Appendix C

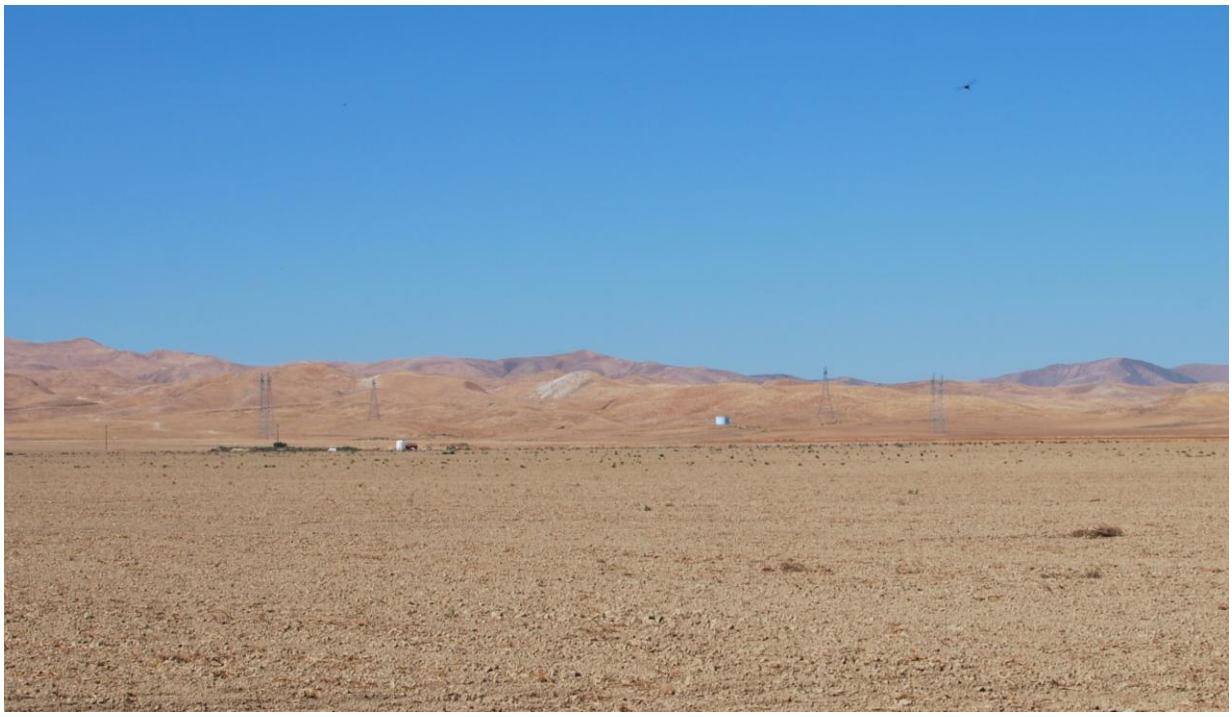
Visual Impact Assessment

VISUAL RESOURCES TECHNICAL REPORT

LS Power Grid California, LLC

Manning 500/230 Kilovolt Substation Project

25 January 2024



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Glossary of Terms and Acronyms

CAISO	California Independent System Operator
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CPUC	California Public Utilities Commission
DOT	Department of Transportation
EIR	Environmental Impact Report
FHWA	Federal Highway Administration
GIS	geographic information system
G.O.	General Order
GPS	global positioning system
I-5	Interstate 5
KOP	key observation point
kV	kilovolt
LSPGC	LS Power Grid California, LLC
MUP	Major Use Permit
NESC	National Electrical Safety Code
OPGW	optical ground wire
PEA	Proponent's Environmental Assessment
PG&E	Pacific Gas & Electric Company
SLR	single-lens reflex

1.0 INTRODUCTION

This technical report examines visual resources in the area of the proposed LS Power Grid California, LLC (LSPGC) Manning 500/230 Kilovolt (kV) Substation Project (Proposed Project) to determine how the Proposed Project could affect the aesthetic character of the landscape. The report includes a description of existing visual conditions and an evaluation of potential visual impacts on aesthetic resources resulting from the construction, operation, and maintenance of the Proposed Project.

The Proposed Project is located in western Fresno County; its main components include the following:

- Constructing an approximately 12-acre 500/230 kV substation (Manning Substation);

- Constructing an approximately 12-mile-long double-circuit 230 kV line from the proposed LSPGC Manning Substation to Pacific Gas & Electric Company's (PG&E's) existing Tranquillity Switching Station;

- Interconnecting the following PG&E lines into the proposed LSPGC Manning Substation:[1]

  - Los Banos-Midway #2 500 kV Line (approximately 0.75 mile),
  - Los Banos-Gates #1 500 kV Line (approximately 0.75 mile), and
  - Panoche-Tranquillity #1 and #2 230 kV lines (approximately 4.2 miles each);

- Rebuilding approximately 7 miles of PG&E's existing Panoche-Tranquillity #1 and #2 230 kV lines;[1]

- Modifying the existing PG&E Tranquillity Switching Station to connect the proposed LSPGC 230 kV Manning-Tranquillity #3 and #4 230 kV transmission lines; and

- Modifying PG&E's existing Panoche, Los Banos, Gates, and Midway substations to provide upgrades to the line relays to protect the new interconnecting lines.

Visual resources are the natural and built features of the landscape that can be seen and that contribute to an attractive landscape appearance and the public's enjoyment of

[1] PG&E would be responsible for interconnecting the existing Los Banos-Midway #2 and Los Banos-Gates #1 500 kV transmission lines and the Panoche-Tranquillity #1 and #2 230 kV transmission lines into the proposed LSPGC Manning Substation. PG&E would route these transmission line extensions to a point within 100 feet of the proposed LSPGC Manning Substation wall, where they would terminate on dead-end structures owned by PG&E. PG&E would also be responsible for rebuilding approximately 7 miles of its Panoche-Tranquillity #1 and #2 230 kV transmission lines and making any necessary adjustments to the existing series capacitors on the Los Banos-Midway #2 and Los Banos-Gates #1 500 kV transmission lines.

the environment. Landforms, water, vegetation patterns and human-made structures define an area's visual character. This report analyzes whether the Proposed Project would alter the perceived visual character of the environment and cause visual impacts and conforms to the California Public Utilities Commission (CPUC) requirements concerning Proponent's Environmental Assessment (PEA) visual resources evaluation. It also addresses criteria for visual impact analysis set forth by the California Environmental Quality Act (CEQA).

2.0 PROJECT OVERVIEW

The Proposed Project is located in unincorporated Fresno County in the west-central portion of the San Joaquin Valley. The Proposed Project is bounded by Manning Avenue to the north, West Dinuba Avenue to the south, the Coastal Foothills to the west and Highway 33 to the east; this defines the Proposed Project Area (Figure 1). The Proposed Project's western terminus is at existing transmission lines at the base of the Coastal Foothills, and the eastern terminus is at the existing Tranquillity Switching Station—this defines the Proposed Project alignment.

The proposed LSPGC Manning Substation would occupy approximately 12 acres of an approximately 40-acre parcel of land to be purchased by LSPGC. Adequate space would be available on LSPGC-controlled property outside of the initial substation footprint to expand the proposed LSPGC Manning Substation, if needed, to accommodate the ultimate buildout contemplated by the California Independent System Operator's (CAISO's) functional specification. Temporary construction laydown area would be established on the substation property. Additionally, an approximately 550-foot-long, 20-foot-wide new driveway and a detention basin would be constructed along with the proposed LSPGC Manning Substation. The permanent access road and detention basin would be located outside of the walled portion of the substation. The substation would be surrounded by a prefabricated interlocking security wall that would be 10 feet tall with 1 foot of barbed wire on top. The access gate would have an opening of 16 feet in width.

Construction at the proposed LSPGC Manning Substation site would begin by clearing all vegetation within the site, grading it to create a generally flat area, and constructing the permanent access road to the substation. The below-ground components (e.g., ground grid and equipment foundations) would then be installed, followed by the substation and telecommunication components. Lastly, testing and commissioning would be conducted once the transmission lines were terminated at the proposed substation prior to energization.

The Manning-Tranquillity 230 kV #3 and #4 transmission lines would be approximately 12 miles in length within an approximately 120-foot-wide right-of-way. The Proposed Project would leverage existing roads and cleared areas around existing structures to the extent practical. However, temporary access roads would be required to provide access to some structures and construction areas. New permanent access roads may be constructed for access to structures, where needed, based on engineering design and landowner feedback. Construction of the access roads would involve vegetation

clearing and grading, as required, to create a flat area to facilitate construction. Staging areas would be utilized to help stage construction efforts and store equipment and materials. Four staging areas are anticipated—one on Dinuba Avenue, one at the Panoche Junction, one on San Diego Avenue, and one on Washoe Avenue. The staging yards would each be between 50 and 80 acres in size. In addition, the proposed LSPGC Manning Substation parcel would also be used as a staging area with an approximate size of 40 acres.

The proposed 230 kV transmission lines would require the installation of 230 kV tubular steel poles on either concrete pier foundations or direct-bury foundations. Typically, 230 kV transmission structures (associated with the 230 kV Interconnections and PG&E 230 kV Rebuild) range from 70 to 180 feet in height and could be up to 199 feet tall when crossing other infrastructure.

The 500 kV Interconnections would be constructed on lattice steel towers. The 500 kV structures for the Proposed Project would typically be larger than the 230 kV structures, ranging between 100 and 160 feet in height. Non-specular conductors and non-reflective insulators would be installed on all new poles and towers.

2.1 LAND USE DESIGNATIONS AND ZONING

The land use designations within the Proposed Project Area include Agriculture and Westside Rangeland. The entirety of the Proposed Project Area is zoned AE-20, Exclusive Agricultural, or AE-40, Exclusive Agricultural, with acreage designations of 20 acres and 40 acres, respectively (Fresno County 2000).

2.2 SURROUNDING LAND USES

Land use along the Proposed Project alignment is reflected in the land use designations; east of the proposed Manning Substation site, the land use is generally agricultural, with lands either in active or passive (fallowed) agricultural use. West of the Manning Substation location, a mix of open space (grasslands) and active or passive (fallowed) agricultural use is present.

At the eastern end of the Proposed Project alignment, surrounding the Tranquillity Switching Station, large solar photovoltaic installations are present. Existing electrical transmission lines—including steel poles and steel lattice towers—and existing electrical distribution lines—including wood poles—are found in the Proposed Project Area. A few residential structures are found in the Proposed Project Area, as are a few agriculture-related structures. The proposed 230 kV transmission line would extend east from the proposed LSPGC Manning Substation, crossing privately owned agricultural lands and Interstate 5 (I-5) for approximately 4.2 miles before interconnecting with PG&E's existing Panoche-Tranquillity 230 kV #1 and #2 Transmission Lines.

3.0 REGULATORY SETTING

3.1 FEDERAL

There are no applicable federal regulations, plans, or policies pertaining to aesthetics that are applicable to the Proposed Project.

3.2 STATE

3.2.1 CEQA

Under CEQA, impacts to aesthetic resources resulting from a project must be considered by state and local agencies. Appendix G of the CEQA Guidelines includes a series of questions that agencies may use when assessing the potential aesthetic impacts of a proposed project.

Appendix G of the CEQA Guidelines states that the potential for aesthetic resource impacts exists if the project would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality;
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The impacts on these aesthetic resources are addressed in Section 8 – CEQA Impact Analysis of this report.

3.2.2 California Department of Transportation: Scenic Highway Program

The State Scenic Highway Program—a provision of Sections 260 through 263 of the Streets and Highways Code—was established by the Legislature in 1963 to preserve and enhance the natural beauty of California. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a State Scenic Highway changes from “eligible” to “officially designated” when the local jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation (Caltrans) for scenic highway approval, and receives the designation from Caltrans. A city or county may propose adding routes with outstanding scenic elements to the list of eligible highways. However, State legislation is required. There are no state-designated or -eligible scenic highways within the Proposed Project Area.

3.3 LOCAL

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order 131-D (G.O. 131-D), Section XIV.B, “Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC’s jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use

matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the Proposed Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

3.3.1 Fresno County General Plan

The Open Space and Conservation Element of the Fresno County General Plan evaluates the County's scenic resources and provides policies intended to protect scenic resources to ensure that development enhances those resources through various measures including identification, development review, acquisition, and other methods.

The Fresno County General Plan also includes policies intended to protect scenic resources along County roadways by identifying, developing, and maintaining scenic amenities along roads and highways in the County and ensuring that development enhances those resources. According to Policy OS-L.1, the County has designated a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways. According to this Element, the only locally designated scenic highway in the vicinity of the Proposed Project is I-5 (Fresno County 2000).

The Open Space and Conservation element includes specific goals and policies related to scenic resources including the following:

Goal OS-K: To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.

Policy OS-K.1: The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.

Goal OS-L: To conserve, protect, and maintain the scenic quality of land and landscape adjacent to scenic roads in Fresno County.

Policy OS-L.1: The County designates a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways. Definitions and designated roadways are shown in the text box below. Figure OS-2 shows the locations of the designated roadways. *(Refer to General Plan for Figure OS-2)*

Policy OS-L.3: The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles:

> b. Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way. […]

The Scenic Roadways Section (L) of the General Plan identifies I-5 within Fresno County as a Fresno County Designated Scenic Highway.

4.0 ENVIRONMENTAL SETTING

4.1 PROJECT SETTING

The Proposed Project is located in the San Joaquin Valley on the western edge of Fresno County along I-5. The Proposed Project is bounded by Manning Avenue to the north, West Dinuba Avenue to the south, the Coastal Foothills to the west and Highway 33 to the east; this defines the Proposed Project Area.

The Proposed Project Area is relatively flat with long views and almost exclusively agricultural and energy uses. The landscape descends gradually from roughly 650 feet above sea level at the base of the Coastal Foothills to 225 feet above sea level where the proposed 230 kV transmission line terminates at the existing Tranquillity Switching Station. There are few dwellings or structures in the Proposed Project area, resulting in the local, flat, open roads being sparsely travelled. In contrast, I-5 is a busy route for travelers accessing destinations north and south of the Proposed Project area.

Large-scale agricultural lands consisting of orchards and row crops extend to cover much of the valley floor from the foothills to the distinctive California Aqueduct irrigation canal. These large farms provide a sense of open space, emphasize the county's rural and farming heritage, and allow motorists opportunities for unrestricted panoramic views. The landscape is noticeably dotted with existing transmission line lattice steel towers and occasional electrical substations and switching stations. This distinctive presence of energy infrastructure has become part of the local landscape character.

Noticeable in the landscape are the Coastal Foothills, just west of I-5. The foothills are characterized by rolling hills with many small peaks. The vegetation in the foothills is a typical grassland, green with colorful wildflowers in the rainy, cooler season and shades of tan to brown during the dry season.

The agricultural lands are a patchwork of green and brown. Orchards and other linear crops add shades of green to a predominately tan to brown landscape.

4.2 PROJECT VIEWSHED

The Proposed Project Area is relatively flat, gently sloping land in the San Joaquin Valley; the viewshed is enclosed by the Coastal Foothills on the south and west and views of farmland extending to the horizon to the north and east. The overall landscape is one of relatively undisturbed foothills featuring native grassland slopes to the west and extensive agricultural dotted with energy/transmission development to the north, east, and south. Fields are alternately bare soil, non-native grasses covering disturbed soil, low-growing crops, and orchards. Several orchards are seen with trees uprooted and left dead in the landscape.

Figure 2 presents the theoretical viewshed based on the height of proposed structures and the topography of the area. Given the relative flatness of the landscape, the viewer has roughly a 2-mile viewshed distance from any point. For the purposes of this report, the actual Proposed Project Area viewshed extends from the foothills to Highway 33 east to west and from West South Avenue to the north and West Rose Avenue to the

south. Within this area, the presence of large dense orchards obscures many views, and atmospheric conditions often limit the clarity of views and reduce the visible distance.

4.3 LANDSCAPE CHARACTER UNITS

A landscape character unit is a portion of the landscape that exhibits consistent elements and features that create a unified view. Two landscape character units have been identified for the Proposed Project viewshed and are illustrated in Figure 3.

4.3.1 Landscape Unit 1, San Joaquin Valley Landscape Character Unit

The San Joaquin Valley Landscape Unit is characterized by the repetition of proportionately sized plots of land of varying color and agricultural use. The landscape as well as the road network are highly organized with bordered fields and paved and unpaved roads to access the local crops and move agricultural workers. I-5 stands in contrast to the structured landscape moving on a diagonal, parallel to the foothills as opposed to following the square and rectangular development pattern. I-5 cuts a wide swath in the landscape with two-lanes in either direction, separated by a wide landscape divide. The California Aqueduct similarly winds across the landscape in a pattern that opposes the cultural order. The California Aqueduct is highly engineered. All aspects of this landscape unit appear shaped and maintained by humankind.

4.3.2 Landscape Unit 2, Foothills Landscape Character Unit

The Coastal Foothills range in elevation from 700 to 2,400 feet and define the western edge of the Proposed Project Area. The foothills are low, rolling and feature numerous low peaks providing a contrasting visual backdrop to the highly modified landscape of the valley floor when viewed from I-5 and from the local road network. From the Proposed Project Area, the foothills appear as a uniform grassland with limited variation in the vegetation.

4.4 REPRESENTATIVE VIEWS

Figures 4a through 4h present a set of eight photographs taken from representative locations along the Proposed Project alignment within the Proposed Project Area and viewshed. Table 4-1, a summary of this set of representative photographs, includes information on the viewpoint location, primary type of viewers, and backdrop conditions to Proposed Project components. Taken together, these photographs convey a general sense of the existing visual character of the landscape within the vicinity of the Proposed Project. The set of photographs also demonstrates that existing transmission and distribution facilities within the Proposed Project viewshed, including those associated with the Proposed Project, are established elements of the visual setting of the area.

Selection of the representative views began with desktop review of Proposed Project maps, geographic information system (GIS) data and review of federal, state, and local plans and policies. Through the desktop study, eight representative views were selected from which to obtain photographs in the field to characterize the existing visual condition and assess potential use in visual simulations. Site reconnaissance was conducted in

August 2023 to obtain the photographs from the representative locations and views. All points are publicly accessible; although, some would not frequently be used by the public as they are located on unpaved roads that are generally used only by agricultural workers.

Table 4-1. Summary of Representative Photographs

Photograph Number and Location	Primary Viewers	Predominant Backdrop for Project Structures
1. PG&E 500 kV ROW	Utility Personnel	Landscape and sky. The brown and green agricultural fields dominate the view with the lattice towers prominent in the foreground. A line of lattice towers is also vaguely visible along the horizon line.
2. Manning Road	Landowners Agricultural Workers Resident	Landscape and sky. The foothills and line of lattice towers would form the backdrop for the structures.
3. Manning Road	Landowners Agricultural Workers Residents	Landscape and sky. The agricultural fields and foothills form the backdrop for the structures.
4. I-5 south of Manning Road	Regional Motorists	Landscape and sky. The foothills and sky are the backdrop for the structures.
5. West Dinuba Avenue east of South Hudson Avenue	Landowners Agricultural Workers	Landscape and sky. The sky and to a lesser extent the green fields form the backdrop for the structures.
6. Manning Avenue west of South Newcomb Avenue	Local Motorists	Landscape and sky. The foothills dotted with lattice towers form the backdrop for the structures.
7. West Dinuba Avenue at South Douglas Avenue	Landowners Agricultural Workers Residents	Landscape and sky. The brown agricultural fields, foothills, lattice towers and sky form the backdrop for the structures.
8. Tranquillity Switching Station	Utility Personnel	Landscape and sky. The agricultural fields, foothills, lattice towers and sky form the backdrop for the structures.

5.0 METHODOLOGY

5.1 VISUAL ASSESSMENT

The visual impact assessment presented in the following sections employs methods based on those adopted by the U.S. Department of Transportation (DOT) Federal Highway Administration (FHWA) and other accepted visual analysis techniques. DOT FHWA methods were selected given that the vast majority of viewers in the Proposed Project Area would be motorists traveling I-5 or local roadways.

The impact analysis describes change to existing visual resources and assesses viewer response to that change. Central to this assessment is an evaluation of impacts to views from which the Proposed Project would be visible to the public; these locations are described as Key Observation Points (KOPs) (see Section 7.1). The visual impact

assessment is based on evaluation of the Proposed Project-related changes to the existing visual resources that would result from construction and operation of the Proposed Project; the changes were assessed, in part, by evaluating views of the Proposed Project provided by computer-generated visual simulations and comparing them to the existing visual environment.

5.2 VISUAL SIMULATION

The methodology employed for preparing the simulations displayed in Figures 5b, 6b, 7b, and 8b includes systematic site photography, computer modeling, and digital rendering techniques. Photographs were taken using a digital single-lens reflex (SLR) camera with fixed focal length 50-millimeter lens, which represents an approximately 40-degree horizontal view angle. The camera height was 6 feet above grade for all photographs. Photography viewpoint locations were documented in the field using photo log sheet notation, global positioning system (GPS) recording, and basemap annotation. Digital aerial photographs and Proposed Project design information supplied by LSPGC provided the basis for developing three-dimensional computer modeling of the new Proposed Project components. These simulations were prepared by Visual Environments for LSPGC, and then provided to Arcadis. For each simulation viewpoint, viewer location was inputted from global positioning system data using 5 feet as the assumed eye level. Computer “wireframe” perspective plots were overlaid on the simulation photographs to verify scale and viewpoint location. Digital visual simulation images were then produced based on computer renderings of the three-dimensional modeling combined with selected digital site photographs.

6.0 VISUAL RESOURCES AND VIEWER RESPONSE

6.1 EXISTING VISUAL QUALITY

The *Guidelines for the Visual Impact Assessment of Highway Projects (FHWA 2015)* identifies three key concepts or elements of visual quality:

- **Natural Harmony:** What a viewer likes and dislikes about the natural environment. The viewer labels the visual resources of the natural environment as being either harmonious or inharmonious. Harmony is considered desirable; disharmony is undesirable.
- **Cultural Order:** What a viewer likes and dislikes about the cultural environment. The viewer labels the visual resources of the cultural environment as being either orderly or disorderly. Orderly is considered desirable; disorderly is undesirable.
- **Project Coherence:** What a viewer likes and dislikes about the project environment. The viewer labels the visual resources of the project environment as being either coherent or incoherent. Coherent is considered desirable; incoherent is undesirable.

Visual quality is subjective and influenced by the viewer's position and biases. Neighbors and travelers would have different perspectives and value different aspects of the landscape, and even neighbors may vary in how they evaluate the same visual resource.

Table 6-1 presents the rating scale used in this assessment; this scale takes into consideration natural harmony, cultural order, and project coherence.

Table 6-1. Visual Quality Rating Scale

Rating	Description
Low Visual Quality	Landscapes that have low scenic value. They may contain visually discordant human alterations, and often provide little visual interest. Levels of natural harmony, cultural order and/or project coherence are low.
Moderately Low Visual Quality	Landscapes that have below average scenic value. They may contain visually discordant human alterations, but these features do not dominate the landscape. They often lack spaces that people perceive as inviting. Levels of natural harmony, cultural order and/or project coherence are below average.
Moderate Visual Quality	Landscapes that are common or typical landscapes with average scenic value. They usually lack significant human or natural features. Levels of natural harmony, cultural order and/or project coherence are average.
Moderately High Visual Quality	Landscapes that are above average but not of high scenic value. They usually contain interesting or pleasing cultural or natural features. Their level of natural harmony, cultural order and or project coherence are moderate to high.
High Visual Quality	Landscapes that have a high-quality scenic value due to cultural or natural features or the arrangement of spaces creating visual interest. These landscapes have high levels of natural harmony, cultural order, and project coherence and people are attracted to them.
Outstanding Visual Quality	Reserved for landscapes with exceptionally high visual quality. These landscapes are regionally and or nationally significant. Contain exceptional natural or cultural features that contribute to a level of iconic landscape that people are attracted to.

The natural landforms, industrial-scale agriculture and energy/transmission infrastructure typify the landscape within the viewshed and contribute to the level of visual quality. The existing visual quality of each of the landscape character units was considered in detail below, as well as the existing visual quality of each representative photograph (see Table 6-2).

6.1.1 Landscape Unit 1, San Joaquin Valley Landscape Character Unit

Natural Harmony (Moderate to Moderately High) – While panoramic and largely harmonious in nature, views from the most accessible and frequently viewed locations are generally common to the region and more dramatic views are available farther north and farther south. The long views are general and lack detail, reducing vividness. The area is also commonly hazy or foggy further limiting the level of detail. The color palette consists of shades of brown with a few memorable masses of green.

Cultural Order (Moderate) – Virtually the entire landscape unit is developed by and for humans with a high degree of order; however, the quality of the order in this area is less attractive or interesting than areas farther north or south. It is typical and not remarkable.

Project Coherence (Moderately High to High) – There is overall harmony and compatibility of the landscape. While highly engineered, the landscape puts forward a homogenous character. The patchwork of fields, whether producing crops or energy, stand together as a unified character.

6.1.2 Landscape Unit 2, Foothills Landscape Character Unit

Natural Harmony (High) – The Foothills stand as a steady backdrop for the valley landscape, the colors are muted, and the haze often reduces their vividness, but they nonetheless provide a continuous natural form in the landscape tying the area to reaches farther north and farther south. They appear wild in contrast to the heavily manicured farmland below and contribute to the aesthetics and character of the area.

Cultural Order (Moderately High) – The natural landscape appears intact and inaccessible to humans with the exception of the existing energy/transmission towers, visible from all parts of the Proposed Project Area. Areas of recreation are nearby but not directly within the Proposed Project Area of the foothills.

Project Coherence (Moderately High) – There is overall harmony and compatibility of the landscape. The foothills have consistent undulation and peaks, consistent color and texture and stand as a consistent backdrop when seen from the valley floor. The existing energy infrastructure has become part of the landscape in the foothills up and down I-5.

Table 6-2. Visual Quality Rating

Representative Photograph Number	Visual Quality Rating	Comments
1	Moderate to Moderately High	Typical central valley grassland landscape with existing energy infrastructure in view.

Table 6-2. Visual Quality Rating

Representative Photograph Number	Visual Quality Rating	Comments
2	Moderately High	Typical central valley grassland landscape with foothills in background.
3	Moderately Low to Moderate	Arid bare soil with foothills in background, distant view.
4	Moderate to Moderately High	Paved interstate with arid grassland landscape. Distant views of foothills and orchards.
5	Moderate	Vibrant green fields with energy infrastructure in background.
6	Moderately High	Cultural landscape with active fields in foreground and middleground, foothills and existing energy infrastructure in background. The view is one of the more attractive (above average) landscapes in the area but not high quality or exceptional.
7	Moderately Low to Moderate	Arid bare soil dominated by energy infrastructure.
8	Moderately Low	Arid bare soil dominated by energy infrastructure.

6.2 VIEWER GROUPS AND SENSITIVITY

Viewer response to changes in the visual environment is based on a combination of viewer sensitivity and viewer exposure.

6.2.1 Potentially Affected Viewers

Accepted visual assessment methods establish sensitivity levels as a measure of public concern for changes to scenic quality. Viewer sensitivity, one of the criteria used to evaluate visual impact significance, can be divided into high, moderate, and low categories. Factors considered in assigning a sensitivity level include viewer activity, view duration, viewing distance, adjacent land use, and special management or planning designation. Visual sensitivity would vary with the type of users. The primary viewer groups within the Proposed Project Area are described below.

Motorists

Motorists or roadway travelers are the largest viewer group in the Proposed Project Area. Included in this group are motorists traveling on I-5, Highway 33, and Manning Avenue, as well as other local roadways.

Motorists include local travelers who are familiar with the visual setting and regional travelers using area roadways on a less regular basis. Local travelers include those commuting to or from work, residents, and drivers of commercial vehicles. Regional motorists include long-distance truck drivers, and those traveling through the Proposed Project Area to destinations outside the Proposed Project Area. The duration of motorists' views is generally brief and depending upon the travel route and type of roadway, could range from a few seconds to up to several minutes.

Workers

Land use in the Proposed Project Area is largely agricultural; workers harvesting crops or otherwise tending to agricultural lands are the second largest viewer group. The duration of workers' views can be long depending on the work being performed.

Residents

The Proposed Project Area is almost wholly uninhabited, with fewer than a half-dozen residential structures along the proposed 230 kV transmission line alignment. The views toward the Proposed Project alignment from these residential structures is largely screened by intervening vegetation, particularly orchards. Residential views tend to be long in duration**.**

6.2.2 Viewer Exposure

Viewer exposure assesses the number of viewers exposed to a visual change, the type of viewer activity, the viewing distance to the resource change (foreground, middleground, or background; see Table 6-3), the duration of their view, the speed at which the viewer moves, and the position of the viewer. They are based on one static point.

Table 6-3. Distance Zones

Distance Zone	Description
Foreground	0 to 0.5 mile from viewer.
Middleground	Extends from the foreground zone to 2 to 5 miles from the viewer.
Background	Extends from the middleground to infinity.

6.2.3 Viewer Sensitivity

Viewer sensitivity is defined as the extent to which the viewing public would notice or experience a change in visual quality. Viewer sensitivity is based on several factors that can differ in level of importance from one viewer to another. Viewer sensitivity is based on a viewer's ability to perceive the landscape and is affected by their activity on the landscape. Table 6-4 presents the Viewer Sensitivity Rating Scale used in this report.

Table 6-4. Viewer Sensitivity Rating Scale

Rating	Description
Low	Viewers are not sensitive to changes in the landscape and may not notice changes.
Low to Moderate	Viewers may notice changes but would likely be accepting of changes without mitigation.
Moderate	Viewers would notice changes and may accept changes without mitigation, or they may require mitigation.
Moderate to High	Viewers would notice changes and require mitigation.
High	Viewers would notice changes and may require redesign or extensive mitigation.

Table 6-5 presents a summary of viewer response from each representative photograph location. Most of the views in the Proposed Project Area would be from a distance

greater than 1 mile and less than 5 miles. The very large majority of viewers are motorists—either those traveling for local work purposes and at low to moderate speeds or those traveling on I-5 at high speeds with shortened exposure times—or agricultural workers. These viewers are identified as having low to moderate sensitivity.

Table 6-5. Summary of Viewer Response

Representative Photograph Location	Viewing Distance	Viewer Sensitivity Rating
1	Foreground to Middleground	Low to Moderate
2	Foreground to Middleground	Low to Moderate
3	Foreground to Middleground	Low to Moderate
4	Foreground to Background	Moderate
5	Foreground	Low to Moderate
6	Middleground	Moderate
7	Foreground to Middleground	Low
8	Foreground to Middleground	Low

In summary:

- Given the short duration of views and the transience of most viewers, **motorists' viewer sensitivity is considered low to moderate.**
- Given their focus on work tasks while in the Proposed Project Area, **workers' viewer sensitivity is considered low.**
- Given the long duration of views and their connection to place, **residents' viewer sensitivity is considered moderate to high.**

With consideration given to viewer groups, activities, and perception-modifying factors such as motorist speed, viewing duration, viewer orientation, viewer occupation, and the existing visual experience, overall viewer awareness of the Proposed Project is anticipated to be low to moderate.

7.0 VISUAL IMPACT ANALYSIS

7.1 KEY OBSERVATION POINTS

To determine whether the Proposed Project would substantially degrade the existing visual character or quality of the site and its surroundings, four of the representative photographs were chosen as KOPs. The validity of each of the Representative Views was confirmed in the field; from the eight representative photographs, representative

photographs 3, 4, 6, and 7 were selected as KOPs for which a visual simulation was developed.

Selection was made based on:

- Views of the proposed substation.
- Likely views of residents who may see the proposed substation and/or alignment from public streets.
- Likely views of travelers who may see the proposed substation and/or alignment from I-5.
- Locations and users that would be most sensitive to changes in visual conditions.

The KOP locations are presented on Figure 3.

The Proposed Project would be visible from several public roadways, including I-5, Highway 33, and Manning Avenue. With the exception of I-5, the roads within the Proposed Project Area are lightly travelled making it challenging to select one viewpoint over another. The Proposed Project Area overall has few fixed residential or commercial uses, and no recreational facilities or areas. Most of the public who view the components of the Proposed Project would be travelling through the Proposed Project Area to other destinations on I-5. Outside of I-5, Highway 33 and Manning Avenue have the highest number of present or future potential viewers.

I-5 is outlined in the Fresno County General Plan (Conservation and Open Space Element) as a county-designated scenic highway, but it is neither a State-designated nor a State-eligible designated scenic highway. This indicates value on the landscape at a county level and potential sensitivity of local viewers. However, the average traveler passing through the Proposed Project Area has no personal connection to the Proposed Project Area and is unlikely to place a high value on the landscape within the Proposed Project Area when compared to the views of the foothills north of the area where the foothills are closer to I-5 and more scenic.

7.2 ANALYSIS OF VISUAL CHANGE

The set of visual simulations presented in Figures 5 through 8 documents the Proposed Project-related visual change that would occur at the four KOPs and provides the basis for evaluating potential visual effects associated with the Proposed Project. The simulations presented on Figures 5, 6, 7, and 8 consist of two full-page images designated “a” and “b,” with the existing views shown in the “a” figure and the visual simulations in the “b” figure.

An evaluation of potential visual effects considered factors such as the extent of change to the visibility of existing power lines, the degree to which the various Proposed Project elements would contrast with or be integrated into the existing landscape, the extent of change in the landscape’s composition and character; and the number and sensitivity of viewers. An analysis of the visual change to be realized at each KOP is presented in the sections below.

7.2.1 Key Observation Point 1 (Representative Photo 3)

Proposed Project Features

Proposed Project components visible from KOP1 include new 230 kV transmission structures (tubular steel poles), 55 to 180 feet in height; 500 kV transmission structures (lattice steel towers) between 100 and 199 feet in height; and the proposed Manning Substation. A variety of new steel structures are visible, including single poles, groups of single poles in close proximity to each other, lattice steel towers, and H-frame structures constructed from pairs of poles with a horizonal crossarm located near the top of the H-frame structure. The new steel poles and structures to be constructed within the proposed Manning Substation would be comprised of dulled grey galvanized steel to the extent feasible. The substation is surrounded by a 10-foot prefabricated interlocking security wall with 1 foot of barbed wire on top. Table 7-1 summarizes the change and impact on KOP1.

Table 7-1. Summary of Key Observation Point 1

Project Elements within View	
Proposed steel poles supporting conductor and optical groundwire (OPGW); lattice steel towers, and proposed LSPGC Manning Substation.	
Visual Sensitivity Factor(s)	
Proximity to foothills.	
Local unpaved road for access to agricultural fields, one residence, no recreation. Few viewers, low speeds.	
Viewing Distance	**Viewers**
Foreground to Middleground	Landowners, Agricultural Workers, Residents
Viewer Sensitivity Rating	
Low to Moderate	
Existing Visual Quality Rating	**Comments**
Moderately Low to Moderate	Arid bare soil with foothills in background. While the view of the foothills in background is an attractive view that is harmonious, the foreground lacks interest or cultural order. The landscape is somewhat typical of the Proposed Project Area but below average.

Proposed Visual Quality Rating	Comments
Low Visual Quality	The view would be impacted by the addition of the substation and new transmission structures that would be located in the foreground to middleground of the view. The addition of the substation introduces elements that are discordant.

Change to Visual Quality and Character
The visual quality is degraded by the dominance of the proposed substation within the view. The new steel poles are more noticeable in the landscape than the existing lattice towers seen in the background and the density of the new lattice towers would create a visual barrier between the viewer and the foothills. The poles and substation infrastructure also exceed the height of the foothills from this vantage point, overpowering an otherwise dominant landscape feature. While the existing view lacks interest, the proposed infrastructure is visually discordant creating an inharmonious landscape.

Resulting Visual Impact
The viewers in the area of the KOP1 are landowners, agricultural workers and the household of one residence; therefore, the number of viewers and sensitivity of viewers is low to moderate. The residents would notice the substantial change to the landscape and may or may not require mitigation measures. The landowners and agricultural workers would also notice the change but are less likely to be sensitive to the change. Overall, the resulting visual impact at KOP1 is perceptible and the Proposed Project would reduce the natural harmony and coherence by introducing a cultural infrastructure into a perceived natural landscape. While the fields are shaped by humans, there is a natural element to them that is in contrast to the engineered form of the proposed substation. However, given the low to moderate viewer sensitivity and the moderately low visual quality, mitigation measures would not be required.

7.2.2 Key Observation Point 2 (Representative Photo 4)

Proposed Project Features

Proposed Project components visible from KOP2 include a number of new steel poles. All steel poles visible in this simulation are single poles, each supporting six conductors and OPGW strung from the top of each pole. The new steel poles would be constructed of dulled grey galvanized steel to the extent feasible.

Table 7-2. Summary of Key Observation Point 2

Project Elements within View	
New steel poles, conductor, and OPGW.	
Visual Sensitivity Factor(s)	
Characteristic agricultural landscape and I-5 in the foreground, extending to the background, and foothills in the background.	
High numbers of motorists on I-5 traveling at high speeds.	
Viewing Distance	**Viewers**
Foreground to Background	Regional Motorists
Viewer Sensitivity Rating	
Moderate	

Table 7-2. Summary of Key Observation Point 2

Existing Visual Quality Rating	Comments
Moderate	The view from I-5 is average, containing common and typical landscapes for this area. It lacks significant natural or cultural features of interest. The foothills in the background are attractive but more attractive views are available, north and south of the Proposed Project Area. While it is a pleasant view it is not memorable. Levels of natural harmony, cultural order and Proposed Project coherence are average.
Proposed Visual Quality Rating	**Comments**
Moderately Low to Moderate	New transmission poles and conductor would be visible as motorists on I-5 approach the Proposed Project alignment. The new poles would be highly visible and would change the view measurably from the vantage point of the KOP. From further distances the visibility would decrease. The poles and lines are new at this location, there are no existing transmission lines in view; therefore, motorists could be sensitive to the change.
Change to Visual Quality and Character	
The visual quality is degraded by the introduction of the transmission poles within the view. While this view was considered typical and of average quality, the introduction of the poles contrasts the otherwise horizontal landscape and reduces the Proposed Project coherence, and therefore reduces the visual quality.	
Resulting Visual Impact	
The duration of views would be relatively long (at 70 miles per hour, a vehicle would travel through the middleground and foreground distance zones in approximately four minutes), but the view would be narrow (less than 40 degrees) at the indicated speed limit along this portion of I-5. Given the short view duration and the moderate viewer sensitivity, and the moderate existing visual quality, the addition of the vertical elements would result in a moderate overall impact. This view as noted is average and energy infrastructure appears continually in the landscape, while noticeable when viewed in a static image, the motorist is in a dynamic situation where the impact would be less noticeable.	

7.2.3 Key Observation Point 3 (Representative Photo 6)

Proposed Project Features

Proposed Project components visible from KOP3 include a number of new steel poles. All steel poles visible in this simulation are single poles, each supporting six conductors with OPGW installed at the top of each pole. The new steel poles would be constructed of dulled grey galvanized steel to the extent feasible.

Table 7-3. Summary of Key Observation Point 3

Project Elements within View	
New steel poles, conductor, and OPGW.	
Visual Sensitivity Factor(s)	
Characteristic agricultural landscape with foothills in the background	
Paved local rural road with no residential, commercial or recreation in this area. Moderate number of viewers, moderate speeds.	
Viewing Distance	**Viewers**
Middleground	Local Motorists
Viewer Sensitivity Rating	
Moderate	
Existing Visual Quality Rating	**Comments**
Moderately High	The view shows a cultural landscape with a farm and active fields in foreground and middleground, existing energy infrastructure in the middleground, and foothills in the background. The view is one of the more attractive (above average) landscapes in the area but not high quality or exceptional. There is an overall natural composition to the landscape with the blend of colors and rugged line of the foothills.
Proposed Visual Quality Rating	**Comments**
Moderately High	The project-related electrical infrastructure (steel poles) would be visible in the middleground; due to the distance from the road and the presence of existing electrical infrastructure (including poles and lattice towers), the steel poles wouldn't change the view measurably. It is difficult to perceive the additional poles in the landscape.
Change to Visual Quality and Character	
The visual quality and the character is unchanged.	
Resulting Visual Impact	
The change to the visual quality is imperceptible to most viewers and does not measurably change the quality of the view. The resulting visual impact is zero.	

7.2.4 Key Observation Point 4 (Representative Photo 7)

Proposed Project Features

Proposed Project components visible from KOP4 include a number of new steel poles supporting conductor and OPGW. A variety of new steel poles are visible, including a single pole and a group of single poles in close proximity to each other. The new steel poles would be constructed of dulled grey galvanized steel to the extent feasible.

Table 7-4. Summary of Key Observation Point 4

Project Elements within View	
New steel poles, conductor, and OPGW.	
Visual Sensitivity Factor(s)	
Characteristic agricultural landscape.	
Local-access road for access to residences, agricultural fields, and farm complex. Few viewers, low speeds.	
Viewing Distance	**Viewers**
Foreground to Middleground	Landowners, Agricultural Workers, Residents
Viewer Sensitivity Rating	
Low to Moderate	
Existing Visual Quality Rating	**Comments**
Moderately Low to Moderate	The existing view features arid bare soil in foreground, existing electrical infrastructure (lattice steel towers and conductor) in the foreground and middleground, and foothills in background. The foothills appear as a far off, distant view and are not prominent from this vantage point as they are in other parts of the Proposed Project Area. The view lacks natural harmony or elements of cultural interest.
Proposed Visual Quality Rating	**Comments**
Moderately Low	The view would be impacted by the addition of new steel poles and new conductor and OPGW in the foreground. The elements are perceivable but appear to be coherent with the existing landscape elements. Energy infrastructure appears as a typical element in this area of industrial agriculture.
Change to Visual Quality and Character	
The visual quality is degraded by the introduction of the transmission poles within the view. The view is moderately low quality due to the existing lattice towers that stand out against the arid soil. There is little natural harmony or cultural features that viewers would find attractive. The structures are vertical in contrast to the horizontal landscape reducing the Proposed Project coherence and therefore reducing the visual quality rating.	
Resulting Visual Impact	

While the change would be perceptible to the viewers, viewer sensitivity is anticipated to be low to moderate as the view is of moderately low quality in area where energy infrastructure is a typical and expected part of the landscape. The natural harmony and cultural order is low due to the lack of features in the landscape and the Proposed Project is in keeping with the infrastructure elements already within the view.

8.0 CEQA IMPACT ANALYSIS

The sections below provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G. The results of the impact analysis are summarized in Table 8-1.

Table 8-1. CEQA Impact Criteria

Would the Project:	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Measures	Less-Than-Significant Impact	No Impact
Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?	☐	☐	☐	☑
In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☑	☐
Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

8.1 WOULD THE PROJECT HAVE A SUBSTANTIAL ADVERSE EFFECT ON A SCENIC VISTA?

For the purpose of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality.

8.1.1 Construction – No Impact

There are no scenic vistas in the Proposed Project Area, and therefore no impacts would be realized.

8.1.2 Operations – No Impact

There are no scenic vistas in the Proposed Project Area, and therefore no impacts would be realized.

8.2 WOULD THE PROJECT SUBSTANTIALLY DAMAGE SCENIC RESOURCES, INCLUDING, BUT NOT LIMITED TO, TREES, ROCK OUTCROPPINGS, AND HISTORIC BUILDINGS WITHIN A STATE SCENIC HIGHWAY?

8.2.1 Construction – No Impact

There are no Eligible or Designated State Scenic Highways in the Proposed Project Area, and thus the Proposed Project would have no impact.

8.2.2 Operations – No Impact

There are no Eligible or Designated State Scenic Highways in the Proposed Project Area, and thus the Proposed Project would have no impact.

8.3 WOULD THE PROJECT SUBSTANTIALLY DEGRADE THE EXISTING VISUAL CHARACTER OR QUALITY OF THE SITE AND ITS SURROUNDINGS?

8.3.1 Construction – Less-than-Significant Impact

Construction-related visual impacts of the Proposed Project would not substantially degrade the existing visual character or quality of the site and its surroundings. During construction, visual impacts would include the presence of workers, portable buildings, construction equipment, and vehicles associated with the installation of the substation components and new transmission line structures. To varying degrees, construction activity would be noticeable to motorists and the small number of local residents. Most of the construction activity would be limited to locations set back from roadways. In addition, the Proposed Project is located in an area where mechanized agricultural production activities occur that typically employ the use of trucks and other equipment that is not unlike the Proposed Project-related construction equipment.

During construction, migration of fugitive dust from the construction sites would be limited by control measures set forth by the regional air quality management district; these measures may include the use of water trucks and other dust control measures.

Disturbance of land would occur as a result of installing transmission structures and the new substation. In addition, minor land disturbance may occur at some of the temporary staging and work areas that would be established as part of the Proposed Project construction. A limited degree of visual contrast could occur due to land disturbance activity such as creation of newly exposed soil areas; however, the effect would be minimized as much of the area is subject to soil disturbance as a result of agricultural activities, and therefore the disturbed areas would blend in with the surrounding landscape setting, thus reducing visual contrast and potential visibility of these areas.

Due to the above factors, as well as their limited duration, construction-related visual effects would be less than significant.

8.3.2 Operations – Less-than-Significant Impact

It is anticipated that the permanent Proposed Project components (substation, transmission structures and conductor) would have a less-than-significant impact on the visual character or quality of the Proposed Project Area. Multiple components of the Proposed Project would be installed across Proposed Project Area from the proposed substation site—visible from KOP1—to the existing Tranquillity Switching Station.

The introduction of the proposed Manning Substation and the adjacent transmission structures would have the largest impact on the aesthetic conditions (as seen from KOP1, Figure 5b). However, the sensitivity of the landscape at this location is low to moderatedue to the lack of residential dwellings or other sensitive viewers. The proposed Manning Substation would not be visible from any of the other KOPs. The physical operations of the substation would not have an impact on visual resources; impacts are related to the addition of the physical structure in the existing landscape. The proposed new structures within and adjacent to the proposed Manning Substation would daylight (would exceed the visible height of the foothills from certain vantage points), changing the natural harmony of the view.

Permanent Proposed Project components, such as steel poles and overhead wires, would be visible and perceivable from KOP2 and KOP4. At KOP2, viewers are moving through the view at a high rate of speed and the view from I-5 is fleeting. There are higher quality views north and south of the Proposed Project Area. Energy infrastructure is typical in the views from I-5 within the Proposed Project Area and beyond. While the new poles and wires crossing the interstate stand in contrast with the horizontal nature of the landscape within the static view, they are not out of character for the San Joaquin Valley area. KOP4 is accessed by local roads and is located in an area where energy infrastructure is typical. While the new infrastructure is perceptible in the landscape it is not atypical. The views from KOP2 and KOP4 lack aesthetic or cultural interest but represent the typical industrial agricultural views within the Proposed Project Area.

The view from KOP3 is of higher quality and includes variation in natural form, an aesthetically pleasing blend of color and indicates cultural influence over the landscape. This view remains unchanged: While the new poles are visible in the middleground of the view they blend with the existing vertical structures in the landscape and are virtually imperceptible. As presented in the discussions above, the long-term operations-related visual effects would be less than significant.

8.4 WOULD THE PROJECT CREATE A NEW SOURCE OF SUBSTANTIAL LIGHT OR GLARE THAT WOULD ADVERSELY AFFECT DAY OR NIGHTTIME VIEWS IN THE AREA?

8.4.1 Construction – Less-than-Significant Impact

Day Views. Construction activities associated with the Proposed Project would not create a new source of light that would adversely affect day views in the area. Glare from construction equipment could result depending upon the time of day and the

position of a viewer relative to the construction equipment; however, such glare would be transient and ephemeral, and associated impacts would be less than significant.

Nighttime Views. Most construction would take place during daylight hours; however, at limited times some construction along the Proposed Project alignment may be required or finished at night, and these activities would require lighting for safety. In these situations, portable temporary lighting would be directed exclusively to on-site locations and used to illuminate the immediate work area. Staging yards may be lit for staging and security; lighting at staging yards would be directed on site and shielded to reduce light escape resulting in less-than-significant impacts.

8.4.2 Operation – Less than Significant Impact

Day Views. Glare occurs when a high degree of contrast is evident between bright and dark areas in a field of view, making it difficult for the human eye to adjust to differences in brightness. As described in 2.0 Project Overview non-specular conductors and non-reflective insulators would be installed under the Proposed Project. The transmission structures would be constructed from non-reflective dulled galvanized steel. The structures and equipment to be installed at the Manning Substation would have non-reflective finishes and neutral earth-tone colors to the extent feasible. These design features would minimize the potential effect of glare, resulting in less-than-significant impacts.

Nighttime Views. It is anticipated that no aeronautical obstruction lighting would be implemented for the Proposed Project: No structures or catenaries would exceed 199 feet above ground level, and therefore FAA notification would not be required. The Proposed Project alignment is not located nearer than 8 miles to the nearest airport; therefore, analysis using the FAA flight tool would not be required. The closest airport is William Robert Johnston Municipal Airport at a distance of approximately 11.5 miles from the existing Tranquillity Substation. Thus, the transmission lines would not be a new source of light.

Lighting would be installed at the proposed Manning Substation; the lighting would conform to National Electric Safety Code (NESC) requirements and other applicable outdoor lighting codes. NESC recommends, as good practice, illuminating the substation facilities to a minimum of 22 lux or two footcandles. Photocell controlled lighting would be provided at a level sufficient to provide safe entry and exit to the proposed Manning Substation and control buildings. Additional manually controlled lighting would be provided to create safe working conditions at the proposed Manning Substation when required. All lighting provided would be shielded and pointed down to minimize glare onto surrounding properties and habitats. Light fixtures would be located near major outdoor equipment, general substation areas, and building exteriors. Lights would be mounted on structures, poles, and supplementary buildings as required. Lights would be motion sensor-activated in order to avoid any unnecessary use or potential disturbance. The Proposed Project would be remotely monitored on a day-to-day basis and would only require monthly inspections. These operations and maintenance activities would usually occur during the day; nighttime maintenance activities are not expected to occur more than once per year. Nighttime lighting would generally only be

used for security purposes and would be shielded and directed to prevent glare and light escape.

Given the design and use of lighting at the proposed Manning Substation, the impacts would be less than significant.

9.0 REFERENCES

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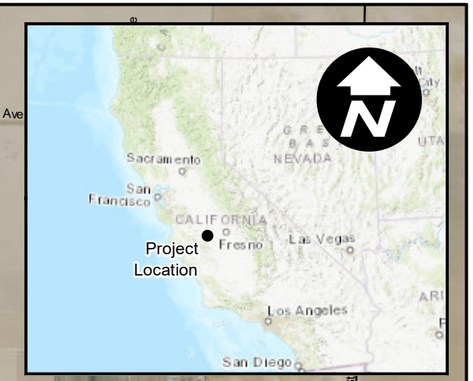

Proposed LSPGC Manning Substation

Existing PG&E Tranquillity Switching Station

W Lincoln Ave
W Panoche Rd
S Brannan Ave
S Fairfax Ave
S Newcomb Ave
S Douglas Ave
S Ormsby Ave
Imperial Ave
W Adams Ave
S San Diego Ave
S Lyon Ave
S Washoe Ave
W South Ave
S Riverside Ave
S San Bernardino Ave
S Ohio Ave
S Jerrold Ave
S Hudson Ave
W Manning Ave
S Imperial Ave
Los Angeles Ave
S Derrick Ave
I-5
W Dinuba Ave
W Floral Ave
Ormsby Ave
Riverside Ave
Hwy 33
W Rose Ave
W Nebraska Ave
Nebraska Ave
State Rte 33
S Storey Ave
W Mountain View Ave
Westside Fwy

LEGEND

- Proposed LSPGC 230 kV Transmission Lines
- Proposed PG&E 500 kV Interconnections
- Proposed PG&E 230 kV Interconnections
- Proposed PG&E 230 kV Rebuild
- Existing Transmission Line
- Proposed LSPGC Manning Substation
- Existing PG&E Tranquillity Switching Station
- Project Area

0 1 2
SCALE IN MILES

LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

PROJECT OVERVIEW

ARCADIS

FIGURE 1

CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane California IV FIPS 0404 Feet
D:\GIS\Project Files\LS_Power\Collinsville_Manning\Documents\Manning\01_Manning_ProjectOverview.mxd PLOTTED: 1/30/2023 2:42:42 PM BY: TYarbrough

Service Layer Credits: Esri, USDA Farm Service Agency

Proposed
LSPGC Manning
Substation

Existing PG&E
Tranquillity
Switching Station

LEGEND

- Proposed LSPGC 230 kV Transmission Lines
- Proposed PG&E 500 kV Interconnections
- Proposed PG&E 230 kV Interconnections
- Proposed PG&E 230 kV Rebuild
- Existing Transmission Line
- Proposed LSPGC Manning Substation
- Existing PG&E Tranquillity Switching Station
- Transmission Path Not Visible
- Transmission Path Visible

0 1 2
SCALE IN MILES

LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

PROJECT VIEWSHED

ARCADIS

FIGURE
2

CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane California IV FIPS 0404 Feet
D:\GIS\Project Files\LS_Power\Collinsville_Manning\Documents\Manning\02_Manning_ProjectViewshed.mxd PLOTTED: 11/30/2023 2:45:29 PM BY: TYarbrough

Service Layer Credits: Esri, USDA Farm Service Agency

Representative Photograph 1

Representative Photograph 2

Representative Photograph 3/KOP1

Representative Photograph 4/KOP2

Representative Photograph 5

Representative Photograph 6/KOP3

Representative Photograph 7/KOP4

Representative Photograph 8

Proposed LSPGC Manning Substation

Existing PG&E Tranquility Switching Station

W Panoche Rd
W Lincoln Ave
W South Ave
W Manning Ave
W Dinuba Ave
W Floral Ave
W Rose Ave
W Nebraska Ave
W Mountain View Ave
W Adams Ave
I-5
Westside Fwy
S Brannan Ave
S Fairfax Ave
S Jerrold Ave
S Hudson Ave
S Newcomb Ave
S Douglas Ave
S Ormsby Ave
S Lyon Ave
S Storey Ave
S Washoe Ave
S Imperial Ave
S San Diego Ave
S San Bernardino Ave
S Riverside Ave
S Ohio Ave
Los Angeles Ave
S Derrick Ave
State Rte 33
Hwy 33

LEGEND

- Representative Photograph
- Representative Photograph Chosen for Visual Simulation
- Proposed LSPGC 230 kV Transmission Lines
- Proposed PG&E 500 kV Interconnections
- Proposed PG&E 230 kV Interconnections
- Proposed PG&E 230 kV Rebuild
- Existing Transmission Line
- Proposed LSPGC Manning Substation
- Existing PG&E Tranquillity Switching Station
- Landscape Unit 1 - San Joaquin Valley Landscape Character Unit
- Landscape Unit 2 - Foothills Landscape Character Unit

0 1 2
SCALE IN MILES

LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

LANDSCAPE CHARACTER UNITS AND REPRESENTATIVE PHOTOGRAPHS/KEY OBSERVATION POINTS

ARCADIS

FIGURE
3

CITY: NOVI MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane California IV FIPS 0404 Feet
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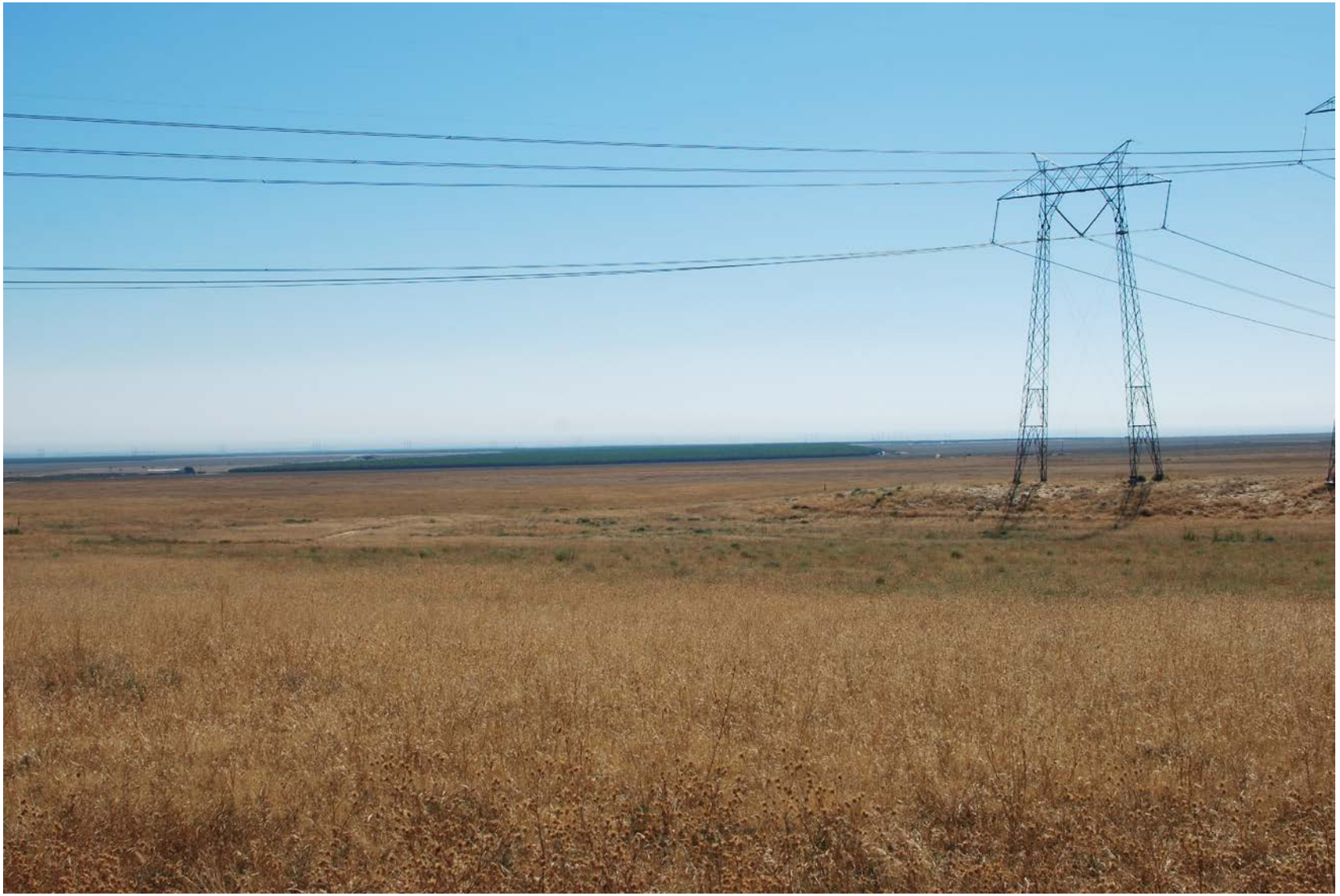
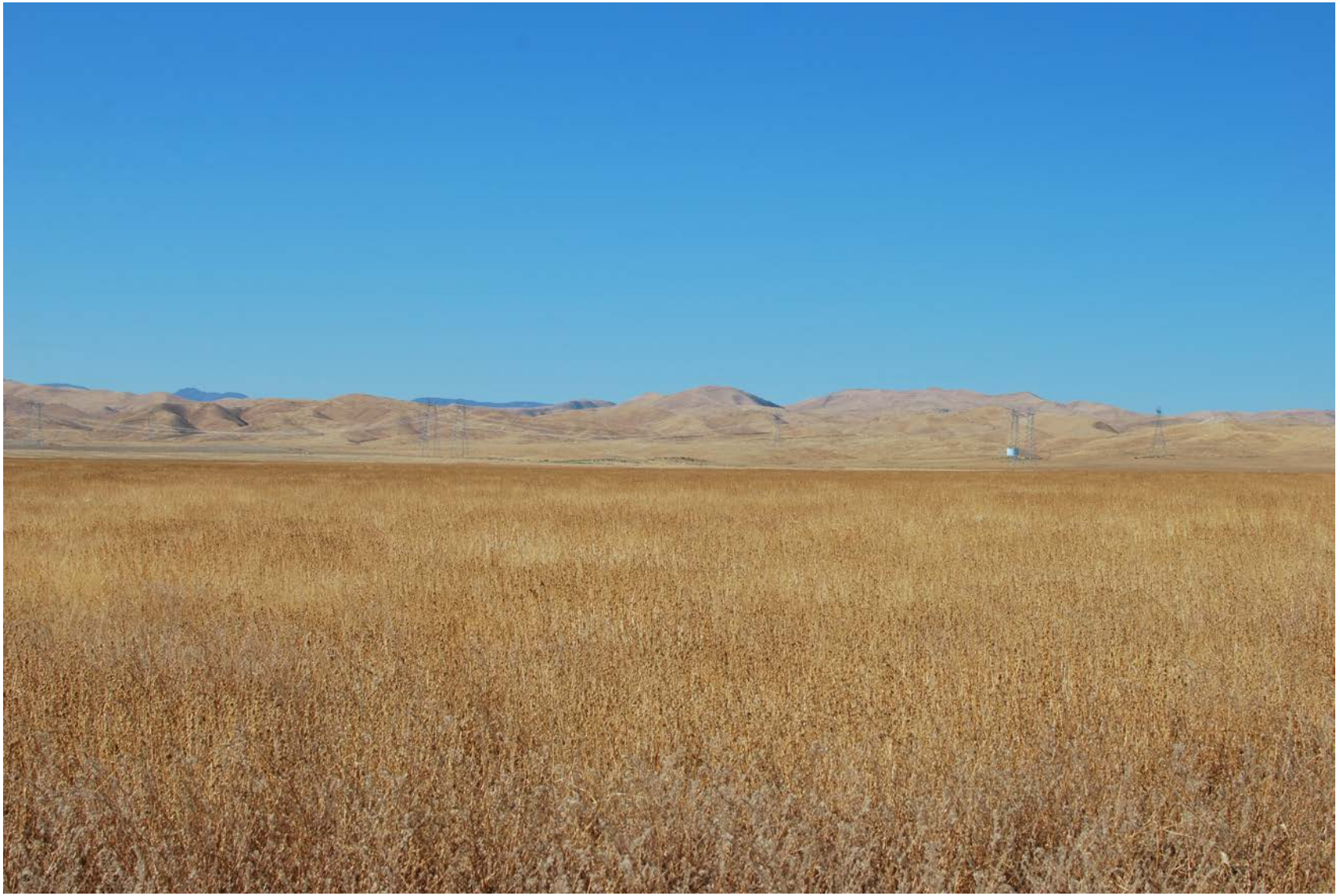


LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

REPRESENTATIVE PHOTOGRAPH 1 (LOOKING EAST)

ARCADIS

FIGURE
4a

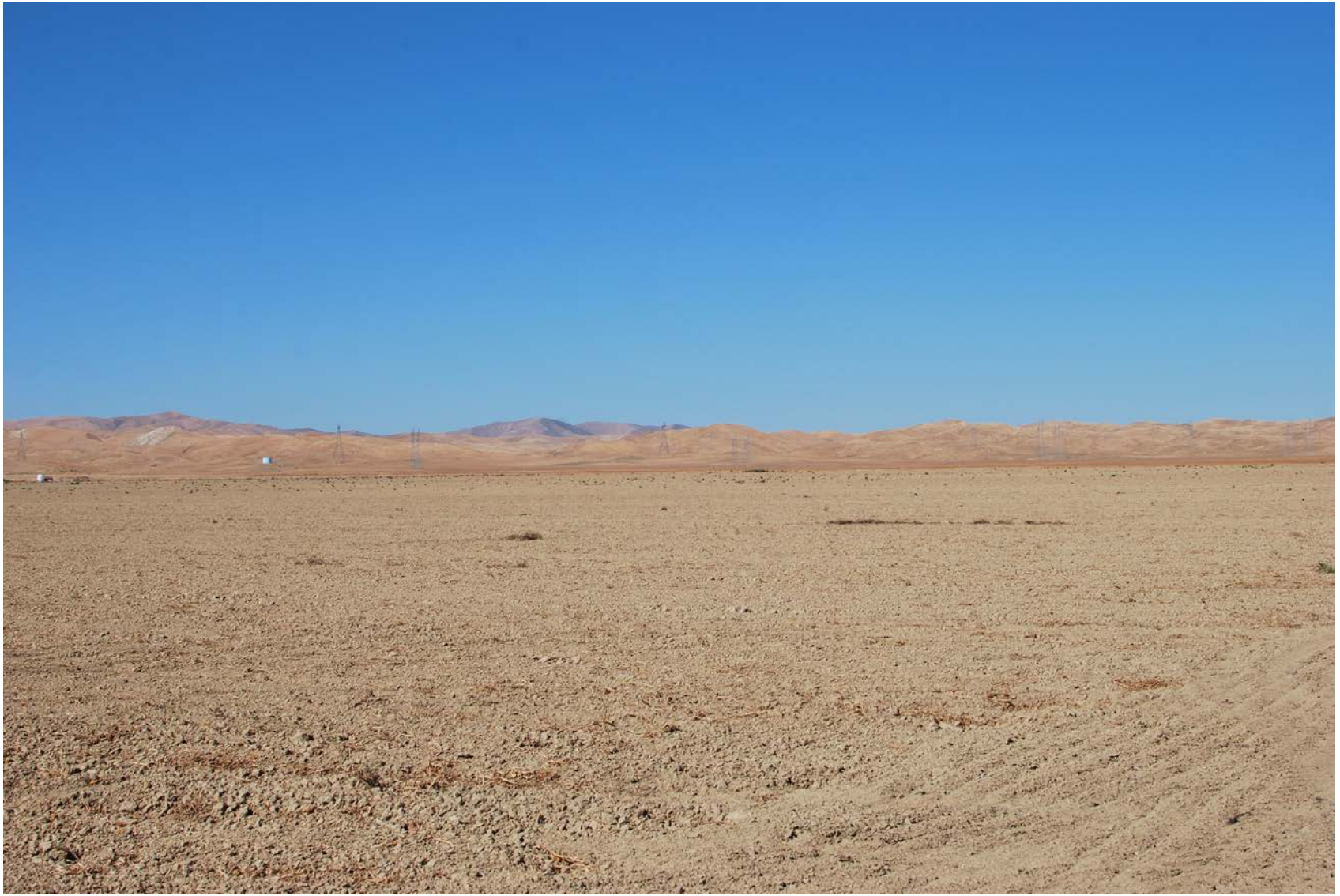


LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

REPRESENTATIVE PHOTOGRAPH 2
(LOOKING SOUTHWEST)

ARCADIS

FIGURE
4b

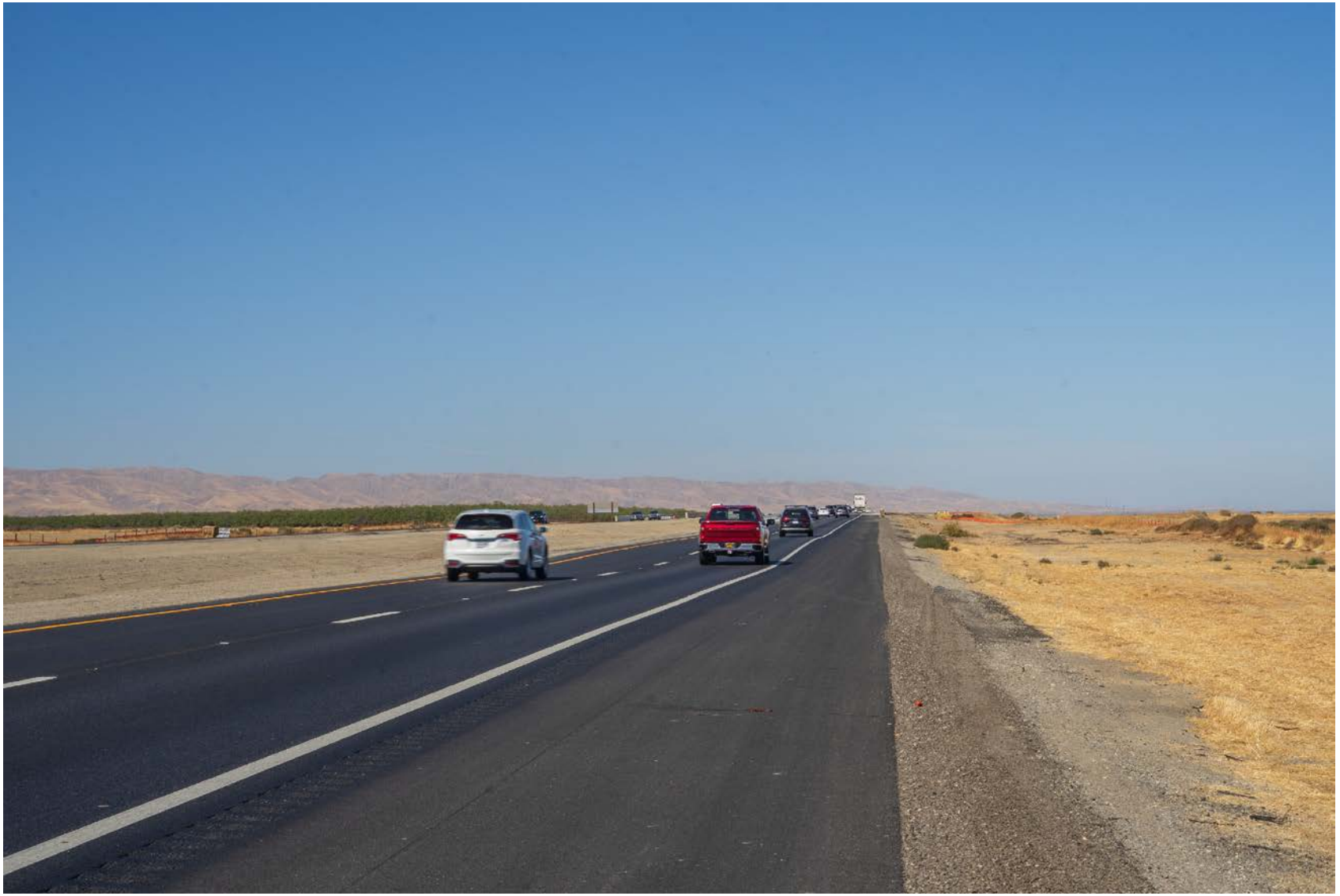


LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

REPRESENTATIVE PHOTOGRAPH 3/KOP1 (LOOKING SOUTHWEST)

ARCADIS

FIGURE
4c

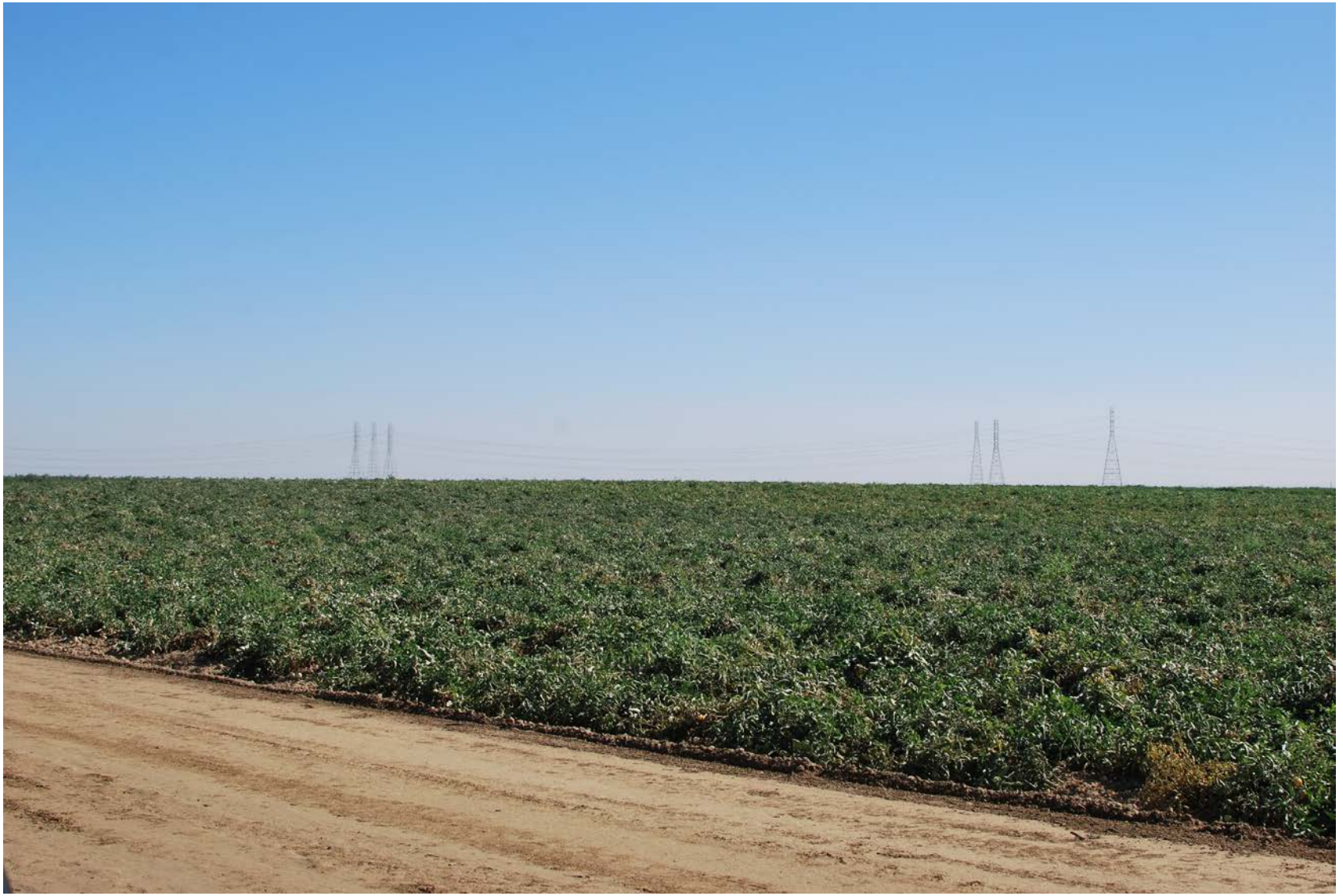


LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

REPRESENTATIVE PHOTOGRAPH 4/KOP2 (LOOKING NORTHWEST)

ARCADIS

FIGURE
4d

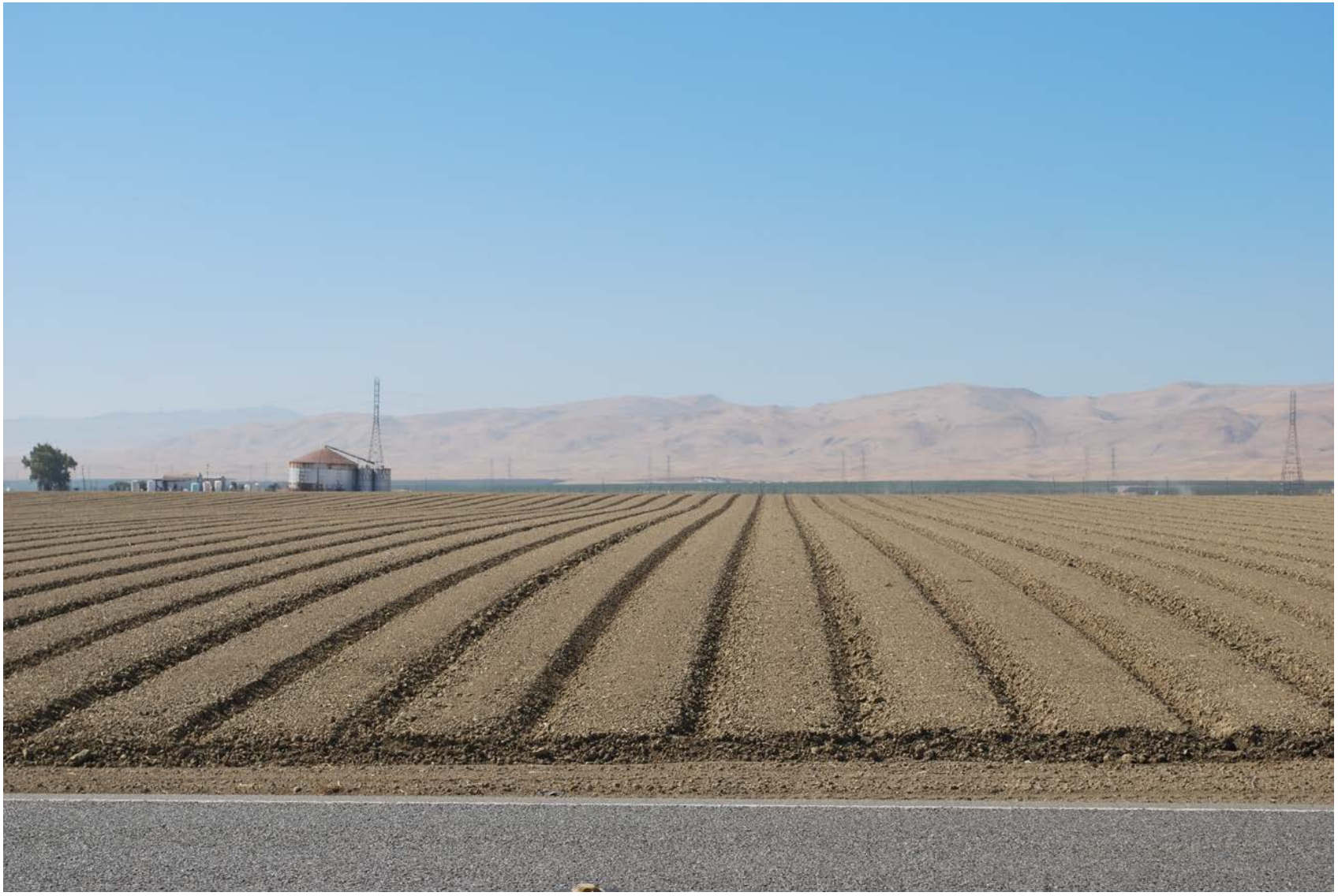


LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

REPRESENTATIVE PHOTOGRAPH 5
(LOOKING NORTHEAST)

ARCADIS

FIGURE
4e

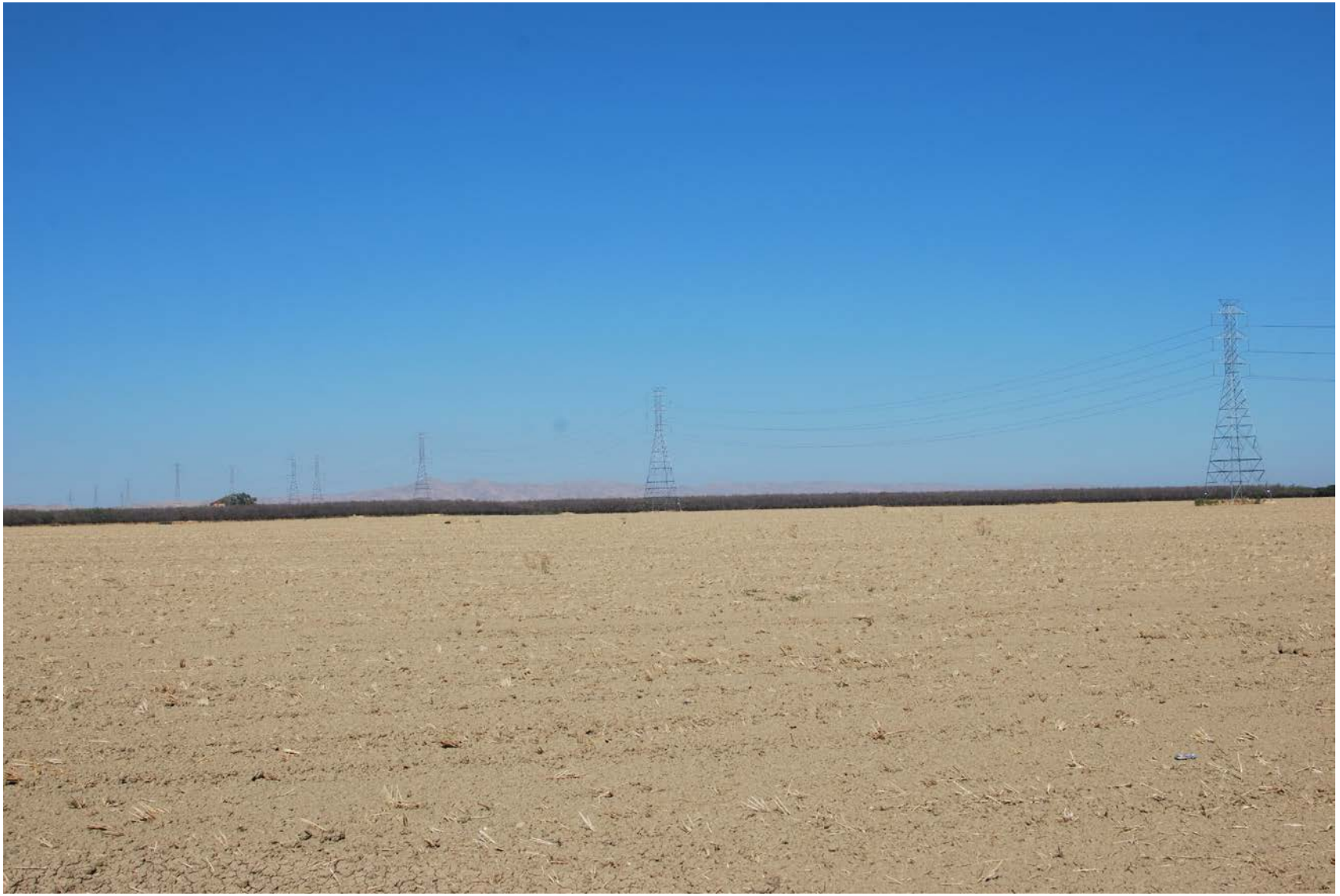


LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

REPRESENTATIVE PHOTOGRAPH 6/KOP3 (LOOKING SOUTH)

ARCADIS

FIGURE
4f

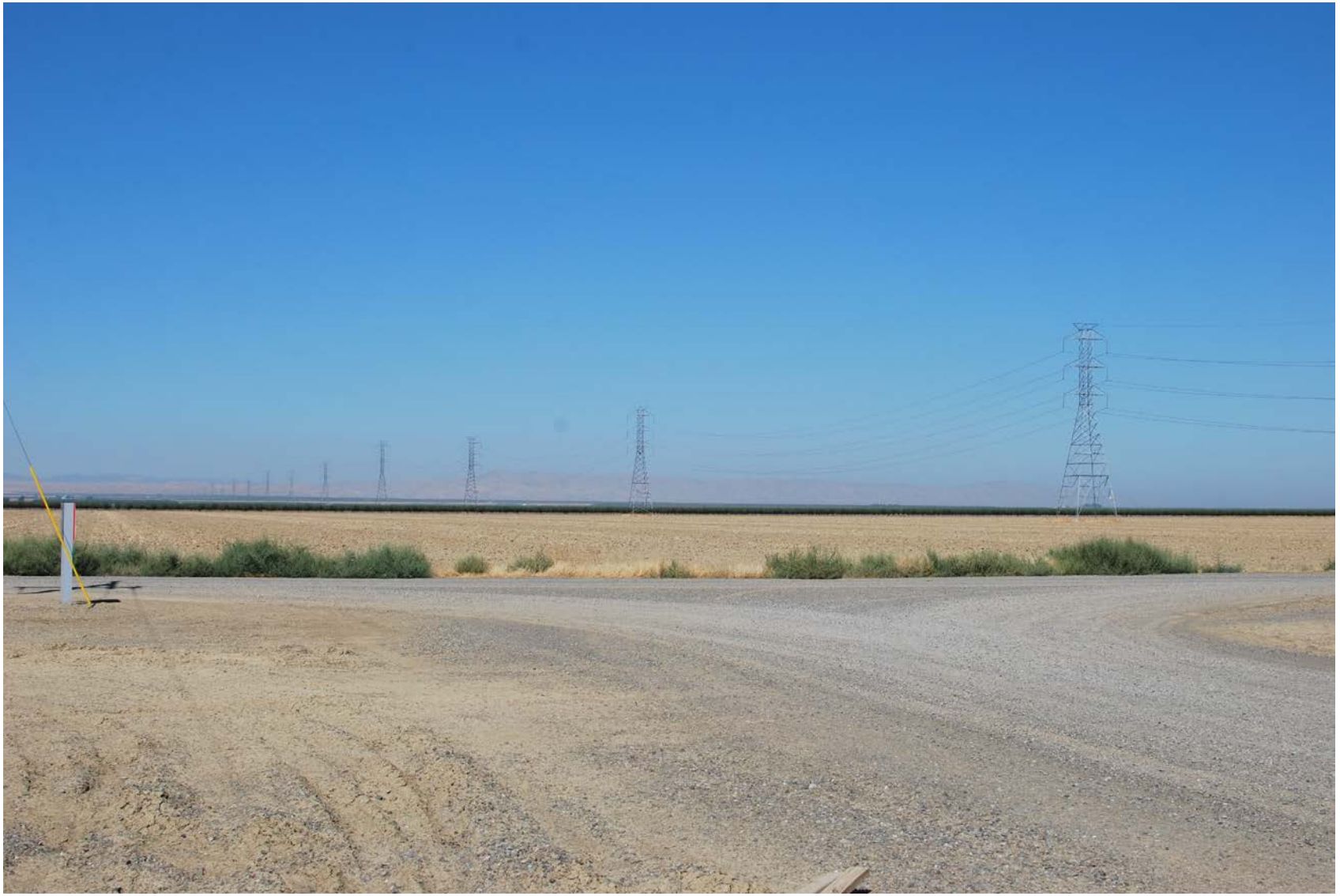


LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

REPRESENTATIVE PHOTOGRAPH 7/KOP4 (LOOKING NORTHWEST)

ARCADIS

FIGURE
4g

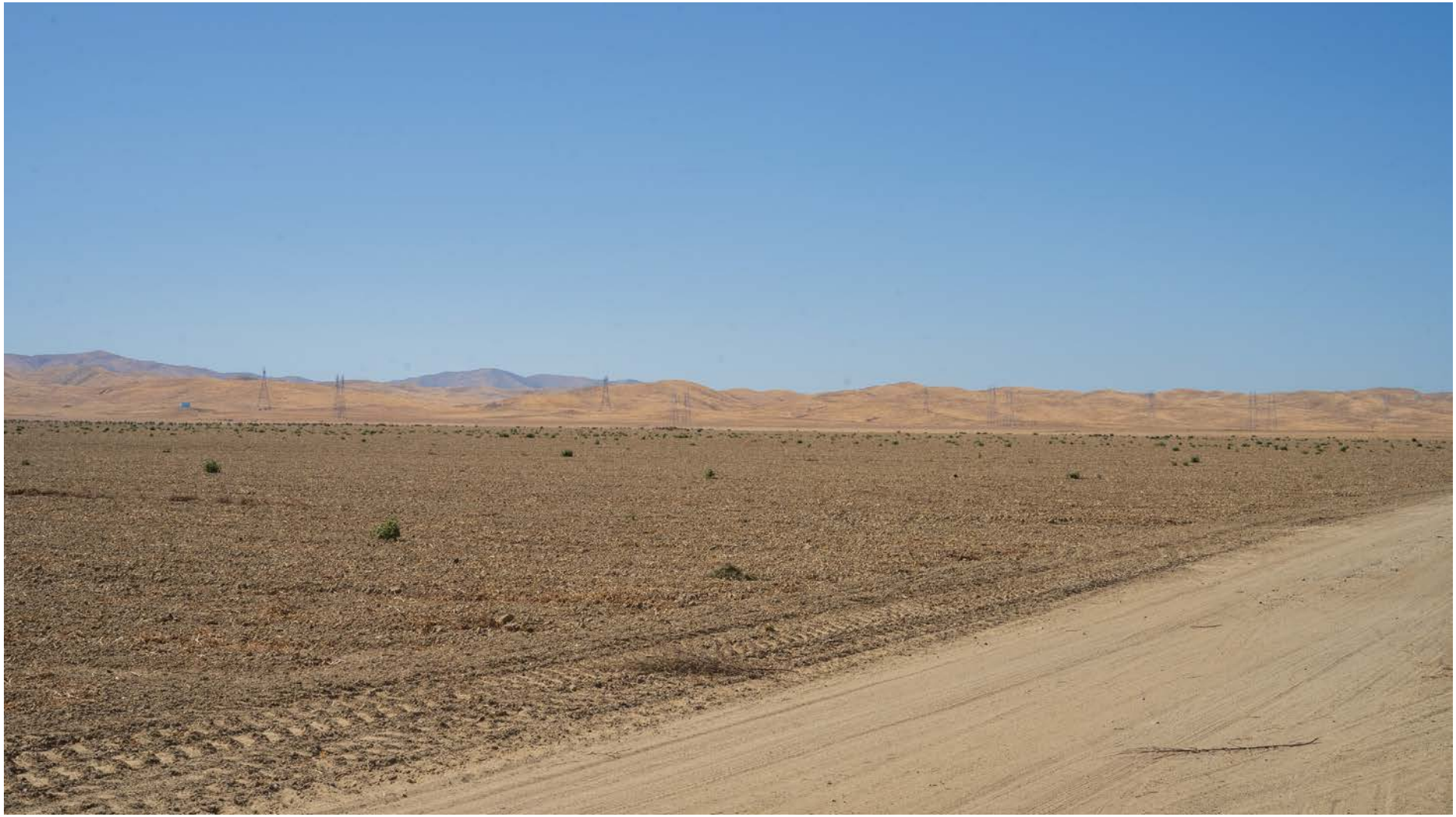


LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

REPRESENTATIVE PHOTOGRAPH 8
(LOOKING WEST-NORTHWEST)

ARCADIS

FIGURE
4h



VISUAL SIMULATIONS COURTESY OF
Visual Environments

LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

KOP1 - EXISTING VIEW

ARCADIS

FIGURE
5a

CITY: NOVI_MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM:
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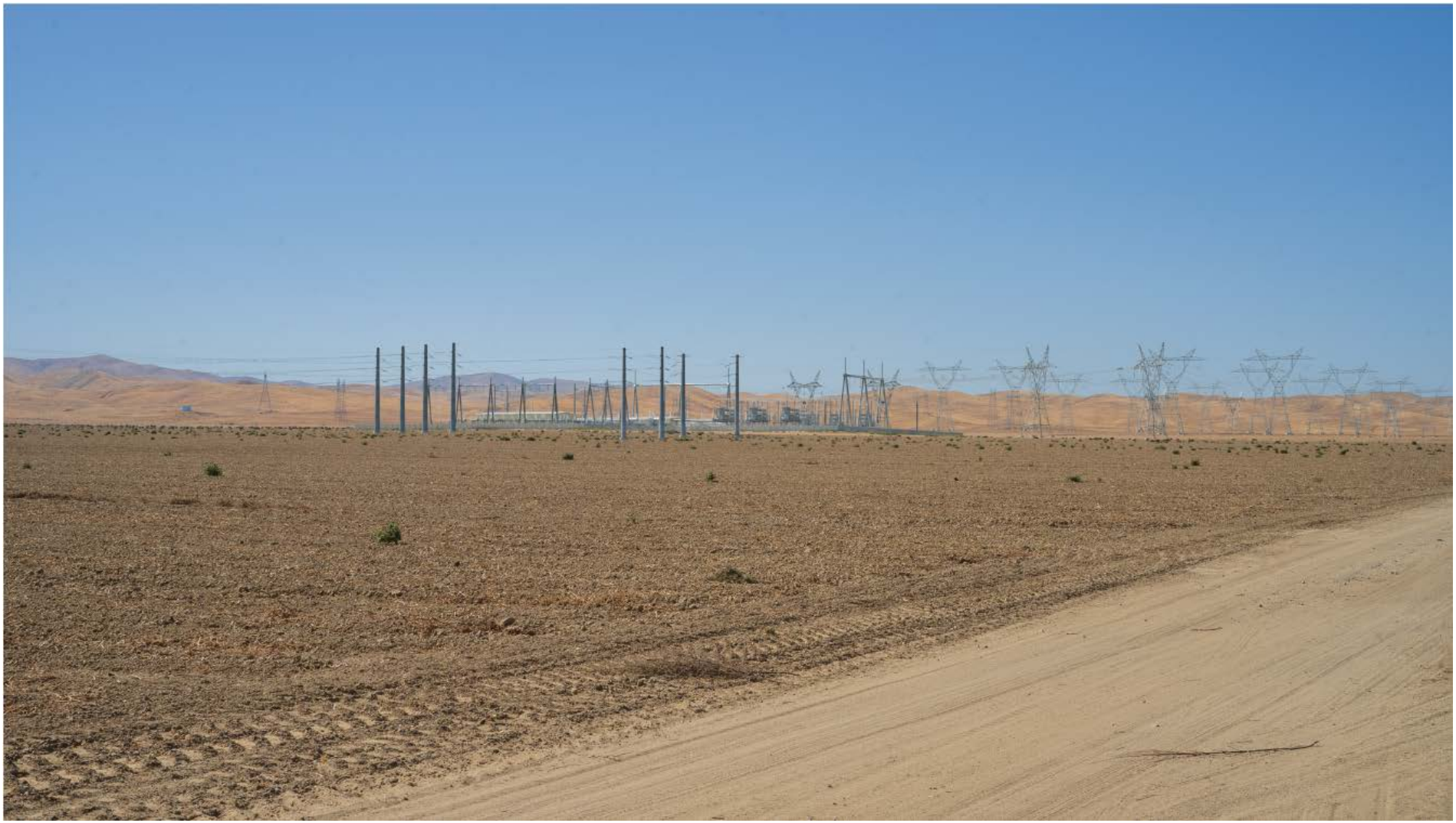

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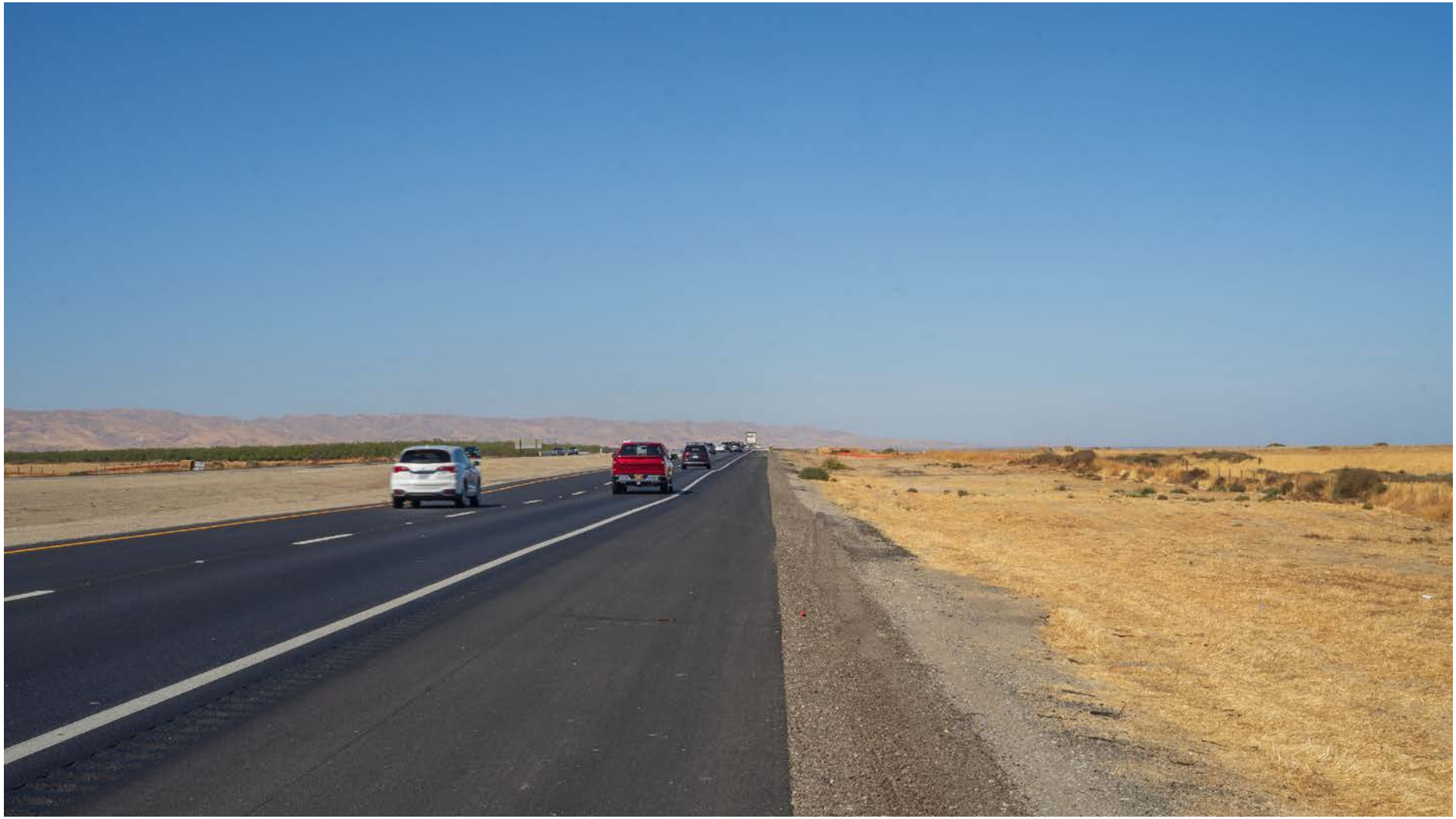
Visual Environments

LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

KOP1 - SIMULATED VIEW

ARCADIS

FIGURE
5b



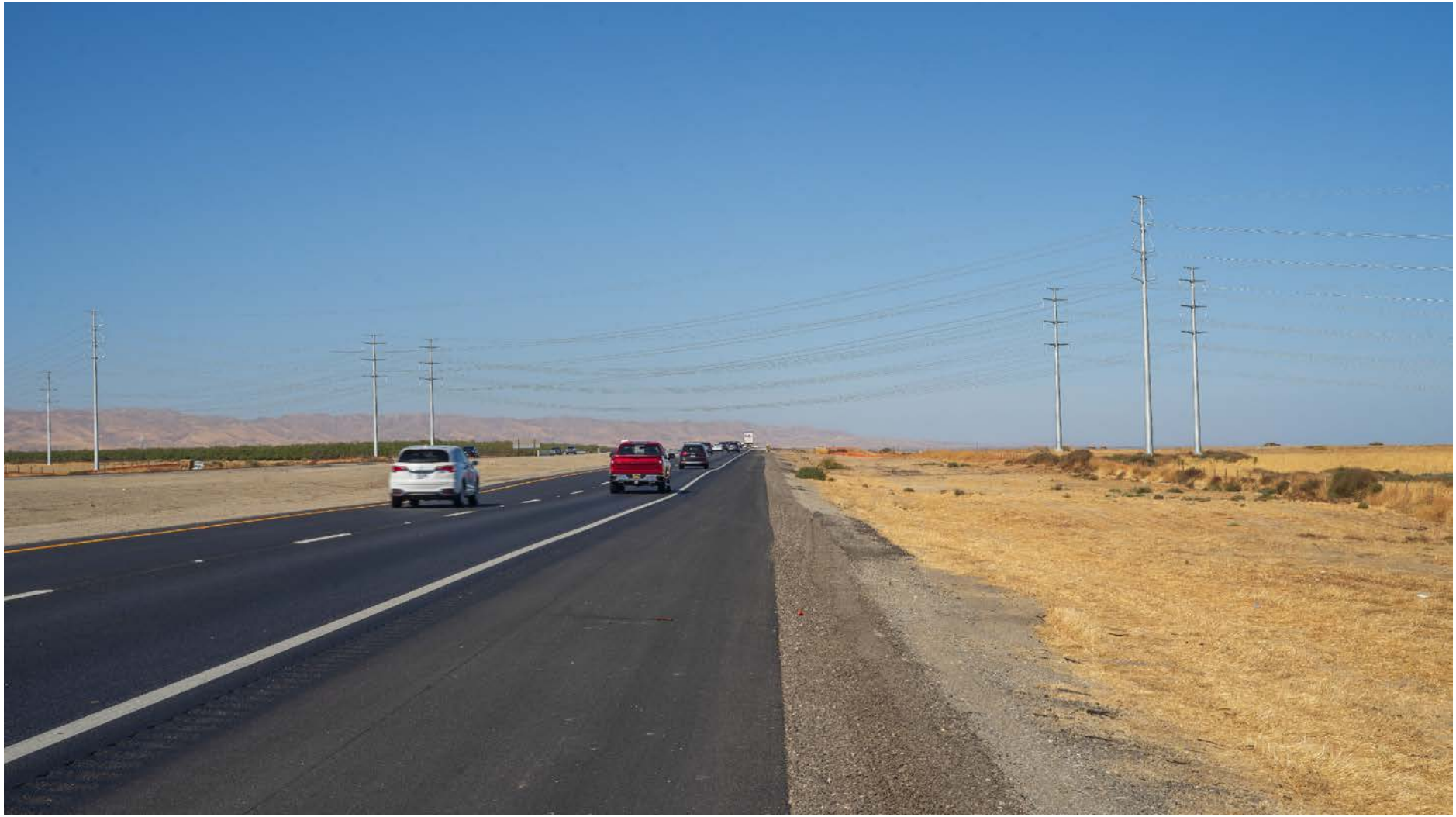
VISUAL SIMULATIONS COURTESY OF
Visual Environments

LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

KOP2 - EXISTING VIEW

ARCADIS

FIGURE
6a



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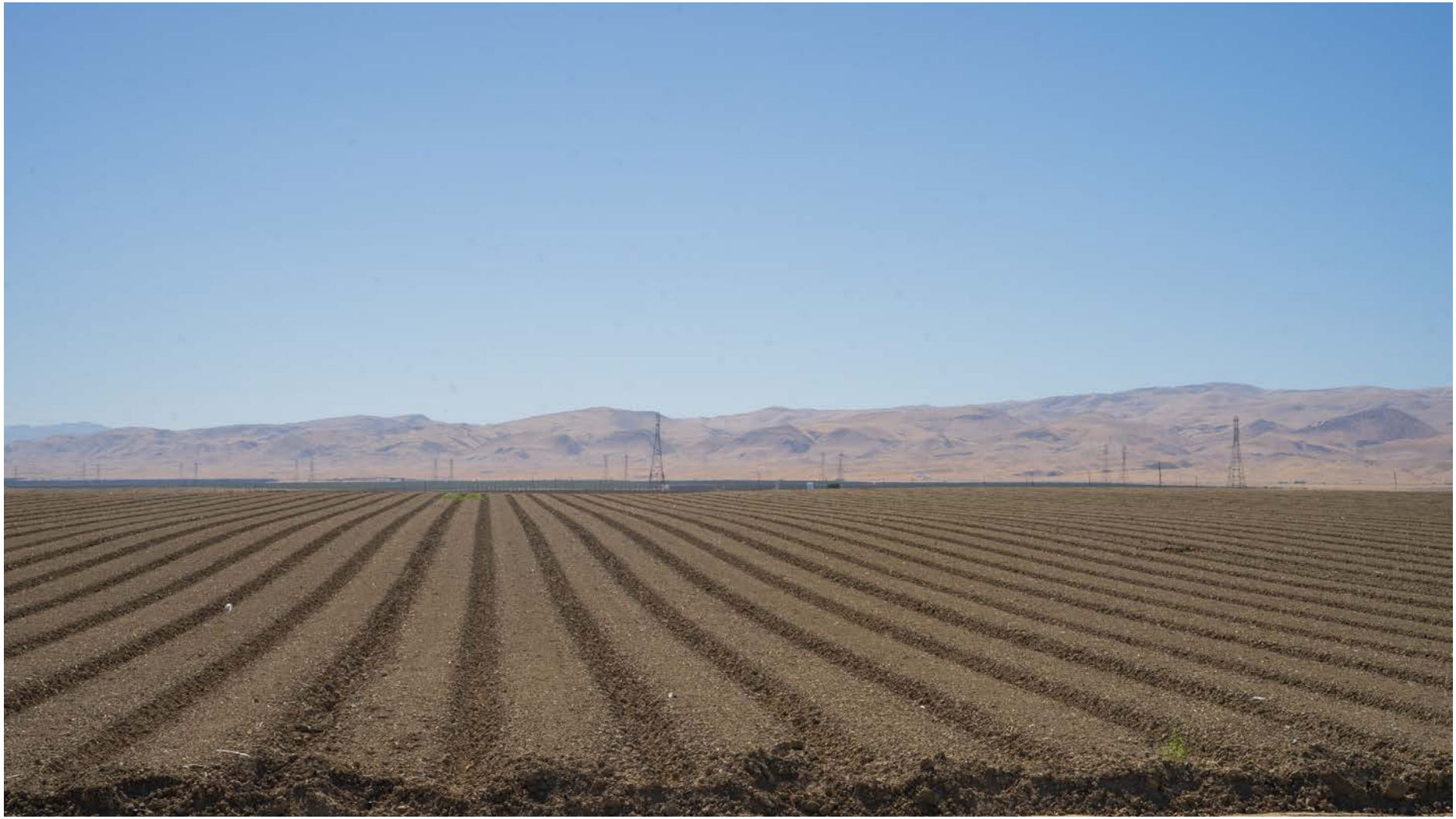
Visual Environments

LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

KOP2 - SIMULATED VIEW

ARCADIS

FIGURE
6b



VISUAL SIMULATIONS COURTESY OF
Visual Environments

LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

KOP3 - EXISTING VIEW

ARCADIS

FIGURE
7a

CITY: NOVI MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM:
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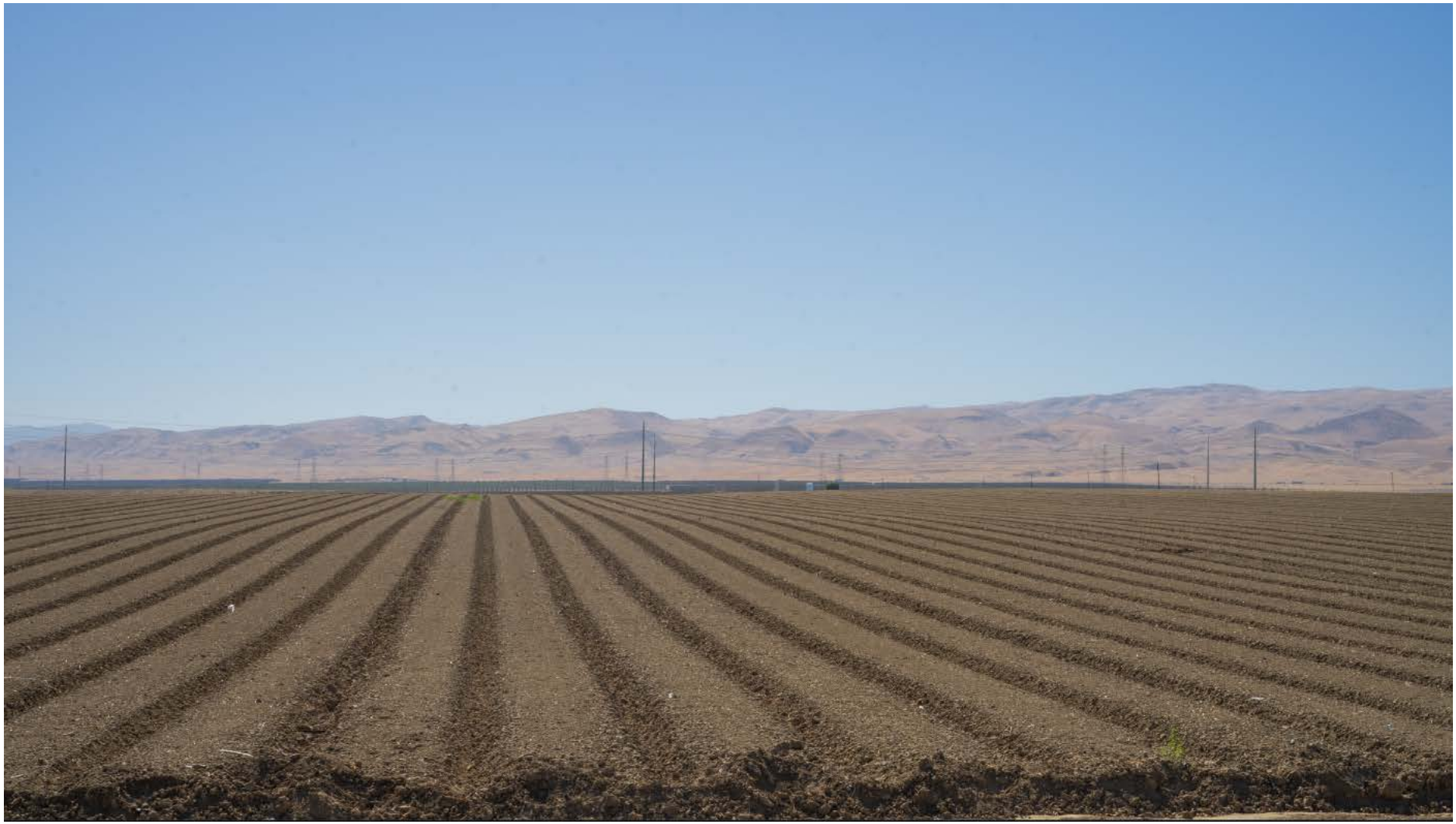


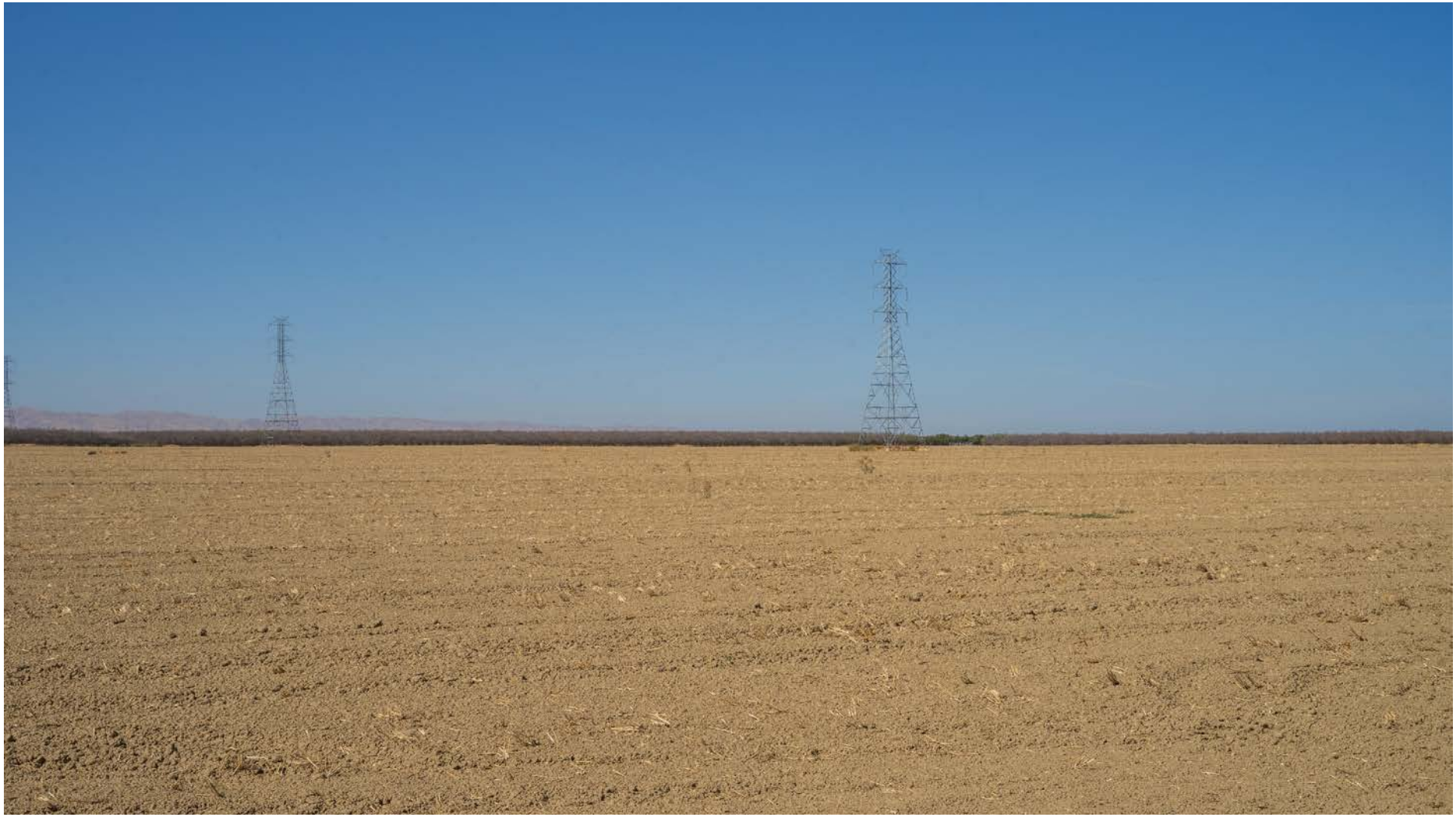
VISUAL SIMULATIONS COURTESY OF
Visual Environments

LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

KOP3 - SIMULATED VIEW

ARCADIS

FIGURE
7b



VISUAL SIMULATIONS COURTESY OF
Visual Environments

LS POWER GRID CALIFORNIA, LLC
MANNING 500/230 KV SUBSTATION PROJECT

KOP4 - EXISTING VIEW

ARCADIS

FIGURE
8a

CITY: NOVI_MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM:
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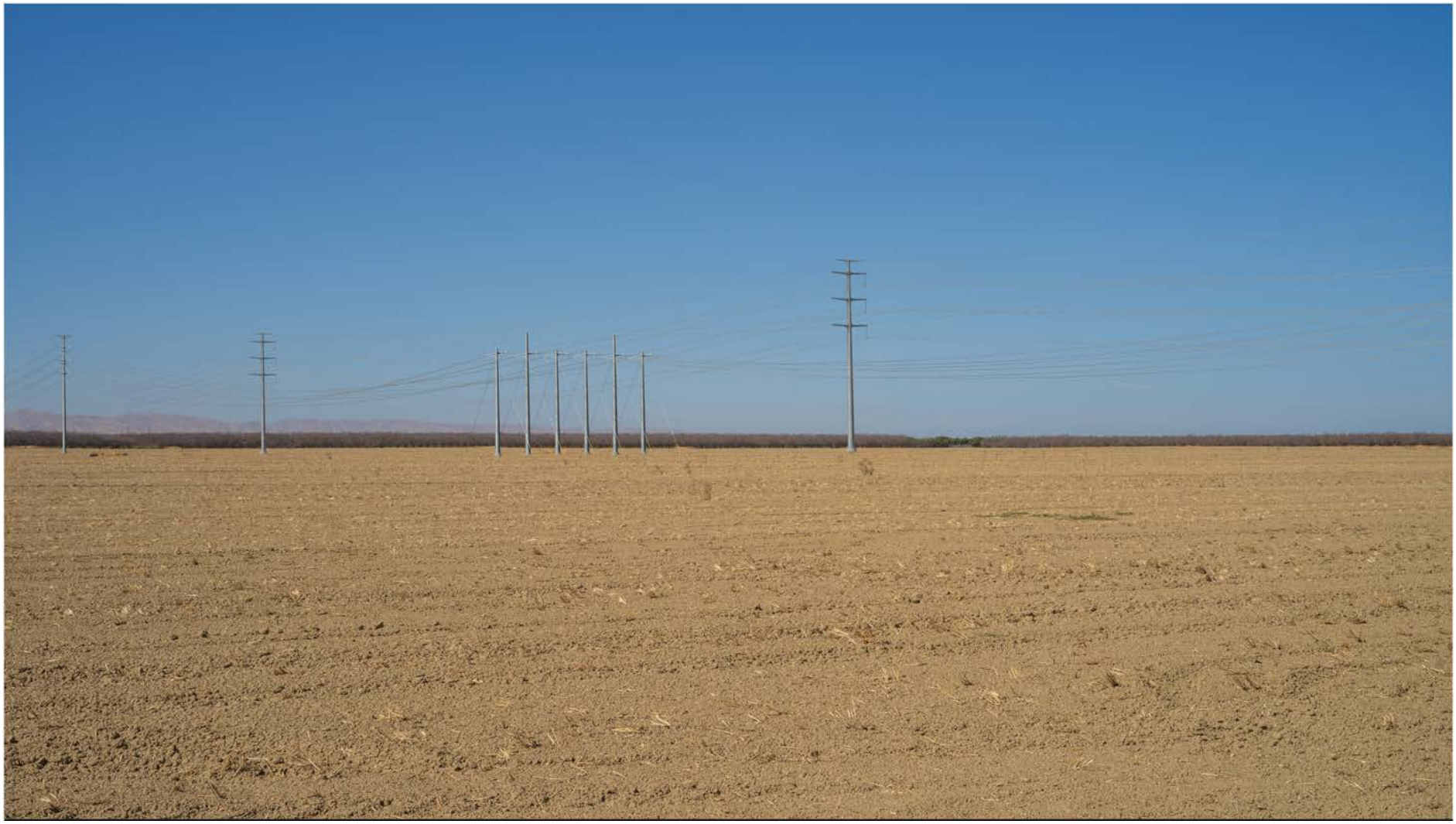

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MANNING 500/230 KV SUBSTATION PROJECT

KOP4 - SIMULATED VIEW

ARCADIS

FIGURE
8b