

**Throughout this Application, all references to Federal Power, Federal Power Avenal, LLC, and Federal Power Avenal refer to Avenal Power Center, LLC.**

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## **LIST OF ACRONYMS**

CHAPTER NO.

8.0

PAGE NO.

8-1

### 6.13 VISUAL RESOURCES

This assessment of visual resources documents existing visual conditions and evaluates the potential change to these conditions from developing the Project. The visual resource analysis evaluates the existing visual character of the area and the type of change that could occur as a result of the Project. The visual change imposed by the Project is influenced by the existing character of the setting, the location of viewpoints open to the public, and the proximity and number of sensitive viewer locations, such as nearby residences. The proposed location for the Project does not contain any identified scenic corridors or nearby residences.

The analytic approach incorporates generally accepted criteria for evaluating visual resources in non-developed rural areas, and relates these criteria to views of selected viewpoints with and without the Project, using computer simulations to illustrate views with the Project. This section also includes: an assessment of the Project's cumulative visual impacts; a description of the laws, ordinances, regulations, and standards relevant to the Project area's visual resources; and a proposed conceptual landscaping plan. The visual resource analysis utilizes a nine-step process presented in Figure 6.13-1 below.

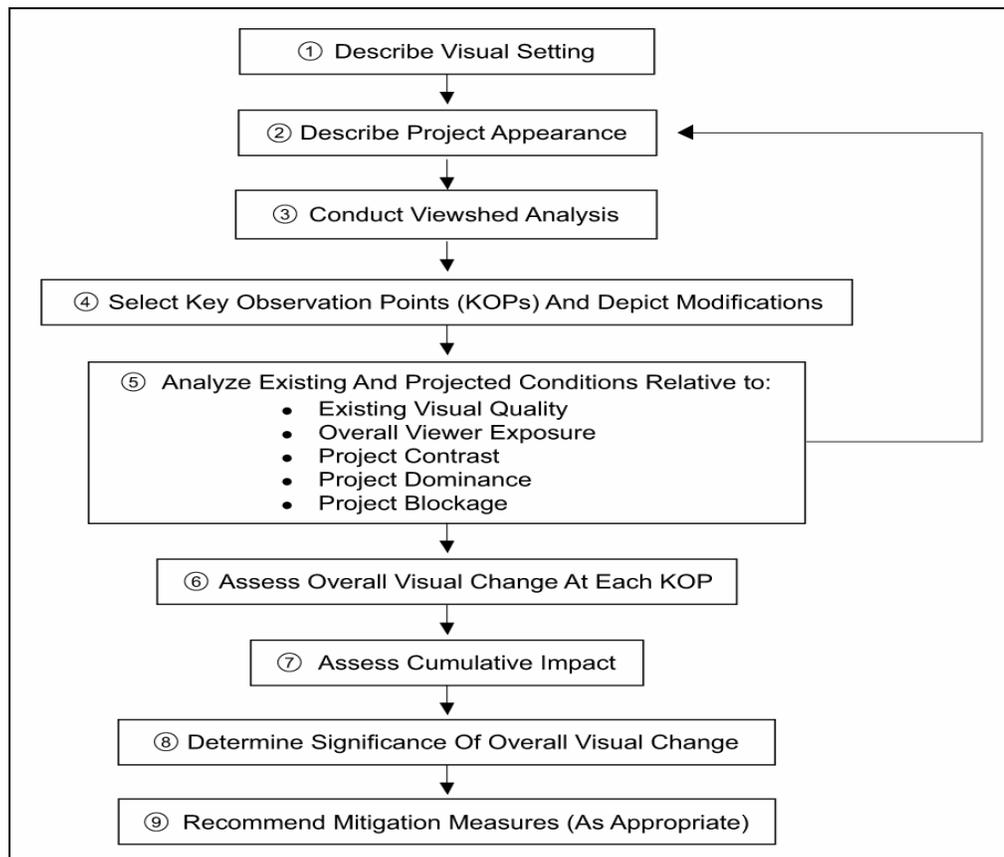


Figure 6.13-1: Visual Resource Analysis Process

### 6.13.1 SUMMARY OF FINDINGS

The San Joaquin Valley is a sparsely populated area (less than one person per acre) dominated by land under agricultural production that is defined by a rectilinear grid of section parcels. Man-made features such as transmission towers, power lines, ranch structures, water irrigation apparatus, and various industrial facilities (e.g., food processing plants, warehouse and transportation hubs, power plants, and gas compressor stations) dot the landscape. The Project vicinity does not contain any identified scenic roadways or scenic vistas. Most public views of the Project would be from the roadways in the Project vicinity. Five representative public view locations were identified with the concurrence of the CEC and City of Avenal staff. These key observation points (KOPs) were located at Interstate 5, along Avenal Cutoff Road at varying distances from the Project, and from a location near the few residences along Orange Avenue, approximately 1.3 miles from the Project. The Project will be developed on approximately 25 acres of a 148-acre Site and sited on the southeast corner of the Site at the maximum distance from Avenal Cutoff Road.

The visual resource analysis considered the quality of the existing environment, as well as the potential visual effect from implementing the Project. The evaluation of the visual setting considered the visual quality and overall viewer exposure at each of the KOPs. The visual quality of the existing landscape was characterized as moderately low to low because of the general lack in both areas of visual interest and spaces that would be perceived of as inviting. The overall viewer exposure was characterized as predominately low because of the relatively brief duration of the views (motorists travel at high speeds along Interstate 5 and Avenal Cutoff Road) and distance of viewers from the Project. Residents along Orange Avenue would not be able to view the Project from Orange Avenue, as all westerly views from the roadway are obscured by a nearby orchard. Drivers traveling westbound along Avenal Cutoff Road experience more extended views near the KOP at the elevated bridge over the San Luis Canal; the overall visual exposure was characterized as moderate at this viewpoint.

The evaluation of the Project effects considered the potential contrast, dominance, and blockage that would be introduced by the facility at each KOP. Contrast was characterized as high at the closest viewpoint and low at the most distant viewpoint. The facility would dominate the view from the entrance road (the closest viewpoint), would be co-dominant with existing landscape features in views from the two other viewpoints along Avenal Cutoff Road, and would be subordinate to other features of the landscape from the most distant viewpoint. View blockage was characterized as low at three viewpoints and moderate at one viewpoint.

The evaluation of the overall visual change resulting from the Project was based on ratings of visual quality, overall viewer exposure, contrast, dominance, and blockage. Features incorporated into the Project to reduce visual impacts, namely, the siting of the Project at the southeast corner of the 148-acre Site, were considered when evaluating the potential visual change. Because visual quality, viewer exposure, contrast and blockage were predominantly rated moderate to low, and the Project exhibited a relationship to other features of the landscape that was more than co-dominant at only one viewpoint, the overall visual change was characterized as neutral at each of the five KOPs. The Project was determined to have a less-than-significant impact to scenic vistas and visual character, and it would not be the source of any new substantial light or glare.

### 6.13.2 VISUAL SETTING

The Site is located in the agricultural region of southwestern San Joaquin Valley, approximately two miles east of Interstate 5, in the Avenal city limits (Figure 6.13-2). Avenal Cutoff Road provides access to the Site from Interstate 5 and from communities such as Lemoore and Hanford, northeast of the Site. The Site is relatively flat with elevations ranging from approximately 360 feet to approximately 320 feet above sea level. Bordering the Site are the City of Avenal's water treatment facility, the San Luis Canal, and land under agricultural production. The City of Avenal's residential and business district is approximately six miles southwest of the Project, visually separated from the Site by the Kettleman Hills. There are no designated scenic highways, roads, or corridors in the Project vicinity.



Figure 6.13-2: Project Location

The Project area's landscape character is defined by features occurring naturally in the landscape and features that have been introduced by man into the landscape. For this analysis, the naturally occurring landscape features are called landscape units, while those introduced by man are called man-made features. The San Joaquin Valley and Kettleman Hills comprise the two landscape units in the Project area, and have undergone extensive development activity to enable production of agricultural and industrial products. Man-made features located throughout the landscape include paved roadways, transmission line structures, the San Luis Canal, the City of Avenal water treatment facility, ranch structures, industrial facilities, water pumping station standpipes, communication towers, and land under agricultural production. Figure 6.13-3, on the following page, illustrates the location of the landscape units and man-made features in the Project vicinity.

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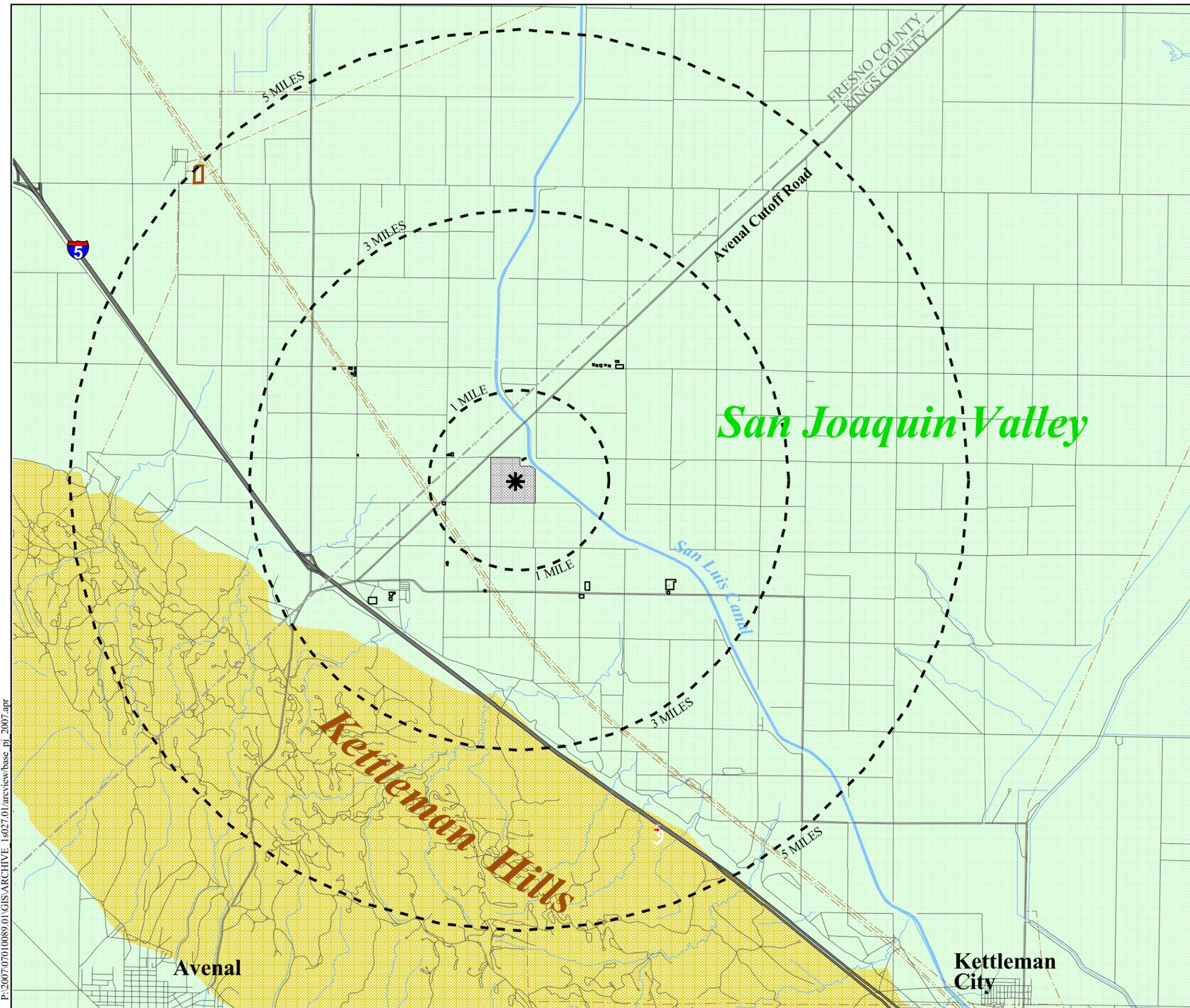
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## Landscape Units and Man Made Features

-  Kettleman Hills
-  Central Valley  
Agricultural Production

### Man-made Features

-  County Boundary
-  Interstate Highway
-  Transmission Lines
-  San Luis Canal
-  Roads
-  Nearby Existing Structures
-  New Project Location



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Source: USGS / EDAW 2007



Scale 1 : 72,000  
1" = 6000 feet



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Figure 6.13-3

Figure 6.13-3 Landscape Units and Man-made Features  
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### 6.13.2.1 Landscape Units

#### San Joaquin Valley

The San Joaquin Valley is dominated by land under agricultural production defined by a rectilinear grid of section parcels. The landscape is dotted with man-made features such as transmission tower lines, ranch structures, and water irrigation apparatus (Figure 6.13-4).



*Figure 6.13-4: View of Project Vicinity*

#### Kettleman Hills

The Kettleman Hills are approximately two miles west of the Site and rise 110 to 1,200 feet above the City of Avenal and the San Joaquin Valley. They are sparsely vegetated, have oil wells and oil pipelines, and contain a few scattered ranch houses (Figure 6.13-5).



*Figure 6.13-5: Kettleman Hills from Avenal Cutoff Road*

### 6.13.2.2 Man-Made Features

#### Interstate 5 Freeway

Interstate 5 runs parallel to the Kettleman Hills approximately two miles from the Site (Figure 6.13-6). It is slightly elevated above the valley floor at the edge of the Kettleman Hills. Interstate 5 is a four-lane freeway that carries approximately 34,500 vehicles per day (with a capacity of 80,000 vehicles per day). It is not a designated scenic highway.



*Figure 6.13-6: Interstate 5 Freeway at Avenal Cutoff Road Overpass*

#### Transmission Line Structures

Numerous PG&E high-voltage transmission lines, ranging in height from 120 to 150 feet, pass within 3,000 feet of the Site. They run north to south, encompassing agricultural lands within their rights-of-way. The structures are characterized by multiple, galvanized steel members, laced together to form steel towers (Figure 6.13-7).



*Figure 6.13-7: Existing Transmission Line Structures*

### San Luis Canal

The San Luis Canal winds through the Project area. The canal is protected by levees on each side, with maintenance roads located on top of the levees. It is at an elevation of approximately 320 feet above sea level, which is above the elevation of the surrounding land, and is approximately 150 feet wide (Figure 6.13-8).



*Figure 6.13-8: San Luis Canal Near Site*

### Avenal Cutoff Road

Avenal Cutoff Road provides access to the communities north of the Site from Interstate 5 and from the communities of Hanford and Lemoore. It is a two-lane paved and striped arterial roadway carrying approximately 5,030 vehicles per day (Figure 6.13-9). There are no lights or stop signs along the road in the Project area. It is not a designated scenic highway.



*Figure 6.13-9: Avenal Cutoff Road Looking Northeast*

**Water Treatment Facility**

The City of Avenal's water treatment facility, located adjacent to the San Luis Canal, is comprised of low-rise brown corrugated steel buildings with a few cylindrical, blue-colored storage tanks of various sizes along the perimeter (Figure 6.13-10). The treatment facility is enclosed by cyclone fencing with lighting placed above the fence line. Vertical light fixtures are also placed throughout the interior of the facility.



*Figure 6.13-10: Water Treatment Facility*

**Agricultural Production**

The primary use of land in the Project area is for agricultural production (Figure 6.13-11). Parcels planted with irrigated almond and orange orchards, and row crops such as tomatoes, cotton, and barley dominate the area. The orchards are in varying degrees of maturity. Those in the immediate Project area are relatively young (planted in 2001).



*Figure 6.13-11: Land Under Agricultural Production*

**Ranch Structures/Farm Equipment Areas**

Ranch structures are interspersed throughout the Project area (Figure 6.13-12). These structures are generally one to two stories high and constructed of wood and metal. They are typically bordered by concentrated plantings of larger trees typically visible from afar and shrubs that separate the structures from the outlying agricultural land.



*Figure 6.13-12: Farm Equipment Storage North of Avenal Cutoff Road*

**Water Pumping Station Standpipes**

Water pumping station standpipes are used throughout the agricultural land. They are vertical towers, approximately 60 to 100 feet high, that are usually painted white (Figure 6.13-13).



*Figure 6.13-13: Water Pumping Station Standpipe Near Avenal Cutoff Road*

## 6.13.3 PROJECT APPEARANCE

## 6.13.3.1 Power Plant

The Applicant will construct and operate a combined-cycle electric power generating plant and ancillary facilities on approximately 25 acres of a 148-acre parcel. The proposed Site layout is illustrated on Figure 6.13-14 below. Project elevations are illustrated on Figure 6.13-15 and an isometric view of the Project is provided on Figure 6.13-16. The dimensions of the major Project features are summarized in Table 6.13-1, along with the materials with which they will be constructed. The color of all major Project features will be characterized by a neutral palate of warm tones.

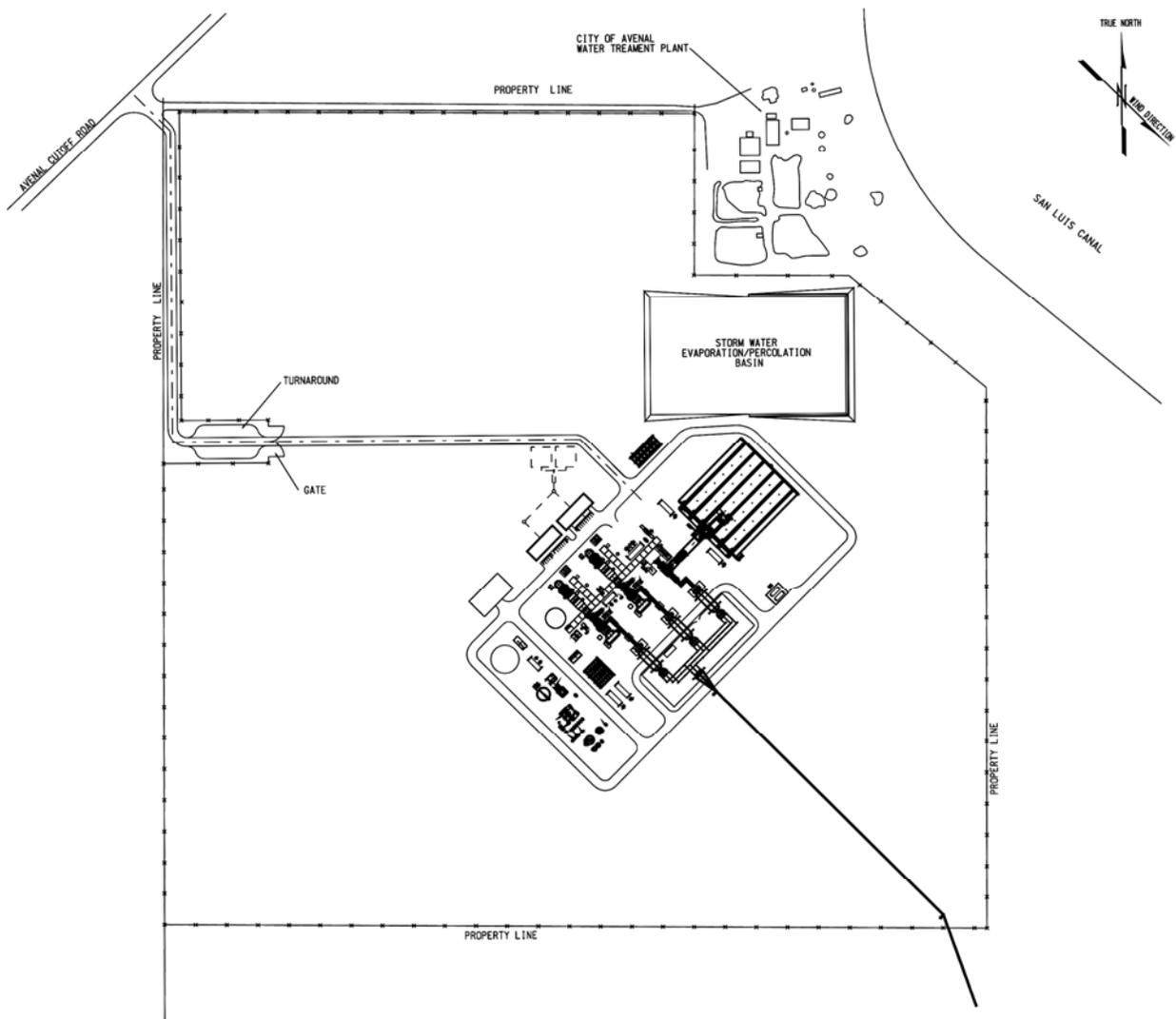


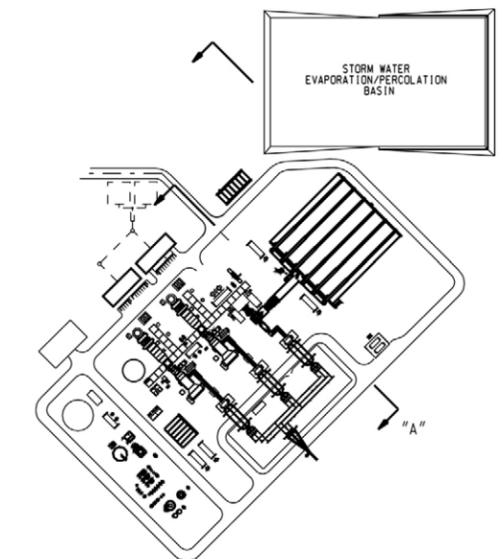
Figure 6.13-14: Project Site Layout

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## Elevation Views Conceptual Design

### KEY



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Figure 6.13 -15

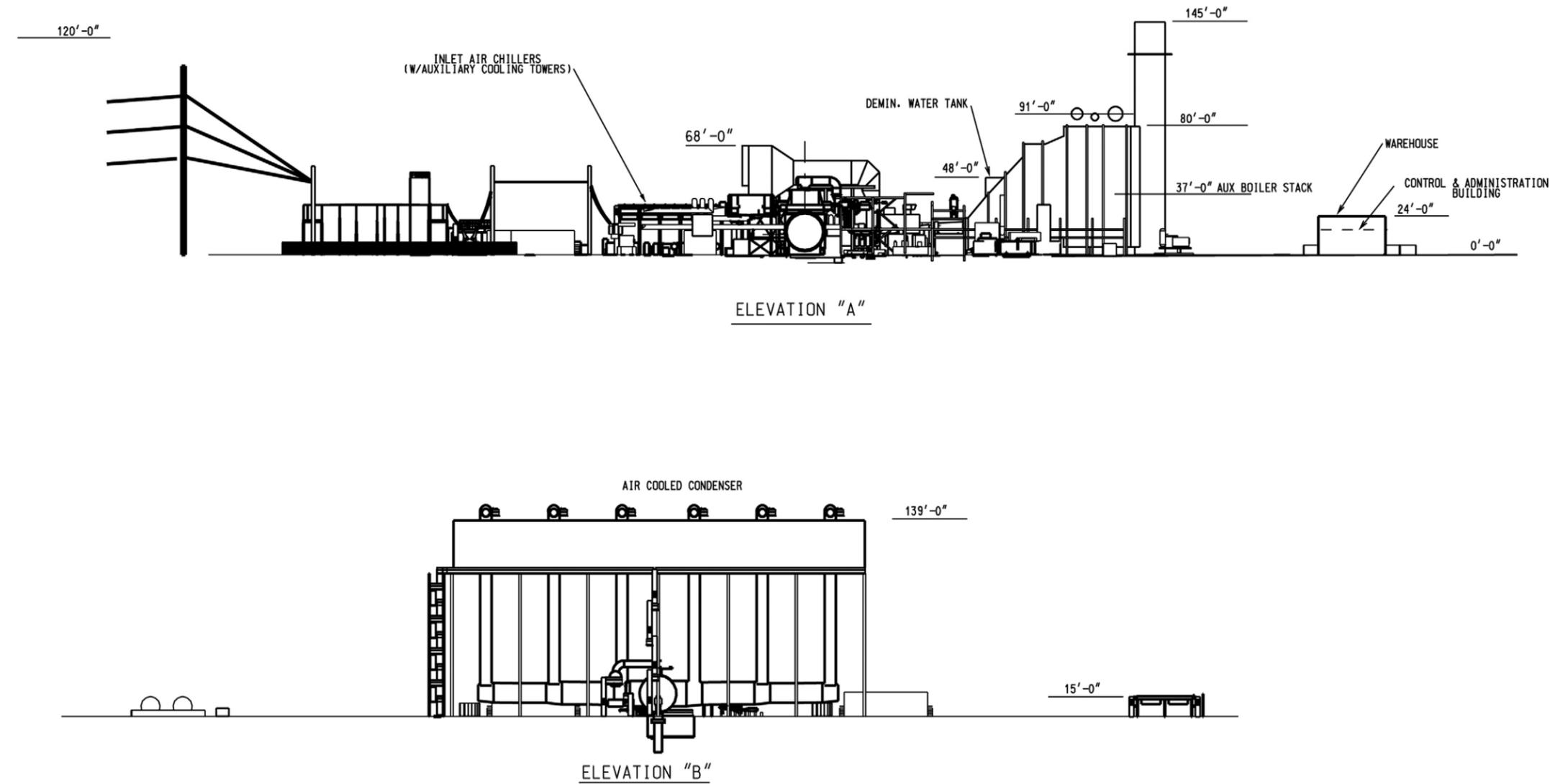


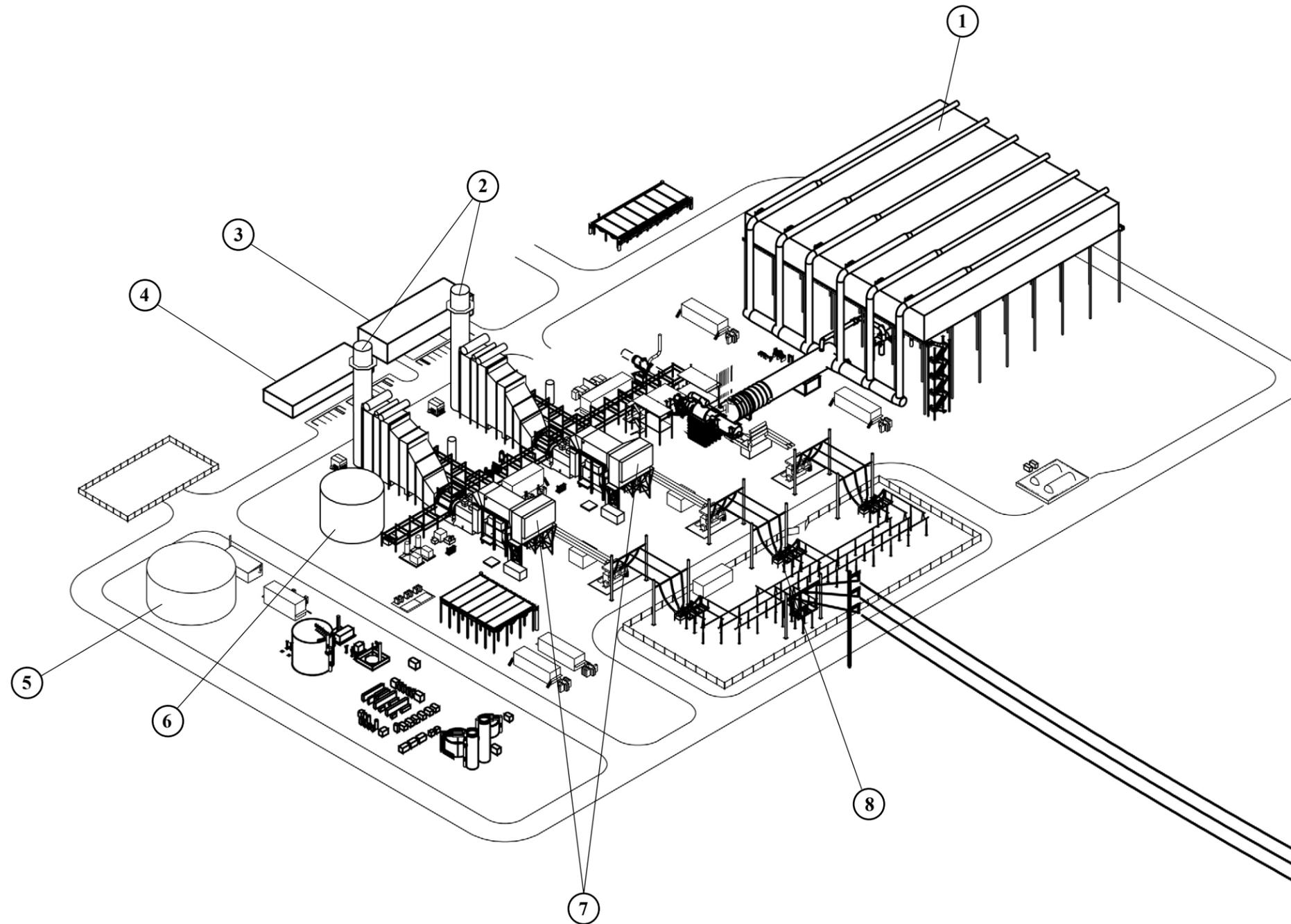
Figure 6.13-15 Project Elevations

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## **Isometric View Conceptual Design and Major Project Features**



1. Air Cooled Condenser
2. Heat Recovery Steam Generators (HRSGs)
3. Warehouse
4. Control and Administration Building
5. Raw Water / Firewater Storage Tanks
6. Demineralized Water Storage Tank
7. Combustion Turbine Generator (CTG) Air Inlets
8. Switchyard

Not to Scale

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Figure 6.13-16 Isometric View of Project

11x17 – BACK

TABLE 6.13-1

## DIMENSIONS OF MAJOR PROJECT FEATURES

Feature	Height (feet)	Length (feet)	Width (feet)	Diameter (feet)	Materials
Air Cooled Condenser	139	278	258		Composite
Heat Recovery Steam Generators (HRSGs)	80	125	35		Steel
HRSG Stacks	145			19	Steel
Warehouse / Maintenance Building	24	120	40		Pre-Engineered Steel
Administration Building	15	120	40		Pre-Engineered Steel
Raw Water/Fire Water Storage Tank	40			65	Steel
Demineralized Water Storage Tank	32			40	Steel
CTG Air Inlet	55	60	45		Steel
Main Transformers	25	29	16		Steel
Transmission Tower	100				Steel Poles

Source: Fluor Daniel, August 2007

### 6.13.3.2 Water and Natural Gas Pipelines

Water pipelines will be installed underground and above-ground activity will occur in already disturbed areas. The gas pipeline will be buried over most of its alignment and will be located entirely within the paved width of the roads and the dirt shoulders that have no cover vegetation. Any visual effects associated with the pipelines would be restricted to the construction phase, as surface conditions will be restored. During construction, the area along the rights-of-way would be temporarily disrupted by machinery, excavated piles of dirt, construction vehicles, and other disturbances associated with pipeline construction. These effects, however, would be minor and temporary.

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### 6.13.3.3 Design Considerations for Reduced Visual Impact

The following considerations were made during the design and planning phases of the Project for the purpose of reducing the Project's visual impact:

- The Site is located approximately two miles from Interstate 5 at an elevation approximately 200 feet lower than the freeway, which reduces visibility from Interstate 5.
- The Project has been sited so that the facility is mostly in the southeastern quarter of the Site, reducing visibility from Avenal Cutoff Road.
- The transmission lines extend from the back of the power plant to the southeast corner of the Site to reduce visibility from Avenal Cutoff Road.
- The Project has been oriented parallel to Avenal Cutoff Road to minimize the mass of the structure when viewed from the road.
- A conceptual landscaping plan that incorporates agricultural patterns of the area is included as part of the Project (see 6.13.3.4). The final landscaping plan will be coordinated with the City of Avenal and provided to the City for review.
- Landscaping will be actively maintained in accordance with general farming practices for weed and dust management.

### 6.13.3.4 Conceptual Landscape Plan

The conceptual landscape plan softens the transition between the Project's industrial character and its agricultural setting. The agricultural patterns that exist in the land surrounding the Project Site are extended into the Site. Row crops (e.g., barley, wheat, onions, peppers, lettuce, melons, or tomatoes) surround the facility on all sides and extend to the edges of the Project Site, covering land unoccupied by the facility. The main access road from Avenal Cutoff Road to the facility is lined by trees that are similar in species and scale to those growing in the orchards adjacent to the Project Site. The main gate to the facility along the access road is signified by the presence of medium-height broadleaf trees (e.g., blue oak or a species of tree that would be similar in height – approximately 25 feet – at maturity). Broadleaf trees are also clustered around the edge of the facility for the purpose of providing shade on-site and in order to soften the edge between agriculture and structure at the base of the buildings. The trees introduce vertical elements into the landscape surrounding the facility. The conceptual landscape plan is illustrated in Figure 6.13-17.



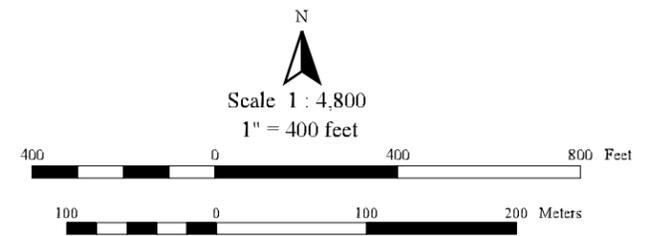
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## Conceptual Landscape Plan on Air Photo

-  ALMOND TREES
-  MEDIUM HEIGHT BROADLEAF TREES
-  NON-IRRIGATED GRASSES
-  ROW CROPS
-  KEY OBSERVATION POINT (KOP) ACTUAL LOCATION
-  KEY OBSERVATION POINT - LOCATED OUTSIDE PHOTO BASE

Note: To ensure consistency with all City zoning ordinance requirements, a detailed landscape plan will be developed and submitted to the City of Avenal for approval prior to project construction.



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Figure 6.13 -17

Figure 6.13-17 Conceptual Landscape Plan

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The Site is in an area zoned for industrial use by the City of Avenal. The conceptual landscape plan for the Project is designed to preserve views of the Project facilities from Avenal Cutoff Road. This is done in response to requests from the City of Avenal to allow the Project to be seen and represent the industrial development planned for the area. As such, the conceptual landscape plan is not intended to provide screening of the Project, and the facility will be visible from points throughout the surrounding landscape. The landscaping will be actively maintained for weed and dust control.

#### 6.13.3.5 Night Lighting

There are no major sources of night lighting in the immediate vicinity of the Site, though the water treatment plant adjacent to the Site includes a number of downward-facing lights and is a source of localized night lighting. During construction of the facility, there will be no nighttime activity and thus no construction areas will be lit at night. As major equipment is installed, fixtures will be lit for security and safety reasons. The permanent lighting system for the facility will consist of approximately 400 480-volt, high-pressure sodium outdoor fixtures. Outdoor fixtures will not be aimed directly at neighboring areas adjacent to the plant, and down-shields will be installed to limit the escape of light from the site. Control of lighting for exterior areas will be by automatically cycling photocells. Night lighting for the Project would illuminate the facility sufficiently to ensure safe working conditions.

#### 6.13.3.6 Visible Water Vapor Plume

Under most circumstances, no visible water vapor plumes will be seen emanating from the plant's HRSG stacks. There may be a few occasions during the year when temperatures are low and humidity is high that condensed steam may be visible at the top of the stacks. These conditions are expected to occur primarily at night and in the early morning hours.

Table 6.13-2 presents the HRSG exhaust design parameters that affect visible plume formation, as required by Commission Power Plant Site Certification Regulations, Appendix B (g) (6) (E). These data were based on six of the cases analyzed by Sierra Research. These parameters are discussed in greater detail in Section 6.2, Air Quality.

TABLE 6.13-2

## HRSG EXHAUST DESIGN PARAMETERS

Case No.	Ambient Temperature, °F:	Load and Duct Burner Conditions	Stack Flow lb/hr	Stack Temperature, °F:	H2O (Moisture Content) – percent by weight
1	101°F	Full Load w/ DB <sup>(1)</sup>	3,653,000	195.3	6.81%
5	63°F	Full Load w/ DB <sup>(1)</sup>	3,650,000	184.9	6.47%
9	32°F	Full Load w/ DB <sup>(1)</sup>	3,759,000	189.0	5.86%
2	101°F	Full Load w/ no DB	3,628,000	207.4	5.39%
6	63°F	Full Load w/ no DB	3,630,000	198.8	5.32%
10	32°F	Full Load w/ no DB	3,743,000	200.9	4.99%

Source: Fluor Daniel, Sierra Research, October 2007

(1) Includes duct burner firing only up to plant maximum output of 600 MW.

#### 6.13.3.7 Transmission Line Route

The proposed single-circuit, 230-kV transmission line route would extend approximately 7,000 linear feet south and west from the onsite switchyard to an existing PG&E regional transmission line corridor, and then northward along the existing transmission line corridor approximately five miles to the existing Gates substation where the Project will connect to the grid. As described in Chapter 2, there would be tubular, 120-foot tall, steel-pole towers associated with the transmission line. A full-page color photo depicting a representative section of the transmission line route prior to construction and a full-page color photo-simulation of the representative section after transmission line construction are presented in Section 6.13.7.

#### 6.13.4 VIEWSHED ANALYSIS

Figure 6.13-18 provides a generalized indication of the areas from which the Project is likely to be visible (“viewshed”). The viewshed figure is developed from a terrain model base, and therefore does not represent trees, structures, and other features in viewers’ immediate foreground that might block views toward the Project. Orchards, residential landscapes, and farm vehicle storage facilities in the Project vicinity could block views toward the Project.

Because of the generally flat terrain in the Project vicinity, the viewshed analysis indicates potential Project visibility beyond five miles. However, the model does not consider haze and other atmospheric conditions. In actuality, views from more than three miles away would become part of the background, the landscape zone in which little color or texture is apparent, colors blur into values of blue or gray, and individual visual impacts become least apparent (USDA Forest Service, 1973). The boundaries of the area of potential visibility were therefore set at three miles from the Project.

There are very few structures located within three miles of the Project. The population density in the valley is less than one person per acre, with most of the land used for agricultural production. A few residences are located along Orange Avenue and along Plymouth Avenue over one mile away from the Project. A farm office is located less than one mile north of the Project and visually separated from Avenal Cutoff Road by farm outbuildings and equipment. The remaining land area within three miles of the Project is comprised of industrial facilities (PG&E compressor station, San Luis Canal, transmission towers, Kochergan Farms composting facility), roadways, farm-related structures, and various orchards and row crops.

The largest number of public viewers of the Project would be motorists traveling on the roadways in the Project vicinity (Interstate 5, Avenal Cutoff Road, Plymouth Avenue, and Orange Avenue). Motorists travel at high speeds along Interstate 5 and Avenal Cutoff Road. A rest area along Interstate 5 located slightly more than three miles north of the Project could provide an opportunity for more extended views toward the Project; however, views from the rest area are obscured by orchards, shrubs, and on-site structures.

Views toward the Project from motorists traveling along Interstate 5 would be periodically blocked by berms and related landscaping bordering the freeway. Motorists traveling northeast along Avenal Cutoff Road would have a distant, unobstructed view of the Project Site from the elevated freeway overpass. After descending from the overpass, motorists would view the Project through the existing transmission towers and related agricultural infrastructure, as well as

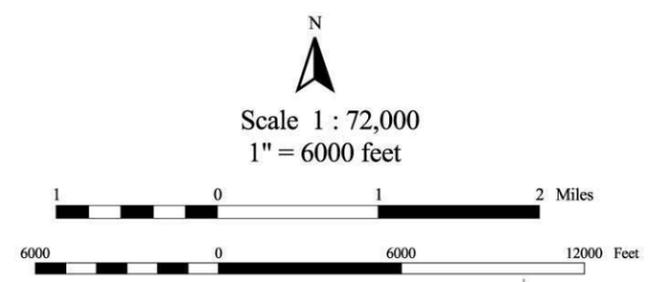
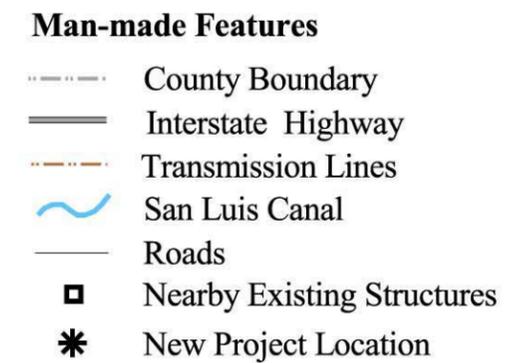
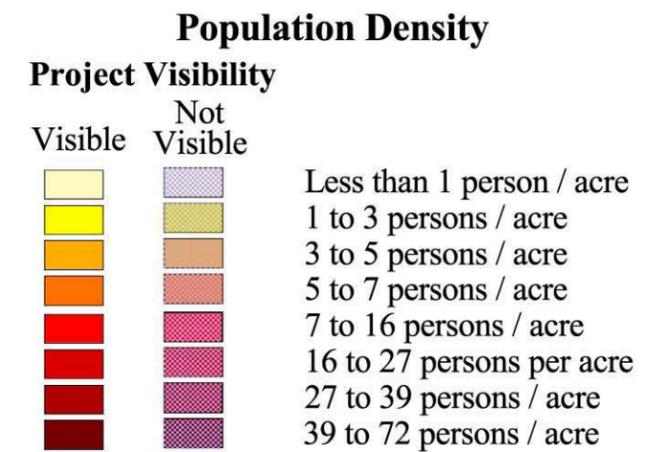
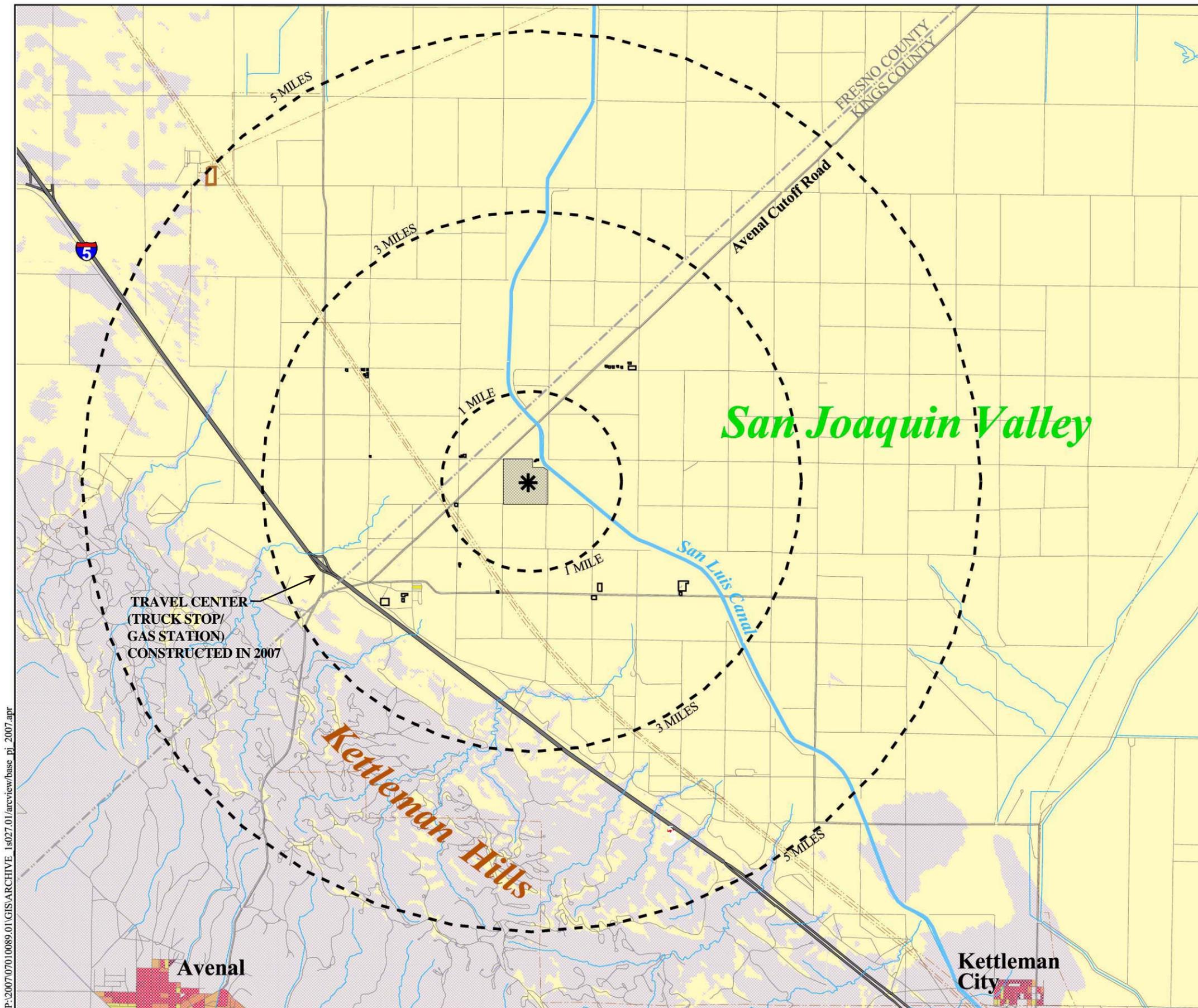
intermittent orchards. Motorists traveling southwest along Avenal Cutoff Road near the San Luis Canal would view the Project across the canal structure, with the water treatment plant to the left of the Project. The elevation of the roadway as it crosses the canal would allow for a less obstructed view than at other points along Avenal Cutoff Road, where views of the Project Site are frequently obscured by existing orchards. Views of the Project from the few residences along Orange Avenue and the one residence along Plymouth Avenue would be partially to completely obscured by existing trees and shrubs bordering these residences and by the almond orchard immediately across Orange Avenue to the west.

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## Project Visibility on Population Density



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Source: USGS / US Dept of Commerce Census 2000 / EDAW 2007

Figure 6.13 -18

Figure 6.13-18 Project Visibility on Population Density

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6.13.5 VISUAL IMPACT ASSESSMENT METHODOLOGY

The visual impact assessment evaluates the changes to the visual setting resulting from construction and operation of the Project. The evaluation of the overall visual change that could result from the Project (positive, neutral, or negative) considers the existing visual character as well as the Project effects upon the visual landscape as illustrated by Figure 6.13-19 below. A more comprehensive explanation of the methodology is also provided.

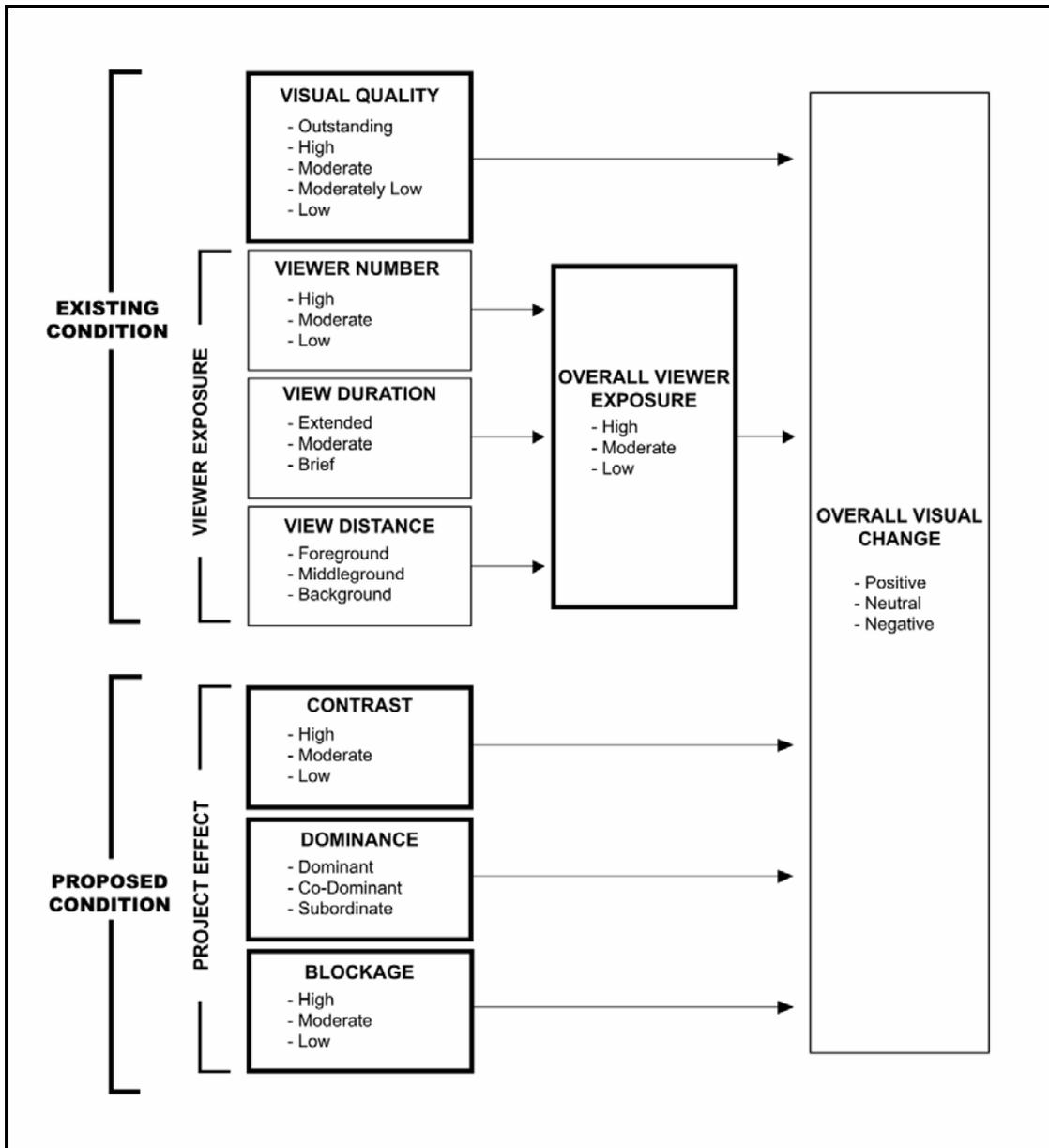


Figure 6.13-19: Assessment of Overall Visual Change at Each KOP

#### 6.13.5.1 Visual Setting Assessment

The analysis of the area's existing visual character includes an assessment of the visual quality of the landscape as required by the Commission, and the level of viewer exposure relative to the Project at each KOP. Because viewer concern was considered equal in all instances, it was not considered to be a determining factor in evaluating the visual setting, and therefore not included in the assessment.

#### **Visual Quality**

The assessment of a landscape's visual quality uses a landscape quality rating scale that incorporates five landscape quality classes listed in Table 6.13-3. This rating system is based on the scale developed for use with an artificial intelligence system for evaluation of landscape visual quality (Buhyoff et. al., 1994). This scale provides a framework for qualitative ratings because it is based on the findings of the full range of available research on the ways in which the public evaluates visual quality. It defines landscape quality in relative terms, contrasting landscapes that are average in visual quality with those that are above and below average, and those that are at the top ("picture post card") and bottom (dominated by visually discordant human alterations) of the landscape quality spectrum.

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TABLE 6.13-3

## VISUAL QUALITY RATING SCALE

Visual Quality Rating	Explanation
<b>Outstanding</b>	A rating reserved for landscapes with exceptionally high scenic value. These landscapes will be significant regionally and/or nationally. They usually contain exceptional natural or cultural features that contribute to this rating. They will be what we think of as “picture post card” landscapes. People will be attracted to these landscapes to be able to view them.
<b>High</b>	Landscapes that have high quality scenic value. This may be due to cultural or natural features contained in the landscape or to the arrangement of spaces contained in the landscape that causes the landscape to be visually interesting or a particularly comfortable place for people. These are often landscapes that have a high potential for recreational activities or in which the visual experience is important.
<b>Moderate</b>	Landscapes that have average scenic value. They usually lack significant man-made or natural features. Their scenic value is primarily a result of the arrangement of spaces contained in the landscape and the two-dimensional visual attributes of the landscape.
<b>Moderately Low</b>	Landscapes that have below average scenic value but not low scenic value. They may contain visually discordant man-made alterations, but these features do not dominate the landscape. They often lack spaces that people will perceive of as inviting and provide little interest in terms of two-dimensional visual attributes of the landscape.
<b>Low</b>	Landscapes with low scenic value. The landscape is often dominated by visually discordant man-made alterations or they are landscapes that do not include places that people will find inviting and lack interest in terms of two-dimensional visual attributes.

*Note:* Rating scale based on Buhyoff et al., 1994

### Viewer Exposure

Viewer exposure considers the number of viewers, the duration of the view, and the viewing distance to the landscape feature. Increasing distance between the viewer and the landscape feature reduces visibility. Overall viewer exposure ranges from high values for all factors, such as an unobstructed foreground view from a large number of residences, to low values for all factors, such as a partially obscured and brief background view for a few motorists.

#### 6.13.5.2 Assessment of Proposed Conditions

This assessment considers the compatibility of the Project’s visual characteristics with existing visual elements, the relative size of the power plant, and the potential blockage of landscape features from each KOP. A rating is applied to each category.

**Visual Contrast**

Visual contrast describes the degree to which the Project's visual elements (consisting of form, line, color, and texture) differ from the same visual elements established in the existing landscape. The presence of forms, lines, colors, and textures in the existing landscape similar to those of the Project indicates a landscape more capable of accepting the Project elements than a landscape where those elements are absent. The degree of visual contrast is rated as low, moderate or high.

**Project Dominance**

Dominance is a measure of the Project's apparent size relative to other visible landscape features and the total field of view. The facility's dominance is affected by its relative location in the field of view (foreground, middleground, and background) and the distance between the viewer and the Project. The level of dominance is rated as subordinate, co-dominant, or dominant.

**View Blockage**

View blockage describes the extent to which any previously visible landscape features are blocked from view by the Project. Blockage of higher quality landscape features by lower quality features causes adverse effects. The degree of view blockage is rated as low, moderate, or high.

**6.13.5.3 Determination of Overall Visual Change**

The assessment of overall visual change is based on the conclusions regarding existing visual quality, overall viewer exposure, visual contrast, Project dominance, and view blockage. The visual criteria are based on the existing local conditions. The visual setting is the baseline from which to consider the level of visual change, and is defined by its natural and man-made features. The analysis considers the level of visual change within the existing visual context. Overall visual change is characterized as positive, neutral, or negative.

**6.13.5.4 Significance of Visual Change**

The determination of significance of the visual change resulting from the Project is based on its overall effect upon all representative viewpoints (KOPs) evaluated. An adverse impact from an individual KOP would not connote a finding of overall significant impact for the Project. The significance criteria are based on the California Environmental Quality Act (CEQA) Guidelines, Appendix G, Environmental Checklist Form. Because the Project would not be located within a

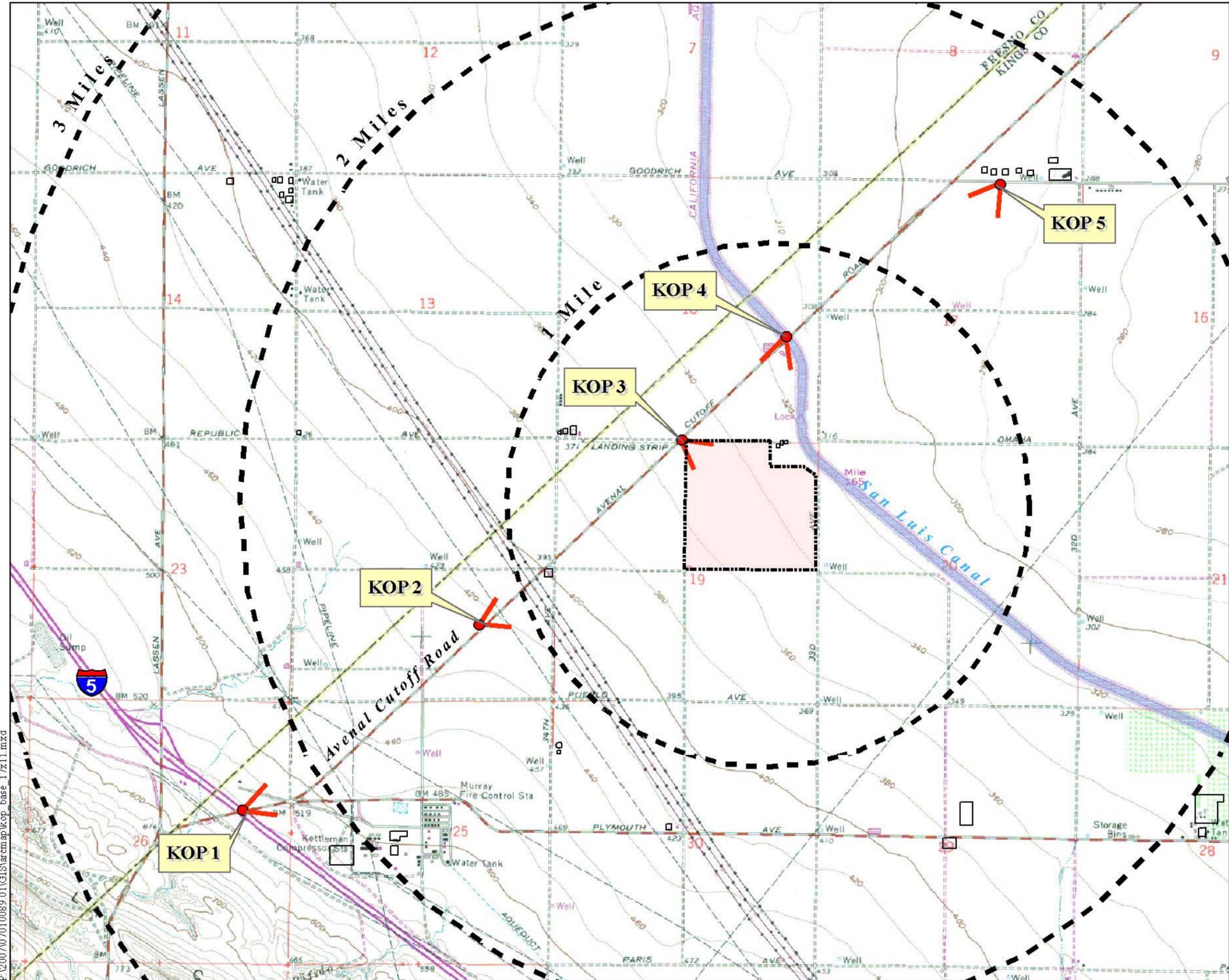
designated scenic corridor, no impact to scenic resources would occur through Project implementation, and this impact criterion provided in Appendix G was therefore not discussed in the analysis. Conflicts with local goals, policies or designations regarding visual resources would constitute significant effects.

#### 6.13.6 KEY OBSERVATION POINTS AND PROJECT MODIFICATIONS

Five representative public view locations in the Project vicinity were identified with the concurrence of the CEC and City of Avenal staff. Considerations in selecting the KOPs were the distance from the Project, duration of view, number of viewers, landscape content, and viewer type (residential and mobile). Because most views of the Project would be from Avenal Cutoff Road, three KOPs are located along this roadway representing distant, intermediate and close-up views of the Project. The two remaining KOPs illustrate the Project from Interstate 5 and from residences along Orange Avenue. Figures 6.13-20 and 6.13-21 show the location and view orientation of the five KOPs, on a map and aerial photograph of the Project vicinity, respectively. The characteristics of the Project were documented using Computer Aided Design line drawings. The drawings were then used to create photographic simulations of the Project as viewed from representative viewpoints to produce realistic images of proposed conditions. The simulations of the Project were incorporated into digital photographic files, upon which the image of the Project could be placed. A three-dimensional computerized model of the Project was created at the same scale and angle as viewed from the KOP photograph, and placed into the KOP photograph. These simulations accurately portray the location, size, and form of the Project from each KOP.

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## KOP Locations on Topographic Map

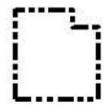
KOP Location and Orientation



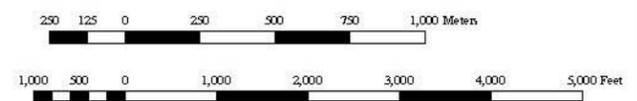
Man-Made Features

-  Structure
-  Transmission Line

Project Site Boundary



Scale 1 : 24,000  
1" = 2000 feet



09-19-07

EDAW | AECOM

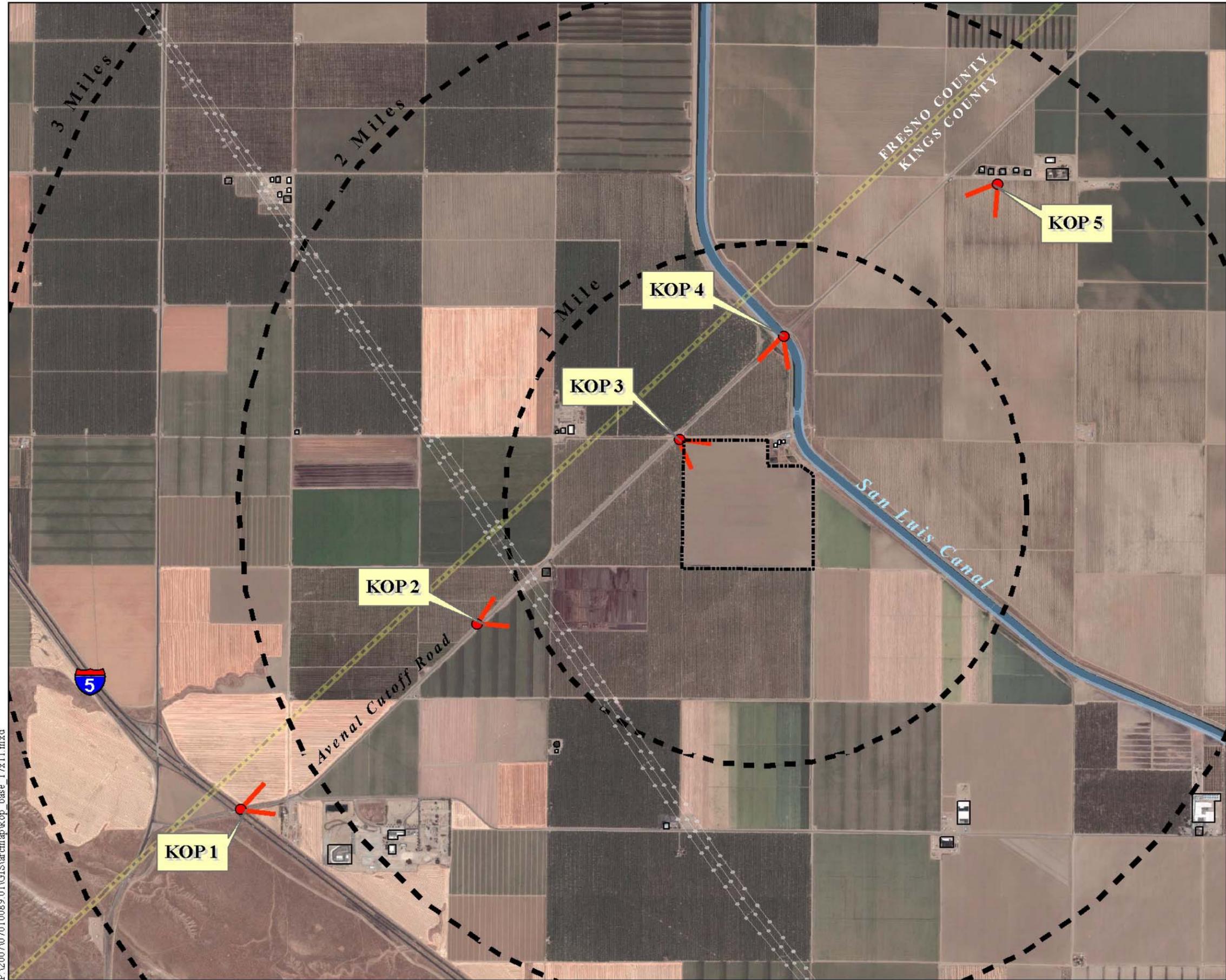
P:\2007\07010089\01\GIS\arcmap\kop\_base\_17x11.mxd

Source: USGS 7.5 Min DRG -- LA Cima quad / EDAW 2007

Figure 6.13 -20

Figure 6.13-20: KOP Locations in Context

11x17 BACK



P:\2007\07010089\01\GIS\arcmap\kop\_base\_17x11.mxd

Source: USGS / Google Earth Imagery / EDAW 2007

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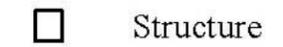
FEDERAL POWER AVENAL, LLC

## KOP Locations on Air Photo

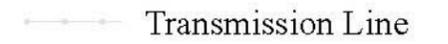
### KOP Location and Orientation



### Man-Made Features

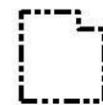


Structure

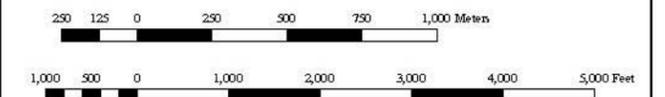


Transmission Line

### Project Site Boundary



Scale 1 : 24,000  
1" = 2000 feet



09-19-07

EDAW | AECOM

Figure 6.13 -21

Figure 6.13-21 KOP Locations in Context on Aerial Map

11x17 - BACK

### 6.13.7 VISUAL ASSESSMENT OF KEY OBSERVATION POINTS

The visual assessment evaluates the existing visual environment and the Project effects upon the visual environment at each KOP. It considers the rating of existing visual conditions in combination with the Project effects when assessing the overall visual change that would occur from the Project.

#### 6.13.7.1 KOP 1 – View from Bridge above Interstate 5

KOP 1 was selected to represent the nearest view of the Project from Interstate 5. The viewpoint is located at the Avenal Cutoff Road interchange across Interstate 5, approximately two miles from the Site. This viewpoint is approximately 25 feet higher than the motorists' view from the road, and therefore presents a substantially clearer view opportunity than would actually be experienced from Interstate 5 in the immediate vicinity. Figure 6.13-22 shows the existing view from KOP 1. Figure 6.13-23 depicts the view from KOP 1 with the Project.

#### **Existing Conditions**

##### Visual Quality

At this viewpoint the landscape is characterized by flat agricultural land with orchards, row crops, and a few farm-related outbuildings in the middleground view. The wood pole electric distribution line supports in the foreground provide a vertical edge to Avenal Cutoff Road continuing in a northwest direction into the middleground view. The landscape quality is related to the broad expanse of agriculturally cultivated land visible in conjunction with the industrial infrastructure visible from this viewpoint, namely the large transmission towers that are prominent in the middleground view and which penetrate the distant horizon. Applying the Buhyoff landscape visual quality scale, the view from this KOP can be classified as having **moderately low** visual quality. The view's foreground and middleground provide relatively little visual interest.

##### Viewer Exposure

Primary viewer exposure would be from motorists along Interstate 5. Approximately 34,500 vehicles per day travel along Interstate 5, representing a high number of viewers. Most vehicles would be traveling at approximately 70 mph, providing brief opportunity for views of the landscape beyond the highway. Landscaping and berms that parallel Interstate 5 further interfere with views from the freeway. Views from the interstate at this location are dominated by man-made features with the distant hills in the background being the primary landscape feature.

Although a high number of motorists view the landscape from this KOP, views would be brief and dominated by man-made features. Additionally, the primary landscape feature is located in the distant background. Overall visual exposure is therefore classified as **low**.

### Proposed Conditions

#### Visual Contrast

From KOP1 the Site would be seen at a distance from an elevation approximately 25 feet above the freeway. The distance of the Project from this viewpoint results in a blending of the Project features into the landscape, reducing the Project contrast with the overall visual landscape. Project features would not intrude into the horizon and would not be seen as substantially different from existing man-made structures. The level of visual contrast would be **low**.

#### Project Dominance

The dominant feature of the landscape from KOP 1 is Avenal Cutoff Road and the tilled agricultural land in the foreground. The location of the Project in the background view renders the relative size of the Project small, particularly when compared to the other elements of the landscape, and relative to the foreground landscape elements. As a result, the Project would appear as a **subordinate** feature of the landscape in relation to prominent foreground features.

#### View Blockage

At KOP 1, the additional industrial features introduced into the landscape by the Project would not block views toward the horizon. The Project would appear as a distant feature of an already substantially modified landscape. Project view blockage would be **low**.

### Overall Visual Change

Table 6.13-4 considers the evaluation of the existing visual environment and the proposed condition, and rates the level of overall visual change. Because of the generally low visual quality and viewer exposure, combined with the low contrast, blockage and subordinate relationship of the Project in the landscape, the overall visual change is characterized as **neutral**.

**TABLE 6.13-4**

#### **KOP 1 - OVERALL VISUAL CHANGE**

KOP	EXISTING CONDITION		PROPOSED CONDITION			OVERALL VISUAL CHANGE
	Visual Quality	Overall Viewer Exposure	Contrast	Dominance	Blockage	
1	Moderately Low	Low	Low	Subordinate	Low	Neutral



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## **KOP 1 - Existing**

The photographs on this page and the following page are intended to be viewed 10 inches from viewer's eyes when printed on 11"x17" paper. The photograph to the lower left has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Figure 6.13-22: Existing View from KOP 1

11x17 – BACK



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## **KOP 1 View from I-5 *Simulated***

### **Summary of Visual Change**

- Project features blend into overall landscape.
- Project is two miles distant and therefore relatively small.
- Project does not extend into horizon line.
- New transmission towers extend into horizon near tie-in location.

### **Summary of Overall Change**

- Visual Quality - Moderately Low
- Overall Viewer Exposure - Low
- Contrast - Low
- Dominance - Subordinate
- Blockage - Low
- **Overall Visual Change - NEUTRAL**

09-19-07

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Figure 6.13-23: View from KOP 1 with Project  
11x17 – BACK

### 6.13.7.2 KOP 2 – View East From Avenal Cutoff Road

KOP 2 was selected to represent views toward the Site as experienced by eastbound travelers along Avenal Cutoff Road. The viewpoint is slightly over one mile southwest of the Site. Figure 6.13-24 shows the existing view from KOP 2. Figure 6.13-25 depicts the view from KOP 2 with the Project. These figures include a representative section of the transmission line route prior to construction and a simulation of the section after transmission line construction.

## **Existing Conditions**

### Visual Quality

The primary elements in the existing foreground view are the open flat agricultural land and roadway. The existing PG&E transmission towers dominate the middleground view. The roadway and flat open agricultural land in the foreground create a strong horizontal plane, while the transmission towers in the middleground and wood pole electric distribution line supports in the foreground and middleground create strong vertical elements. The preponderance of man-made features in the landscape in combination with the open agricultural land creates a scene that is a mix of the rural and technological. Applying the Buhyoff landscape visual quality scale, the view from this KOP can be classified as having **low** visual quality. The view's foreground and middleground provide relatively little visual interest, do not contain inviting features, and contain visually prominent infrastructure facilities.

### Viewer Exposure

Primary viewer exposure would be from motorists traveling along Avenal Cutoff Road. Approximately 5,030 vehicles per day travel along this road representing a relatively low number of viewers, when compared to the volumes along Interstate 5. Most vehicles travel at fast speeds along the roadway (approximately 55 mph) providing an opportunity for viewing the landscape from this KOP for a short duration of time (less than one minute). The view is dominated by man-made features, including the open agricultural areas, which are either under agricultural production or developed as roads and easements for industrial infrastructure. Because of the low number of viewers, short duration of the view and absence of a landscape feature in the view, overall viewer exposure is classified as **low**.

## **Proposed Conditions**

### Visual Contrast

From this viewpoint the existing transmission power lines, roadway, and lands under agricultural production establish a predominantly man-made landscape. The Project is placed in the middleground view, between existing PG&E transmission towers. From this view the Project's

main features, primarily the air-cooled condenser, HRSGs and water tanks appear architecturally different from existing transmission line towers and other manmade features. They also appear to be much shorter than the existing transmission tower structures and similar in height to existing electric distribution line poles and other existing structures in the area (e.g., water standpipes). The new transmission tower in the middleground appears slightly higher but less bulky than the existing transmission towers, however, from this view has the perception of being slightly higher due to ground terrain. Because of the architectural difference between the Project and existing structures, visual contrast would be characterized as **moderate**.

#### Project Dominance

The dominant features of the landscape from KOP 2 are Avenal Cutoff Road, the agricultural land in the foreground view, and the transmission towers and distribution line poles in the middleground and background views. The Project, located in the middleground view, is lower in scale than the transmission towers and occupies less horizontal space in the view. However, the Project would be a clearly visible part the landscape, alongside other man-made features. While the relatively low height of the Project facility, as compared to the towers, would result in a minimal change to the horizontal plane from KOP 2. The new transmission line and towers would be of similar scale in the horizontal plane compared to the existing transmission lines and towers. This viewpoint, which is currently dominated by the character of the agricultural land, the asphalt corridor of Avenal Cutoff Road, and the transmission towers, would also include the equally prominent Project. As a result, the Project would appear as a **co-dominant** feature to the dominant landscape features.

#### View Blockage

From KOP 2, the level of intrusion of Project features would be substantially less than the existing transmission towers and distribution lines, which encompass a wider portion of the view than the Project facilities. The potential view blockage resulting from the Project at this viewpoint would be **low**, because of the already substantial blockage provided by the existing industrial features.

#### **Overall Visual Change**

Table 6.13-5 summarizes the evaluation of the existing visual environment and the proposed condition, and rates the level of overall visual change. Because of the low visual quality and low viewer exposure, in combination with the low blockage and co-dominant relationship of the Project to the overall landscape, overall visual change is characterized as **neutral**.

TABLE 6.13-5

## KOP 2 - OVERALL VISUAL CHANGE

KOP	EXISTING CONDITION		PROPOSED CONDITION			OVERALL VISUAL CHANGE
	Visual Quality	Overall Viewer Exposure	Contrast	Dominance	Blockage	
2	Low	Low	Moderate	Co-Dominant	Low	Neutral

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## **KOP 2 - Existing**

The photographs on this page and the following page are intended to be viewed 10 inches from viewer's eyes when printed on 11"x17" paper. The photograph to the lower left has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Insert Figure 6.13-24 – Existing View from KOP 2

11x17 – BACK



Source: 3DScape, 2007

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## **KOP 2 - From Avenal Cutoff Road *Simulated***

### **Summary of Visual Change**

- Project is subordinate to the three main transmission towers visible in this view.
- Distant views are relatively unaffected by Project.
- Stacks and Air Cooled Condenser penetrate horizon, though distant hills provide backdrop.
- The new transmission towers parallel to the existing three lines extend above the horizon line, and are taller but less bulky than existing towers.

### **Summary of Overall Change**

- Visual Quality - Low
- Overall Viewer Exposure - Low
- Contrast - Moderate
- Dominance - Co-Dominant
- Blockage - Low

**Overall Visual Change - NEUTRAL**

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Insert Figure 6.13-25: View from KOP 2 with Project  
11x17 figure – BACK

### 6.13.7.3 KOP 3 – View from Entrance Road

This KOP was selected to provide the closest public view of the Site. The viewpoint is located at the entrance to the Site from Avenal Cutoff Road. Landscaping at this location will be installed during construction to provide screening during the interim period. Figure 6.13-26 shows the existing view from KOP 3. Figure 6.13-27 depicts the view from KOP 3 with the Project, and Figure 6.13-28 shows the view of the Project with landscaping from KOP 3.

## **Existing Conditions**

### Visual Quality

The major element of the existing view at this viewpoint is the expanse of flat, open agricultural land and unimproved roadway that extend into the horizon. The agricultural land dominates the foreground and middleground views. The water treatment plant is visible at the end of the entrance road along the northern edge of the horizon. This landscape is dominated by the horizontal elements of ground and sky. Vertical elements include the recent orchard plantings (visible at the edges of the view), and some tall grass in the foreground, along with existing telephone poles, the water treatment plant structures and a cluster of mature trees alongside farming-related structures in the distant view. Applying the Buhyoff landscape visual quality scale, the view from this area can be classified as having a **moderately low** visual quality because the view represents a landscape that has undergone substantial alteration and does not contain visually engaging features.

### Viewer Exposure

At this location the primary viewer exposure is from motorists traveling along Avenal Cutoff Road. Approximately 5,030 vehicles per day travel along this road representing a relatively low number of viewers, when compared to the volumes along Interstate 5. Man-made features dominate the foreground and middleground views at this location. Most vehicles travel at high speeds along the roadway (approximately 55 mph), and view the landscape for a brief duration of time (approximately 10 seconds), because of the closeness of the view and because of the relatively limited view corridor created by the orchards on the land adjacent to either side of the Project Site. Because of the low number of viewers, brief duration of the view, and predominantly man-made character of this view, overall viewer exposure is classified as **low**.

## **Proposed Conditions**

### Visual Contrast

From this viewpoint the Project would add another industrial feature to the landscape at a location that is approximately the same distance to the viewer than the existing water treatment

plant, but larger in scale. Landscaping will be planted on the undeveloped portions of the Site, allowing for continuity in the landscape with regard to color and form and the degree to which the area visible in the foreground relates to the orchards on either side of the Project Site. In addition, the medium-height broadleaf trees clustered around the edge of the Project facility serve to soften the edges in the view where the industrial structures appear to merge with the agriculture-covered ground. The trees in this view are simulated at heights of 25 feet. The existing water treatment plant, like the Project, is industrial in appearance, but appears at a substantially reduced scale. The industrial features added by the Project would therefore be more noticeable. Despite the softening effects of the landscaping, the level of visual contrast would be **high**.

#### Project Dominance

The dominant features of the landscape from KOP 3 are the agricultural land and roadway in the foreground and middleground view. The Project, in the middleground, would introduce large industrial elements into the horizon unobscured by any existing man-made or natural features. The Project would therefore appear **dominant** from this viewpoint.

#### View Blockage

The view at KOP 3 does not include a prominent natural landscape feature. All of the elements in the view have undergone substantial alteration for either agricultural or infrastructure purposes, including the cluster of trees in distant views, which are adjacent to large buildings and are part of a larger industrial cluster. The Project – most notably the air cooled condenser and HRSG stacks – intrude into the horizon, but do not interfere with a view of any important distant landscape features. From this viewpoint, the rightmost approximately one-third of Project facilities will be obscured by Project-related landscaping once the almond trees lining the access road are approximately four to five years old. View blockage from the Project at this viewpoint would be **low**.

#### **Overall Visual Change**

Table 6.13-6 summarizes the evaluation of the existing visual environment and the proposed condition, and rates the level of overall visual change. Although the viewpoint does not provide a high visual quality or viewer exposure, without landscaping the Project would present a high contrast and dominant relationship in this view, which provides the most proximate location for the public to view the Site (Figure 6.13-27). The proposed landscaping would soften the visual effects of the contrast by obscuring approximately the right one-third of the Project features and the lowermost portion of the remaining Project features. It would also soften the visual effects of the contrast by

extending agricultural patterns into the Site. The overall visual change is judged to be consistent with the City of Avenal's request to allow the Project to be seen and represent the industrial development planned for the area. The resulting overall visual change with landscaping is characterized as **neutral** (Figure 6.13-28).

**TABLE 6.13-6**

**KOP 3 - OVERALL VISUAL CHANGE**

KOP	EXISTING CONDITION		PROPOSED CONDITION			OVERALL VISUAL CHANGE
	Visual Quality	Overall Viewer Exposure	Contrast	Dominance	Blockage	
3	Moderately Low	Low	High	Dominant	Low	Neutral

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## **KOP 3 - Existing**

The photographs on this page and the following pages are intended to be viewed 10 inches from viewer's eyes when printed on 11"x17" paper. The photograph to the lower left has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Figure 6.13-26: Existing View from KOP 3

11x17 – BACK



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## **KOP 3** **View from Entrance Road** *Simulated*

### **Summary of Visual Change**

- Project is relatively close to viewer and dominates view.
- Project extends above horizon.
- Except for cluster of trees in distant views, no landscape features are evident in distance.
- Existing industrial character of water treatment plant is evident just outside of frame of view.
- New transmission towers extend into horizon, but are placed behind power plant features.



Figure 6.13-27: View from KOP 3 with Project

11x17 – BACK



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## **KOP 3** *Simulated with Landscaping*

### **Summary of Visual Change**

- View corridor reveals height of stacks and presence of Air Cooled Condenser.
- Existing open field now contains row crops and improved road, which is lined by almond trees for purposes of wayfinding within project site
- Trees in middleground soften but do not obscure industrial character, particularly at base of stacks and Air Cooled Condenser.
- Some of new transmission towers are obscured by trees in foreground.

### **Summary of Overall Change**

- Visual Quality - Moderately Low
- Overall Viewer Exposure - Low
- Contrast - High
- Dominance - Dominant
- Blockage - Low

**Overall Visual Change - NEUTRAL**



Figure 6.13-28: View from KOP 3 with Conceptual Landscape Plan

11 x 17 Back

#### 6.13.7.4 KOP 4 – View from San Luis Canal

This KOP was selected to represent a view of the Project from motorists traveling southwest along Avenal Cutoff Road. The viewpoint is located at the intersection of the San Luis Canal and Avenal Cutoff Road, less than one-half mile from the Site, along a short elevated segment of the roadway where it passes over the canal. Because it is on a short elevated section of roadway, it represents a maximum proximal view from Avenal Cutoff Road looking west across the canal toward the Kettleman Hills. Figure 6.13-29 shows the existing view from KOP 4. Figure 6.13-30 depicts the view from KOP 4 with the Project, and Figure 6.13-31 shows the view of the Project with landscaping from KOP 4.

### **Existing Conditions**

#### Visual Quality

This KOP provides a view of the valley floor with the canal in the foreground and the Kettleman Hills in the background. The foreground view is almost entirely taken up by the canal. Lands under agricultural production and the water treatment plant are located in the middleground. The existing regional power lines and electric distribution lines form vertical elements throughout the middleground view. The Kettleman Hills, located along the western edge of the view, are a natural feature of this landscape. The canal lining, berms, lock, maintenance roads, access gates, water treatment plant and other structures result in a dominant landscape of manmade features. Applying the Buhyoff landscape visual quality scale, the view from this area can be classified as having a **moderately low** visual quality. The presence of a dominant water feature, the arrangement of spaces in the view, and the location of the Kettleman Hills in the background, provides some viewer interest.

#### Viewer Exposure

The primary viewer exposure is from motorists traveling along Avenal Cutoff Road. Approximately 5,030 vehicles per day travel along this road representing a relatively low number of viewers, when compared to the volumes along Interstate 5. The landscape is comprised of predominantly man-made features with natural features in the background. Most vehicles travel at high speeds along the roadway (approximately 55 mph), but have unobstructed views of the landscape from this short elevated KOP for a brief duration of time (between 10 and 20 seconds). However, because the brief, unobstructed views are uninterrupted by any other features in the landscape, overall viewer exposure can be classified as **moderate**.

## Proposed Conditions

### Visual Contrast

From this viewpoint the existing industrial man-made features of the landscape (namely, the San Luis Canal and the water treatment plant, along with their associated apparatus), establish a visual context for the Project. The Project's features appear directly behind the water treatment plant and while generally appearing to be architecturally similar, are larger in scale. The Project's industrial features are noticeable because of their location in the middleground, and the elevated position of the viewer from this short segment of Avenal Cutoff Road that overpasses the canal. The proposed landscaping on the Project Site would not substantially soften visible edges of the Project from this viewpoint. The existing view toward the Kettleman Hills in the background would be interrupted by the Project's air cooled condenser and HRSG stacks, resulting in a **moderate** visual contrast.

### Project Dominance

The dominant features of the landscape from KOP 4 are the engineered features and the water surface of the canal and the expansive agricultural land in the foreground view. These features form a strong horizontal context, with the Project in the middleground expanding upon the existing vertical industrial elements in the landscape. When considered in the context of the dominant San Luis Canal in the foreground and middleground, framed by the expansive agricultural land, the Project would appear **co-dominant** with these features.

### View Blockage

From KOP 4 the Project would rise above the horizon, blocking a small fraction of the view of the Kettleman Hills. The presence of the air cooled condenser in the skyline would be the primary interference with the extensive views of agricultural lands and the Kettleman Hills. View blockage from the Project would therefore be **moderate**.

## Overall Visual Change

Table 6.13-7 summarizes the evaluation of the existing visual environment and the proposed condition, and rates the level of overall visual change. Because of the generally moderate level of visual quality, in combination with the moderate level of Project effects upon the landscape, the overall visual change is characterized as **neutral**.

TABLE 6.13-7

## KOP 4 - OVERALL VISUAL CHANGE

KOP	EXISTING CONDITION		PROPOSED CONDITION			OVERALL VISUAL CHANGE
	Visual Quality	Overall Viewer Exposure	Contrast	Dominance	Blockage	
4	Moderately Low	Moderate	Moderate	Co-Dominant	Moderate	Neutral

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# *Avenal Energy*

**FEDERAL POWER AVENAL, LLC**

## **KOP 4 - Existing**

The photographs on this page and the following pages are intended to be viewed 10 inches from viewer's eyes when printed on 11"x17" paper. The photograph to the lower left has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.

Insert Figure 6.13-29 Existing View from KOP 4

11x17 – BACK



# *Avenal Energy*

FEDERAL POWER AVENAL, LLC

## **KOP 4** **From San Luis Canal** *Simulated*

### **Summary of Visual Change**

- Project extends industrial character of water treatment plant
- Project extends above the horizon of Kettleman Hills
- Project is co-dominant in landscape with canal



Insert Figure 6.13-30 View from KOP 4 with Project

11x17 – BACK



# *Avenal Energy*

**FEDERAL POWER AVENAL, LLC**

## **KOP 4** *Simulated with Landscaping*

### **Summary of Visual Change**

- Landscaping softens base of industrial features but does not screen facility.

### **Summary of Overall Change**

- Visual Quality - Moderately Low
- Overall Viewer Exposure - Moderate
- Contrast - Moderate
- Dominance - Co-Dominant
- Blockage - Moderate
- **Overall Visual Change - NEUTRAL**

09-19-07

EDAW | AECOM

Figure 6.13-31: View from KOP 4 with Conceptual Landscape Plan

11 x 17 Back

#### 6.13.7.5 KOP 5 – View from Orange Avenue

This KOP was selected to represent the view from residences within viewing distance of the Project. The viewpoint is located approximately 1.3 miles from the Site. A few residences are located along Orange Avenue with views toward the Project. Figure 6.13-32 shows the existing view and the view with the Project from KOP 5. Figure 6.13-33 depicts the view from KOP 5 with the Project.

### **Existing Conditions**

#### Visual Quality

This view is dominated by land under agricultural production. The foreground presence of mature almond trees in the orchard across the street from the residences obscures any view of the valley floor beyond the orchard. The Kettleman Hills, which would be present in the background of an unobstructed vista from this location, are not visible. From this viewpoint, the trees serve as the landscape's primary vertical and horizontal elements. Electric distribution lines traverse the sky in proximal range. Applying the Buhyoff landscape visual quality scale, the view from this area can be classified as having a **low** visual quality primarily because the prominence of the orchard results in a monotonous landscape that is not inviting to viewers, nor does it afford views of the landscape beyond its boundary.

#### Viewer Exposure

From this viewpoint primary viewer exposure is from residents occupying a few homes along Orange Avenue. Workers at the agricultural processing area south of the residences also will intermittently view the area. Traffic count data was not available for Orange Avenue, but because it is not a through street and services only a few residences and a small processing area, traffic levels are low. At this viewpoint all views are dominated by agricultural lands, with no views of the existing landscape visible beyond the orchard. Therefore, overall viewer exposure can be classified as **low**.

### **Proposed Conditions**

#### Visual Contrast

From this viewpoint the project would not be visible beyond the trees, and there would be no contrast in form, line, color or texture with the existing landscape. There would be **no visual contrast**.

Project Dominance

The Project's apparent size relative to other visible landscape features and the total field of view would not be visible from this viewpoint. The dominance of the Project, as determined by its relative location (foreground, middleground, and background) is similarly not apparent from this viewpoint. As a result, **no level of dominance** is assigned to the Project from this viewpoint.

View Blockage

As the Project is not visible from this viewpoint, there would be **no blockage** of any other landscape features in this view.

**Overall Visual Change**

Table 6.13-8 summarizes the evaluation of the existing visual environment and the proposed condition, and rates the level of overall visual change. Because of the presence of the orchard in the immediate foreground, the Project would not be visible and a number of the evaluative categories do not apply. Lack of visibility of the Project means that there would be neither a positive nor negative change to the existing visual environment; thus, for this KOP, the overall visual change is characterized as **neutral**.

**TABLE 6.13-8****KOP 5 - OVERALL VISUAL CHANGE**

KOP	EXISTING CONDITION		PROPOSED CONDITION			OVERALL VISUAL CHANGE
	Visual Quality	Overall Viewer Exposure	Contrast	Dominance	Blockage	
5	Low	Low	N/A	N/A	N/A	Neutral

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# *Avenal Energy*

FEDERAL POWER AVENAL, LLC

## **KOP 5 - View from Orange Avenue Existing**

The photographs on this page and the following page are intended to be viewed 10 inches from viewer's eyes when printed on 11"x17" paper. The photograph to the lower left has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Figure 6.13-32: Existing View from KOP 5

11x17 – BACK



# *Avenal Energy*

FEDERAL POWER AVENAL, LLC

## **KOP 5 - View from Orange Avenue *Simulated***

### **Summary of Visual Change**

- The Project would not be visible beyond the adjacent orchard in this view.

### **Summary of Overall Change**

- Visual Quality - Low
- Overall Viewer Exposure - Low
- Contrast - Not Applicable
- Dominance - Not Applicable
- Blockage - Not Applicable
  
- **Overall Visual Change - NEUTRAL**

09-19-07

EDAW | AECOM

Figure 6.13-33: View from KOP 5 with Project

11x17 – BACK

## 6.13.8 SUMMARY OF VISUAL RESOURCE EVALUATION

Table 6.13-9 summarizes the results of the visual resource evaluation at each of the five KOPs. The analysis concluded that the overall visual change would be neutral at each of the five viewpoints. Although it is not intended to screen from view any of the Project features, it should be noted that the conceptual landscaping plan incorporated into the Project will add an element of vegetation to the foreground in views into the Site from KOP 3, the closest viewpoint. The additional vegetation will offset the contrast between the existing landscape and the Project facility; however, it will obscure the rightmost approximately 30 percent of the project features, and for the remainder of Project features it will contribute to a softening of the facility's edges where it appears to blend into the ground., by reducing the view areas and framing views into the Site with features from the surrounding agricultural landscape.

The integration of row crops into the landscape plan will provide ongoing weed and dust control. The landscaping will be actively maintained in accordance with general farming practices.

**TABLE 6.13-9****SUMMARY OF KOP VISUAL ASSESSMENTS**

KOP	EXISTING CONDITION		PROPOSED CONDITION			OVERALL VISUAL CHANGE (WITH LANDSCAPING)
	Visual Quality	Overall Viewer Exposure	Contrast	Dominance	Blockage	
1	ML	L	L	SUB	L	Neutral
2	L	L	M	CO-DOM	L	Neutral
3	ML	L	H	DOM	L	Neutral
4	ML	M	M	CO-DOM	M	Neutral
5	L	L	N/A	N/A	N/A	Neutral

H = High

SUB = Subordinate

M = Moderate

DOM = Dominant

ML = Moderately Low

CO-DOM = Co-Dominant

L = Low

N/A = Not Applicable

### 6.13.9 SIGNIFICANCE OF OVERALL VISUAL CHANGE

The determination of the significance of visual changes resulting from the Project was based on the Project's overall effect upon all representative viewpoints (KOPs) evaluated, considered in the context of the existing visual environment. An adverse impact at an individual KOP would not connote a finding of overall significance for the Project.

#### 6.13.9.1 Significance Criteria

The significance criteria used for this assessment are based on the CEQA Guidelines, Appendix G, Environmental Checklist Form. Because the Project would not be located within a State scenic right-of-way, no impact to scenic resources would occur through Project implementation. This impact criterion provided in Appendix G is therefore not discussed in the following analysis. The Project would be considered to have a significant adverse impact on visual resources if it would result in:

- A substantial adverse effect on a scenic vista.
- Substantial degradation of the existing visual character or quality of the Site and its surroundings.
- Creation of a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Conflicts with local goals, policies or designations regarding visual resources would also constitute significant effects and are discussed in Section 6.13.12 of this analysis - Laws, Ordinances, Regulations and Standards.

#### 6.13.9.2 Project Impact to Scenic Vista

The Project would not adversely impact a scenic vista. The Project area does not include any identified scenic roadways or scenic vistas. Because of the low population density in the area, public viewpoints are primarily the roadways in the Project area. Views from these roads will be of short duration and interrupted by existing vegetation along Interstate 5 and surrounding the Project facility.

At a distance of more than three miles, the Project would become part of the background, where little color or texture is evident. In the distant views represented by KOPs 1 and 2, the Project will appear as a smaller element in a larger landscape panorama. The closest view into the Site,

illustrated by KOP 3, will provide a relatively brief glimpse of the Project. Views of the Project from KOP 4 would expand the industrial elements already present in the landscape. The Project would not be visible in views from KOP 5.

Because of the absence of identified scenic roadways or vistas in the Project vicinity, the short duration of views toward the Project from surrounding roadways, and the substantial alteration of the existing landscape through agricultural and industrial activities, the Project would have a less than significant impact to scenic vistas.

#### 6.13.9.3 Project Impact to Existing Visual Character

The Project would not substantially degrade the existing visual character of the area. The Project area is comprised predominantly of man-made industrial and agricultural elements. In the views from each of the five KOPs, the Project-introduced changes to the visual landscape would not degrade the overall visual character of the area. The Project would function in accordance with the existing industrial uses of the area, including the electrical transmission towers traversing the Project area, the water treatment plant, and compressor station located adjacent to Interstate 5. The Project's industrial and agricultural elements are consistent with the predominant character of the landscape.

The Project would not substantially degrade the existing visual character of the Site. When considered in the context of the moderately low visual quality and disturbed terrain at the Site, the change from construction of the Project would not be considered a degradation of its visual character. The Site is less than one mile from the high-voltage electrical transmission towers, adjacent to the water treatment plant, and adjacent to the San Luis Canal. Vegetation will be planted around the facility, consistent with existing landscaping patterns around agricultural structures, to more fully integrate the Project into the visual context of the area.

Because the Project would not substantially degrade the existing visual character of the area or the Site, the impact on visual character would be less than significant.

#### 6.13.9.4 Project Creation of Light and Glare

The Project will create a new source of light and glare; however, glare will be kept to a minimum through the use of non-reflective materials. The nearby water treatment plant is an existing source of night lighting. Night lighting for the Project would illuminate the facility sufficiently

to ensure safe working conditions. Outdoor lighting fixtures will not be aimed directly at neighboring areas adjacent to the plant, and down-shields will be installed to limit the escape of light from the site. The proposed landscaping surrounding the Project also would provide some off-site screening of the night lighting.

#### 6.13.10 CUMULATIVE IMPACTS

Other actions with potential for cumulative effects are identified in Section 6.1.4. None of the actions identified in Section 6.1.4 would be close enough to have cumulative visual impacts. Therefore, there will be no significant cumulative impacts to visual resources.

#### 6.13.11 MITIGATION MEASURES

The Project incorporates design features, including a conceptual landscape plan, to reduce the degree of visual change resulting from the Project. No further mitigation is necessary.

#### 6.13.12 LAWS, ORDINANCES, REGULATIONS AND STANDARDS

The primary policies and standards relating to visual resources in the Project area are contained in the City of Avenal General Plan and Zoning Ordinance (City of Avenal, 2005). These policies are summarized below with discussion regarding the consistency of the Project with these policies.

##### 6.13.12.1 City of Avenal General Plan

###### **Circulation Element**

Soften impacts of expansive parking areas in all land use designations through landscaping and tree planting as prescribed in City Zoning Ordinance.

*Project Consistency.* The Applicant will install landscaping and trees in accordance with the General Plan and Zoning Ordinance.

##### 6.13.12.2 City of Avenal Zoning Ordinance

###### **Parking Lot Landscaping**

1. All parking lots shall have one fifteen gallon shade tree planted every three parking spaces along parking rows. This requirement may be

- waved for parking rows located adjacent to structures where space limitations would not permit growth of the tree. Each planter shall be surrounded by six-inch high curbing. Fifty percent of the paved parking lot surface shall be shaded by tree canopies within ten years of planting.
2. If the sum area of the landscaping requirements does not equal at least five percent of the total ground area of the parking lot, additional landscaping area shall be designed to achieve a landscaping coverage of five percent of the total parking lot. All landscaped planters shall be provided with an automatic irrigation system.
  3. A landscaped planter of at least 80 square feet shall be provided at least every 10 parking spaces.

*Project Consistency.* The Applicant will develop a detailed landscape plan, which will include landscaping for all parking areas, and which will be submitted to the City of Avenal for approval prior to project construction.

#### **Property Boundary Landscaping**

Minimum property boundary provisions include 25 feet of landscaping on the front boundary of the property, 10 feet on the side boundaries, and five feet on the rear of the property.

*Project Consistency.* The Avenal Energy conceptual landscape plan includes landscaping that far exceeds these provisions. The power plant will be located near the central portion of the 148-acre site. The entire site will be landscaped, except for approximately 25 acres of permanent disturbance.

#### 6.13.13 REFERENCES

Buhyoff, G.J., P.A. Miller, J.W. Roach, D. Zhou, and L.G. Fuller, "An AI Methodology for Landscape Visual Assessments" *AI Applications*, 8, 1, pp. 1-13, 1994.

City of Avenal General Plan, 2005.

United States Department of Agriculture Forest Service. National Forest Landscape Management Volume 1. Washington D.C.: Superintendent of Documents, 1973.