual Resources Impact Analysis was previously prepared for the subject site by Dudek in December 2013 for a similar 80-megawatt "Rugged Solar" generating facility on the subject site (MUP 3300-12-007, Envn. Log No. 3910-120005; available under separate cover). As part of the project, a Final Environmental Impact Report (EIR) was also prepared by Dudek in January 2015 to evaluate the potential environmental effects of the project in conformance with CEQA requirements (SCH No. 2012-121-018; available under separate cover). The project analyzed in these documents proposed a PV solar facility with a larger development footprint that incorporated a different type of solar tracker, and with components of the project arranged differently within the development footprint, as compared to the Proposed Project as proposed. Refer to Table 1, Comparison of Approved Project to Proposed Project, below.

The subject property is now under new ownership and the Proposed Project has been redesigned to incorporate a different type of solar tracker technology, a single-axis photovoltaic (PV) tracker technology with an average height of seven feet (7') and a maximum height of twelve feet (12'). By comparison, the Approved Project utilized a dual-axis concentrating PV tracker system with a maximum height of thirty feet (30'). Accordingly, this Visual Resources Analysis is aimed at evaluating the Proposed Project design in conformance with the County of San Diego's *Guidelines for Determining Significance and Report Format Guidelines (Visual Resources),* with consideration of the findings of significance for impacts on visual resources made for the Approved Project in the Soitec Solar Development Revised Final Program EIR (Revised PEIR), and providing a comparison as such where appropriate. This report also includes a comparison of the significance findings contained in the FEIR prepared for the Approved Project and

concludes whether the Proposed Project would reduce impacts, minimally increase, or result in similar impacts than was determined for the previous project. This VIA also carries forward Mitigation Measure M-AE-PP-1, as it applies to the Project site, and Project Design Features PDF-AE-2 through PDF-AE-5 previously identified to reduce potential project effects with regard to visual resources.

1.2 KEY ISSUES

Key issues to be evaluated in this analysis are whether the Project has the potential to adversely impact the existing visual character or quality of the affected properties and/or the physical or natural surroundings. Potential visual effects are considered from public roadways and other public vantage points in and around the Boulevard community. Project design attributes; the potential to remove, change, or add features that contribute to the existing quality of the visual landscape; and, potential conflicts with applicable plans or policies relating to visual resources, are considered.

1.3 PRINCIPAL VIEWPOINTS TO BE COVERED

The proposed development area and associated off-site lands where improvements would occur for access purposes would be potentially visible from several principal viewpoints within the Boulevard area, as follows. These principal viewpoints were selected as they are anticipated to have a high number of potential viewers and/or would offer views within close proximity to the Project site:

- Interstate 8 eastbound looking east/northeast
- McCain Valley Road looking north/northeast
- McCain Valley Road looking southwest
- Interstate 8 westbound looking west/northwest

Views may also occur from surrounding roadways such as Old Highway 80 to the south (south of I-8) and State Route 94 (SR 94) , and other public vantage points, such as the McCain Valley Conservation Area to the north or the Mt. Tule Recreational Area to the northeast. Limited views may also occur from surrounding residential and/or agricultural uses on private lands within the McCain Valley and/or on hillsides surrounding the valley floor, but would generally be visually reduced due to intervening vegetation, development, and/or elevational differences, in addition to distance from the Project site. Additionally, a number of homes located to the west of the subject site may experience more direct views across the Project site.

The key views identified above are considered herein, and the Project's potential to alter or affect existing views from these surrounding public vantage points within the viewshed are analyzed in depth. Visual simulations were not prepared for the proposed Project; however, the impact analysis herein considers the visual simulations previously prepared for the Approved Project (Dudek 2013) to illustrate the potential visibility of the solar facility and infrastructure within the visual landscape; refer to Figures 5A to 5D and Appendix A of this analysis.

2. PROJECT DESCRIPTION

2.1 PROJECT LOCATION

Portions of the proposed Project site is located north of Interstate 8 (I-8), east of Ribbonwood Road, and west of McCain Valley Road; refer to Figure 1, Regional/Local Vicinity Map. The Project would disturb a series of individual parcels, with the solar development areas occurring on separate sites (Areas A through E). The majority of the proposed development would be located west of McCain Valley Road; a portion of the development is also proposed to the east of McCain Valley Road. The Rugged Solar farm would tie into the existing gen-tie line for the Tule Wind Energy project, which runs within a 200-foot wide utility easement bisecting the Project site and running roughly parallel (north-south) along McCain Valley Road, with ultimate connection to the SDG&E Boulevard East Substation. The Project area includes the following County Assessor Parcel Numbers (APNs), or portions thereof: 611-060-04, 611-090-02, 611-090-04, 611-091-03, 611-091-07 (portion), 611-100-07, 612-030-01, and 612-030-19, and 611-110-01.

2.2 GENERAL PLAN LAND USE DESIGNATIONS AND ZONING

The General Plan land use designations for the affected parcels is Rural Lands (RL-80). Zoning for all affected parcels is General Rural (S92) with exception of APN 611-110-01 which is zoned General Agriculture (A72) and APN 611-100-07 which is zoned S92/A72.

The project would not change the existing land use designations or zoning. The proposed solar facility is an allowable use on the subject lands with County approval of an extension of the existing MUP that applies to the property.

2.3 PROJECT DESCRIPTION

The Project proponent is preparing an application for the development and operation of an up to 74 MW photovoltaic (PV) solar farm to be located on privately-held lands near Boulevard. The Project requires approval from the County of San Diego for a Major Use Permit (MUP) Modification to allow for the construction, operation, and maintenance of a solar energy generation facility.

As stated above, the proposed Project represents a redesign of the Approved Project for a similar solar facility installation and associated infrastructure on the subject site. Since the time of the original project was approved, the site has come under new ownership and the Project has been redesigned to accommodate a different product for the solar panels, ultimately reducing potential visual (and other environmental) effects resulting with development. However, as proposed, the Proposed Project would retain many components of the original design (i.e., on-site substation, temporary rock crushing and batch plant facility, on-site water storage tanks, inverters/transformers, etc.).

Table 1 below provides a detailed comparison of the project description and other details of the Approved Project to the Proposed Project on the subject site. The Rugged Solar Visual Resources Technical Report (Dudek 2013) prepared for the Approved Project is available under separate cover for reference; however, a number of excerpts that are integral to the analysis herein are included in Appendix A.

TABLE 1. COMPARISON OF APPROVED PROJECT TO PROPOSED PROJECT

Project Design Feature	Rugged Solar (2015; Approved Project)	Rugged Solar (2021; Current/Proposed Project)
Major Use Permit Area	765 acres[1]	763.3 acres
Development Footprint	450	Approx. 393.3 acres
Megawatts	(Up to) 80 MW (AC Generating Capacity)	(Up to) 74 MW (AC Generating Capacity)
Type of Tracker	3,588 trackers; Dual-axis Concentrated Photovoltaic (CPV)	Single-axis PV
Max. Panel Height	Max. 30 feet	Max. 12 feet (range of 7-12 feet above ground surface)
Panel Length	48 feet	--
Inverters	59 Inverter/Transformer Enclosures (Estimated max. 10 feet x 40 feet); Max. height 12 feet	38 Inverter Pads (10 feet x 40 feet); 12-foot height with 16-foot high sun shade
On-site Substation	Fenced pad area of 6,000 s.f. (60 ft. x 100 ft.); 2-acre substation site incl. 450 s.f. control house (15 feet x 30 feet); Max. height 35 feet	Fenced pad areas of 130 ft. x 200 ft. (26,000 s.f.) with 450-foot control enclosure; Max. 35 feet height
Operations & Maintenance Building (Manned Facility) OR Storage Building	7,500 s.f.[2]	5,400 s.f.[3]
Perimeter Fence Height	7-foot high (6-foot chain link fence with 1-foot of 3-strand barbed wire)	7-foot high (6-foot chain link fence with 1-foot of 3-strand barbed wire)
Gen-Tie Line	--	34.5 kV underground and overhead AC conductors
Water Storage Tank(s)	Three 20,000-gallon above ground storage tanks	One 10,000-gallon above ground tank; Two 20,000-gallon above ground tanks
Oak Avoidance	--	All on-site oaks avoided with minimum 50-foot setback

1. Acreage refers to the total project area under control of the project applicant. Actual areas of disturbance may be reduced due to avoidance of sensitive areas or other development constraints.
2. This area represents the development "footprint" which includes the exterior surface parking area as well as the Operations and Maintenance (O&M) manned structure which housed the control room, warehouse, conference room, and restrooms.
3. This square footage includes the 4,500 s.f. storage building, 600 s.f. control room, and 300 s.f. conference room.

The proposed PV solar facilities would be installed on an approximately 391.5-acre portion of the larger 763.3-acre property, under the ownership of the Project applicant (Rugged Solar, LLC). The unaffected (undeveloped) acreage on-site would generally remain in its present state upon implementation of the proposed Project as currently designed; refer to Figure 2A, Major Use Permit Plot Plan.

The Project design consists of PV solar panels mounted on a collection of single-axis tracking (SAT) systems supported by machine-driven metal "I" beam or C-Channel piles; refer to Figure 2E, Major Use Permit Plot Plan - Details. Each pile would be roughly 6 inches by 6 inches wide and would be driven approximately 7 feet into the ground; the panels would not be installed in individual building pads. The solar panels would be installed in rows that rotate to face east in the morning and west in the afternoon hours, tracking the sun about a north/south axis to maximize solar absorption. Trackers would be mounted approximately 4.5 feet minimum above the ground so that a minimum clearance of 12 inches above the ground is achieved when the tracker is fully rotated. The maximum height of the top of panel would measure an average of seven feet at full tilt; however, in certain cases where the ground undulates under the panels, the panel height could reach a maximum of approximately 12 feet as measured from the ground surface.

The direct current (DC) power generated by the PV panels would be transmitted via underground cable to inverter/transformer pads and one switchgear pad located within the proposed on-site development areas, where the DC power would be converted to alternating current (AC) power. Each inverter/transformer equipment pad would be approximately 10 feet wide by 40 feet long. The equipment installed on the pads would measure a maximum of approximately 10 feet in height (above pad elevation), or 12 feet in height as measured from the ground surface. All inverter/transformer structures would be constructed of non-flammable materials (e.g. concrete block, metal, or similar).

The ultimate arrangement/number of solar panels, equipment pads and structures, and internal access roads are shown on the MUP Plot Plan; refer to Figures 2A to 2E, Major Use Permit Plot Plan; however, the ultimate layout may be subject to minor modifications at the final engineering design stage. The solar technology system being proposed with the Project and analyzed herein is further described below.

System Interconnection Points

As designed, the Project would underground the utility lines between the solar panels within the interior of the site; refer to Figure 2, Major Use Permit Plot Plan. The Project includes construction of a 130-foot by 200-foot (26,000-square-foot) private on-site collector substation. The substation would collect the energy received from the overhead and underground collector system and increase the voltage from 34.5 kV to 69 kV. Once the voltage is stepped up to 69 kV, the power would be conveyed through a 35-foot-high dead-end structure (a fully self-supporting steel tower) that connects the on-site collector substation with the Tule Wind Energy gen-tie line.

The 138-kV gen-tie for the Tule Wind Energy project includes a 69 kV undersling line, which would be used to service the Rugged Solar Project. The Tule gen-tie runs south along the east side of McCain Valley Road and SDG&E's Sunrise Powerlink and across I-8, after which it crosses McCain Valley Road and runs parallel to Old Highway 80 along the north side until it crosses Old Highway 80 at the proposed new SDG&E Boulevard East Substation.

As such, utility poles and overhead lines are located off-site and are already present within the visual landscape. The Project would not require replacement of or upgrades to any existing off-site utilities.

Inverters/Transformers

Forty-two equipment pads would be constructed within the solar panel fields to support the inverters/transformers. The equipment would be approximately ten feet in height when measured from the top of pad. The equipment would be constructed of non-flammable materials (i.e., steel).

Grading

Construction of the Project would involve clearing and grubbing of the existing vegetation, large rocks, and/or other debris from within the development footprint (i.e., clearing, grubbing and grinding). Grading necessary for the construction of access and service roads; trenching for the electrical collection system, including telecommunication lines; installation of the inverter stations; construction of an overhead 34.5 kilovolt (kV) trunk line for collection systems leading to the on-site substation; and construction of the Project collector substation, storage building, and the gen-tie line from the Project substation would require varying degrees of grading (i.e., cut/fill) to create a level area and accommodate foundations and/or engineered fills. Grading is estimated to require approximately 75,000 cubic yards (c.y.) of balanced cut and fill. No import or export of soils is required. Refer also to Figure 3F, Preliminary Grading Plan, for illustration of the proposed site grading.

Lighting

Limited Project lighting would be installed to allow for security. Lighting would be provided at the storage building, entrance gates, and entrance to the on-site project substation. Lighting would also be provided next to the entrance door to the control house and mounted at the entrance gates to allow for safe entry. Since maintenance activities are not anticipated to be completed during the evening hours, nighttime lighting would only be utilized if needed.

All lighting would be operated manually or activated via motion sensors and would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent ownerships. All lighting would conform to County of San Diego outdoor lighting requirements, including the Light Pollution Code (LPC). All outdoor lighting controls would incorporate dusk-to-dawn photocell controllers, occupancy sensors, and/or switches as appropriate.

Signage

Minimal Project signage is proposed to allow for the identification of the Project owner and for safety and security purposes. Signage would be installed include system identification, safety, and warning signs. Signage would be located throughout the development area in accordance with applicable Occupational and Safety and Health Administration (OSHA) requirements and as required by the Authority Having Jurisdiction. Illuminated signage at the Project entrance and each inverter station that notes the location and identification number of each electrical grid disconnect and circuit breaker would also be installed.

Access / Circulation

Construction Access

All materials for Project construction would be delivered to the site by truck. The majority of truck traffic would occur on designated truck routes and/or major streets (e.g., Ribbonwood Road, McCain Valley Road). Traffic resulting from construction activities would be temporary and may occur along area roadways as workers and materials are transported to and from the Project area. If directed by the County, and prior to the issuance of a grading/building permit, the Project applicant would prepare a Construction Traffic Control Plan (refer to PDF-TR-1) to ensure that circulation on the affected roadways is not adversely affected and that public safety is maintained.

Long-Term Access

Road access would include, at minimum, from the point of entry from approved public access points to the PV site, site perimeter looped roads, and the area immediately around transformers, inverters, and other similar structures. Permanent access to the site would occur from McCain Valley Road; refer to Figure 2A, Major Use Permit Plot Plan. Interior access would be provided by Rough Acres Ranch Road within the property. A system of 24-foot wide all-weather access drives (within 28-foot wide graded width) that would allow for adequate emergency access to all PV panel blocks and inverter stations is proposed. All access road sections would be designed per the recommendation of the site-specific Geotechnical Report and per governing County standard design specifications. Perimeter fire access roads would be designed with an all-weather surface (decomposed granite or gravel) capable of supporting a minimum 75,000-pound fire apparatus bearing load whereas interior fire access roads would be designed with an all-weather surface (decomposed granite or gravel) capable of supporting a minimum 45,000-pound fire apparatus bearing load. These drives would also be used for purposes of Project maintenance. A series of smaller 20-foot wide roadways would be provided within the solar PV field to provide access for maintenance vehicles. Consistent with County of San Diego requirements, a 30-foot wide fuel management zone (FMZ) (brush clearing) would be provided around the perimeter of the on-site development area to reduce the potential for the spread of wildfire.

Fencing/Gates

The perimeter of the MUP area would be fenced with a 6-foot high chain link fence topped with 1 foot of 3-strand barbed wire for security purposes to prevent public access. The entrance to proposed Areas A though F would be gated (28-foot wide opening). All gates would meet the requirements of San Diego County Fire Code Section 96.1.503.6 for automatic operation with battery back-up. The gates would open immediately upon emergency vehicle strobe light activation from either direction of approach and would include a Knox Box key-operation switch.

Project Schedule / Phasing

It is anticipated that overall construction of the Project would take approximately 12 months to complete, with crews working 6 days per week, 12 hours per day. Construction of the Project would occur at one time and phasing is not proposed.

Anticipated Permits and Agency Approvals Required

The County of San Diego will act as the Lead Agency under the requirements of CEQA. Approval from the County of San Diego would be required for grading and construction permits prior to commencement of ground-disturbing activities. The anticipated permits and approvals required are listed in Table 2 in the general order in which they would be obtained.

TABLE 2. APPROVALS AND PERMITS ANTICIPATED

Permit/Approval	Approving Agency
Major Use Permit Modification	County of San Diego – Department of Planning & Development Services
Air Quality Permit to Construct	Air Pollution Control District
National Pollutant Discharge Elimination System (NPDES) Permit	San Diego Regional Water Quality Control Board (RWQCB)
General Construction Storm Water Permit	RWQCB

Decommissioning Plan

Once built, the Project would operate at a minimum for the 25-year life of its Power Purchase Agreement (PPA). It is likely, because much of the needed electrical infrastructure will have been developed, that the Project would continue to be upgraded and used to generate solar energy beyond the term of the initial PPA. Therefore, it is possible that the site would remain in solar energy production for the foreseeable future.

Prior to issuance of a grading permit, the applicant will be required to prepare a Decommissioning Plan to govern future decommissioning of the site at the time when appropriate. If the Project were ever to be decommissioned, the panels, support structures, and electrical equipment would be removed from the site and it would be returned to a use consistent with the current zoning of the site.

As appropriate, the Decommissioning Plan would identify such actions as removal of all above-grade structures from the site and any non-shared transmission facilities; associated decompaction activities; recontouring; application of hydroseeding; and/or, installation of permanent best management practices (BMPs) if needed. The Project shall comply with all requirements of the San Diego Regional Water Quality Control Board (RWQCB) General Construction Permit for Notice of Termination filing associated with site stabilization.

Financially, the owner of the proposed solar facility would assume responsibility for decommissioning. The cost of decommissioning would be relatively low, as no earthwork would be necessary, and the panels, support structures, and electrical equipment would be salvaged and recycled. Implementation of the Decommissioning Plan would also ensure that, if operation of the PV solar facility were to cease, adverse visual effects would not occur as a result and that the land would be returned to a generally disturbed state, consistent with the visual setting prior to Project development. Removal of all on-site Project components as part of the Decommissioning Plan would also ensure that the setting does not degrade visually from any such elements falling into disrepair over the long-term, due to non-operation.

2.4 REGULATORY FRAMEWORK

State of California Guidelines

The Project is subject to technical and environmental review pursuant to the California Environmental Quality Act (CEQA), in conformance with applicable regulatory guidelines established by the County of San Diego.

Appendix G of the CEQA Guidelines states that a project has the potential for a significant impact if it will:

a) Have a substantial adverse effect on a scenic vista;

b) Substantially damage scenic resources, including, but not limited to: trees, rock outcroppings, and historic buildings within a state scenic route;

c) Substantially degrade the existing visual character or quality of the site and its surroundings; or,

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views of the area.

In addition, CEQA Section 15064 (b) states "…the significance of an activity may vary with the setting … an activity which may not be significant in an urban area may be significant in a rural area." This statement is applicable to the determination of the significance of a visual effect for the Project.

San Diego County Plans and Policies

San Diego County General Plan

The County of San Diego General Plan (General Plan) was adopted August 3, 2011 by the County Board of Supervisors. The General Plan is intended to provide guidance for the long-term development of San Diego County and includes various Elements that provide guidance for accommodating future growth while retaining or enhancing the County's rural character, its economy, its environmental resources, and its unique communities. Goals, policies and objectives are provided within each of the Elements to guide future land development and ensure consistency with the County's intended vision for the future of San Diego County.

A list of applicable goals and policies is provided below. Refer to the General Plan Consistency Analysis Report prepared by the County for an evaluation of Project consistency with the General Plan, Mountain Empire Subregional Plan, and Boulevard Community Plan goals and policies relative to design (available under separate cover).

The Guiding Principles of the General Plan are to:

- Support a reasonable share of projected regional population growth;
- Promote health and sustainability by locating new growth near existing and planned infrastructure, services, and jobs in a compact pattern of development;

- Reinforce the vitality, local economy, and individual character of existing communities when planning new housing, employment, and recreational opportunities;
- Promote environmental stewardship that protects the range of natural resources and habitats that uniquely define the County's character and ecological importance;
- Ensure that development accounts for physical constraints and the natural hazards of the land;
- Provide and support a multi-modal transportation network that enhances connectivity and supports community development patterns and, when appropriate, plan for development which supports public transportation;
- Maintain environmentally sustainable communities and reduce greenhouse gas emissions that contribute to climate change;
- Preserve agriculture as an integral component of the region's economy, character, and open space network;
- Minimize public costs of infrastructure and services and correlate their timing with new development; and,
- Recognize community and stakeholder interests while striving for consensus.

Chapter 3 - Land Use Element

Policies

- **LU-2.8 Mitigation of Development Impacts.** Require measures that minimize significant impacts to surrounding areas from uses or operations that cause excessive noise, vibrations, dust, odor, aesthetic impairment, and/or are detrimental to human health and safety.
- **LU-6.6 Integration of Natural Features into Project Design.** Require incorporation of natural features (including mature oaks; indigenous trees, and rock formations) into proposed development and require avoidance of sensitive environmental resources.
- **LU-6.9 Development Conformance with Topography.** Require development to conform to the natural topography to limit grading; incorporate and not significantly alter the dominant physical characteristics of a site; and, to utilize natural drainage and topography in conveying storm water to the maximum extent practicable.
- **LU-10.2 Development - Environmental Resource Relationship.** Require development in Semi-Rural and Rural areas to respect and conserve the unique natural features and rural character and avoid sensitive or intact environmental resources and hazard areas.
- **LU-12.4 Planning for Compatibility.** Plan and site infrastructure for public utilities and public facilities in a manner compatible with community character, minimize visual and environmental impacts, and whenever feasible, locate any facilities and supporting infrastructure outside preserve areas. Require context sensitive Mobility Element road design that is compatible with

community character and minimizes visual and environmental impacts; for Mobility Element roads identified in Table M-4, a LOS D or better may not be achieved.

Chapter 5 – Conservation and Open Space Element

Visual Resources

According to the Conservation and Open Space Element, a highway corridor generally includes the land adjacent to and visible from the vehicular right-of-way. A "scenic highway" may include "any freeway, highway, road, or other vehicular right-of-way along a corridor with considerable natural or otherwise scenic landscape." A highway may be designated as "scenic" depending on how much of the natural landscape can be seen by travelers, the aesthetic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

The Conservation and Open Space Element designates several roads within the Project vicinity as County Scenic Roadways. Refer also to Figure 3, Viewshed Analysis, which shows the visibility of the Project site from surrounding vantage points within the viewshed (areas shaded in green would have views to the Project site). The relevant County designated scenic roadways include the following (see also Table 3, County Designated Scenic Roadways, herein):

- Interstate 8 (I-8) from El Cajon city limits east to Imperial County line
- Old Highway 80 from State Route 79 (Pine Valley) to I-8 (Jacumba)
- State Route 94/Ribbonwood Road from State Route 125 to I-8

The following policies identified in the Conservation and Open Space Element are relevant to the proposed project:

- **COS-11.1 Protection of Scenic Resources.** Require the protection of scenic highways, corridors, regionally significant scenic vistas, and natural features, including prominent ridgelines, dominant landforms, reservoirs, and scenic landscapes.
- **COS-11.2 Scenic Resource Connections.** Promote the connection of regionally significant natural features, designated historic landmarks, and points of regional historic, visual, and cultural interest via designated scenic corridors, such as scenic highways and regional trails.
- **COS-11.3 Development Siting and Design.** Require development within visually sensitive areas to minimize visual impacts and to preserve unique or special visual features, particularly in rural areas, through the following:
    - Creative site planning
    - Integration of natural features into the project
    - Appropriate scale, materials, and design to complement the surrounding natural landscape
    - Minimal disturbance of topography

  - Clustering of development so as to preserve a balance of open space vistas, natural features, and community character.
  - Creation of contiguous open space networks

- **COS-11.5 Collaboration with Private and Public Agencies.** Coordinate with the California Public Utilities Commission, power companies, and other public agencies to avoid siting energy generation, transmission facilities, and other public improvements in locations that impact visually sensitive areas, whenever feasible. Require the design of public improvements within visually sensitive areas to blend into the landscape.
- **COS-11.7 Underground Utilities.** Require new development to place utilities underground and encourage "undergrounding" in existing development to maintain viewsheds, reduce hazards associated with hanging lines and utility poles, and to keep pace with current and future technologies.
- **COS-13.1 Restrict Light and Glare.** Restrict outdoor light and glare from development projects in Semi-Rural and Rural Lands and designated rural communities to retain the quality of night skies by minimizing light pollution.
- **COS-13.2 Palomar and Mount Laguna.** Minimize, to the maximum extent feasible, the impact of development on the dark skies surrounding Palomar and Mount Laguna observatories to maintain dark skies which are vital to these two world-class observatories by restricting exterior light sources within the impact areas of the observatories.
- **COS-13.3 Collaboration to Retain Night Skies.** Coordinate with adjacent Federal and State agencies, local jurisdictions, and tribal governments to retain the quality of night skies by minimizing light pollution.

Air Quality, Climate Change, and Energy

Policies

- **COS-14.4 Sustainable Technology and Projects.** Require technologies and projects that contribute to the conservation of resources in a sustainable manner, that are compatible with community character, and that increase the self-sufficiency of individual communities, residents, and businesses.
- **COS-14.7 Alternative Energy Sources for Development Projects.** Encourage development projects that use energy recovery, photovoltaic, and wind energy.

Mountain Empire Subregional Plan

The Mountain Empire Subregional Plan is supplemental to the County General Plan and provides goals and policies to guide development of the Boulevard, Manzanita, Live Oak Springs, Tierra del Sol, Crestwood, Jewel Valley, McCain Valley, Miller Valley, and a portion of Bankhead Springs in southeastern San Diego County. The Boulevard Subregional Planning Area includes the community of Boulevard in which the Project site is located.

1. LAND USE ELEMENT

Policies and Recommendations

1. The landforms of the subregion are an important environmental resources that should be respected in new development. Hillside grading shall be minimized and designed to blend in with the existing natural contours.

6. CONSERVATION

Policies and Recommendations

1. All development shall demonstrate a diligent effort to retain as many native oak trees as possible.

4. Use low sodium lights and light shielding for new subdivisions and use permits as required by the "Dark Sky" Ordinance for those properties within a specified radius of the observatory at Palomar Mountain.

5. Development shall not adversely affect the habitat of sensitive plant and wildlife species or those areas of significant scenic value.

Boulevard Community Plan

The Boulevard Subregional Planning Area includes the community of Boulevard in which the Project site is located. The following policies of the Boulevard Community Plan apply to the Project.

1. LAND USE

Policies and Recommendations

- **LU 1.1.1.** Prohibit higher density, clustered subdivisions, or industrial-scale projects or facilities that induce growth and detract from or degrade the limited groundwater resources, water and air water quality, visual and natural resources, abundant wildlife, and historic rural character of the Boulevard area. Renewable energy projects, such as solar and wind projects, are not “industrial-scale projects or facilities” for purposes of this Community Plan.

- **LU 1.1.2.** Encourage development to protect the quality and quantity of ground and surface water resources, air quality, dark skies, visual resources, and low ambient noise levels, as well as retain and protect the existing natural and historic features characteristic of the community’s landscape and natural environment.

- **LU 1.1.3.** Encourage development to respectfully incorporate existing topography and landforms, watersheds, riparian areas, oaks, and other native vegetation and wildlife, ridgelines, historic and cultural resources, views, and sustainability design factors.

- **LU 1.2.2.** Require development, including regional infrastructure and public facilities, to comply and maintain a rural bulk and scale in accordance with Boulevard’s community character.

Renewable energy projects, such as wind and solar projects, are not "regional infrastructure or public facilities" for purposes of this policy.

- **LU 3.1.1.** Encourage development to preserve dark skies with reduced lighting and increased shielding requirements.
- **LU 6.1.1.** Require commercial, industrial development and large-scale energy generation projects to mitigate adverse impacts to the rural community character, charm, quiet ambiance and life-style, or the natural resources, wildlife, and dark skies of Boulevard, if feasible, in accordance with the California Environmental Quality Act.
- **LU 6.1.2.** Encourage commercial, industrial development and large-scale energy generation projects to create and maintain adequate buffers between residential areas and incompatible activities that create heavy traffic, noise, infrasonic vibrations, lighting, odors, dust and unsightly views and impacts to groundwater quality and quantity.
- **LU 6.1.3.** Encourage commercial, industrial development and large-scale energy generation projects to provide buffers from public roads, adjacent and surrounding properties and residences, recreational areas, and trails.

2. CIRCULATION AND MOBILITY

Policies and Recommendations

- **CM 8.6.2.** Encourage the use of solar and residential scale wind turbines.

San Diego County Zoning Ordinance

Portions of the County Zoning Ordinance that may affect the assessment of visual impacts are generally zoning overlay designators. Relevant Special Area Regulations Designators include:

- B – Community Design Review Area
- D – Design Review Area
- G – Sensitive Resource
- H – Historic/Archaeological Landmark or District
- J – Special Historic District
- S – Scenic Area

No zoning overlay designators or Special Area Regulations Designators apply to the Project or other associated lands affected by Project-related infrastructure improvements.

Design Policies and Guidance

The Mountain Empire Subregion and the Boulevard Community Plan provide goals and policies that address design objectives for these areas within the County. The Project site is not subject to a Special

Area Regulations Designator that would require design review or sensitivity to natural resources on-site having high scenic value, and specific Design Guidelines have not been prepared for the Boulevard community that would apply to the proposed Project. Refer to the General Plan Consistency Analysis Report prepared by the County for an evaluation of Project consistency with the General Plan, Mountain Empire Subregional Plan, and Boulevard Community Plan goals and policies relative to design (available under separate cover).

3. VISUAL ENVIRONMENT OF THE PROJECT

3.1 PROJECT SETTING

Surrounding Land Uses

The Project area is located within the community of Boulevard in southeastern rural San Diego County. The site lies in the southeastern portion of San Diego County near the eastern portion of the Peninsular Ranges and western Colorado Desert region. The Peninsular Ranges are located to the south and east and are characterized by steep mountain slopes exhibiting rock outcroppings and chaparral vegetation along the western slopes, forestland at higher elevations, and desert chaparral along the eastern slopes. The lower elevations of the valley exhibit scattered rural development. To the north and northeast of the site, largely undeveloped lands are present supporting mountainous terrain and rock outcroppings, areas of steep slopes, and visually prominent ridgelines on County, state park, tribal, and Bureau of Land Management (BLM) lands. The BLM Carrizo Gorge Wilderness Area extends to the north and east of the subject site. Further to the east, the desert terrain includes mountains, alluvial fans, and desert floor and offers expansive views characterized by varied landforms, desert habitat, and low-lying valleys. The Cleveland National Forest is located west of the Project site.

The majority of lands in the Project vicinity are undeveloped large-acre properties, with limited rural residential uses scattered within the landscape. A number of single-family residential uses are present to the west and south of the Project site. Adjacent to the northeast of the site is the Rough Acres Ranch. The Ranch operates as a conference/retreat and wellness center and campground facility. The Ranch supports an equestrian center, tent and RV/trailer campground facilities, restroom facilities, two clubhouse/lodges, two swimming pools, 200-person amphitheater, an archery course, skeet shooting range, multi-purpose athletic field, recreation area/lay down yard, and three ranch residences.

To the southwest of the site is the Boulevard Border Patrol Station. To the southeast/east of the site is the McCain Valley Conservation Camp, a prison camp maintained by the California Department of Forestry and Fire Protection (CALFIRE) and the California Department of Corrections and Rehabilitation. Further to the south, across I-8, is the rural community of Boulevard.

Additionally, this portion of the County also supports a variety of planned and existing renewable energy projects; refer to Figure 6, Cumulative Projects Map. The 500 kilovolt (kV) Sunrise Powerlink traverses this portion of the County and exhibits transmission towers of substantial height that are visually dominant within the visual landscape. The towers are located within a 200-foot wide utility easement with towers located adjacent to I-8 and along the western side of the McCain Valley Road alignment within the Project area. Views of the transmission line, towers, and McCain Valley Road from surrounding vantage points are at times obscured by intervening topography and/or lessened as viewing distance is increased. The Kumeyaay Wind Farm, consisting of 25 wind turbines, is also located along the western rim of the McCain Valley and is highly visible from various locations within the valley and from I-8 due to both their motion and size. The turbines are approximately 400 feet tall as measured from the ground to the tip of the blade.

Palomar Observatory lies approximately 56 miles to the northwest of the Project site. The Mount Laguna Observatory lies approximately 12 miles to the northwest.

Project Site

The subject property is currently undeveloped. On-site topography is relatively flat to gently sloping, with limited areas of steep slopes. A limited number of rock outcroppings are scattered throughout the site. The site supports a range of vegetation types with varied coverage throughout, and therefore, does not exhibit a visual continuity in this sense. Vegetation onsite is generally composed of upland scrub and chaparral communities mixed with coast live oak, Mexican rush, salt grass, and mulefat, among others. Vegetation changes in appearance throughout the seasons, with colors of dark to light green during the wet season with hues of yellows and browns during the drier seasons.

Views from the Project site are generally panoramic and encompass the Laguna, In-Ko-Pah, and Jacumba mountains at a distance to the west, north, and east, respectively. The Project viewshed encompasses a wide view comprised of the McCain Valley along the lower elevations extending upwards to the ridgelines of the surrounding mountains; refer to Figure 3, Project Viewshed.

Visual Quality Definitions

Visual quality is affected by the aesthetic characteristics of a particular area. Such aesthetic elements may include physical characteristics, as well as viewer perception. Physical characteristics influencing the visual quality of an area may include such features as topography, landform, natural vegetation, water bodies, visual diversity, and visible coloring. Viewer perception is generally influenced by vividness, intactness, harmony, visual integrity, adjacent scenery, and/or visual unity. These elements all influence the overall evaluation of the quality of a particular view.

High Visual Quality

Areas with high visual quality may offer physical characteristics such as varying vertical relief; established natural vegetation with visually pleasing form, color, texture or pattern; water features; or, other elements that create a visually unified landscape. Particular views with high visual quality may include those with distinct focal points or patterns; enhanced or existing natural scenery; compatibility with the character of the surrounding landscape; and/or, a unique visual setting within the surrounding area.

Moderate Visual Quality

Moderate visual quality is generally considered to be represented by views that are interesting, but not visually exceptional with regard to landforms or other physical characteristics. Such views may consist of dominant types of vegetation; water features; colors within the landscape; or, other elements that visually unify a particular view or landscape. Contributing factors may include a varied composition that includes visual patterns created by landscape elements; enhancement of views from adjacent scenery; and/or, a visual setting that is distinguishable from, as well as visually similar to, views within the surrounding area.

Low Visual Quality

Low visual quality may be represented by areas with limited or no existing landforms or changes in topography; sparse or indiscernible vegetation types, due to density; absence of water features; monotonous color palettes; or, limited visual elements of varying visual interest. Visual quality may be considered to be low if views are varied, but visually disconnected; lack perceivable visual patterns; are

adjacent to views that devalue the existing scenic quality; or, do not generally represent a visual setting that is common and/or valued within the surrounding area.

3.2 PROJECT 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. Viewsheds may occur from designated scenic viewpoints or from singular vantage points where an unobstructed view of visual components within the landscape exists. The viewshed is composed of such elements as topography and natural land features (i.e., hillsides, mountains) and other physical features within the landscape, such as buildings, vegetation, water features. Potential visual impacts within the viewshed may be affected by distance of the viewer from a site, the frequency and length of views, the personal viewer perception, and physical and/or atmospheric conditions at the time viewing occurs.

Traversing the Project viewshed are Interstate 8 (I-8) which serves as a major east-west corridor and Old Highway 80 which runs east-west to the south of I-8, providing access to the community of Boulevard and its commercial corridor.

Much of the area consists of undeveloped lands, particularly along the sloping hillsides of the mountains, with rural type development concentrated along the valley floor. Grazing activities are present along the grasslands of the flatter areas of the valley both on private ownerships as well as on lands leased from the BLM.

Vegetation within the viewshed is comprised of chaparral along the slopes with non-native grasslands and meadowlands along with flat-topped buckwheat and sagebrush scrub, coast live oak and limited pines along the valley floor.

The Project site is located within McCain Valley along the slopes rising from the valley floor to the ridgelines of the surrounding mountains. The Project site is located within McCain Valley on southeastern San Diego County. The Project viewshed is generally defined by the surrounding mountainous topography that encircles the valley floor. To the west, the viewshed is generally defined by slopes rising to the Tecate Divide, with the eastern boundary being defined by the In-Ko-Pah Mountains. To the north, the viewshed is defined by the In-Ko-Pah Mountains, with sloping lands south of Boulevard forming the southerly extent.

Although the viewshed is expansive, consideration of this viewshed provides the most comprehensive (largest) and conservative (worst-case) estimate of the area that could potentially be affected by the proposed Project. Refer to Figure 3, Viewshed Map, which shows the viewshed in the Project vicinity. An approximate five-mile radius from the Project site was considered; however, as shown on Figure 6, views of the Project site would only occur from limited vantage points within this area (shown as shaded in green), due to area topography. Figure 3, Viewshed Map, shows the general limits of the viewshed considered within the viewshed as part of this analysis.

Within the viewshed, views may be experienced by passengers in vehicles traversing the valley in vehicles along I-8 and Old Highway 80. Views within the viewshed also occur from low-density development and undeveloped lands along the valley floor to the south of I-8, generally bounded by the surrounding

hillsides. Due to the generally flat topography of the valley floor and the limited, low-lying vegetation typical of the environment, views across the valley from surrounding vantage points within the viewshed do occur; however, distance from the object being viewed and intervening development and geological features have the potential to reduce or restrict views.

Within the viewshed, views to the north, east, and west are generally restricted due to topography; however, more distant views are afforded looking to the south as one travels along I-8. Topography and established vegetation further influence the degree to which the Project site is visible from this roadway within the viewshed.

More distant views are afforded from varying points along the I-8 and McCain Valley Road corridors where elevations are higher, with longer, expansive views to the valleys located west of Boulevard, the Laguna Mountains located to the north, and the distant Sierra de Juarez Mountains to the southeast.

Within the Project viewshed, visibility may also be influenced by meteorological conditions which reduce visual clarity of elements within the landscape. For instance, at a viewing distance of two or more miles, key visual elements including the existing 500 kV Sunrise Powerlink transmission line, steel lattice towers, and other low-level transmission lines, may have reduced visibility and visual prominence within the surrounding landscape due to meteorological conditions, existing vegetation, and/or topography. Additionally, the vertical forms of the wind turbines associated with the Kumeyaay Wind Farm also attract the eye of viewers traveling through the area. Varying topography, mountains and geographic elements such as rock outcroppings also contribute to the visual composition of the viewshed.

To characterize the visual pattern elements that occur within the Project viewshed, a number of key view locations within the valley were identified and representative photographs taken. Key viewpoints are described in detail in Section 5.2, Key Views. Key vantage points within the viewshed offering views of the site occur from I-8 and McCain Valley Road.

State Scenic Highways are highways that are either officially designated by the California Department of Transportation (Caltrans) or are eligible for designation. This statewide system of scenic highways is part of the Master Plan of State Highways Eligible for Official State Designation as Scenic Highways. Designation of a highway as “scenic” is dependent upon the visibility of the natural landscape to travelers, the aesthetic quality of the landscape, and the extent to which development intrudes upon the traveler’s enjoyment of the view. A highway’s designation may change from “eligible” to “officially designated” if a local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and Caltrans subsequently designates the road as an official State Scenic Highway.

With regard to the Project, no designated scenic roadways are located directly adjacent to the site; however, Interstate 8 in the vicinity of the site is designated as an eligible State Scenic Highway, but it is not officially designated as such. The Project site may potentially be intermittently visible from vantage points along the length of I-8. The roadway is located approximately 0.43 mile to the south of the Project site at its closest point and views of the Project would occur; however, such views would vary based upon distance of the vantage point as well as elevational differences, viewing angle, and topography.

As indicated previously, the County General Plan Conservation and Open Space Element identifies several roads as County Scenic roadways within the vicinity of the Project site including portions of I-8, McCain

Valley Road, Old Highway 80, and State Route 94. Table 3, County Designated Scenic Roadways, identifies the scenic roadways within the vicinity of the Project site.

TABLE 3. COUNTY DESIGNATED SCENIC ROADWAYS

Roadway	Distance from Project Site (at Closest Point)
Interstate 8 (I-8) from City of El Cajon city limits east to Imperial County line	Approximately 0.4 mile south of Project site
Old Highway 80 from State Route 79 (Pine Valley) to I-8 (Jacumba)	Approximately 0.9 mile south of Project site
State Route 94/Ribbonwood Road from State Route 125 to I-8	Approximately 0.25 mile west of Project site

Source: County General Plan Conservation and Open Space Element, Table COS-1, County Scenic Highway System. 2011.

3.3 LANDSCAPE UNITS

A landscape unit is an area that can generally be defined by visual and physical characteristics and may be composed of a limited area (i.e., meadow) or a larger area (i.e., portion of a mountain range). The overall boundaries of a landscape unit may generally be defined by topography, natural vegetation, architectural design, landforms, or similar types of land uses. Each landscape unit can be described individually and as varying from other adjacent landscape units. Each landscape unit is a portion of the regional landscape that often corresponds to a place or district that is commonly known among local viewers.

Several landscape units that may potentially be affected by construction of the proposed facilities were identified in the 2013 Dudek Visual Resources Technical Report. These landscape units are generally delineated in Figure B-1, Project Area Viewshed Analysis/ Landscape Character Units (LCU) (see Appendix B) and are further described below. The Proposed Project is located on the same site (i.e., within the same viewsheds) as the Approved Project; therefore, the analysis herein considers the same Landscape Units as were identified in the 2013 report for purposes of consistency in discussion.

Landscape Unit #1 - Mountains

The following language is taken from the Dudek Visual report (Dudek 2013) and describes Landscape Unit #1, Mountains, as originally analyzed for the Rugged Solar project:

Several mountain ranges bound the project area, including the Laguna Mountains to the west and the In-Ko-Pah and Jacumba Mountains to the north and east. These broad mountain ranges are characterized by domed to pyramidal ridges and intervening valleys. The mountains in this unit range in elevation from approximately 3,000 to 4,500 feet and enclose the McCain Valley, including the project area. Cultural modifications or other human disturbances are minimal in the Mountain LCU, likely because of topographical constraints, though the Interstate 8 highway corridor and other roads do bisect the unit. In addition to Interstate 8 and other roads, the existing Kumeyaay Wind Farm along the Tecate Divide, approximately 2.25 miles from the project site, is also visible from certain vantage points in the McCain Valley and for westbound travelers on Interstate 8.

The silhouette of the domed to pyramidal ridgelines in this LCU is distinct (against the sky), while the transition between the mountains and adjacent McCain Valley LCU (see below) is less distinct. The

boundary between the Mountains LCU and McCain Valley LCU is primarily characterized by transitional slopes, periodic rock outcrops, and slight variations in vegetation density (the mountains tend to be more sparsely vegetated). The texture of the Mountain LCU is moderately coarse, with some smooth patches formed by breaks in the vegetation and rock outcrops. Colors in this LCU tend to be muted, with tans, grays, and greens of vegetation and exposed soils dominating the unit.

The Interstate 8 highway corridor is the dominant human modification on the landscape in the project area. This transportation infrastructure is a split four-lane highway corridor; two travel lanes in each direction that are grade separated with a variable width median, appears as a smooth, flat, linear feature that creates a highly prominent break in the natural vegetation of the LCU, while the drab gray color of the highway generally fits within the more muted color palette of the surrounding area, its extremely smooth texture contrasts with the more highly textured (stippled) vegetation and boulders that are characteristic of the Mountain LCU. In addition, road cuts support limited vegetation and the exposed light-colored granitic soil tend to contrast with adjacent vegetated areas (Dudek 2013).

Landscape Unit #2 - McCain Valley

The following language is taken from the Dudek report (Dudek 2013) and describes Landscape Unit #2, McCain Valley, as originally analyzed for the Rugged Solar project:

The McCain Valley LCU is characterized by low, rolling chaparral hills, with some boulders and other rock outcrops dotting the landscape. The vegetation generally consists of low shrubs, grasses, and other typical desert species. Large oak trees add a vertical dimension to a landscape that is otherwise dominated by low vegetation. The area to the north of Interstate 8 tends to be characterized by open, rocky range land that is occasionally broken by cultural modifications (e.g., roads, transmission lines, etc.), while the area to the south of Interstate 8 is more pastoral, less rugged, and includes the community of Boulevard. Colors in the unit tend to be muted and dominated by shades of tan and green, although some vibrancy is introduced from reds, oranges, and other warm colors resulting from seasonal changes in vegetation.

The visual texture of the McCain Valley LCU ranges from smooth to moderate, depending on vegetation type and density, as well as the presence of (or lack of) rock formations and outcrops. Tule Wash cuts diagonally across the McCain Valley LCU north of Interstate 8 generally from the northwest to the southeast toward Tule Lake (Tule Lake is not highly visible in the McCain Valley, including the project site, because of topography). The dry streambed is visually distinct from the surrounding low, rolling hills because of its lack of contiguous vegetation and extent of exposed soil, both of which result in a smoother texture and more uniform color palette. The width of the wash varies from less than 0.1 mile to about 0.5 mile at its widest point.

Development in the McCain Valley LCU is moderate, with multiple areas of human disturbance interspersed with areas of more natural rugged terrain and vegetation. Human disturbances include highway and other road corridors, transmission and communication lines, fences, and ranches (buildings and range areas), among others. These generally linear (both horizontal and vertical) features contrast with the more rounded, gently sloping lines and forms of the landscape. A cluster of buildings is present at the McCain Valley Conservation Camp where the wash intersects McCain Valley Road, as well as fencing, transmission and communication lines, and roads (again, primarily along or adjacent to McCain Valley Road). The wash also appears to be used by off-highway vehicles (OHVs).

As in the Mountain LCU, the Interstate Highway 8 corridor is the dominant human modification in the McCain Valley LCU. This transportation infrastructure appears as two dominant lines through the LCU that is visually reinforced by road cuts with exposed light-colored granitic soils that contrast with adjacent vegetated area. The roadways are a smooth, flat, linear feature that creates a highly prominent break in the natural vegetation of the LCU. While the drab gray color of the highway generally fits within the more muted color palette of the surrounding area, its smooth texture contrasts with the more highly textured (stippled) vegetation of the McCain Valley LCU.

4. EXISTING VISUAL RESOURCES AND VIEWER RESPONSE

4.1 EXISTING VISUAL RESOURCES

The McCain Valley is generally defined by lower-elevation hillsides to the south, the Laguna Mountains to the west, and the In-Ko-Pah and Jacumba Mountains to the north and east. These features generally define the valley and the overall viewshed within which lies the Project site. The McCain Valley offers varied topography, scattered rock outcroppings, and chaparral covered hillsides and exhibits a variety of visual patterns, with low-density rural-type development mixed with undeveloped ranchland and grazing lands, oak woodland and chaparral, and intermittent rock outcroppings.

Onsite lands affected by the proposed Project is generally lacking in significant visual resources. Topography is varied with portions of the site supporting moderate slopes along with scattered rock outcroppings. Low-lying vegetation and scattered rock outcroppings generally characterize the property.

4.1.1 Visual Character/Visual Quality

The Project site is located in the McCain Valley which is bounded by the Laguna Mountains to the west, the In-Ko-Pah and Jacumba Mountains to the north and east, and low-lying rolling hills and the valley floor to the south. The topography of these mountain ranges and nearby hills generally defines the landscape and the overall viewshed within which lies the Project site.

The McCain Valley offers a variety of topographic and geographic patterns ranging from gently sloping lands along the valley floor, undeveloped pasture lands, oak woodland and chaparral habitat, and sporadic rock outcroppings. The east/southeast horizon of the surrounding viewshed offers mountains characterized by a more varied and often better defined form compared to those in the north and west, which offer a more rounded character and are textured with sporadic rock outcroppings. Refer to Section 3.3 which describes the Landscape Units identified in the project area.

4.2 VIEWER RESPONSE

Viewer response is based on both viewer sensitivity and viewer exposure. These elements influence how a viewer may potentially respond to a change in the visual landscape, particularly with regard to development of a site from a generally undeveloped condition. Viewer response varies based upon the type of viewer and the characteristics of the visual environment that would ultimately be affected (i.e., urban versus rural environment, established large-scale commercial area versus low density residential uses, etc.). Viewer response is largely influenced by viewer sensitivity and viewer exposure, as described in greater detail below.

4.2.1 Viewer Sensitivity

Viewer sensitivity to a change in the visual environment can be influenced by a number of factors, including the awareness of the viewer, personal interest in a particular visual resource, and/or viewer activity during the time that views of a resource occur (i.e., vehicle driver versus passenger, active versus passive viewing). In addition, the particular goals or values of a community can influence the sensitivity of viewers to a particular site, land area, or viewshed. Viewer sensitivity may vary between those with a

vested interest in a community (i.e., residents) versus those traveling through an area with little or no knowledge of the community or existing visual landscape. Based on these conditions, viewer sensitivity can be assigned a value of low, medium, or high; refer also to Table 4, Viewer Groups and Anticipated Exposure.

It is likely that community members would be more sensitive to the Project than would those who experienced the area as a tourist. In addition, viewer sensitivity may be higher among those who would experience views of the site more frequently, such as area residents to the west of the site. As views of the Project components would also vary due to distance from the site, as well as travel speed along area roadways and the degree to which one chooses to make an effort to view the site (e.g. turning of one's head), viewer sensitivity to a visual change within the landscape occurring as a result of the Project would further be influenced.

Limited views of the Project site may also be experienced by area recreationalists. Visitors to the McCain Valley Conservation Area to the north or the Mt. Tule Recreational Area to the northeast may be afforded views to the subject site from varied public vantage points and at varying distances.

Additionally, viewers and recreationalists in the area would experience the 150-foot tall steel lattice structures constructed as part of the 500 kV Sunrise Powerlink Project which are located adjacent to McCain Valley Road. As they are a dominant feature within the landscape, it is anticipated that such visual elements would, to a degree, detract from views of the Project elements. Similarly, views of the Kumeyaay Wind Farm in combination with views of other existing renewable energy projects within the viewshed as one travels along area roadways (i.e., Tule Wind turbines, 138 kV ECO Transmission Line, and Energia Sierra Juarez Gen-Tie project) would influence, or detract from, viewer sensitivity to the proposed Project elements within the visual setting.

4.2.2 Viewer Groups

Viewer groups would mainly consist of those individuals traveling along I-8, McCain Valley Road, and Ribbonwood Road in the proximity of the Project site; refer to Table 4, Viewer Groups and Anticipated Exposure. Additional viewer groups may include travelers along other public roadways in the area where views occur at a higher elevation than the Project site or across the valley; however, such views would generally be distanced from the Project site. Visitors to the Anza Borrego Desert State Park and other recreational areas in the surrounding area may also experience views to the site from varied vantage points and at varying distances.

Additional viewer groups may include residents and/or occupants viewing the Project site from surrounding residential uses (particularly at a higher elevation than the site) to the west, southwest and south; however, such views of the Project from these vantage points would occur from privately-owned properties and not public viewpoints. With exception of those properties immediately adjacent to the site (i.e., to the west), views from these private ownerships would generally be decreased due to distance and intervening vegetation and topography. It should be noted that CEQA does not require the analysis of a project's effect on views experienced from privately-owned lands (i.e., residential ownerships). However, such analysis has been incorporated herein in this report.

4.2.3 Viewer Exposure

A limited number of public roadways are present in the area surrounding the Project site. Potential views into the Project site from vehicles traveling along adjacent roadways would be limited, due to distance to the proposed development areas, height of the Project components, travel speeds, and the angle of the view with respect to the viewer (i.e., forward-looking versus turning one's head and looking back towards the subject property). Views of the site from other public roads at greater distances may occur, but would also be limited.

In determining the potential exposure of each viewer group, several factors are considered. These include the overall number of viewers experiencing visual changes to the resource as the result of the proposed development; how long views would last; the anticipated speed at which viewers would be traveling; and, the relation and distance of the viewer to the particular site.

Table 4, Viewer Groups and Anticipated Exposure, summarizes the anticipated viewer groups and the potential viewing experience of each.

TABLE 4. EXISTING VIEWER GROUPS AND EXISTING EXPOSURE

Existing Viewer Group	Number of Existing Viewers	Key Views	Approximate Distance to the Project Site (Closest Vantage Point)	Sensitivity	Duration of View of the Project Site
Drivers along Interstate 8	Estimated 10,000+ people per day	#1 and #4	0.4 mile	Low to Medium	Varied / 0-15 seconds
Drivers along Old Highway 80	Estimated less than 1,000 people per day	N/A	0.9 mile	Low	Varied / 0-10 seconds
Drivers along Ribbonwood Road	Estimated less than 500 people per day	N/A	0.25 mile	Low	Varied / 0-10 seconds
Drivers along McCain Valley Road	Estimated less than 200 people per day	#2 and #3	Adjacent	Low	Varied / 0-15 seconds
Surrounding Private Residential Uses	Varied	N/A	Adjacent / Varied	Low to High	Varied

4.2.4 Viewer Awareness

Viewer response is affected by the degree to which a viewer is receptive to visual details, character and quality of the surrounding landscape. A viewer's perception is affected by his/her activity and the degree to which he/she actively participates in noticing a change in the visual environment.

Viewer awareness to potential visual changes in the setting that may occur with the Project would be varied. A viewer would first need to be in a location within the surrounding area where the Project site was visible (e.g. from a higher elevation), then actively notice that a change in the visual landscape has

occurred. Viewer awareness would also vary between local residents and those who are experiencing the area as a visitor. Local residents and recreationalists who frequent the area (i.e., visitors using McCain Valley Road to access the McCain Valley Cooperative Land and Wildlife Management Area) would likely be more aware of a change in the visual environment as they would be familiar with the existing setting and may more readily notice a change to existing views within the landscape. In addition, viewer awareness would also vary due to distance from the proposed solar facilities, as views occurring at a greater distance would diminish the visibility of the Project components within the visual landscape.

5. VISUAL IMPACT ASSESSMENT

5.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

The California Environmental Quality Act (CEQA) Guidelines define "environment" to include "objects of…aesthetic significance (Section 15360)." As such, the County of San Diego has identified thresholds of significance to assess potential impacts resulting from proposed development.

The following significance guidelines are intended to provide guidance in the evaluation of whether a significant impact to visual resources would occur as a result of project implementation. According to the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirement for Visual Resources (County of San Diego 2007), a project is generally considered to have a significant effect if it proposes any of the following:

1) Introduction of features that would detract from or contrast with the existing visual character and/or quality of a neighborhood, community, or localized area by conflicting with important visual elements or the quality of the area (such as theme, style, setbacks, density, size, massing, coverage, scale, color, architecture, building materials, etc.) or by being inconsistent with applicable design guidelines;

2) Removal or substantial adverse change of one or more features that contribute to the valued visual character or image of the neighborhood, community, or localized area, including but not limited to landmarks (designated), historic resources, trees, and rock outcroppings;

3) Substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from a public road, a trail within an adopted County or State trail system, a scenic vista or highway, or a recreational area; or,

4) The project would not comply with applicable goals, policies or requirements of an applicable County Community Plan, Subregional Plan, or Historic District's zoning.

5) The project would create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Additionally, the County's Guidelines for Determining Significance and Report Format and Content Requirements for Dark Skies and Glare (County of San Diego 2009) identify additional significance thresholds for evaluating impacts pertaining to nighttime lighting and glare. These thresholds are listed below.

6) The project would have a significant impact if it would result in:

    a) Installation of outdoor light fixtures that do not conform to the lamp type and shielding requirements described in Section 59.105 (Requirements for Lamp Source and Shielding) and are not otherwise exempted pursuant Section 59.108 or Section 59.109 of the San Diego County Light Pollution Code.

b) Operation of Class I or Class III outdoor lighting between 11:00 p.m. and sunrise that is not otherwise exempted pursuant Section 59.108 or Section 59.109 of the San Diego County Light Pollution Code.

c) Generate light trespass that exceeds 0.2 foot-candles measured five feet onto the adjacent property.

d) Install highly reflective building materials, including but not limited to reflective glass and high-gloss surface color, that will create daytime glare and be visible from roadways, pedestrian walkways, or areas frequently used for outdoor activities on adjacent properties.

e) Not conform to applicable federal, State, or local statue or regulation related to dark skies or glare, including, but not limited to the San Diego County Light Pollution Code.

5.2 KEY VIEWS

The County's Guidelines for Determining Significance - Visual Resources, have been considered in identification of the following key views (County 2007). As stated in the County's Guidelines, analyzing all potential views in which a project would be seen is not feasible. Therefore, a number of key viewpoints should be selected that most clearly represent the visual effects of a project and the primary viewer groups that would potentially be affected by the project.

Based on such guidance, several key views of the Project site from surrounding public vantage points were identified; refer to Figure 4, Key View Location Map. Photographs of the existing site conditions and visual setting from these key vantage points are provided in Figures 4 and 5A to 5D. Additionally, visual simulations were prepared for the Approved Project (2013) from these key vantage points which are also provided in Figures 5A to 5D. These key views were selected as those vantage points from which the proposed development may have a higher degree of visibility to the public (i.e., from I-8) or a greater potential to result in a visual change to the existing landscape.

Key View #1 – View from Eastbound Interstate 8 (West of Ribbonwood Road)

Key View 1 provides views of the McCain Valley, the Project site, as well as views to the southeast, east, and northeast from eastbound vehicles traveling eastward on I-8; refer to Figure 5A. Viewers from this vantage point would be passengers in vehicles.

From Key View #1, the existing visual landscape contains native vegetation communities and flat to gently rolling terrain in the foreground typical of the high desert region of San Diego County. In the background, the Jacumba Mountain Range and Wilderness Area are the most prominent visual features. Existing views are varied, but generally consist of the expansive flatter lands of the McCain Valley and the surrounding rolling hillsides in the foreground and middle-ground, and the mountains and ridgelines having greater elevation in the background. The westbound lanes of I-8 are also visible in the foreground from this vantage point. Other elements within the visual landscape include limited rural residential uses, undeveloped lands, and large transmission towers in support of other existing renewable energy projects located within the region. Well-established vegetation is visible throughout the valley, consisting largely of low-lying scrub and brush, along with scattered oaks and oak woodlands. Scattered rock outcroppings and washes also contribute to the existing visual character of the area landscape.

The Project site is located approximately one mile from the Key View location (at its closest point). The primary project components in this view would include the single-axis PV trackers and the project's aboveground interconnect transmission lines running from Areas D and E to the project substation (project facilities). Portions of Areas A and B and the majority of Areas D and E would be visible from this Key View. The proposed facilities would be located at an approximate elevation of 3,600 feet amsl, or approximately 200 feet below Key View 1 (Dudek 2013). As the viewing angle occurs at a higher elevation than the Project site, views experienced are direct yet distanced, as can be seen in Figure 5A. However, as one travels within the vicinity of this vantage point, the low-lying hills and elevated westbound I-8 travel lanes intermittently obscure the Project site from view. As a result, the Project components would only be briefly visible from this location due to travel speed, viewing angle, and intervening topography. Although intervening topography and/or vegetation, as well as topography on the site itself, may influence views to the site, at the point where the site can be seen, the majority of the solar panel fields and other related improvements would generally be visible.

The addition of the Project elements would contribute to a change in the views experienced from this vantage point. However, although views to the site would vary as one travels along the roadway, viewer response is anticipated to be low from this vantage point, as visibility of the proposed Project features within the landscape would be diminished due to a viewing distance; refer to Figure 5A. As stated, the existing setting offers a range of varied topography and distinctive mountainous features, combined with the varied patterns created by development and vegetation along the flatter valley floor, all of which offer elements of visual interest to the viewer. However, although the Project would add a new visual feature within the landscape that would be visible from this vantage point and may somewhat contrast with the existing vegetation patterns along the valley floor, the viewer would also experience views of existing infrastructure such as the transmission towers associated with other renewable energy projects in the area (i.e., Sunrise Powerlink), utility lines, and other structural elements that are already part of the existing built landscape. Additionally, the westbound lanes of I-8 would be witnessed in the foreground, thereby diminishing the scenic value of any views looking to the Project site.

Further, viewers from this vantage point would be motorists, tourists, and/or commuters traveling through the area. Although I-8 is considered to be a County scenic highway and State-eligible scenic highway, views to the site from the roadway would be diminished by motorist speed, distance to the site, limited duration of views, and other competing and more dominant visual elements within the landscape. As such, it is not anticipated that the Project site would be the focus of travelers along eastbound I-8 at this vantage point.

For the reasons above, it is anticipated that the introduction of the proposed Project elements within the expansive visual landscape would result in a moderate alteration of the visual character and quality of existing views from eastbound I-8. Viewer response to and awareness of the change in the landscape with addition of the Project is anticipated to be low to moderate and further influenced by the limited duration of the view, distance to the site, intervening topography and vegetation, travel speed, and similar traffic traveling along westbound I-8. For these reasons, project impacts are considered to be less than significant.

Key View #2 – View from Northbound McCain Valley Road (North of Interstate 8)

Key View 2 is the view from McCain Valley Road looking north/northeast; refer to Figure 5B. Viewers from this location would mainly be passengers in vehicles traveling in either direction along McCain Valley Road.

As can be seen in Figure 5B, the existing visual landscape as viewed from this vantage point is dominated by the existing large steel lattice towers, concrete pedestals, transmission lines, and areas cleared of vegetative cover that are associated with the Sunrise Powerlink Transmission corridor. These elements intrude upon the visual landscape experienced from this vantage point. Additionally, existing utility poles are present along the McCain Valley Road alignment. Scattered oaks and occasional rock outcroppings add a degree of contrast to the overall visual landscape which is generally comprised of undeveloped lands with low-lying vegetation of scrub and grassland. Gently sloped, rolling hillsides of lower elevation are visible and provide some degree of diversity, but this view generally lacks distinctive topographical features such as rugged mountains or well-defined ridgelines. Overall, the existing visual character and quality are considered to be moderate.

Views from this vantage point along McCain Valley Road would be of the eastern portion of the Project site (Area A) and would be directly to the development area. Travelers along the roadway would have clear and generally unobstructed foreground views of the Project site, traveling both north or south. Views would occur along a relatively level viewing field. From this vantage point, the western portion of the property (Areas B to E) would not be visible due to intervening site topography and vegetation.

As shown on Figure 2A, Major Use Permit Plot Plan - Area A, Project elements within the panel fields to the east of McCain Valley Road (Area A) would be distanced from the road by approximately 350 feet. Several existing utility easements run parallel to McCain Valley Road, including a 200-foot wide utility easement (Sunrise Powerlink) and a 100-foot wide utility easement (San Diego Gas & Electric). Additionally, the Project design includes a 20-foot wide perimeter landscaping strip along the western property boundary, facing McCain Valley Road. The solar panel field would be further distanced from the road by the required 30-foot fuel modification zone. Therefore, at the closest distance, the first row of PV solar panels would be located approximately 350 feet from the roadway.

Views into the site would be further reduced by the proposed perimeter landscaping that would continue to mature over time, thereby providing even greater visual screening, and blending the development into the surrounding landscape. Additionally, due to the height of the proposed PV solar panels (7-foot min height and 12-foot maximum height at full tilt), distance from the roadway, and line of sight, views of the panels and other associated infrastructure within the panel fields would be obscured from this vantage point.

The PV solar panel fields proposed to the west of McCain Valley (Area B) would similarly be distanced from the roadway; refer to Figure 2B, Major Use Permit Plot Plan - Area B. Distance to the proposed development area from this vantage point would be approximately 1,300 feet; refer to Figure 4, Key View Location Map. Views of the Project elements from this location would be reduced due to the limited height of the Project elements, and further influenced by viewing distance and intervening vegetation and topography, as well as topography on-site.

Therefore, the Project would further contribute to the introduction of man-made structural elements into the visual landscape that would be visible to travelers along McCain Valley Road. The proposed development would be highly noticeable from Key View #2. A change to the existing visual landscape would therefore occur; however, as views currently experienced are dominated by existing large-scale infrastructure, utility-type elements, and the paved roadway, such views are not of high quality. Further, the Project would not be introducing structural elements into a landscape that is currently visually intact or comprised of undisturbed natural lands. Additionally, the existing landscape from this vantage point does not offer elements of interest that contribute to a unique or distinctive sense of visual character. Although Project features would have the potential to contrast with natural features within the landscape as shown in Figure 5B, the view is currently dominated by the existing transmission line, other utility infrastructure, exposed soils where vegetation removal has occurred, and other desert vegetation typical of the area.

Additionally, motorists, commuters, and recreational viewers traveling along McCain Valley Road are anticipated to be those who would experience the views from this location. Motorists or commuters would likely have a lower sensitivity and level of response to the changes that would occur with Project implementation, as their focus would be more on the road than their surroundings; however, motorists who are using the road to access the McCain Valley Conservation Area may have a higher sensitivity to such visual changes. Therefore, combined with lower travel speeds (as compared to I-8) and potential duration of views experienced, viewer awareness from Key View #2 is considered to be moderately high.

As such, the addition of the Project elements within the visual landscape would alter existing views. Although infrastructure elements are currently experienced in the views from McCain Valley Road, the Project would further contribute to the presence of infrastructure-related elements within the landscape which would contrast with the natural elements also present. As the proposed development would be distanced from the road, and would be further partially screened from view (east of McCain Valley Road), the Project would further alter the landscape and may have a potential effect on viewer response from those traveling in the area. Therefore, the Project is considered to result in a significant visual impact at Key View #2.

Key View #3 – View from Southbound McCain Valley Road (North of Interstate 8)

Key View #3 is the view from McCain Valley Road looking southwest to the Project site; refer to Figure 5C. This vantage point provides generally direct views into the Project for motorists traveling southward along McCain Valley Road. Travelers in vehicles would have generally unobstructed views of the Project site at a viewing distance as they travel in either direction on McCain Valley Road. This vantage point is located at approximately the same elevation as the Project site and approximately 0.25 mile from the Project site with limited intervening vegetation.

Views from this vantage point would be to the south/southwest through a number of privately-held properties, mostly undeveloped land. Lands adjacent to the southwest of McCain Valley Road (intervening between the roadway and the proposed development area) support relatively level lands with some gentle slopes occurring in places; refer to Figure 5C. Vegetation is generally low-lying grasses and scrub with scattered oaks and intermittent rock outcroppings, with patches of land cleared of vegetation in some areas. Views from this vantage point are across the McCain Valley, with views to the varied

topography of the rolling mountains in the background. Established vegetation in the foreground and middleground somewhat restricts views further to the south/southwest (Project site); refer to Figure 5C. The varied vegetation, lower hillsides, and more distant topography of the mountains lend to a moderate level of visual interest and overall visual unity.

Similar to views traveling north on McCain Valley Road, views traveling south would be dominated by the existing steel lattice structures of the Sunrise Powerlink, other existing utility poles and lines, and the roadway itself, all representing man-made, built elements within the natural landscape. An existing barbed wire fence is also present along the western side of the roadway. Such multiple elements reduce the degree of overall visual intactness experienced from this vantage point.

Views of the Project components would be largely restricted from this vantage point, due to the distance from the Project and the relative height and size of Project-related features[i.e., the proposed solar panels of approximately 7 feet minimum height (12 feet maximum height at full tilt), substation inverter stations, etc.). In addition, intervening vegetation and topography further restrict views of the Project site, thereby minimizing its visibility within the surrounding landscape; refer to Figure 5C. More noticeable features, such as the visibly dominant existing transmission towers/lines, utility lines, and the roadway itself, would encroach on an otherwise natural-appearing landscape and would likely attract a viewer's attention more than the Project components. Viewer response to the visual change in the landscape with Project implementation is therefore considered to be low to moderate from this vantage point, with consideration for those who may be traveling along the roadway to access the McCain Valley Conservation Area, as such travelers may be more sensitive to a change in the visual landscape.

The Project would add additional man-made components to the existing landscape which may be intermittently visible as one travels south along McCain Valley Road. Views to the distant hillsides would not be obstructed by the Project components and would remain intact; however, the Project may be intermittently visible in the middle-ground of the view. Although views from this vantage point are somewhat panoramic and include views across the valley, such views are not highly memorable or unique. The quality of views experienced from this vantage point are further diminished due to competing existing largely man-made visual elements within the viewshed, distance to the site, and intervening vegetation and topography. However, as the addition of the PV solar panels, substation, and other Project components would change the existing landscape and, thereby, the visual experience, combined with the removal of existing vegetation to accommodate the panel fields, the Project would have the potential to decrease the existing visual character or quality experienced from this vantage point. Therefore, impacts are considered to be significant and unavoidable.

Key View #4 – View from Westbound Interstate 8 (West of McCain Valley Road)

Key View #4 provides the view from westbound I-8. Viewers from this location would be passengers in vehicles traveling within the vicinity of this vantage point. Views of the southernmost Project boundary that occurs between a natural saddle visible to the northwest from I-8 are afforded. This viewpoint is located at an elevation of approximately 3,450 feet amsl and the Project boundary is located approximately 0.55 mile to the north.

The existing view is largely composed of natural vegetation consisting of low-lying chaparral scrub and grasses; intermittent rock outcroppings are visible within the foreground, middle-ground, and background

and contribute to the rugged visual character of the area and add a degree of visual interest. From this vantage point, views to the site would be across this expanse. Existing topography rises in the southern portion of the view within the vicinity of the roadway, as shown in Figure 5C. The horizon line extends from the roadway to the west/northwest, with a topographical "saddle" visible on the subject property where the elevation decreases and then continues upward further to the northwest/north. Windmills associated with Tule Wind Project can be seen in the background looking northwest. However, the vegetation and topography do not offer features that are unique or visually vivid or striking as compared to other vantage points within the McCain Valley. Additionally, the roadway and associated traffic comprise the dominant man-made elements within the view, along with associated informational signage, thus detracting from an otherwise largely natural landscape. However, the view is generally free from other visually encroaching elements and is therefore generally composed of undeveloped natural lands. Based on the above-described conditions, visual character and quality offered by this view are considered to be low to moderate.

From this vantage point, views of the of the proposed elements would be largely obscured due to Project design and layout of the components within the Project boundaries. The existing topography, as seen in Figure 5D, would block views to the panel fields and other Project components. Views experienced from I-8 from Key View #4 would largely consist of a variety of low-lying mature vegetation with sloping topography, punctuated by the existing rock outcroppings. Views from this vantage point would therefore remain largely unchanged with Project implementation.

Therefore, the existing horizon line would be preserved and Project elements would not interrupt or detract from this existing view, thereby reducing potential impacts to the existing visual quality or character of views currently experienced from I-8 at this vantage point. No change in viewer response from motorists traveling along the roadway would occur with the Project as proposed, and no effect on scenic resources would result.

Project implementation would not substantially change the existing visual character or quality of views from this vantage point, as no Project-related elements would be visible. Impacts are considered to be less than significant.

Surrounding Private Uses

A number of private residential homes located within the surrounding area may have views of the site, particularly those residences located immediately adjacent (i.e., to the west/southwest) or at a higher elevation. Estimated viewing distances from surrounding residences to the project site would be approximately 0.15 to 0.30 mile (i.e., along Ribbonwood Road). Such views of the Project site would be varied, depending on proximity to the site, viewing angle, and vegetation, and/or elevational/topographical features. Per CEQA requirements, the potential effects of a project on existing visual resources are required to be analyzed with regard to how views from public vantage points would be affected. Views from private residences are not required to be analyzed in this CEQA process and are not afforded protection under federal or State requirements. However, views from private residential uses within the Project area are considered briefly herein to ensure that potential visual effects are effectively minimized or avoided to the extent feasible.

With implementation of the proposed Project, portions of the site would be developed with the proposed PV solar arrays that may be visible from several surrounding off-site residential uses located to the west/southwest and to the east of McCain Valley Road; however, such views would be somewhat restricted due to existing vegetation and topography. Views from residences located within proximity of the property boundaries would generally have views of the PV solar arrays. Vegetative screening is proposed along portions of the property boundaries adjacent to McCain Valley Road in order to restrict views into the site from such off-site vantage points; refer to Figures 5A to 5D. Existing views from off-site residential uses located at higher elevations would generally not be affected by the proposed perimeter landscape screening, as the Project components within the interior of the property would be visible; however, due to distance to the site from such locations and the limited height of the proposed PV solar panels and other Project structural elements, the Project components would not be highly visible within the surrounding visual landscape from private residences.

Furthermore, views of the Project site may occur from residential uses located within the surrounding area, including the Boulevard community. As the valley floor is generally flat, considered with existing elements within the visual landscape (e.g. development, vegetation, etc.), views of the Project site would be largely blocked from such residential uses located along the valley floor and further minimized by distance to the site.

As indicated above, it is acknowledged that the Project would have the potential to change existing views to the site from private residences or other private land uses in the surrounding area, thereby changing the existing visual character or quality of such views. As an analysis of Project effects on such private views is not required under CEQA, a determination as to whether a significant visual impact would occur is not provided herein.

5.3 ASSESSMENT OF VISUAL CHARACTER AND VISUAL QUALITY

5.3.1 Assessment of Visual Character

Existing Condition

As described earlier, the affected viewshed offers a variety of established natural vegetation, along with a range of natural landforms including the relatively flat valley floor, the low-lying hillsides, and the taller, more distinctive mountains. A mixture of industrial- and civic-type land uses are present, along with limited single-family rural residential uses intermixed with larger-acreage parcels of undeveloped land. Density increases with proximity to the community of Boulevard to the southeast of the site. Additionally, a number of renewable energy projects are visible within the landscape, including the more visually-dominating elements of the existing wind energy projects which include large-scale wind turbines and associated steel lattice towers.

Structures in the surrounding area are generally of one to two stories in height, of varied architectural character (largely ranch-style or Spanish-style), and of earth-toned or muted colors. Structural elements having larger bulk and scale within the landscape include the McCain Valley Conservation Camp to the northeast and the U.S. Border Patrol Station to the southwest of the site, which tend to be utilitarian in nature and exhibit a generally non-distinctive architectural style. Additionally, the Rough Acres Ranch to the northeast of the site also supports a series of individual structures ranging in height from 1-2 stories,

including a conference center and several agricultural-related structures such as barns and bunkhouses supporting ranch operations. Limited commercial and residential uses in the community of Boulevard to the south of I-8 generally exhibit a rural character and are of smaller scale, typically 1-2 stories in height.

During Construction

During project construction, the site would be graded to accommodate the proposed improvements. The total development acreage onsite would be approximately 391.5 acres. The Project has been designed to minimize grading requirements and to avoid the onsite ridgelines and hillsides. Grading would not result in the removal of any slopes, hillsides, or other visual elements that would potentially contribute to or enhance the visual character of the property and would be contoured to follow the natural contours of the landscape, rather than resulting in angled cuts that would visually contrast with existing topography.

As part of grading, existing vegetation and ground cover in undeveloped areas where improvements would occur would be removed. Some of these areas disturbed by construction would be temporarily visible from surrounding public vantage points, thereby temporarily changing the visual character of the site; however, as the improvements are constructed, these temporarily bare and/or disturbed lands would become less visible (i.e., covered with PV solar panels, structures, maintenance roadways, etc.). As such, the Project would have the potential to temporarily change the existing on-site visual character with grading activities and installation of the PV solar panels and associated facilities.

End of Construction

As noted, the existing visual landscape includes a number of existing built elements that have contributed to an overall change in the visual character of the area, including I-8, single-family residential development and large-acre ranches, commercial and industrial development, and renewable energy projects, including the more visually-dominating wind turbines and associated high-voltage steel transmission towers and transmission corridors. Such elements are part of the existing landscape and diminish the existing scenic character of the area. The proposed Project would therefore have an incremental effect on further diminishing the scenic character within the viewshed.

The Project has been designed to minimize grading requirements, thereby leaving the topography of the site largely in it is natural condition. The potential effects of the development on the existing visual character would be further reduced by allowing a portion of the subject property to remain undeveloped. Additionally, as designed, the Project would underground the utility lines between the solar panels within the interior of the site. These lines would extend to the on-site substation; refer to Figure 2B, Major Use Permit Plot Plan. The power would then be conveyed underground from the on-site substation to an existing 35-foot-high dead-end structure that connects the collector substation with the existing Tule gen-tie line to the east. As such, utility structures are already present within the visual landscape, and the Project would not result in the installation of new poles within the Tule Wind utility easement that would have the potential to contrast with current views or further substantially decrease the visual character of the existing setting in this regard.

Additionally, the Project would involve installation of small-scale structures to house the inverters/transformers, along with the storage building and on-site substation. As the Project represents a utility use, Project components would be utilitarian in nature and would not represent structural

features such as residential or commercial buildings that would require detailed architectural design or design features intended for visual enhancement. The Project design proposes to locate these elements within the interior of the development, thereby minimizing or avoiding their visibility from off-site public vantage points. Additionally, proposed landscape screening along McCain Valley Road would further reduce the potential for the Project to substantially alter the visual character of the site as experienced from off-site public vantage points. Refer to Figure 2A which identifies the areas where landscape screening is proposed.

However, the introduction of the Project within the existing landscape would have the potential to contribute to a change in the overall rural character of the surrounding area.

Maturity

Landscaping would be planted along certain segments of the Project perimeter to screen public views into the site (i.e., from McCain Valley Road). Such landscaping would continue to grow over the years, progressively providing additional screening and enhancing the visual character of the site. It is also anticipated that viewer sensitivity to the change in visual character of the site with Project implementation as experienced by those who frequently view the site and/or surrounding area would decrease over time, as the Project would become a known element within the visual landscape.

5.3.2 Assessment of Visual Quality

Existing Condition

The visual quality of a view is partially influenced by the viewing location from which public views occur. The viewing location can allow for views that are generally either expansive in nature or focused on a specific view of a site or particular feature within the landscape. In addition, visual quality is influenced by the particular characteristics of the viewing corridor within which a view occurs. Visual quality is also affected by the quality of the overall viewshed area being viewed. Areas identified as having high visual quality are those which are identified as being sub-regionally important and possessing high scenic value.

As stated, the project site lies within an area offering large expanses of undeveloped open space with rolling hills and mountains of varying elevation, the valley floor which contribute to the scenic value and visual quality offered within the overall viewshed. However, built elements associated with residential, commercial, and industrial-type land uses, I-8 and other area roadways, and components of other renewable energy projects within the landscape contribute to a degradation in the overall visual quality offered within the existing viewshed.

During Construction

Visual diversity of the site under existing conditions is generally low, as views largely consist of the low-lying varied vegetation, with limited elements or features that disrupt the visual landscape, and no visually significant natural or topographical features occur on-site. As such, the affected lands are generally considered to have a medium visual quality; however, they are not considered to be subregionally important or possessing a high scenic value.

The visual quality of the Project site would be potentially affected during the construction phase of the Project. Development would involve grading of the site to accommodate the PV solar panels, substation, storage building, and other associated infrastructure. Site preparation would involve vegetation removal within the areas proposed for development, thus resulting in areas of bare ground and soils disturbed by grading. Although the existing on-site vegetation contributes to the character of the site, such elements do not lend to a distinctive visual quality. Views of the site would also include various construction activities, presence of construction vehicles and workers, and storage of building materials and construction waste. Existing vegetation would provide some visual screening of views from off-site public viewing locations. The presence of such construction-related elements on the existing visual quality would be temporary and short-term and would ultimately no longer be part of the visual landscape when construction is completed.

End of Construction

Once the construction phase ceases, no other changes to the visual landscape would occur, as no other development or improvements are proposed. As the lands affected by the Project would be cleared and grubbed, on-site vegetation within those areas proposed for development following Project implementation would be limited; however, the Project as designed would develop only a 391.5-acre portion of the approximately 763.3-acre Project site, allowing the remainder of lands to remain in their natural state and the visual quality unchanged. Landscaping for screening purposes is proposed along McCain Valley Road to enhance the visual quality in areas where the Project elements may otherwise be visible. As such, the visual quality would be further enhanced following completion of the construction phase through the maturing of the proposed landscape screening. However, as installation of the PV solar panels and associated infrastructure would change the existing landscape from undeveloped land to developed, the visual quality of the site would be altered, further affecting views experienced within the surrounding viewshed.

Maturity

As discussed above under Assessment of Visual Character, project landscaping would be installed along portions of the Project perimeter near McCain Valley Road to enhance visual quality where the proposed improvements may be visible. As such, the visual quality of the site would continue to be further enhanced following completion of the construction phase(s) through the maturing of the proposed landscaping over time. The proposed landscaping would contribute to the overall visual quality of both the Project site and the surrounding community, further screening views into the site from certain public vantage points and visually blending the development into the existing setting, thereby reducing the potential degree of change in visual quality resulting with the Project.

5.4 ASSESSMENT OF VIEWER RESPONSE

Existing

Viewer response to visual changes on the Project site with development of the PV solar facilities is anticipated to be varied, dependent upon the Project facilities being viewed and the location of the public vantage point. Viewer response is also influenced by the location of view (i.e., from a stationary vantage

point or from a moving vehicle). Travel speed, distance to the site, and actively turning one's head at times to view the existing features within the landscape may further influence viewer response.

As noted previously, the response to visual change is also subject to the viewer group itself, even when a change is witnessed from the same public vantage point. Those having familiarity with the area (i.e., residents, recreationalists, or those traveling through on a routine basis) are likely to have a higher degree of response to a change in the visual setting. Individuals passing through the area who are not familiar with the former existing landscape (i.e., pre-Project development), would likely not notice a change or would have a low level of viewer response. Additionally, motorists traveling along I-8 or other local roadways for recreational purposes may experience varying levels of sensitivity or viewer response to a visual change on the Project site. Those visitors who may travel to the area for purposes of recreation of a more scenic nature (i.e., recreationalists using McCain Valley Road to access the McCain Valley Cooperative Land and Wildlife Management Area) may have a greater level of sensitivity to visual change in the existing setting as compared to off-road recreationists similarly traveling along McCain Valley Road for purposes of access to access to local off-road vehicle recreation areas. Refer to Table 5, Viewer Groups and Anticipated Exposure.

TABLE 5. VIEWER GROUPS AND ANTICIPATED EXPOSURE

Anticipated Viewer Group	Number of Anticipated Viewers	Key Views	Approximate Distance to the Project Site (Closest Vantage Point)	Anticipated Views with Project Implementation	Sensitivity/ Response	Duration of View (of the Project Site)
Drivers along Interstate 8	Estimated 10,000+ people per day	#1 and #4	0.4 mile	Obscured or restricted/ Intermittent views of solar panels and associated infrastructure	Low to Medium	Varied / 0-15 seconds
Drivers along Old Highway 80	Estimated less than 1,000 people per day	N/A	0.9 mile	Obscured and/or intermittent views of solar panels and associated infrastructure due to elevational differences and intervening topography	Low	Varied / 0-10 seconds
Drivers along Ribbonwood Road	Estimated less than 500 people per day	N/A	0.25 mile	Intermittent views of solar panels and associated infrastructure	Low	Varied / 0-10 seconds
Drivers along McCain Valley Road	Estimated less than 200 people per day	#2 and #3	Adjacent	Direct and intermittent views of solar panels and associated infrastructure	Low	Varied / 0-15 seconds
Surrounding Private Residential Uses	Varied	N/A	Adjacent / Varied	Varied / Intermittent views of solar panels and associated infrastructure / transmission lines	Low to High	Varied

During Construction

Viewer response during the Project construction phase may be greater because grading activities, construction equipment, and varying stages of panel installation may be visible from public roads within the Project vicinity. Views to the areas disturbed by construction activities may occur in the foreground (i.e., along Ribbonwood Road or McCain Valley Road) or at in the middleground or background (i.e., from public roadways located at a distance), thereby influencing the degree to which a viewer may respond. Once construction is completed, no other changes to the visual landscape would occur, as no other development or physical improvements are proposed; however, the proposed perimeter landscaping that would be installed along portions of McCain Valley Road for screening purposes would continue to mature over time, thus enhancing the visual character and appearance of the site.

Project construction may be perceived as a move to increased development in the Boulevard area, contributing to a visual change in the existing visual setting, in particular with consideration for other renewable energy projects in the area. Project construction activities would be viewed in combination with the backdrop of the existing visual landscape and would be somewhat extensive, as the development area would encompass approximately 391.5 acres. However, the effects of Project-related construction activities on the visual setting would be temporary. Construction activities on the project site would be dynamic in nature and would include the movement of construction equipment and materials, grading and vegetation removal, construction of Project elements within the landscape, and planting of perimeter landscape screening, it is anticipated that the viewer response to such activities would be moderate based upon the viewer groups considered and the varying duration of views afforded of Project construction activities afforded from surrounding public vantage points.

End of Construction

Over the long-term, the Project would contribute to an overall change in the visual landscape of the surrounding area over its lifetime, in combination with existing and planned renewable energy and other development projects within the subject viewshed that would result in a developed versus undeveloped condition. The proposed Project elements (inverters/transformers, PV solar panels, storage building) would generally be low-lying within the surrounding landscape due to proposed height. Additionally, the Project has been designed to place the components of greater height (i.e., storage building, dead-end structure at substation) within the interior of the panel fields, at a distance from public roadways, thereby reducing their visibility from surrounding public vantage points. As described previously, the Proposed Project design would substantially reduce the height of the PV solar panels from approximately 30 feet to 7 feet minimum (12 feet maximum height at full tilt) as compared to the Approved Project. As a result, it is anticipated that viewer response would be reduced as the PV solar panels would not be as visibly prominent as one travels through the viewshed in the vicinity of the site. It is also anticipated that the proposed vegetative screening would further reduce viewer response, in particular as it matures over time during the operational phase. Additionally, viewer response from more distant locations would be anticipated to be lower, even at higher elevations, such as from the mountains located to the east of the site, due to viewing distance, topography, and existing vegetation, and would be further influenced by competing visual elements (other renewable energy infrastructure, I-8), etc.) within the visual landscape. However, the Project would have the potential to alter overall public views to the site and trigger viewer

response, as it would be changed from an undeveloped to a developed condition with Project implementation.

Maturity

A viewer's familiarity with the proposed on-site development would increase over time, thereby likely reducing the degree of response to any change in views to the project site. Further, as noted above, with maturity of the proposed perimeter landscape screening over time, views of the development would become less visible, thereby also decreasing the degree to which a viewer may notice or respond to a change in the visual setting from its original form. At maturity, the development on-site would have become a part of the overall existing development pattern within the viewshed, and would therefore not be expected to result in a substantial visual change to which a viewer would respond. However, as noted above, the degree of viewer response may differ based on the viewer group, whereas those experiencing views of the area frequently would be more familiar with the landscape, whereas those traveling through the area as visitors (i.e., along I-8), may have a higher degree of response to the visibility of the Project components within the viewshed.

5.5 DETERMINATION OF SIGNIFICANCE

1) Introduction of features that would detract from or contrast with the existing visual character and/or quality of a neighborhood, community, or localized area by conflicting with important visual elements or the quality of the area (such as theme, style, setbacks, density, size, massing, coverage, scale, color, architecture, building materials, etc.) or by being inconsistent with applicable design guidelines.

The Soitec Solar Development Revised Final Program EIR (Revised PEIR) determined that, even with the application of M-AE-PP-1 and PDF-AE-1 through PDF-AE-5, the Approved Project would result in a direct significant and unavoidable impact to visual character and/or quality. The following evaluation takes such findings into consideration and incorporates the different PV technology and a reduced project footprint of the Proposed Project. The analysis herein evaluates the Proposed Project, per CEQA requirements, against the identified significance thresholds to determine if a potential visual impact finding would be similar, increased, or reduced in comparison to the Approved Project.

With the exception of PDF-AE-1, the Proposed Project would implement the same PDFs and Mitigation Measures required for the Approved Project, as follows:

Project Design Features

PDF-AE-2 Staging material and equipment storage areas, including storage sites for excavated materials, visible from nearby roads, residences, and recreational areas shall be visually screened using temporary screening fencing. Fencing shall be of an appropriate design and color for the Proposed Project location.

PDF-AE-3 The O&M building shall be painted/finished with muted-earth toned colors. Materials, coatings, or paints having little or no reflectivity shall be used whenever possible. Including on the other project components such as project fencing and gates, inverters, transformers,

and the metal piers and framing supporting the solar arrays. New overhead conductors shall be non-specular in design to reduce conductor visibility, glare, and visual contrast.

PDF-AE-4 Weathered or cor-ten steel shall be used for gen-tie monopoles to reduce the potential for color contrast between structures and existing vegetation and terrain.

PDF-AE-5 Outdoor lighting at each solar farm site shall conform to County of San Diego Light Pollution Code Zone A standards for lamp type and shielding requirements. More specifically, Zone A standards shall be applicable for all Class I (i.e., lighting for assembly areas where color rendition is important) and Class II (i.e., lighting for general illumination and security) lighting at the solar farm site and all outdoor lighting fixtures shall be fully shielded and directed downward. Further, fully shielded motion sensor lighting shall be installed at the on-site private substation yard, next to the entrance door to the substation control house, and mounted atop entrance gates and shall be turned off when no one is on site. When possible, tracker washing shall occur during evening and morning hours to reduce occurrences of dark sky illumination. Regarding operation of security measures, motion sensor infrared cameras shall be installed at the Project site to avoid illumination of the site and surrounding area during nighttime hours.

Mitigation Measure

M-AE-PP-1 The applicant shall install landscape screens along McCain Valley Road as specified in Appendix 2.1-4, Landscape Screening Design for the Soitec Solar Development Program EIR. Features of the solar facility to be screened include the 50-foot-wide fire buffer with 6-foot-tall perimeter fence, photovoltaic (CPV) solar panels, and other associated features that exceed the height of the fencing installed around the perimeter of the solar facility.

The applicant shall also be responsible for continued maintenance of the landscape screens, including installation and maintenance of a drip irrigation system and implementation of and consistency with plant installation and maintenance standards identified in the Landscape Screening Design report. Periodic monitoring and reporting to observe and assess the maintenance regime and implementation of appropriate measures to promote plant survival, growth, overall health, and vigor shall also be required. If necessary, adaptive measures shall be implemented in the subsequent spring season to address project deficiencies as they relate to the desired landscape screening effect. Additional details regarding recommended plants and materials for landscape screens, project-specific designs, irrigation systems, water demand calculations, and maintenance and monitoring activities are included in the Landscape Screening Design Report.

The County has not adopted official design guidelines for the Boulevard area, and therefore, development is guided by the General Plan, Mountain Empire Subregional Plan, and Boulevard Community Plan goals and policies, as well as applicable zoning regulations.

Within the viewshed, views of Project construction activities may be experienced by several viewer groups including surrounding residents (i.e., to the west/southwest and east of the site, and to the south within the valley), recreationists looking to the site from public recreation lands to the north/northeast, and

motorists traveling along I-8 and other local roadways within the vicinity of the site. Construction activity and movement of equipment and materials on-site, as well as to/from the site on local roadways, may attract the attention of area viewers. Further, grading and vegetation removal would result in a noticeable visual contrast with surrounding undeveloped lands.

As such, construction of the Proposed Project would have the potential to introduce features that may detract from or contrast with the existing visual character and/or quality of the community or localized area, Project Design Features PDF-AE-2 through PDF-AE-5, as described in more detail above, would be implemented to reduce the potential visibility of such activities within the landscape. These Project Design Features would require visual screening of construction equipment and storage areas, use of earth-tone and non-reflective paint colors, weathered or cor-ten steel for project gen-tie monopoles, and minimal outdoor lighting with requirements for the site lighting to be shielded and directed downward. However, some on-site areas would still be visible to area viewers.

Additionally, the Proposed Project would result in the removal of on-site vegetation and graded areas, creating large areas of bare soil that would contrast with surrounding natural vegetation and large-acre undeveloped or agricultural-use lands. During Project grading, the manufactured contouring of on-site lands may also be seen as contrasting with the natural topography of off-site lands (although on-site grading has been minimized to the extent feasible to accommodate the proposed components). Therefore, such conditions may attract a viewer's attention, both from area roadways as well as surrounding residential uses and/or recreational areas.

Following completion of the Proposed Project, project components would be viewed within the surrounding viewshed which has been modified over time by development, including several highly visible renewable energy and infrastructure projects that have changed the context of the visual setting. The degree of visibility of the Proposed Project components within this landscape would vary depending on the public vantage point, whether viewed within the foreground (i.e., McCain Valley Road or Ribbonwood Road) or the middle-ground (i.e., I-8); refer to Figures 5A to 5D. However, the relatively small scale of the proposed elements and the matte color of the PV solar trackers would help to reduce the degree of visual contrast with the overall character of the existing site and surrounding lands.

Project components would be visible within the landscape at Project completion/buildout and until such time that the Project is decommissioned. Due to their industrial-type nature, form, material, and color, the proposed structural elements (i.e., PV solar panels, substation, inverters, transmission lines and associated metal poles, etc.), would have the potential to visually contrast with the more natural forms of the existing landscape, such as the rolling on-site topography and surrounding hillsides, as well as existing on-site and off-site natural vegetation patterns (refer to Figure 5C, Views to Project Site – Key View 3). In addition, passengers traveling within proximity to the site, including along McCain Valley Road (refer to Figure 5B, Views to Project Site – Key View #2), would be afforded direct views into the site, looking both east and west, from their vehicles as they travel along the segment of the roadway adjacent to the proposed development areas and/or approach the Project site. Views from this vantage point would be of the repeating rows of PV solar trackers and the tie-in from the Project site to the existing Tule Wind transmission line that parallels the east side of the road. As such, the Proposed Project has the potential to alter existing views experienced from this roadway. Similar views into the site of the repeating PV solar

trackers would also be afforded as one travels north-south along Ribbonwood Road near the western Project boundary.

Views of the Proposed Project components would be further influenced by motorist movement and speed along area roadways, particularly I-8, thereby reducing the degree to which the Project may attract a viewer's attention. For travelers along eastbound I-8 (refer to Figure 5A, Views to Project Site – Key View 1), the Proposed Project would result in a visible change from the existing patterns and colors of the natural on-site and off-site vegetation, resulting in a change in the visual setting and character as experienced under current conditions. Visibility of the Proposed Project components would be further influenced by the duration of the view, viewing angle, and distance from the developed areas of the Project site. The wind turbines of the Kumeyaay Wind Farm and associated transmission towers would also be visible along the hillsides and would influence the degree to which motorists would respond to the Project-related features within the landscape. Due to their size and motion, the wind turbines would likely attract a viewer's attention, particularly of eastbound travelers, thereby reducing viewer response and sensitivity to changes within the surrounding visual landscape that would result with Project implementation. Views would be further influenced by intervening topography, elevation, and vegetation.

Limited, intermittent views of the site may occur to motorists as one travels west along I-8 in the vicinity of the Project site. As shown in Figure 5D, Views to Project Site – Key View 4, Project components would be partially visible from this vantage point for an intermittent period of time. Therefore, the Proposed Project would result in a change in the existing quality of public views experienced from this vantage point. It should be noted however that any intermittent views afforded as one travels along I-8 westbound would be distanced from the site and short in duration, thereby reducing the degree of visual contrast associated with vegetation removal and grading. The Proposed Project components would offer a noticeable contrast in line, color, and form when viewed within the surrounding natural terrain and vegetation.

Overall, the construction, operation, and maintenance of the Proposed Project would result in a visual contrast with the existing vegetation and terrain of the McCain Valley caused by Project vegetation removal and grading, as well with the form and color of surrounding natural vegetation and rural-type development. Such Project effects would be considered to have the potential to substantially detract from the existing visual character or quality of the area, and would therefore result in a significant impact in this regard. Mitigation Measure M-AE-PP-1 is proposed to require the installation of perimeter landscape screening along portions of the Proposed Project frontage onto McCain Valley Road to reduce potential views into the site from public vantage points. Such screening would help to reduce the potential for the Proposed Project to change the visual character or quality of existing views from this roadway and other surrounding public vantage points.

Project Design Features are proposed to reduce the visibility of the Proposed Project components and their potential to affect the existing character or quality of the area. Project Design Feature PDF-AE-2 would require that on-site construction staging materials and equipment storage areas visible from adjacent public roadways, private residences, and/or public recreational areas be visually screened via the installation of temporary screening fencing. Project Design Feature PDF-AE-3 would require that the on-site storage building be painted/finished with muted earth-toned colors and that materials, coatings, or paints having little or no reflectivity shall be used whenever possible, including on the other project components such as project fencing and gates, inverters, transformers, and the metal piers and framing

supporting the solar arrays. Additionally, PDF-AE-3 would require that new overhead conductors would be non-specular in design to reduce potential visibility, glare effects, and visual contrast with the surrounding landscape. PDF-AE-4 would require that weathered or cor-ten steel be used for gen-tie monopoles to reduce the potential for color contrast between structures and existing vegetation and terrain. Finally, PDF-AE-5 would require that outdoor lighting conform to County of San Diego Light Pollution Code Zone A standards, requiring, among other standards, that all outdoor lighting fixtures be fully shielded and directed downward. PDF-AE-5 would also require, when possible, that tracker washing occur during evening and morning hours to reduce occurrences of dark sky illumination. Regarding operation of security measures, motion sensor infrared cameras shall be installed at the Project site to avoid illumination of the site and surrounding area during nighttime hours. The PDFs for the Proposed Project are outlined in detail above.

However, even with implementation of PDF-AE-2 through PDF-AE-5, and after application of M-AE-PP-1, the Proposed Project would still have the potential to result in a significant impact on the existing visual character and quality of the site and its surroundings. Although compared to the Approved Project, impacts would be reduced, impacts in this regard would remain significant and unavoidable.

As previously stated, the Revised PEIR determined that the Approved Project would result in significant and unavoidable impacts to visual character and quality. As designed, the Proposed Project would implement PDF-AE-2 through PDF-AE-5 to reduce the visibility of the Project's structural components within the landscape as compared to the Approved Project, including by substantially reducing the height of the proposed PV solar panels (from 30 feet in height down to a maximum of 12 feet and an average height of 7 feet) and by reducing the on-site development footprint within the overall property acreage. Additionally, with the exception of PDF-AE-1, the Proposed Project would implement the same Mitigation Measure and Project Design Features required of the Approved Project to further reduce the potential for the Proposed Project to introduce features that may detract from or contrast with the existing visual character and/or quality of the community or localized area by conflicting with important visual elements or the quality of the area. The implementation of such measures would reduce Project impacts; however, similar to the Approved Project, such measures would not reduce potential impacts to below a level of significance.

Level of Significance with Mitigation Incorporated

Impacts would be significant and unavoidable.

2) Removal or substantial adverse change of one or more features that contribute to the valued visual character or image of the neighborhood, community, or localized area, including but not limited to landmarks (designated), historic resources, trees, and rock outcroppings.

The Revised PEIR for the Approved Project determined that the project would result in a less than significant impact with regard to the removal or substantial adverse change of one or more features that contribute to the valued visual character or image of the neighborhood, community, or localized area. The following evaluation takes such findings into consideration; however, as the project has been redesigned, the analysis herein evaluates the Proposed Project as proposed, per CEQA requirements, against the

identified significance thresholds to determine if a potential visual impact finding would remain similar to the Approved Project, or if impacts would be increased or reduced in comparison.

As noted in the Boulevard Subregional Plan, the region straddles the Tecate Divide between the Laguna Mountains above and the Yuha and Anza Borrego Deserts below and provides views of the surrounding Laguna, In-Ko-Pah, Jacumba Mountains, and Sierra Juarez Mountain ridgelines. These viewsheds are valued assets and protecting such resources is intended to help maintain Boulevard's rural community character over the long-term (County 2011). Open spaces, parks, and accessible recreation areas, such as the McCain Valley Resource Conservation Area and Land Cooperative, the Cleveland National Forest, Table Mountain, the Carrizo and Jacumba Wilderness Areas, In- Ko-Pah, and others help to preserve valued visual resources in the area (County 2011).

Additionally, the County has adopted Resource Conservation Areas (RCAs) throughout the County which represent areas of scenic and/or natural resources value and are intended for long-term protection or preservation. According to the Mountain Empire Subregional Plan and the Boulevard Subregional Plan, there are no designated Resource Conservation Areas (RCAs) within the Project vicinity. The nearest RCAs to the Project site are the Thing Valley, located approximately 8.4 miles to the northwest and the Laguna Meadow, located approximately 14.8 miles to the northwest (County 2011). Due to distance to these resources and intervening topography, views to the Project site are not afforded from these RCAs. Therefore, the Project would not result in an adverse change in views from these RCAs when viewed within the existing landscape.

Neither the subject site nor adjacent off-site lands support designated landmarks, federally-, state-, or locally-designated historic resources, or significant tree stands. A number of rock outcroppings are present on-site; some removal of rock outcroppings within the panel fields would be required to allow for installation of the trackers. However, it is not anticipated that removal of a limited number of rock outcroppings on-site would not substantially change existing views of the site within the larger context of the surrounding mountains which support similar resources. Although the Project would result in the installation of the solar panels and associated infrastructure within the existing landscape, no significant visual resources either on-site or off-site would be removed or substantially altered as the result of Project construction.

The proposed solar facility is designated as a civic use type which is an allowed use under the existing General Plan land use and zoning designations with County approval of the requested MUP, and, therefore, is consistent with the land use intended for the property by the County. Although development of the site with the proposed solar PV facilities would change the on-site use from undeveloped land to a utility use, design measures are proposed (landscape screening, Project elements of minimal height and scale, etc.), to ensure that the Project does not result in a significant effect on the existing visual setting and that the rural character or image of the neighborhood is not adversely altered with Project implementation.

As such, the Project as proposed would not result in the removal or substantial adverse change of one or more features that contribute to the valued visual character or image of the neighborhood, community, or localized area. Impacts would be less than significant, and no mitigation is required in this regard.

As previously stated, the Revised PEIR determined that Approved Project would result in a less than significant impact related to the removal or substantial adverse change of one or more features that contribute to the valued visual character or image of the neighborhood, community, or localized area. Similarly, the proposed Project would result in a less than significant impact relative to this threshold.

3) Substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from a public road, a trail within an adopted County or State trail system, a scenic vista or highway, or a recreational area.

The Revised PEIR determined that the Approved Project would result in a less than significant impact relative to the potential for the project to substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from a public road, a trail within an adopted County or State trail system, a scenic vista or highway, or a recreational area. No mitigation measures were required; however, the EIR did identify Project Design Feature (PDF-AE-1) to reduce views to the site from westbound motorists on I-8. Project Design Feature PDF-AE-1 required that project grading be pulled back and trackers removed from the natural saddle that occurs on the southern parcel where the development would likely be visible to westbound I-8 motorists, breaking the horizon line. In-place existing vegetation was also required to be protected to serve as a low screen and provide topographic and vegetative continuity across the saddle area," and additional shrub planting were also required "to reinforce the vegetation line across the saddle" (Dudek 2015). With implementation of PDF-AE-1 (not a mitigation measure per CEQA), impacts were determined to be less than significant.

The following evaluation takes such findings into consideration; however, as the Proposed Project proposes single-axis PV trackers which would be substantially lower in height (an average of 7 feet in height) compared to the dual-axis concentrating PV trackers (30 feet in height) proposed by the Approved Project, the Proposed Project would have a reduced impact compared to the Approved Project when viewed from westbound I-8 motorists (refer to Figure 5D, Key View 4, Proposed Project). The analysis herein evaluates the Proposed Project as proposed, per CEQA requirements, against the identified significance thresholds to determine if a potential visual impact finding would remain similar to the Approved Project, or if impacts would be increased or reduced in comparison.

According to the Mountain Empire Subregional Plan and the Boulevard Subregional Plan, there are no designated RCAs within the Project vicinity. The nearest RCAs to the Project site are located over 8 miles from the site, and therefore, do not contribute any valued focal and/or panoramic vistas that would be affected with development of the Project site. Therefore, the Project would not result in an adverse change in views from these RCAs.

As stated previously, several County-designated Scenic Highways are located within the vicinity of the Project site which include I-8, Old Highway 80, and State Route 94/Ribbonwood Road; refer to Table 3, County Designated Scenic Roadways. Additionally, I-8 is designated as an eligible State Scenic Highway. These roads are located at a distance from the Project site, with the closest scenic roadway being I-8, approximately 0.4 mile to the south. Depending on the elevation of these roadways relative to the Project site; topography, development, and/or existing vegetation; and, distance to the Project site, Project visibility may be obscured or reduced from varying locations along these roadway segments.

Project construction activities (i.e., construction vehicles, equipment to be installed, etc.) would be temporarily visible from area roadways and adjoining properties, but would cease upon completion of construction; refer to Threshold 1, above. Additionally, Mitigation Measure M-AE-PP-1 would be implemented to reduce views afforded from surrounding vantage points by screening active construction areas on the site during the construction phase. Such measures would help to reduce the Project's potential to substantially interrupt or detract from existing views experienced from surrounding public roadways, trails, or recreational areas during construction.

Panoramic views of the McCain Valley, In-Ko-Pah and Sierra de Juarez Mountains are afforded to travelers along eastbound I-8 as they descend into McCain Valley; refer to Figure 5A, Key View 1. Although views of the Project would occur from the roadway, adjacent topography (road cuts) intermittently obscure such views. Further, broad panoramic views to the southeast and south may also reduce viewer awareness of the Project facilities within the surrounding landscape as one travels along the road.

The Project site would be partially visible to both eastbound and westbound I-8 motorists for varying periods of time, depending on the location along the roadway, intervening topography and vegetation, and viewing angle and distance. The Project elements would not be readily visible when viewed from eastbound I-8. While travelers would experience views of the site, such views would be intermittent, and therefore, the visual contrast between the Project components and the surrounding landscape would be reduced by a limited view duration. In addition, views would occur at a distance from the Project site along eastbound travel lanes, reducing the apparent scale of the individual solar components; refer to Key View 1. Further, westbound traffic would also help to intermittently screen the site from view. Where views are experienced, eastbound motorists would see the Project site in close visual proximity to the Kumeyaay Wind Farm which would likely reduce overall sensitivity to visual changes in the landscape with Project implementation. Therefore, while the solar PV components would be briefly visible to eastbound travelers, views would be of limited duration and would be partially screened by intervening topography and westbound traffic. In addition, broad views of the In-Ko-Pah Mountains to the east would not be affected and views to the south and southeast would also be maintained as travelers enter the McCain Valley from this roadway, following Project implementation. As such, the Project would not obstruct or interrupt from a valued focal point or panoramic vista as viewed from eastbound I-8. Impacts would be less than significant.

In addition, partial views of the southwestern portion of the site would be afforded to westbound I-8 motorists near the McCain Valley Road overpass. As noted above, the Revised PEIR for the Approved Project proposed Project Design Feature PDF-AE-1 (not mitigation) to require that project grading be pulled back and trackers removed from the natural saddle that occurs on the southern parcel where the development would likely be visible to westbound I-8 motorists; see Figure 5D, Key View 4. However, as the Proposed Project proposes single-axis PV trackers which would be substantially lower in height (an average of 7 feet in height) compared to the dual-axis concentrating PV trackers (30 feet in height) proposed by the Approved Project, the Proposed Project the visual effects of the Proposed Project from Key View 4 would be substantially reduced, both in height and visual contrast. While a portion of the PV panels would be within the I-8 viewshed near Key View 4 and on the approach towards Ribbonwood Road/SR-94, panels would present a low vertical profile within a topographical saddle located in the periphery of westbound motorists' views and would not be focal elements. Additionally, due to the distance between Key View 4 along I-8 and the southwestern portion of the project site, the line of panel

edges and greyish color of panel surfaces would be muted such that they would blend in with the surrounding landscape and present weak visual contrast. Furthermore, the natural line created by the topographical saddle and vegetation would persist and would not be substantially altered by the Proposed Project.

At Key View 4 and from westbound I-8, solar panels on the Project site would not be distinct nor dominate landscape elements and would not block or otherwise disrupt views to/of scenic resources. Lastly, the introduction of panels to the topographic saddle area would not substantially affect existing quality or character of the I-8 visual experience, which, in the Jacumba and Boulevard areas, includes visible wind and solar developments. For these reasons, the project would not constitute a change that would trigger a new or substantially greater impact than what was previously analyzed. Therefore, the Proposed Project would not have the potential to substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from westbound I-8. Impacts would be less than significant.

Broad views of McCain Valley are briefly available to motorists along McCain Valley Road. Upon leaving the public BLM-managed lands, southbound motorists are afforded intermittent views of the McCain Valley from portions of the roadway. Brief views to the west are also afforded, but are largely obstructed by area topography. Travelers would be afforded views of the site's perimeter fencing and the rows of trackers; however, proposed landscaped screening along the perimeter of the property would reduce such views into the site and decrease the visibility of the development within the visual setting. Additionally, the Project would connect to the existing overhead line that runs within the 200-foot wide utility easement to the east of McCain Valley Road. Although the steel towers and other associated components would be visible from this roadway, the Project would connect to existing facilities and does not propose the addition or extension of any facilities located within the easement. The Project would connect to the existing Tule gen-tie line and the line would appear visually similar in nature to the other transmission lines currently running within the easement.

While the installation of trackers and associated components would be visible to motorists along segments of McCain Valley Road, views of the Project and the McCain Valley would be relatively limited and brief. In addition, broad views of the McCain Valley and the Project components from McCain Valley Road would be intermittently screened by intervening topography and vegetation. Therefore, as viewed from McCain Valley Road, the Project would not obstruct or interrupt from a valued focal point or panoramic vista and impacts would be less than significant.

The Project site would also be intermittently visible from westbound Old Highway 80; refer to Figure 3. Westbound motorists on Old Highway 80 may be afforded intermittent, partially obstructed views of the southernmost area of the Project (Area E); refer to Figure 3. Distant views of the site may be intermittently and briefly afforded from elevated segments of the highway prior to the descent into the McCain Valley; however, views would be largely obscured by the elevated travel lanes of I-8, intervening topography to the north of I-8, and viewing distance. Views to the site from eastbound Old Highway 80 between Ribbonwood Road and McCain Valley Road are generally not afforded due to the presence of mature oak trees along the roadway, intervening landforms, residential and commercial structures and the elevated travel lanes (and traffic) of I-8. Therefore, the Project would not substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista experienced by travelers along Old Highway 80. Impacts would be less than significant.

The project site may also intermittently be experienced by motorists on eastbound SR 94. Varied topography and dense vegetation partially obscure northeasterly views to the subject site. At locations where glimpses of the site would occur, views would be reduced by distance (approximately 2 miles) and further reduced by the limited scale of project components. Therefore, the Project would not interrupt or obstruct views to the north/northeast of the In-Ko-Pah Mountains in the background or other prominent distant landforms from this roadway viewing distance. The Project site would not be located within view of westbound travelers along SR 94. The Project would therefore not obstruct, interrupt, or detract from any focal or panoramic vistas experienced by travelers along this roadway. Impacts would be less than significant.

Trails and Recreation Areas

The BLM-managed McCain Valley Conservation Area includes the Sacatone Overlook (approximately 2 miles northeast of the site) and the Carrizo Overlook (approximately 5 miles north of the site). Views of the Project site would be obscured from view from these locations due to intervening topography of the In-Ko-Pah Mountains. However, views to the Project site may also be afforded from other vantage points within the McCain Valley Conservation Area. Users of the park would experience intermittent, brief views of the Project components from a limited number of trails; however, due to intervening topography and vegetation, combined with distance to the Project site, views of the Project elements would be diminished and/or obscured. As such, the Project components would not substantially obstruct or interrupt existing views of topographical features or mountains in the distance and would not obstruct the expansive views of the valley below.

Additionally, recreationalists may experience views from Mt. Tule, located approximately 2 miles east of McCain Valley Road. Trails to the summit of Mt. Tule do not support a large number of hikers, as access is generally limited, and trailheads and parking are limited and not well-identified. Further, due to distance from the Project site, combined with the overall height of Project elements within the visual landscape, views of the Project would be diminished and Project elements would visually blend into the surrounding setting and would not represent a substantially feature within the viewshed. Although views of McCain Valley from a vantage point at the summit would include the Project site, it is anticipated that the Project, when considered with the surrounding mountains to the north and expansive views of the desert landscape to the east and south, would generally appear as relatively horizontal features within the landscape along the valley floor and would not obstruct or substantially conflict with extensive scenic views of the surrounding viewshed, including views to the western horizon as well as to the Tecate Divide.

Views may occur from public trails within the El Carrizo Preserve located to the east/northeast and other such trails that occur along the various mountain ranges present in the surrounding area; however, such views would be intermittent and would vary due to the viewer's location as one moves along area trails. Any potential views of the Project site from such trails would occur at a distance, thereby reducing the visibility of the proposed facilities. In addition, views to the site from such trails would likely be intermittent due to topography as well as intervening vegetation along area trails. With consideration for distance to the Project site and the limited size (height) of the panels, along with other built elements that comprise the existing visual landscape (both developed and undeveloped lands), the visual effect resulting from the addition of the proposed Project on such views would be minimal. The Project would therefore

not substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista within the El Carrizo Preserve and views would not be substantially changed with Project implementation.

Therefore, for the reasons discussed above, the Project is not anticipated to substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from a trail within an adopted County or State trail system or a recreational area/ Potential impacts would be less than significant in this regard.

With consideration for the limited size (height) of the panels and other proposed structural elements in combination with other built elements visible within the surrounding landscape, the visual effect of the Project would be minimal, and views would not be significantly changed with Project implementation. Further, the Project as proposed would reduce the maximum panel height by 18 feet as compared to that allowed by the Approved Project (30 feet), substantially reducing the visibility of the Project within the surrounding landscape. Although inclusion of the solar PV panels that would offer straight, repetitious lines, and smooth, manufactured textures could potentially detract from the overall scenic quality of the site, such features are not anticipated to substantially diminish the scenic value of designated focal points or panoramic vistas available from recreation areas in the project vicinity.

As evaluated above, the Project would not have the potential to substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from a public road, a trail within an adopted County or State trail system, a scenic vista or highway, or a recreational area. Therefore, impacts would be less than significant. No mitigation measures are required.

As previously stated, the Revised PEIR determined that the Approved Project would result in a less than significant impact as it would not have the potential to substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from a public road, a trail within an adopted County or State trail system, a scenic vista or highway, or a recreational area. Although a significant impact was not identified, Project Design Feature PDF-AE-1 was proposed to reduce visibility of the PV solar panels as viewed from I-8 and to better blend the development into the existing setting. As evaluated above, the Proposed Project would have a similar finding of less than significant in this regard. However, it should be noted that the Proposed Project has been designed to remove development from the on-site saddle, thereby avoiding any potential visual effects to westbound I-8 or other area scenic roadways, and eliminating the need for application of Project Design Features.

4) The project would not comply with applicable goals, policies or requirements of an applicable County Community Plan, Subregional Plan, or Historic District's zoning.

The Revised PEIR for determined that the Approved Project as proposed (with inclusion of a General Plan Amendment request) would not conflict with applicable visual resource goals and policies found in the Boulevard Subregional Plan, Mountain Empire Subregional Plan, or County of San Diego General Plan and that impacts would be less than significant. The Revised PEIR stated that the former Rugged Solar farm project would be in conformance with applicable goals and policies of the Boulevard Subregional Plan as amended by the Wind Ordinance POD 10-007 General Plan Amendment (GPA 12-003), adopted by the County Board of Supervisors on May 15, 2013. However, at the time when the EIR was being prepared, the Wind Ordinance had been legally challenged in court and, if the Board of Supervisors' decision was reversed, the project would have then been in conflict with several visual resource policies of the Boulevard Subregional Plan (Soitec 2015). In the event that the Wind Ordinance GPA was reversed, a

General Plan Amendment would have been processed for the Rugged Solar project to request an exception from such policies.

The following evaluation takes such findings into consideration; however, as the project has been redesigned, the analysis herein evaluates the Proposed Project as proposed, per CEQA requirements, against the identified significance thresholds to determine if a potential visual impact finding would remain similar to the Approved Project, or if impacts would be increased or reduced in comparison.

The Project site is not within the boundaries of a Historic District. The Project as proposed has been designed to conform to the requirements of applicable goals, policies and requirements of the County General Plan, Mountain Empire Subregional Plan, Boulevard Community Plan, and the County Zoning Ordinance. A Plan Conformance Evaluation which provides a discussion of Project conformance with these plans, as applicable is provided in Appendix C. Specific to the County's General Plan, the Proposed Project would be consistent with Goal COS-11 and Policies COS-11.1, COS-11.2, COS-11.3, COS-11.5, and COS-11.7, Goal COS-13 and Policies COS-13.1 through COS 13.3, COS-14.4, and COS-14.7. The Proposed Project would also be consistent with applicable Land Use and Conservation Policies and Recommendations of the Mountain Empire Subregional Plan, with applicable Land Use and Circulation and Mobility Policies and Recommendations of the Boulevard Community Plan.

As determined by the analysis, Project impacts would be less than significant, and no mitigation is required.

As previously stated, the Revised PEIR determined that the Approved Project would result in a less than significant impact relative to conformance with applicable goals, policies or requirements of an applicable County Community Plan, Subregional Plan, or Historic District's zoning. The proposed Project would similarly result in a less than significant impact in this regard.

5) The project would create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

6) The project would have a significant impact if it were to:

   a) Install outdoor light fixtures that do not conform to the lamp type and shielding requirements described in Section 59.105 (Requirements for Lamp Source and Shielding) and are not otherwise exempted pursuant Section 59.108 or Section 59.109 of the San Diego County Light Pollution Code.

   b) Operate Class I or Class III outdoor lighting between 11:00 p.m. and sunrise that is not otherwise exempted pursuant Section 59.108 or Section 59.109 of the San Diego County Light Pollution Code.

   c) Generate light trespass that exceeds 0.2 foot-candles measured five feet onto the adjacent property.

See discussion under Threshold 6d) below regarding potential glare impacts.

The Revised PEIR for determined that the Approved Project as proposed would result in a less than significant impact relative to lighting. Project Design Features were proposed to require such measures as installation of fully shielded motion sensor lighting limiting tracker washing to evening and morning hours,

and installation of motion sensor infrared security camera, among others; however, these were not mitigation measures. The following evaluation takes such findings into consideration; however, as the Project has been redesigned, the analysis herein evaluates the Proposed Project as proposed, per CEQA requirements, against the identified significance thresholds to determine if a potential visual impact finding would remain similar to the Approved Project, or if impacts would be increased or reduced in comparison.

Project construction would occur during the hours of 7:00 a.m. and 7:00 p.m. consistent with County regulations. Therefore, the use of temporary nighttime lighting for construction is not anticipated.

All Project lighting would comply with the County of San Diego Light Pollution Code Section 59.101 et and would be shielded and directed downward to minimize the potential trespass or spillover onto adjacent ownerships and for conformance with Dark Sky requirements relative to the County's observatories (Class II lighting in Zone A for Mount Laguna - less than 15-mile radius). All lighting would be operated manually or activated via motion sensors. All outdoor lighting controls would incorporate dusk-to-dawn photocell controllers, occupancy sensors, and/or switches as appropriate, and therefore, Project lighting is not anticipated to adversely affect any neighboring properties, in particular during the hours from 11:00 p.m. to sunrise, consistent with the County's Light Pollution Code.

Limited Project lighting would be installed to allow for maintenance and security. Such lighting would be provided at the storage building, entrance gates, and entrance to the on-site project substation. Lighting would also be provided near the entrance door to the control house and mounted at the entrance gates to allow for safe entry. As such structures would be placed within the interior of the property, distanced from any off-site sensitive receptors (i.e., residential uses), it is not anticipated that any nighttime lighting would result in adverse effects or the potential for spillover onto adjacent properties. Additionally, as maintenance activities are not anticipated to be completed during the evening hours, nighttime lighting would only be utilized if needed. All lighting would be operated manually or activated via motion sensors and all outdoor lighting controls would incorporate dusk-to-dawn photocell controllers, occupancy sensors, and/or switches as appropriate.

Tracker washing may occur during the evening or night to avoid disruption of solar operations. All necessary lighting during the tracker washing process would be intermediate and isolated as washing crews would visit the trackers individually. Additionally, such activities would be temporary and limited as tracker washing would only occur once per year.

For the reasons above, the Project is not anticipated to result in a significant impact relative to nighttime lighting due to adverse effects on the County's dark skies. Impacts would be less than significant. However, the following Project Design Feature is proposed to ensure that potential effects of nighttime lighting and glare are reduced to the extent feasible.

As previously stated, the Revised PEIR determined that the Approved Project would result in a less than significant impact relative to nighttime lighting. The proposed Project would also result in a less than significant impact as compared to the Approved Project. Therefore, impacts would be similar.

d) Install highly reflective building materials, including but not limited to reflective glass and high-gloss surface color, that would create daytime glare and be visible from roadways,

pedestrian walkways, or areas frequently used for outdoor activities on adjacent properties.

The Approved Project included a glare study, prepared by Power Engineers, Inc. in 2013, that determined potential glare effects to be significant and unavoidable (refer to the Rugged Solar Project Visual Resources Technical Report, prepared by Dudek, December 2013; available under separate cover). The glare analysis found that the Approved Project as designed would not result in adverse glare effects on area recreationalists or travelers along I-8; however, the analysis did identify adverse daytime glare effects for five existing residences located directly west of the site, as well as for travelers along McCain Valley Road during certain times of the year (due to the angle of the sun). With consideration for the County's Guidelines of Significance for determining glare effects, such impacts were deemed significant. No feasible mitigation measures were identified, and impacts were therefore deemed significant and unavoidable.

The following evaluation takes such findings into consideration; however, as the project has been redesigned, the analysis herein evaluates the Proposed Project as proposed, per CEQA requirements, against the identified significance thresholds to determine if a potential visual impact finding would remain similar to the Approved Project, or if impacts would be increased or reduced in comparison.

Due to the change in design and technology as proposed with the Proposed Project, as compared to the previously proposed project, a new glare study was conducted by Power Engineers, Inc. in May 2020 to analyze potential glare impacts to nearby residents, recreationists, and motorists (Power Engineers 2020; refer to Appendix D). The study identified 64 structures within one mile of the project boundary having a direct line of sight to the proposed solar installations. To optimize the analysis, some residences south of I-8 and west of Ribbonwood Road were screened for line of sight to the Project site and omitted from the study if none was present. Proposed solar operations were then studied from the 64 key observation points (KOPs), which included the 5 residences that the prior 2013 glare analysis determined would be adversely affected by potential glare from the solar installation.

Views from Ribbonwood Road (located west of the Project site running north/south), McCain Valley Road (located in the eastern portion of the site running north/south), and Tule Mountain Road (a private road traversing the central portion of the Project site, running east-west and connecting to both Ribbonwood Road and McCain Valley Road), as well as surrounding residential structures, were evaluated; refer to Appendix B which identifies the locations of the KOPs analyzed. Data was then analyzed using the software GlareGauge to determine when and where solar glare may occur during the year. Analysis in the glare study evaluated a worst-case scenario and did not account for visual obstructions from surrounding vegetation or minor terrain undulation (Power Engineers 2020).

The Project would install single-axis solar trackers that have four primary positions: wake, tracking, backtracking, and stow. The wake position is the stationary position of the tracker prior to sunrise. The tracker rests in a position of 5.0 degrees from parallel to the ground facing east. Tracking position is when the solar array follows the sun by rotating around a fixed axis to maintain a 90-degree relationship to the angle of inbound sunlight. Backtracking position is when the solar array rotates away from 90 degrees relative to the sun to avoid shading of the adjacent arrays. Stow position is when the array is not tracking or backtracking. In this position, the track rests in a position of 5.0 degrees from parallel to the ground facing west and would occur during non-daylight hours. Trackers would also remain in a stow position when the modules undergo cleaning or maintenance (Power Engineers 2020).

In PV installations, glare is most common in the first and last hour of the day when the sun is lowest in the sky. When single-axis tracking PV panels are stowed flat, incoming sunlight from the rising/setting sun glances across the surface of the panel with a higher potential for glare. By utilizing a 5.0 degree wake/stow angle, potential glare is redirected 5.0 degrees above that of a flat panel and therefore raises potential glare above and away from most viewers in the study area (Power Engineers 2020).

The analysis determined that the potential for glare effects to occur would be low and would be limited to motorists traveling on private Tule Mountain Road from the months of September through March; however, this road is private and is not intended for use by the public. Therefore, this would not be an adverse impact to the public. Additionally, no glare effects were reported for residential viewers or motorists on Ribbonwood Road or McCain Valley Road due to their distances to the Project site and the 5.0 degree wake/stow angle of the single-axis tracking solar PV panels. Additionally, the results of the study determined that the Proposed Project would not cause significant glare to any of the KOPs evaluated. For residential viewers in the study area, no potential glare effects were identified to occur due to the orientation, rotational limits, and wake/stow angle of the proposed single-axis tracking solar PV panels. Therefore none of the 5 residences previously affected by the Approved Project and considered in this analysis for potential adverse glare effects would be impacted by the proposed Project.

The Proposed Project would not install highly reflective building materials that would result in a substantial increase in glare that would affect the surrounding area or that would produce reflective light that could create adverse disability or discomfort glare. All inverters/transformers would be constructed of non-flammable materials (i.e., steel) painted with a non-reflective earth-toned finish to blend the components into the visual landscape. Roofing for these structures would also be metal and painted with a non-reflective, earth-toned finish to reflect the visual character of the surrounding natural environment. Similarly, materials used for the substation control room and storage building would be non-reflective and earth-toned in nature. To ensure that the potential for glare effects to occur as a result of the Project is minimized, such design measures would be made conditions of County approval with adoption of the MUP Plot Plan.

As previously stated, the Revised PEIR determined that the Approved Project would result in a significant and unavoidable impact relative to glare, as no mitigation measures were identified to adequately reduce such impacts to below a level of significance. Potential impacts related to glare for the proposed Project would be less than significant, as demonstrated by the Glare Study performed (Power Engineers 2020). Therefore, the Project would reduce potential glare impacts as compared to the Approved Project.

e) The project does not conform to applicable federal, State or local statute or regulation related to dark skies or glare, including but not limited to the San Diego County Light Pollution Code.

The Revised PEIR for determined that the Approved Project as proposed would result in a less than significant impact relative to lighting and a significant and unavoidable impact relative to glare. As the Project has been redesigned, the analysis herein evaluates the Proposed Project as proposed, per CEQA, against the identified significance thresholds to determine if potential impacts relative to lighting and glare would remain similar, or if impacts would be increased or reduced in comparison.

Refer to the discussion under Thresholds 5 and 6a) to 6c) above pertaining to potential Project nighttime lighting effects on the County's dark skies. Due to the nature of the land use, the Project would include minimal nighttime lighting for purposes of safety and emergency maintenance. All nighttime lighting would be designed and installed in conformance with applicable federal, State, and local regulations related to dark skies, including the San Diego Light Pollution Ordinance. Impacts in this regard would be less than significant. Refer also to Threshold 6d), above, pertaining to glare.

As previously stated, the Revised PEIR determined that the Approved Project would result in a less than significant impact relative to lighting and a significant and unavoidable impact with regard to glare. As redesigned, the proposed Project would have a similar impact of less than significant for lighting effects; however, the proposed Project would reduce impacts as compared to the Approved Project in that impacts related to glare would be less than significant.

5.6 CUMULATIVE IMPACT ANALYSIS

The Revised PEIR for determined that the Approved Project would result in significant and unavoidable cumulative impacts during construction and operation with regard to visual quality and character as well as light and glare. The following evaluation takes such findings into consideration; however, as the project has been redesigned, the analysis herein evaluates the Proposed Project as proposed, per CEQA requirements, against the identified significance thresholds to determine if a similar finding of significance for cumulative impacts would remain, or if the potential for a significant cumulative impact would be increased or reduced in comparison.

For the proposed Project, Figure 6, Cumulative Projects Map, identifies the projects considered for the cumulative analysis. The study area selected for the Project generally includes those projects within a 5-mile radius of the site. A list of projects considered for the cumulative analysis is included in Table 6, Cumulative Projects, below.

The cumulative study area was determined based upon the surrounding topography and potential views to the site from off-site public locations. The study area limits generally encompass the surrounding ridgelines with consideration for distance from the Project site. The McCain Valley viewshed serves as the physical boundary for determining cumulative visual effects, however the cumulative study area boundary should be considered roughly synonymous with that of the Mountain Empire Subregional Plan. This boundary includes the Project-specific viewshed and areas to the south, incorporating the community of Boulevard and other lands along the Interstate 8 corridor (see Figure 11, Cumulative Projects Map). This was determined to be an appropriate cumulative boundary based on the type and geographic extent of the Project's visual impacts, further described below, and because it would encompass projects that would have the potential to change the visual character along Interstate 8 and McCain Valley Road as motorists travel through the valley and approach the Project site.

Viewers located on any downslopes away from the Project site would not experience views of the Project. Additionally, locations within the valley on the lower slopes may have views to the site, but such views would be decreased by distance and intervening topographic conditions, as well as existing development and established vegetation. Locations at or below the elevation of the Project site (e.g. within the flatter lands of the valley floor) would not have views to the Project site. Table 6 provides a list of discretionary

projects that were approved within the last five years or that are currently being processed by the County of San Diego Department of Land Use that are considered to have a potential to contribute to cumulative impacts on visual resources within the Project area.

TABLE 6. CUMULATIVE PROJECTS

Project Number*	Project Name	Project Details	Status	Location	Approximate Distance from Project Site	Permit Type
1	Boulder Brush Facilities Gen-Tie Line	3.5-mile long, 230 kV overhead generation transmission line; high-voltage substation; switchyard; in-out connection to the existing Sunrise Powerlink; access roads on private land	In Progress	Boulevard	0.5 - 4.2 miles northwest	MUP-19-002
2	Tule Wind Phase I	131 MW wind farm; 57 turbines; 34.5 kV overhead and underground collector cable system; 138 kV transmission line; meteorological tower; access roads	Constructed	Mountain Empire	1.1 - 7.8 miles north/northwest	3300-09-019 MUP-09-019M1 MUP-09-019M2
3	Torrey Wind	2,041-acre, 126 MW wind farm; 30 turbines; underground electrical connection system; collector substation; O&M building; batch plant	In Progress	Boulevard	2.2 - 3.9 miles west/northwest	MUP-18-014
4	Boulevard Solar	420-acre, 60 MW solar project	In Progress	Boulevard	5.7 miles southwest	MUP-12-010W1
5	JVR Energy Park	691 acres; 90 MW solar facility; 20 MW energy storage system	In Progress	Jacumba	4.7 miles southeast	MUP-18-022; REZ-18-007; GPA-18-010
6	Jacumba Solar	304-acre, 20 MW solar project; 10 MW battery storage facility	Constructed	Jacumba	8.3 miles southeast	MUP-14-041

*Project numbers correspond to locations identified on Figure 6, Cumulative Projects Map.

It is anticipated that future construction activities within the cumulative study area would occur on various sites and at varied times, when an application for development is made. Such construction-related impacts would be short-term and would cease upon completion. In addition, all new discretionary projects within the cumulative study area would be subject to environmental and design review on a site-specific, project-by-project basis to ensure visual aesthetic impacts are limited to the extent possible during the construction process. All future construction activities would also be required to be consistent with the County's regulatory requirements and applicable conditions of approval to reduce potential cumulative visual effects of construction activities within the landscape. Although such effects would be temporary, they could be potentially extensive in geographic scope and visibility given the existing topography and expansive views offered by the McCain Valley. If the Project is constructed concurrently with the cumulative projects listed above, the Project would have the potential to contribute to a significant and unavoidable cumulative impact on existing visual character or quality, as well as scenic resources, when considered in combination with the other cumulative projects.

Cumulative projects considered for the Visual Resources Impact Analysis are located in the vicinity of the Boulevard community within the Project viewshed; refer to Table 6, Cumulative Projects, and Figure 6, Cumulative Projects Map. The projects considered represent a range of use types including renewable energy generation (solar and wind). As shown on Figure 6, the locations shaded in green (within the 5-mile radius study area) would have views to the Project site. Such views would likely occur due to area topography that allows for unobstructed views and viewing locations at a higher elevation than that of the Project site. As can be seen on Figure 3, a number of the cumulative projects identified within the five-mile radius study area would have views of the Project components and may therefore contribute to an overall cumulative effect that such projects may have on visual resources within the area.

A number of other solar and wind energy-generating facilities within the Boulevard area are being considered or are under construction within the viewshed; however, such projects are located outside of the Project viewshed and were therefore not considered in the cumulative analysis as they would not have the potential to be viewed in combination with the proposed Project. These projects include, but are not limited to, Desert Green Solar (Boulevard), NLP Granger (Valley Center), NLP Solar Valley Center (Valley Center), NRG Solar (Borrego Springs), and SDG&E Solar (Ramona).

Future development of the cumulative projects in the Project vicinity could permanently convert existing off-site open space or undeveloped/vacant lands to a developed condition, potentially resulting in the incremental loss of such lands. Such future development could also contribute to the alteration of views to designated visual resources (i.e., scenic highways, rock outcroppings, etc.). All future discretionary projects proposed within the surrounding area would be subject to an evaluation of the significance of potential cumulative visual and aesthetic changes on a site-specific, project-by-project basis, with consideration for project scope and contribution to a change in the overall visual pattern or character within the community.

As the Boulevard area offers abundant sunshine, combined with available undeveloped lands that are generally flat, the area represents optimal conditions for the sighting of solar energy facilities in the future. Additionally, southeastern San Diego offers ideal conditions to support the installation and operation of wind turbines for electrical generation; refer also to Figure 6. If proposed, it is anticipated that any future installation of solar panels would occur sporadically on available parcels as independent development

applications, rather than concentrated in one area of the valley. Thus, the cumulative visual effects of such installations would be reduced, as a range of small-scale to larger-scale projects would likely be proposed, depending on available land, appropriate zoning, and the nature of the development application.

If proposed, future solar installations along the valley floor would have a similar visual effect as other types of development would have in that they would generally change undeveloped land to developed land. Over time, it is anticipated that development within the Boulevard community and surrounding areas will continue to occur. As the valley is extensive, and the proposed Project site represents a minimal overall percentage of such lands. In addition, due to the limited height and scale of the proposed Project elements, the Project is not anticipated to result in a substantial change in existing views from locations within the valley or from the surrounding mountains. Such views would be further restricted by topography as well as intervening vegetation. However, the Project would contribute to the overall cumulative effect of development within the valley and would therefore have the potential to contribute to a substantial visual change in the appearance of the viewshed.

The cumulative projects considered would have the potential to result in the introduction of features that would detract from or contrast with existing visual features found in the surrounding area. Existing development in the Boulevard area largely consists of a range of uses that include limited single-family residential and small-scale commercial uses, civic-type uses (fire station), agricultural uses, and public recreational areas. The inclusion of the proposed Project in the land use mix would have the potential to contribute to a change with the visual character or quality of the area; however, the proposed Project is generally distanced from the other cumulative projects considered and would be installed on lands largely surrounded by scattered rural type uses or undeveloped lands; refer to Figure 6, Cumulative Projects.

If construction of the cumulative projects was to overlap, composite views of the construction activities could be experienced by viewers within the viewshed, from local area roadways and other surrounding public vantage points. The visual activity generated by construction personnel, equipment, and vehicles on various sites would be apparent, potentially resulting in vegetation removal for site preparation and project grading that may generate visual contrast in form, line, and color with the natural vegetation, rock outcroppings, and/or rolling hillsides offered by the surrounding valley. While views along the I-8 corridor within the viewshed would be influenced by road cuts and elevated berms adjacent to the roadway, views to such new development would be intermittently afforded within the landscape, and in particular, the tall, tubular forms associated with the planned (or constructed) wind farms that would offer dominant visual forms within the existing landscape. If construction activities were to occur within a similar timeframe, such development would be viewed simultaneously.

The anticipated solar and wind developments identified in Table 6 would contribute to the mixture of built elements within the landscape, contributing vertical lines and forms, metallic surfaces, and colors that would potentially contrast with the rural character and scale of the area, thereby increasing the visibility of industrial-type components within the landscape. As the cumulative projects considered within the viewshed have the potential to add increasingly industrial elements, the existing visual quality would be degraded by the addition of PV solar panels, wind turbines, and associated infrastructure which may include large-scale transmission towers. Therefore, new development would have the potential to visually contrast with the existing setting as the form, line, color, and texture of such features would detract from

and contrast with the visual quality and character of the overall viewshed. While the extent of short-term visual impacts occurring on all project sites would not be visible from individual lands comprising the Project, given the generally natural rural character of the McCain Valley and Boulevard areas, and given the presence of other projects within the I-8 corridor viewshed, the Project would contribute to a cumulatively considerable impact due to a change in the overall character of the viewshed. As such, the Project's contribution to a long-term visual change would be considered significant as the Project would contribute to a shift in the existing visual character and quality of the area. Therefore, the Project would contribute to a significant cumulative impact in this regard.

Although the existing viewshed includes man-made elements (i.e., rural residences, roadways, and other infrastructure components), the existing setting is generally natural and rural in character . As noted above, the viewshed is comprised of the rolling hillsides, with the backdrop of the more defined, rugged mountains of higher elevation, combined with rock outcroppings and low-lying chaparral and desert scrub vegetation. The viewshed generally offers a variety of panoramic vistas and expansive scenic views from various vantage points including along I-8, other local public roadways, and from public recreational lands in the valley. As stated previously, the Project would be intermittently visible from I-8 and other local roadways, as well as from limited areas within surrounding public lands. Potential impacts on scenic vistas would generally occur along area roadways from which the Project would be viewed in combination with other area projects, particularly those of prominence (i.e., wind farms), as the change would be distracting and could substantially obstruct or interrupt the broad, horizontal composition of existing views experienced.

As stated above, the cumulative projects considered would contribute to the introduction of varied and prominent industrial elements within the subject viewshed. Several wind energy projects are proposed and would be located atop prominent ridgelines highly visible from I-8, local public roadways, and from public recreational lands within McCain Valley. The tall, vertical forms and visual prominence that characterize wind farms would contribute to the development visible within the affected viewshed. Such elements would contribute to the views experienced along several segments of I-8, local public roadways, (including eligible State scenic highways and County Scenic Highways and would result in a visual environment influenced by renewable energy development. Views of such development would be constant and difficult to avoid as one travels through or within the viewshed. Therefore, the volume of components related to renewable energy projects, including wind turbines, solar panels, gen-tie lines, associated infrastructure, and mechanical moving elements would have the potential to obstruct, interrupt and detract from existing panoramic vistas and scenic views experienced by motorists on public roads, eligible state scenic highways, and roadways included in the County Scenic highway system (i.e., I-8, SR-94, and Old Highway 80), as well as from public recreation areas in the vicinity. The Project, which would include installation of the expansive PV solar fields, site grading, and vegetation removal, would therefore contribute to this change in views experienced within the viewshed and would have a significant cumulative contribution with regard to the detraction and interruption of available focal points and panoramic views, including from I-8 and Old Highway 80.

In general, the cumulative projects considered would be required to demonstrate conformance with applicable goals and policies of the County General Plan, Mountain Empire Subregional Plan, Boulevard Community Plan, and County Zoning Ordinance. If deviations to changes to the existing or allowed

conditions or uses are proposed with future projects, project-specific analysis would be required to justify such changes, prior to approval by the County.

In addition, all lighting proposed with future development within the cumulative study area, such as street lighting, security lighting, or exterior illumination, would potentially result in increased light and glare impacts within the Boulevard community. Projects within the cumulative study area would be evaluated by the County on a project-by-project basis to determine the extent of such lighting necessary and any appropriate site-specific measures to reduce potential impacts on surrounding areas (i.e., shielding, use of low-level lighting, directing lighting away from adjacent properties and open space areas). As such, it is anticipated that the cumulative effects of increased lighting and/or glare associated with future development in the cumulative study area would be reduced to less than significant levels. As the Project would require minimal nighttime lighting limited to the purposes of security and maintenance, the Project would not represent a substantial new source of light within the community. Further, the Project, along with all other discretionary projects within the viewshed, would be subject to conformance with the County's Light Pollution Ordinance to ensure the long-term protection of the County's dark skies and/or to prevent disruption of neighboring properties from light spillover. The Project would also be subject to implementation of Project Design Feature PDF-AE-5 which would further reduce the potential for the Project to contribute to increased lighting effects within the viewshed. Due to such conditions, in combination with the fact that the Project would result in a less than significant impact relative to nighttime lighting, the Project would not contribute to a significant cumulative impact relative to lighting. Project-related cumulative impacts would be less than significant in this regard.

Although all solar panels are designed to absorb sunlight, potential glare effects from future additional solar installations within the viewshed, as well as other cumulative projects, may have the potential to create significant glare or result in reflective surfaces that could create adverse effects on surrounding land uses or on views from surrounding vantage points. The cumulative projects would be subject to the County's discretionary review and would be evaluated to determine if, due to project design, proximity to neighboring uses or public vantage points, and/or use of building materials or finishes, would result in adverse glare effects. As the proposed Project was determined to result in a less than significant impact relative to glare, it is not anticipated that the Project would contribute to a significant cumulative impact related to glare within the surrounding viewshed. The Project would also be subject to implementation of Project Design Features PDF-AE-2 through PDF-AE-4 to reduce glare impacts. Project-related cumulative impacts would therefore be less than significant in this regard.

Additionally, all future discretionary projects within the Boulevard vicinity would be subject to an evaluation of the significance of potential cumulative visual and aesthetic changes on a site-specific, project-by-project basis, with consideration for its scope and contribution to a change in the overall visual pattern or character within the community. Adherence to applicable General Plan policies and goals would further reduce potential cumulative impacts relative to the long-term alteration of views to designated scenic resources.

5.7 SUMMARY OF PROJECT IMPACTS AND SIGNIFICANCE AND CONCLUSIONS

Through evaluation in this VIA, it was determined that the Project would have the potential to result in the introduction of features that would substantially detract from or contrast with the visual character of the surrounding community by conflicting with visual elements or quality of an existing area (i.e., through conflicting style, size, coverage, scale, building materials, etc.). The Project would result in a change from undeveloped to developed land and would introduce elements that are inconsistent with the surrounding natural vegetation and topography. With implementation of proposed mitigation in the form of landscape screening, impacts would be reduced, but not to a level of less than significant. This finding would be similar to that concluded in the Revised PEIR for the Approved Project, as impacts were determined to be significant and unmitigable, even with the incorporation of mitigation.

The Project would not result in the removal of or substantial adverse change to one or more features that contribute to the valued visual character or image of the Project area, including but not limited to designated landmarks, historic resources, or trees, and the removal of a limited number of rock outcroppings would not adversely change the existing visual setting of the subject lands. The subject site is generally lacking such resources. A number of rock outcroppings are present on-site; some removal of rock outcroppings within the panel fields would be required to allow for installation of the trackers. However, it is not anticipated that removal of a limited number of rock outcroppings on-site would not substantially change existing views of the site within the larger context of the surrounding mountains which support similar resources. Impacts would be less than significant. This finding would be similar to that concluded in the Revised PEIR for the Approved Project.

Furthermore, the Project would not substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from a public road, trails within an adopted County or State trail system, scenic vista or highway, or recreational area. As compared to the Revised PEIR for the Approved Project, the proposed Project would result in a similar finding of significance in this regard; however, it should be noted that the former project proposed a design that would have resulted in a potentially higher degree of visibility of the project components from area scenic highways (i.e., I-8) and implementation of a Project Design Feature was therefore required to reduce such effects. The Proposed Project as proposed presents a revised design that avoids the potential for such effects on scenic highways to occur altogether.

The Project as designed would also not result in an inconsistency with any goals, standards, or policies related to visual resources as given in the County General Plan, Mountain Empire Subregional Plan, or Boulevard Community Plan. Impacts would be less than significant. This finding would be similar to that concluded in the Revised PEIR for the Approved Project.

Additionally, the Project would not create a new source of substantial light or glare, that would adversely affect day or nighttime views in the area. Due to the nature of the land use, limited nighttime lighting would be required, and all such lighting would conform to County Dark Sky requirements. With the Project as currently designed, no potential adverse effects from glare generated by the PV solar panels or other associated equipment would result. Overall, impacts relative to light and glare are considered to be less than significant. Therefore, impacts with the Proposed Project would be similar to that of the Revised PEIR relative to nighttime lighting effects; however, as the Revised PEIR identified a significant and unavoidable impact relative to glare, the proposed Project would reduce such impacts in comparison.

In summary, the proposed Project would have potential to result in a significant impact on aesthetic resources. The implementation of Mitigation Measure M-AE-PP-1 and Project Design Features PDF-AE-2 through PDF-AE-5 are proposed to reduce Project impacts with regard to aesthetic resources; however, impacts to visual character and quality would not be reduced to below a level of significance. Project impacts relative to other thresholds evaluated would be less than significant and either similar to or reduced in comparison to the Approved Project as proposed.

6. VISUAL MITIGATION MEASURES / DESIGN CONSIDERATIONS

The Revised PEIR for the Approved Project identified significant and unavoidable impacts relative to visual character and quality and dark skies and glare. Mitigation Measure M-AE-PP-1 was proposed to address project design and site management techniques to reduce anticipated visual contrast and impacts to existing visual character and/or quality of the site and surroundings to the extent practicable. Additional mitigation measures to reduce the severity of project impacts associated with existing visual character and/or quality and project-generated glare were considered but were determined to be infeasible or ineffective. Therefore, even with implementation of Mitigation Measure M-AE-PP-1 and the proposed Project Design Features, project impacts associated with visual character and quality and dark skies and glare were determined to be significant and unmitigable.

The Revised PEIR analysis determined that the Approved Project would result in a less than significant impact for all other thresholds evaluated. Implementation of Project Design Features PDF-AE-1 through PDF-AE-5 were proposed to further minimize potential project effects on existing aesthetic resources. Respectively, these PDFs required: 1) the pulling back of project grading from the natural on-site saddle and protecting in-place natural vegetation, in addition to requiring additional landscape plantings to further screen the saddle from view; 2) installation of temporary fencing to screen the on-site staging of materials and equipment storage during the construction phase; 3) use of earth-toned coating/paint for the O&M building and non-specular overhead conductors to reduce visibility, glare, and visual contrast and 4) installation of outdoor lighting in conformance with County of San Diego Light Pollution Code Zone A Standards for lamp type and shielding requirements and installation of motion sensor lighting and cameras (Refer to the Revised PEIR or the Executive Summary above for the full text of these PDFs). PDF-AE-2 through PDF-AE-5 are carried forward and detailed below to reduce the potential effects of the Proposed Project.

As evaluated herein in this VIA, the Project as currently proposed would have the potential to result in the introduction of features that could significantly detract from or contrast with the visual character of the Boulevard community by conflicting with the visual elements or quality of an existing area. The following mitigation measure is therefore proposed to ensure that Project effects on visual character and quality are reduced; however, such mitigation would not reduce Project impacts to a level of less than significant. This mitigation measure has been revised from that identified in the Revised PEIR for the Rugged Solar project for applicability to the Proposed Project as designed.

M-AE-PP-1 The applicant shall install landscape screens as specified in Appendix 2.1-4, Landscape Screening Design for the Soitec Solar Development Program EIR. Features of the solar facility to be screened include the 50-foot-wide fire buffer with 6-foot-tall perimeter fence, concentrator photovoltaic (CPV) solar panels, and other associated features that exceed the height of the fencing installed around the perimeter of the solar facility.

The applicant shall also be responsible for continued maintenance of the landscape screens, including installation and maintenance of a drip irrigation system and implementation of and consistency with plant installation and maintenance standards identified in the Landscape Screening Design report. Periodic monitoring and reporting to observe and assess the maintenance regime and implementation of appropriate measures to promote plant survival,

growth, overall health, and vigor shall also be required. If necessary, adaptive measures shall be implemented in the subsequent spring season to address project deficiencies as they relate to the desired landscape screening effect. Additional details regarding recommended plants and materials for landscape screens, project-specific designs, irrigation systems, water demand calculations, and maintenance and monitoring activities are included in the Landscape Screening Design Report.

Additionally, the following Project Design Features are proposed to reduce the potential effects of the Proposed Project with regard to aesthetic resources. These Project Design Features are carried forward from the Revised PEIR for the Approved Project.

PDF-AE-2 Staging material and equipment storage areas, including storage sites for excavated materials, visible from nearby roads, residences, and recreational areas shall be visually screened using temporary screening fencing. Fencing shall be of an appropriate design and color for the Proposed Project location.

PDF-AE-3 The O&M building shall be painted/finished with muted-earth toned colors. Materials, coatings, or paints having little or no reflectivity shall be used whenever possible. New overhead conductors shall be non-specular in design to reduce conductor visibility, glare, and visual contrast.

PDF-AE-4 Weathered or cor-ten steel shall be used for gen-tie monopoles to reduce the potential for color contrast between structures and existing vegetation and terrain.

PDF-AE-5 Outdoor lighting at each solar farm site shall conform to County of San Diego Light Pollution Code Zone A standards for lamp type and shielding requirements. More specifically, Zone A standards shall be applicable for all Class I (i.e., lighting for assembly areas where color rendition is important) and Class II (i.e., lighting for general illumination and security) lighting at the solar farm site and all outdoor lighting fixtures shall be fully shielded and directed downward. Further, fully shielded motion sensor lighting shall be installed at the on-site private substation yard, next to the entrance door to the substation control house, and mounted atop entrance gates and shall be turned off when no one is on site. When possible, tracker washing shall occur during evening and morning hours to reduce occurrences of dark sky illumination. Regarding operation of security measures, motion sensor infrared cameras shall be installed at the project site to avoid illumination of the site and surrounding area during nighttime hours.

As evaluated herein, the Project would not result in a significant impact related to the removal of or substantial adverse change to one or more features that contribute to the valued visual character or image of the Project area, including but not limited to designated landmarks, historic resources, or trees, and the removal of a limited number of rock outcroppings would not adversely change the existing visual setting of the subject lands. Furthermore, the Project would not substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from a public road, trails within an adopted County or state trail system, scenic vista or highway, or recreational area. The Project as designed would also not result in an inconsistency with any goals, standards, or policies related to visual resources as given in the

County General Plan, Mountain Empire Subregional Plan, or Boulevard Community Plan. Impacts would be less than significant in this regard.

Additionally, as the Project, in combination with other existing and planned development within the viewshed, would have the potential to contribute to a significant and unavoidable cumulative impact relative to visual character and quality due to the introduction of features that would detract from or contrast with the existing visual character and/or quality of a neighborhood, community, or localized area by conflicting with important visual elements or the quality of the area. The Project would also have the potential to result in a significant and unavoidable cumulative impact as it may interrupt or detract from a valued focal and/or panoramic vista from a public road, a trail within an adopted County or State trail system, a scenic vista or highway, or a recreational area. These findings are consistent with those identified in the Revised PEIR for the Approved Project.

7. REFERENCES

County of San Diego General Plan. Adopted August 3, 2011.

County of San Diego General Plan – Boulevard Community Plan. Adopted August 2011.

County of San Diego General Plan – Mountain Empire Subregional Plan. Adopted August 2011.

County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Dark Skies and Glare. July 30, 2007. Modified January 15, 2009.

County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements - Visual Resources. July 30, 2007.

County of San Diego Zoning Ordinance. Updated with Ordinance Update No. 80, October 2009.

Rugged Solar Project Glare Study, prepared by Power Engineers, Inc., May 2020.

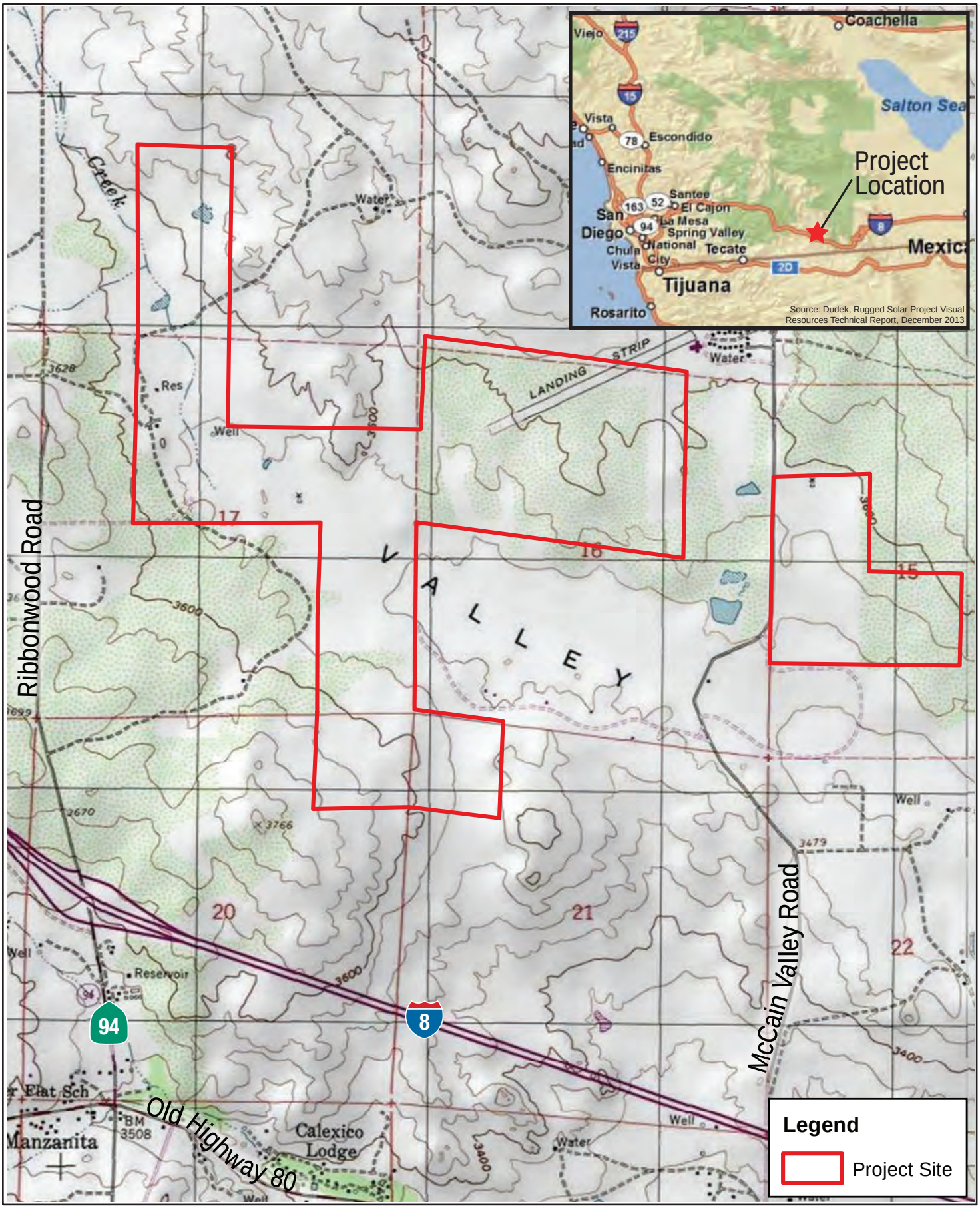
Final Program Environmental Impact Report - Soitec Solar Development Project, prepared by Dudek, January 2015.

Rugged Solar Project Visual Resources Technical Report, prepared by Dudek, December 2013.

8. REPORT PREPARERS

Michael Baker International

Nicole Marotz, AICP, LEED AP
Environmental Planner
County Certified CEQA Consultant for Visual Impact Analyses
Primary Author of the Visual Impact Analysis



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173007Figures.indd

0 0.125 0.25 0.5 Miles

Source: USGS; Live Oak Springs USGS Quadrangle, San Diego County

RUGGED SOLAR PROJECT

Regional/Local Vicinity Map

Figure 1

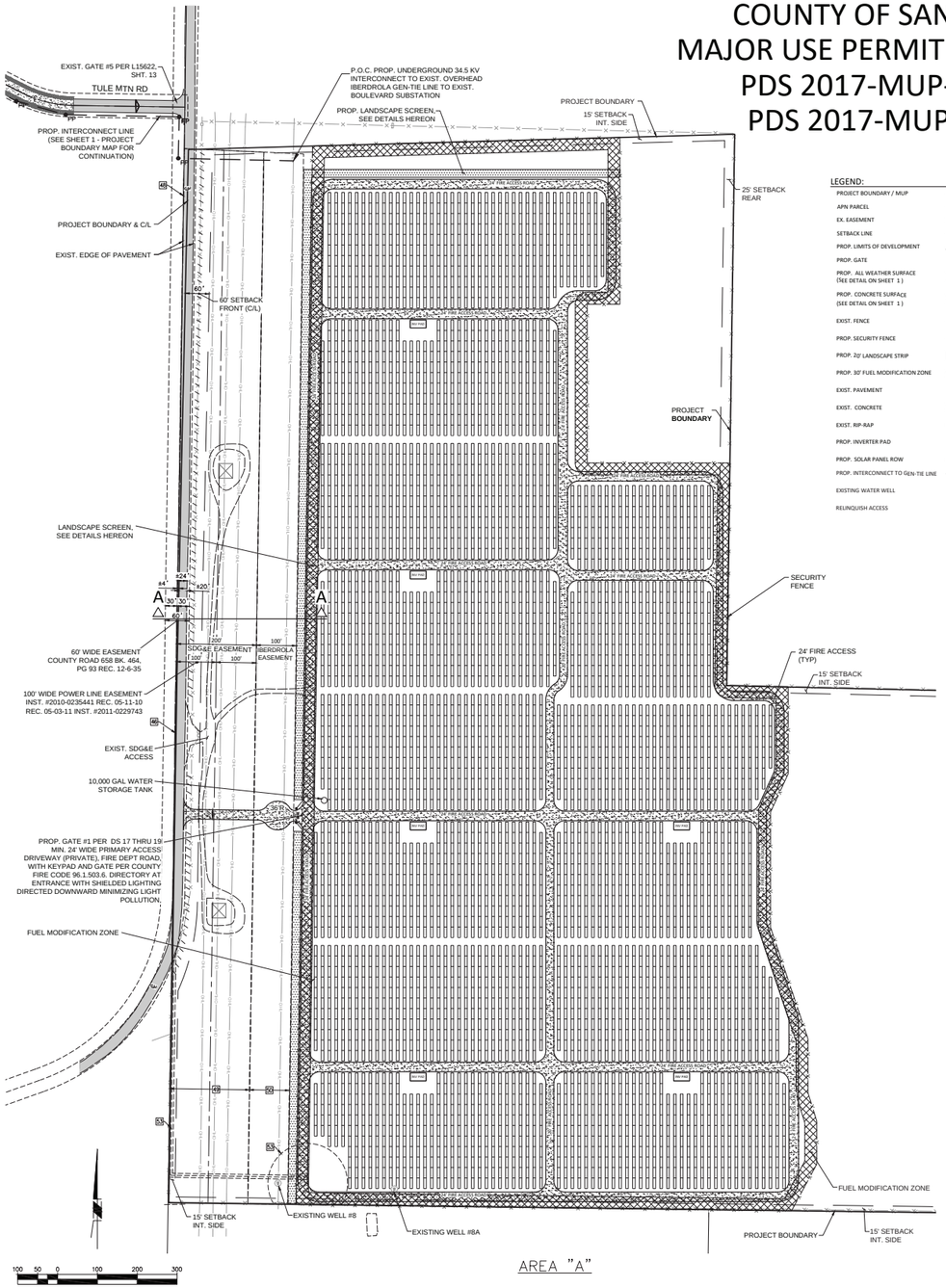
RUGGED SOLAR

COUNTY OF SAN DIEGO, CA

MAJOR USE PERMIT MODIFICATION

PDS 2017-MUP-12-007W1

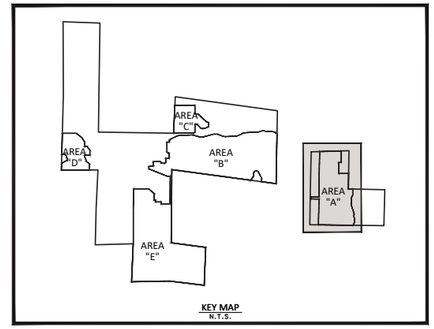
PDS 2017-MUP-12-007TE



AREA "A"

LEGEND:

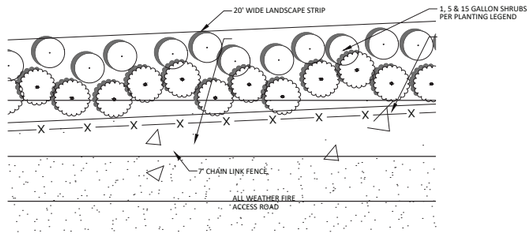
- PROJECT BOUNDARY / MUP
- APN PARCEL
- EX. EASEMENT
- SETBACK LINE
- PROP. LIMITS OF DEVELOPMENT
- PROP. GATE
- PROP. ALL WEATHER SURFACE (SEE DETAIL ON SHEET 1)
- PROP. CONCRETE SURFACE (SEE DETAIL ON SHEET 1)
- EXIST. FENCE
- PROP. SECURITY FENCE
- PROP. 20' LANDSCAPE STRIP
- PROP. 30' FUEL MODIFICATION ZONE
- EXIST. PAVEMENT
- EXIST. CONCRETE
- EXIST. RIP-RAP
- PROP. INVERTER PAD (INV TYP)
- PROP. SOLAR PANEL ROW (8-370w PV PANELS)
- PROP. INTERCONNECT TO GEN-TIE LINE
- EXISTING WATER WELL (W)
- RELINQUISH ACCESS



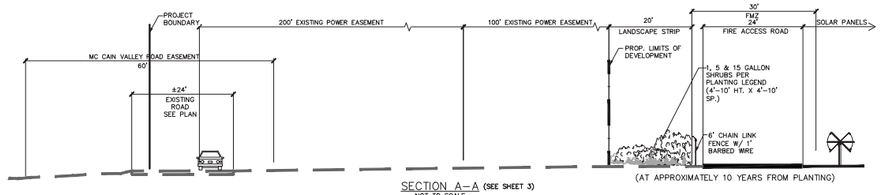
KEY MAP
N.T.S.

PLANT LEGEND

	SHRUBS	BOTANICAL NAME / COMMON NAME	SIZE	SPACING	WATER USE
⊙		QUERCUS BERBERIDIFOLIA / SCRUB OAK	1 & 5 GALLON	VARIES 15'–20'	L
⊙		HETEROMELES ARBUTIFOLIA / TOYON	5 & 15 GALLON	VARIES 6'–10'	L

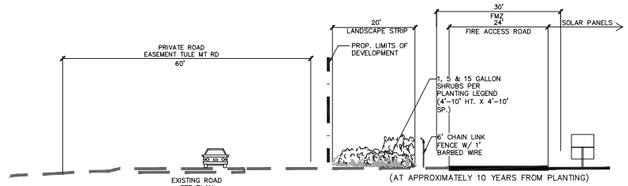


ENLARGEMENT TYPICAL
NOT TO SCALE



SECTION A–A (SEE SHEET 3)
NOT TO SCALE

(AT APPROXIMATELY 10 YEARS FROM PLANTING)



(AT APPROXIMATELY 10 YEARS FROM PLANTING)

SECTION B–B (SEE SHEET 2)
NOT TO SCALE

EXISTING EASEMENTS

☐	DESCRIPTION	DISPOSITION	DOC. #
10	PUBLIC UTILITY EASEMENT - MT EMPIRE ELECTRIC CO.	TO REMAIN	INSTR. 46667, 3/11/1971
11	PUBLIC UTILITY EASEMENT - JAMES & WANDA FUQUAY	TO REMAIN	INSTR. 108056, 4/13/1976
12	PUBLIC UTILITY EASEMENT - YORK & TINA HEIMERDINGER	TO REMAIN	INSTR. 2002-0686092, 8/16/2002
15	ROAD CONST. EASEMENT - MT EMPIRE ELECTRIC CO.	TO REMAIN	INSTR. 2012-0031562, 1/19/2012
16	INGRESS AND EGRESS - ROUGH ACRE WATER CO.	TO REMAIN	INSTR. 2013-0208238, 4/02/2013
17	GRANT OF EASEMENT	TO REMAIN	INSTR. 2013-0208244, 4/03/2013
18	INGRESS AND EGRESS - HARMONY GROVE PARTNERS	TO REMAIN	INSTR. 2013-0208247, 4/03/2013 & INSTR. 2016-0574322, 10/25/2016
19	GRANT OF EASEMENT	TO REMAIN	INSTR. 2013-0208249, 4/03/2013
26	DITCHES AND CANALS - USA	TO REMAIN	BK. 699, PG. 344, 10/04/1937
27	RIGHT TO FISH AND INCIDENTAL PURPOSES - STATE CA.	TO REMAIN	BK. 6651, PG. 344, 10/04/1937
30	RECORDED MEMORANDUM OF LEASE - SDGE	TO REMAIN	INSTR. 2010-0217321, 4/30/2010
31	RESTRICTIVE COVENANT	TO REMAIN	INSTR. 2010-318659, 6/24/2010
32	MEMORANDUM OF ACCESS EASEMENT AGREEMENT	TO REMAIN	INSTR. 2012-0031560, 1/19/2012
33	MEMORANDUM OF ACCESS AND ROAD CONTRUCTION	TO REMAIN	INSTR. 2012-0031562, 1/19/2012
36	GRANT OF ACCESS	TO REMAIN	INSTR. 2013-0208234, 4/03/2013
37	GRANT OF ROUGH ACRES RANCH ROAD	TO REMAIN	INSTR. 2013-0208246, 4/03/2013
38	GRANT OF CHARGER WAY	TO REMAIN	INSTR. 2013-0208248, 4/03/2013
41	IOD FOR PUBLIC HIGHWAY	TO REMAIN	INSTR. 2016-0565303, 9/23/2016
46	COUNTY HIGHWAY - COUNTY OF SAN DIEGO	TO REMAIN	BK. 464, PG 93,12/06/1935
48	AGREEMENT ACCESS & MAINTENANCE OF FENCE	TO REMAIN	BK. 7301, PG.368,10/15/1958
49	UTILITY ACCESS - SDGE	TO REMAIN	INSTR. 2010-0235441, 5/11/2010
50	MEMORANDUM OF POWER LINE AGREEMENT	TO REMAIN	INSTR. 2011-0229743, 5/03/2011
53	ACCESS & MAINTENANCE - ROUGH ACRES WATER CO. INC.	TO REMAIN	INSTR. 2013-0208243, 4/03/2013

EASEMENTS AND RESTRICTIONS PER FIRST AMERICAN TITLE INSURANCE COMPANY PRELIMINARY REPORT ORDER NUMBER 5020-10143680CA2 UPDATED MAY 22,2020.

Michael Baker INTERNATIONAL

173007Figures.indd

Source: October 2020, Major Use Permit Plot Plan

RUGGED SOLAR PROJECT

Major Use Permit Plot Plan - Area A

Figure 2A

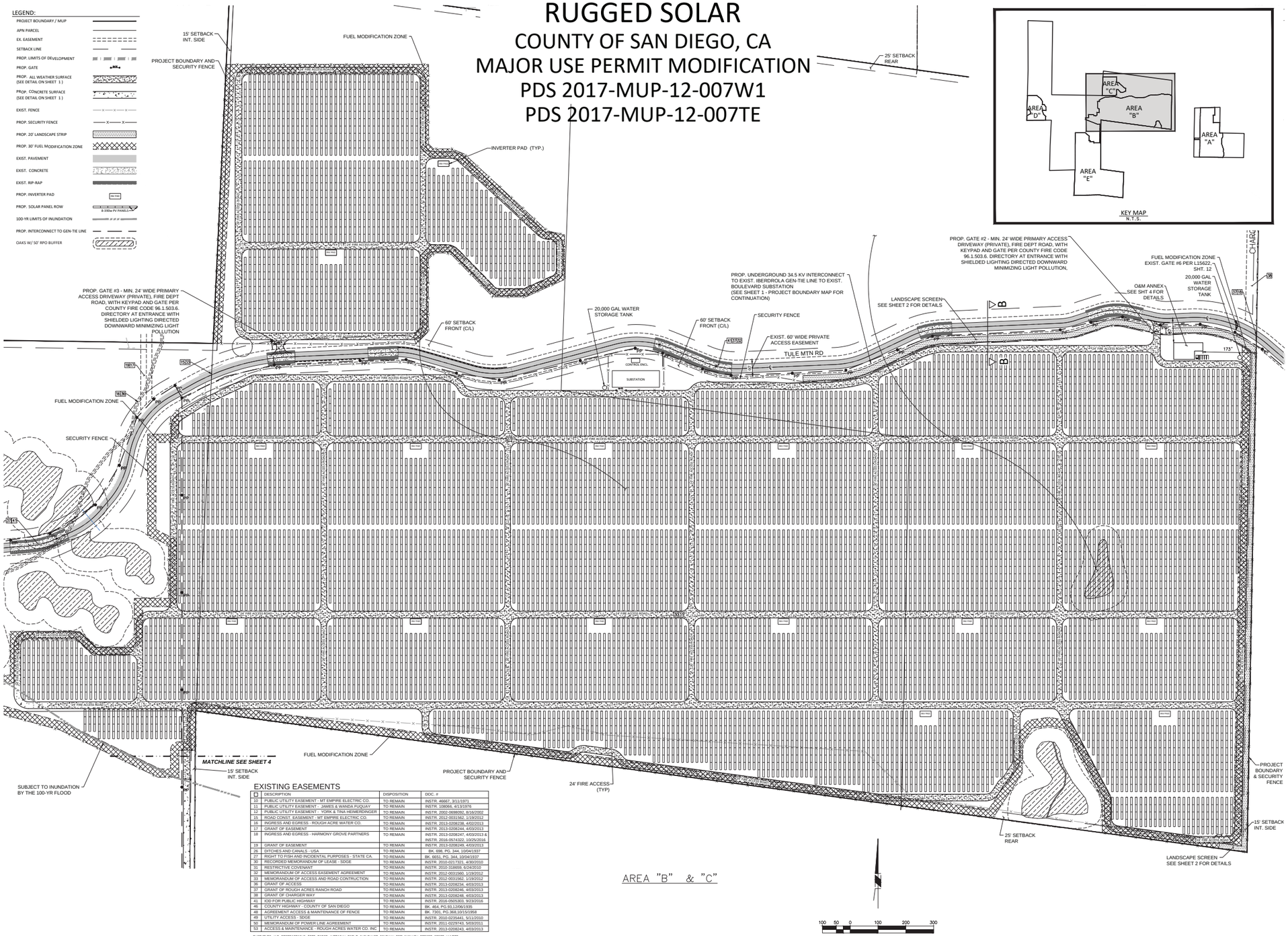
RUGGED SOLAR

COUNTY OF SAN DIEGO, CA

MAJOR USE PERMIT MODIFICATION

PDS 2017-MUP-12-007W1

PDS 2017-MUP-12-007TE



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12	PUBLIC UTILITY EASEMENT - YORK & TINA HEIMERDINGER	TO REMAIN	INSTR. 2002-0688092, 8/14/2002
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17	GRANT OF EASEMENT	TO REMAIN	INSTR. 2013-0208244, 4/03/2013
18	INGRESS AND EGRESS - HARMONY GROVE PARTNERS	TO REMAIN	INSTR. 2013-0208247, 4/03/2013 & INSTR. 2016-0574202, 10/05/2016
19	GRANT OF EASEMENT	TO REMAIN	INSTR. 2013-0208249, 4/03/2013
26	DITCHES AND CANALS - USA	TO REMAIN	BK. 696, PG. 344, 10/04/1937
27	RIGHT TO FISH AND INCIDENTAL PURPOSES - STATE CA	TO REMAIN	BK. 6651, PG. 344, 10/04/1937
30	RECORDED MEMORANDUM OF LEASE - SDGE	TO REMAIN	INSTR. 2010-0217321, 4/30/2010
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50	MEMORANDUM OF POWER LINE AGREEMENT	TO REMAIN	INSTR. 2011-0229743, 5/03/2011
53	ACCESS & MAINTENANCE - ROUGH ACRES WATER CO. INC	TO REMAIN	INSTR. 2013-0208243, 4/03/2013

EASEMENTS AND RESTRICTIONS, CPER FIRST AMERICAN TITLE INSURANCE COMPANY PRELIMINARY REPORT ORDER NUMBER 3020-10143062A2 UPDATED MAY 22,2020.

RUGGED SOLAR

COUNTY OF SAN DIEGO, CA

MAJOR USE PERMIT MODIFICATION

PDS 2017-MUP-12-007W1

PDS 2017-MUP-12-007TE

LEGEND:

- PROJECT BOUNDARY / MUP
- APN PARCEL
- EX. EASEMENT
- SETBACK LINE
- PROP. LIMITS OF DEVELOPMENT
- PROP. GATE
- PROP. ALL WEATHER SURFACE (SEE DETAIL ON SHEET 1)
- PROP. CONCRETE SURFACE (SEE DETAIL ON SHEET 1)
- EXIST. FENCE
- PROP. SECURITY FENCE
- PROP. 20' LANDSCAPE STRIP
- PROP. 30' FUEL MODIFICATION ZONE
- EXIST. PAVEMENT
- EXIST. CONCRETE
- EXIST. RIP-RAP
- PROP. INVERTER PAD
- PROP. SOLAR PANEL ROW (I: 990w PV PANELS)
- 100-YR LIMITS OF INUNDATION
- PROP. INTERCONNECT TO GEN-TIE LINE
- EXISTING WATER WELL
- OAKS W/ 50' RPO BUFFER

EXISTING EASEMENTS

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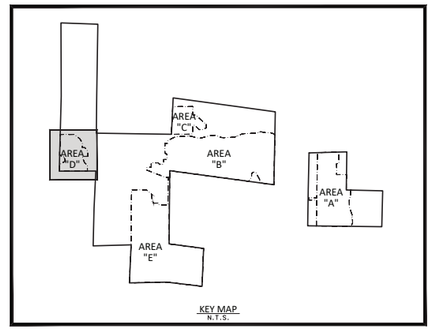
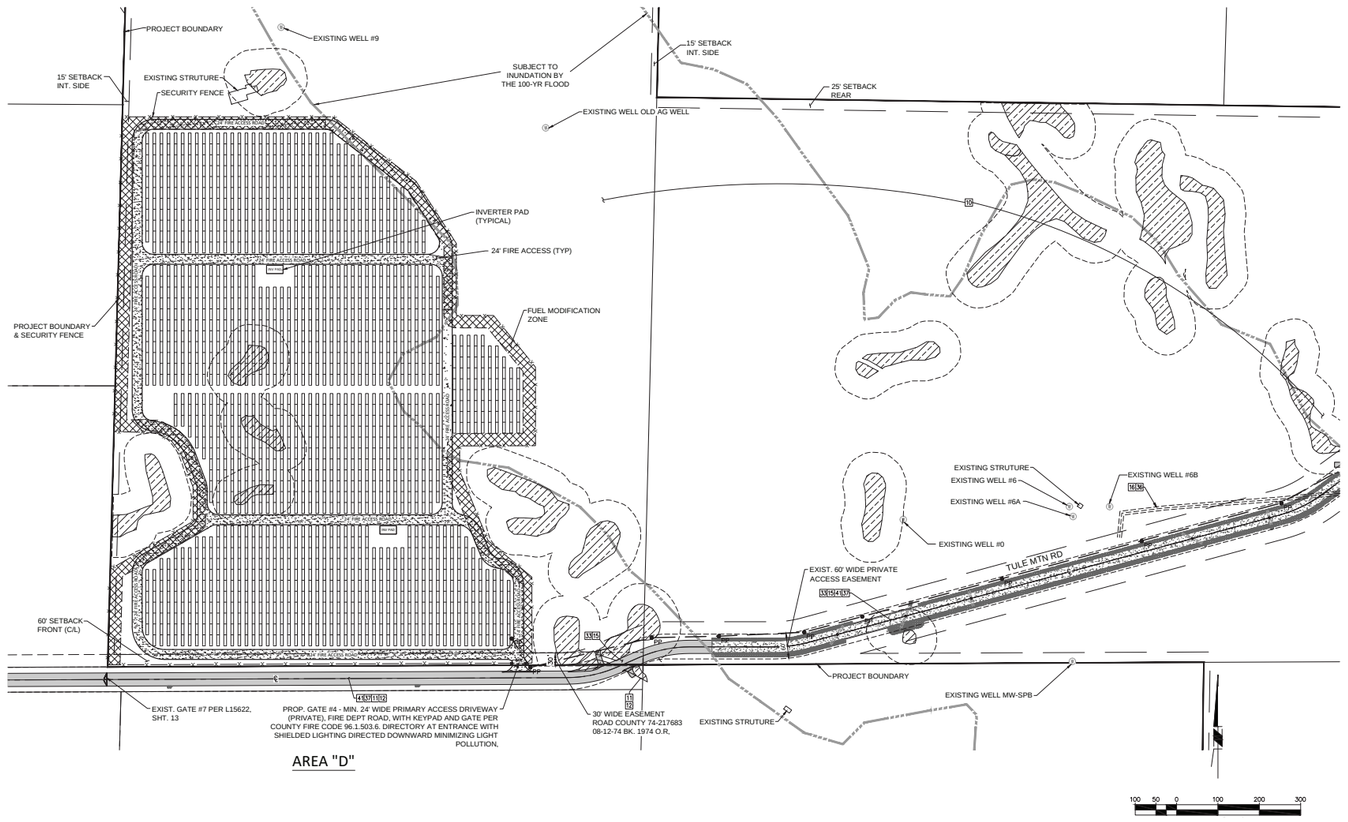
27	RIGHT TO FISH AND INCIDENTAL PURPOSES - STATE CA.	TO REMAIN	BK. 6651, PG. 344, 10/04/1937
30	RECORDED MEMORANDUM OF LEASE - SDGE	TO REMAIN	INSTR. 2010-0217321, 4/30/2010
31	RESTRICTIVE COVENANT	TO REMAIN	INSTR. 2010-318659, 6/24/2010
32	MEMORANDUM OF ACCESS EASEMENT AGREEMENT	TO REMAIN	INSTR. 2012-0031560, 1/19/2012
33	MEMORANDUM OF ACCESS AND ROAD CONTRUCTION	TO REMAIN	INSTR. 2012-0031562, 1/19/2012
36	GRANT OF ACCESS	TO REMAIN	INSTR. 2013-0208234, 4/03/2013
37	GRANT OF ROUGH ACRES RANCH ROAD	TO REMAIN	INSTR. 2013-0208246, 4/03/2013
38	GRANT OF CHARGER WAY	TO REMAIN	INSTR. 2013-0208248, 4/03/2013
41	IOD FOR PUBLIC HIGHWAY	TO REMAIN	INSTR. 2014-0505303, 9/23/2016
46	COUNTY HIGHWAY - COUNTY OF SAN DIEGO	TO REMAIN	BK. 464, PG. 93,12/06/1935
48	AGREEMENT ACCESS & MAINTENANCE OF FENCE	TO REMAIN	BK. 7301, PG.368,10/15/1954
49	UTILITY ACCESS - SDGE	TO REMAIN	INSTR. 2010-0235441, 5/11/2010
50	MEMORANDUM OF POWER LINE AGREEMENT	TO REMAIN	INSTR. 2011-0229743, 5/03/2011
53	ACCESS & MAINTENANCE - ROUGH ACRES WATER CO. INC	TO REMAIN	INSTR. 2013-0208243, 4/03/2013

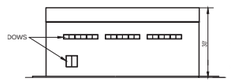
EASEMENTS AND RESTRICTIONS (PER FIRST AMERICAN TITLE INSURANCE COMPANY PRELIMINARY REPORT ORDER NUMBER 3020-1014308DA2 UPDATED MAY 22,2020.



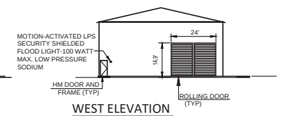
KEY MAP
N.T.S.



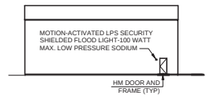
AREA "D"



NORTH ELEVATION



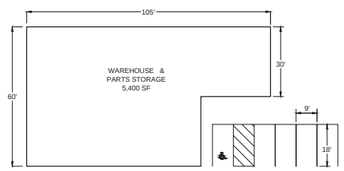
WEST ELEVATION



SOUTH ELEVATION

EAST ELEVATION

ELEVATIONS



PLAN VIEW
OPERATION & MAINTENANCE (O&M)
N.T.S.

BUILDING WILL BE EARTH TONE COLORS, WITH EITHER WOOD FRAME CONSTRUCTION WITH STUCCO OR METAL SIDING.

ROOF CONSTRUCTION WILL BE TILE OR METAL MATERIAL.

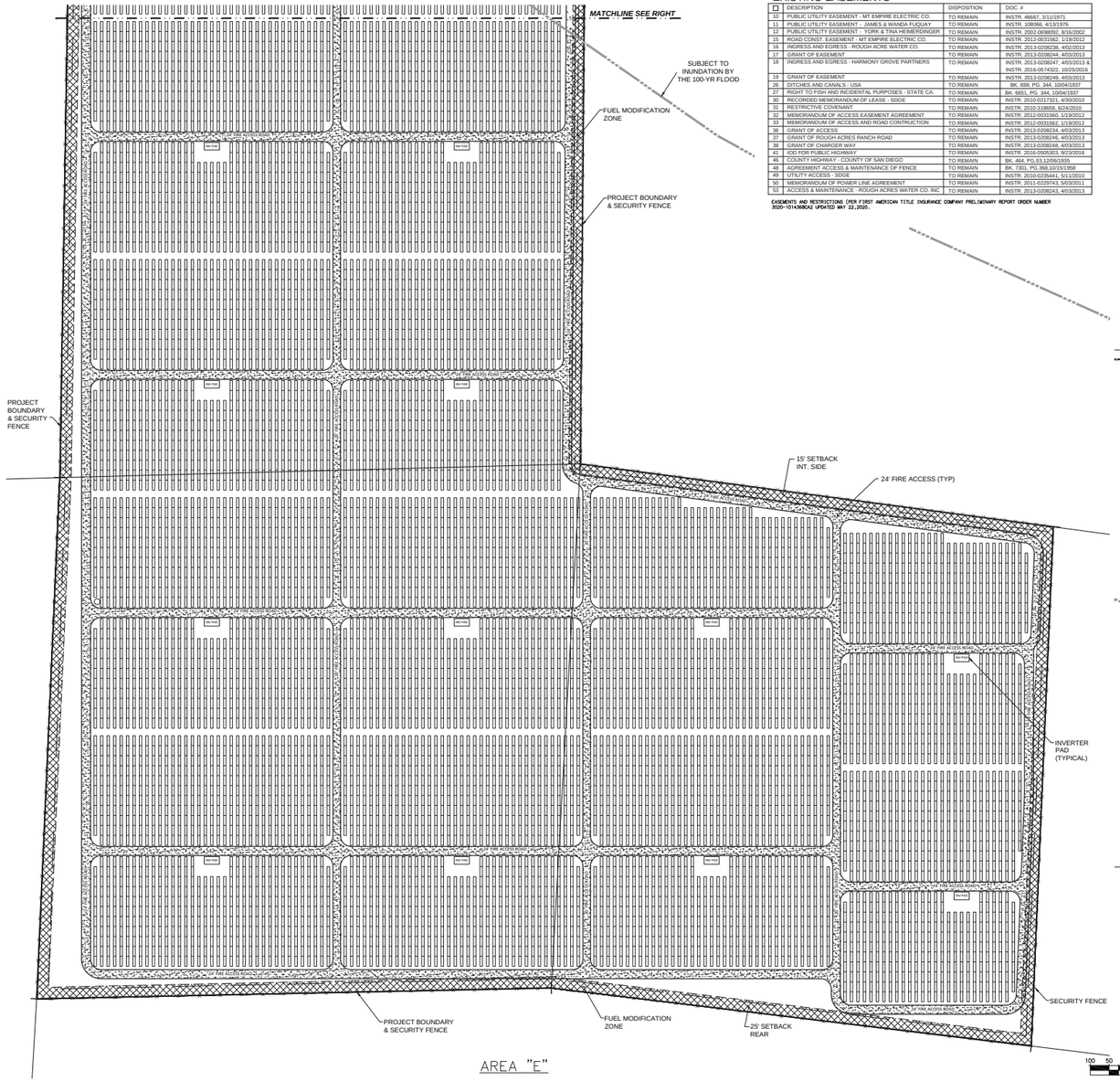
RUGGED SOLAR

COUNTY OF SAN DIEGO, CA

MAJOR USE PERMIT MODIFICATION

PDS 2017-MUP-12-007W1

PDS 2017-MUP-12-007TE



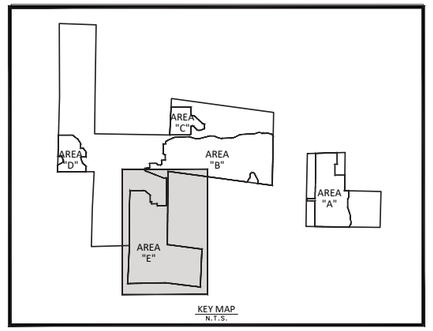
EXISTING EASEMENTS

	DESCRIPTION	DISPOSITION	DOC. #
10	PUBLIC UTILITY EASEMENT - MT EMPIRE ELECTRIC CO.	TO REMAIN	INSTR. 46667, 3/11/1971
11	PUBLIC UTILITY EASEMENT - JAMES & WANDA FUQUAY	TO REMAIN	INSTR. 108066, 4/13/1976
12	PUBLIC UTILITY EASEMENT - YORK & TINA HEMERDINGER	TO REMAIN	INSTR. 2002-0696892, 8/16/2002
15	ROAD CONST. EASEMENT -MT EMPIRE ELECTRIC CO.	TO REMAIN	INSTR. 2012-0031562, 1/19/2012
16	INGRESS AND EGRESS - ROUGH ACRE WATER CO.	TO REMAIN	INSTR. 2013-0208238, 4/02/2013
17	GRANT OF EASEMENT	TO REMAIN	INSTR. 2013-0208244, 4/03/2013
18	INGRESS AND EGRESS - HARMONY GROVE PARTNERS	TO REMAIN	INSTR. 2013-0208247, 4/03/2013 & INSTR. 2016-0574322, 10/25/2016
19	GRANT OF EASEMENT	TO REMAIN	INSTR. 2013-0208249, 4/03/2013
26	DITCHES AND CANALS - USA	TO REMAIN	BK. 698, PG. 344, 10/04/1937
27	RIGHT TO FISH AND INCIDENTAL PURPOSES - STATE CA.	TO REMAIN	BK. 6653, PG. 344, 10/04/1937
30	RECORDED MEMORANDUM OF LEASE - SDGE	TO REMAIN	INSTR. 2010-0217321, 4/30/2010
31	RESTRICTIVE COVENANT	TO REMAIN	INSTR. 2010-318659, 6/24/2010
32	MEMORANDUM OF ACCESS EASEMENT AGREEMENT	TO REMAIN	INSTR. 2012-0031560, 1/19/2012
33	MEMORANDUM OF ACCESS AND ROAD CONTRUCTION	TO REMAIN	INSTR. 2012-0031562, 1/19/2012
36	GRANT OF ACCESS	TO REMAIN	INSTR. 2013-0208234, 4/03/2013
37	GRANT OF ROUGH ACRES RANCH ROAD	TO REMAIN	INSTR. 2013-0208246, 4/03/2013
38	GRANT OF CHARGER WAY	TO REMAIN	INSTR. 2013-0208248, 4/03/2013
41	IOD FOR PUBLIC HIGHWAY	TO REMAIN	INSTR. 2016-0905303, 9/23/2016
46	COUNTY HIGHWAY - COUNTY OF SAN DIEGO	TO REMAIN	BK. 464, PG.93,12/06/1935
48	AGREEMENT ACCESS & MAINTENANCE OF FENCE	TO REMAIN	BK. 7301, PG.368,10/15/1958
49	UTILITY ACCESS - SDGE	TO REMAIN	INSTR. 2010-0235441, 5/11/2010
50	MEMORANDUM OF POWER LINE AGREEMENT	TO REMAIN	INSTR. 2011-0229743, 5/03/2011
53	ACCESS & MAINTENANCE - ROUGH ACRES WATER CO. INC	TO REMAIN	INSTR. 2013-0208243, 4/03/2013

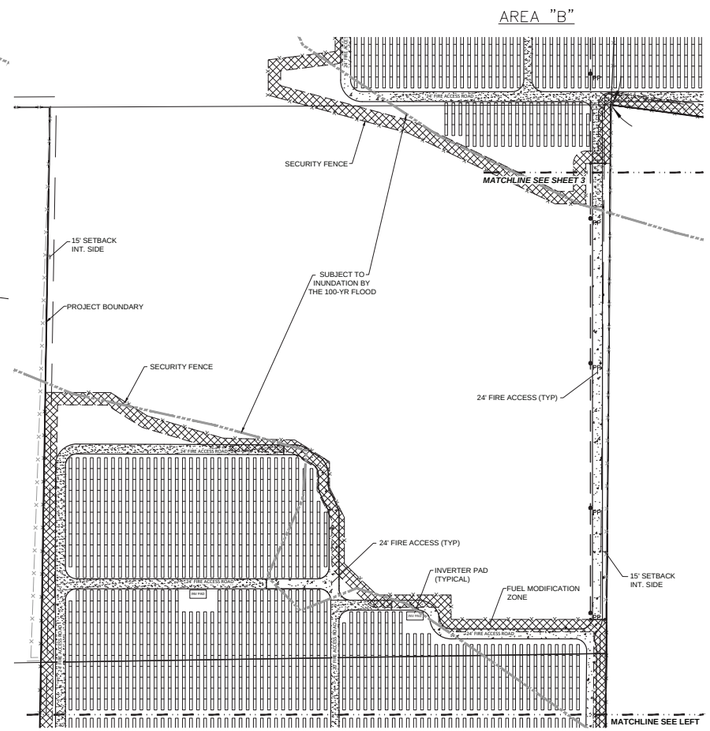
EASEMENTS AND RESTRICTIONS PER FIRST AMERICAN TITLE INSURANCE COMPANY PRELIMINARY REPORT ORDER NUMBER 3020-1014306QKZ UPDATED MAY 22, 2020.

LEGEND:

- PROJECT BOUNDARY / MUP
- APN PARCEL
- EX. EASEMENT
- SETBACK LINE
- PROP. LIMITS OF DEVELOPMENT
- PROP. GATE
- PROP. ALL WEATHER SURFACE (SEE DETAIL ON SHEET 1)
- PROP. CONCRETE SURFACE (SEE DETAIL ON SHEET 1)
- EXIST. FENCE
- PROP. SECURITY FENCE
- PROP. 20' LANDSCAPE STRIP
- PROP. 30' FUEL MODIFICATION ZONE
- PROP. INVERTER PAD
- PROP. SOLAR PANEL ROW (8.192kw PV PANELS)
- 100-YR LIMITS OF INUNDATION
- PROP. INTERCONNECT TO GEN-TIE LINE



KEY MAP
N.T.S.



100 50 0 100 200 300

Michael Baker INTERNATIONAL

173007Figures.indd

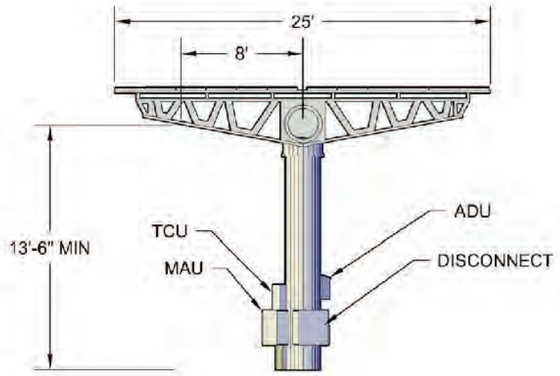
Source: October 2020, Major Use Permit Plot Plan

RUGGED SOLAR PROJECT

Major Use Permit Plot Plan - Area E

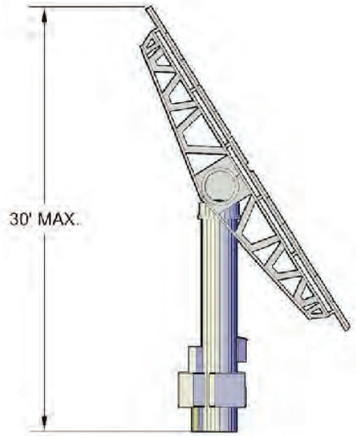
Figure 2D

Rugged Solar Project (Former Project)



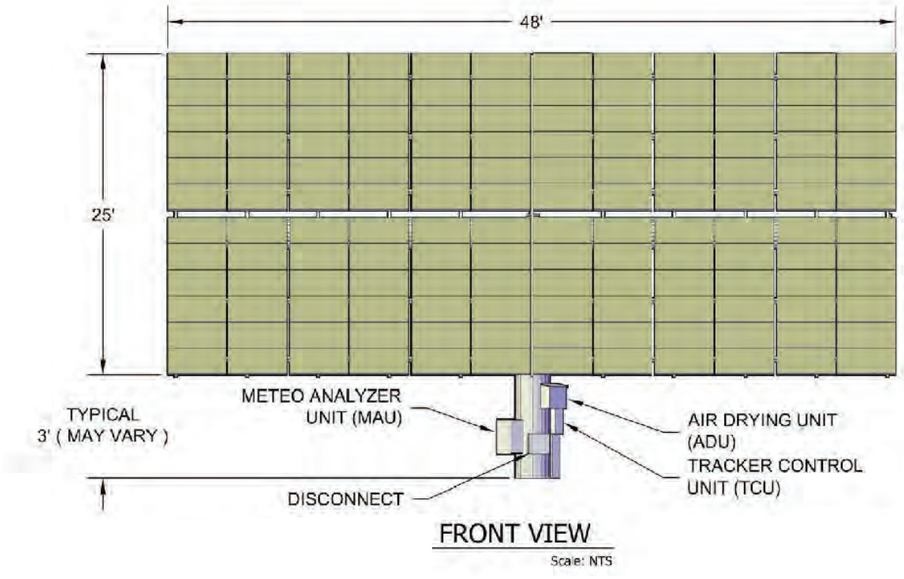
STOW MODE VIEW

Scale: NTS



SIDE VIEW

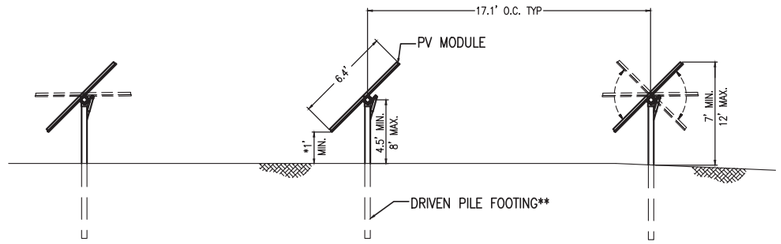
Scale: NTS



FRONT VIEW

Scale: NTS

Rugged Solar Project (Current/Proposed Project)



DRIVEN PILE FOOTING

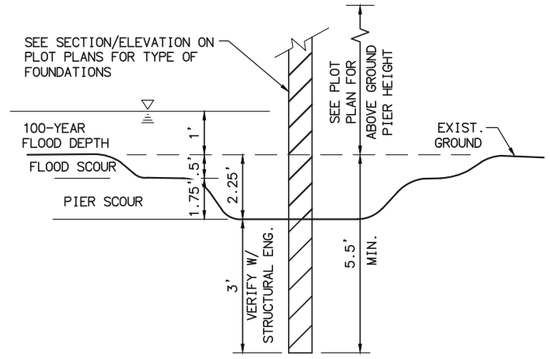
POLE HEIGHTS MAY VARY TO FIT EXISTING TERRAIN

** DEPTH OF FOOTING TO BE DETERMINED BY STRUCTURAL ENGINEER

TRACKER ELEVATION W-E

N.T.S.

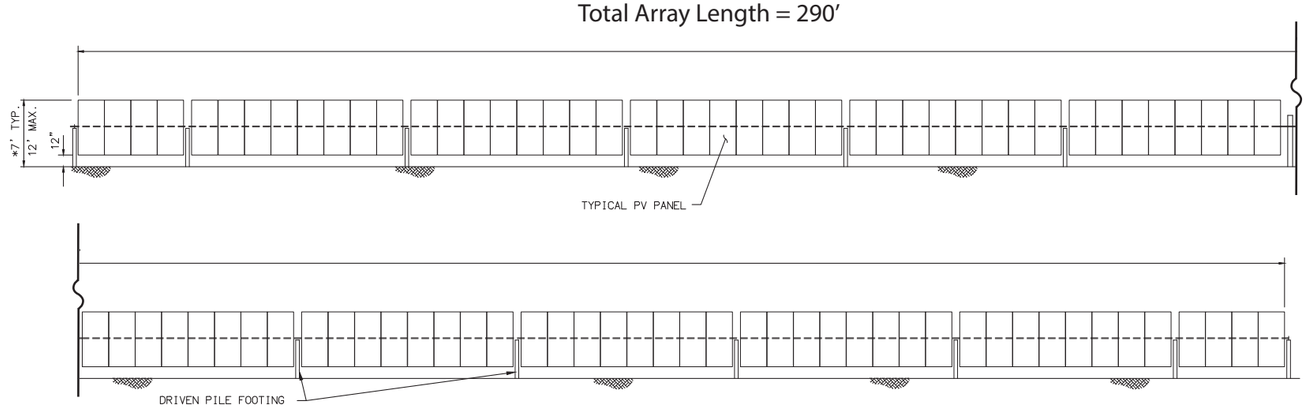
* NOTE: BOTTOM OF PANEL TO BE A MIN. 1' ABOVE BASE FLOOD ELEVATION (BFE).



TYPICAL SECTION
PIER FOUNDATION DETAIL

N.T.S.

Total Array Length = 290'



TRACKER ELEVATION N-S

N.T.S.

- DRIVEN PILE FOOTING MAY BE H-PILES OR PIPE COLUMNS
- DEPTH / TYPE OF FOOTING TO BE DETERMINED BY STRUCTURAL ENGINEER.
- ALL SOLAR PANELS (AT MAXIMUM TILT) SHALL BE ELEVATED SO THAT THE LOWEST HORIZONTAL STRUCTURAL MEMBER IS AT LEAST ONE FOOT ABOVE THE BASE FLOOD ELEVATION (BFE) PER PRELIMINARY DRAINAGE STUDY.

* SOIL UNDER PV ARRAY MAY UNDULATE WHICH MAY RESULT IN A MAXIMUM PANEL HEIGHT OF 12'.

Michael Baker INTERNATIONAL

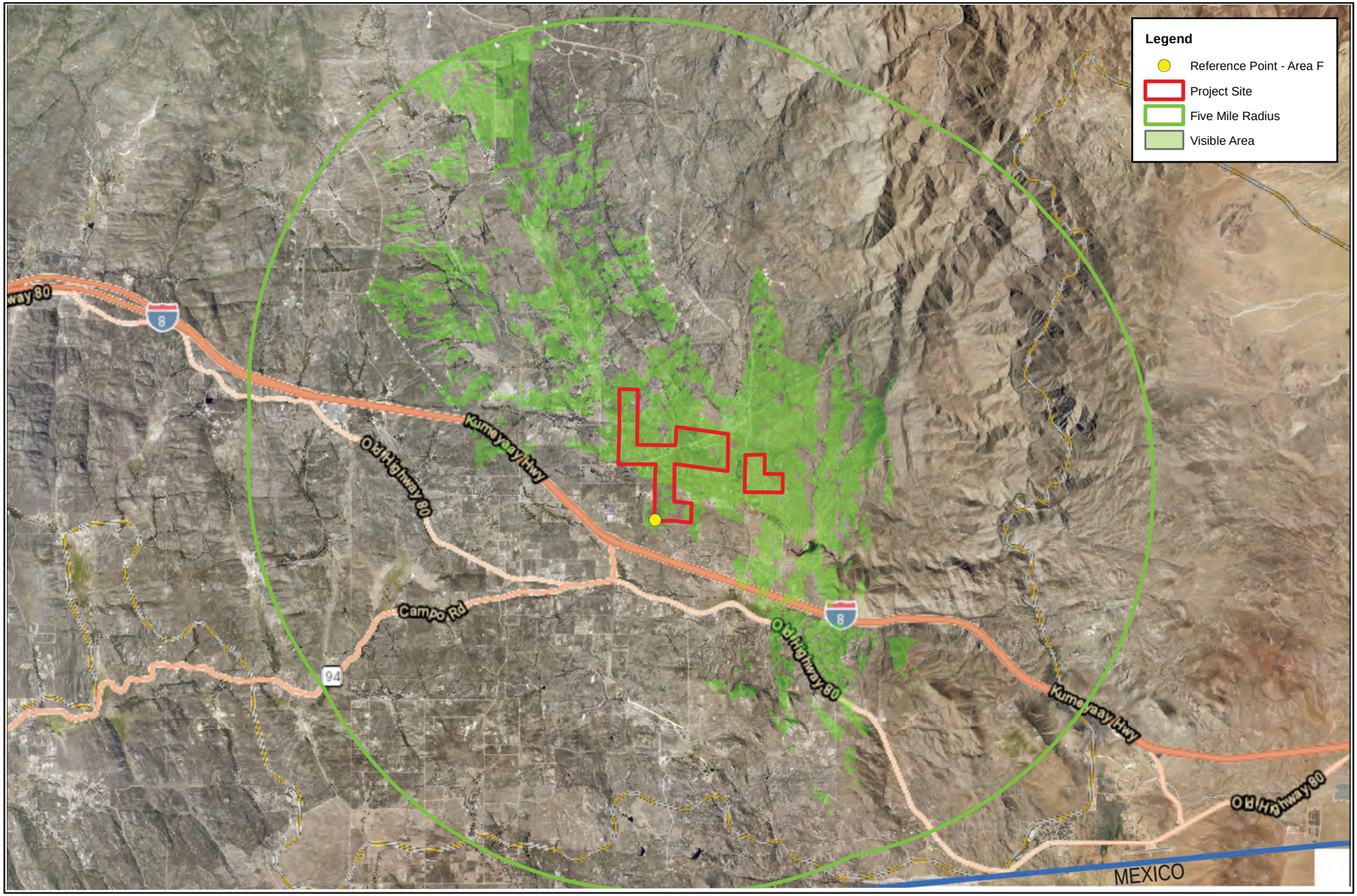
173007Figures.indd

Source: Dudek, January 2015, Final Program Environmental Impact Report; Clean Focus Renewables, Inc., 2019.

RUGGED SOLAR PROJECT

Major Use Permit Plot Plan Details

Figure 2E



Michael Baker INTERNATIONAL

173007Figures.indd

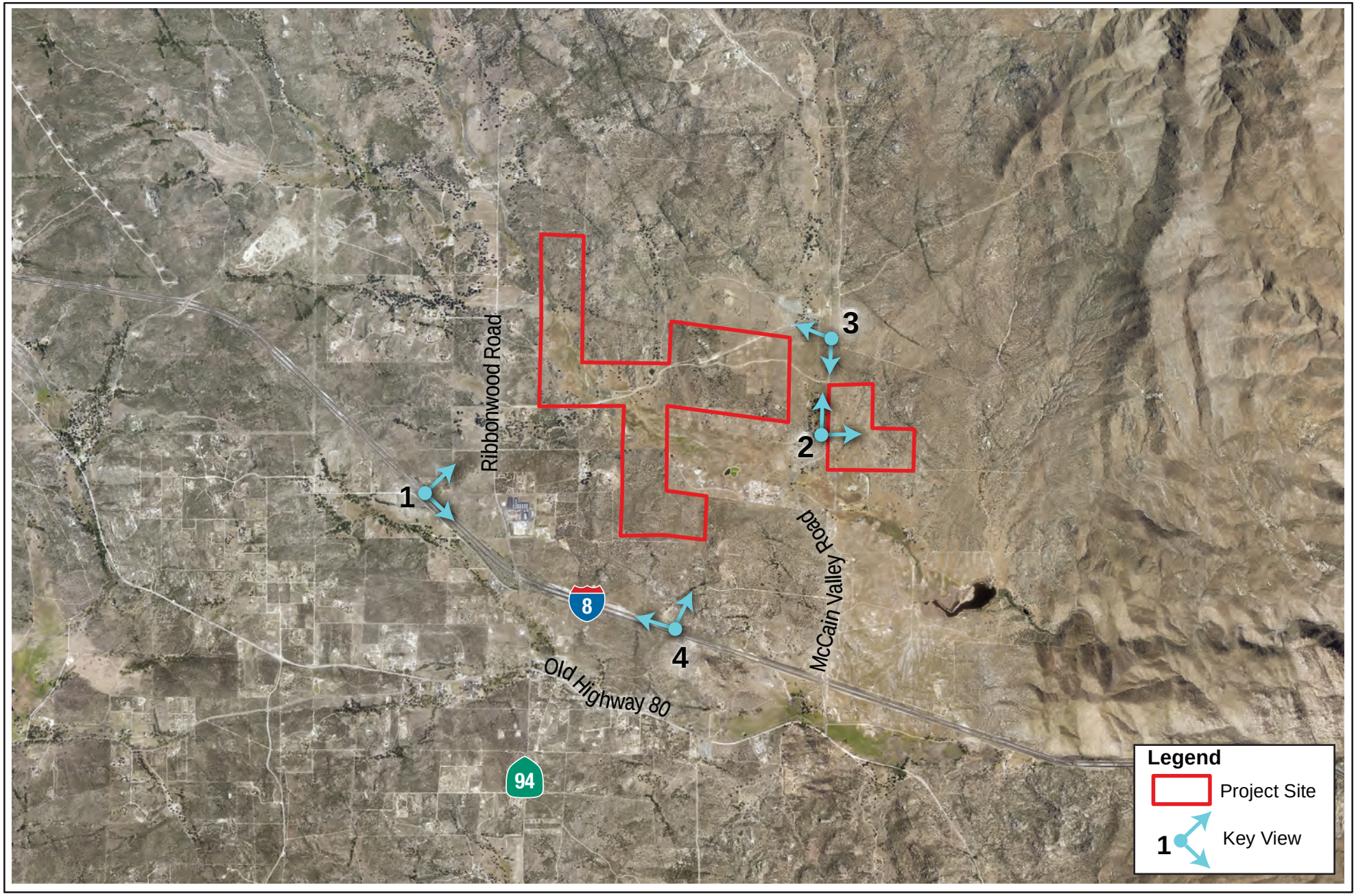
0 0.5 1 2 Miles

Source:

RUGGED SOLAR PROJECT

Viewshed Analysis

Figure 3



Michael Baker INTERNATIONAL

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0 0.25 0.5 1 Miles

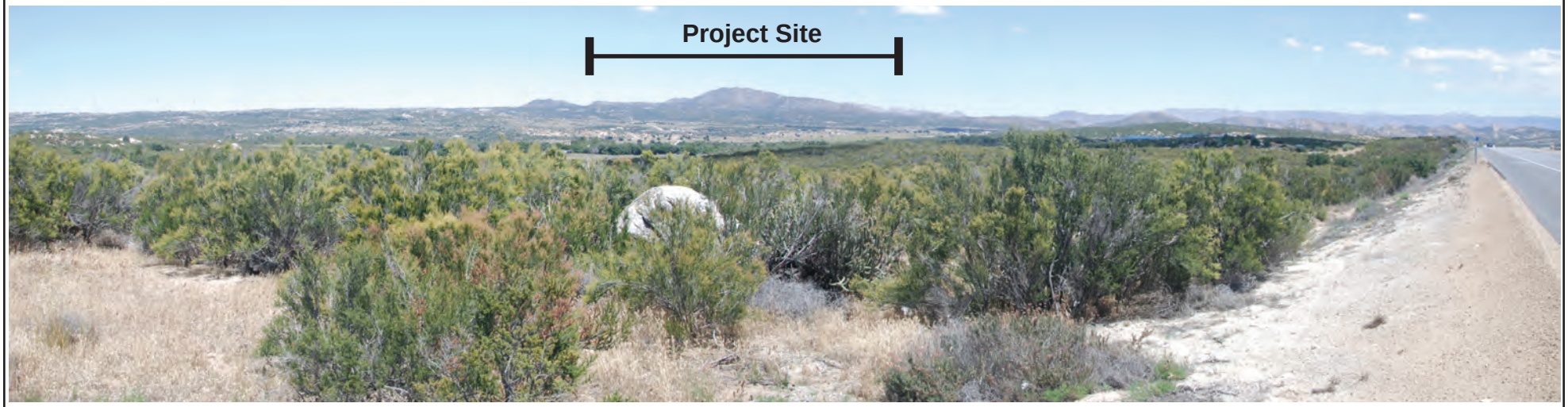
Source: SANDAG and SanGIS

RUGGED SOLAR PROJECT

Key View Location Map

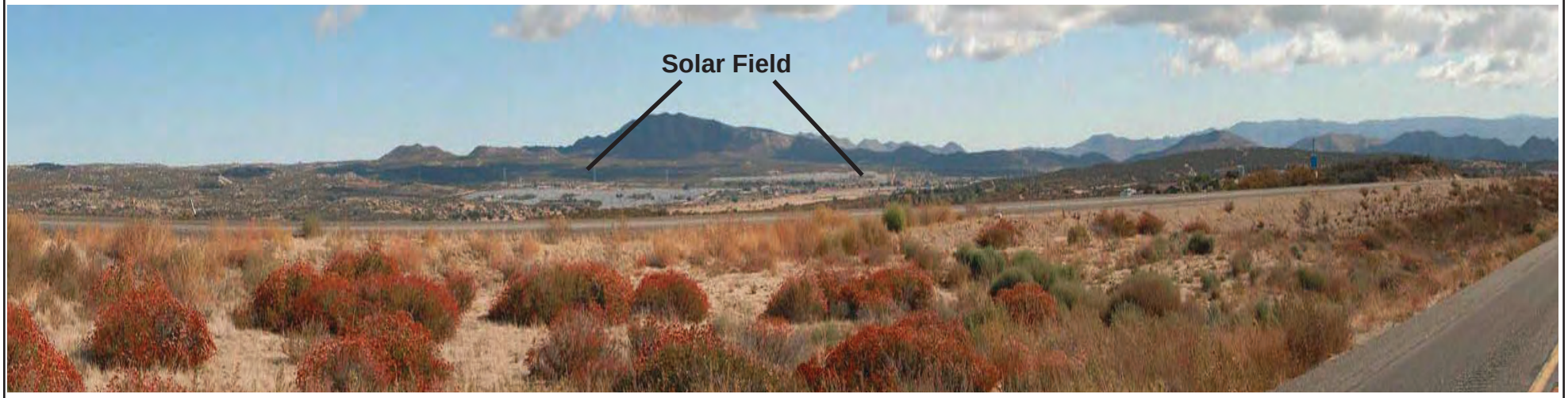
Figure 4

Rugged Solar Project (Current/Proposed Project)



Key View 1: Existing view looking east/northeast along Interstate 8.

Rugged Solar Project (Former Project)



Key View 1: Proposed view looking east/northeast along Interstate 8. Visual simulation of former project.

Michael Baker INTERNATIONAL

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Source: Dudek, Rugged Solar Project Visual Resources Technical Report, December 2013

RUGGED SOLAR PROJECT

Views to Project Site - Key View 1

Figure 5A

Rugged Solar Project (Current/Proposed Project)

Key View 2: Existing view looking north/northeast along McCain Valley Road.

Rugged Solar Project (Former Project)

Key View 2: Proposed view looking north/northeast along McCain Valley Road. Visual simulation of former project.

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Source: Dudek, Rugged Solar Project Visual Resources Technical Report, December 2013

RUGGED SOLAR PROJECT

Views to Project Site - Key View 2

Figure 5B

Rugged Solar Project (Current/Proposed Project)

Key View 3: Existing view looking southwest from McCain Valley Road to project site.

Rugged Solar Project (Former Project)

Key View 3: Proposed view looking southwest from McCain Valley Road to project site. Visual simulation of former project.

Michael Baker INTERNATIONAL

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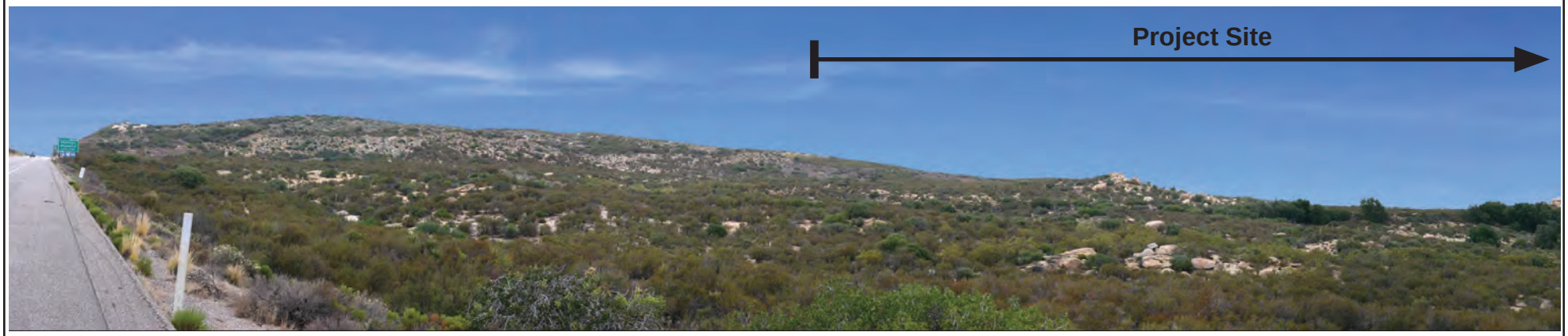
Source: Dudek, Rugged Solar Project Visual Resources Technical Report, December 2013

RUGGED SOLAR PROJECT

Views to Project Site - Key View 3

Figure 5C

Rugged Solar Project (Current/Proposed Project)



Key View 4: Existing view looking northwest along westbound Interstate 8.

Rugged Solar Project (Former Project)

Key View 4: Proposed view looking northwest along westbound Interstate 8. Visual simulation of former project.

Michael Baker INTERNATIONAL

173007Figures.indd

Source: Dudek, Rugged Solar Project Visual Resources Technical Report, December 2013

RUGGED SOLAR PROJECT

Views to Project Site - Key View 4

Figure 5D

Michael Baker INTERNATIONAL

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0 1 2 4 Miles

Source: SanGIS

RUGGED SOLAR PROJECT

Cumulative Projects

Figure 6

Appendix A

Excerpts from 2013 Rugged Solar Visual Analysis (Dudek)

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APPENDIX A
Photos of Land Uses in Project Vicinity

Photo 1: Sunrise Powerlink 500 kV Steel Lattice Towers are located immediately adjacent to the project site along McCain Valley Road.

Source: Dudek, Visual Resources Technical Report, December 2013

Photo 2: Golden Acorn Casino consists of a large-scale casino located adjacent to I-8 and the Kumeyaay Wind Farm.

Photo 3: Kumeyaay Wind Farm consisting of 25 wind turbines approximately 300 feet in height.

Source: Dudek, Visual Resources Technical Report, December 2013

Photo 4: McCain Valley Conservation Camp #21, a prison camp providing training for 110 inmates on a regular basis.

Source: Dudek, Visual Resources Technical Report, December 2013

Photo 5: MET Towers are scattered across the landscape within the vicinity of the project area consisting of tubular towers that are approximately 200 feet in height.

Photo 6: Scattered single-family residences located throughout the Boulevard area.

Photo 7: Located north of Interstate 8 and adjacent to Ribbonwood Road, the new Boulevard U.S Customs and Border Protection Station (shown under construction here) will station up to 250-border patrol agents.

Source: Dudek, Visual Resources Technical Report, December 2013

Photo 8: Lux Inn and Businesses located within Boulevard Town Center at the I-8/Ribbonwood intersection.

Photo 9: View from I-8 looking north towards the project study area, west of McCain Valley Road.

Source: Dudek, Visual Resources Technical Report, December 2013

Appendix B

Landscape Units Exhibit (Former Rugged Solar Project; Dudek)

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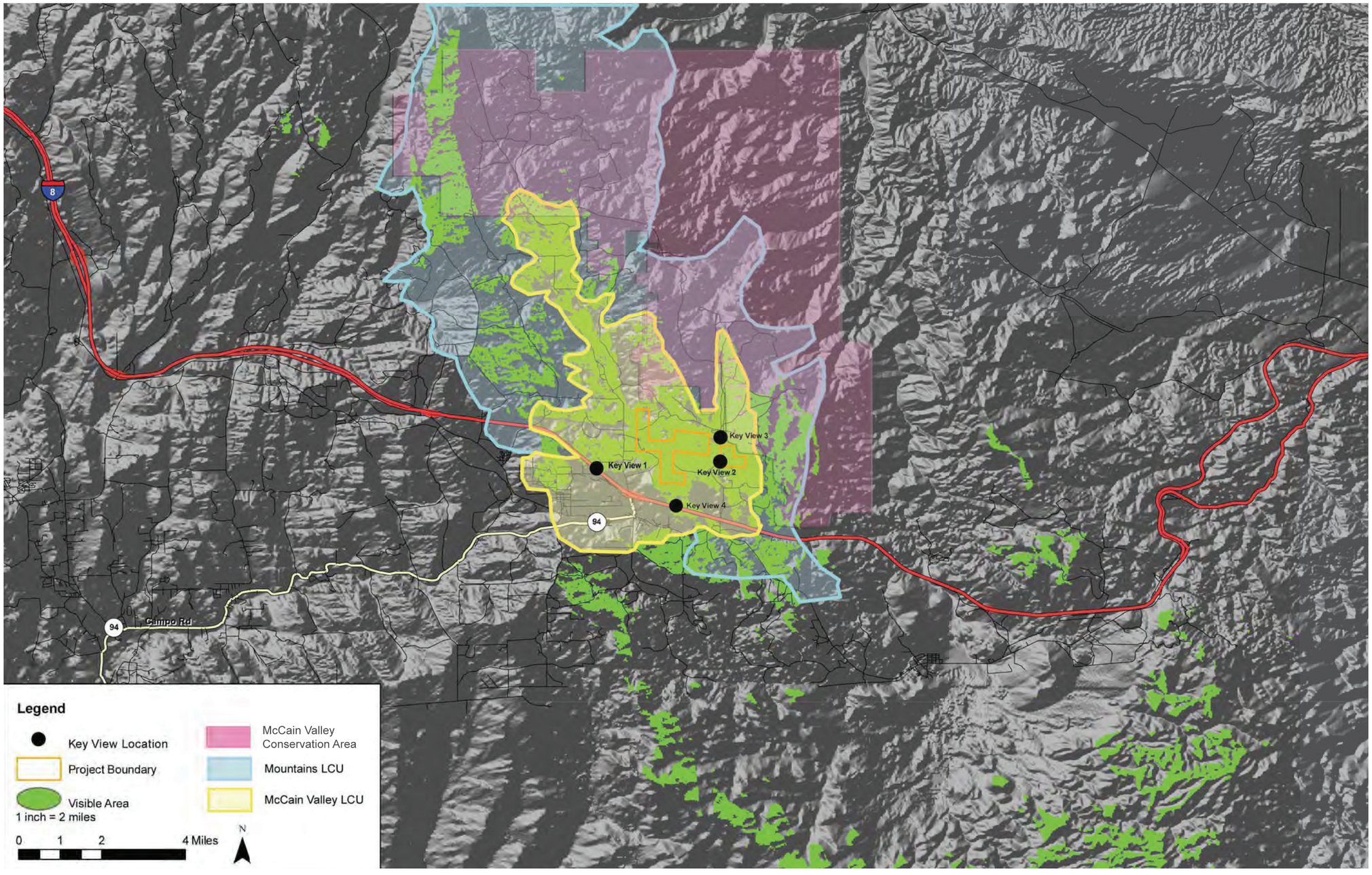

Michael Baker INTERNATIONAL

173007Figures.indd

Source: Rugged Solar LLC Project Visual Resources Technical Study, December 2013; Soitec, 2012; AECOM, 2012; USGS, 2011

FORMER RUGGED SOLAR PROJECT

Project Viewshed Analysis/Landscape Character Units

Figure B-1

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Appendix C

Plan Consistency Analysis

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APPENDIX C. Rugged Solar - Plan Consistency Analysis

Applicable Plan	Project Conformance	Consistent?
San Diego County General Plan		
Chapter 5 – Conservation and Open Space Element		
According to the Conservation and Open Space Element, a highway corridor generally includes the land adjacent to and visible from the vehicular right-of-way. A "scenic highway" may include "any freeway, highway, road, or other vehicular right-of-way along a corridor with considerable natural or otherwise scenic landscape." A highway may be designated as "scenic" depending on how much of the natural landscape can be seen by travelers, the aesthetic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The Conservation and Open Space Element designates several roads as County Scenic Roads within the project vicinity as follows: ▪ Interstate 8 (I-8) from El Cajon City limits east to Imperial County line ▪ Old Highway 80 from State Route 79 (Pine Valley) to I-8 (Jacumba) ▪ State Route 94/Ribbonwood Road from State Route 125 to I-8	**Interstate 8 (I-8) from El Cajon City limits east to Imperial County line:** This road lies approximately 0.4 mile to the south of the Project site. Views from this roadway to the site are generally obscured or restricted. However, intermittent views may be experienced as one travels along the road within the vicinity of the site. **Old Highway 80 from State Route 79 (Pine Valley) to I-8 (Jacumba):** This road lies approximately 0.9 mile to the south of the Project site. Views to the Project site are highly restricted and/or obscured from this roadway due to mature vegetation along the roadway; intervening landforms and residential and commercial structures; and the elevated travel lanes (and traffic) of I-8. **State Route 94/Ribbonwood Road from State Route 125 to I-8**: This road lies approximately 0.25 mile to the west of the Project site. Obscured and/or intermittent views of the Project site may occur from this roadway, depending on the direction of travel; however, views are generally restricted due to distance, intervening topography, and established vegetation. The potential change in views of the Project site that may be experienced from these roadways is analyzed in the Visual Impact Analysis provide herein (Michael Baker 2020).	Yes

Applicable Plan	Project Conformance	Consistent?
GOAL COS-11 **Preservation of Scenic Resources.** Preservation of scenic resources, including vistas of important natural and unique features, where visual impacts of development are minimized.	No officially designated scenic vistas are present on the project site or in the surrounding area. As noted above, I-8, Old Highway 80, and SR 94 are identified as County scenic highways within the vicinity of the site. Views of the proposed improvements would be experienced to varying degrees with Project implementation depending on the viewpoint location and the area of the Project site being viewed. Due to existing mature vegetation, intervening topography, proposed landscaping, and/or viewing distance, many of the proposed improvements would either be obscured from view or would be largely unnoticeable within the visual landscape from various public vantage points along I-8. Although many views would be obscured, in some locations along I-8, the proposed development would be more readily visible. Views to the proposed improvements would be diminished due to distance from the site, the limited scale and height of the proposed elements within the visual landscape, and natural established vegetation, as well as proposed landscaping enhancements that would mature over time. However, as identified in the Visual Impact Analysis (Michael Baker 2020), the project would have the potential to affect impacts to existing views along I-8. Project Design Features are proposed to reduce such Project effects on scenic resources.	Yes
POLICIES **COS-11.1 Protection of Scenic Resources.** Require the protection of scenic highways, corridors, regionally significant scenic vistas, and natural features, including prominent ridgelines, dominant landforms, reservoirs, and scenic landscapes.	Refer also to Goal COS-11, above, regarding scenic resources. An existing north-south ridgeline is located in the western extent of the project site. As designed, limited Project grading would be required to accommodate the PV solar panels and other associated infrastructure on-site; refer also to Policy COS-11.3, below. No dominant landforms, reservoirs, or scenic landscapes occur on-site, and therefore, Project development would not affect the County's intent to protect such resources.	Yes
COS-11.2 Scenic Resource Connections. Promote the connection of regionally significant natural features,	Refer to Policy COS-11.1, above.	Yes

Applicable Plan	Project Conformance	Consistent?
designated historic landmarks, and points of regional historic, visual, and cultural interest via designated scenic corridors, such as scenic highways and regional trails.	There are no historic resources or landmarks on or near the Project site. No officially designated State scenic highways are present in the Project vicinity; however, several road segments within the area are designated as County scenic roadways. A number of recreational trails also occur on lands within the surrounding area. Development of the Project site as proposed would not interfere with the County's goal to connect regionally significant natural features, designated historic landmarks, and points of regional historic, visual, and cultural interest via designated scenic corridors.	
COS-11.3 Development Siting and Design. Require development within visually sensitive areas to minimize visual impacts and to preserve unique or special visual features, particularly in rural areas, through the following: ▪ Creative site planning; ▪ Integration of natural features into the project; ▪ Appropriate scale, materials, and design to complement the surrounding natural landscape; ▪ Minimal disturbance of topography; ▪ Clustering of development so as to preserve a balance of open space vistas, natural features, and community character; and, ▪ Creation of contiguous open space networks.	Construction of the Project would involve clearing and grubbing of the existing vegetation, large rocks, and/or other debris from within the development footprint (i.e., clearing, grubbing and grinding). Varying degrees of grading (i.e., cut/fill) would be required to create a level area and accommodate foundations and/or engineered fills. Grading is estimated to require approximately 75,000 cubic yards (c.y.) of balanced cut and fill. No import or export of soils is required. As compared to the former Rugged Solar project, the project has been redesigned to introduce elements of lesser scale (i.e., solar panels of 7-foot height versus the 30-foot panels proposed with the former project; however, in order to minimize grading, in certain cases where the ground undulates under the panels, the panel height could reach a maximum of approximately 12 feet as measured from the ground surface. Therefore, the Project has been scaled to substantially reduce potential visual effects of the development within the landscape. The site does not offer visually significant natural or topographical feature and does not possess a high scenic value. Additionally, the Project as designed would concentrate development within a 393-acre portion of the 765-acre Project site, allowing the remainder of lands to remain in their natural state and the visual quality unchanged.	Yes

Applicable Plan	Project Conformance	Consistent?
	The Project site does not serve as a wildlife corridor or as a linkage between existing open space networks. The perimeter of the site will necessarily be fenced for security and public safety purposes.	
COS-11.5 Collaboration with Private and Public Agencies. Coordinate with the California Public Utilities Commission, power companies, and other public agencies to avoid siting energy generation, transmission facilities, and other public improvements in locations that impact visually sensitive areas, whenever feasible. Require the design of public improvements within visually sensitive areas to blend into the landscape.	The Rugged Solar farm would tie into the existing gen-tie line for the Tule Wind Energy project, which runs within a 200-foot wide utility easement bisecting the Project site and running roughly parallel (north-south) along McCain Valley Road, with ultimate connection to the SDG&E Boulevard East Substation.	Yes
COS-11.7 Underground Utilities. Require new development to place utilities underground and encourage "undergrounding" in existing development to maintain viewsheds, reduce hazards associated with hanging lines and utility poles, and to keep pace with current and future technologies.	As designed, the Project would underground the utility lines between the solar panels within the interior of the site. The Project includes construction of a 60-foot by 100-foot (6,000-square-foot) private on-site collector substation. The substation would collect the energy received from the overhead and underground collector system and increase the voltage from 34.5 kV to 69 kV. Once the voltage is stepped up to 69 kV, the power would be conveyed through a 35-foot-high dead-end structure (a fully self-supporting steel tower) that connects the on-site collector substation with the Tule Wind Energy gen-tie line. The 138-kV gen-tie for the Tule Wind Energy project includes a 69 kV undersling line, which would be used to service the Rugged Solar Project. The Tule gen-tie runs south along the east side of McCain Valley Road and SDG&E's Sunrise Powerlink and across I-8, after which it crosses McCain Valley Road and runs parallel to Old Highway 80 along the north side until it crosses Old Highway 80 at the proposed new SDG&E Boulevard East Substation. As such, utility poles and overhead lines are located off-site and are already present within the visual landscape. The Project would not require replacement of or upgrades to any existing off-site utilities.	Yes

Applicable Plan	Project Conformance	Consistent?
GOAL COS-13 **Dark Skies.** Preserved dark skies that contribute to rural character and are necessary for the local observatories.	The Palomar Observatory lies approximately 56 miles to the northwest of the project site. The Mount Laguna Observatory lies approximately 12 miles to the northwest. Therefore, the project lies within the County's "Zone A" (less than a 15-mile radius) for the Mount Laguna Observatory and "Zone B" for the Palomar Observatory. All proposed lighting would be required to conform to the County's lighting design measures for the Zone which are aimed at maintaining dark skies to avoid light pollution and to minimize potential adverse effects on existing nighttime views. The proposed development would conform to the standards from the San Diego County Light Pollution Code (Dark Skies) with consideration for the site's proximity to Mount Laguna Observatory (within 15 miles - Zone A) with its conditions and other light/glare guidelines. Specific project lighting locations or types are not proposed at this time. Subsequent discretionary permits would include details to regulate any proposed onsite lighting. All exterior lighting would be required to conform to the requirements of the County's Lighting Ordinance and Light Pollution Code to prevent the potential for trespass or spillover onto adjacent properties or open space areas, and to ensure that lighting does not result in any adverse effects.	Yes
POLICIES **COS-13.1 Restrict Light and Glare.** Restrict outdoor light and glare from development projects in Semi-Rural and Rural Lands and designated rural communities to retain the quality of night skies by minimizing light pollution.	Limited Project lighting would be installed to allow for security. At a minimum, permanent lighting would be provided for the outdoor equipment access areas, such as at the inverters and switchgear, storage building, substation, and at the site entrance. The on-site private substation would include lighting on the interior to allow for safety inspections or maintenance that may be required during the evening hours. Lighting would also be provided next to the entrance door to the control house and mounted at the entrance gates to allow for safe entry. All lighting would be operated manually or activated via motion sensors and would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent ownerships. All	Yes

Applicable Plan	Project Conformance	Consistent?
	lighting would conform to County of San Diego outdoor lighting requirements, including the Light Pollution Code. All outdoor lighting controls would incorporate dusk-to-dawn photocell controllers, occupancy sensors, and/or switches as appropriate. The materials used to construct the panels are designed to minimize the potential for reflection and retain as much of the solar spectrum as possible, thereby reducing glare. As determined by the Gare Analysis prepared for the Project (Power Engineers 2020), the Project would not install highly reflective materials that would result in a substantial increase in light or glare that would affect surrounding viewers or that would produce reflective light that would create adverse disability or discomfort glare to the public. It is anticipated that the building surfaces of structures proposed would be of muted colors (i.e., grays, tans) to blend the components into the visual landscape and reflect the existing rural character. Roofing for the structures would also be of a non-reflective, muted finish to respect the visual character of the surrounding natural environment and to minimize the potential for glare effects. Therefore, the project would not install nighttime lighting or highly reflective building materials that would result in a substantial increase in light or glare, or that would produce reflective light that could create adverse disability or discomfort glare with the potential to adversely affect the public.	
COS-13.2 Palomar and Mount Laguna. Minimize, to the maximum extent feasible, the impact of development on the dark skies surrounding Palomar and Mount Laguna observatories to maintain dark skies which are vital to these two world-class observatories by restricting exterior light sources within the impact areas of the observatories.	Refer to Goal COS-13 above.	Yes

Applicable Plan	Project Conformance	Consistent?
COS-13.3 Collaboration to Retain Night Skies. Coordinate with adjacent federal and State agencies, local jurisdictions, and tribal governments to retain the quality of night skies by minimizing light pollution.	Refer to Goal COS-13 and Policy COS-13.1, above.	Yes
COS-14.4 Sustainable Technology and Projects. Require technologies and projects that contribute to the conservation of resources in a sustainable manner, that are compatible with community character, and that increase the self-sufficiency of individual communities, residents, and businesses.	The Project is intended to allow for the installation and operation of a photovoltaic solar electrical generation facility and represents an opportunity to provide residents of Ramona and the greater surrounding area with clean solar energy. As future population growth continues within San Diego County, the demand for electrical service will continue to increase accordingly. The Project represents an additional clean source of electrical power that would supplement energy currently supplied by the existing power grid, thereby reducing the potential for power shortages to occur and decreasing demands on the capabilities of the existing distribution system. The Project has been designed to respect the existing rural character of the Boulevard community with regard to scale, bulk, height, materials and color, and light and glare effects. Furthermore, design measures are proposed to require installation of landscape screening along portions of the MUP perimeter fencing to minimize potential effects on the existing visual setting and adjacent lands, and blend the development into the surrounding landscape.	Yes
COS-14.7 Alternative Energy Sources for Development Projects. Encourage development projects that use energy recovery, photovoltaic, and wind energy.	Refer to Policy COS-14.4. The Project will result in the development and operation of an up to 74 MW photovoltaic solar farm to be located on privately-held lands near Boulevard.	Yes

Applicable Plan	Project Conformance	Consistent?
Mountain Empire Subregional Plan		
1. Land Use **POLICIES AND RECOMMENDATIONS** 1. The landforms of the subregion are an important environmental resources that should be respected in new development. Hillside grading shall be minimized and designed to blend in with the existing natural contours.	Refer to Policy COS-11.3 pertaining to Project grading. The Project does not require grading along any hillsides as the site is located along the flatter portions of the valley. Although grading is required, the Project has been designed to minimize such requirements, largely locating the Project components along the existing natural contours of the site and allowing the ground to undulate beneath the panels where appropriate, rather than grading the property to achieve a flat surface across the affected lands.	Yes
6. Conservation **POLICIES AND RECOMMENDATIONS** 1. All development shall demonstrate a diligent effort to retain as many native oak trees as possible.	The Project has been designed to avoid all coast live oak woodland and mixed oak woodland habitat on-site. Therefore, the Project would retain such resources with development of the site as proposed.	Yes
4. Use low sodium lights and light shielding for new subdivisions and use permits as required by the "Dark Sky" Ordinance for those properties within a specified radius of the observatory at Palomar Mountain.	Refer to Goal COS-13 and Policies COS-13.1 and COS-13.2, above.	Yes
5. Development shall not adversely affect the habitat of sensitive plant and wildlife species or those areas of significant scenic value.	While the Project site contains native habitat, no endangered species have been identified on-site. No highly sensitive or sensitive habitat lands as identified by the County's Resource Protection Ordinance were identified on-site that warrant avoidance measures. The Project site contains a portion of Tule Creek which will be avoided by Project design. The Project site does not contain any unique natural features or hazard areas that require avoidance. The site is located approximately two miles north of I-8, which is a County-designated scenic highway, and due to topography and intervening landforms, the Project would be visible to passing motorists along I-8 by passing motorists for only short intervals of time. The layout of the Project has been modified to remove proposed PV solar panels from a natural on-site saddle that would	Yes

Applicable Plan	Project Conformance	Consistent?
	be visible from I-8 (as compared to the former Rugged Solar project which located solar panels within the saddle). The Project site does not contain regionally significant scenic vistas.	
Boulevard Community Plan		
1. Land Use **POLICIES AND RECOMMENDATIONS** **LU 1.1.1.** Prohibit higher density, clustered subdivisions, or industrial-scale projects or facilities that induce growth and detract from or degrade the limited groundwater resources, water and air water quality, visual and natural resources, abundant wildlife, and historic rural character of the Boulevard area. Renewable energy projects, such as solar and wind projects, are not "industrial-scale projects or facilities" for purposes of this Community Plan.	The Project is a PV solar project and therefore is not considered an "industrial-scale project or facility" as defined by the Boulevard Community Plan. Therefore, the Project would not conflict with this Policy.	Yes
LU 1.1.2. Encourage development to protect the quality and quantity of ground and surface water resources, air quality, dark skies, visual resources, and low ambient noise levels, as well as retain and protect the existing natural and historic features characteristic of the community's landscape and natural environment.	A Groundwater Resources Investigation Report**,** Air Quality Technical Report, Visual Resources Report, and Acoustical Assessment Report were completed for the Project. These studies analyzed the Project for compliance with applicable federal, State and local regulations and ordinances. The Project is designed to protect the quality and quantity of ground and surface water resources, air quality, dark skies, visual resources, and low ambient noise levels, as well as to retain and protect the existing natural and historic features characteristic of the community's landscape and natural environment to the maximum extent feasible. Where a significant impact has been identified, mitigation measures are proposed to reduce such impacts to the maximum extent feasible.	Yes

Applicable Plan	Project Conformance	Consistent?
LU 1.1.3. Encourage development to respectfully incorporate existing topography and landforms, watersheds, riparian areas, oaks, and other native vegetation and wildlife, ridgelines, historic and cultural resources, views, and sustainability design factors.	Refer to Policy COS-11.3. The existing topography and landforms of the site would not be substantially manipulated with Project grading. The Project site does not contain any ridgelines or historic/cultural resources. The Project has been designed to avoid on-site riparian areas and oak woodlands.	Yes
LU 1.2.2. Require development, including regional infrastructure and public facilities, to comply and maintain a rural bulk and scale in accordance with Boulevard's community character. Renewable energy projects, such as wind and solar projects, are not "regional infrastructure or public facilities" for purposes of this policy.	Renewable energy projects, such as wind and solar projects, are not "regional infrastructure or public facilities" for purposes of this policy. Refer to Policy LU 6.1.1, below; the proposed Project has been designed to reduce the size of the solar panels within the visual landscape and to avoid placement of the panels in areas of the site having greater visibility (as compared to the former Rugged Solar project on the subject site).	Yes
LU 3.1.1. Encourage development to preserve dark skies with reduced lighting and increased shielding requirements.	Refer to GOAL COS-13 and Policies COS-13.1 to COS-13.3 pertaining to the County's Dark Skies Ordinance.	Yes
LU 6.1.1. Require commercial, industrial development and large-scale energy generation projects to mitigate adverse impacts to the rural community character, charm, quiet ambiance and life-style, or the natural resources, wildlife, and dark skies of Boulevard, if feasible, in accordance with the California Environmental Quality Act.	As a PV solar facility, the Project has been designed to the extent feasible to minimize conflicts with the rural community character by reducing the panel height size (as compared to the former Rugged Solar project, minimizing grading required, avoiding placement of panels in more visually sensitive areas of the site (i.e., the on-site saddle), and incorporating landscape screening along portions of the development perimeter. Construction would conform to the County's Noise Ordinance to reduce potential effects on surrounding sensitive receptors and is anticipated to occur during normal construction hours as allowed by the County. Impacts to biological resources would be reduced to less than significant via incorporation of mitigation measures. Refer to GOAL COS-13 and Policies COS 13.1 to 13.4 regarding dark skies.	Yes

Applicable Plan	Project Conformance	Consistent?
LU 6.1.2. Encourage commercial, industrial development, and large-scale energy generation projects to create and maintain adequate buffers between residential areas and incompatible activities that create heavy traffic, noise, infrasonic vibrations, lighting, odors, dust and unsightly views and impacts to groundwater quality and quantity.	The Project is not considered to be an industrial development (see Policy LU 1.1.1), nor is it a large-scale energy generation project. However, the Project has been designed to provide adequate distance between the areas proposed for development and surrounding residential uses. The project would generate a limited number of vehicles trips during construction and operation; no significant adverse effects to the circulation system would result. Refer to GOAL COS 13 and Policies 13.1 to 13.3 regarding Project lighting. Project construction would occur in conformance with the County's Noise Ordinance; any potential effects would be reduced to less than significant through standard mitigation, if applicable. Project operation would not exceed County noise thresholds, due to the nature of the proposed use. The Project would not generate offensive odors, and standard dust control measures would be implemented during Project construction to minimize any potential air quality effects on sensitive area receptors. As indicated in the Visual Impact Analysis, impacts on aesthetic resources would be reduced (but not to a level of less than significant) through Project design and incorporation of mitigation measures and Project Design Features, as appropriate. Groundwater investigations have been prepared for the Project site to ensure that the Project does not adversely affect groundwater quality or quantity (available under separate cover).	Yes
LU 6.1.3. Encourage commercial, industrial development and large-scale energy generation projects to provide buffers from public roads, adjacent and surrounding properties and residences, recreational areas, and trails.	Refer to Policy LU 6.1.2, above.	Yes

Applicable Plan	Project Conformance	Consistent?
1. <u>Circulation and Mobility</u> **POLICIES AND RECOMMENDATIONS** **CM 8.6.2.** Encourage the use of solar and residential scale wind turbines.	The Project proposes development of an up to 74 MW PV solar farm to be located on privately-held lands near Boulevard. The Project requires approval from the County of San Diego for a Major Use Permit modification to allow for the construction, operation, and maintenance of a solar energy generation facility.	Yes
San Diego County Zoning Ordinance		
Portions of the County Zoning Ordinance that may affect the assessment of visual impacts are generally zoning overlay designators. Relevant Special Area Regulations Designators include: ▪ B – Community Design Review Area ▪ D – Design Review Area ▪ G – Sensitive Resource ▪ H – Historic/Archaeological Landmark or District ▪ J – Special Historic District ▪ S – Scenic Area	No zoning overlay designators or Special Area Regulations Designators apply to the Project or other associated lands affected by Project-related infrastructure improvements.	Yes

Appendix D

Glare Study (Power Engineers 2020)

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FINAL

Glare Study
Rugged Solar Project

Major Use Permit PDS2017-MUP-12-007W1

Boulevard, San Diego County, California

Lead Agency:

County of San Diego

Planning and Development Services

5510 Overland Avenue
San Diego, California 92123
Contact: Bronwyn Brown

Project Proponent:

Rugged Solar

Clean Focus Renewables, Inc.
363 Centennial Parkway, Suite 105
Contact: Jean-Paul La Marche

Prepared by:

2041 S. Cobalt Point Way
Meridian, Idaho 83642

ANDY STEPHENS

OCTOBER 2019

Revised January 2022

Rugged Solar Project Glare Study

PREPARED FOR: *J. WHALEN ASSOCIATES, INC.*

PREPARED BY: *POWER ENGINEERS, INC.*

EXECUTIVE SUMMARY

POWER Engineers, Inc. (POWER) has been commissioned by J. Whalen Associates, Inc. to prepare a glare study for Rugged Solar, LLC's Modified Rugged Solar Project (Project). In August 2013, POWER studied glare impacts to this area as part of Soitec Solar Development's Project approved in 2015. Solar technologies, arrangements and sensitive viewers of the Modified Project have changed. Methodology and standards for performing glare analysis have also evolved during this time. These changes required a new study to be performed and outputs from previous glare studies are no longer valid.

This study utilizes the Solar Glare Hazard Analysis Tool licensed by GlareGauge to determine the occurrence and duration of solar glare visible to sensitive viewers. Proposed solar operations were analyzed from residential viewpoints and major roadways within one mile of the Project

Review of the analysis determined potential glare will be limited to motorists traveling on the private Tule Mountain Road from September through March. No glare was reported for residential viewers or motorists on Ribbonwood and McCain Valley Roads due to their distances to the Project and the 5 degree wake/stow angle of the single-axis tracking PV panels (see Section 4.0). Based on these findings, it is POWER's professional opinion that instances of glare and overall glare impacts from the Modified Rugged Solar Project are anticipated to be low. For further discussion please see Section 5.0. For a detailed reporting of the GlareGauge analysis results, see Appendix A.

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FIGURES:

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ACRONYMS AND ABBREVIATIONS

AR	anti-reflective
KOP(s)	Key Observation Point(s)
POWER	POWER Engineers, Inc.
Project	Rugged Solar Project
PV	photovoltaic

1.0 INTRODUCTION

POWER Engineers, Inc. (POWER) has performed this Glare Study for the proposed Rugged Solar Project (Project) to identify potential glare impacts to surrounding residences. This study was commissioned by J. Whalen Associates, Inc. on behalf of Rugged Solar, LLC. The Project is located within the Mountain Empire Subregional Plan area in unincorporated San Diego County, California (see Figure 1). The Project will utilize single-axis tracking photovoltaic (PV) solar technology to produce up to 74 megawatts alternating current of solar energy. Specifically, this study does the following:

- Identifies sensitive residential viewers within one mile of the Project (see Section 3.1).
- Characterizes typical glare behavior experienced from the solar Project throughout the day and year (see Section 3.2).
- Evaluates when and where glare may be visible to sensitive viewers (see Section 4.0).

2.0 DEFINITIONS AND DESCRIPTIONS

The following definitions and descriptions are important for understanding the methodology and results of the study:

Anti-reflective Coating – Anti-reflective Coating, also known as AR coating, is a surface treatment to solar panel glass designed to reduce reflected light and increase panel efficiencies. AR Coating methods may vary by manufacturer. This study assumes both form and function are in original working conditions through the life of the Project.

Photovoltaic Panel – Photovoltaic panels, also known as PV panels, are designed to absorb solar energy and retain as much of the solar spectrum as possible in order to produce electricity.

Single Axis Solar Tracker – Single axis solar trackers are designed to maximize the efficiency of a PV panel operation. PV panels mounted to a single axis tracker rotate around a fixed axis allowing PV panels to track the sun's east/west position throughout the day.

Glare – A continuous source of brightness, relative to diffuse or surface scattered lighting. For purposes of this study, glare is caused by the sun reflecting off solar panels (see Figure 3).

Key Observation Points (KOP) – KOPs refer to locations with sensitivity to potential glare. For this study, KOPs included roadways and residential structures within one mile of the Project (see Section 3.1).

GlareGauge – The GlareGauge tool uses Solar Glare Hazard Analysis Tool technology. Developed by Sandia National Laboratories, this tool is a web-based application that predicts the potential for solar glare and ocular impacts from solar technologies (see https://share.sandia.gov/phlux/). The GlareGauge tool and Solar Glare Hazard Analysis Tool technologies have become the Federal Aviation Administration standard for analyzing solar glare for both terrestrial and aerial viewers.

Prepared By,

POWER ENGINEERS

Rugged Solar Project Glare Study

Figure 1 - Project Location

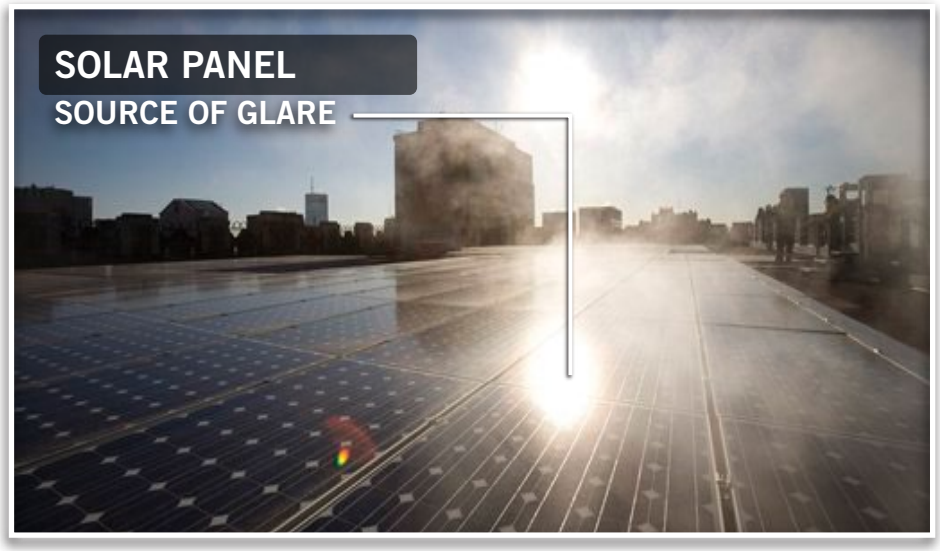
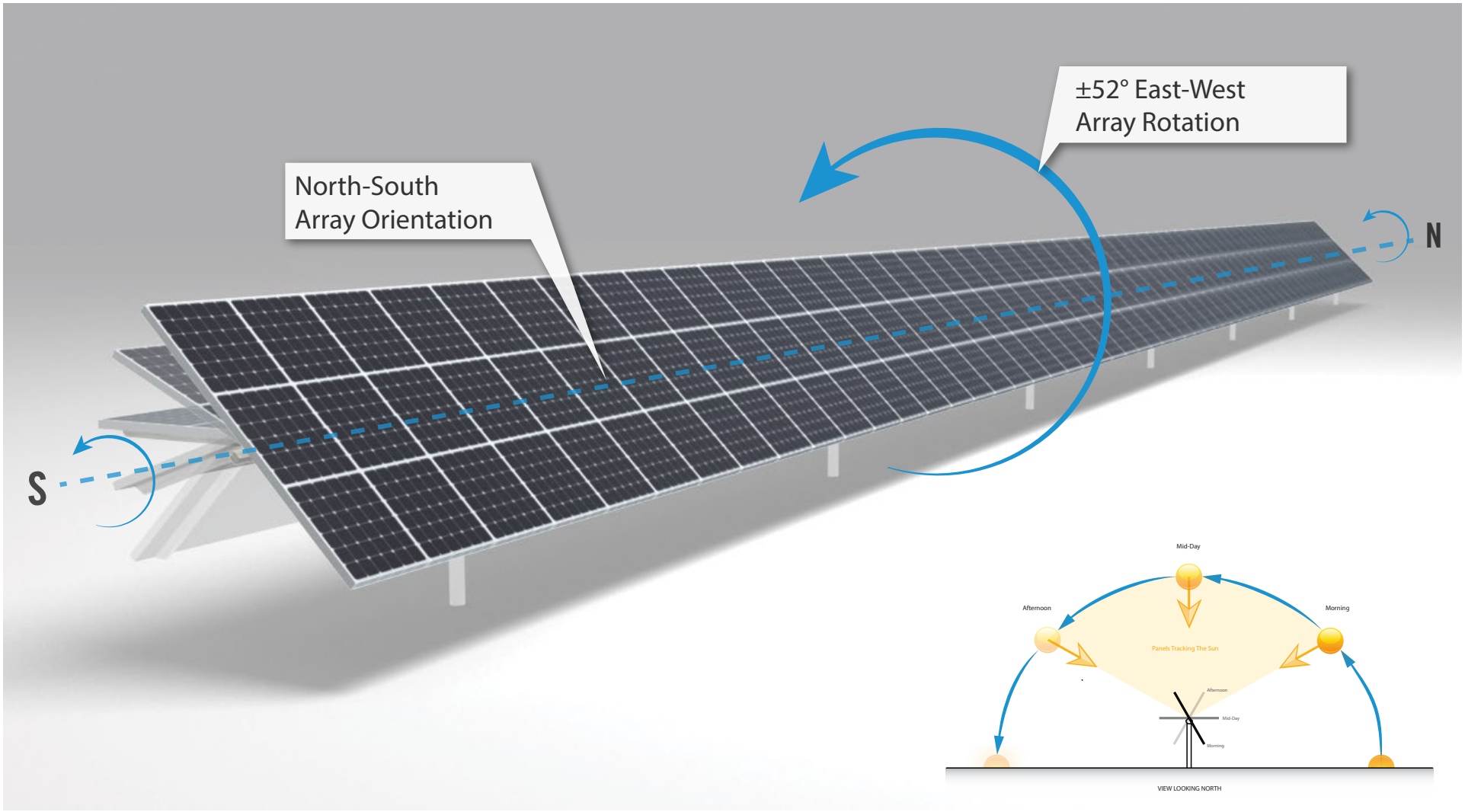


Figure 2 - Examples of Glare



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Rugged Solar Project Glare Study

Figure 3 - Single Axis Tracker

3.0 METHODOLOGY

POWER used the following methodology to determine the location and duration of potential glare:

Identify Potential Glare Issues – This study focused on potential issues where glare may be visible from nearby residences. POWER prepared the study based on these locations (see Section 3.1).

Characterize Glare Behavior – POWER utilized the GlareGauge tool to determine when and where solar glare may occur throughout the year (see https://share.sandia.gov/phlux/). Technical specifications of proposed solar equipment were provided by J. Whalen Associates, Inc. and include panel dimensions, type, angle, orientation, and placement (see Section 3.2).

Evaluate – Once glare was characterized, visual analysts documented the occurrence and hazard level of potential glare (see Section 3.3).

3.1 Identify Potential Glare Issues

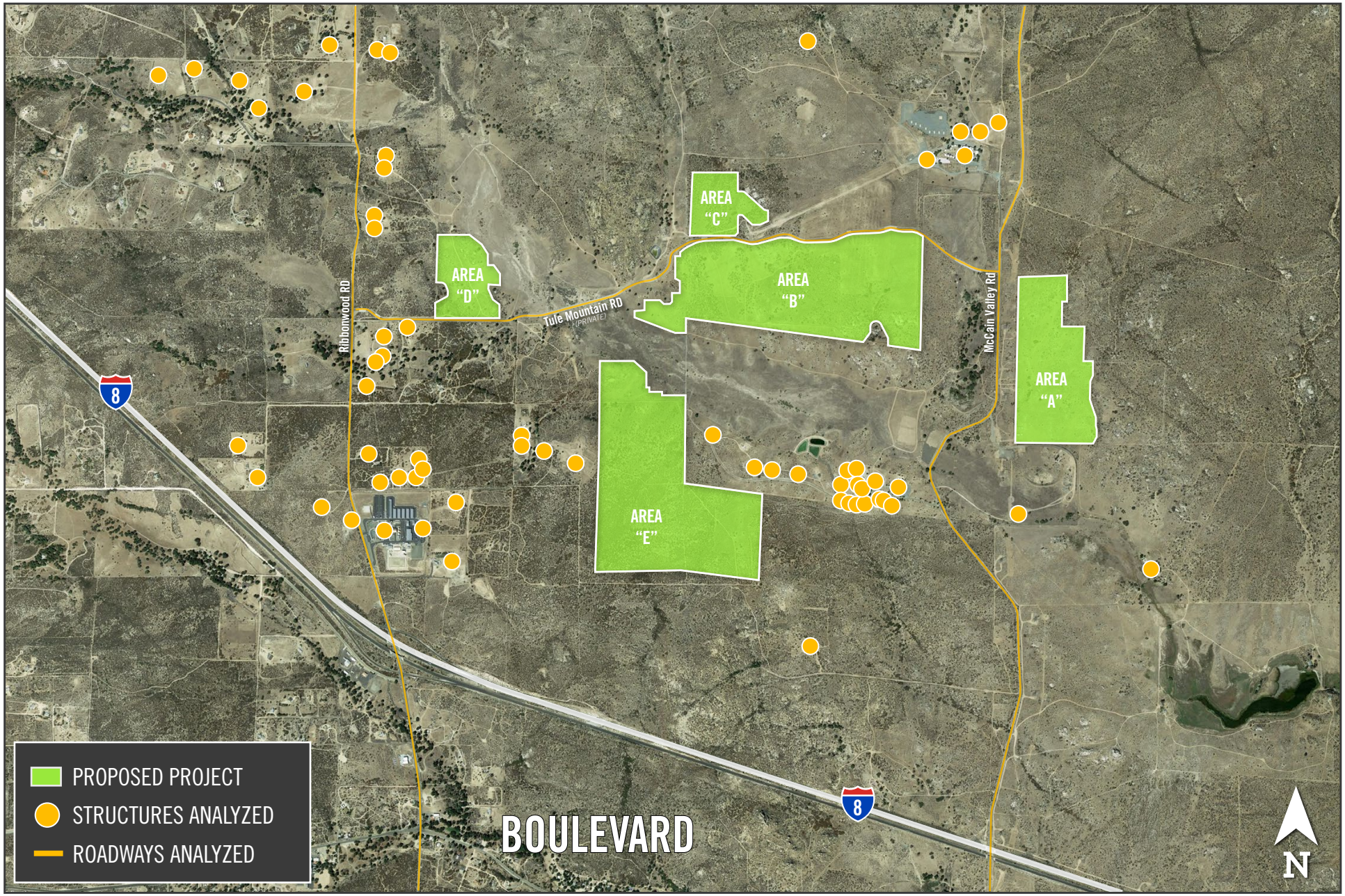
The proposed Project was analyzed to evaluate and document any occurrences of glare that would potentially cause distractions to nearby residences or motorists. This study specifically focused on residential viewers and motorists that are located within one mile of the proposed Project boundary with direct line of sight to proposed solar installations.

Google Earth aerial imagery was used to identify any major structures within one mile of the Project. To optimize the analysis, some residences south of Interstate 8 and west of Ribbonwood Road were screened for line of sight to the Project and omitted from the study if none was present. Proposed solar operations were then studied from KOPs identified at 64 remaining structures (see Figure 4). Single point locations were analyzed for each KOP at an elevation of 15 feet above ground to represent a worst-case scenario second story view.

- **Surrounding Residential Structures:**
    - Distance from Project: 0-1.0 mile
    - Viewer Height: 15 feet above ground

Google Earth aerial imagery was used to identify any major roadways near the project and include Interstate 8, Ribbonwood Road, McCain Valley Road, and Private Tule Mountain Road. Viewshed Analysis provided by the client concluded that, within one mile of the Project, there was not a direct line of site from Interstate 8 to the solar installations due to its distance from and reduced elevation to the Project (See Appendix B – Rugged Solar Project Viewshed Analysis). As a result, Interstate 8 was omitted from further study. Remaining surrounding roadways were studied up to one mile from the Project at an elevation of 5 feet above ground representing an average motorist viewer height. For detailed elevation and GPS coordinates of each sensitive viewer, please see Appendix A – GlareGauge Results. Each KOP is described below:

- **Surrounding Major Roadways:**
    - Ribbonwood Road: Located west of the Project running north/south.
    - McCain Valley Road: Located on the eastern portion of the Project running north/south
    - *Tule Mountain Road: Private road centrally located in the Project running east/west connecting Ribbonwood Road and McCain Valley Road.*



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POWER ENGINEERS

Rugged Solar Project Glare Study

Figure 4 - Key Observation Points

3.2 Characterize Glare Behavior

POWER utilized the GlareGauge tool to determine when and where solar glare may occur throughout the year. The sun changes its east-west orientation throughout the day. It also changes its north-south position throughout the year. The sun reaches its highest position in the sky at noon during the summer months and its lowest position in the sky at noon during the winter months (see Figure 5). For a detailed description of the GlareGauge tool including the purpose, input data and output data, see section 3.3. Technical specifications of proposed solar equipment were provided by J. Whalen Associates, Inc. and are described below:

Photovoltaic Solar Panels:

- Single Axis Trackers
- Panel Orientation: North/South
- Panel Rotation Limits: ± 52 degrees
- Rack Height: 4.5 feet above grade
- Wake/Stow Angle: 5.0 degrees

A single-axis solar tracker has four primary positions: wake, tracking, backtracking, and stow positions. These are characterized by the following descriptions (see Figure 6):

- Wake – The stationary position of a solar array prior to sunrise. A solar array in wake position rests in a position of 5.0 degrees from parallel to the ground facing east.
- Tracking – The process by which solar arrays rotate around a fixed axis to maintain a 90 degree relationship to the angle of inbound sunlight.
- Back tracking – The process by which solar arrays rotate away from 90 degrees relative to the sun to avoid shading of the adjacent arrays. This occurs when an array reaches its maximum tracking angle.
- Stow – The stationary position of a solar array that is not in tracking or back tracking procedures. A solar array in stow position rests in a position of 5.0 degrees from parallel to the ground facing west and will occur during non-daylight hours.

The general behavior of a single-axis solar tracker used for our study purposes is as such:

- All panels will be positioned at a 5.0 degree east facing angle prior to sunrise.
- Once the sun rises in the east, the solar arrays will enter the wake cycle and slowly rotate into a +52 degree east facing angle, with the sun perpendicular to the panel face. This ends the wake cycle and begins the tracking cycle.
- When the inbound sunlight is perpendicular (90 degrees) to the face of the solar panels, the arrays will begin to track the sun throughout the day until the panel reaches its westerly 52 degree rotational limits.
- When the solar arrays reach a 52 degree west facing angle, they will stop tracking the sun, start the back-tracking cycle and rotate to a 5.0 degree west facing stow angle.
- Solar arrays will remain in 5.0 degree west facing angle until after the sun has set.

Spring Equinox

March 19, 2020
12 hours 8 minutes of daylight
Sunrise - 6:49 a.m.
Sunset - 6:56 p.m.

Summer Solstice

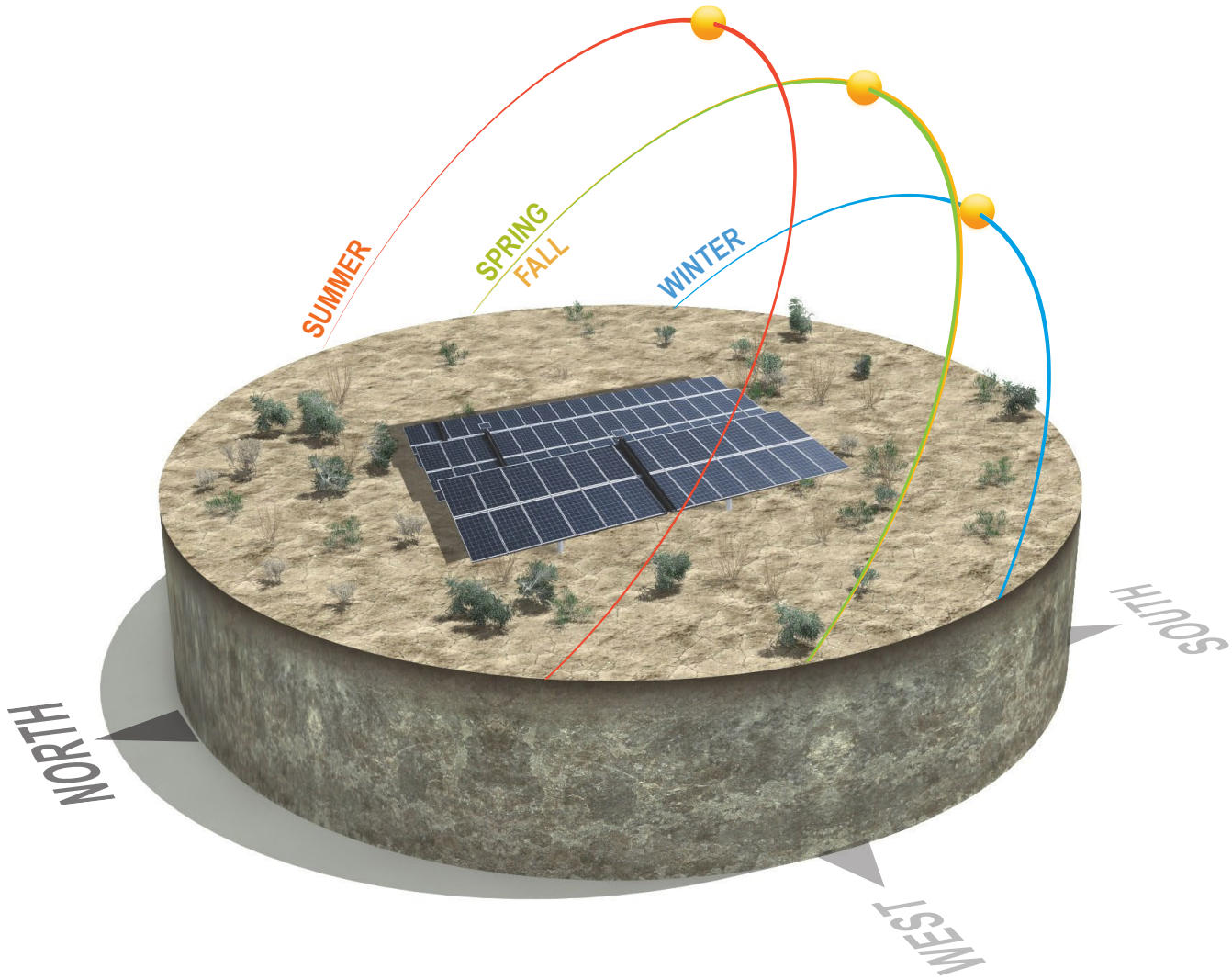
June 21, 2020
14 hours 18 minutes of daylight
Sunrise - 5:38 a.m.
Sunset - 7:56 p.m.

Fall Equinox

September 22, 2020
12 hours 7 minutes of daylight
Sunrise - 6:33 a.m.
Sunset - 6:40 p.m.

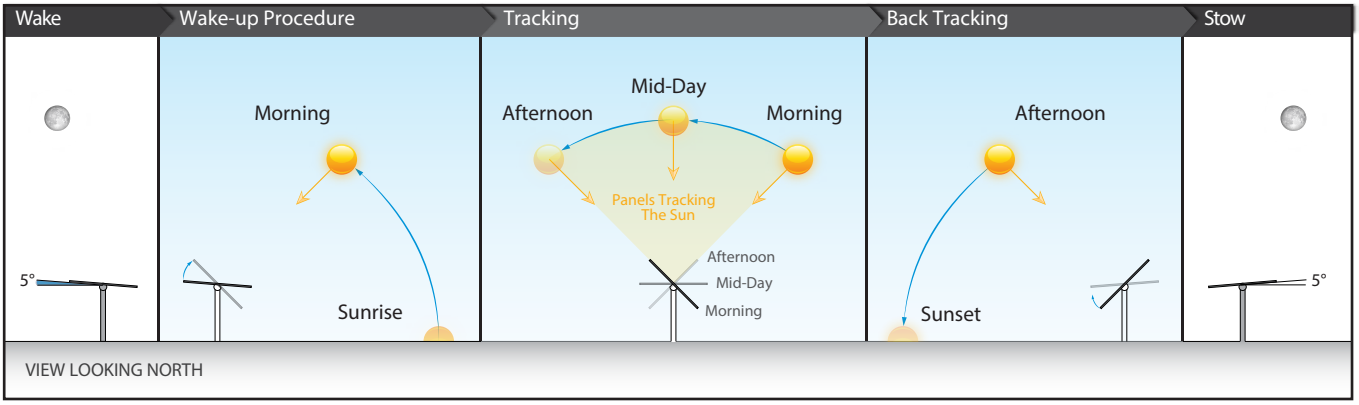
Winter Solstice

December 21, 2020
10 hours 00 minutes of daylight
Sunrise - 6:43 a.m.
Sunset - 4:44 p.m.



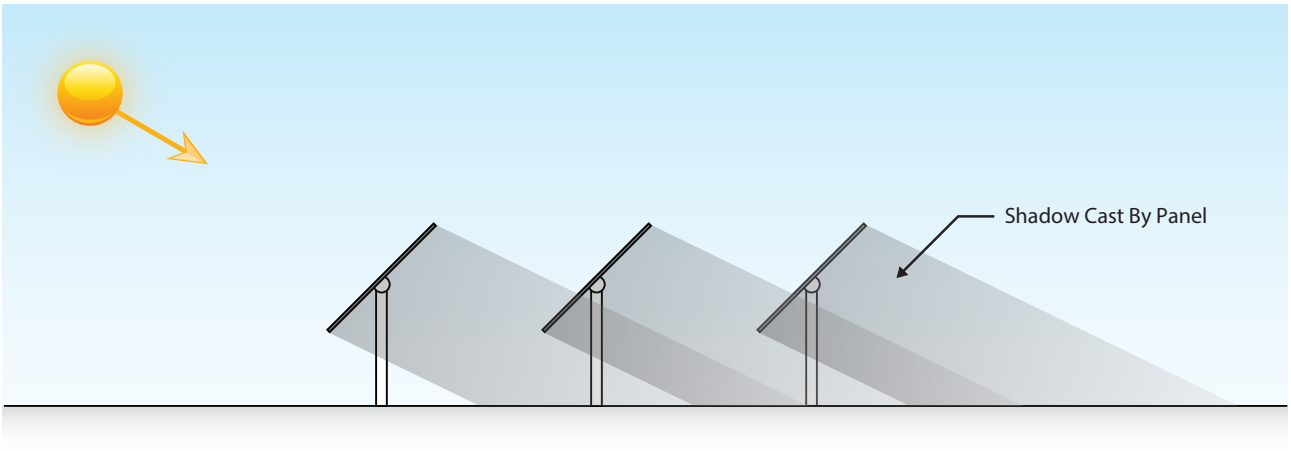
The sun changes its east-west orientation throughout the day. It also changes its north-south position throughout the year. The sun reaches its highest position in the sky at noon in the summer months and its lowest position in the sky at noon during the winter months.

SINGLE AXIS TRACKER BEHAVIOR

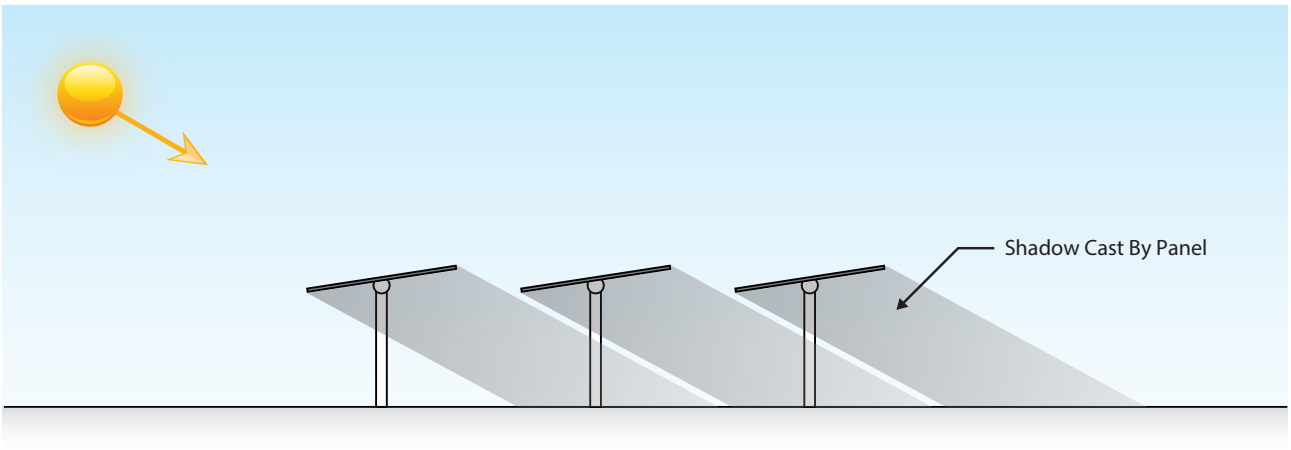


BACK TRACKING PROCEDURES

PANELS *WITHOUT* BACK TRACKING



PANELS *WITH* BACK TRACKING



3.3 Glare Evaluation – GlareGauge Analysis

To identify the occurrence of glare, POWER utilized the GlareGauge tool licensed by ForgeSolar (see https://www.forgesolar.com/). The GlareGauge tool is a web-based glare assessment tool that uses the Solar Glare Hazard Analysis Tool technology developed by Sandia National Laboratories in collaboration with the Department of Energy. The GlareGuage tool allows input of specific viewer position, solar facility location, panel specifics, and elevation data either through point and click navigation or through the import of geo-located engineered data, as was the case for this Project. The GlareGauge tool provides a quantified assessment of when and where glare may occur throughout the year from a solar installation, as well as identifying the potential impacts on the human eye if glare does occur. The GlareGauge analyzes for worst case scenario and does not account for visual obstructions from surrounding vegetation or minor terrain undulation.

Glare was analyzed at five-minute intervals throughout the entire year to determine when and where glare may be visible to nearby residences and motorists. Glare was analyzed with PV rotational limits of 52 degrees facing east and west and a wake/stow angle of 5 degrees. Should rotational limits or wake/stow angles change, additional analysis will be required. Refer to Section 4.0 and Appendix A for glare results.

4.0 RESULTS

For detailed tabular results of the GlareGauge analysis please see the attached Appendix A – GlareGuage Results. Below is a summary of our findings:

Review of the analysis determined potential glare will be limited to motorists traveling on the private Tule Mountain Road from September through March. Potential glare emanates from solar arrays on the northern portions of Area "B" that are nearest Tule Mountain Road, specifically referenced as sections "PV 5" and "PV 8" in the tabular results (See Appendix A).

No glare was reported for residential viewers or motorists on Ribbonwood and McCain Valley Roads due to their distances to the Project and the 5-degree wake/stow angle of the single-axis tracking PV panels.

In PV installations, glare is most common in the first and last hour of the day when the sun is lowest in the sky. When single axis tracking PV panels are stowed flat (parallel to the ground), incoming sunlight from the rising/setting sun glances across the surface of the panel resulting in a high potential for visible glare impacts. The Project utilizes a 5.0 degree wake/stow angle resulting in potential glare being redirected 5 degrees above that of a flat panel, up and away from most viewers. This redirected glare will continue to rise over distance and is largely responsible for the lack of potential impacts seen in this proposed installation. Should wake/stow angles change, additional analysis would be required.

Due to the following factors, it is POWER's professional opinion that glare resulting from the proposed solar operations will have the following impacts to residences and motorists:

- Impacts to Residences: (LOW)
    - Residential Viewers: No potential glare reported due to the orientation, rotational limits and wake/stow angle of the proposed single-axis tracking PV panels.
- Impacts to Motorists: (LOW)
    - Ribbonwood Road: No potential glare reported due to the orientation, rotational limits and wake/stow angle of the proposed single-axis tracking PV panels.

- McCain Valley Road: No potential glare reported due to the orientation, rotational limits and wake/stow angle of the proposed single-axis tracking PV panels.
- *Tule Mountain Road (Private):* Potential glare was recorded throughout the day for motorists traveling both east and west on private Tule Mountain Road. Potential glare was reported from September through March reaching a glare category of "yellow" for ocular impact level with the potential to cause temporary after-image. Should Tule Mountain Road be made available for public travel, screening fence or vegetation may be recommended. For a detailed description of the GlareGauge analysis results, see Appendix A.

5.0 COMPARITIVE DISCUSSION

It is important to discuss the distinct differences, regarding glare, of the current Proposed Rugged solar project compared to the Previously Approved Soitec Solar Development Solar Project (2013) (Previously Approved Project).

The Previously Approved Project utilized dual-axis tracking solar panels as opposed to the single-axis trackers of the current Project. That combined with modified panel arrangements have resulted in substantially different glare trajectories and subsequent impacts.

Methods for analyzing glare impacts have also evolved since the Previously Approved Project. At that time, 2013, the Sandia Labs Glare Hazard Analysis Tool (SGHAT) did not have the capability to perform analysis on dual axis trackers. Instead, proprietary methods of 3D geometric analysis were performed at 4 key times during the year employing seasonal comparisons to infer glare impacts. Ocular impacts were comparative in nature and limited to time and duration without specific values for hazard level should glare occur.

Current methods of glare analysis, such as the GlareGauge Tool, have become much more specific and qualitative where geometric analysis should only be employed when unique equipment behavior limitations are beyond the capabilities of SGHAT based technologies.

The results of the glare analysis for the Previously Approved Project can be found in Appendix 2.1-3, Boulevard Glare Study, to the Soitec Project Final Program EIR. In summary, the Previously Approved Project resulted in potential glare impacts to five residences directly west of the project site as well as potential impacts to motorists on Ribbonwood Road and McCain Valley Road. These potential glare impacts were caused by dual axis tracking panels and their unique wake/stow cycle, size, and orientation to the project.

Analyzing the change in solar technology with the use of modern analysis methods, we have concluded that glare impacts associated with the current proposed Rugged Solar Project would be substantially reduced in comparison to the Previously Approved Project.

6.0 SOURCES

ForgeSolar GlareGauge Web Application. 2019. https://www.forgesolar.com/tools/glaregauge. Accessed 2019.

Files provided by J. Whalen Associates, Inc.

09_10_19 Rugged_Site Plan.pdf

09_10_19 Rugged_Grading Plan.pdf

173007-BNDY-25P.dwg

173007-fmz-25P.dwg

173007-LD-25P.dwg

173007-plout-25P.dwg

Array Boundary.dwg

Rugged Solar Viewshed.pdf

APPENDIX A GLAREGAUGE RESULTS

ForgeSolar

GlareGauge Glare Analysis Results

Site Configuration: Rugged PV

Single-Axis Tracking +/-52 deg rotation 5 degree stow 15 ft viewer height Analysis 5 min interval

Created Oct. 16, 2019 1:15 p.m.
Updated May 11, 2020 2:05 p.m.
DNI varies and peaks at 1,000.0 W/m^2
Analyze every 5 minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone UTC-8
Site Configuration ID: 32256.5888

Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV1	SA tracking	SA tracking	0	0	-
PV2	SA tracking	SA tracking	0	0	-
PV3	SA tracking	SA tracking	0	0	-
PV 4	SA tracking	SA tracking	0	0	-
PV 5	SA tracking	SA tracking	0	549	-
PV 6	SA tracking	SA tracking	0	0	-
PV 7	SA tracking	SA tracking	0	0	-
PV 8	SA tracking	SA tracking	13,991	7,963	-
PV 9	SA tracking	SA tracking	0	0	-
PV array 10	SA tracking	SA tracking	0	0	-

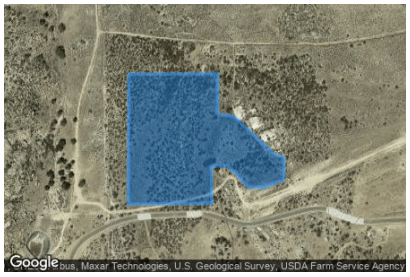
Component Data

PV Array(s)

Name: PV1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 52.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

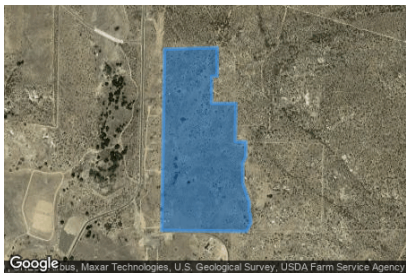
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.693725	-116.285844	3547.89	4.50	3552.39
2	32.694068	-116.286174	3549.41	4.50	3553.91
3	32.694068	-116.286466	3553.02	4.50	3557.52
4	32.694546	-116.286466	3555.54	4.50	3560.04
5	32.694961	-116.286784	3553.07	4.50	3557.57
6	32.695388	-116.287432	3555.54	4.50	3560.04
7	32.695387	-116.289081	3576.31	4.50	3580.81
8	32.693295	-116.289147	3593.35	4.50	3597.85
9	32.693288	-116.288822	3586.26	4.50	3590.76
10	32.693233	-116.288705	3584.01	4.50	3588.51
11	32.693160	-116.288638	3583.18	4.50	3587.68
12	32.692926	-116.288535	3580.70	4.50	3585.20
13	32.692699	-116.288535	3583.01	4.50	3587.51
14	32.692503	-116.288935	3595.94	4.50	3600.44
15	32.691910	-116.288955	3602.00	4.50	3606.50
16	32.691914	-116.285881	3563.13	4.50	3567.63
17	32.692329	-116.285872	3571.59	4.50	3576.09
18	32.692572	-116.286217	3559.34	4.50	3563.84
19	32.693036	-116.286440	3554.14	4.50	3558.64
20	32.693201	-116.286440	3552.69	4.50	3557.19
21	32.693197	-116.285843	3548.06	4.50	3552.56

Name: PV2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 52.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad



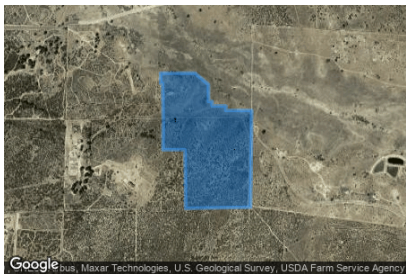
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.697334	-116.273192	3586.94	4.50	3591.44
2	32.697334	-116.273401	3585.37	4.50	3589.87
3	32.697383	-116.273460	3585.85	4.50	3590.35
4	32.698169	-116.273460	3600.41	4.50	3604.91
5	32.698158	-116.275589	3598.49	4.50	3602.99
6	32.695537	-116.275601	3561.63	4.50	3566.13
7	32.695552	-116.273593	3563.86	4.50	3568.36
8	32.695730	-116.273601	3564.22	4.50	3568.72
9	32.696297	-116.273605	3572.25	4.50	3576.75
10	32.696306	-116.273388	3574.38	4.50	3578.88
11	32.696306	-116.273240	3576.69	4.50	3581.19
12	32.696287	-116.273187	3577.89	4.50	3582.39
13	32.695872	-116.272707	3585.71	4.50	3590.21
14	32.695872	-116.272323	3579.50	4.50	3584.00
15	32.696043	-116.271869	3589.79	4.50	3594.29
16	32.696485	-116.271869	3599.23	4.50	3603.73
17	32.696525	-116.272074	3593.39	4.50	3597.89
18	32.697284	-116.273042	3587.19	4.50	3591.69

Name: PV3
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 52.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad



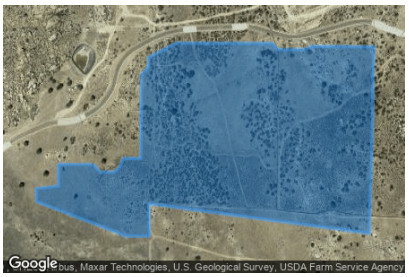
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.688976	-116.258834	3528.64	4.50	3533.14
2	32.688891	-116.258837	3528.64	4.50	3533.14
3	32.688847	-116.258838	3528.64	4.50	3533.14
4	32.686274	-116.258884	3494.58	4.50	3499.08
5	32.686231	-116.254826	3512.53	4.50	3517.03
6	32.686553	-116.254620	3517.24	4.50	3521.74
7	32.686849	-116.254620	3520.31	4.50	3524.81
8	32.687046	-116.254692	3523.20	4.50	3527.70
9	32.687417	-116.254692	3532.94	4.50	3537.44
10	32.688186	-116.254998	3540.46	4.50	3544.96
11	32.688981	-116.254998	3555.91	4.50	3560.41
12	32.689245	-116.254854	3555.02	4.50	3559.52
13	32.689844	-116.254854	3566.59	4.50	3571.09
14	32.689853	-116.255355	3559.98	4.50	3564.48
15	32.691390	-116.255329	3583.65	4.50	3588.15
16	32.691390	-116.256493	3572.46	4.50	3576.96
17	32.692484	-116.256493	3572.92	4.50	3577.42
18	32.692484	-116.256227	3576.81	4.50	3581.31
19	32.693635	-116.256227	3587.98	4.50	3592.48
20	32.693575	-116.258753	3586.17	4.50	3590.67
21	32.689067	-116.258834	3531.18	4.50	3535.68

Name: PV 4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 52.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad



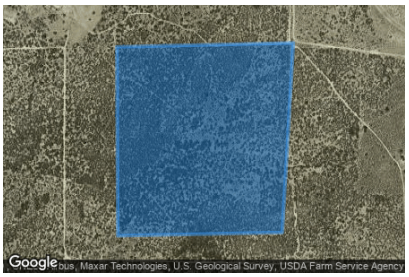
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.689875	-116.280572	3529.80	4.50	3534.30
2	32.689875	-116.278925	3523.33	4.50	3527.83
3	32.689414	-116.278271	3520.67	4.50	3525.18
4	32.688737	-116.278271	3518.46	4.50	3522.96
5	32.688737	-116.278099	3518.43	4.50	3522.93
6	32.688556	-116.278099	3517.85	4.50	3522.35
7	32.688556	-116.277434	3516.45	4.50	3520.95
8	32.688376	-116.277445	3516.58	4.50	3521.08
9	32.688376	-116.276200	3513.76	4.50	3518.26
10	32.684493	-116.276254	3578.56	4.50	3583.06
11	32.684447	-116.279369	3594.84	4.50	3599.34
12	32.684932	-116.279376	3586.59	4.50	3591.09
13	32.684948	-116.279375	3586.30	4.50	3590.80
14	32.686800	-116.279396	3550.00	4.50	3554.50
15	32.686800	-116.280458	3561.79	4.50	3566.29
16	32.687960	-116.280444	3536.09	4.50	3540.59
17	32.689465	-116.280473	3529.61	4.50	3534.11
18	32.689466	-116.280567	3531.70	4.50	3536.20

Name: PV 5
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 52.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.691177	-116.270917	3546.94	4.50	3551.44
2	32.691773	-116.276196	3550.64	4.50	3555.14
3	32.691123	-116.276185	3519.99	4.50	3524.49
4	32.691123	-116.276743	3522.19	4.50	3526.69
5	32.691818	-116.278889	3528.83	4.50	3533.33
6	32.692080	-116.278899	3530.67	4.50	3535.17
7	32.692134	-116.278363	3531.32	4.50	3535.82
8	32.692567	-116.278363	3534.65	4.50	3539.15
9	32.692567	-116.277537	3534.81	4.50	3539.31
10	32.692414	-116.277365	3532.91	4.50	3537.41
11	32.692414	-116.277033	3534.40	4.50	3538.90
12	32.692513	-116.276904	3533.54	4.50	3538.04
13	32.692692	-116.276805	3533.66	4.50	3538.16
14	32.692692	-116.276389	3537.99	4.50	3542.49
15	32.692786	-116.276391	3539.33	4.50	3543.83
16	32.693505	-116.276389	3560.12	4.50	3564.62
17	32.694371	-116.276378	3564.97	4.50	3569.47
18	32.694527	-116.276214	3564.42	4.50	3568.92
19	32.694721	-116.276210	3566.53	4.50	3571.03
20	32.694792	-116.276047	3568.49	4.50	3572.99
21	32.695012	-116.275544	3559.83	4.50	3564.33
22	32.695009	-116.273236	3558.86	4.50	3563.36
23	32.694884	-116.273111	3559.61	4.50	3564.11
24	32.694886	-116.272446	3574.70	4.50	3579.20
25	32.694948	-116.272301	3582.18	4.50	3586.68
26	32.694937	-116.270810	3578.17	4.50	3582.67
27	32.693154	-116.270842	3556.89	4.50	3561.39

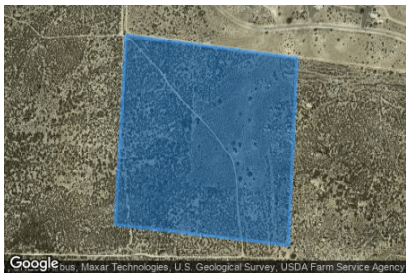
Name: PV 6
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 52.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.684422	-116.280484	3612.15	4.50	3616.65
2	32.684501	-116.276254	3578.44	4.50	3582.94
3	32.680683	-116.276522	3598.31	4.50	3602.81
4	32.680618	-116.280463	3670.79	4.50	3675.29

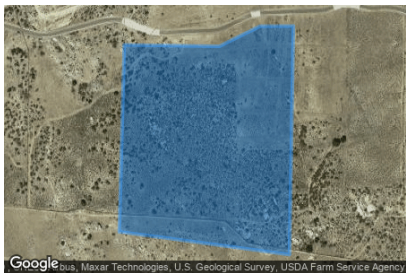
Name: PV 7
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 52.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.684498	-116.276254	3578.44	4.50	3582.94
2	32.684038	-116.272156	3529.85	4.50	3534.35
3	32.680263	-116.272360	3549.23	4.50	3553.73
4	32.680682	-116.276520	3598.31	4.50	3602.81

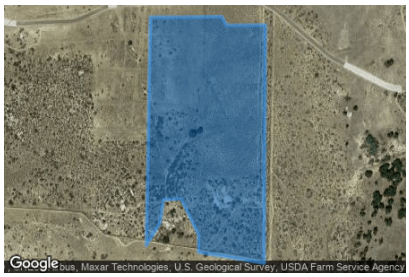


Name: PV 8
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 52.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.694938	-116.270803	3578.07	4.50	3582.57
2	32.694911	-116.268523	3600.09	4.50	3604.59
3	32.695315	-116.267550	3588.52	4.50	3593.02
4	32.695317	-116.266819	3593.31	4.50	3597.81
5	32.695318	-116.266750	3593.53	4.50	3598.03
6	32.690714	-116.266846	3533.69	4.50	3538.19
7	32.691175	-116.270924	3546.76	4.50	3551.26

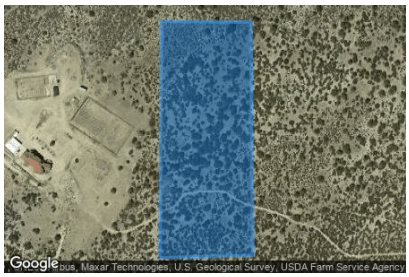


Name: PV 9
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 52.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.695317	-116.266748	3593.53	4.50	3598.03
2	32.695317	-116.266044	3587.13	4.50	3591.63
3	32.695329	-116.265035	3586.00	4.50	3590.50
4	32.695153	-116.264914	3585.32	4.50	3589.82
5	32.695160	-116.263988	3595.60	4.50	3600.10
6	32.690362	-116.264014	3557.64	4.50	3562.14
7	32.690579	-116.265592	3536.73	4.50	3541.24
8	32.690931	-116.265592	3544.23	4.50	3548.73
9	32.691653	-116.266010	3552.04	4.50	3556.54
10	32.691635	-116.266428	3549.29	4.50	3553.79
11	32.691166	-116.266514	3549.09	4.50	3553.59
12	32.690714	-116.266844	3533.61	4.50	3538.11

Name: PV array 10
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 52.0 deg
Resting angle: 5.0 deg
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.686807	-116.280461	3561.70	4.50	3566.20
2	32.686798	-116.279393	3550.14	4.50	3554.64
3	32.684447	-116.279369	3594.84	4.50	3599.34
4	32.684422	-116.280481	3612.15	4.50	3616.65

Route Receptor(s)

Name: McCain Valley Rd
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.706298	-116.258503	3704.80	5.00	3709.81
2	32.705540	-116.258503	3699.72	5.00	3704.72
3	32.704168	-116.258718	3674.59	5.00	3679.59
4	32.703481	-116.258782	3669.83	5.00	3674.83
5	32.702651	-116.258782	3666.42	5.00	3671.42
6	32.700647	-116.258675	3650.92	5.00	3655.92
7	32.698805	-116.258568	3635.80	5.00	3640.80
8	32.697523	-116.258739	3622.44	5.00	3627.44
9	32.696439	-116.259254	3605.50	5.00	3610.50
10	32.695464	-116.259748	3583.28	5.00	3588.28
11	32.694381	-116.259758	3582.41	5.00	3587.41
12	32.688322	-116.259855	3521.53	5.00	3526.53
13	32.687979	-116.259952	3519.11	5.00	3524.11
14	32.687573	-116.260177	3520.62	5.00	3525.62
15	32.687320	-116.260456	3513.80	5.00	3518.80
16	32.687085	-116.260992	3509.41	5.00	3514.41
17	32.686715	-116.262194	3498.58	5.00	3503.58
18	32.686633	-116.262366	3496.07	5.00	3501.07
19	32.686507	-116.262526	3493.60	5.00	3498.60
20	32.685234	-116.263310	3488.83	5.00	3493.83
21	32.684981	-116.263363	3489.01	5.00	3494.01
22	32.684674	-116.263342	3487.85	5.00	3492.85
23	32.684213	-116.263106	3488.08	5.00	3493.08
24	32.683428	-116.262741	3495.39	5.00	3500.39
25	32.682669	-116.262280	3507.84	5.00	3512.84
26	32.679292	-116.259061	3484.45	5.00	3489.45
27	32.678886	-116.258825	3475.46	5.00	3480.47
28	32.678606	-116.258750	3469.92	5.00	3474.92
29	32.678271	-116.258728	3464.68	5.00	3469.68
30	32.675273	-116.258557	3417.02	5.00	3422.02
31	32.674966	-116.258600	3409.92	5.00	3414.92
32	32.673142	-116.259104	3379.07	5.00	3384.07
33	32.669918	-116.260037	3348.72	5.00	3353.72
34	32.668997	-116.260080	3334.51	5.00	3339.51
35	32.668139	-116.260059	3315.13	5.00	3320.13
36	32.667723	-116.260059	3305.08	5.00	3310.08

Name: Ribbonwood Rd
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.706702	-116.293428	3603.74	5.00	3608.74
2	32.702983	-116.293385	3614.02	5.00	3619.02
3	32.702712	-116.293364	3615.14	5.00	3620.14
4	32.699895	-116.293471	3627.98	5.00	3632.98
5	32.698884	-116.293171	3651.85	5.00	3656.85
6	32.697331	-116.293385	3640.81	5.00	3645.81
7	32.696085	-116.293321	3675.78	5.00	3680.78
8	32.695615	-116.293192	3681.45	5.00	3686.45
9	32.694099	-116.293471	3700.43	5.00	3705.43
10	32.688924	-116.293616	3650.68	5.00	3655.68
11	32.684861	-116.293723	3696.16	5.00	3701.16
12	32.684138	-116.293637	3703.88	5.00	3708.88
13	32.677438	-116.291427	3608.58	5.00	3613.59
14	32.675975	-116.290998	3580.83	5.00	3585.83
15	32.671242	-116.290161	3530.86	5.00	3535.86
16	32.669201	-116.290118	3512.89	5.00	3517.89

Name: Tule Mountain Rd
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	32.692096	-116.293498	3658.08	5.00	3663.08
2	32.692096	-116.292876	3655.44	5.00	3660.44
3	32.692041	-116.292564	3655.82	5.00	3660.82
4	32.691680	-116.291921	3653.68	5.00	3658.68
5	32.691644	-116.291470	3663.09	5.00	3668.09
6	32.691662	-116.285559	3555.24	5.00	3560.24
7	32.691743	-116.285204	3553.33	5.00	3558.33
8	32.691870	-116.284872	3550.92	5.00	3555.92
9	32.691879	-116.283799	3544.34	5.00	3549.34
10	32.692769	-116.279950	3531.98	5.00	3536.98
11	32.692895	-116.279682	3533.10	5.00	3538.10
12	32.693076	-116.279371	3536.29	5.00	3541.29
13	32.693396	-116.278539	3541.67	5.00	3546.67
14	32.693437	-116.278051	3542.88	5.00	3547.89
15	32.693586	-116.277622	3548.23	5.00	3553.23
16	32.693780	-116.277305	3559.82	5.00	3564.82
17	32.694083	-116.277048	3559.07	5.00	3564.07
18	32.694525	-116.276908	3570.65	5.00	3575.65
19	32.694719	-116.276780	3568.34	5.00	3573.34
20	32.694913	-116.276490	3563.15	5.00	3568.15
21	32.695031	-116.276222	3566.03	5.00	3571.03
22	32.695193	-116.275803	3565.77	5.00	3570.77
23	32.695265	-116.275433	3558.30	5.00	3563.30
24	32.695302	-116.274972	3555.73	5.00	3560.73
25	32.695342	-116.273824	3558.81	5.00	3563.81
26	32.695324	-116.273642	3559.11	5.00	3564.11
27	32.695216	-116.273228	3561.43	5.00	3566.43
28	32.695130	-116.272805	3565.64	5.00	3570.64
29	32.695144	-116.272617	3567.36	5.00	3572.36
30	32.695238	-116.272021	3581.58	5.00	3586.58
31	32.695446	-116.271169	3591.96	5.00	3596.96
32	32.695433	-116.270831	3585.39	5.00	3590.39
33	32.695238	-116.270192	3585.35	5.00	3590.35
34	32.695162	-116.269860	3588.86	5.00	3593.86
35	32.695225	-116.268690	3605.81	5.00	3610.81
36	32.695284	-116.268363	3601.35	5.00	3606.35
37	32.695532	-116.267757	3592.84	5.00	3597.84
38	32.695568	-116.267537	3590.89	5.00	3595.89
39	32.695627	-116.266035	3591.28	5.00	3596.28
40	32.695762	-116.265455	3588.39	5.00	3593.39
41	32.695681	-116.264860	3590.08	5.00	3595.08
42	32.695685	-116.264404	3590.57	5.00	3595.57
43	32.695591	-116.263959	3591.27	5.00	3596.27
44	32.695089	-116.263213	3589.18	5.00	3594.18
45	32.694548	-116.262467	3574.97	5.00	3579.97
46	32.694376	-116.262113	3567.50	5.00	3572.50
47	32.693889	-116.261008	3564.62	5.00	3569.62
48	32.693861	-116.259860	3578.79	5.00	3583.79
49	32.693857	-116.259769	3580.21	5.00	3585.21

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	32.685330	-116.281816	3603.45	15.00	3618.45
OP 2	32.685907	-116.283550	3605.13	15.00	3620.13
OP 3	32.686670	-116.274766	3517.10	15.00	3532.10
OP 4	32.685176	-116.272575	3512.90	15.00	3527.90
OP 5	32.685052	-116.271691	3515.00	15.00	3530.00
OP 6	32.684899	-116.270304	3523.87	15.00	3538.87
OP 7	32.684502	-116.268142	3517.70	15.00	3532.70
OP 8	32.685075	-116.267692	3521.29	15.00	3536.29
OP 9	32.685156	-116.267381	3520.45	15.00	3535.45
OP 10	32.683707	-116.268110	3527.14	15.00	3542.14
OP 11	32.683608	-116.267649	3527.72	15.00	3542.72
OP 12	32.683563	-116.267204	3527.78	15.00	3542.78
OP 13	32.683603	-116.266796	3528.46	15.00	3543.46
OP 14	32.683811	-116.266023	3529.04	15.00	3544.04
OP 15	32.683752	-116.265766	3528.99	15.00	3543.99
OP 16	32.683504	-116.265374	3525.64	15.00	3540.64
OP 17	32.684439	-116.267134	3517.41	15.00	3532.41
OP 18	32.684281	-116.266925	3517.56	15.00	3532.56
OP 19	32.684556	-116.266297	3518.30	15.00	3533.30
OP 20	32.684330	-116.265036	3526.69	15.00	3541.69
OP 21	32.683109	-116.258630	3475.25	15.00	3490.25
OP 22	32.682553	-116.289824	3684.28	15.00	3699.28
OP 23	32.686156	-116.284696	3605.28	15.00	3620.28
OP 24	32.686580	-116.284771	3606.09	15.00	3621.09
OP 25	32.691316	-116.290614	3640.60	15.00	3655.60
OP 26	32.690973	-116.291886	3639.84	15.00	3654.85
OP 27	32.698653	-116.291783	3654.84	15.00	3669.84
OP 28	32.688808	-116.292824	3641.43	15.00	3656.43
OP 29	32.690103	-116.292019	3627.74	15.00	3642.74
OP 30	32.689864	-116.292298	3634.16	15.00	3649.16
OP 31	32.698677	-116.263529	3617.70	15.00	3632.70
OP 32	32.698708	-116.261775	3596.80	15.00	3611.80
OP 33	32.699945	-116.261818	3605.95	15.00	3620.96
OP 34	32.699918	-116.260712	3607.43	15.00	3622.43
OP 35	32.700284	-116.259808	3630.92	15.00	3645.92
OP 36	32.703806	-116.269810	3762.20	15.00	3777.20
OP 37	32.685903	-116.292677	3677.42	15.00	3692.42
OP 38	32.684774	-116.291084	3691.02	15.00	3706.02
OP 39	32.684544	-116.292071	3702.84	15.00	3717.84
OP 40	32.684887	-116.290108	3683.38	15.00	3698.38
OP 41	32.685108	-116.289968	3678.17	15.00	3693.17
OP 42	32.685609	-116.290113	3673.28	15.00	3688.28
OP 43	32.683725	-116.288134	3660.31	15.00	3675.31
OP 44	32.681031	-116.288408	3688.39	15.00	3703.39
OP 45	32.677235	-116.269820	3507.14	15.00	3522.14
OP 46	32.701027	-116.298522	3668.22	15.00	3683.22
OP 47	32.701424	-116.296097	3643.84	15.00	3658.84
OP 48	32.703573	-116.292278	3604.04	15.00	3619.05
OP 49	32.703537	-116.294896	3628.62	15.00	3643.62
OP 50	32.703392	-116.291677	3603.12	15.00	3618.12
OP 51	32.702337	-116.303568	3747.72	15.00	3762.72
OP 52	32.702586	-116.301626	3743.79	15.00	3758.79
OP 53	32.702280	-116.299223	3686.80	15.00	3701.80
OP 54	32.686171	-116.299415	3755.50	15.00	3770.50
OP 55	32.684758	-116.298428	3760.03	15.00	3775.03
OP 56	32.683503	-116.295043	3747.33	15.00	3762.33

OP 57	32.682419	-116.291894	3696.34	15.00	3711.34
OP 58	32.682871	-116.293576	3717.24	15.00	3732.24
OP 59	32.680663	-116.251780	3455.50	15.00	3470.50
OP 60	32.688625	-116.288948	3612.27	15.00	3627.27
OP 61	32.705852	-116.298481	3656.28	15.00	3671.28
OP 62	32.695719	-116.292417	3653.07	15.00	3668.07
OP 63	32.696283	-116.292465	3648.01	15.00	3663.01
OP 64	32.698262	-116.291860	3653.69	15.00	3668.69

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV1	SA tracking	SA tracking	0	0	-	-
PV2	SA tracking	SA tracking	0	0	-	-
PV3	SA tracking	SA tracking	0	0	-	-
PV 4	SA tracking	SA tracking	0	0	-	-
PV 5	SA tracking	SA tracking	0	549	-	-
PV 6	SA tracking	SA tracking	0	0	-	-
PV 7	SA tracking	SA tracking	0	0	-	-
PV 8	SA tracking	SA tracking	13,991	7,963	-	-
PV 9	SA tracking	SA tracking	0	0	-	-
PV array 10	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

PV1 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0

OP: OP 48	0	0
OP: OP 49	0	0
OP: OP 50	0	0
OP: OP 51	0	0
OP: OP 52	0	0
OP: OP 53	0	0
OP: OP 54	0	0
OP: OP 55	0	0
OP: OP 56	0	0
OP: OP 57	0	0
OP: OP 58	0	0
OP: OP 59	0	0
OP: OP 60	0	0
OP: OP 61	0	0
OP: OP 62	0	0
OP: OP 63	0	0
OP: OP 64	0	0
Route: McCain Valley Rd	0	0
Route: Ribbonwood Rd	0	0
Route: Tule Mountain Rd	0	0

No glare found

PV2 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0

OP: OP 48	0	0
OP: OP 49	0	0
OP: OP 50	0	0
OP: OP 51	0	0
OP: OP 52	0	0
OP: OP 53	0	0
OP: OP 54	0	0
OP: OP 55	0	0
OP: OP 56	0	0
OP: OP 57	0	0
OP: OP 58	0	0
OP: OP 59	0	0
OP: OP 60	0	0
OP: OP 61	0	0
OP: OP 62	0	0
OP: OP 63	0	0
OP: OP 64	0	0
Route: McCain Valley Rd	0	0
Route: Ribbonwood Rd	0	0
Route: Tule Mountain Rd	0	0

No glare found

PV3 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0

OP: OP 48	0	0
OP: OP 49	0	0
OP: OP 50	0	0
OP: OP 51	0	0
OP: OP 52	0	0
OP: OP 53	0	0
OP: OP 54	0	0
OP: OP 55	0	0
OP: OP 56	0	0
OP: OP 57	0	0
OP: OP 58	0	0
OP: OP 59	0	0
OP: OP 60	0	0
OP: OP 61	0	0
OP: OP 62	0	0
OP: OP 63	0	0
OP: OP 64	0	0
Route: McCain Valley Rd	0	0
Route: Ribbonwood Rd	0	0
Route: Tule Mountain Rd	0	0

No glare found

PV 4 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0

OP: OP 48	0	0
OP: OP 49	0	0
OP: OP 50	0	0
OP: OP 51	0	0
OP: OP 52	0	0
OP: OP 53	0	0
OP: OP 54	0	0
OP: OP 55	0	0
OP: OP 56	0	0
OP: OP 57	0	0
OP: OP 58	0	0
OP: OP 59	0	0
OP: OP 60	0	0
OP: OP 61	0	0
OP: OP 62	0	0
OP: OP 63	0	0
OP: OP 64	0	0
Route: McCain Valley Rd	0	0
Route: Ribbonwood Rd	0	0
Route: Tule Mountain Rd	0	0

No glare found

PV 5 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0

OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0
OP: OP 48	0	0
OP: OP 49	0	0
OP: OP 50	0	0
OP: OP 51	0	0
OP: OP 52	0	0
OP: OP 53	0	0
OP: OP 54	0	0
OP: OP 55	0	0
OP: OP 56	0	0
OP: OP 57	0	0
OP: OP 58	0	0
OP: OP 59	0	0
OP: OP 60	0	0
OP: OP 61	0	0
OP: OP 62	0	0
OP: OP 63	0	0
OP: OP 64	0	0
Route: McCain Valley Rd	0	0
Route: Ribbonwood Rd	0	0
Route: Tule Mountain Rd	0	549

PV 5 - OP Receptor (OP 1)

No glare found

PV 5 - OP Receptor (OP 2)

No glare found

PV 5 - OP Receptor (OP 3)

No glare found

PV 5 - OP Receptor (OP 4)

No glare found

PV 5 - OP Receptor (OP 5)

No glare found

PV 5 - OP Receptor (OP 6)

No glare found

PV 5 - OP Receptor (OP 7)

No glare found

PV 5 - OP Receptor (OP 8)

No glare found

PV 5 - OP Receptor (OP 9)

No glare found

PV 5 - OP Receptor (OP 10)

No glare found

PV 5 - OP Receptor (OP 11)

No glare found

PV 5 - OP Receptor (OP 12)

No glare found

PV 5 - OP Receptor (OP 13)

No glare found

PV 5 - OP Receptor (OP 14)

No glare found

PV 5 - OP Receptor (OP 15)

No glare found

PV 5 - OP Receptor (OP 16)

No glare found

PV 5 - OP Receptor (OP 17)

No glare found

PV 5 - OP Receptor (OP 18)

No glare found

PV 5 - OP Receptor (OP 19)

No glare found

PV 5 - OP Receptor (OP 20)

No glare found

PV 5 - OP Receptor (OP 21)

No glare found

PV 5 - OP Receptor (OP 22)

No glare found

PV 5 - OP Receptor (OP 23)

No glare found

PV 5 - OP Receptor (OP 24)

No glare found

PV 5 - OP Receptor (OP 25)

No glare found

PV 5 - OP Receptor (OP 26)

No glare found

PV 5 - OP Receptor (OP 27)

No glare found

PV 5 - OP Receptor (OP 28)

No glare found

PV 5 - OP Receptor (OP 29)

No glare found

PV 5 - OP Receptor (OP 30)

No glare found

PV 5 - OP Receptor (OP 31)

No glare found

PV 5 - OP Receptor (OP 32)

No glare found

PV 5 - OP Receptor (OP 33)

No glare found

PV 5 - OP Receptor (OP 34)

No glare found

PV 5 - OP Receptor (OP 35)

No glare found

PV 5 - OP Receptor (OP 36)

No glare found

PV 5 - OP Receptor (OP 37)

No glare found

PV 5 - OP Receptor (OP 38)

No glare found

PV 5 - OP Receptor (OP 39)

No glare found

PV 5 - OP Receptor (OP 40)

No glare found

PV 5 - OP Receptor (OP 41)

No glare found

PV 5 - OP Receptor (OP 42)

No glare found

PV 5 - OP Receptor (OP 43)

No glare found

PV 5 - OP Receptor (OP 44)

No glare found

PV 5 - OP Receptor (OP 45)

No glare found

PV 5 - OP Receptor (OP 46)

No glare found

PV 5 - OP Receptor (OP 47)

No glare found

PV 5 - OP Receptor (OP 48)

No glare found

PV 5 - OP Receptor (OP 49)

No glare found

PV 5 - OP Receptor (OP 50)

No glare found

PV 5 - OP Receptor (OP 51)

No glare found

PV 5 - OP Receptor (OP 52)

No glare found

PV 5 - OP Receptor (OP 53)

No glare found

PV 5 - OP Receptor (OP 54)

No glare found

PV 5 - OP Receptor (OP 55)

No glare found

PV 5 - OP Receptor (OP 56)

No glare found

PV 5 - OP Receptor (OP 57)

No glare found

PV 5 - OP Receptor (OP 58)

No glare found

PV 5 - OP Receptor (OP 59)

No glare found

PV 5 - OP Receptor (OP 60)

No glare found

PV 5 - OP Receptor (OP 61)

No glare found

PV 5 - OP Receptor (OP 62)

No glare found

PV 5 - OP Receptor (OP 63)

No glare found

PV 5 - OP Receptor (OP 64)

No glare found

PV 5 - Route Receptor (McCain Valley Rd)

No glare found

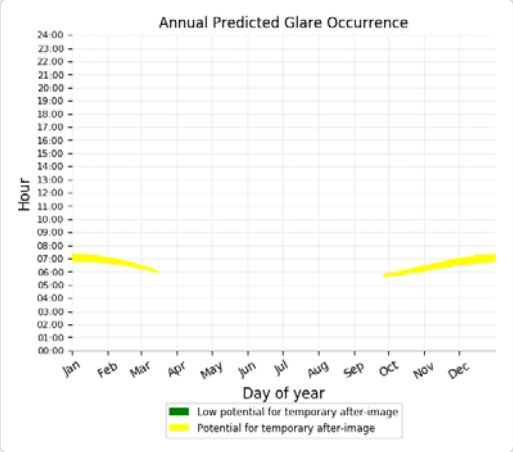
PV 5 - Route Receptor (Ribbonwood Rd)

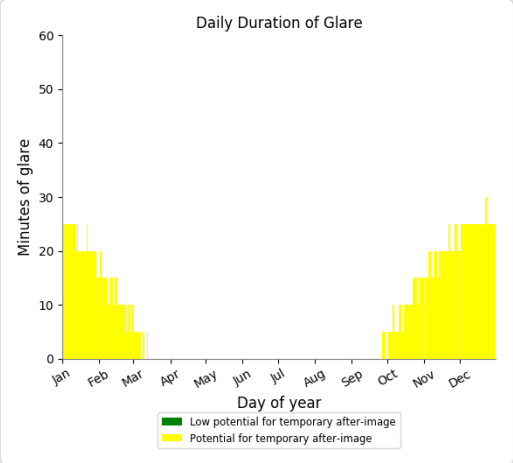
No glare found

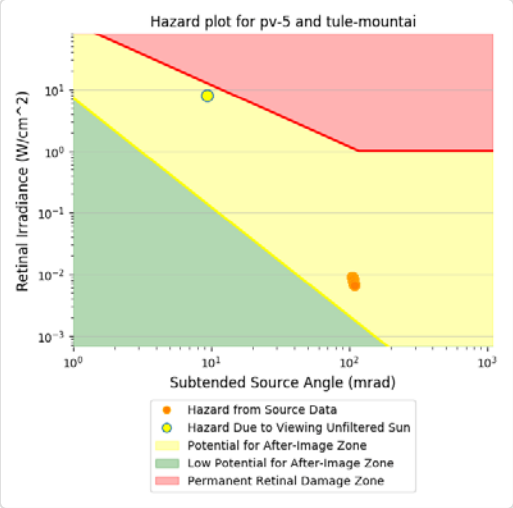
PV 5 - Route Receptor (Tule Mountain Rd)

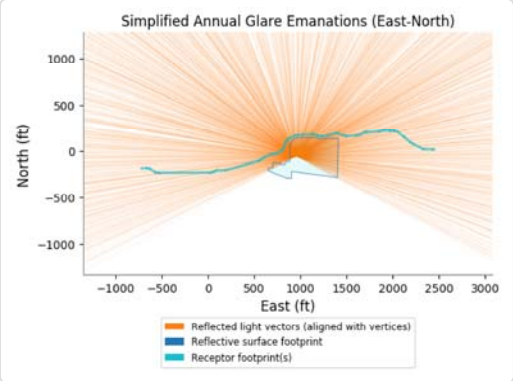
PV array is expected to produce the following glare for receptors at this location:

- *0 minutes of "green" glare with low potential to cause temporary after-image.*
- *549 minutes of "yellow" glare with potential to cause temporary after-image.*









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

PV 6 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0

OP: OP 48	*0*	*0*
OP: OP 49	*0*	*0*
OP: OP 50	*0*	*0*
OP: OP 51	*0*	*0*
OP: OP 52	*0*	*0*
OP: OP 53	*0*	*0*
OP: OP 54	*0*	*0*
OP: OP 55	*0*	*0*
OP: OP 56	*0*	*0*
OP: OP 57	*0*	*0*
OP: OP 58	*0*	*0*
OP: OP 59	*0*	*0*
OP: OP 60	*0*	*0*
OP: OP 61	*0*	*0*
OP: OP 62	*0*	*0*
OP: OP 63	*0*	*0*
OP: OP 64	*0*	*0*
Route: McCain Valley Rd	*0*	*0*
Route: Ribbonwood Rd	*0*	*0*
Route: Tule Mountain Rd	*0*	*0*

No glare found

PV 7 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0

OP: OP 48	0	0
OP: OP 49	0	0
OP: OP 50	0	0
OP: OP 51	0	0
OP: OP 52	0	0
OP: OP 53	0	0
OP: OP 54	0	0
OP: OP 55	0	0
OP: OP 56	0	0
OP: OP 57	0	0
OP: OP 58	0	0
OP: OP 59	0	0
OP: OP 60	0	0
OP: OP 61	0	0
OP: OP 62	0	0
OP: OP 63	0	0
OP: OP 64	0	0
Route: McCain Valley Rd	0	0
Route: Ribbonwood Rd	0	0
Route: Tule Mountain Rd	0	0

No glare found

PV 8 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0

OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0
OP: OP 48	0	0
OP: OP 49	0	0
OP: OP 50	0	0
OP: OP 51	0	0
OP: OP 52	0	0
OP: OP 53	0	0
OP: OP 54	0	0
OP: OP 55	0	0
OP: OP 56	0	0
OP: OP 57	0	0
OP: OP 58	0	0
OP: OP 59	0	0
OP: OP 60	0	0
OP: OP 61	0	0
OP: OP 62	0	0
OP: OP 63	0	0
OP: OP 64	0	0
Route: McCain Valley Rd	0	0
Route: Ribbonwood Rd	0	0
Route: Tule Mountain Rd	13991	7963

PV 8 - OP Receptor (OP 1)

No glare found

PV 8 - OP Receptor (OP 2)

No glare found

PV 8 - OP Receptor (OP 3)

No glare found

PV 8 - OP Receptor (OP 4)

No glare found

PV 8 - OP Receptor (OP 5)

No glare found

PV 8 - OP Receptor (OP 6)

No glare found

PV 8 - OP Receptor (OP 7)

No glare found

PV 8 - OP Receptor (OP 8)

No glare found

PV 8 - OP Receptor (OP 9)

No glare found

PV 8 - OP Receptor (OP 10)

No glare found

PV 8 - OP Receptor (OP 11)

No glare found

PV 8 - OP Receptor (OP 12)

No glare found

PV 8 - OP Receptor (OP 13)

No glare found

PV 8 - OP Receptor (OP 14)

No glare found

PV 8 - OP Receptor (OP 15)

No glare found

PV 8 - OP Receptor (OP 16)

No glare found

PV 8 - OP Receptor (OP 17)

No glare found

PV 8 - OP Receptor (OP 18)

No glare found

PV 8 - OP Receptor (OP 19)

No glare found

PV 8 - OP Receptor (OP 20)

No glare found

PV 8 - OP Receptor (OP 21)

No glare found

PV 8 - OP Receptor (OP 22)

No glare found

PV 8 - OP Receptor (OP 23)

No glare found

PV 8 - OP Receptor (OP 24)

No glare found

PV 8 - OP Receptor (OP 25)

No glare found

PV 8 - OP Receptor (OP 26)

No glare found

PV 8 - OP Receptor (OP 27)

No glare found

PV 8 - OP Receptor (OP 28)

No glare found

PV 8 - OP Receptor (OP 29)

No glare found

PV 8 - OP Receptor (OP 30)

No glare found

PV 8 - OP Receptor (OP 31)

No glare found

PV 8 - OP Receptor (OP 32)

No glare found

PV 8 - OP Receptor (OP 33)

No glare found

PV 8 - OP Receptor (OP 34)

No glare found

PV 8 - OP Receptor (OP 35)

No glare found

PV 8 - OP Receptor (OP 36)

No glare found

PV 8 - OP Receptor (OP 37)

No glare found

PV 8 - OP Receptor (OP 38)

No glare found

PV 8 - OP Receptor (OP 39)

No glare found

PV 8 - OP Receptor (OP 40)

No glare found

PV 8 - OP Receptor (OP 41)

No glare found

PV 8 - OP Receptor (OP 42)

No glare found

PV 8 - OP Receptor (OP 43)

No glare found

PV 8 - OP Receptor (OP 44)

No glare found

PV 8 - OP Receptor (OP 45)

No glare found

PV 8 - OP Receptor (OP 46)

No glare found

PV 8 - OP Receptor (OP 47)

No glare found

PV 8 - OP Receptor (OP 48)

No glare found

PV 8 - OP Receptor (OP 49)

No glare found

PV 8 - OP Receptor (OP 50)

No glare found

PV 8 - OP Receptor (OP 51)

No glare found

PV 8 - OP Receptor (OP 52)

No glare found

PV 8 - OP Receptor (OP 53)

No glare found

PV 8 - OP Receptor (OP 54)

No glare found

PV 8 - OP Receptor (OP 55)

No glare found

PV 8 - OP Receptor (OP 56)

No glare found

PV 8 - OP Receptor (OP 57)

No glare found

PV 8 - OP Receptor (OP 58)

No glare found

PV 8 - OP Receptor (OP 59)

No glare found

PV 8 - OP Receptor (OP 60)

No glare found

PV 8 - OP Receptor (OP 61)

No glare found

PV 8 - OP Receptor (OP 62)

No glare found

PV 8 - OP Receptor (OP 63)

No glare found

PV 8 - OP Receptor (OP 64)

No glare found

PV 8 - Route Receptor (McCain Valley Rd)

No glare found

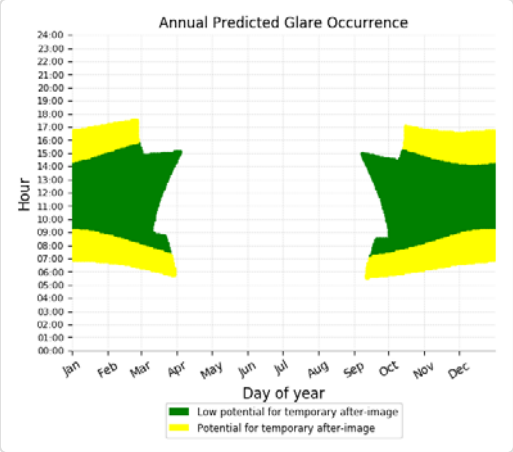
PV 8 - Route Receptor (Ribbonwood Rd)

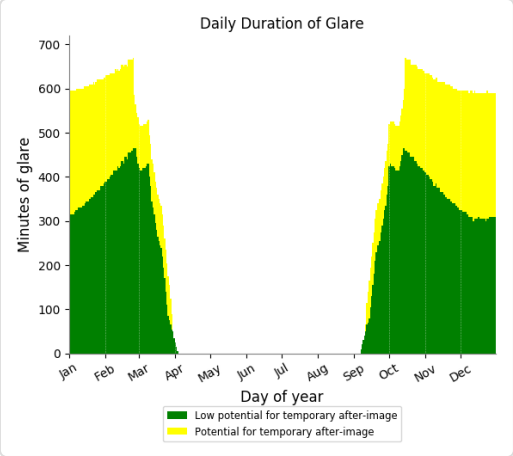
No glare found

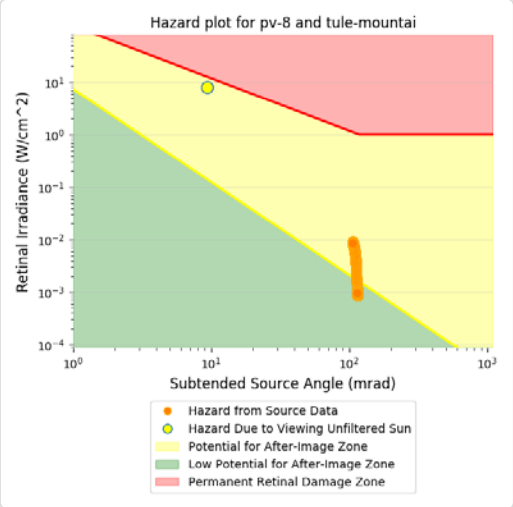
PV 8 - Route Receptor (Tule Mountain Rd)

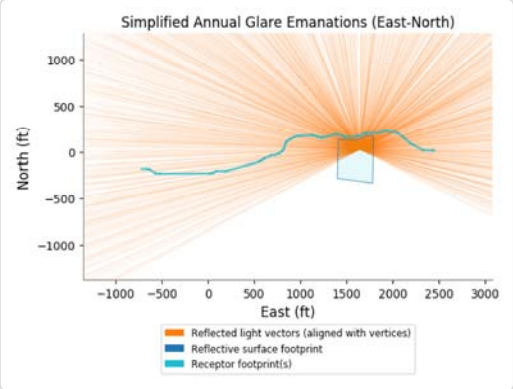
PV array is expected to produce the following glare for receptors at this location:

- *13,991 minutes of "green" glare with low potential to cause temporary after-image.*
- *7,963 minutes of "yellow" glare with potential to cause temporary after-image.*









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

PV 9 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0

OP: OP 48	*0*	*0*
OP: OP 49	*0*	*0*
OP: OP 50	*0*	*0*
OP: OP 51	*0*	*0*
OP: OP 52	*0*	*0*
OP: OP 53	*0*	*0*
OP: OP 54	*0*	*0*
OP: OP 55	*0*	*0*
OP: OP 56	*0*	*0*
OP: OP 57	*0*	*0*
OP: OP 58	*0*	*0*
OP: OP 59	*0*	*0*
OP: OP 60	*0*	*0*
OP: OP 61	*0*	*0*
OP: OP 62	*0*	*0*
OP: OP 63	*0*	*0*
OP: OP 64	*0*	*0*
Route: McCain Valley Rd	*0*	*0*
Route: Ribbonwood Rd	*0*	*0*
Route: Tule Mountain Rd	*0*	*0*

No glare found

PV array 10 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0

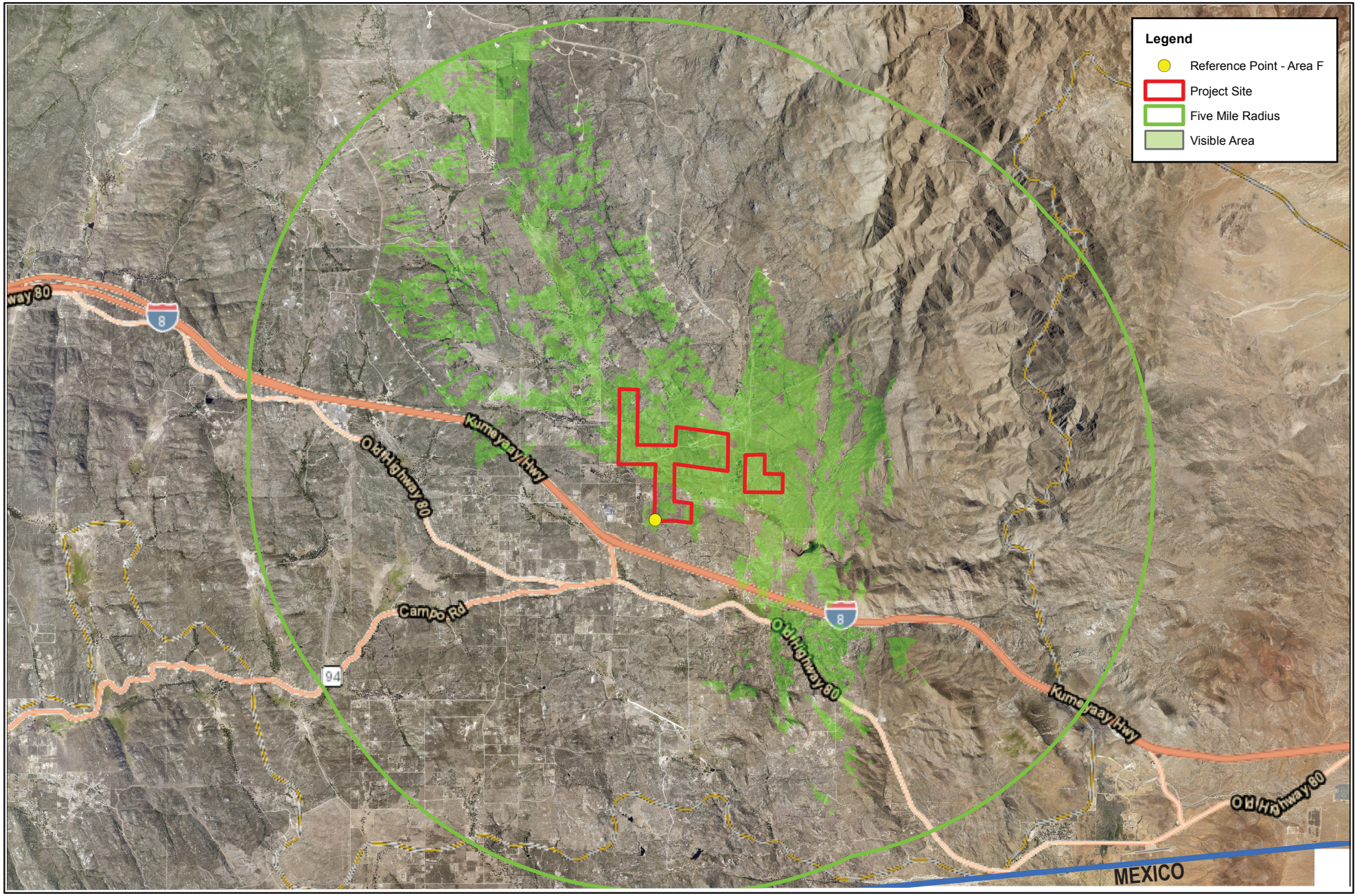
OP: OP 48	**0**	**0**
OP: OP 49	**0**	**0**
OP: OP 50	**0**	**0**
OP: OP 51	**0**	**0**
OP: OP 52	**0**	**0**
OP: OP 53	**0**	**0**
OP: OP 54	**0**	**0**
OP: OP 55	**0**	**0**
OP: OP 56	**0**	**0**
OP: OP 57	**0**	**0**
OP: OP 58	**0**	**0**
OP: OP 59	**0**	**0**
OP: OP 60	**0**	**0**
OP: OP 61	**0**	**0**
OP: OP 62	**0**	**0**
OP: OP 63	**0**	**0**
OP: OP 64	**0**	**0**
Route: McCain Valley Rd	**0**	**0**
Route: Ribbonwood Rd	**0**	**0**
Route: Tule Mountain Rd	**0**	**0**

No glare found

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the Help page for assumptions and limitations not listed here.

APPENDIX B VIEWSHED ANALYSIS



Michael Baker INTERNATIONAL

173007Figures.indd

0 0.5 1 2 Miles

Source:

RUGGED SOLAR PROJECT

Viewshed Analysis

Figure 3