Application for a
Certificate of Environmental Compatibility

Three Sisters Solar
230-Kilovolt Gen-Tie Project

Prepared for:

Arizona Power Plant and
Transmission Line Siting Committee

Submitted by:

THSI bn, LLC

January 19, 2023
Case No. _____

BEFORE THE
POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

IN THE MATTER OF THE APPLICATION OF	Docket No. _____
	Case No.

APPLICATION FOR
CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

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LIST OF EXHIBITS

(Exhibits follow Application)

LIST OF EXHIBIT FIGURES/ATTACHMENTS

List of Acronyms and Abbreviations

A.A.C.	Arizona Administrative Code
ac	Alternating current
ACC	Arizona Corporation Commission
AEPCO	Arizona Electric Power Cooperative
AGFD	Arizona Game & Fish Department
A.R.S.	Arizona Revised Statutes
ASLD	Arizona State Land Department
BrightNight	BrightNight, LLC
CEC	Certificate of Environmental Compatibility
Cordelio	Cordelio Power
gen-tie	generation transmission tie line
I-10	Interstate 10
kV	Kilovolt
MW	Megawatt
POCO	Point of Change of Ownership
Project	The proposed activities requiring the Certificate of Environmental Compatibility gen-tie, substation and switchyard located in Cochise County
ROW	Right-of-way
Siting Committee	Arizona Power Plant and Transmission Line Siting Committee
THSI	THSI bn, LLC

EXECUTIVE SUMMARY

INTRODUCTION

Pursuant to Arizona Revised Statutes (A.R.S.) §§ 40-360, et seq., THSI bn, LLC (Applicant), is seeking a Certificate of Environmental Compatibility (CEC) for a proposed 230-kilovolt (kV) generation transmission tie line (gen-tie) and associated switchyard and substation facilities (Project switchyard and Project substation; collectively, the "Project") in Cochise County, Arizona (**Exhibit A-1**). The Project will interconnect a planned up to 300-megawatt (MW) alternating current (ac) photovoltaic solar energy generating facility with potential battery energy storage (the "Three Sisters Solar Project") to the regional electric power grid. The Project gen-tie will run from the proposed Project substation located at the Three Sisters Solar Project, north to the proposed Project switchyard and connect to the existing 230-kV transmission line operated by Arizona Electric Power Cooperative (AEPCO).

The Applicant is a subsidiary of BNC DEVCO, LLC, which is a joint venture between BrightNight, LLC (BrightNight) and Cordelio Power (Cordelio). BrightNight is the lead developer for this Project. BrightNight is a privately held independent power producer that develops, owns, and manages renewable power facilities; BrightNight's management team has prior experience developing over 10,000 megawatts (MW) of generating capacity and grid-scale energy systems. Cordelio is a renewable power producer that manages an operating portfolio of more than 1,200 MW of renewable power assets in Canada and the United States. Cordelio also oversees a growth pipeline of more than 18,000 MW of wind, solar, and storage projects spread across the United States.

The Applicant proposes to construct and operate the Project to deliver electricity generated by the Three Sisters Solar Project to local Cochise County electrical districts and/or other public power agencies and utilities in Arizona and the Southwest. Although the Three Sisters Solar Project is briefly described in this application for the information and convenience of the Arizona Power Plant and Transmission Line Siting Committee (Siting Committee) and the Arizona Corporation Commission (ACC), the Applicant seeks the CEC only for the gen-tie, the Project switchyard (north end of gen-tie) and Project substation (south end of gen-tie). The Applicant will be seeking a separate county-level approval for the solar energy generating facility with potential battery energy storage from Cochise County later this year.

The Project was included in BrightNight's Ten-Year Transmission System Plan filed with the ACC on June 3, 2022. Project construction is anticipated to begin as early as 2H 2024, with an attendant in-service date expected as early as 2H of 2025.

Certain information contained in this application constitutes forward-looking information or forward statements (collectively, "forward-looking statements"). All

statements other than statements of historical fact are forward-looking statements. Forward-looking statements typically contain words such as "anticipate", "believe", "confirms", "continuous", "estimate", "expect", "may", "plan", "project", "should", "will", or similar words suggesting future outcomes, and include without limitation, all financial projections, estimates of future costs, and projected performance or results. Forward-looking statements by their nature are subject to risks, assumptions and uncertainties which may cause the actual outcomes of such events to differ from the Applicant's expectation as of the date hereof, and whether forward-looking statements ultimately prove to be accurate will depend on factors outside of the control of the Applicant.

PROJECT OVERVIEW

The proposed Project consists of: (1) the gen-tie, which is an approximately 1 to 1.5 mile-long 230-kV transmission line, (2) the Project substation, which is a new 230-kV substation at the southern end of the gen-tie line dedicated to the planned Three Sisters Solar Project, and (3) a new Project switchyard at the northern end of the gen-tie line where it will tap into the existing AEPCO transmission line. Collectively these Project components are located within a 500-foot-wide corridor referred to as the Proposed Transmission Corridor. **Exhibits A-2 and A-3** depict the Proposed Transmission Corridor associated with this application and the existing AEPCO transmission line. The proposed gen-tie will be sited within the Proposed Transmission Corridor shown on **Exhibit A-3**, with the corridor situated 250 feet on either side of a centerline following the north-south section lines of Sections 5-8 in Township 16 South, Range 25 East. The Proposed Transmission Corridor is composed primarily of private lands with a segment of State Trust lands (in Section 6) managed by the Arizona State Land Department (ASLD). The Applicant is requesting approval for a total gen-tie right-of-way (ROW) width of 100 feet, which will be located within the Proposed Transmission Corridor to be approved as part of this CEC. Final engineering will precisely locate the final 100-foot-wide ROW, the Project switchyard, and the Project substation within the Proposed Transmission Corridor (Project Area).

The Three Sisters Solar Project is a planned renewable power generation project located on private lands in Cochise County that is expected to include up to 300 MW of photovoltaic solar energy generating facility and up to 6 hours of battery storage. The solar energy generating facility and battery storage area are expected to be situated on undeveloped private lands presently used for cattle grazing southeast of the Willcox Playa located approximately 11 miles southeast of Interstate 10 (I-10), 14 miles south of the city of Willcox, Arizona and approximately 2 miles east of U.S. Highway 191.

Siting Process

Siting of the gen-tie route for this Project considered several factors. The Proposed Transmission Corridor serves as the potential routing area encompassing slight variations

of alternative 100-foot-wide ROWs, varying primarily in vertical alignment. The existing AEPCO transmission line that will serve the Project interconnection is located directly north of the Three Sisters Solar Project. The landscape and general habitat in the area between the Three Sisters Solar Project and the AEPCO transmission line is relatively uniform with no remarkable features to be avoided. The Proposed Transmission Corridor follows a north to south bearing along a section line division and was selected primarily because it is the shortest pathway to connect the Three Sisters Solar Project to the transmission grid alongside willing, private landowners able to provide the easements and other rights necessary for the alignment. Additionally, there are few residents in the area minimizing potential effects. For maximum siting flexibility, an additional area is proposed on State Trust lands in the Proposed Transmission Corridor to maximize design flexibility for final engineering. If the transmission line ROW will be located on State Trust lands, the Applicant will conduct all required surveys and apply for the necessary permits/land rights. To summarize, the Proposed Transmission Corridor has been carefully selected in a rural area with limited development. Surrounding land uses are highly compatible with the Project and include limited low-density residences, agriculture (livestock grazing and crop production), natural open space, recreation and existing public utility corridors (transmission line and gas pipeline corridors to the north). **Exhibits B and C** provide an overview of the environmental planning considerations.

PROJECT DESCRIPTION

Project Substation

A substation is expected to be constructed as part of the Project Area at the southern portion of the line. The Project substation will be approximately 400 feet by 400 feet (3.6 acres) constructed within an approximately 8-acre site situated on private land. Final engineering and siting will precisely locate the approximately 8-acre site. The proposed Project substation site requested under this application will be located in the northwest quarter of Section 8, Township 16 South, Range 25 East or alternatively, in the northeast quarter of the southeast quarter of Section 7, Township 16 South, Ranch 25 East (**Exhibit A-3**). It is anticipated the Project substation will include a power transformer, breakers, feeders, switches, and control house with fencing enclosure to promote safe and secure operation with consideration of both humans and animals.

Project Switchyard

A switchyard is expected to be constructed as part of the Project Area at the northern portion of the line and Proposed Transmission Corridor. The Project switchyard would be approximately 400 feet by 400 feet (3.6 acres) constructed within an approximately 8-acre site situated on private land owned by AEPCO. Final engineering and siting will precisely locate the 8-acre switchyard. The Project switchyard site for this application will be located in the north half of Section 5, Township 16 South, Range 25

East (**Exhibit A-3**) within the region marked “AEPCO Property”. It is anticipated the Project switchyard will include a three (3) breaker ring bus configuration, with an open position for a future connection. A new Control Building may be installed that will include (but is not limited to): three (3) relay panels with a breaker control relay, primary and backup line protection relays, and one (1) revenue-grade metering panel with two (2) revenue meters. with fencing enclosure to promote safe and secure operation with consideration of both humans and animals.

Proposed Gen-tie Route

The gen-tie will interconnect the Three Sisters Solar Project solar energy generating facility to the regional electric transmission grid via an existing 230-kV transmission line, providing power to local Cochise County electrical districts and/or utilities and customers in Arizona and the Southwest. The existing 230-kV transmission line is owned and operated by AEPCO and transmits electric power from Apache Generating Station (625 MW of combined gross generating capacity) produced from burning natural gas and coal.

The proposed route is described below and shown on figures in **Exhibit A**. The gen-tie route may be located within portions of Sections 5-8 in Township 16 South, Range 25 East. The gen-tie line will be approximately 1 to 1.5 miles in length and start at the proposed Project substation to the south, with the 230-kV gen-tie running north along a section line to the proposed Project switchyard at AEPCO’s 230-kV transmission line. The final gen-tie line and associated 20-foot-wide access road will occupy approximately 3.6 acres, formed within a 100-foot-wide ROW along the approximately 1.5-mile-long route. The construction footprint for the Project will include these facilities in addition to 100- by 100-foot pad areas for construction of each transmission pole and laydown yard/pull sites at the transmission line endpoints and at any gen-tie line turns required to enter the switchyard and substation sites. Components of the gen-tie transmission line include wooden H-frame structures with dead-end structures that are expected to serve as the Point of Change of Ownership (POCO). The structures will typically be between 70-75 feet tall, with a maximum height of 150 feet. Additional alternative pole types that may be used are included in **Exhibit G**.

PUBLIC OUTREACH AND ENVIRONMENTAL COMPATIBILITY

The Applicant has coordinated with City of Willcox and Cochise County staff, including planners and the City Manager. Letters were sent out to 35 stakeholders and Project informational flyers were sent out to 53 property owners within a 2-mile radius of the Project Area. The material included Project details, methods for obtaining additional Project information vis the Project website, directions to the public on opportunities to comment on the Project, and an invitation to participate in a public Open House held at the Willcox Community Center on December 7, 2022. Seven people attended the Open

House and learned about the Project and resource studies that were being conducted for the Project. This included representatives from the County planner's office, the Arizona Department of Environmental Quality, AEPCO, Arizona Game and Fish Department (AGFD), and private landowners. No opposition from the neighboring community was expressed during the open house or in comments submitted electronically. Information about public outreach efforts and letters/emails received are presented in **Exhibit J**.

Studies have been conducted to evaluate the Project's potential effects on the environment and ecology of Arizona, the Applicant respectfully submits this CEC application which provides documentation that the Project will be environmentally compatible in accordance with A.R.S. § 40-360.06. The proposed location for the Project avoids sensitive environmental, cultural, and recreational areas and resources.

PROJECT NEED AND BENEFITS

The Project is needed to connect a proposed up to 300-MW photovoltaic solar energy generating facility with potential battery storage to an existing transmission line, which will provide electric power to the existing regional electric power grid.

CONCLUSION

This application includes the environmental evaluation and documentation relevant to the Project as specified by Arizona Administrative Code (A.A.C.) R14-3-219. The Applicant is committed to avoiding and minimizing environmental impacts, and submits the Project is environmentally compatible. As such, the Applicant respectfully requests the Siting Committee grant the requested CEC for the Project and the ACC approve the CEC.

APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

1. Name and address of Applicant:

Applicant: THSI bn, LLC
Address: 13123 E Emerald Coast Pkwy
Suite B #158
Inlet Beach, Florida 32461
Telephone: 1-888-614-2626

Legal Representative

Name: Albert Acken
Address: 111 E. Dunlap Ave
Suite 1-172
Phoenix, AZ 85020
Telephone: 1-602-790-6091
Email: bert@ackenlaw.com

2. Name, address and telephone number of a representative of Applicant who has access to technical knowledge and background information concerning this Application and who would be available to answer questions or furnish additional information:

Name: Erik Ellis, Vice President, Development
BrightNight, LLC
Telephone: 1-602-549-4243
Email: erik@brightnightpower.com

3. Dates on which Applicant filed a Ten-Year Plan in compliance with A.R.S. § 40-360.02, in which the facilities for which this application is made were described:

Submitted June 3, 2022

4. Description of the proposed facility including:

a. Description of the electrical generating plant:

Not applicable, the proposed Project is not a thermal generating facility.

b. Description of the proposed transmission lines, switchyards or substations associated therewith; and purpose for constructing said transmission line:

i. Nominal voltage for which the lines are designated:

(1) Nominal voltage:

The nominal voltage for the Project's transmission lines is 230 kV.

(2) Description of proposed structures:

The gen-tie route may be located within portions of Sections 5-8 in Township 16 South, Range 25 East (**Exhibit A-3**). The gen-tie is expected to be constructed using H-Frame structures, typically ranging from 70 to 75 feet in height with a minimum of 20-feet conductor ground clearance. The average span length between structures is estimated to be approximately 700 feet, depending on final design. The structures are expected to be wooden, and conductors will have a non-specular finish to reduce visibility. Variations on structure types may be required to achieve site-specific mitigation objectives, meet site-specific engineering requirements, and/or based on availability at the time of procurement. All the pole types that will be used in the Project are included in **Exhibit G**.

(3) Description of proposed switchyards & substations:

There are two proposed interconnection facilities to be constructed in association with this Project. One will be the Project substation which will convert power from 34.5 kV to 230 kV. It is expected to consist of a power transformer, one 230-kV main breaker, two 35-kV feeder breakers, switches, a control house, and a substation superstructure within an approximately 7-foot-tall fence enclosure surrounding an approximately 8-acre land area. The proposed Project substation site requested under this application will be located in the northwest quarter of Section 8, Township 16 South, Range 25 East or alternatively, in the northeast quarter of the southeast quarter of Section 7, Township 16 South, Ranch 25 East (**Exhibit A-3**).

The other proposed interconnection facility will be a switchyard for the 230-kV interconnection. The Project switchyard is expected to consist of a three (3) breaker ring bus configuration, with an open position for a future connection. A new Control Building may be installed that will include (but is not limited to): three (3) relay panels with a breaker control relay, primary and backup line protection relays, and one (1) revenue-grade metering panel with two (2) revenue meters. The Project switchyard site will be located in the north half of Section 5, Township 16 South, Range 25 East (**Exhibit A-3**) within the region marked "AEPCO Property".

A conceptual layout of the substation and switchyard described above is provided in **Exhibit G**.

(4) Purpose for constructing the transmission line:

The purpose for constructing the Project is to interconnect the proposed Three Sisters Solar Generating Facilities to the regional transmission grid to help load serving entities increase renewable energy portfolios to serve to their customers and provide additional capacity in the Southwest to make up for dwindling hydro resources and regional capacity constraints.

ii. Description of geographical points between which the transmission line will run the straight-line distance between such points and the length of the transmission line for each alternative route for which application is made. General Location:

(1) Description of geographical points between which the transmission line will run:

Between the proposed Project substation to the Project switchyard adjacent to AEPCO's 230-kV transmission line directly to the north as shown in **Exhibit A-3**. All Project facilities will be located in unincorporated Cochise County.

(2) Straight-line distance between such geographic points:

Estimated 1 to 1.5 miles.

(3) The length of the transmission line for each alternative route for which application is made:

Due to the proximity of the Project site to the AEPCO system, and the overall minimal community and biological impact of the proposed transmission alignment, other alternatives are not included in this application as they will have more significant community and biological impact (e.g., such as connection to the Apache coal plant substation).

iii. Detailed Dimensions:

(1) Nominal width of ROW required: 100 feet

(2) Nominal width of corridor: 500 feet

(3) Nominal length of spans: 700 feet

(4) Maximum height of supporting structures:

Structures will be 70 to 150 feet in height depending on terrain.

(5) Minimum height of conductor above ground: 20 feet

iv. Estimated costs of proposed transmission lines and route, stated separately:

Transmission line cost approximately $1.2 million, which includes the costs for the poles, wires, and installation

Route cost is estimated at $200k, which includes the costs for securing the necessary easements along the transmission alignment

v. Description of proposed route and switchyard locations:

The proposed transmission line will connect the following points:

(1) Proposed Substation located in Section 8, Township 16 South, Range 25 East, as shown in Exhibit A-3.

(2) Proposed Switchyard located in Section 5, Township 16 South, Range 25 East, as shown in Exhibit A-3.

vi. For each alternative route for which application is made, list the ownership percentages of land traversed by the entire route (federal, state, Indian, private, etc.):

The Applicant has identified the Proposed Transmission Corridor as the viable route for the Project approximately 1.5-mile-long corridor. Detailed location information including surface management is provided in **Exhibits A-1 to A-3**. There is no federal or Indian/tribal land within the Proposed Transmission Corridor. The majority of the corridor is privately owned land with a segment of ASLD property occurring within Section 6 (Township 16 South, Range 25 East). Within the Proposed Transmission Corridor, the majority of the 367 acres is located on privately owned lands. Approximately 7.9 percent of the Proposed Transmission Corridor is on State Trust lands managed by ASLD with the remining 92.1 percent on privately owned lands. The actual anticipated footprint of disturbance for the Project is approximately 13.1 acres, primarily on privately-owned land.

5. Jurisdictions

a. Areas of jurisdiction (as defined in A.R.S. § 40-360.04) affected by this route:

The Project is located on private lands in Cochise County; no incorporated towns or cities will be affected. The Project will be adjacent to and may in limited circumstances as explained herein be located on Arizona State Trust land, which will only be used if needed.

b. Designation of proposed sites or routes, if any, which are contrary to the zoning ordinances or master plans of affected areas of jurisdiction:

The Project is not contrary to the zoning ordinances or general plans of any affected jurisdictions.

6. Description of the environmental studies Applicant has performed or expects to perform, including the contemplated date of completion:

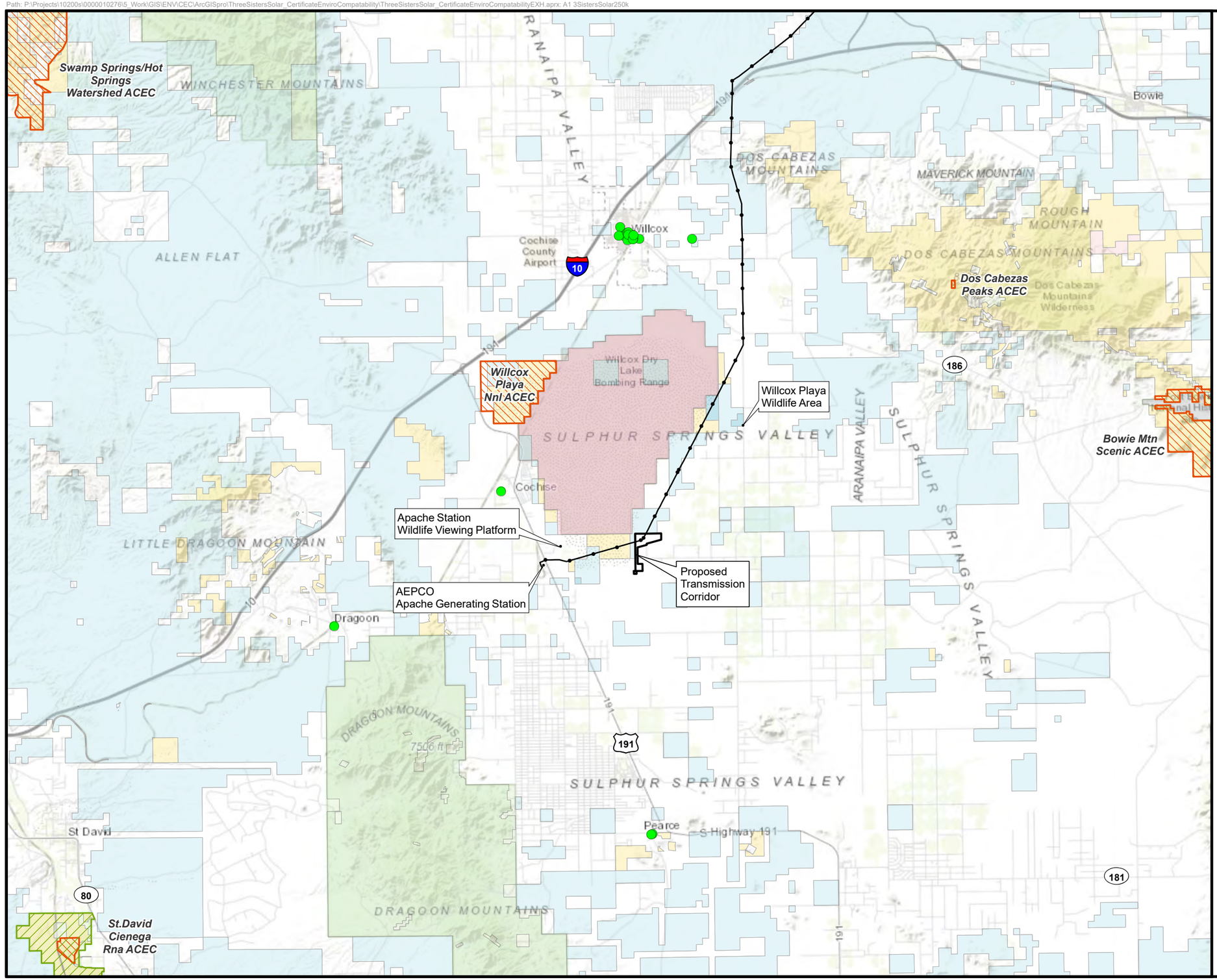
BrightNight completed the following studies:

1. Class I Cultural Resources Assessment, January 17, 2023
2. Biological Report, January 17, 2023
3. Visual Simulations, January 9, 2023

BrightNight studies to be completed:

1. Pre-construction nest survey, burrowing owl pre-construction survey, within 30 days prior to ground-breaking activities

By: Erik Ellis



T16S, R25E, Portions of Sections 5-8,
Cochise County, Arizona,
Projection: NAD 1983 UTM Zone 12N
Surface Management: BLM ArcGIS Service accessed 10/11/2022
NPS: National Register of Historic Places,
Critical Habitat: USFWS,
ACEC and NLCS: BLM,
Image Source: ArcGIS Online, World Topographic Map

Legend

- NPS Historic Building
- Existing Transmission Line
- Proposed Transmission Corridor
- BLM Designated Area of Critical Environmental Concern
- BLM National Landscape Conservation System National Monument

Surface Management

- Bureau of Land Management
- Bankhead-Jones Act
- Military
- National Park Service
- Private (No Color)
- State
- State Wildlife Area
- US Forest Service

N

0 2 4 Miles

0 3.5 7 Kilometers

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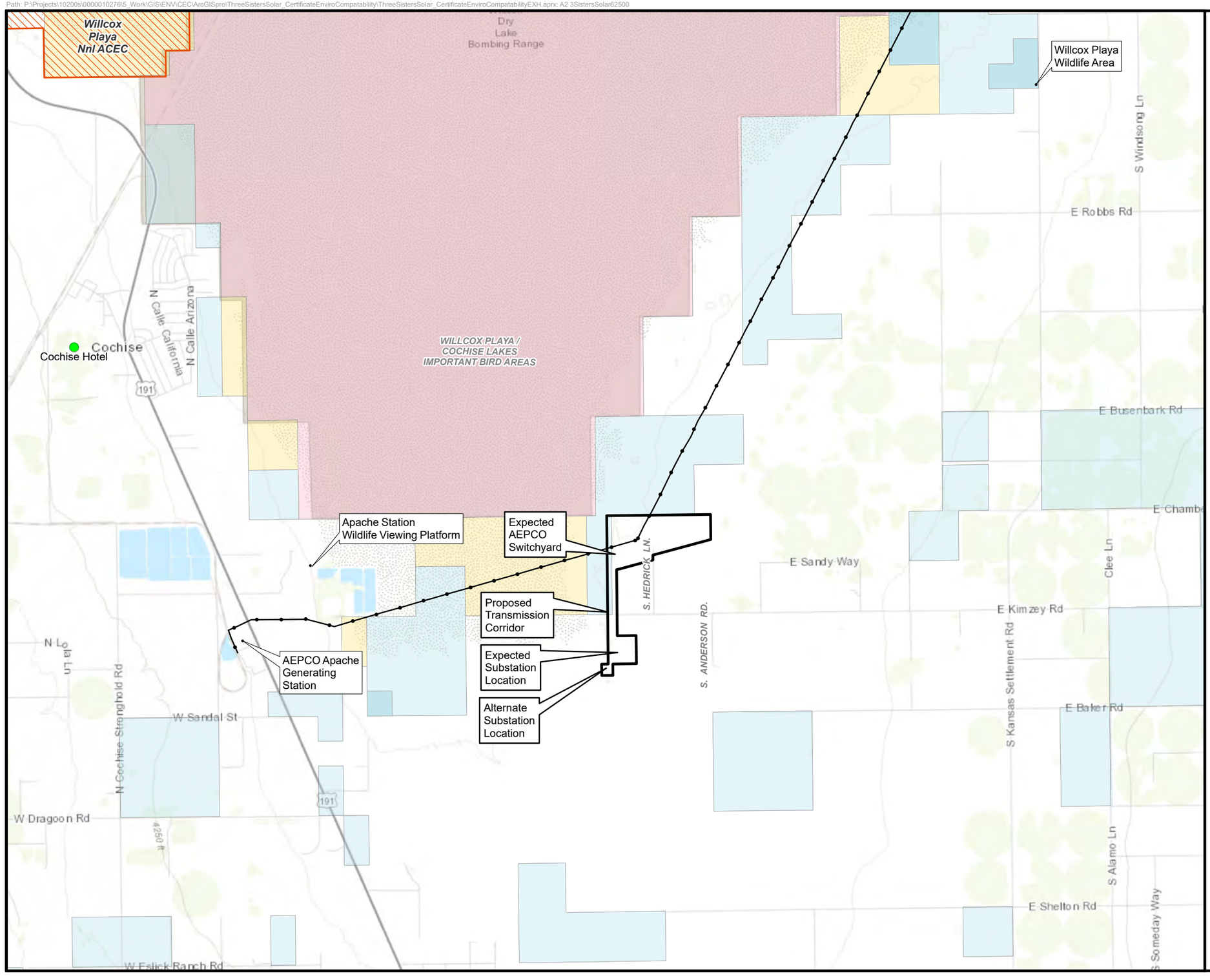
100% EMPLOYEE OWNED
Engineering & Environmental Services

THSI bn, LLC
Three Sisters Solar Project
Certificate of Environmental Compatibility

LAND OWNERSHIP AND LAND USE
1:250,000 TOPOGRAPHIC MAP
Exhibit A-1



T16S, R25E, Portions of Sections 5-8,
Cochise County, Arizona,
Projection: NAD 1983 UTM Zone 12N
Surface Management: BLM ArcGIS Service accessed 10/11/2022
NPS: National Register of Historic Places,
ACEC: BLM,
Image Source: ArcGIS Online, World Topographic Map

Legend

- NPS Historic Building
- Existing Transmission Line
- Proposed Transmission Corridor
- BLM Designated Area of Critical Environmental Concern

Surface Management

- Bureau of Land Management
- Military
- Private (No Color)
- State
- State Wildlife Area

N

0 0.5 1 Miles

0 1 2 Kilometers

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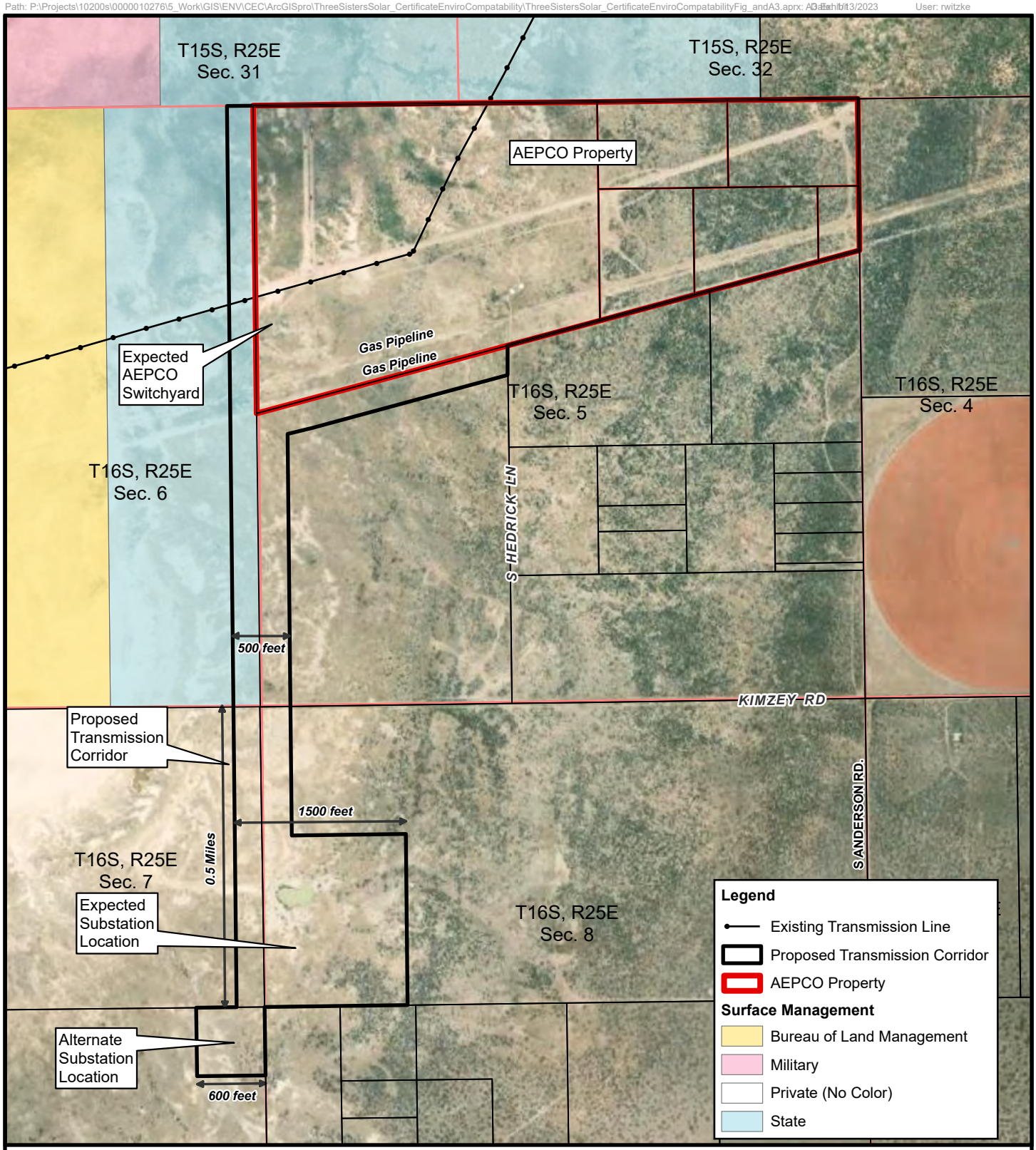
THSI bn, LLC
Three Sisters Solar Project
Certificate of Environmental Compatibility

LAND OWNERSHIP AND LAND USE
1:62,500 TOPOGRAPHIC MAP
Exhibit A-2



Proposed Transmission corridor within:
T16S, R25E, Portions of Sections 5-8,
Cochise County, Arizona,
Image Source: Maxar 9/17/2021 and 3/19/2022

N

0 600 1,200 Feet

0 200 400 Meters

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THSI bn, LLC

Three Sisters Solar Project
Certificate of Environmental Compatibility

PROPOSED TRANSMISSION CORRIDOR
Exhibit A-3

EXHIBIT B: ENVIRONMENTAL STUDIES

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit B of an application for a Certificate of Environmental Compatibility must consider the following:

> *Attach any environmental studies which applicant has made or obtained in connection with the proposed site(s) or route(s). If an environmental report has been prepared for any Federal agency or if a Federal agency has prepared an environmental statement pursuant to Section 102 of the National Environmental Policy Act, a copy shall be included as part of this exhibit.*

There are no Federal lands present within the Project area and no other identified federal nexus. Therefore, a National Environmental Policy Act analysis has not been conducted.

The environmental application and letter relevant to the Three Sisters Solar Project included in this exhibit are:

- Exhibit B-1: A Cultural Resources Assessment in Support of the Three Sisters Generation Transmission Line Tie-in in Cochise County, Arizona, January 17, 2023
- Exhibit B-2: Biological Evaluation for the Three Sisters Solar Project, January 17, 2023
- Exhibit B-3 – Visual Simulations Conducted for Key Observation Points (KOPs) Adjacent to the Project Area, January 9, 2023

Exhibit B-1

A Cultural Resources Assessment in Support of the Three Sisters Generation Transmission Line Tie-in in Cochise County, Arizona, January 17, 2023

Exhibit B-2

Biological Evaluation for the Three Sisters Solar Project, January 17, 2023

Exhibit B-3

Visual Simulations Conducted for Key Observation Points (KOPs) Adjacent to the Project Area, January 9, 2023

A Cultural Resources Assessment in Support of the Three Sisters Generation Transmission Line Tie-in in Cochise County, Arizona

Prepared for: BrightNight

Prepared by: WestLand Engineering & Environmental Services

Date: January 17, 2023

Project/Report Nos.: 10276/2022-204

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(follow text)

Appendices

INTRODUCTION AND PROJECT BACKGROUND

BrightNight proposes to develop a 300MW photovoltaic solar energy facility south of Willcox, Arizona, that will include an approximately 2,000-acre solar array, a substation, a switchyard, and an approximately 1-to-1.5-mile-long gen-tie from the solar energy generating facility to an existing transmission line. The substation, switchyard, and gen-tie require a Certificate of Environmental Compatibility (CEC) from the Arizona Corporation Commission, and a Special Use Permit from Cochise County under Section 1824 of the Zoning Regulations is required for the solar generating facility. A right-of-way authorization from the Arizona State Land Department (ASLD) will be required if the final alignment encroaches onto State Trust land.

The proposed gen-tie will interconnect the Three Sisters Solar Project solar energy generating facility to the regional electric transmission grid via an existing 230kV transmission line, providing power to local Cochise County electrical districts and/or utilities and customers in Arizona and the Southwest. The existing 230kV transmission line is owned and operated by Arizona Electric Power Cooperative (AEPCO) and transmits electric power from Apache Generating Station (625MW of combined gross generating capacity) produced from burning natural gas and coal.

The gen-tie line would be approximately 1 to 1.5 miles in length and start at the proposed Project substation to the south, with the 230kV gen-tie running north along a section line within the 500-foot-wide Proposed Transmission Corridor to the new Project switchyard at AEPCO's 230kV transmission line. The final gen-tie line and associated 20-foot-wide access road would occur within the 100-foot-wide right-of-way along the approximately 1.5-mile route. The construction footprint for the Project would include these facilities in addition to 100-by-100-foot pad areas for the construction of each transmission pole and laydown yard/pull sites at the transmission line endpoints and at any gen-tie line turns required to enter the Project switchyard and the Project substation sites. Components of the gen-tie transmission line include wooden H-frame structures with dead-end structures that are expected to serve as the Point of Change of Ownership. The structures will typically be between 70 and 75 feet tall with a maximum height of 150 feet.

The Project substation will be constructed as part of the Project Area at the southern terminus of the line and Proposed Transmission Corridor. The substation will be approximately 400 by 400 feet (3.6 acres) constructed within an approximately 8-acre site situated on private land. Final engineering and siting will precisely locate the approximately 8-acre site. The proposed Project substation site requested under the CEC application would be located in the southwest quarter of the northwest quarter of Section 8, Township 16 South, Range 25 East **(Figures 1 and 2).** It is anticipated that the Project substation would include a power transformer, breakers, feeders, switches, and a control house with fencing enclosure to promote safe and secure operation with consideration of both humans and animals.

The Project switchyard will be constructed as part of the Project Area at the northern terminus of the line and Proposed Transmission Corridor. The switchyard will be approximately 400 by 400 feet (3.6 acres) constructed within an approximately 8-acre site situated on private land owned by AEPCO. Final

engineering and siting will precisely locate the 8-acre switchyard. The Project switchyard site for the CEC application would be located in the north half of Section 5, Township 16 South, Range 25 East on private land owned by AEPCO. It is anticipated that the Project switchyard would include a three (3) breaker ring bus configuration with an open position for a future connection. A new Control Building may be installed that will include (but is not limited to): three (3) relay panels with a breaker control relay, primary and backup line protection relays, and one (1) revenue-grade metering panel with two (2) revenue meters with fencing enclosure to promote safe and secure operation with consideration of both humans and animals.

BrightNight contracted WestLand Engineering & Environmental Services (WestLand) to prepare a Cultural Resources Assessment (Class I) of the Project Area, which consists of the 500-foot-wide Proposed Transmission Corridor for the gen-tie line, the 8-acre Project substation siting location, and the private AEPCO parcel that would encompass the 8-acre Project switchyard location. The aim of the Class I records search was to (1) determine previous cultural survey coverage in the study area (the Project Area plus a 1.0-mile [1.6-km] buffer) conducted to date and (2) ascertain the number of previously recorded cultural resources sites within the study area, the cultural resources' site types, and, if possible, their Arizona Register of Historic Places and National Register of Historic Places (A/NRHP) eligibility status. WestLand also assessed any potential impacts the Project might have on known cultural resources.

This document presents the Class I records search results for the study area (the Project Area plus the 1.0-mile [1.6-km] buffer) located south of Willcox in Cochise County, Arizona. In legal terms, the Project Area is in Township 16 South, Range 25 East, portions of Sections 5 through 8, Gila and Salt River Baseline and Meridian (Sulphur Spring, Arizona, U.S. Geological Survey [USGS] 7.5′ quadrangle) **(**see **Figure 2)**.

ARCHAEOLOGICAL RESEARCH AND RECORDS SEARCH

As part of the cultural resources analysis, an archaeological overview of the study area was conducted. Specifically, archaeologists reviewed existing archaeological information in the site files at the Arizona State Museum's (ASM) Archaeological Records Office and online using Arizona's AZSITE archaeological database. WestLand then generated a dataset containing the documented information about each site and each survey conducted in the study area.

For each previous survey project, WestLand documented the agency project number, project title, and a reference. WestLand also noted the spatial extent of each survey as it intersected the study area, with an emphasis on the projects conducted in the last 10 years. This 10-year time frame was used to assess whether the previously conducted surveys in the study area could be considered adequate in light of current Arizona State Historic Preservation Office (SHPO) guidelines (SHPO 2004). These guidelines make it clear that not all surveys older than 10 years are inadequate, either from the perspective of meeting state and federal standards or from a research standpoint. However, many of these surveys were conducted prior to the adoption of the state and federal standards that help ensure the adequacy of archaeological

investigations. For example, these standards define what constitutes an "archaeological site" and a "100 percent intensive survey." Following SHPO guidelines (SHPO 2004), WestLand examined the older surveys in the study area from the standpoint of (1) the survey methods used and if these methods met current standards and (2) the professional qualifications of the survey personnel who conducted the investigations and if these qualifications met current state and federal standards. The results of the analysis are presented in **Table A.1** and **Figure A.1** [Appendix A] and summarized in the **Previous Survey Coverage in the Project Area** section below.

WestLand also documented the number of previously recorded sites in the study area, including each site's ASM (or other) site number, site type, and age and cultural affiliation. When a reference for a site was available, that information was also documented. In addition, WestLand noted the A/NRHP eligibility of any previously recorded sites in the Project Area. This information is presented in **Table A.2** and **Figure A.1** [Appendix A] and summarized in the **Sites in the Project Area** section below.

The criteria for A/NRHP eligibility are as follows:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
>
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) that are associated with the lives of persons significant in our past; or
>
> (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (d) that have yielded, or may be likely to yield, information important in prehistory or history.

Historical Map Review

In addition to the archaeological overview, historical (i.e., more than 50 years old) General Land Office (GLO) plats and USGS quadrangle maps were examined to identify potentially historical features that might be encountered in the study area. The features depicted on these maps meet the minimum threshold for being considered historical according to ASM criteria.[1] Once identified on maps, current aerial photographs were used to preliminarily assess whether the historical features were still present on the landscape and in use. Historical USGS quadrangle maps at the Historical Topographic Map Collection (https://ngmdb.usgs.gov/topoview/) and historical GLO plats at the Official Federal Land Records Site (https://glorecords.

[1] **Note:** In accordance with a current provisional policy adopted by the SHPO and the ASM, in-use linear infrastructure, while recorded and evaluated, is no longer assigned ASM site numbers.

blm.gov/default.aspx) were used in this research. WestLand examined the following maps as part of the cultural resources assessment:

- **GLO plat for Township 16 South, Range 25 East, officially filed in 1877.** No features are depicted in the Project Area.
- **GLO plat dependent resurvey for Township 16 South, Range 25 East, officially filed in 1916.** Fence lines, fields, and an unnamed road are depicted in the Project Area **(Figure 3)**. A number of labeled houses and a windmill well are depicted within the 1.0-mile (1.6-km) buffer.
- **USGS Willcox, Arizona, 1:125,000 series quadrangle edition of 1922.** Depicts several roads in the Project Area **(Figure 4)**.
- **USGS Cochise, Arizona, 1:62,500 series quadrangle edition of 1943.** Depicts two unnamed roads in the Project Area **(Figure 5)**. These alignments are now known as Kimzey Road and Andersen Road. One additional road is depicted in the eastern portion of the Project Area. This road was not identified during a recent survey (Stone 2021).
- **USGS Cochise, Arizona, 1:62,500 series quadrangle edition of 1958.** Depicts two unnamed roads (now known as Kimzey and Andersen roads) and a pipeline (El Paso Natural Gas Pipeline 1103) in the Project Area **(Figure 6)**.
- **USGS Silver City, New Mexico, 1:250,000 series quadrangle edition of 1954.** Depicts two unnamed roads (one is the alignment of Kimzey Road) and a pipeline (El Paso Natural Gas Pipeline 1103) in the Project Area **(Figure 7)**.
- **USGS Silver City, New Mexico, 1:250,000 series quadrangle edition of 1958.** Depicts the same features as the 1954 edition.
- **USGS Silver City, New Mexico, 1:250,000 series quadrangle edition of 1962.** Depicts the same features as the 1954 and 1958 editions.

Two roads—Kimzey Road and Andersen Road—and El Paso Natural Gas Pipeline 1103 are known to still exist in the Project Area.

Previous Survey Coverage in the Project Area

Eleven cultural resources inventories have been conducted in the study area, all of which intersect the Project Area **(**see **Table A.1** and **Figure A.1** [Appendix A]**)**. These projects were conducted over the past several decades for utilities installation, improvements, and maintenance. According to available records, these surveys have examined approximately 70 percent of the proposed Project Area. Of these past projects, 2011-32.ASM, 2020-300.ASM, WRI 1608.30, and WRI 2957.09 meet modern standards. These projects account for approximately 68 percent of the proposed Project Area.

Sites in the Project Area

Four archaeological sites and one in-use historical resource are located in the study area **(**see **Table A.2** and **Figure A.1** [Appendix A]**)**. One archaeological site and the in-use historical resource intersect the Project Area. These sites/resources represent use of the study area during the Prehistoric and Historic periods.

In-use historical resource El Paso Natural Gas Pipeline 1103 (formerly recorded as AZ BB:16:48[ASM]) has been determined eligible for listing in the NRHP by the SHPO (08/10/2008 and 12/23/2008). The pipeline is expected to be avoided by the Project. Further, the Advisory Council on Historic Preservation (ACHP) has determined that historical natural gas pipelines are exempt from review under Section 106 of the National Historic Preservation Act of 1966 (ACHP 2002).

Archaeological site AZ CC:13:16(ASM) is an artifact scatter containing ceramic, flaked stone, and ground stone artifacts thought to date to the Mogollon Pueblo period (A.D. 1150–1450). The site was completely surface-collected by the ASM in 1977, and although no surface expression of the site remains, shifting aeolian deposits at the site may be obscuring subsurface deposits and features. As such, AZ CC:13:16(ASM) is considered unevaluated for listing in the A/NRHP. Testing of the site is needed to make an eligibility recommendation. A small portion of the site on ASLD-managed land was monitored during the installation of a waterline in 2021 (Gray 2021). No artifacts, features, or buried deposits were identified in the waterline trench; however, the rest of the site area remains untested.

SUMMARY AND RECOMMENDATIONS

The issuing of the CEC is considered a state action subject to compliance with the State Historic Preservation Act (A.R.S. §§41-861–41-864), which requires that state agencies (1) consider the impacts of their programs on historic properties listed in or eligible for listing in the ARHP and (2) provide the SHPO an opportunity to review and comment on the actions that affect such historic properties. As part of this required review, the SHPO may request a Class III survey of any areas not covered by surveys meeting modern standards (2011-32.ASM, 2020-300.ASM, WRI 1608.30, and WRI 2957.09). A Class III survey will be required by the ASLD prior to approval of a right-of-way application should State Trust land be included in the final gen-tie alignment.

The historical map review identified several in-use roads in the Project Area. However, these roads are not expected to reach the significance threshold for A/NRHP eligibility when fully recorded.

The pipeline first identified on the 1958 Cochise, Arizona, 1:62,500 series quadrangle is in-use El Paso Natural Gas Pipeline 1103 (formerly recorded as AZ BB:16:48[ASM]). This pipeline is expected to be avoided by the Project and is also exempt from Section 106 review. It is recommended that the Project be designed so that AZ CC:13:16(ASM) is also avoided.

WestLand provides the general recommendation that all ground-disturbing activities have the potential to inadvertently disturb human remains and other cultural items. Pursuant to Arizona Revised Statute §41-844, if Native American human remains, associated funerary objects, unassociated funerary objects, objects of cultural patrimony, or sacred objects are encountered on state land during ground-disturbing activities, all activity shall cease in the area of the discovery and the Director of the ASM shall be immediately notified. Pursuant to Arizona Revised Statute §41-865, if Native American human remains or funerary objects are encountered on private land during ground-disturbing activities, all activity shall cease in the area of the discovery and the Director of the ASM shall be immediately notified.

REFERENCES

Advisory Council on Historic Preservation (ACHP)

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FIGURES

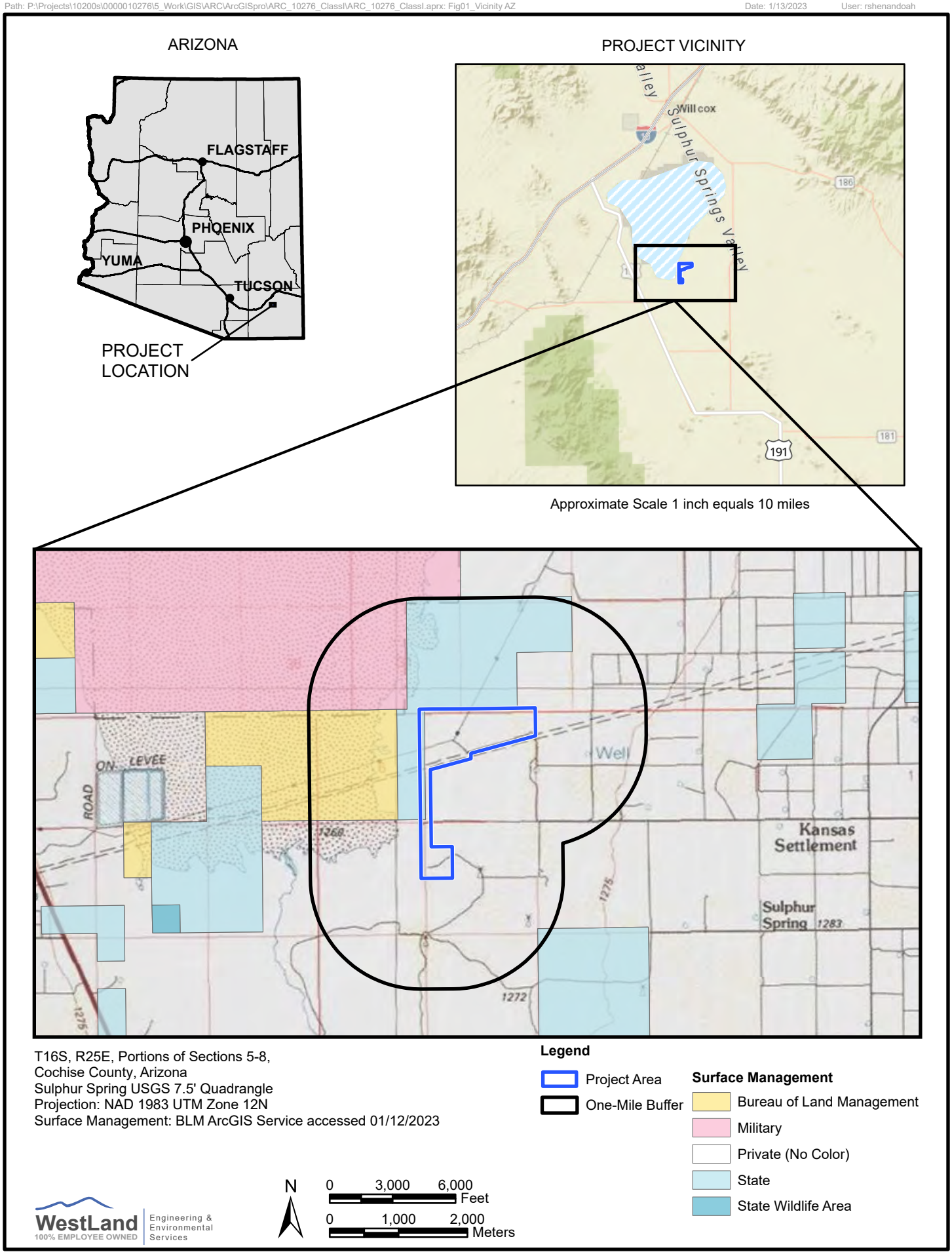

Figure 1. Vicinity map

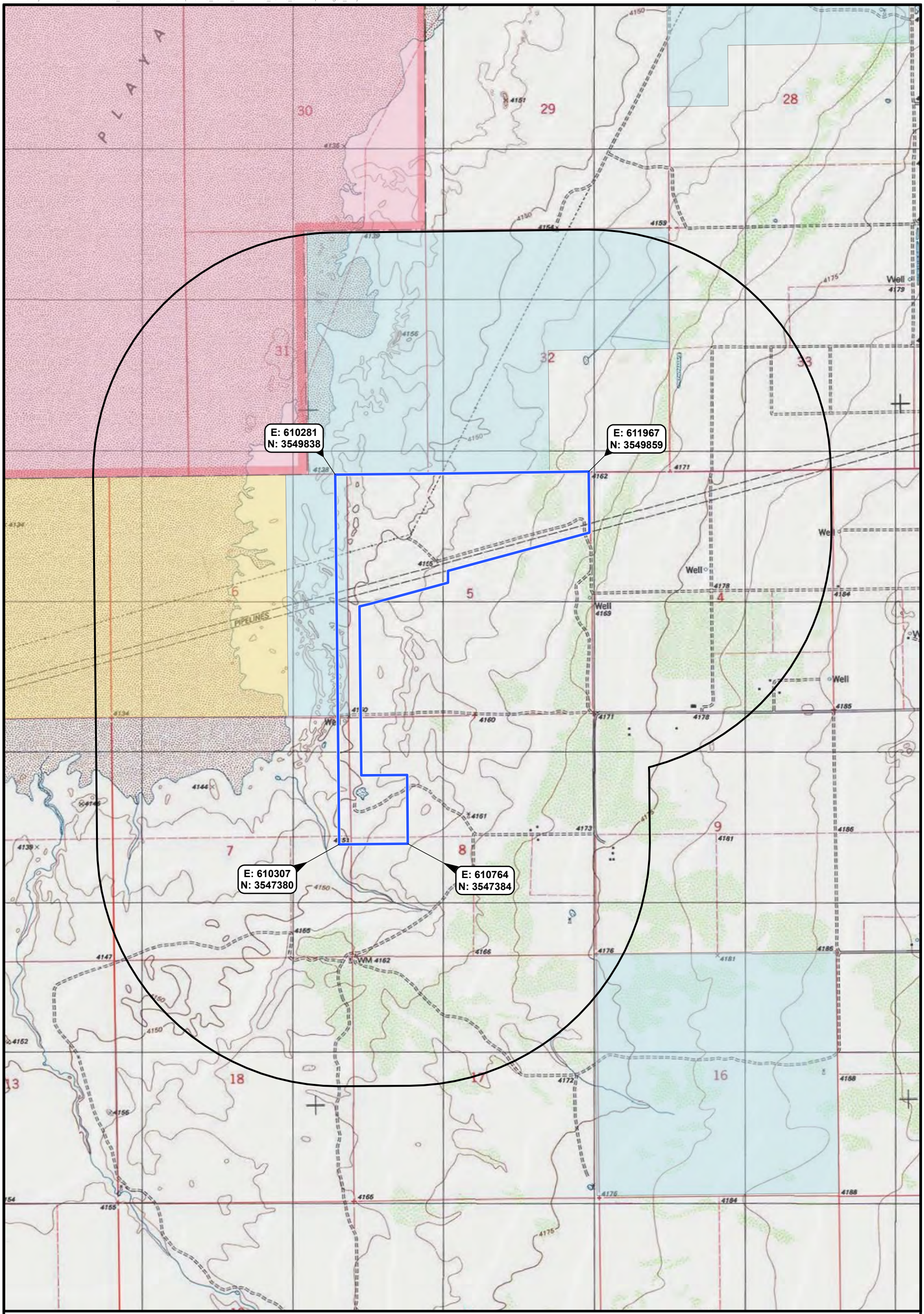

Figure 2. Project location showing surface management

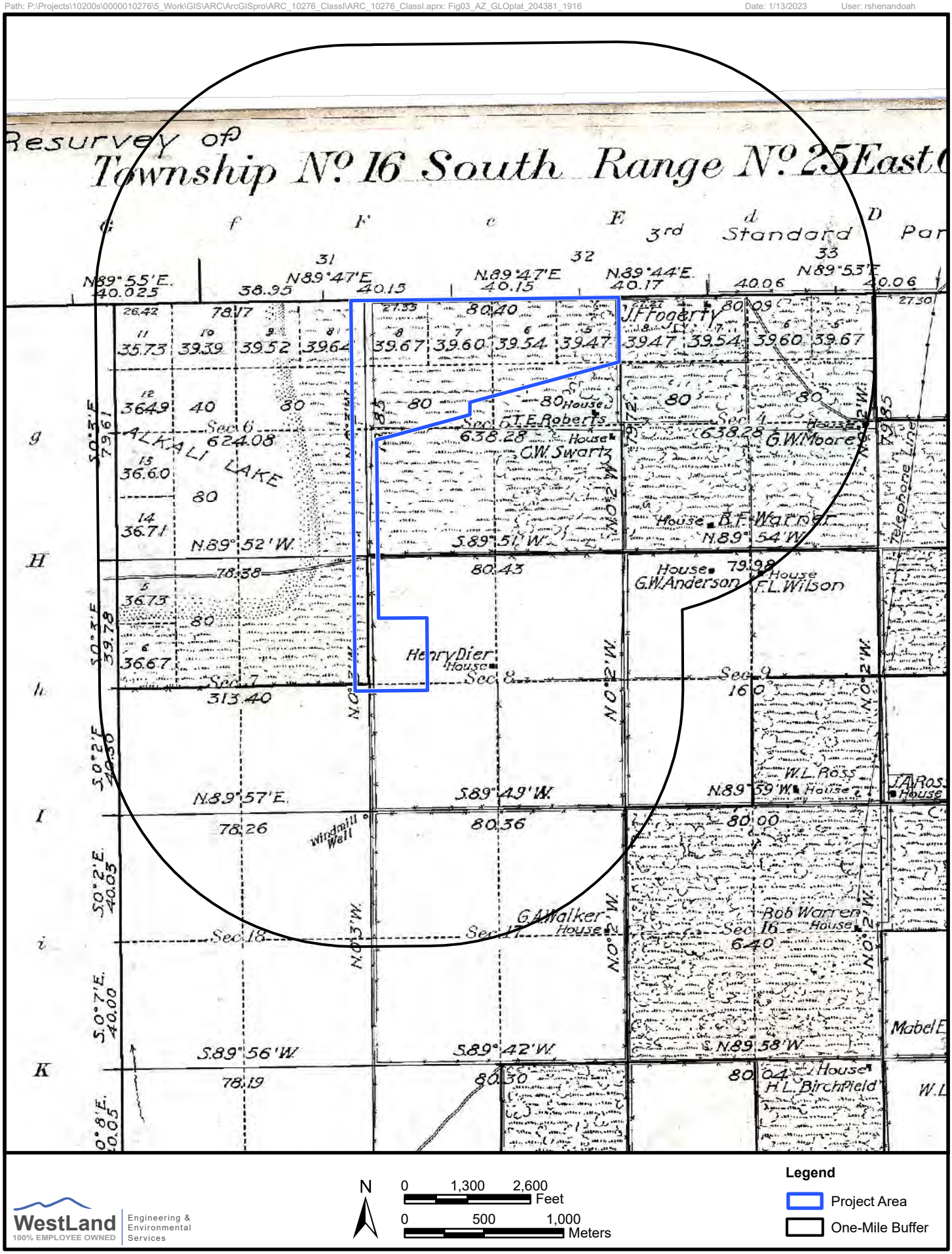

Figure 3. Overlay of the study area on the GLO plat for Township 16 South, Range 25 East, officially filed in 1916

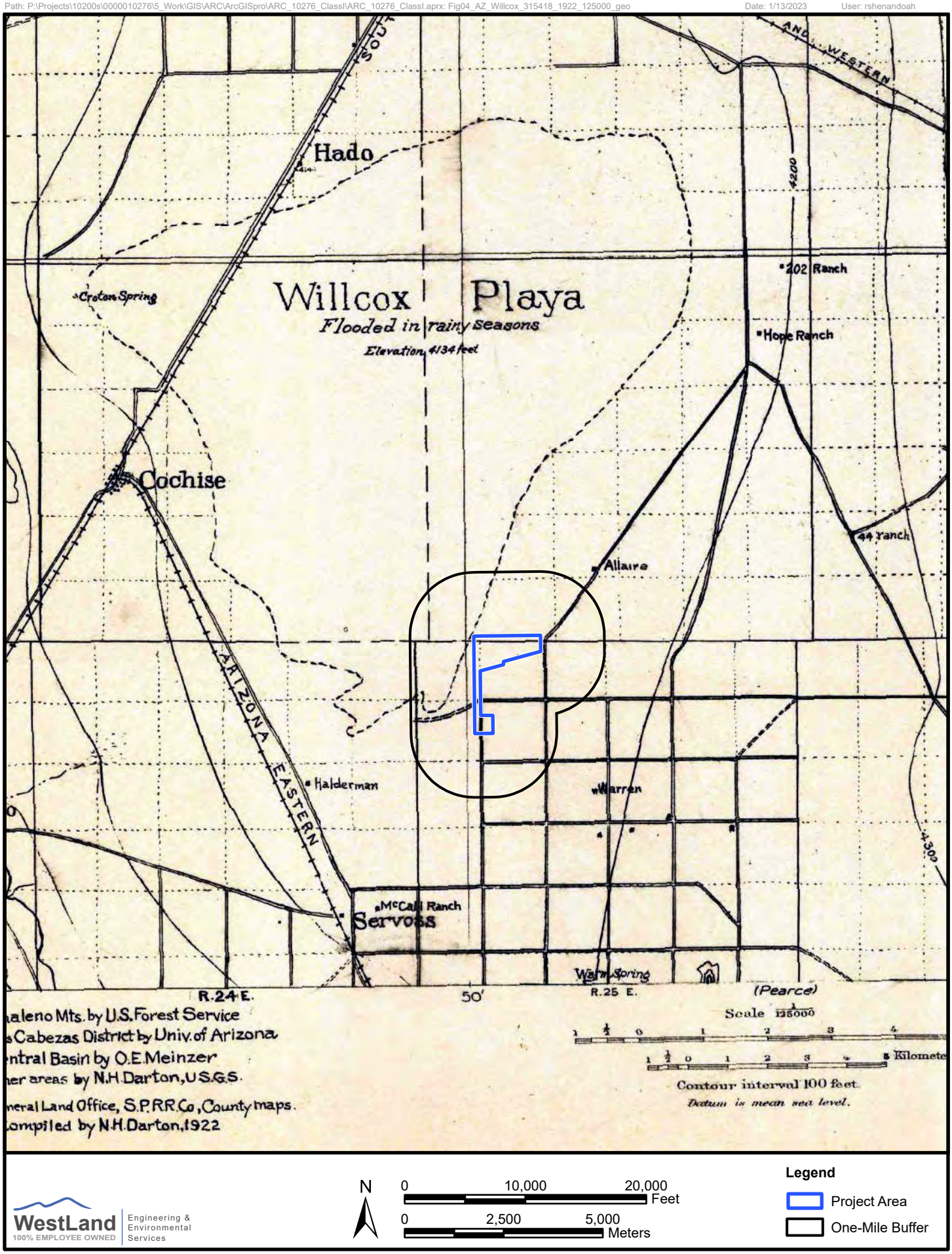

Figure 4. Overlay of the study area on the 1922 Willcox, Arizona 1:125,000 USGS quadrangle

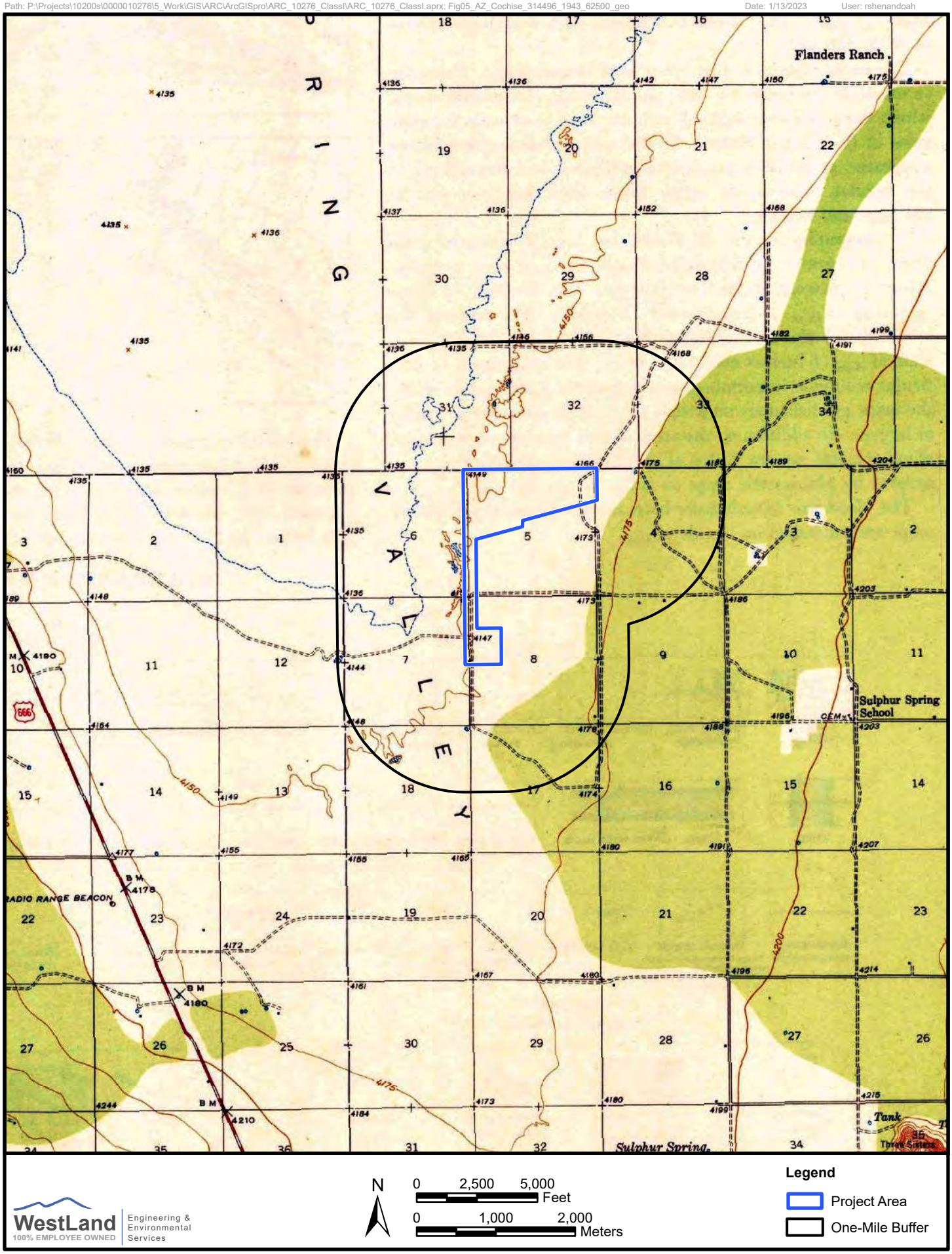

Figure 5. Overlay of the study area on the 1943 Cochise, Arizona 1:62,500 (15' series) USGS quadrangle

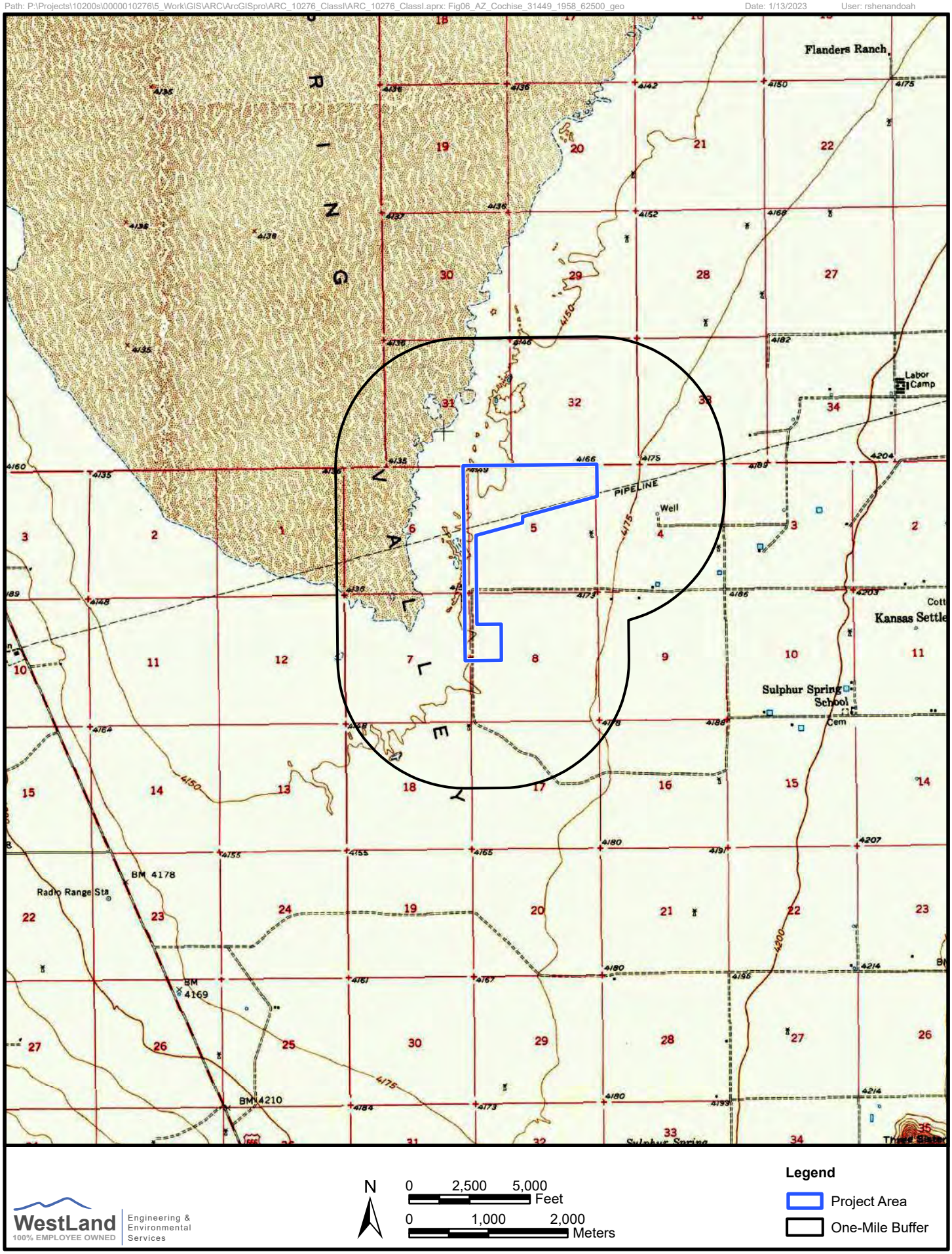

Figure 6. Overlay of the study area on the 1958 Cochise, Arizona 1:62,500 (15' series) USGS quadrangle

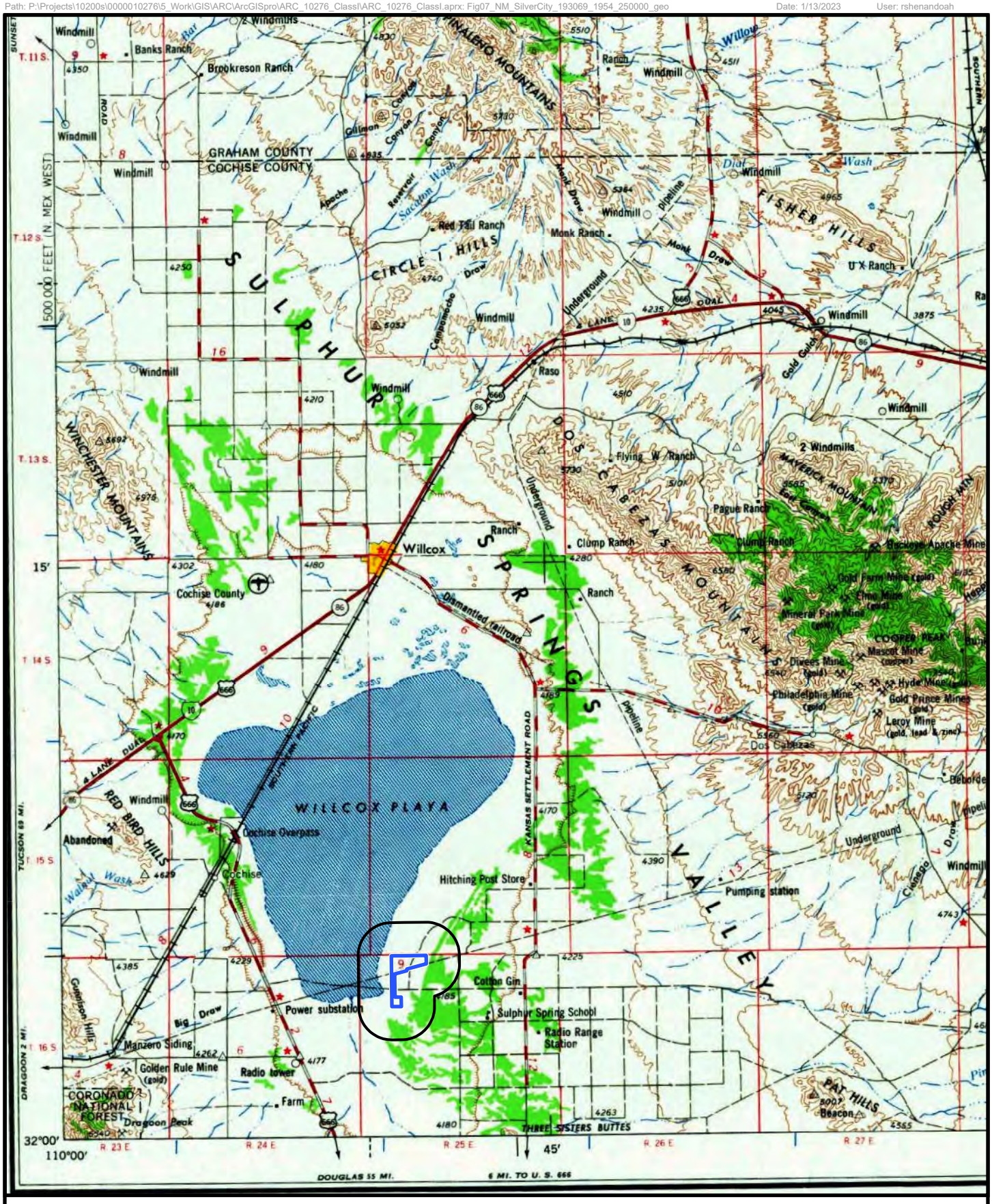

Figure 7. Overlay of the study area on the 1954 Silver City, New Mexico 1:250,000 USGS quadrangle

APPENDIX A
Archaeological Records Search

Figure A.1 depicts information that is considered sensitive and may be protected under federal, state, and local laws. As such, it has been redacted from this report.

Table A.1. Previous archaeological surveys in the Project Area*

Agency Project No.	Project Name	Reference
1955-3.ASM 1	Southern Pacific Pipeline Survey	Ingmanson 1955; McConville and Holzkamper 1955
1976-3.ASM 2	AEPCO I	Simpson et al. 1978
1977-6.ASM 3	AEPCO II: Dos Condado to Apache	Westfall et al. 1979
1993-192.ASM 4	1103 Line Replacement	Douglas 1993
1997-209.ASM 5	SFPP Arizona Reconditioning Project	William Self Associates, Inc. 1997
2000-732.ASM 6	AEPCO Apache to Dos Condado Survey	Becker et al. 2001
2006-1.ASM 7	SFPP, LP, El Paso to Phoenix Expansion Project, Arizona Portion: Cochise and Pima Counties	Rieder et al. 2006
2011-32.ASM 8	Apache-Redtail Survey	Doak 2010
2020-300.ASM 9	Hedrick Road II	Charest 2020
WRI 1608.30 10	Hedrick Road	Stone 2021
WRI 2957.09 11	SSVEC Willcox Dry Lake Tie Line	Poseyesva 2020

* The surveys listed in the table intersect the Project Area.

Table A.2. Known archaeological sites in the Project Area* and vicinity

Site Number	Site Type	Age and Cultural Affiliation	Reference	A/NRHP Eligibility
El Paso Natural Gas Pipeline 1103 (formerly AZ BB:16:48[ASM]) 1	Gas pipeline	Historic period (A.D. 1949–present); Euroamerican	Buckles et al. 2011; Jones 2008; Rieder et al. 2006	Determined eligible for listing in the NRHP by the SHPO on 08/10/2008 and 12/23/2008**
AZ CC:13:16(ASM) 2	Artifact scatter	Mogollon Pueblo period (A.D. 1150–1450); Mogollon	Charest 2020	Unevaluated
AZ CC:13:15(ASM) 3	Artifact scatter	Mogollon Pueblo period (A.D. 1150–1450); Mogollon	Doak 2010	
AZ CC:13:57(ASM) 4	Artifact scatter	Historic period (A.D. 1960s–1970s); Euroamerican	Tucker 2000	
AZ CC:16:24(ASM) 5	Gas pipeline	Historic period (A.D. 1949–present); Euroamerican	Buckles 2012	

* The sites in the Project Area are listed first with numbered blue boxes.

** The Advisory Council on Historic Preservation (ACHP) has determined that historical natural gas pipelines are exempt from review under Section 106 of the National Historic Preservation Act of 1966 (ACHP 2002).

CLASS I REFERENCES

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Biological Evaluation
for the Three Sisters Solar Project

Prepared for:

THSI bn, LLC, a subsidiary of BrightNight, LLC
13123 E Emerald Coast Pkwy, Suite B #158 – Inlet Beach Florida 32461

Prepared by:

WestLand Engineering & Environmental Services
4001 E. Paradise Falls Drive – Tucson, Arizona 85712
+1 520-206-9585

WestLand Project Number: 10276

January 17, 2023

WestLand 100% EMPLOYEE OWNED | Engineering & Environmental Services

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Appendices

1. INTRODUCTION

THSI bn, LLC (the Applicant, or THSI), a subsidiary of BNC Devco, LLC, which is a joint venture between BrightNight, LLC (BrightNight) and Cordelio Power (Cordelio) proposes the Three Sisters Solar Project, an up to 300 -megawatt (MW) photovoltaic solar energy generating facility with potential battery storage and associated approximately 1.5-mile-long generation transmission tie-in (gen-tie) line, Project substation, and Project switchyard located primarily on private lands south of Willcox, Cochise County, Arizona. Development of the Three Sisters Solar Project will require a special use permit (SUP) from Cochise County (Planning & Zoning Division) for the solar energy generating facility, and a Certificate of Environmental Compatibility (CEC) from the Arizona Corporation Commission (ACC) for the gen-tie line, substation, and switchyard (Project). This Biological Evaluation (BE) has been prepared to support acquisition of both authorizations and provides an assessment for both the solar energy generating facility, the gen-tie line, Project substation, and Project switchyard within a 500-foot buffer (Analysis Area).

For the purpose of this Biological Evaluation, special-status species are defined as species designated by the United States Fish and Wildlife Service (USFWS) as Endangered, Threatened, proposed for listing, or Candidate for listing under the Endangered Species Act (ESA), and species protected under the Bald and Golden Eagle Protection Act (BGEPA). Other species of concern within the area include the western burrowing owl (*Athene cunicularia*) and the sandhill crane (*Antigone canadensis*), both of which are protected under the Migratory Bird Treaty Act (MBTA). Given the noise and dust from proposed construction activities that may impact a broader area than the footprint of the Project, Photographs of the Project Area are provided in **Appendix A**. This 500-ft-wide corridor for the gen-tie line in combination with the proposed sites for the Project substation and Project switchyard create the Proposed Transmission Corridor considered in the analysis (**Figure 2a**). Additionally, this BE considers the proposed solar energy generating facility with potential battery energy storage.

The following sections provide: a description and location of the Project (**Section 2**), a description of the Analysis Area (**Section 3**), special-status species screening methods (**Section 4**), special-status species screening results (**Section 5**), and references cited (**Section 6**).

2. PROJECT LOCATION AND DESCRIPTION

Generation Transmission Tie-In Line Substation, and Switchyard

The Project will consist of a gen-tie line, Project substation, and Project switchyard to interconnect a proposed up to 300-MW photovoltaic solar energy generating facility with potential battery storage to an existing transmission line located approximately 10 miles south of Willcox, Arizona. The proposed gen-tie line will be approximately 1.5 miles in length running north-south along the southeastern side of the Willcox Playa, connecting to an existing transmission line that is owned and operated by Arizona Electric Power Cooperative, Inc. (AEPCO), and transmits electric power from Apache Station Generating Station (625 MW of combined gross generating capacity) produced from burning natural gas, or coal.

The proposed Project substation will convert power generated or stored at the proposed up to 300-MW photovoltaic solar energy generating facility to a voltage compatible with the existing transmission line. The proposed gen-tie line and 20-foot-wide access road will ultimately be 100 feet in width from the proposed Project substation occupying approximately 400 by 400 feet (3.6 acres) within an approximately 8-acre site at the south terminus to the approximately 400 by 400 feet (3.6 acres) Project switchyard within an approximately 8-acre site at the north terminus which will be similar in size to the substation. The Proposed Transmission Corridor will be located primarily on privately-owned lands. **Figures 2a and 2b** depict the facilities associated with this CEC application and the existing AEPCO line. The proposed Project switchyard at the north end will interconnect the gen-tie to the existing AEPCO transmission line. The potential footprint of disturbance within the 100-foot-wide eight-of-way, Project Substation and Project switchyard is approximately 13.1 acres.

Solar Energy Generating Facility with Battery Storage

The proposed site for the solar energy generating facility with potential battery storage (the Site) consists of the development of approximately 2,000 acres adjacent to and south of the gen-tie line. The Site is situated on undeveloped private lands southeast of the Willcox Playa located approximately 11 miles southeast of Interstate 10, 14 miles south of the city of Willcox, Arizona, and approximately 2 miles east of U.S. Highway 191. The Site is bound on the north, south, and east by undeveloped private land and on the west, by undeveloped private and Arizona State Trust lands.

3. ENVIRONMENTAL SETTING OF THE ANALYSIS AREA

3.1. PHYSIOGRAPHIC

The Analysis Area is located in the Basin and Range physiographic province (Ffolliott 1999), within the Northern Sulphur Springs Valley physiographic area near the southeastern edge of the Willcox Playa (Trapp and Reynolds 1995; **Figure 1**). The Analysis Area is adjacent to the southeastern extent of the playa and occurs at approximately 4,152 to 4,158 ft above mean sea level (amsl). Geologic substrate within the Analysis Area is broadly mapped primarily as Holocene surficial deposits with the major constituents of fluvial silt and clay and minor constituents of alluvial sand and gravel (Richard et al. 2000).

Terrain in the general area is essentially flat, with elevations ranging from approximately 4,150 to 4,187 feet amsl. The western-most portion of the array area has more relief and includes floodplain area that will be set-aside and preserved as open space.

3.2. CLIMATIC

Temperature and precipitation data was collected from the National Oceanic and Atmospheric Administration (NOAA) Cooperative Station in Willcox, Arizona (WRCC 2016).[1] Climatic conditions are characterized by hot summers (94.5° F average temperature in July, the hottest month), mild winters (25.9° F average temperature in January, the coldest month) and low precipitation. The average annual precipitation in the Town of Willcox is 12.18 inches.

3.3. SURFACE WATER

The Willcox Playa is an endorheic (closed) basin, with all surface water drainage flowing to the southcentral portion of the playa. Although perennial and intermittent stream reaches occur in the mountain ranges that bound the playa, all drainage features within the Willcox Playa become ephemeral before discharging into the playa. After heavy rainfall events, runoff from the surrounding mountains and alluvial piedmonts accumulates in the playa, creating shallow, ephemeral ponds, and these shallow surface waters evaporate within several days if not recharged (Waters 1989). There are several ephemeral drainage features and ponds within the Site. An approved jurisdictional delineation (AJD) was prepared that documents that these surface water features are not jurisdictional. This is being reviewed by the Army Corps of Engineers.

Within the Analysis Area for the gen-tie line, cattle tanks located at the south end of the Analysis Area and backwater drainages extending from the playa were observed to have water during the site visit on September 29, 2022, that resulted from recent rainfall events.

3.4. SOIL

The Analysis Area consists of somewhat poorly drained Crot sandy loam with 0- to 1-percent slopes, which is often associated with flats and terraces (**Appendix B**).

3.5. VEGETATION

The Analysis Area and the Site are mapped within the Semidesert Grassland biotic community (The Nature Conservancy 2012). Vegetation composition within the Analysis Area and the Site consists primarily of low-density grasses and upland tree and shrub species.

Within the Analysis Area vegetation observed included four-wing saltbush (*Atriplex canescens*), invasive Russian thistle (*Salsola sp.*), shrub-sized velvet mesquite (*Prosopis velutina*), burroweed (*Isocoma tenuisecta*), invasive tamarisk, and mixed grasses. Yucca (*Yucca s*pp.) and cholla cacti (*Cylindropuntia* spp.*)* were also observed.

[1] Western Regional Climate Center accessed online November 1, 2022.

3.6. WILDLIFE

A site visit was conducted on September 29, 2022, by Breck Jacoby and Dave Ward, qualified WestLand biologists familiar with the vegetation and wildlife of the region. During this site visit, wildlife observed included numerous birds such as sandhill crane (*Antigone canadensis*), loggerhead shrike (*Lanius ludovicianus*), common raven (*Corvus corax*), great horned owl (*Bubo virginianus*), and several sparrow and swallow species. Other wildlife observed included jackrabbit (*Lepus townsendii*), small rodents, and a variety of lizards.

Western burrowing owl was not observed during the site visit but is known to occur within the Willcox Playa Wildlife Linkage that crosses a portion of the Analysis Area including portions of the gen-tie line and the solar array (The Arizona Wildlife Linkages Workgroup 2006) (**Appendix D, Important Areas, pg. 6**). The Willcox Playa Wildlife Linkage is reported to include the following species: bobcat (*Lynx rufus*), Chiricahua leopard frog (*Lithobates chiricahuensis*), javelina (*Tayassuidae*), kit fox (*Vulpes macrotis*), Mexican spotted owl (*Strix occidentalis lucida*), mountain lion (*Puma concolor*), mule deer (*Odocoileus hemionus*), ornate box turtle (*Terrapene ornata*), plains leopard frog (*Lithobates blairi*), pronghorn (*Antilocapra americana*), Texas horned lizard (*Phrynosoma cornutum*), and western burrowing owl (*Athene cunicularia hypugaea*).

The Analysis Area is located at the southern end of the Willcox Playa/Cochise Lakes Important Bird Area (IBA). This IBA is described as containing a broad alkaline lakebed fringed with semi-desert grassland, with a seasonally flooded playa that serves as wintering and migratory stopovers for shorebirds and waterfowl (Tucson Audubon Society 2012).

General wildlife whose range overlaps the Analysis Area or are associated with its mapped biotic community (semidesert grassland) are listed in **Tables 1 through 3**.

Table 1. Mammal Species that May Occur in the Area

Species Name	Common Name
Antilocapra americana	Pronghorn
Canis latrans	Coyote
Dicotyles tajacu	Javelina
Dipodomys merriami	Merriam's kangaroo rat
D. ordii	Ord's kangaroo rat
D. spectabilis	Banner-tailed kangaroo rat
Lepus californicus	Black-tailed jackrabbit
Neotoma albigula	White-throated woodrat
N. micropus	Southern plains woodrat
Odocoileus hemionus crooki	Mule deer
O. virginianus	White-tailed deer
Onychomys torridus	Southern grasshopper mouse
Chaetodipus hispidus	Hispid pocket mouse
Peromyscus leucopus	White-footed mouse
Sigmodon fulviventer	Tawny-bellied cotton rat

Species Name	Common Name
S. hispidus	Hispid cotton rat
Spermophilus spilosoma	Spotted ground squirrel
Taxidea taxus	Badger

Table 2. Bird Species that May Occur in the Area

Species Name	Common Name
Aimophila cassinii	Cassin's sparrow
Amphispiza bilineata	Black-throated sparrow
Athene cunicularia	Burrowing owl
Auriparus flaviceps	Verdin
Buteo swainsoni	Swainson's hawk
Callipepla squamata	Scaled quail
Campylorhynchus brunneicapillus	Cactus wren
Carpodacus mexicanus	House finch
Chondestes grammacus	Lark sparrow
Corvus cryptoleucus	White-necked raven
Eremophila alpestris	Horned lark
Falco mexicanus	Prairie falcon
F. sparverius	American kestrel
Geococcyx californianus	Roadrunner
Hirundo rustica	Barn swallow
Icterus parisorum	Scott's oriole
Lanius ludovicianus	Loggerhead shrike
Lophortyx gambelii	Gambel's quail
Mimus polyglottos	Mockingbird
Molothrus ater	Brown-headed cowbird
Myiarchus cinerascens	Ash-throated flycatcher
Phalaenoptilus nuttallii	Poorwill
Picoides scalaris	Ladder-backed woodpecker
Polioptila melanura	Black-tailed gnatcatcher
Sayornis saya	Say's phoebe
Sturnella neglecta	Western meadowlark
S. magna	Eastern meadowlark
Toxostoma curvirostre	Curve-billed thrasher
Tyrannus verticalis	Western kingbird
Zenaida macroura	Mourning dove

Table 3. Reptile and Amphibian Species that May Occur in the Area

Species Name	Common Name
Bufo debilis insidior	Western green toad
Cnemidophorus uniparens	Desert grassland whiptail
Heterodon nasicus	Western hooknose snake
Heterodon nasicus kennerlyi	Mexican hognose snake
Holbrookia texana scitula	Southwestern earless lizard
Terrapene ornate luteola	Desert box turtle

3.7. EXISTING CONDITIONS

Land use in the Analysis Area and vicinity includes operation and maintenance of existing energy generation, transmission, and distribution infrastructure, agriculture, cattle grazing, rural housing, transportation via U.S. Highway 191 and other smaller roads, wildlife viewing, and other recreational activities. The Project Area is adjacent to the Willcox Playa and does not include recreational facilities or residential structures. Cattle grazing and two manmade tanks are located within the Project Area.

4. METHODS

A screening analysis was completed to evaluate the potential for special-status species or proposed or designated critical habitat to occur within the Analysis Area. ESA-listed species and critical habitat considered for evaluation are those that were identified in the USFWS Information for Planning and Consultation (IPaC) report generated for the Project (**Appendix C**; September 28, 2022). The determinations of potential for special-status species to occur within the Analysis Area were based on a review of:

- The natural history and known geographical and elevational ranges of the species.
- Results of an Arizona Game and Fish Department (AGFD) Heritage Data Management System (HDMS) online environmental review tool query that provided records of special-status species within 3 miles of the Project (**Appendix D**).
- Other occurrence records in published or grey literature, including citizen science data, and unpublished data.

Observations recorded during a site visit conducted September 29, 2022, to identify habitat types and evaluate the potential for special-status species to be present in the Analysis Area and general vicinity. The criteria used to determine the potential of occurrence of each species included in this screening analysis are defined as follows:

Present: The species has been observed to occur within the Analysis Area, the Analysis Area is within the known range and distribution of the species, and habitat characteristics required by the species are present.

Possible: There are no known records of the species within the Analysis Area, but the known, current distribution of the species includes the Analysis Area, and the required habitat characteristics of the species appear to be present in the Analysis Area. Given the uncertainty associated with species identification and accuracy of the location of observations from eBird and other citizen science databases, observations associated with citizen science databases suggest that a species is possible within the Analysis Area but do not confirm presence.

Unlikely: The known, current distribution of the species does not include the Analysis Area, but the distribution of the species is close enough such that the Analysis Area may be within the dispersal or foraging distance of the species, and they may show up as transients. The habitat characteristics required by the species may be present in the Analysis Area.

None: The Analysis Area is outside of the known distribution of the species, or the habitat characteristics required by the species are not present.

5. POTENTIAL FOR SPECIAL-STATUS SPECIES TO OCCUR

The results of the special-status species screening analyses are provided in **Table 4**. An overview of the federal protection status, known suitable habitat, total range, distribution in Arizona, and potential to occur within the Analysis Area for ESA and other special-status species is provided in **Table 4**.

5.1. ESA LISTED SPECIES

The IPaC list generated for this Project (**Appendix C**) included seven special-status species: jaguar (*Panthera onca*), Northern aplomado falcon (*Falco femoralis septentrionalis*), yellow-billed cuckoo (*Coccyzus americanus*), Northern Mexican gartersnake (*Thamnophis eques megalops*), Chiricahua leopard frog (*Rana chiricahuensis*), monarch butterfly (*Danaus plexippus),* and Wright's marsh thistle (*Cirsium wrightii*; **Table 1**). Of these seven species, one species was determined to have the potential to occur of **Unlikely** (monarch butterfly), and six were determined to have the potential to occur of **None**. These determinations and explanations for these findings are provided in **Table 4**.

5.2. BGEPA LISTED SPECIES

BGEPA species include golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*). Though neither had HDMS records within 3 miles of the Analysis Area (**Appendix D**), a number of eBird records exist from the vicinity of the Analysis Area. These records are generally from the winter and early spring period and suggest seasonal presence of foraging eagles, though no suitable nesting habitat occurs in the Analysis Area or its vicinity

5.3. MIGRATORY BIRD SPECIES ACT

As described in **Section 3.6**, MBTA species including western burrowing owl and sandhill crane are known to use Willcox Playa adjacent to the Analysis Area. Birds protected by the MBTA are likely to pass through the area during migration, although nesting habitat within the Analysis Area is limited by the sparse nature of the vegetation and predominance of weedy species such as Russian thistle.

Table 4. ESA Species Screening Analysis

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur
AMPHIBIANS					
Lithobates chiricahuensis Chiricahua leopard frog	Threatened (USFWS 2002, USFWS 2012); designated critical habitat (USFWS 2012).	Breeds in perennial to semi-permanent montane aquatic environments including cattle tanks, creeks, cienegas, pools, rivers, springs, lakes and reservoirs (USFWS 2011). Larvae are obligate on aquatic habitats whereas adults are primarily aquatic but also utilize terrestrial habitats (USFWS 2012). May disperse from occupied habitat one mile overland, three miles along intermittent drainages, and five miles along permanent water courses, or some combination thereof (USFWS 2012). Elevation: 3,200–8,890 ft (USFWS 2012).	Occurs in Arizona and New Mexico, U.S. and Sonora, Chihuahua and Durango, Mexico (USFWS 2012).	In Arizona, this species distribution is split into two areas, one within montane areas across the Mogollon Rim and the second in the mountains and valleys south of the Gila River (AGFD 2015). At the time of the initial listing (USFWS 2002), the frog was likely extant at an estimated 87 localities in Arizona. Surveys between 2002 and 2009 suggest that there has been a modest increase in the number of breeding sites (USFWS 2011).	**None.** There are HDMS records within 3 miles of the Analysis Area (**Appendix D**). The Analysis Area does not contain the aquatic habitats (creeks, cienegas, pools, rivers, streams etc.) this species requires. The Analysis Area is outside designated critical habitat for this species.
BIRDS					
***Coccyzus americanus* (western Distinct Population Segment)** Yellow-billed cuckoo	Threatened (USFWS 2014b); designated critical habitat (USFWS 2021b).	In Arizona, most commonly found in lowland riparian woodlands where Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk are dominant (USFWS 2013b). Also utilizes drier woodlands including mesquite bosques, drainages in desert scrub and desert grassland with a tree component, and Madrean evergreen woodlands in perennial, intermittent or ephemeral drainages (USFWS 2020c). This species typically occurs at elevations less than 6,600 ft amsl (AGFD 2011b). Western yellow-billed cuckoos may migrate along riparian corridors and surrounding upland vegetation (Hughes 2020). Elevation: Typically below 6,600 ft (AGFD 2011b).	This species is a long-distance neotropical migrant (Hughes 2020). At the species level, breeds throughout temperate North America south to Mexico and the Greater Antilles (Hughes 2020). The western DPS breeds west of the Continental Divide and the watershed boundary between the Rio Grande and Pecos River and the Chihuahuan Desert. The USFWS considers the historical breeding range to include southern British Columbia, Canada and in Washington, Idaho, Nevada, Oregon, Utah, western Colorado, southwestern Wyoming, California, Arizona, western New Mexico, and Texas, U.S. Breeding range extends into the Cape Region of Baja California Sur, Sonora, Sinaloa, western Chihuahua and northwestern Durango, Mexico (USFWS 2014b). Winters in South America, east of the Andes and typically south of the Amazon Basin in southern Brazil, Paraguay, Uruguay, eastern Bolivia and northern Argentina (USFWS 2014b).	More common in southern, central and the extreme northeastern portion of state, but occurs throughout the state where suitable habitat exists (AGFD 2011b).	**None.** The Analysis Area does not contain suitable lowland riparian woodlands this species requires. Additionally, there are no HDMS records within 3 miles of the Analysis Area (**Appendix D**). The Analysis Area is outside designated critical habitat for this species.
Falco femoralis septentrionalis Northern aplomado falcon	Endangered (USFWS 1986); no critical habitat; non-essential experimental population (USFWS 2006).	Within the U.S., this species uses coastal prairies, desert grasslands, oak woodlands and riparian gallery forest (Keddy-Hector, Pyle, and Pattern 2017). This species has historically occurred in relatively flat and open habitats (USFWS 2014d). Builds nests in large trees, cliffs, utility poles, artificial platforms or on the ground when elevated nest sites are not available (Keddy-Hector, Pyle, and Pattern 2017). This species is expected to use similar habitat year-round (Keddy-Hector, Pyle, and Pattern 2017). Elevation: In southwestern U.S., most common from 3,300–4,900 ft (AGFD 2001).	This species is mostly non-migratory, although local nomadic movement may occur (Keddy-Hector, Pyle, and Pattern 2017). The *septentrionalis* subspecies occurs in New Mexico and Texas, U.S. and the Mexican states of Chihuahua, northwestern Chiapas, western Campeche, Oaxaca, San Luis Potosi, Tabasco, and Vera Cruz (USFWS 2014d).	Historically occurred in the southern portion of the state but there are no substantiated breeding records since 1940. The most recently documented sighting in the state occurred in 1977, however, there was an unconfirmed report in 2005 from near the international border with Mexico (USFWS 2006). A non-essential experimental population, encompassing the entire state, was established in 2006 but we are unaware of any introduction of birds into Arizona (USFWS 2006).	**None.** The Analysis Area contains flat and open habitat, which is suitable for this species. However, there is limited knowledge of the distribution of this species in Arizona, no HDMS records within 3 miles of the Analysis Area (**Appendix D**), and no confirmed records of this species in Arizona for over 50 years.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur
INSECTS					
Danaus plexippus plexippus Monarch butterfly	Candidate. (USFWS 2020a)	Monarch caterpillars feed exclusively on plants in the subfamily Asclepiadoideae (milkweed) and adults forage for nectar on a wide variety of flowers. This species can be found wherever milkweed occurs. Overwintering populations use the leaves, branches and trunks of large trees within forested groves. In California, both native tree species and eucalyptus trees are utilized (Jepsen et al. 2015). Elevation: In Arizona, found at all elevations (Morris, Kline, and Morris 2015).	*D. plexippus* occurs in North America, Central America, the Caribbean south to South America, Hawaii, Australia, some Pacific Islands, parts of Asia, Africa and southern Europe. Populations outside of the Americas may be non-native (Zhan et al. 2014). Most populations of the *plexippus* subspecies are migratory and breed in southern-most portions of all Canadian provinces except Newfoundland and Labrador, the conterminous U.S. states and the Mexican states of Baja California, Chihuahua, Coahuila, Nuevo Léon, Sonora and Tamaulipas. The wintering range of migratory populations includes coastal California and southern Florida, U.S. and the Mexican states of Baja California, Mexico and Michoacán (Jepsen et al. 2015).	Breeding and migratory populations occur throughout the state. Some adults overwinter in the low deserts of Arizona in areas where food resources are abundant. These areas are generally represented by urban environments including Yuma, Phoenix and Tucson (Morris, Kline, and Morris 2015).	**Unlikely.** This species is migratory and can be found where food resources are abundant. However, milkweed was not observed within the Analysis Area to support the monarch butterfly populations. There are no HDMS records within 3 miles (**Appendix D**). Preferred foraging habitat is absent in the Analysis Area due to the lack of milkweed and the predominance of grasses, four-wing saltbush, and Russian thistle.
MAMMALS					
Panthera onca Jaguar	Endangered (USFWS 1997); designated critical habitat (USFWS 2014a).	Range wide this species uses wide variety of habitat types. Jaguars use lowland wet vegetative communities, including marshy savanna and tropical rainforest. This species is also found in arid regions where it is found in tropical dry forest, thornscrub, desertscrub, chaparral, semi-desert grassland, Madrean evergreen woodland, deciduous forest, and conifer forest (USFWS 2018). Elevation: This species has been recorded from as high as 9,186 ft in the northern extent of its range (USFWS 2018).	Occurs in southern Arizona, southern New Mexico and southern Texas, U.S. Range extends southward through Mexico to northern Argentina (USFWS 2018).	Historically (i.e., prior to 1965), jaguars were reported at numerous locations in Arizona, as far north as the Grand Canyon; however, all Arizona records since 1965 have been in the southern portion of the state (Brown and López-González 2001, Wildlife Conservation Society 2021, accessed February 1, 2021). One record is from near Globe, and the remaining records are from the Atascosa, Baboquivari, Dos Cabezas, Huachuca, Patagonia, Peloncillo, Santa Rita and Whetstone mountains in the southeastern portion of the state. Between 1965 and 1986, only three jaguars were documented (and all were killed) in Arizona: in the Patagonia Mountains (1965), near the Santa Cruz River (1971), and in the Dos Cabeza Mountains (1986). No jaguars were reported in Arizona for 10 years between 1986 and 1996, but the number of sightings of this species in the southwestern U.S. has been on the rise since 1996. Seven possibly eight, individual jaguars were documented in the U.S. between 1996 and 2021: two in New Mexico and five or six in Arizona (Wildlife Conservation Society 2021). A single male jaguar has been documented in the Dos Cabeza and Chiricahua Mountains as recently as 2021 (Wildlife Conservation Society 2021). Because female jaguars have not been documented in the state for many years, individuals detected in Arizona are interpreted as part of a population that primarily occurs in adjoining regions of Mexico (USFWS 2018).	**None.** The Analysis Area lacks appropriate habitat, is rare in numbers in Arizona and there are no HDMS records within 3 miles (**Appendix D**). The Analysis Area is outside designated critical habitat for this species.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur
PLANTS					
Cirsium wrightii Wright's marsh thistle	Positive 12-month finding (USFWS 2010).	This species is a wetland obligate which grows in saturated, often alkaline soils along streams, springs, seeps and marshes (Keil 2006, Lichvar et al. 2016, USFWS 2010). Elevation: 3,450–7,850 ft (USFWS 2010).	Historically in Arizona and New Mexico, U.S. and Chihuahua and possibly Sonora, Mexico (USFWS 2010).	This species has been extirpated from all known locations in Arizona (USFWS 2010). Historically, occurred in the San Bernardino Cienega, Cochise County (AGFD 2010).	**None.** The Analysis Area does not occur within known locations of this species in Arizona. Additionally, there is no suitable habitat within the Analysis Area, and there are no HDMS records within 3 miles (**Appendix D**).
REPTILES					
Thamnophis eques megalops Northern Mexican gartersnake	Threatened (USFWS 2014c); designated critical habitat (USFWS 2020b, U.S. Fish and Wildlife Service 2021a)	This species is strongly associated with water due to its primarily aquatic prey base and is heavily dependent on fish species. Occurs near or in ponds, cienegas, lowland river riparian forests and woodlands, and upland stream gallery forests. Avoids steep mountain canyons. Most abundant in densely vegetated habitat. Associated with a variety of biotic communities including Sonoran Desertscrub, Semidesert Grasslands, Interior Chaparral, Madrean Evergreen Woodland and into the lower reaches of Petran Montane Conifer Forest (AGFD 2012, USFWS 2013a). Northern Mexican gartersnakes may be found up to one mile (or more) away from water, using terrestrial habitat for brumation, digestion, or for thermoregulatory needs such as developing young (Jeff Servoss, USFWS pers. comm. to D. Cerasale, April 18, 2016). Elevation: 130–8,497 ft (USFWS 2014c) but is most common below 5,000 ft (AGFD 2012).	Occurs in Arizona and New Mexico, U.S. (USFWS 2014c). Although it is poorly known, the range extends into Mexico and is thought to include Sonora, Chihuahua, Durango, Coahuila, Zacatecas, Guanajuato, Nayarit, Hidalgo, Jalisco, San Luis Potosí, Aguascalientes, Tlaxcala, Puebla, México, Michoacán, Oaxaca, Veracruz, and Querétaro (AGFD 2012).	Occurs in fragmented populations south of Hwy I-40. There are five populations where individuals are reliably detected and include Page Springs and Bubbling Ponds State Fish Hatcheries along Oak Creek, lower Tonto Creek, the upper Santa Cruz River in the San Rafael Valley, the Bill Williams River and the upper and middle Verde River. This species is irregularly detected along the Agua Fria River, Little Ash Creek, the Black River, Big Bonito Creek, Redrock Canyon, Sonoita Creek, Scotia Canyon, Parker Canyon, Las Cienegas National Conservation Area and Cienega Creek Natural Preserve, Buenos Aires National Wildlife Refuge, Bear Creek, San Pedro River, Babocomari River and Cienega, Canelo Hills-Sonoita Grasslands Area, and the San Bernardino National Wildlife Refuge. The species is likely extirpated from the Lower Colorado River, the Lower Salt River, Sycamore Creek (Yavapai and Coconino counties), and the Lower Santa Cruz River (USFWS 2014c).	**None.** The Analysis Area does not contain suitable aquatic habitat this species requires. Additionally, there are no HDMS records within 3 miles (**Appendix D**). The Analysis Area is outside designated critical habitat for this species.

Table 5. BGEPA Species Screening Study

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur
Haliaeetus leucocephalus Bald Eagle	Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c)	Breeding is concentrated in coastal areas, along rivers, lakes or reservoirs. Typically breeds in forested areas with edge habitat within 1.3 miles of aquatic habitats suitable for foraging. Prefers areas of shallow water and shorelines for fishing and hunting wide variety of waterfowl, and small aquatic and terrestrial mammals. Fish are preferred prey, but carrion is used extensively whenever encountered. Nests away from human disturbance in large trees and rarely on cliff ledges or on the ground when trees are absent. Winters primarily in coastal areas or along major river systems with adequate prey availability and large trees for perching (Buehler 2020). Elevation: In Arizona, 460–7,930 ft (AGFD 2011a).	Migratory behavior varies among populations and age groups (Buehler 2020). Breeds south of the tundra throughout Canada and the U.S., excluding Hawaii. Additionally, small breeding populations occur in Baja California, Sonora and Chihuahua, Mexico (Buehler 2020). Winter range appears to be expanding as populations increase in size. Most populations are year-round residents with only the northern most populations in Alaska, U.S. and Canada withdrawing southward or to coastal areas (Fink et al. 2018).	A small resident population occupies the central part of the state, and a wintering population occurs in central and northern Arizona. Breeding territories occur at most large lakes and reservoirs and along portions of large rivers and creeks, including the Agua Fria, Bill Williams, Colorado, Little Colorado, Gila, Salt, San Carlos, San Francisco and Verde Rivers (AGFD 2011a, McCarty, Licence, and Jacobsen 2018).	**Possible** The Analysis Area is within the southern limit of this species' wintering range. There are no HDMS records within 3 miles of the Analysis Area (**Appendix D**) but there are numerous eBird records from the vicinity of the Analysis Area. These records are generally from the winter and early spring period and suggest seasonal presence of bald eagles as foraging individuals. No suitable nesting habitat occurs in the Analysis Area or vicinity and there are no known bald eagle breeding areas in southeastern Arizona. There is no critical habitat designated for this species.
Aquila chrysaetos Golden eagle	Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c)	Range-wide, breeds in a wide variety of open habitats, with nests typically on cliffs, and avoids heavily forested areas (Katzner et al. 2020). In Arizona, prefers pinyon-juniper woodlands and Sonoran desertscrub (Driscoll 2005). Constructs large nests on cliff ledges, rock outcrops, tall trees or, rarely, transmission towers (Driscoll 2005). Golden eagles are known to forage within 4.4 miles of the nest (Tesky 1994), generally in open habitats where prey is available (Katzner et al. 2020). Primarily feeds on small mammals (greater than 80% of prey items) but also consumes birds, reptiles and fish (Katzner et al. 2020). In the western U.S. average territory size ranges from 22 to 55 square miles (AGFD 2002). Elevation: In Arizona, typically breeds between 1,300–9,000 ft (Driscoll 2005).	This species is a short to medium-distance partial migrant with a Holarctic distribution (Katzner et al. 2020). In North America, primarily breeds in western portion of the continent from Alaska to central Mexico. Northern most populations are typically migratory. Year-round and non-breeding populations occur from central Saskatchewan to British Columbia, Canada and south throughout its range and sparsely in the eastern U.S. (Katzner et al. 2020).	Found in suitable habitat throughout the state (Driscoll 2005) but tend to vacate low desert areas during the summer (AGFD 2002).	**Possible** There are no HDMS records of this species within 3 miles of the Study Area **(Appendix D)** but there are numerous eBird records from the vicinity of the Analysis Area. These records are generally from the winter and early spring period and suggest seasonal presence of golden eagles as foraging individuals. No suitable nesting habitat occurs in the Analysis Area or vicinity. There is no critical habitat designated for this species.

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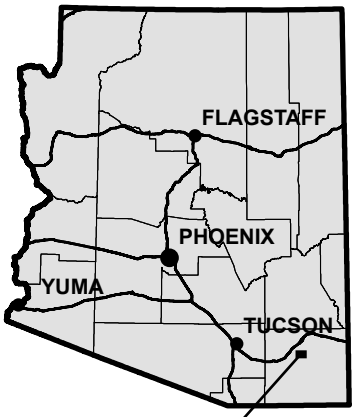
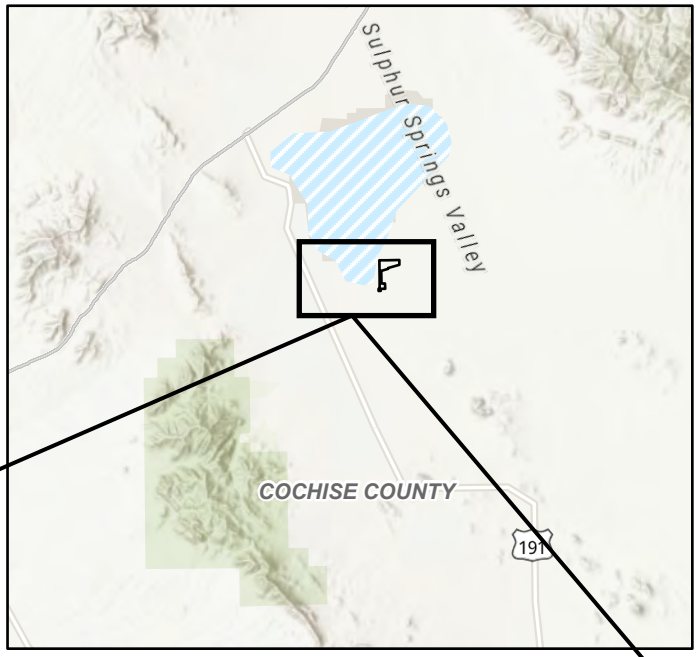
FIGURES

ARIZONA

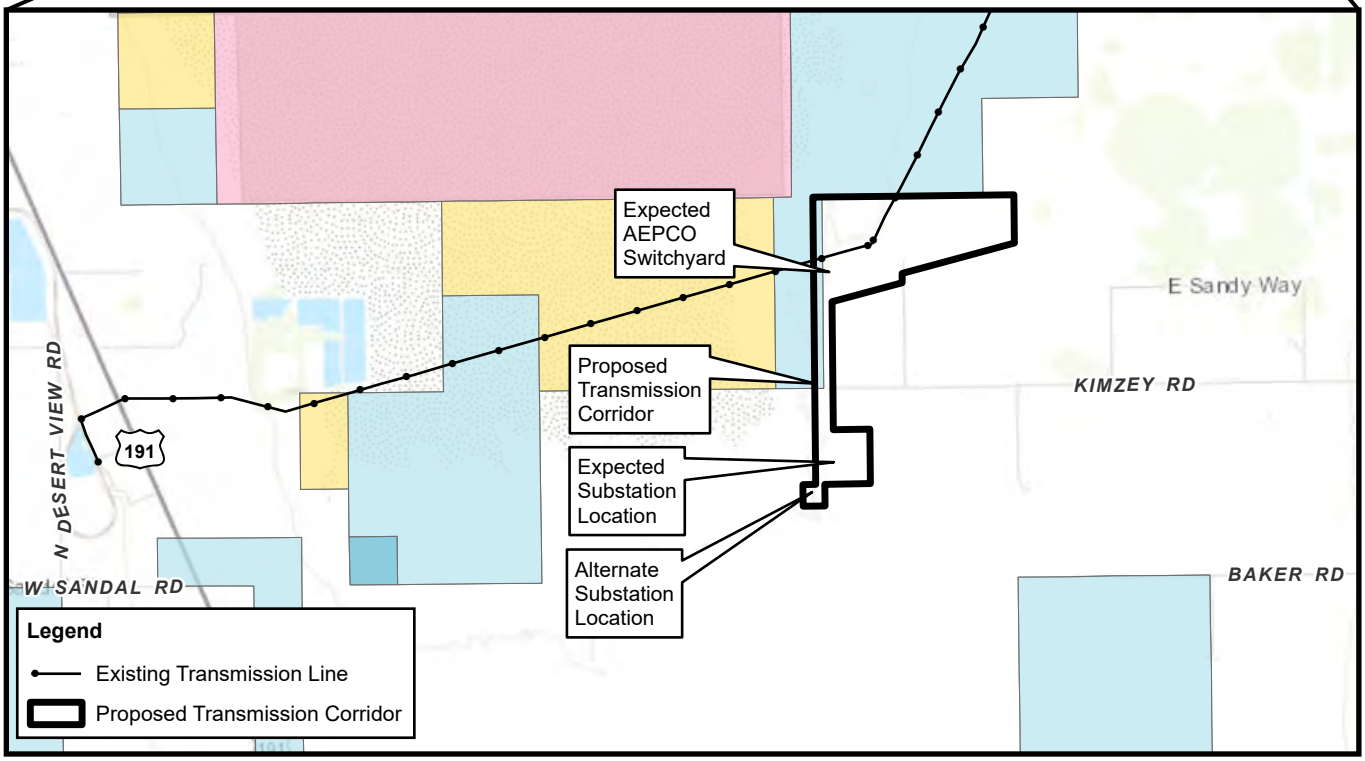


PROJECT LOCATION

PROJECT VICINITY



Approximate Scale 1 inch equals 10 miles



Proposed Transmission Corridor within:
T16S, R25E, Portions of Sections 5-8,
Cochise County, Arizona,
Willcox 1:100,000 USGS Quadrangle
Projection: NAD 1983 UTM Zone 12N
Surface Management: BLM ArcGIS Service accessed 1/12/2023
Image Source: ArcGIS Online, World Topographic Map

THSI bn, LLC
Three Sisters Solar Project
Certificate of Environmental Compatibility
Exhibit B-2 Biological Evaluation

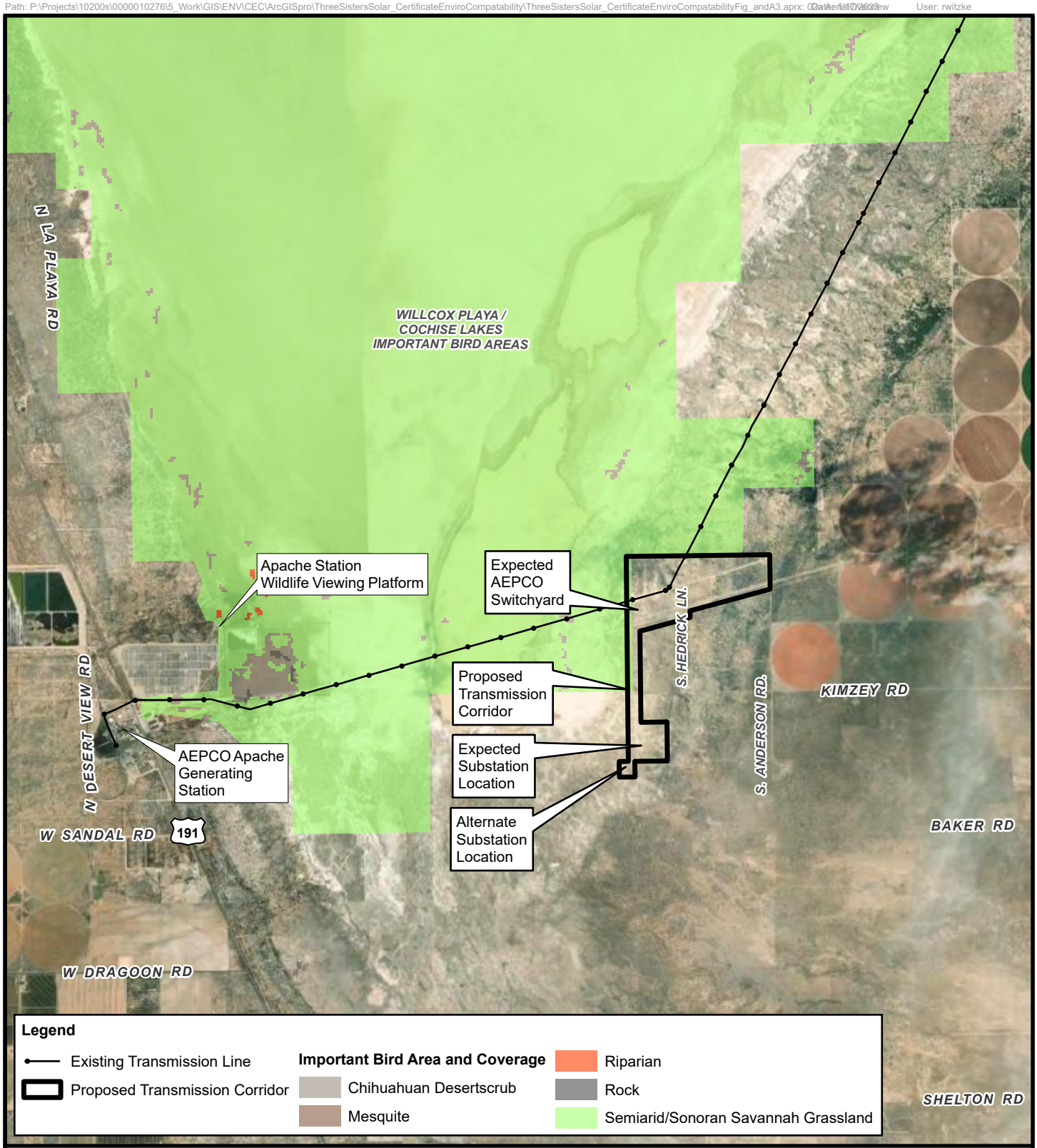
VICINITY MAP
Figure 1

N

0 0.5 1 Miles

0 1 2 Kilometers

WestLand
100% EMPLOYEE OWNED
Engineering & Environmental Services



Proposed Transmission Corridor within:
T16S, R25E, Portions of Sections 5-8,
Cochise County, Arizona,
Image Source: Maxar 9/17/2021 - 4/10/2022

N

0 0.5 1 Miles

0 1 2 Kilometers

WestLand
100% EMPLOYEE OWNED
Engineering & Environmental Services

THSI bn, LLC
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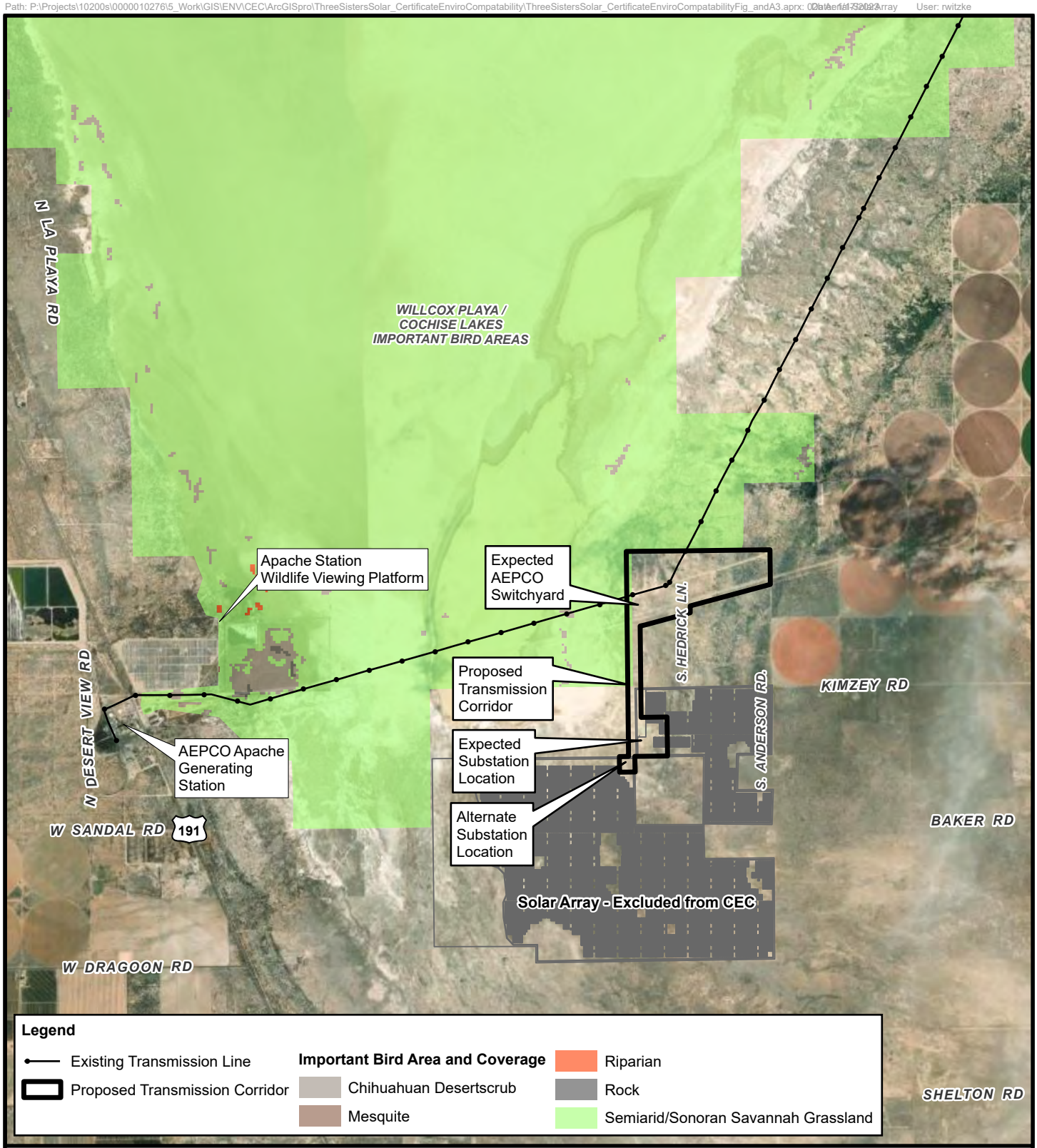
Exhibit B-2 Biological Evaluation

AERIAL OVERVIEW
Figure 2a



Proposed Transmission Corridor within:
T16S, R25E, Portions of Sections 5-8,
Cochise County, Arizona,
Image Source: Maxar 9/17/2021 - 4/10/2022

N

0 0.5 1 Miles

0 1 2 Kilometers

WestLand
100% EMPLOYEE OWNED
Engineering & Environmental Services

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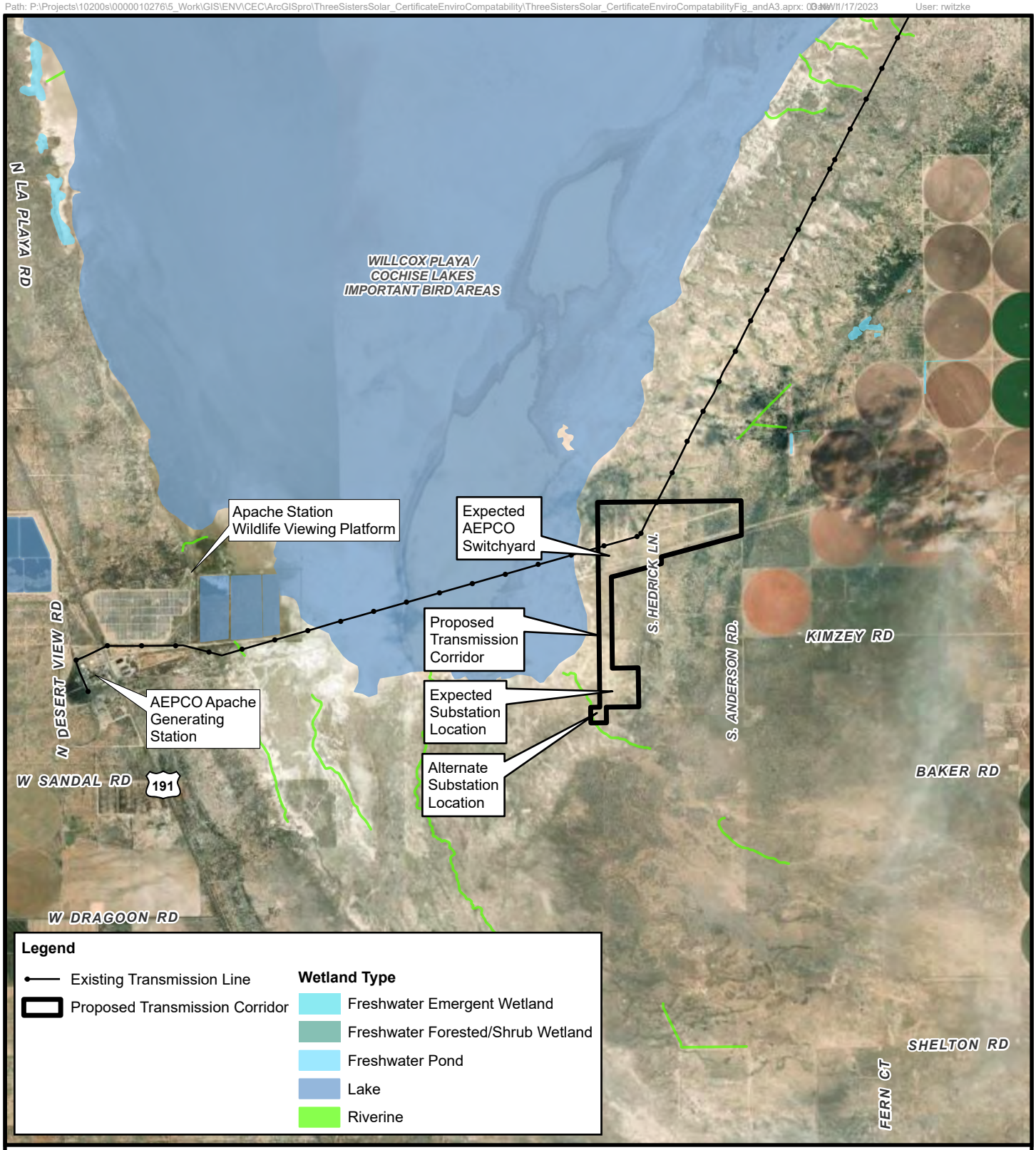
Exhibit B-2 Biological Evaluation

AERIAL OVERVIEW WITH SOLAR ARRAY
Figure 2b



Proposed Transmission Corridor within:
T16S, R25E, Portions of Sections 5-8,
Cochise County, Arizona,
USFWS National Wetland Inventory
Image Source: Maxar 9/17/2021 - 4/10/2022

N

0 0.5 1 Miles

0 1 2 Kilometers

WestLand
100% EMPLOYEE OWNED
Engineering & Environmental Services

THSI bn, LLC
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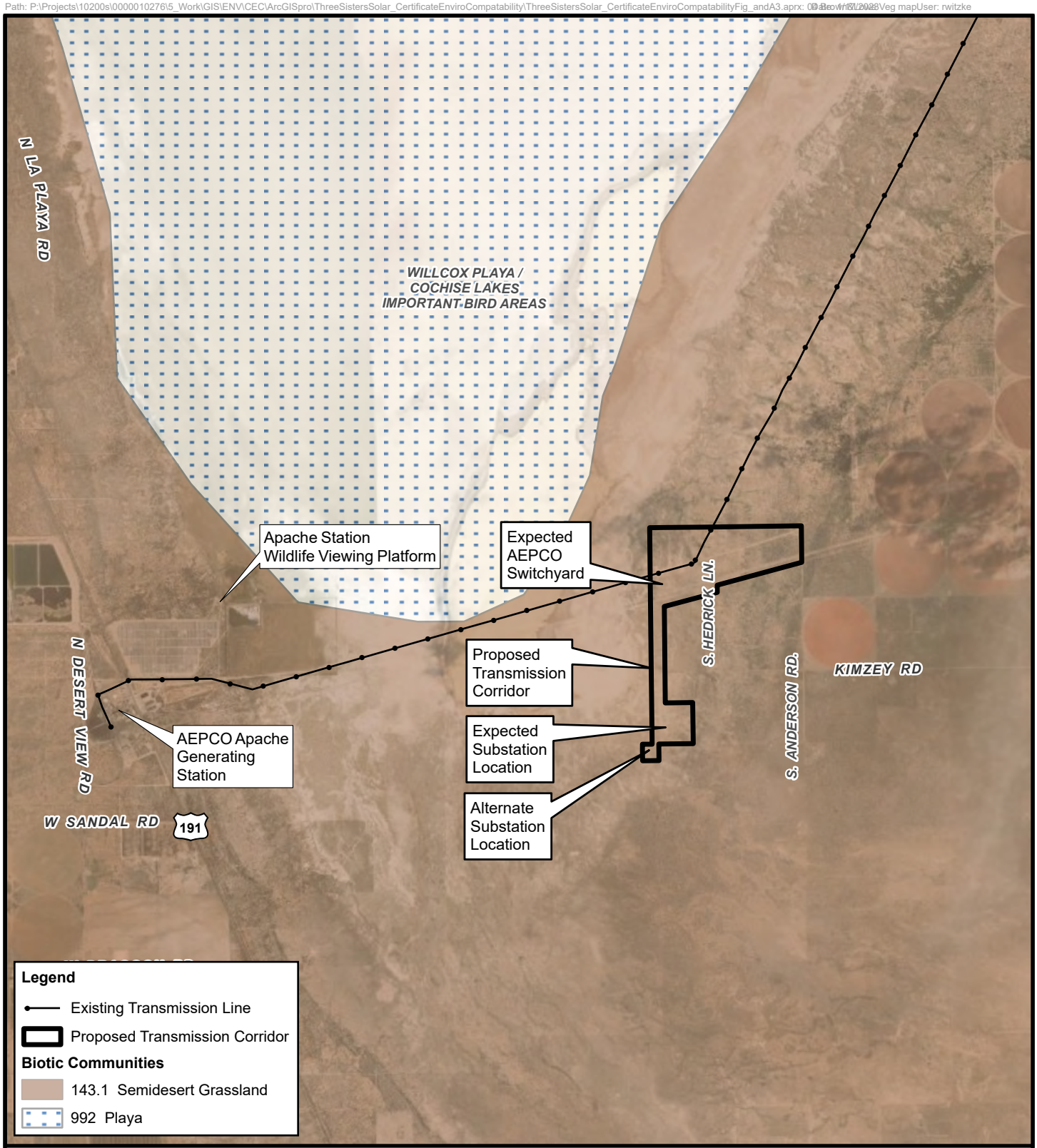
Exhibit B-2 Biological Evaluation

NATIONAL WETLAND INVENTORY
Figure 3



Proposed Transmission Corridor within:
T16S, R25E, Portions of Sections 5-8,
Cochise County, Arizona,
Brown & Lowe Biotic Communities of the Southwest (1980),
developed by The Nature Conservancy in AZ (2004)
Image Source: Maxar 9/17/2021 - 4/10/2022

N

0 0.5 1 Miles

0 1 2 Kilometers

WestLand
100% EMPLOYEE OWNED
Engineering & Environmental Services

THSI bn, LLC
Three Sisters Solar Project
Certificate of Environmental Compatibility
Exhibit B-2 Biological Evaluation

VEGETATION MAP
Figure 4

APPENDIX A
Representative Photographs of the Analysis Area

Photo 1. View at the northern terminus of the Gen-tie line Project Area. Open grasses are visible with little diversity.

Photo 2. Shallow, ephemeral ponds located to the east, adjacent to the Gen-tie line Project Area.

Photo 3. Overview of the grazing infrastructure located along Gen-tie line Project Area.

Photo 4. Overview of the southern terminus and fencing along Gen-tie line Project Area.

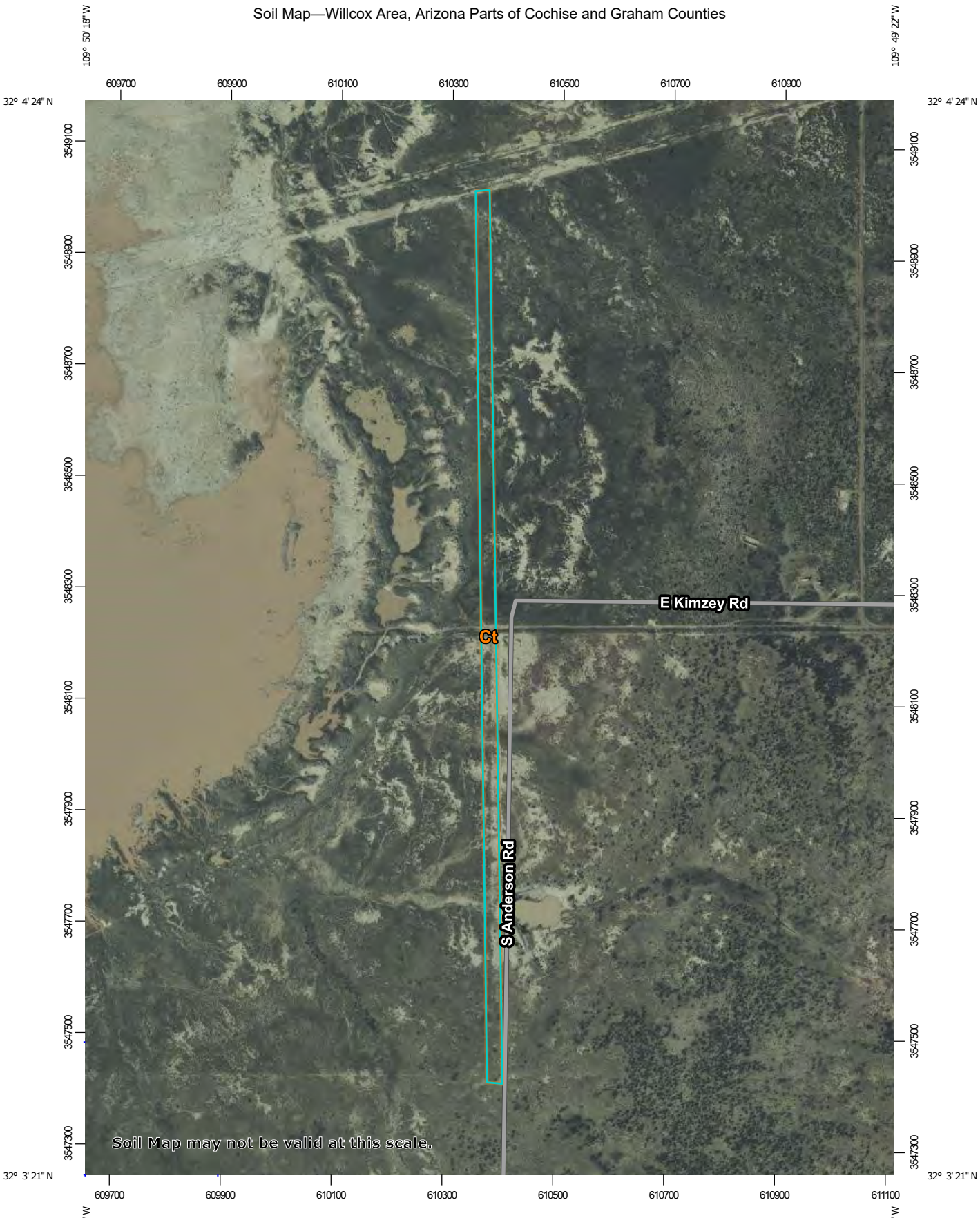
Photo 5. Ephemeral wash located at the western portion of the larger solar array Project Area.

Photo 6. Section of the larger solar array Project Area with several velvet mesquite trees.

Photo 7. Overview of the general vegetation of the larger solar array Project Area dominated by open grassland.

Photo 8. Overview of the fenceline within the larger solar array Project Area

APPENDIX B
NRCS Digital Web Soil Survey Report



Map Scale: 1:9,410 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 100 200 400 600

Feet
0 450 900 1800 2700

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Willcox Area, Arizona Parts of Cochise and Graham Counties
Survey Area Data: Version 16, Aug 29, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 13, 2020—Feb 15, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ct	Crot sandy loam	10.6	100.0%
Totals for Area of Interest		**10.6**	**100.0%**

APPENDIX C
USFWS Arizona Ecological Services Field Office IPaC Query Report

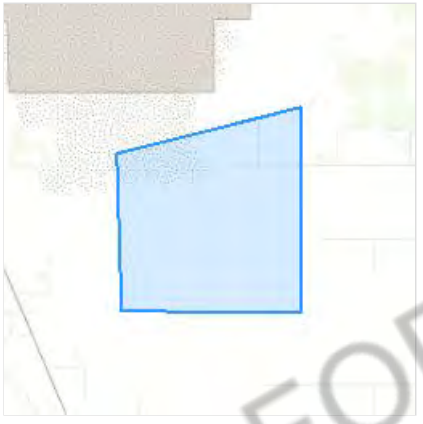
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Cochise County, Arizona



Local office

Arizona Ecological Services Field Office

(602) 242-0210
(602) 242-2513

9828 North 31st Ave
#c3
Phoenix, AZ 85051-2517

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Jaguar Panthera onca Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3944	Endangered

Birds

NAME	STATUS

Northern Aplomado Falcon Falco femoralis septentrionalis — EXPN

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1923

Yellow-billed Cuckoo Coccyzus americanus — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/3911

Reptiles

NAME	STATUS
Northern Mexican Gartersnake Thamnophis eques megalops Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Amphibians

NAME	STATUS
Chiricahua Leopard Frog Rana chiricahuensis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1516	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Wright's Marsh Thistle Cirsium wrightii There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/8963	Proposed Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Baird's Sparrow *Ammodramus bairdii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5113	Breeds elsewhere
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Jul 31
Bendire's Thrasher *Toxostoma bendirei* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9435	Breeds Mar 15 to Jul 31
Black-throated Gray Warbler *Dendroica nigrescens* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jul 20

Chestnut-collared Longspur *Calcarius ornatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Western Grebe *aechmophorus occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

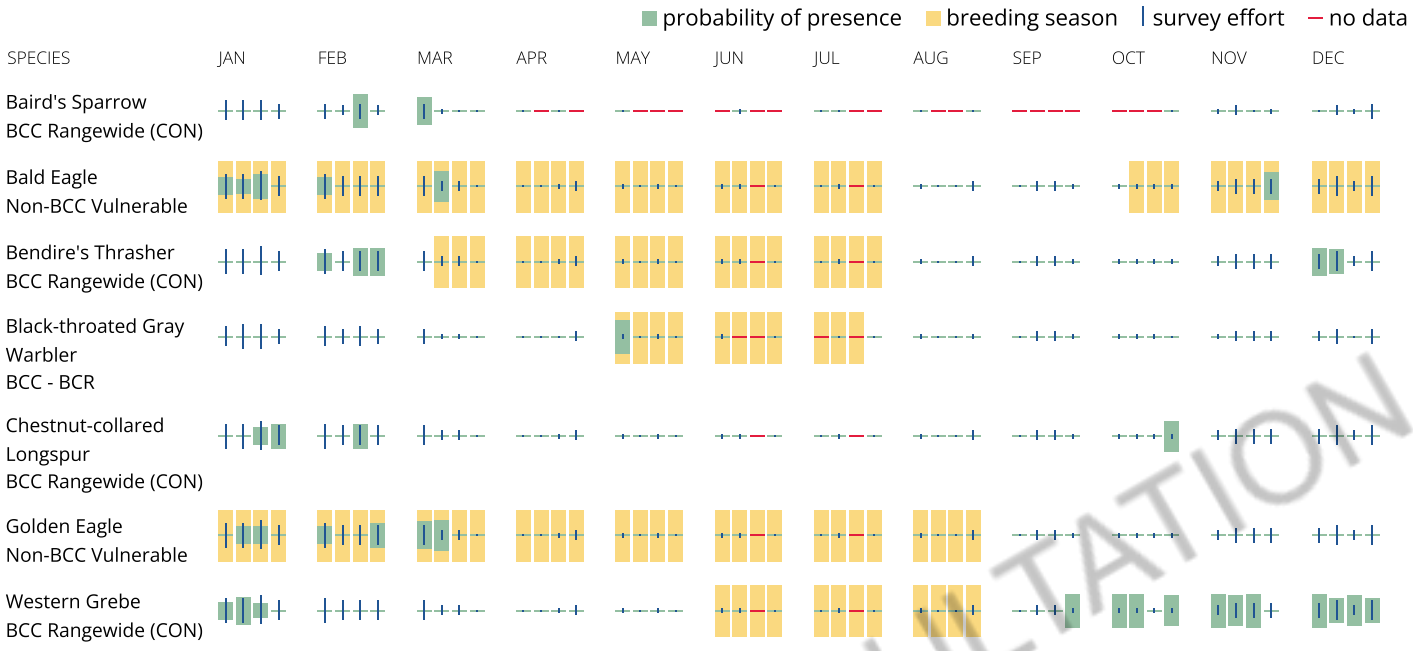
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Coastal Barrier Resources System

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit

the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

There are no known coastal barriers at this location.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the official CBRS maps. The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX D
AGFD HDMS Online Environmental Review Tool Query Report

Arizona Environmental Online Review Tool Report

Arizona Game and Fish Department Mission
To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:
BrightNight Three Sisters

Project Description:
BrightNight Three Sisters

Project Type:
Energy Storage/Production/Transfer, Energy Transfer, Power line/electric line (new)

Contact Person:
Breck Jacoby

Organization:
WestLand Resources, Inc.

On Behalf Of:
CONSULTING

Project ID:
HGIS-17409

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

Disclaimer:

1. This Environmental Review is based on the project study area that was entered. The report must be updated if the project study area, location, or the type of project changes.
2. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area. This review is also not intended to replace environmental consultation (including federal consultation under the Endangered Species Act), land use permitting, or the Departments review of site-specific projects.
3. The Departments Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. HDMS data contains information about species occurrences that have actually been reported to the Department. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HabiMap Arizona data, specifically Species of Greatest Conservation Need (SGCN) under our State Wildlife Action Plan (SWAP) and Species of Economic and Recreational Importance (SERI), represent potential species distribution models for the State of Arizona which are subject to ongoing change, modification and refinement. The status of a wildlife resource can change quickly, and the availability of new data will necessitate a refined assessment.

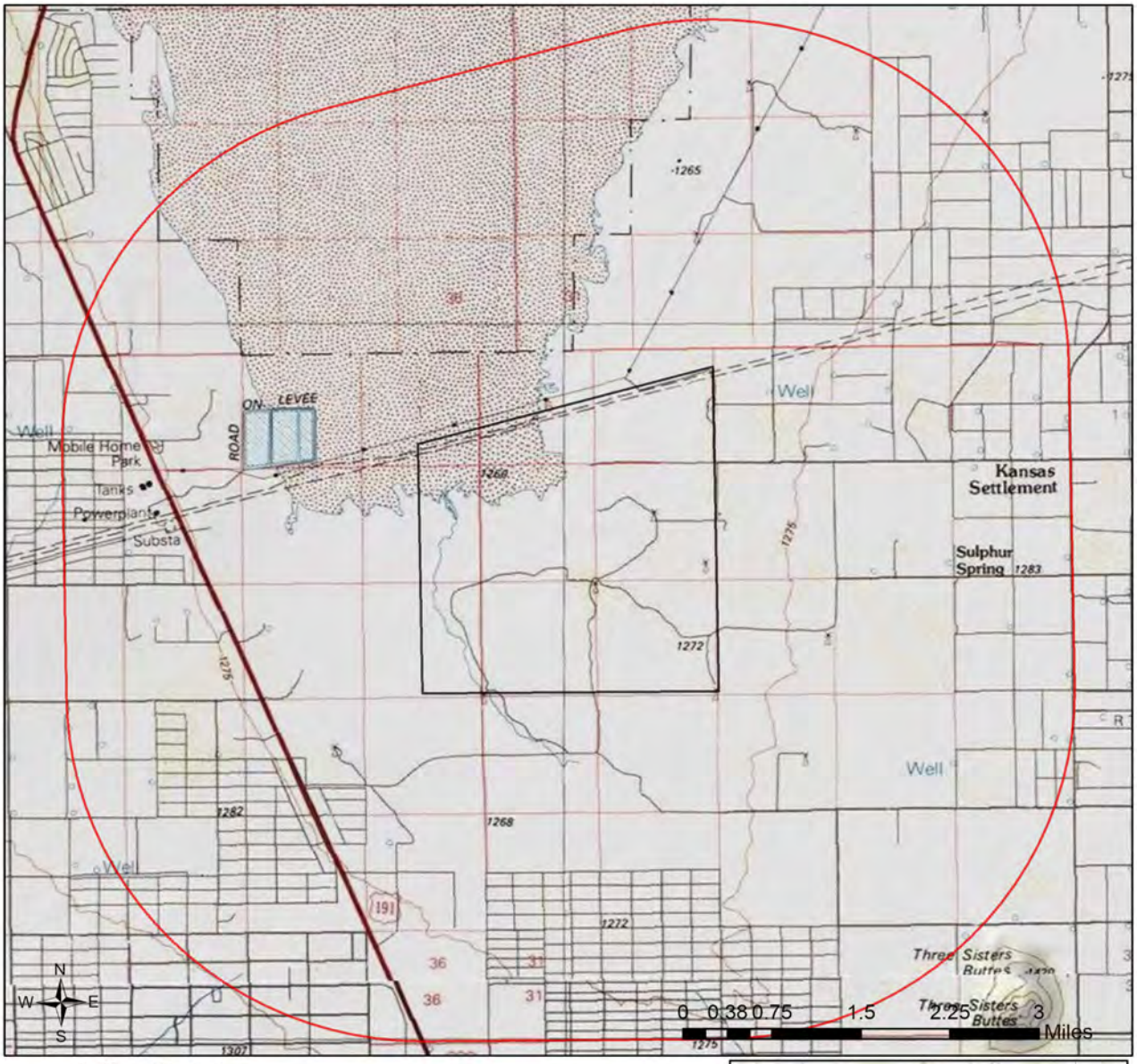
Locations Accuracy Disclaimer:
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

Recommendations Disclaimer:

1. The Department is interested in the conservation of all fish and wildlife resources, including those species listed in this report and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
2. Recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation).
3. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project. These recommendations are preliminary in scope, designed to provide early considerations on all species of wildlife.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. Further coordination with the Department requires the submittal of this Environmental Review Report with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map). Once AGFD had received the information, please allow 30 days for completion of project reviews. Send requests to:
   Project Evaluation Program, Habitat Branch
   Arizona Game and Fish Department
   5000 West Carefree Highway
   Phoenix, Arizona 85086-5000
   Phone Number: (623) 236-7600
   Fax Number: (623) 236-7366
   Or
   PEP@azgfd.gov
6. Coordination may also be necessary under the National Environmental Policy Act (NEPA) and/or Endangered Species Act (ESA). Site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies

BrightNight Three Sisters

USA Topo Basemap With Locator Map



Buffered Project Boundary

Project Boundary

Project Size (acres): 3,962.46

Lat/Long (DD): 32.0540 / -109.8339

County(s): Cochise

AGFD Region(s): Tucson

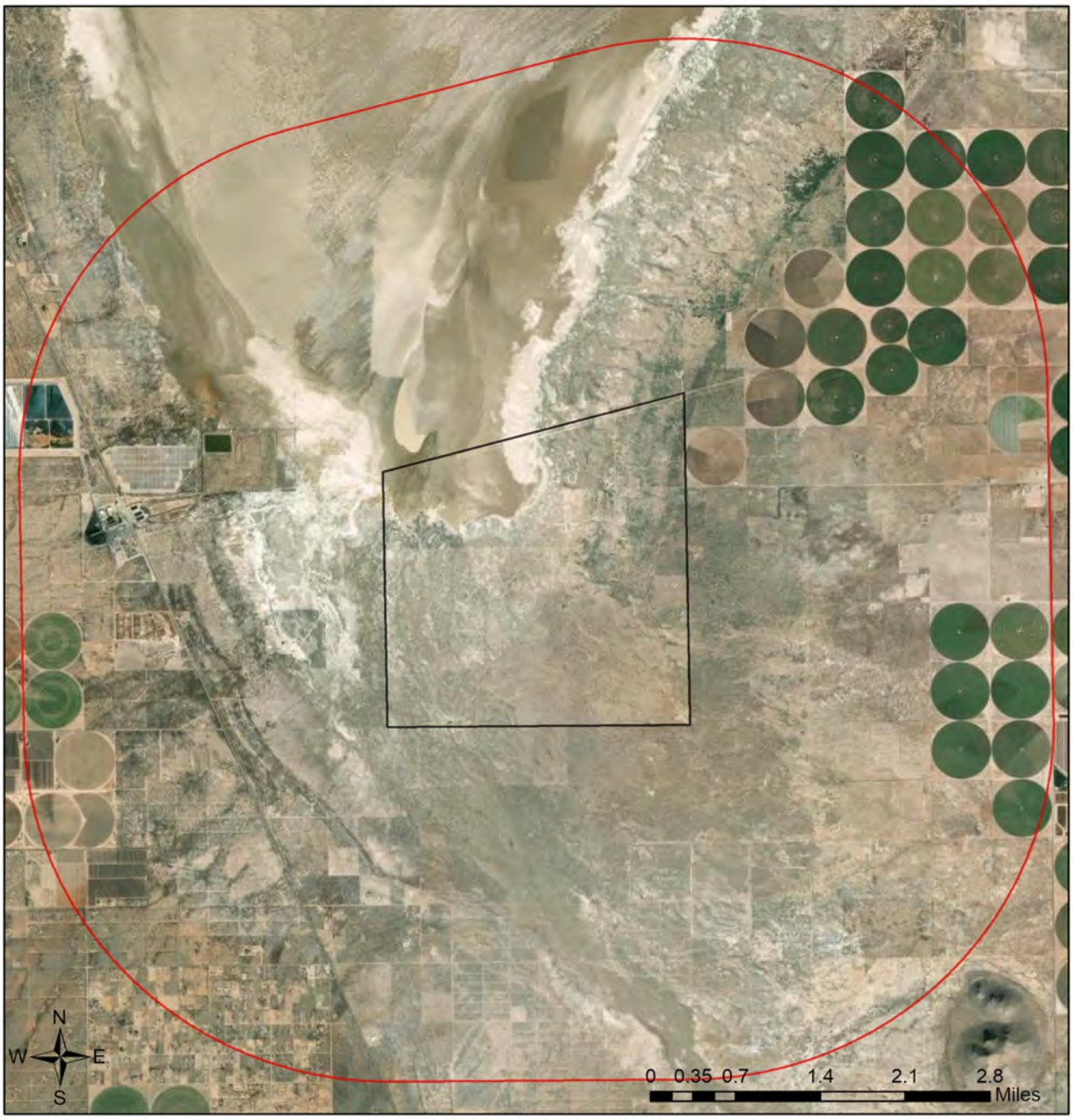
Township/Range(s): T16S, R24E; T16S, R25E

USGS Quad(s): SULPHUR SPRING

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

BrightNight Three Sisters

Web Map As Submitted By User



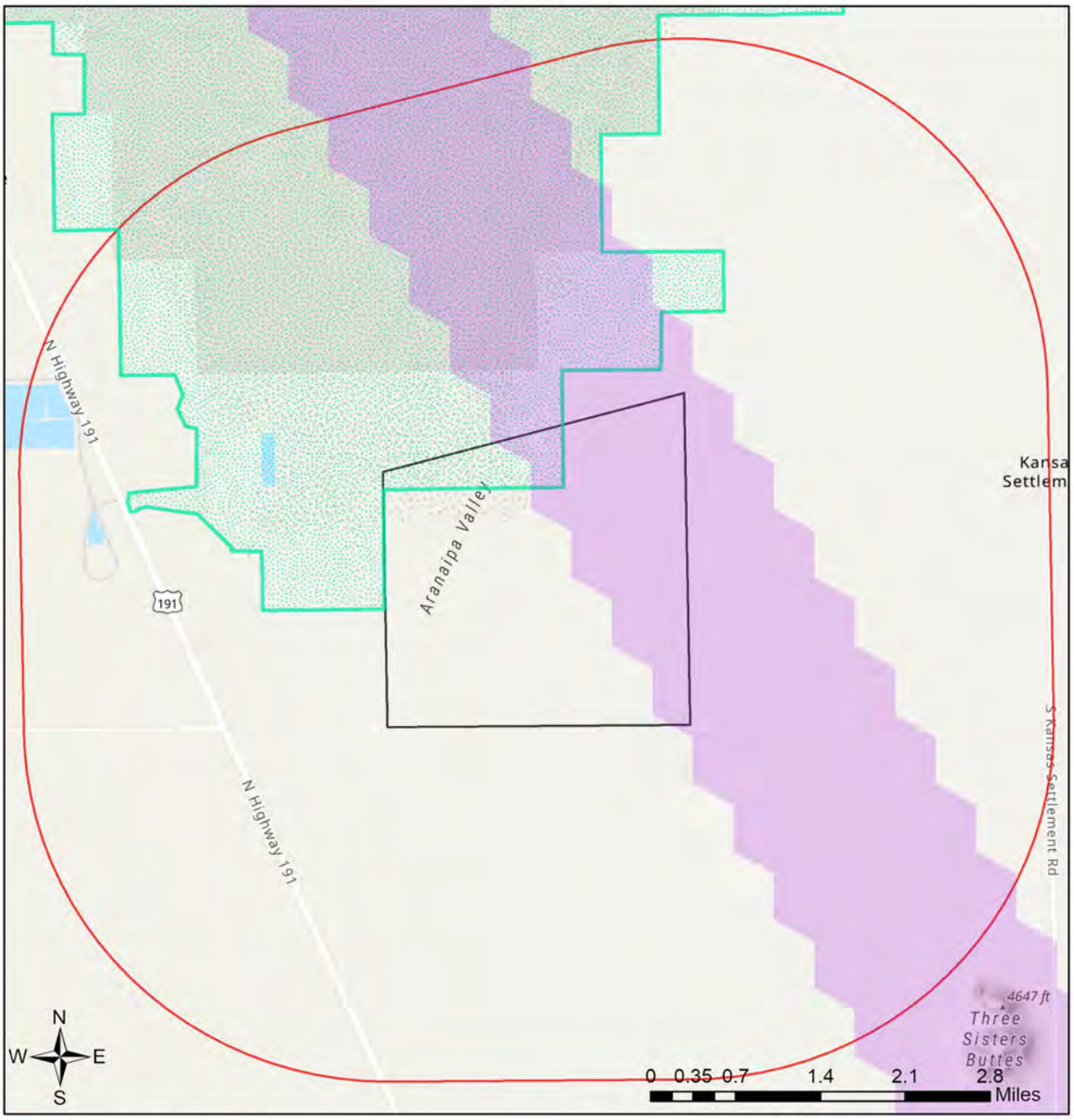
Buffered Project Boundary
Project Boundary

Project Size (acres): 3,962.46
Lat/Long (DD): 32.0540 / -109.8339
County(s): Cochise
AGFD Region(s): Tucson
Township/Range(s): T16S, R24E; T16S, R25E
USGS Quad(s): SULPHUR SPRING

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

BrightNight Three Sisters

Important Areas



- Buffered Project Boundary
- Project Boundary
- Important Bird Areas
- Critical Habitat
- Pinal County Riparian
- Important Connectivity Zones
- Wildlife Connectivity

Project Size (acres): 3,962.46

Lat/Long (DD): 32.0540 / -109.8339

County(s): Cochise

AGFD Region(s): Tucson

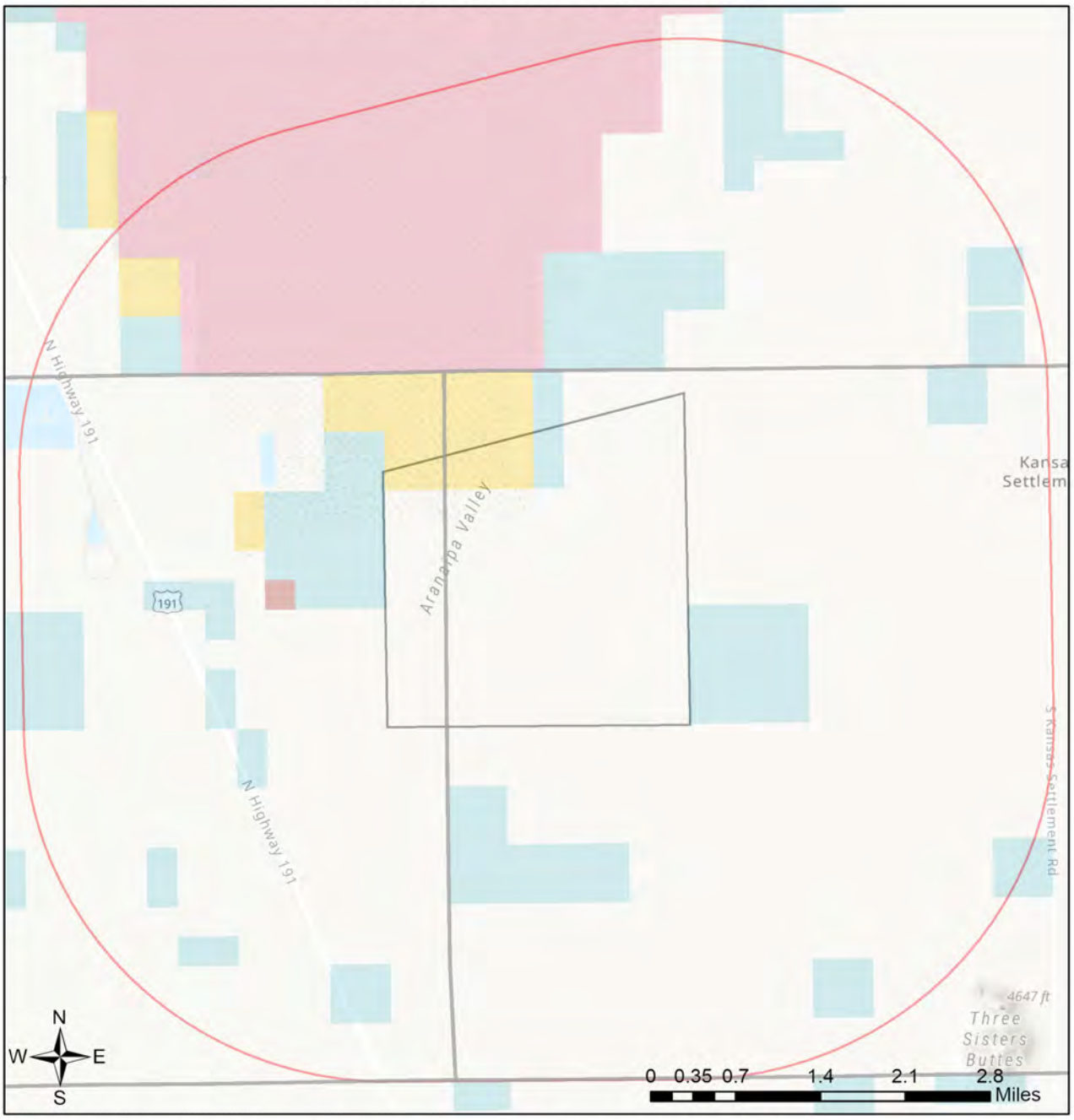
Township/Range(s): T16S, R24E; T16S, R25E

USGS Quad(s): SULPHUR SPRING

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

BrightNight Three Sisters

Township/Ranges and Land Ownership



- Buffered Project Boundary
- Project Boundary
- AZ Game & Fish Dept.
- BLM
- BOR
- Indian Res.
- Military
- Mixed/Other
- National Park/Mon.
- Private
- State & Regional Parks
- State Trust
- US Forest Service
- Wildlife Area/Refuge
- Township/Ranges

Project Size (acres): 3,962.46

Lat/Long (DD): 32.0540 / -109.8339

County(s): Cochise

AGFD Region(s): Tucson

Township/Range(s): T16S, R24E; T16S, R25E

USGS Quad(s): SULPHUR SPRING

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Lithobates blairi	Plains Leopard Frog			S		1A
Lithobates chiricahuensis	Chiricahua Leopard Frog	LT				1A
Plegadis chihi	White-faced Ibis	SC				
Terrapene ornata luteola	Desert Box Turtle			S		1A
Terrapene ornata	Ornate Box Turtle			S		1A

Note: Status code definitions can be found at https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/
.

Special Areas Documented that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Important Connectivity Zone	Wildlife Connectivity					
Willcox Playa/Cochise Lakes IBA	Important Bird Area					

Note: Status code definitions can be found at https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/
.

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Ammodramus savannarum ammolegus	Arizona grasshopper sparrow		S	S		1B
Ammodramus savannarum perpallidus	Western Grasshopper Sparrow					1B
Ammospermophilus harrisii	Harris' Antelope Squirrel					1B
Anthus spragueii	Sprague's Pipit	SC				1A
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		1B
Buteo regalis	Ferruginous Hawk	SC		S		1B
Buteo swainsoni	Swainson's Hawk					1C
Callipepla squamata	Scaled Quail					1C
Calypte costae	Costa's Hummingbird					1C
Cistothorus palustris	Marsh Wren					1C
Coluber bilineatus	Sonoran Whipsnake					1B
Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC	S	S		1B
Crotalus tigris	Tiger Rattlesnake					1B
Cynanthus latirostris	Broad-billed Hummingbird		S			1B
Cynomys ludovicianus	Black-tailed Prairie Dog	CCA		S		1A
Dipodomys spectabilis	Banner-tailed Kangaroo Rat			S		1B
Euderma maculatum	Spotted Bat	SC	S	S		1B
Eumops perotis californicus	Greater Western Bonneted Bat	SC		S		1B
Falco peregrinus anatum	American Peregrine Falcon	SC	S	S		1A

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Haliaeetus leucocephalus	Bald Eagle	SC, BGA	S	S		1A
Heloderma suspectum	Gila Monster					1A
Hypsiglena sp. nov.	Hooded Nightsnake					1B
Lasiurus blossevillii	Western Red Bat		S			1B
Lasiurus xanthinus	Western Yellow Bat		S			1B
Leptonycteris yerbabuenae	Lesser Long-nosed Bat	SC				1A
Lepus alleni	Antelope Jackrabbit					1B
Lithobates blairi	Plains Leopard Frog			S		1A
Lithobates chiricahuensis	Chiricahua Leopard Frog	LT				1A
Melanerpes uropygialis	Gila Woodpecker					1B
Melospiza lincolnii	Lincoln's Sparrow					1B
Melozone aberti	Abert's Towhee		S			1B
Micrathene whitneyi	Elf Owl					1C
Micruroides euryxanthus	Sonoran Coralsnake					1B
Myiarchus tyrannulus	Brown-crested Flycatcher					1C
Myotis occultus	Arizona Myotis	SC		S		1B
Myotis velifer	Cave Myotis	SC		S		1B
Myotis yumanensis	Yuma Myotis	SC				1B
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					1B
Oreoscoptes montanus	Sage Thrasher					1C
Oreothlypis luciae	Lucy's Warbler					1C
Panthera onca	Jaguar	LE				1A
Passerculus sandwichensis	Savannah Sparrow					1B
Peromyscus nasutus	Northern Rock Deermouse					1B
Peucaea botterii arizonae	Arizona Botteri's Sparrow			S		1B
Phrynosoma solare	Regal Horned Lizard					1B
Setophaga petechia	Yellow Warbler					1B
Spizella breweri	Brewer's Sparrow					1C
Sturnella magna	Eastern Meadowlark					1C
Tadarida brasiliensis	Brazilian Free-tailed Bat					1B
Terrapene ornata	Ornate Box Turtle					1A
Vireo bellii arizonae	Arizona Bell's Vireo					1B
Vulpes macrotis	Kit Fox	No Status				1B

Species of Economic and Recreation Importance Predicted that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Callipepla gambelii	Gambel's Quail					

Species of Economic and Recreation Importance Predicted that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Callipepla squamata	Scaled Quail					1C
Odocoileus hemionus	Mule Deer					
Patagioenas fasciata	Band-tailed Pigeon					1C
Pecari tajacu	Javelina					
Puma concolor	Mountain Lion					
Zenaida asiatica	White-winged Dove					
Zenaida macroura	Mourning Dove					

Project Type: Energy Storage/Production/Transfer, Energy Transfer, Power line/electric line (new)

Project Type Recommendations:
Minimize the potential introduction or spread of exotic invasive species, including aquatic and terrestrial plants, animals, insects and pathogens. Precautions should be taken to wash and/or decontaminate all equipment utilized in the project activities before entering and leaving the site. See the Arizona Department of Agriculture website for a list of prohibited and restricted noxious weeds at https://www.invasivespeciesinfo.gov/unitedstates/az.shtml and the Arizona Native Plant Society https://aznps.com/invas for recommendations on how to control. To view a list of documented invasive species or to report invasive species in or near your project area visit iMapInvasives - a national cloud-based application for tracking and managing invasive species at https://imap.natureserve.org/imap/services/page/map.html.

- To build a list: zoom to your area of interest, use the identify/measure tool to draw a polygon around your area of interest, and select “See What’s Here” for a list of reported species. To export the list, you must have an account and be logged in. You can then use the export tool to draw a boundary and export the records in a csv file.

The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

For any powerlines built, proper design and construction of the transmission line is necessary to prevent or minimize risk of electrocution of raptors, owls, vultures, and golden or bald eagles, which are protected under state and federal laws. Limit project activities during the breeding season for birds, generally March through late August, depending on species in the local area (raptors breed in early February through May). Conduct avian surveys to determine bird species that may be utilizing the area and develop a plan to avoid disturbance during the nesting season. For underground powerlines, trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herpetofauna (snakes, lizards, tortoise) from entering ditches. In addition, indirect affects to wildlife due to construction (timing of activity, clearing of rights-of-way, associated bridges and culverts, affects to wetlands, fences) should also be considered and mitigated.

Based on the project type entered, coordination with State Historic Preservation Office may be required (https://azstateparks.com/).

Based on the project type entered, coordination with U.S. Fish and Wildlife Service (Migratory Bird Treaty Act) may be required (https://www.fws.gov/office/arizona-ecological-services).

Vegetation restoration projects (including treatments of invasive or exotic species) should have a completed site-evaluation plan (identifying environmental conditions necessary to re-establish native vegetation), a revegetation plan (species, density, method of establishment), a short and long-term monitoring plan, including adaptive management guidelines to address needs for replacement vegetation.

Project Location and/or Species Recommendations:
HDMS records indicate that **Chiricahua Leopard Frogs** have been documented within the vicinity of your project area. Please review the Chiricahua Leopard Frog Management Guidelines found at: https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/planningFor/wildlifeFriendlyGuidelines/FINALLithchirHabitatGdlns.pdf

The analysis has detected one or more **Important Bird Areas** within your project vicinity. Please see http://aziba.org/?page_id=38 for details about the Important Bird Area(s) identified in the report.

HDMS records indicate that one or more **Listed, Proposed, or Candidate** species or **Critical Habitat** (Designated or Proposed) have been documented in the vicinity of your project. The Endangered Species Act (ESA) gives the US Fish and Wildlife Service (USFWS) regulatory authority over all federally listed species. Please contact USFWS Ecological Services Offices at https://www.fws.gov/office/arizona-ecological-services or:

Phoenix Main Office
9828 North 31st Avenue #C3
Phoenix, AZ 85051-2517
Phone: 602-242-0210
Fax: 602-242-2513

Tucson Sub-Office
201 N. Bonita Suite 141
Tucson, AZ 85745
Phone: 520-670-6144
Fax: 520-670-6155

Flagstaff Sub-Office
SW Forest Science Complex
2500 S. Pine Knoll Dr.
Flagstaff, AZ 86001
Phone: 928-556-2157
Fax: 928-556-2121

Analysis indicates that your project is located in the vicinity of an identified ***wildlife habitat connectivity feature***.
The **Statewide Wildlife Connectivity Assessment's Important Connectivity Zones** (ICZs) represent general areas throughout the landscape which contribute the most to permeability of the whole landscape. ICZs may be used to help identify, in part, areas where more discrete corridor modeling ought to occur. The reports provide recommendations for opportunities to preserve or enhance permeability. Project planning and implementation efforts should focus on maintaining and improving opportunities for wildlife permeability. For information pertaining to the linkage assessment and wildlife species that may be affected, please refer to: https://s3.amazonaws.com/azgfd-portal-wordpress/azgfd.wp/wp-content/uploads/0001/01/23120719/ALIWCA_Final_Report_Perkl_2013_lowres.pdf.
Please contact the Project Evaluation Program (pep@azgfd.gov) for specific project recommendations.

Three Sisters 230kV Project
Visual Resource Exhibit

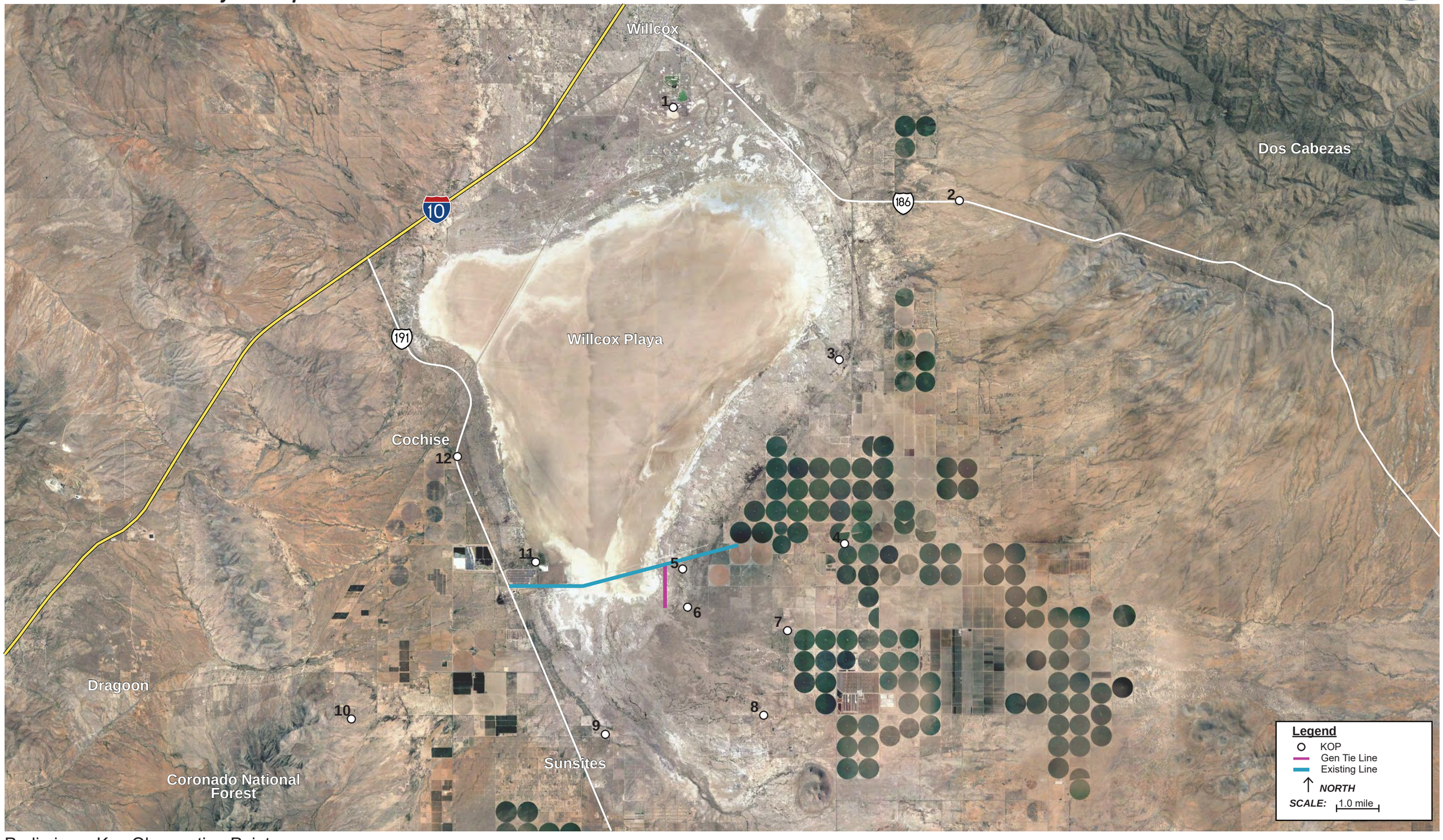
Visual Simulations

Prepared By:
Jeremy Palmer | Sole Proprietor

January 9, 2023

BrightNight Power

Three Sisters 230kV Project Map



Preliminary Key Observation Points

Key Observation Point (KOP) # 1

Vicinity Map

Project Map

Legend
- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information
- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: f/8 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP
- Representative View for: residents, and recreational users viewing from crane observation area.
- Location: East 20th Lane
- Latitude: 32.227008° N; Longitude: 109.827613° W
- View Point Elevation at Eye Level: 4,170 ft.
- Looking: south
- Poles Visible: N/A
- Image File Name: IMG_1617.JPG

Simulation Notes
- Photo Taken: October 08, 2022, 1:29 PM
- The image is based on a single photo and represent approximately 39.5 degree horizontal field of view.
- This view is approximately 10.71 miles north of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #1

Existing Condition

Simulated Condition

Key Observation Point (KOP) # 2

Vicinity Map

Project Map

Legend

- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: 7.1 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residents, commercial and recreational traffic viewing from travelers of Highway 186.
- Location: Hwy 186; Mile Marker 337
- Latitude: 32.195272° N; Longitude: 109.711702° W
- View Point Elevation at Eye Level: 4,341 ft.
- Looking: south southwest
- Poles Visible: H-Frame Structures
- Image File Name: IMG_1798.JPG

Simulation Notes

- Photo Taken: October 08, 2022, 3:34 PM
- The image is based on a single photo and represent approximately 39.5 degree horizontal field of view.
- This view is approximately 10.84 miles northeast of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #2

Existing Condition

Simulated Condition

Key Observation Point (KOP) # 3

Vicinity Map

Project Map

Legend

- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: 5.6 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: recreational user of the Game and Fish Preserve.
- Location: 6150 South Kansas Settlement Road
- Latitude: 32.141425° N; Longitude: 109.762892° W
- View Point Elevation at Eye Level: 4,176 ft.
- Looking: west southwest
- Poles Visible: H Frame Structures
- Image File Name: IMG_1642.JPG

Simulation Notes

- Photo Taken: October 08, 2022, 2:02 PM
- The image is based on a single photo and represent approximately 39.5 degree horizontal field of view.
- This view is approximately 6.08 miles east northeast of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #3

Existing Condition

Simulated Condition

Key Observation Point (KOP) # 4

Vicinity Map

Project Map

Legend

- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: 7.1 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residential, and commercial traffic traveling southbound
- Location: 7750 South Kansas Settlement Road
- Latitude: 32.079589° N; Longitude: 109.759460° W
- View Point Elevation at Eye Level: 4,220 ft.
- Looking: west southwest
- Poles Visible: H-Frame Structures
- Image File Name: IMG_1653.JPG

Simulation Notes

- Photo Taken: October 08, 2022, 2:16 PM
- The image is based on a single photo and represent approximately 39.5 degree horizontal field of view.
- This view is approximately 4.15 miles east northeast of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #4

Existing Condition

Simulated Condition

Key Observation Point (KOP) # 5

Vicinity Map

Project Map

Legend
- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information
- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 24mm | F-Stop: 5.6 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP
- Representative View for: residential traffic
- Location: 6243 South Hedrick Lane
- Latitude: 32.071528° N; Longitude: 109.823576° W
- View Point Elevation at Eye Level: 4,171 ft.
- Looking: west southwest
- Poles Visible: H-Frame Structures
- Image File Name: IMG_1732.JPG

Simulation Notes
- Photo Taken: October 08, 2022, 2:40 PM
- The image is based on a single photo and represent approximately 73.7 degree horizontal field of view.
- This view is approximately 1,975 feet east of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #5

Existing Condition

Simulated Condition

Key Observation Point (KOP) # 6

Vicinity Map

Project Map

Legend
- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information
- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: 10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP
- Representative View for: residential traffic
- Location: 8404 S. Anderson Road
- Latitude: 32.057744° N; Longitude: 109.813402° W
- View Point Elevation at Eye Level: 4,193 ft.
- Looking: northwest
- Poles Visible: H-Frame Structures
- Image File Name: IMG_1715.JPG

Simulation Notes
- Photo Taken: October 08, 2022, 2:35 PM
- The image is based on a single photo and represent approximately 39.5 degree horizontal field of view.
- This view is approximately 5,618 feet southeast of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #6

Existing Condition

Simulated Condition

Key Observation Point (KOP) # 7

Vicinity Map

Project Map

Legend
- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information
- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: 9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP
- Representative View for: residential traffic and community center visitors
- Location: 3055 East Baker Road
- Latitude: 32.050539° N; Longitude: 109.781401° W
- View Point Elevation at Eye Level: 4,210 ft.
- Looking: west
- Poles Visible: H-Frame Structures
- Image File Name: IMG_1770.JPG

Simulation Notes
- Photo Taken: October 08, 2022, 2:54 PM
- The image is based on a single photo and represent approximately 39.5 degree horizontal field of view.
- This view is approximately 2.94 west of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #7

Existing Condition

Simulated Condition

Key Observation Point (KOP) # 8

Vicinity Map

Project Map

Legend
- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information
- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: 10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP
- Representative View for: residential traffic
- Location: 3000 East Shelton Road
- Latitude: 32.021561° N; Longitude: 109.790947° W
- View Point Elevation at Eye Level: 4,208 ft.
- Looking: northwest
- Poles Visible: H-Frame Structures
- Image File Name: IMG_1784.JPG

Simulation Notes
- Photo Taken: October 08, 2022, 3:05 PM
- The image is based on a single photo and represent approximately 39.5 degree horizontal field of view.
- This view is approximately 3.41 miles southeast of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #8

Existing Condition

Simulated Condition

Key Observation Point (KOP) # 9

Vicinity Map

Project Map

Legend

- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: 7.1 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residential traffic
- Location: 600 East Van Ness Street
- Latitude: 32.014152° N; Longitude: 109.856348° W
- View Point Elevation at Eye Level: 4,196 ft.
- Looking: north northeast
- Poles Visible: H-Frame Structures
- Image File Name: IMG_1604.JPG

Simulation Notes

- Photo Taken: October 08, 2022, 12:53 PM
- The image is based on a single photo and represent approximately 39.5 degree horizontal field of view.
- This view is approximately 3.36 miles south southwest of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #9

Existing Condition

Simulated Condition

Key Observation Point (KOP) # 10

Vicinity Map

Project Map

Legend
- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information
- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: 10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP
- Representative View for: recreational users
- Location: Hiking trail off Forest Road 795/State Trust Land
- Latitude: 32.020811° N; Longitude: 109.956211° W
- View Point Elevation at Eye Level: 4,540 ft.
- Looking: northeast
- Poles Visible: H-Frame Structures
- Image File Name: IMG_1573.JPG

Simulation Notes
- Photo Taken: October 08, 2022, 12:27 PM
- The image is based on a single photo and represent approximately 39.5 degree horizontal field of view.
- This view is approximately 7.83 miles southwest of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #10

Existing Condition

Simulated Condition

Key Observation Point (KOP) # 11

Vicinity Map

Project Map

Legend

- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 35mm | F-Stop: 9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

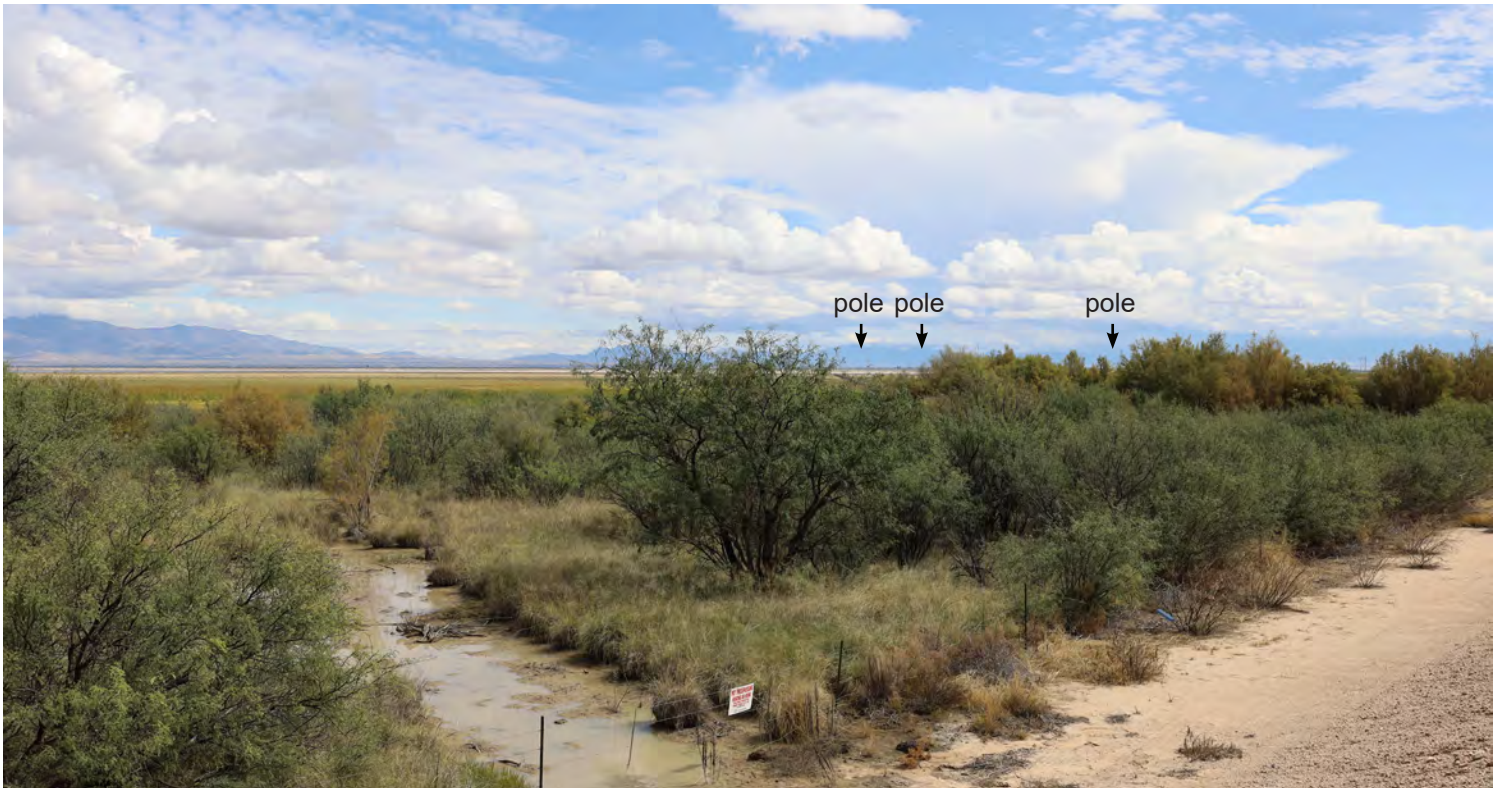
- Representative View for: Recreational users at the Apache Station Wildlife Viewing Platform.
- Location: Apache Station Wildlife Viewing Platform
- Latitude: 32.072853° N; Longitude: 109.882656° W
- View Point Elevation at Eye Level: 4,158 ft.
- Looking: east
- Poles Visible: H-Frame Structures
- Image File Name: IMG_1567.JPG

Simulation Notes

- Photo Taken: October 08, 2022, 11:51 AM
- The image is based on a single photo and represent approximately 54 degree horizontal field of view.
- This view is approximately 3.06 miles west of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #11

Existing Condition



Simulated Condition

Key Observation Point (KOP) # 12

Vicinity Map

Project Map

Legend
- Existing Transmission
- 230kV Line
- KOP

Notes:

Camera Information
- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: 7.1 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP
- Representative View for: residential, commercial, and recreational travelers heading southbound on Hwy 191.
- Location: Highway 191/ West Rath Avenue
- Latitude: 32.113159° N; Longitude: 109.912770° W
- View Point Elevation at Eye Level: 4,212 ft.
- Looking: southeast
- Poles Visible: H-Frame Structures
- Image File Name: IMG_1548.JPG

Simulation Notes
- Photo Taken: October 08, 2022, 11:29 AM
- The image is based on a single photo and represent approximately 39.5 degree horizontal field of view.
- This view is approximately 5.6 miles northwest of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #12

Existing Condition

Simulated Condition

THREE SISTERS SOLAR PROJECT
APPLICATION FOR CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT D: BIOLOGICAL RESOURCES

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit D of an application for a Certificate of Environmental Compatibility must consider the following:

> *List the fish, wildlife, plant life and associated forms of life in the vicinity of the proposed site or route and describe the effects, if any, the proposed facilities will have thereon.*

A Biological Evaluation (BE) was completed for the Three Sisters Solar Project (Exhibit B-2), and that evaluation informs this exhibit. This Exhibit focuses on the potential Project effects to general biological resources within and near the approximately 1.5-mile-long gen-tie line (including the 500-foot-wide corridor), the Project substation, and the Project switchyard (the Proposed Transmission Corridor; Exhibit A-3) based on the BE completed for the Three Sisters Solar Project. An Arizona Game & Fish Department (AGFD) Heritage Data Management System (HDMS) report, and the United States Fish and Wildlife Service (USFWS) Arizona Ecological Services Field Office Information for Planning and Consultation (IPaC) System online query report were generated for the Project. Note that references to "Exhibits" refer to exhibits to the CEC application.

1. HABITAT

As part of the Biological Evaluation for the proposed gen-tie line which runs from the up to 300-megawatt photovoltaic solar energy installation to the existing 230-kilovolt transmission line, two WestLand Engineering & Environmental Services qualified biologists, Breck Jacoby and Dave Ward, conducted a site visit of the Project Area in September 2022. As described in the CEC Application, the gen-tie line, combined with the Project substation and Project switchyard define the Project Area. The gen-tie line will be within a 100-foot-wide right-of-way contained within a 500-foot-wide corridor that occurs primarily on privately-owned land.

The Project Area habitat is indicative of the Semidesert Grassland biotic community (The Nature Conservancy 2012). Vegetation composition within the Project Area consists primarily of low-density grasses and upland tree and shrub species. Four-wing saltbush (*Atriplex canescens*), invasive Russian thistle (*Salsola* sp.), shrub-sized velvet mesquite (*Prosopis velutina*), burroweed (*Isocoma tenuisecta*), invasive tamarisk (*Tamarix* sp.), and mixed grasses are dominant.

The Project Area is also within the southern end of the Willcox Playa/Cochise Lakes Important Bird Area (IBA). This IBA is described as containing a broad alkaline lake bed fringed with semi-desert grassland,

with a seasonally flooded playa that serves as wintering and migratory stopovers for shorebirds and waterfowl (Tucson Audubon Society 2012).

Although perennial and intermittent stream reaches occur in the mountain ranges that bound the playa, all drainage features within the Willcox Playa become ephemeral before discharging into the playa. After heavy rainfall events, runoff from the surrounding mountains and alluvial piedmonts accumulates in the playa, creating shallow, ephemeral ponds, these shallow surface waters evaporate within several days if not recharged (Waters 1989). Cattle tanks located at the south end of the Project Area and backwater drainages extending from the playa were observed to have water present during the site visit on September 29, 2022.

2. WILDLIFE

An evaluation of the wildlife within the Project Area is described in the Biological Evaluation (Exhibit B-3). Given the lack of surface water resources, no fish species occur within the Project Area.

There is an important wildlife connectivity zone located within the footprint of the Project Area (Exhibit B-3 Biological Evaluation, Appendix C). This connectivity zone is identified as the Willcox Playa Wildlife Linkage and has been identified for the following species: bobcat, Chiricahua leopard frog, javelina, kit fox, Mexican spotted owl, mountain lion, mule deer, ornate box turtle, plains leopard frog, pronghorn, Texas horned lizard, and western burrowing owl (The Arizona Wildlife Linkages Workgroup 2006). The Project will not result in a barrier to wildlife movement and vegetation loss will be limited to the pole locations, the 20-foot-wide access road and the fenced in area for the Project substation (approximately 8 acres) and the Project switchyard (approximately 8 acres).

A summary of the species evaluations presented in the BE is provided below:

2.1. Amphibians and Reptiles

Given the lack of surface water features, amphibious species are unlikely to be located within the Project Area. The Biological Evaluation (Exhibit B-3) describes in detail the Endangered Species Act (ESA) listed amphibian and reptiles identified by the IPaC report that could have potential to occur within the Project Area which include Chiricahua leopard frog (*Rana chiricahuensis*) and Northern Mexican gartersnake (*Thamnophis eques megalops*).

The BLM identifies the following species within the Willcox Playa area, gopher snake, diamondback rattlesnake, kingsnake, red racer, horned lizard and coachwhip.

A variety of unidentified lizards were observed within the Project Area. Based on the Semidesert Grassland biotic community habitat non-protected reptile and amphibian species that may occur within the vicinity of the Project Area are listed in **Table 1**.

Table 1. Reptile and Amphibian Species that May Occur in the Area

Species Name	Common Name
Bufo debilis insidior	Western green toad
Cnemidophorus uniparens	Desert grassland whiptail
Ficimia cana	Western hooknose snake
Heterodon nasicus kennerlyi	Mexican hognose snake
Holbrookia texana scitula	Southwestern earless lizard
Terrapene ornate luteola	Desert box turtle

2.2. Birds

The Biological Evaluation (Exhibit B-3) describes in detail the ESA listed birds identified by the IPaC report that could have potential to occur within the Project Area which include Northern aplomado falcon (*Falco femoralis septentrionalis)*, and yellow-billed cuckoo (YBC; *Coccyzus americanus*). The Project Area does not contain suitable lowland riparian woodlands to support the YBC and while suitable habitat may be available for the Northern aplomado falcon, the distribution of this species in Arizona and lack of records within the Project Area indicate it is unlikely to occur.

The Willcox Playa/ Cochise Lakes IBA provides habitat for a variety of bird species including those protected by the Migratory Bird Treaty Act (MBTA). The Willcox Playa supports the second largest over-wintering concentration of sandhill cranes in Arizona and also provides important habitat for a great number of bird species including shorebirds.

The western burrowing owl was not observed during the site visit but is known to occur within the Willcox Playa Wildlife Linkage that crosses a portion of the Project Area (The Arizona Wildlife Linkages Workgroup 2006)(Exhibit B-3; Appendix C), The Willcox Playa Wildlife Linkage which includes the following species: bobcat, Chiricahua leopard frog, javelina, kit fox, Mexican spotted owl, mountain lion, mule deer, ornate box turtle, plains leopard frog, pronghorn, Texas horned lizard, and western burrowing owl (National Audubon Society).

During the site visit, the following species were observed within the Project Area: sandhill crane (*Antigone canadensis*), loggerhead shrike (*Lanius ludovicianus),* raven (*Corvus* sp.), great horned owl (*Bubo virginianus*), unidentified swallows (Family Hirundinidae), and unidentified perching birds (Order Passeriformes). Based on the Semidesert Grassland biotic community habitat, non-protected bird species that may occur within the vicinity of the Project Area are listed in **Table 2**.

Table 2. Bird Species that May Occur in the Area

Species Name	Common Name
Aimophila cassinii	Cassin's sparrow
Amphispiza bilineata	Black-throated sparrow
Athene cunicularia	Burrowing owl
Auriparus flaviceps	Verdin
Buteo swainsoni	Swainson's hawk
Callipepla squamata	Scaled quail
Campylorhynchus brunneicapillus	Cactus wren
Carpodacus mexicanus	House finch
Chondestes grammacus	Lark sparrow
Corvus cryptoleucus	White-necked raven
Eremophila alpestris	Horned lark
Falco mexicanus	Prairie falcon
F. sparverius	American kestrel
Geococcyx californianus	Roadrunner
Hirundo rustica	Barn swallow
Icterus parisorum	Scott's oriole
Lanius ludovicianus	Loggerhead shrike
Lophortyx gambelii	Gambel's quail
Mimus polyglottos	Mockingbird
Molothrus ater	Brown-headed cowbird
Myiarchus cinerascens	Ash-throated flycatcher
Phalaenoptilus nuttallii	Poorwill
Picoides scalaris	Ladder-backed woodpecker
Polioptila melanura	Black-tailed gnatcatcher
Sayornis saya	Say's phoebe
Sturnella neglecta	Western meadowlark
S. magna	Eastern meadowlark
Toxostoma curvirostre	Curve-billed thrasher
Tyrannus verticalis	Western kingbird
Zenaida macroura	Mourning dove

2.3. Mammals

The Biological Evaluation (Exhibit B-3) describes in detail the ESA listed mammals identified by the IPaC report that could have potential to occur within the Project Area which includes the jaguar. The Project Area does not contain suitable habitat for this species, it is rare within Arizona and there are no records within the Project Area; therefore, it is not expected to occur within the Project Area. Jackrabbits and small rodents were observed during the site visit.

The BLM identifies the following species within the Willcox Playa area mule deer, javelina, coati, badger, jack rabbit, fox, bobcat, coyote, and raccoon.

During the site visit the following species were observed: jackrabbit (*Lepus sp.),* small rodents and deer (Genus Odocoileus). Based on the Semidesert Grassland biotic community habitat non-protected mammal species that may occur within the vicinity of the Project Area are listed in **Table 3**.

Table 3. Mammal Species that May Occur in the Area

Species Name	Common Name
Antilocapra americana	Pronghorn
Canis latrans	Coyote
Dicotyles tajacu	Javelina
Dipodomys merriami	Merriam's kangaroo rat
D. ordii	Ord's kangaroo rat
D. spectabilis	Banner-tailed kangaroo rat
Lepus californicus	Black-tailed jackrabbit
Lynx rufus	Bobcat
Nasua nasua	Coati
Neotoma albigula	White-throated woodrat
N. micropus	Southern plains woodrat
Odocoileus hemionus crooki	Mule deer
O. virginianus	White-tailed deer
Onychomys torridus	Southern grasshopper mouse
Perognathus hispidus	Hispid pocket mouse
Peromyscus leucopus	White-footed mouse
Procyon lotor	Raccoon
Sigmodon fulviventer	Tawny-bellied cotton rat
S. hispidus	Hispid cotton rat
Spermophilus spilosoma	Spotted ground squirrel
Taxidea taxus	Badger

3. PROJECT EFFECTS

Project impacts to biological resources will occur from vegetation removal during construction. Project construction and related activities could result in temporary damage to and/or permanent loss of vegetation; habitat loss and mortality of general wildlife species; and temporary disturbance to and/or loss of individuals or habitats of plant and animal species. Temporary disturbance includes short-term impacts (less than 2 years) associated with construction, such as air quality, noise, and the presence of construction workers, through ground disturbance for the Project. Ground disturbance for the proposed substation is not considered temporary.

Ground disturbance impacts of approximately 13.11 acres associated with the permanent Project features (Project substation, Project switchyard, gen-tie line, and 20-ft-wide access road) that will remain throughout the life of the Project create long-term impacts.

Project implementation will have direct and indirect impacts on vegetation resources located within areas disturbed by construction activity; however, these impacts will be minimized through implementation of

various best management practices (BMPs), which may include activities such as but not limited to pre-construction surveys, contractor training and restricting overland travel.

Potential impacts to wildlife associated with construction and operation of the Project include loss of habitat, temporary displacement during construction, direct mortality of wildlife that are less mobile such as snakes, lizards, and small mammals, and altering, displacing, or disrupting the breeding and foraging behavior of wildlife. These impacts are expected to be minor given the overall footprint of the Project relative to available suitable habitat in the surrounding region, the short-term and relatively benign nature of construction activities required for solar facility installation, and BMPs to be implemented prior to and during construction. Overall, the amount of habitat that will be impacted by Project activities will be small in comparison to total available habitat in the general area, and the limited loss of individuals will not impact local populations. No critical habitat for any protected species will be impacted by the Project.

4. REFERENCES

National Audubon Society. "Important Bird Areas: Willcox Playa /Cochise Lakes." https://www.audubon.org/important-bird-areas/willcox-playa-cochise-lakes. Arizona

The Arizona Wildlife Linkages Workgroup. 2006. Arizona's Wildlife Linkages Assessment Section VII Potential Linkages Zones. 41-146.

The Nature Conservancy. 2012. Brown and Lowe's Biotic Communities of the Southwest. *Digital version of David E. Brown and Charles H. Lowe's 1981 Map*: The Nature Conservancy of Arizona. June 27, 2012.

Tucson Audubon Society. 2012. Arizona's Important Bird Areas. *The Arizona Important Bird Area Program*: National Audubon Society. June, 2012.

Waters, Michael R. 1989. "Late Quaternary Lacustrine History and Paleoclimatic Significance of Pluvial Lake Cochise." *Quaternary Research* 32 (1):1-11.

THREE SISTERS SOLAR PROJECT
APPLICATION FOR CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT E: SCENIC AREAS, HISTORIC SITES AND STRUCTURES, AND ARCHAEOLOGICAL SITES

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit E of an application for a Certificate of Environmental Compatibility must consider the following:

> *Describe any existing scenic areas, historic sites and structures or archaeological sites in the vicinity of the proposed facilities and state the effects, if any, the proposed facilities will have thereon.*

This Exhibit provides a summary of potential Project effects to these resources within and near the Three Sisters Solar Project focusing on the approximately 1.5-mile-long gen-tie line (including the 500-ft-wide corridor), the Project substation, and the Project switchyard (Proposed Transmission Corridor). Note that references to "Exhibits" refer to exhibits to the CEC application.

1. SCENIC AREAS

The landscape surrounding the Three Sisters Solar Project is characterized by desert vegetation, agricultural lands, the adjacent Willcox Playa, and anthropogenic structures including existing transmission lines and ranching related structures such as fencing. There are two cattle tanks located within the Project Area. There are no wild and scenic rivers, national scenic and/or backcountry byways, national monuments, or other designated scenic areas in the Project Area.

The Proposed Transmission Corridor does not cross the Willcox Playa; however, the Willcox Playa hosts 5,000-10,000 overwintering sandhill cranes (*Grus canadensis*) and other migratory bird species every year. There are two viewing areas along the Willcox Playa, the Apache Station Wildlife Viewing Area on the southwest extent of the Willcox Playa at AEPCO's Apache generating station and viewing within the Willcox Playa Wildlife Area managed by the Arizona Game and Fish Department (AGFD) in the northeast section of the Willcox Playa. The Project Area is approximately three miles east of the AEPCO viewing platform, although the view is largely blocked by adjacent vegetation and is approximately six miles southwest of the AGFD Wildlife Area and is blocked by both topography and vegetation. Visual simulations have been conducted from 11 key observation points (KOPs) including the viewing platforms (Exhibit B-3). The poles are not expected to be visible to the naked eye from KOPs 1-4, and 8-9.

The Project would be visible to individuals along the southeastern extent of the Willcox Playa; however, this area does not contain wildlife viewing areas and is not available for public use. The Proposed Transmission

Corridor is primarily located on privately owned land. State Trust lands managed by the Arizona State Land Department (ASLD) are within and adjacent to the northern portion of the Proposed Transmission Corridor. ASLD land is generally not available for spontaneous public use; however, ASLD land is available for public use under permits and leasing. According to current ASLD property records available through their GIS tool, the ASLD parcel to the west of the Project area is unleased.

Visual impacts could occur during the construction and operational phases of the Project. Disturbance resulting from construction (dust, movement, etc.) would be temporary and largely short in duration, and visible effects from active construction would diminish significantly after commissioning. Because of the small scale of vegetation disturbance required, there would be minimal visible contrasts, and these would be reduced over time.

In 1966, the National Park Service designated the Willcox Playa, situated adjacent to the Proposed Transmission Corridor, as a National Natural Landmark. National Natural Landmarks are selected "...for their outstanding condition, illustrative value, rarity, diversity, and value to science and education." National Natural Landmarks are not part of the National Park system, rather they are owned by various landowners including non-federal entities and participation in the program is voluntary. The proposed Project is not expected to affect resources that would impact this designation.

Conclusion

Due to the rural character of the area, the presence of existing transmission line, and general lack of public access, there would be a limited number of viewers traveling near the Project Area. The visual simulations prepared demonstrate the minimal effect the gen-tie line would have on the visual character of the area (Exhibit B-3). Therefore, the Project may reduce the scenic quality in the immediate area, but few people would have the opportunity to view the Project structures.

2. HISTORIC SITES AND STRUCTURES AND ARCHAEOLOGICAL SITES

As required by the Arizona Administrative Code R14-3-219, Ex. 1(E), the potential effects of the Project on historic sites and structures and archaeological sites were assessed.

2.1. Inventory Methods

WestLand Engineering & Environmental Services (WestLand) examined information for historic sites, structures, and archaeological sites within the Proposed Transmission Corridor as well as a 1- mile buffer (the Study Area). The following sources were consulted:

- AZSITE database
- Archaeological Records Office of the Arizona State Museum
- Historic General Land Office (GLO) Plats
- Historic U.S. Geological Survey topographic quadrangle maps

- National Register of Historic Places
- ARHP

WestLand gathered information from these sources to evaluate whether portions of the proposed project components had been previously surveyed for cultural resources, to determine whether historic properties eligible for inclusion or already listed in the Arizona or National Register of Historic Places (A/NRHP) are present, and to provide recommendations concerning the potential for impacts to cultural resources. The results of the Class I records review are reported in Exhibit B-1.

2.2. Historic Sites and Structures

The historical map review for the full Study Area (the Proposed Transmission Corridor plus a 1-mile buffer) is included in Exhibit B-1. Historical maps depict several roads, occasional structures, fences, fields, and a pipeline within the Study Area. Of the features depicted on historical maps, two roads—Kimzey Road and Andersen Road—and El Paso Natural Gas Pipeline 1103 are known to still exist in the Proposed Transmission Corridor.

A file search conducted in the NRHP and the ARHP databases indicates that no historic structures listed on either register are located within the Study Area (National Park Service 2022; Arizona State Parks 2022).

2.3. Archaeological Sites

The Class I records search identified four archaeological sites and one in use historical resource located in the Study Area, two of which intersect the Proposed Transmission Corridor (**Table 1**).

Table 1. Archaeological sites intersecting the Proposed Transmission Corridor

Site Number (ASM)	Site Type	Age and Cultural Affiliation	NRHP Eligibility
El Paso Natural Gas Pipeline 1103 (formerly AZ BB:16:48[ASM]) **1**	Gas pipeline	Historic period (A.D. 1949–present); Euroamerican	Determined eligible for listing in the NRHP by the Arizona SHPO on 08/10/2008 and 12/23/2008*
AZ CC:13:16(ASM) **2**	Artifact scatter	Mogollon Pueblo period (A.D. 1150–1450); Mogollon	Unevaluated

*The Advisory Council on Historic Preservation (ACHP) has determined that historical natural gas pipelines are exempt from review under Section 106 of the National Historic Preservation Act of 1966 (ACHP 2002).

A file search conducted in the NRHP and the ARHP databases indicates that no archaeological sites listed on either register are located within the Study Area (National Park Service 2022; Arizona State Parks 2022).

2.4. Effects

Eligible or unevaluated historic structures and archaeological sites identified during the Class I review within the Proposed Transmission Corridor were assessed for potential impacts.

El Paso Natural Gas Pipeline 1103 (formerly recorded as AZ BB:16:48[ASM]) intersects the Proposed Transmission Corridor. The pipeline is expected to be avoided by the Project. This pipeline has been determined eligible for listing in the NRHP by the SHPO (08/10/2008 and 12/23/2008). However, the Advisory Council on Historic Preservation (ACHP) has subsequently determined that historical natural gas pipelines are exempt from review under Section 106 of the National Historic Preservation Act of 1966 (ACHP 2002).

AZ CC:13:16(ASM) is an artifact scatter thought to date to the Mogollon Pueblo period (A.D. 1150–1450). The assemblage consists of ceramic, flaked stone, and ground stone artifacts. The site was completely surface collected by the Arizona State Museum in 1977. Although no surface expression of the site remains, shifting aeolian deposits at the site may be obscuring subsurface deposits and features. As such the site is considered unevaluated for the A/NRHP. Testing of the site would be needed to make an eligibility recommendation. A small portion of the site on ASLD managed lands was monitored during installation of a waterline in 2021 (Gray 2021. No artifacts, features, or buried deposits were identified in the waterline trench, however, the rest of the site area remains untested. It is recommended that the project be designed such that AZ CC:13:16(ASM) is avoided.

The historical map review identified several in use roads in the project area. However, these roads are not expected to reach the significance threshold for A/NRHP eligibility when fully recorded.

3. REFERENCES

Advisory Council on Historic Preservation (ACHP)

2002 Exemption Regarding Historic Preservation Review Process for Projects Involving Historic Natural Gas Pipelines. Federal Register 67(66):1–2. Arizona State Parks.

2022 State Register of Historic Places. Online database https://d2umhuunwbec1r.cloudfront.net/gallery/0004/0051/6C59BF0C13FB42FA9804DCA7A9F174D2/ARHP%20List.pdf, accessed November 2022.

Gray, Jayson W.

2021 *Results of Archaeological Monitoring for the AEPCO Waterline Installation Between Hedrick Lane and the Apache Generating Station in Cochise County, Arizona*. Cultural Resources Report No. 2021-108. WestLand Resources, Inc., Tucson.

National Park Service

2022 National Register Database and Research. Online database https://www.nps.gov/subjects/nationalregister/database-research.htm, accessed November 2022.

U.S. National Park Service (NPS).

2022 Wilcox Playa. National Natural Landmarks Program. Available at: https://www.nps.gov/subjects/nnlandmarks/site.htm?Site=WIPL-AZ, accessed on 12/12/2022.

THREE SISTERS SOLAR PROJECT
APPLICATION FOR CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT C: AREAS OF BIOLOGICAL WEALTH

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit C of an application for a Certificate of Environmental Compatibility must consider the following:

> *Describe any areas in the vicinity of the proposed site or route which are unique because of biological wealth or because they are habitats for rare and endangered species. Describe the biological wealth or species involved and state the effects, if any, the proposed facilities will have thereon.*

A Biological Evaluation (BE) was completed for the Three Sisters Solar Project (Exhibit B-2), and that evaluation informs this exhibit. This Exhibit focuses on the potential effects to sensitive species and habitats within the approximately 1.5-mile-long gen-tie line (including the 500-ft-wide corridor), the Project substation, and the Project switchyard (the Proposed Transmission Corridor; Exhibit A-3) based on the BE completed for the Three Sisters Solar Project. An Arizona Game & Fish Department (AGFD) Heritage Data Management System (HDMS) report, and the United States Fish and Wildlife Service (USFWS) Arizona Ecological Services Field Office Information for Planning and Consultation (IPaC) System online query report were generated for the Project. Note that references to "Exhibits" refer to exhibits for the CEC application.

1. FEDERAL OR STATE LAWS AND POLICIES

Laws and policies protecting rare species on private lands in Arizona include the following:

- The USFWS administers the Endangered Species Act (ESA) of 1973, as amended. The ESA protects species listed as threatened or endangered from "take" (generally, directly, or indirectly harming or disturbing listed species and/or their habitat). Prior to being listed as threatened or endangered, a proposed listing rule is issued. When agency priorities take precedence over certain listing actions, species may also be designated as candidates, to be evaluated and potentially listed when no longer precluded by higher-priority actions. The ESA also allows for the designation of critical habitat (areas essential to the survival and recovery of listed species), although designation of critical habitat is not always required when a species is listed. Critical habitat is an administrative designation of a defined area with specific characteristics important to the survival and recovery of a listed species. Designation of critical habitat can affect federal actions, but not state or private actions that do not have a federal nexus.
- The USFWS Division of Migratory Birds administers the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (Eagle Act). The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except

when authorized by the USFWS. The Eagle Act prohibits anyone, without a permit, from taking (including disturbing) eagles, and their parts, nests, or eggs.

- The AGFD manages and conserves wildlife in Arizona. Nearly all take of wildlife is regulated in some manner through the hunting and fishing license system. Arizona does not have a counterpart to the federal ESA, but a list of rare species (Wildlife Species of Concern) was created in 1996 without creating any specific statutory protections for those species. However, hunting regulations are used to provide some protection, and no hunting or capture of Wildlife Species of Concern is currently allowed.
- The Arizona State Wildlife Action Plan (SWAP) provides strategies and conservation actions for managing Arizona's fish, wildlife, and wildlife habitats that are in greatest need of conservation. The current SWAP was updated in 2022 for a 10-year period as funded through a state-federal partnership and grant program (AGFD 2022). The SWAP identifies several tiers of Species of Greatest Conservation Need (SGCN) based on vulnerability criteria.
- Native plants in Arizona are managed by the Arizona Department of Agriculture (AZDA), which regulates harvest and salvage. Harvest or salvage of most plant species may be permitted or required. Plants listed as Highly Safeguarded may only be taken or salvaged for scientific or conservation purposes and include plants that may become jeopardized or are in danger of extinction throughout all or a significant portion of their ranges and includes plants resident to the state and listed as endangered, threatened, or category 1 in the ESA.

No other federal or state agency has jurisdiction over sensitive biological resources along the Proposed Route.

2. ENDANGERED SPECIES ACT SPECIES

In the Three Sisters Solar Project Biological Evaluation (Exhibit B-3), a total of seven species listed under ESA were identified as part of the IPaC list generated for this Project. The species included: jaguar (*Panthera onca*), northern aplomado falcon (*Falco femoralis septentrionalis*), yellow-billed cuckoo (YBC; *Coccyzus americanus*), northern Mexican gartersnake (*Thamnophis eques megalops*), Chiricahua leopard frog (*Rana chiricahuensis*), monarch butterfly (*Danaus plexippus),* and Wright's marsh thistle (*Cirsium wrightii*). Only one species, the monarch butterfly, has a potential to occur in the Project Area, and the potential to occur is "Unlikely."

The monarch butterfly is a candidate ESA species (USFWS 2020). Breeding and migratory populations occur throughout Arizona. Some adults overwinter in the low deserts of Arizona in areas where food resources are abundant. These areas are generally represented by urban environments including Yuma, Phoenix and Tucson (Morris, Kline, and Morris 2015). Due to the lack of milkweed and the predominance of grasses and invasive weedy species, preferred foraging habitat for the monarch butterfly is absent and this species is unlikely to occur in the Project Area (Exhibit B-3).

The Project is not anticipated to potentially affect any other federally listed species or designated critical habitat.

3. OTHER SPECIAL STATUS SPECIES

3.1. Wildlife

The HDMS report included species identified as species of greatest conservation need (SGCN) within 3 miles of the Project Area including plains leopard frog, Chiricahua leopard frog, white-faced ibis, desert box turtle, and ornate box turtle and numerous others that are predicted to intersect with the Project Area, based on predicted range models. Sandhill cranes were observed within the Project Area. The western burrowing owl was not observed during the site visit but is known to occur within the Willcox Playa Wildlife Linkage that crosses a portion of the Project Area. The species identified are likely associated with the Willcox Playa/ Cochise Lakes Important Bird Area (IBA) located outside of the Project Area footprint.

The Willcox Playa/ Cochise Lakes IBA provides habitat for a variety of bird species including those protected by the Migratory Bird Treaty Act (MBTA). The Willcox Playa supports the second largest over-wintering concentration of sandhill cranes in Arizona and also provides important habitat for a great number of bird species including shorebirds.

Given the limited area of disturbance associated with development of the proposed gen-tie, substation, and switchyard, coupled with the existing transmission lines in the area, the proposed Project is not anticipated to represent substantial risk to any of these sensitive species. The structures will be designed with raptor-friendly protections to limit the potential electrocution of larger avian species, such as sandhill cranes. Preconstruction surveys for the western burrowing owl will be completed before construction of the Project.

3.2. Plants

Vegetation composition within the Project Area consists primarily of low-density grasses and upland tree and shrub species. Vegetation observed included Four-wing saltbush (*Atriplex canescens*), invasive Russian thistle (*Salsola* sp.), shrub-sized velvet mesquite (*Prosopis velutina*), burroweed (*Isocoma tenuisecta*), invasive tamarisk, and mixed grasses are dominant. Yucca (*Yucca* spp.) and cholla cacti (*Cylindropuntia* spp.) were also observed.

Best Management Practices (BMPs) will be implemented during Project construction to minimize impacts to native plants listed in Arizona's Native Plant Law, and to minimize the potential introduction or spread of invasive plant species. BMPs may include but are not limited to washing vehicles entering and exiting the site and implementing erosion control features. The HDMS report did not identify any additional sensitive plant species within the Project Area.

4. HABITAT

The Project Area is mapped within the Semidesert Grassland biotic community (The Nature Conservancy 2012), and is within the southern end of the Willcox Playa/Cochise Lakes IBA (See Exhibit B-2). This IBA is described as containing a broad alkaline lake bed fringed with semi-desert grassland, with a seasonally flooded playa that serves as wintering and migratory stopovers for shorebirds and waterfowl (Tucson Audubon Society 2012). No proposed or designated critical habitat occurs within the Project Area.

Cattle tanks located at the south end of the Project Area and backwater drainages extending from the playa were observed to have water during the site visit on September 29, 2022. Areas with ponding water were also observed within the Project Area.

Land use in the Project Area and vicinity includes operation and maintenance of existing energy generation and distribution infrastructure, agriculture, cattle grazing, rural housing, transportation via U.S. Highway 191 and other smaller roads, wildlife viewing, and other recreational activities.

There is a wildlife connectivity zone located within the footprint of the Project Area (Exhibit B-3 Biological Evaluation, Appendix C). This connectivity zone is identified as the Willcox Playa Wildlife Linkage and has been identified for the following species: bobcat, Chiricahua leopard frog, javelina, kit fox, Mexican spotted owl, mountain lion, mule deer, ornate box turtle, plains leopard frog, pronghorn, Texas horned lizard, and western burrowing owl (The Arizona Wildlife Linkages Workgroup 2006). The gen-tie line will not create a barrier to wildlife movement through the area and loss of vegetation will be minimal, only occurring at pole locations, the Project substation, the Project switchyard, and along the access road.

The Willcox Playa is a BLM Designated Area of Critical Environmental Concern (ACEC; Exhibit A-1) located adjacent to the Project Area. This was identified as an ACEC due to being a national natural landmark and a Pleistocene Epoch lakebed (BLM 1991). The Project area is not within this ACEC and there will no impacts to the ACEC associated with the construction, operation, or maintenance of the Project.

5. CONCLUSION

The Project is not likely to affect any special status species. No species afforded protection under the ESA are present and none will be affected by the Project. No protected areas, or areas of biological wealth are within the Project Area, and mitigation measures implemented for burrowing owls will address potential impacts to this species.

6. REFERENCES

Bureau of Land Management. 1991. Safford District Resource Management Plan (RMP). U.S. Department of the Interior. Safford, Arizona. Original edition, March 30, 2018. August 1, 1991.

Morris, Gail M., Christopher Kline, and Scott Morris. 2015. "Status of *Danaus Plexippus* Population in Arizona." *Journal of the Lepidopterists' Society* 69 (2):1-17.

The Arizona Wildlife Linkages Workgroup. 2006. Arizona's Wildlife Linkages Assessment Section VII Potential Linkages Zones. 41-146.

The Nature Conservancy. 2012. Brown and Lowe's Biotic Communities of the Southwest. *Digital version of David E. Brown and Charles H. Lowe's 1981 Map*: The Nature Conservancy of Arizona. June 27, 2012.

Tucson Audubon Society. 2012. Arizona's Important Bird Areas. *The Arizona Important Bird Area Program*: National Audubon Society. June, 2012.

U.S. Fish and Wildlife Service. 2020. Endangered and Threatened Wildlife and Plants; 12-Month Finding for the Monarch Butterfly; Notice of 12-Month Finding. U.S. Department of the Interior. December 17, 2020. *Federal Register*, 85:81813-81822.

THREE SISTERS SOLAR PROJECT
APPLICATION FOR CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT F: RECREATIONAL PURPOSES AND ASPECTS

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit F of an application for a Certificate of Environmental Compatibility must consider the following:

> *"State the extent, if any, the proposed site or route will be available to the public for recreational purposes, consistent with safety considerations and regulations and attach any plans the applicant may have concerning the development of the recreational aspects of the proposed site or route."*

This Exhibit provides a summary of potential Project effects to these resources within and near the Project Area. The Project Area is defined as the approximately 1.5-mile-long gen-tie corridor (including a 500-ft-wide corridor), the approximately 8-acre Project substation, and the approximately 8-acre Project switchyard (Proposed Transmission Corridor). Note that references to "Exhibits" refer to exhibits to the CEC application.

Regional recreational resources include wildlife viewing platforms adjacent to the Willcox Playa and one campground. The nearest recreational opportunities to the Proposed Transmission Corridor are associated with the Willcox Playa, Cochise Lakes, and the Willcox Playa Wildlife Area managed by the Arizona Game and Fish Department. The Willcox Playa Wildlife Area, located approximately six miles (10 kilometers [km]) northeast of the Proposed Transmission Corridor, hosts recreational opportunities including hunting, hiking, and camping, as well as viewing opportunities for the sandhill crane (*Antigone canadensis*) winter migration. Another wildlife viewing opportunity, the Apache Station Wildlife Viewing Area, is located approximately 3 miles (5 km) directly west across the southern tip of the Willcox Playa. The portion of the Willcox Playa west of the Proposed Transmission Corridor is Arizona State Trust Land, and further west and northwest are lands administered by the Bureau of Land Management, which are not available for public use (**Exhibit A-3**). The majority of the Willcox Playa is owned by the Department of Defense, administered by the United States Army Corps of Engineers and is not available for public use.

The Project is not expected to affect recreational resources. The gen-tie line is not expected to pose a barrier to wildlife movement at the Willcox Playa and would not adversely affect birding or wildlife viewing areas in the vicinity. The approximately 1.5-mile-long transmission line will occur near other existing transmission lines and the Applicant will design the structures using raptor-friendly protections to limit the potential electrocution of larger avian species, such as sandhill crane and other raptors. The Applicant will

conduct preconstruction surveys for the western burrowing owl prior to construction of the Project to minimize potential loss of individual birds in the area. Visual simulations conducted at these viewing areas support the determination of no effects to recreational opportunities (Exhibit B-3). The poles are not expected to be visible to the naked eye from key-observation points 1-4, and 8-9.

Travelers along I-10 to the north would not be able to see the gen-tie line due to topography and the raised railroad bed that runs parallel between the Playa and I-10. Highway 186 runs northwest-southeast, approximately 12 miles to the northeast of the gen-tie line along the foothills of the Dos Cabezas Mountains. Highway 186 is often used by those traveling to Chiricahua National Monument. The gen-tie line would not affect recreational opportunities in this area. Hikers and recreationists in the Dragoon Mountains approximately 8 miles west of the gen-tie line would not be able to view the line.

Exhibit G – Conceptual Drawings of Transmission Facilities

As stated in the Arizona Administrative Code R14-3-219, Exhibit 1:

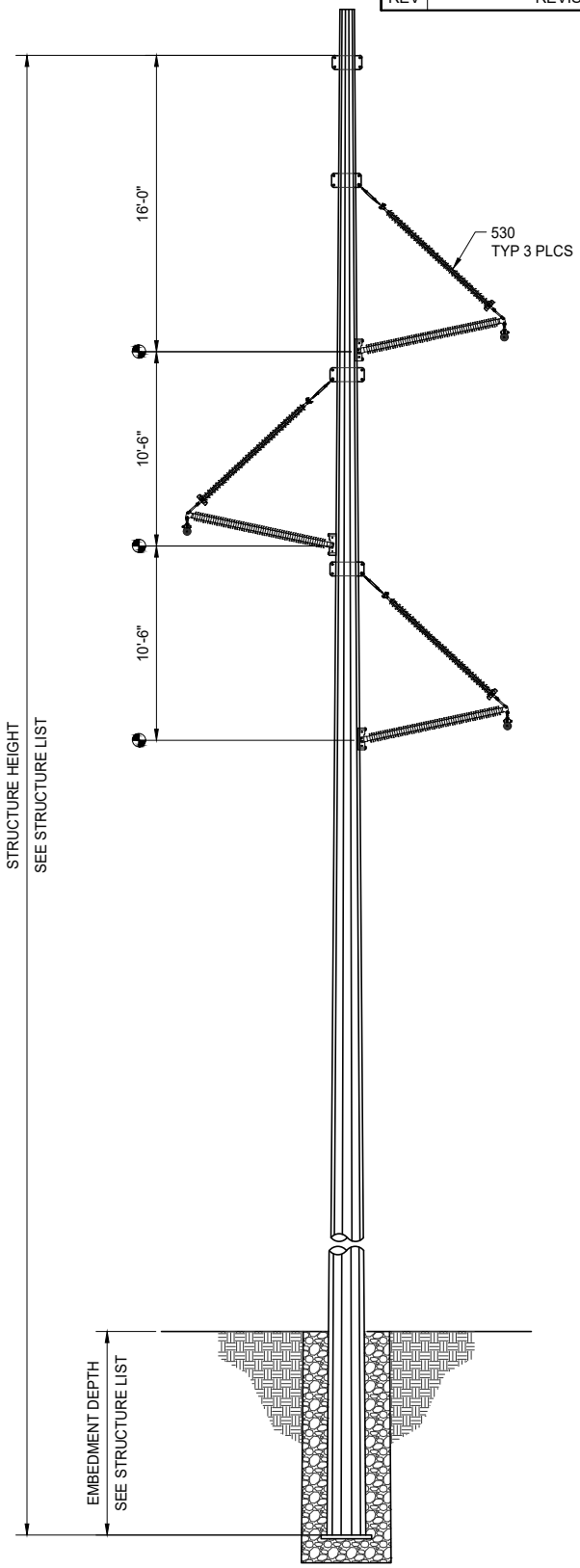
Exhibit G:

Attach any artist's or architect's conception of the proposed plant or transmission line structures and switchyards, which applicant believes may be informative to the Committee.

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
A	ISSUED FOR REVIEW	12/28/22	WF	DCT	*	*

DETAIL	DESCRIPTION	QTY
510	OHGW ASSEMBLY	-
520	OPGW ASSEMBLY	1
530	CONDUCTOR ASSEMBLY	3
540	UNDERBUILD ASSEMBLY	-
550	COMMUNICATION ASSEMBLY	-
560	GUY & ANCHOR ASSEMBLY	-
570	BRACES & CROSSARM ASSEMBLY	-
580	GROUNDING ASSEMBLY	1
590	MISCELLANEOUS ASSEMBLY	-

* SEE STRUCTURE LIST FOR SPECIFIC ASSEMBLIES



DSGN	DCT	12/28/2022	BRIGHTNIGHT ENERGY	JOB NUMBER 023981 / REV A
DRN	WF	12/28/2022	THREE SISTERS 230kV GEN-TIE	
CKD	*	*	TANGENT (0-1°), ALTERNATING, BRACE POST	DRAWING NUMBER 530.001
SCALE: NONE				
FOR 8.5x11 DWG ONLY				

REFERENCE DRAWINGS

POWER ENGINEERS

0239831.500.dwg

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
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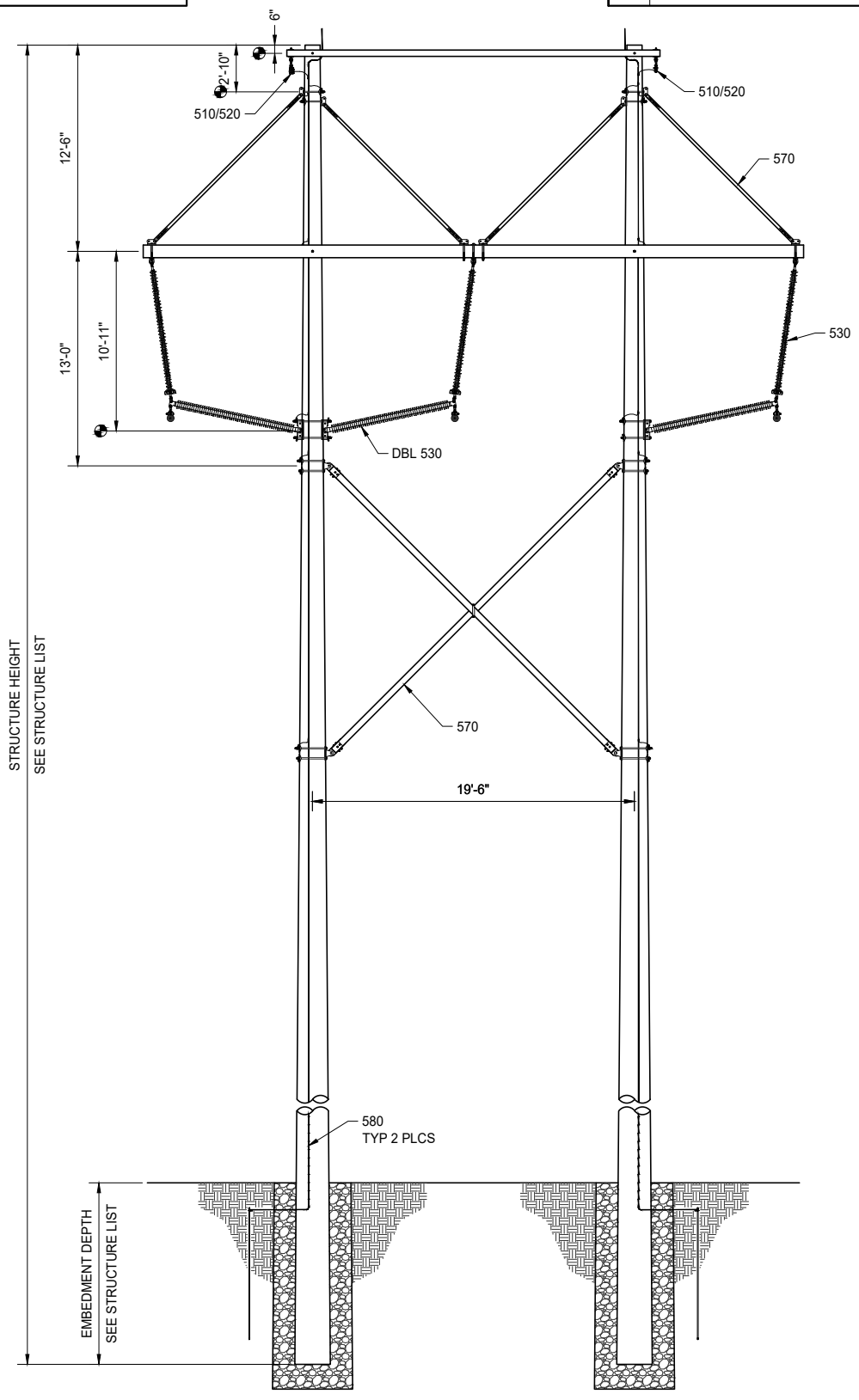

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540	UNDERBUILD ASSEMBLY	-
550	COMMUNICATION ASSEMBLY	-
560	GUY & ANCHOR ASSEMBLY	-
570	BRACES & CROSSARM ASSEMBLY	1
580	GROUNDING ASSEMBLY	2
590	MISCELLANEOUS ASSEMBLY	-

* SEE STRUCTURE LIST FOR SPECIFIC ASSEMBLIES

DSGN	DCT	12/28/2022		
DRN	WF	12/28/2022		
CKD	*	*		
SCALE:	NONE			
FOR 8.5x11 DWG ONLY				

REFERENCE DRAWINGS

POWER ENGINEERS

BRIGHTNIGHT ENERGY

THREE SISTERS 230kV GEN-TIE

TANGENT (0-1°), HORIZONTAL, SUSPENSION

JOB NUMBER 023981

REV A

DRAWING NUMBER 530.002

0239831.500.dwg

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
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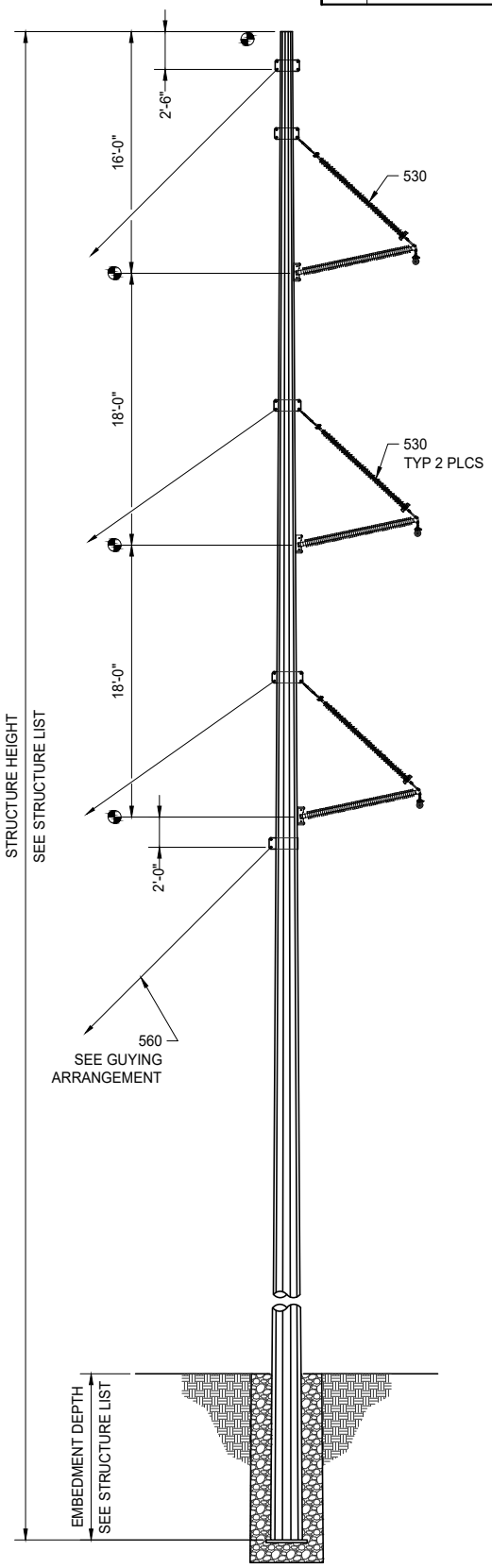
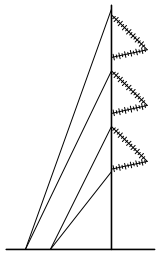
520	OPGW ASSEMBLY	1
530	CONDUCTOR ASSEMBLY	3
540	UNDERBUILD ASSEMBLY	-
550	COMMUNICATION ASSEMBLY	-
560	GUY & ANCHOR ASSEMBLY	2
570	BRACES & CROSSARM ASSEMBLY	-
590	MISCELLANEOUS ASSEMBLY	-

* SEE STRUCTURE LIST FOR SPECIFIC ASSEMBLIES





GUYING ARRANGEMENT

DSGN	DCT	12/28/2022	BRIGHTNIGHT ENERGY	JOB NUMBER 0239831 / REV A
DRN	WF	12/28/2022	THREE SISTERS 230kV GEN-TIE	
CKD	*	*	MEDIUM RUNNING ANGLE (5-15°) VERTICAL, BRACE POST	DRAWING NUMBER 500.003
SCALE: NONE				
FOR 8.5x11 DWG ONLY				

REFERENCE DRAWINGS

POWER ENGINEERS

0239831.500.dwg

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
A	ISSUED FOR REVIEW	12/28/22	WF	DCT	*	*

DETAIL	DESCRIPTION	QTY
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520	OPGW ASSEMBLY	2
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550	COMMUNICATION ASSEMBLY	-
560	GUY & ANCHOR ASSEMBLY	5
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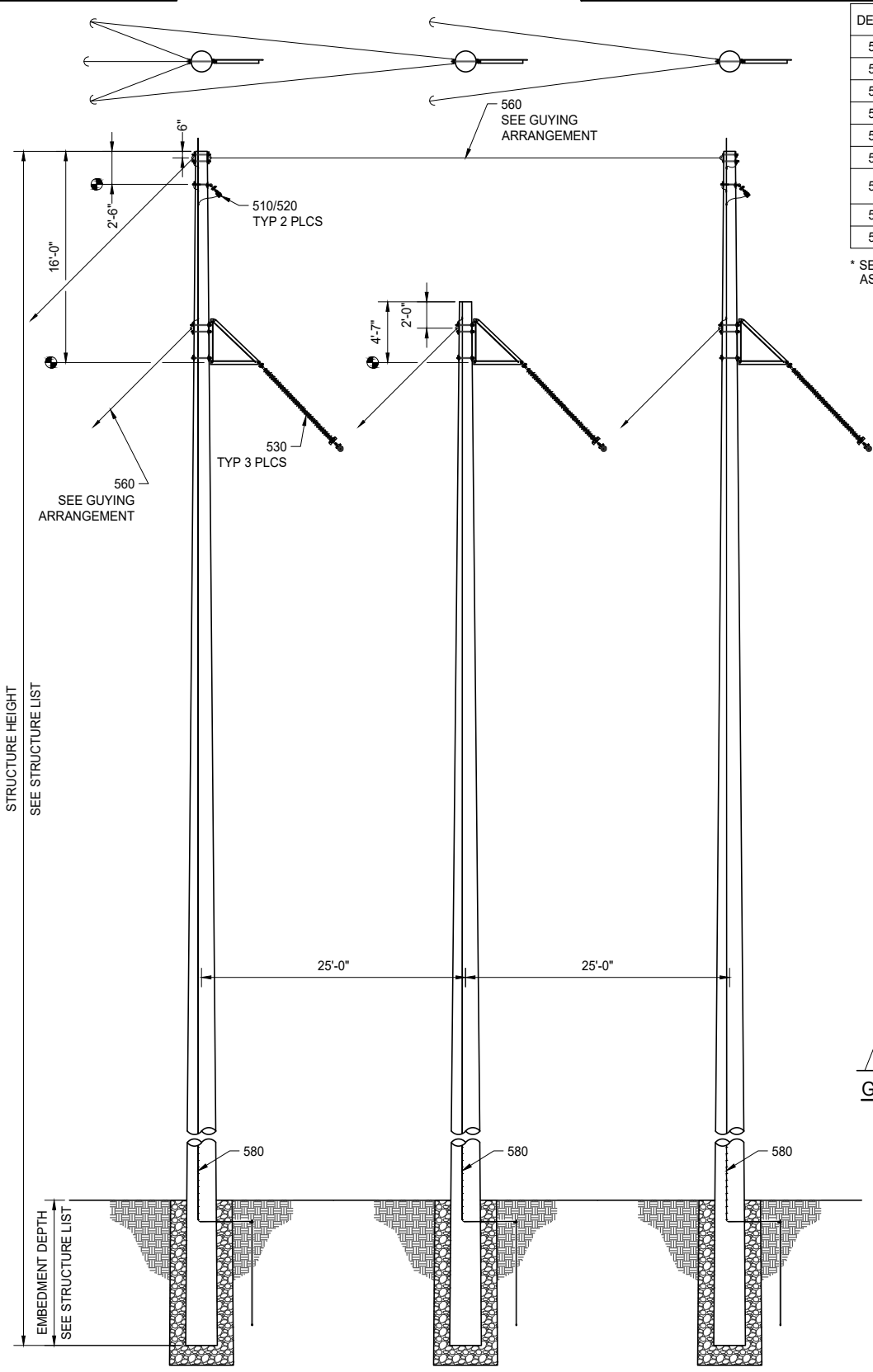
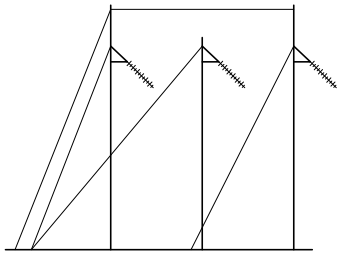
580	GROUNDING ASSEMBLY	3
590	MISCELLANEOUS ASSEMBLY	-

* SEE STRUCTURE LIST FOR SPECIFIC ASSEMBLIES





GUYING ARRANGEMENT

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DRN	WF	12/28/2022	THREE SISTERS 230kV GEN-TIE	
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SCALE: NONE				
FOR 8.5x11 DWG ONLY				

REFERENCE DRAWINGS

POWER ENGINEERS

0239831.500.dwg

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
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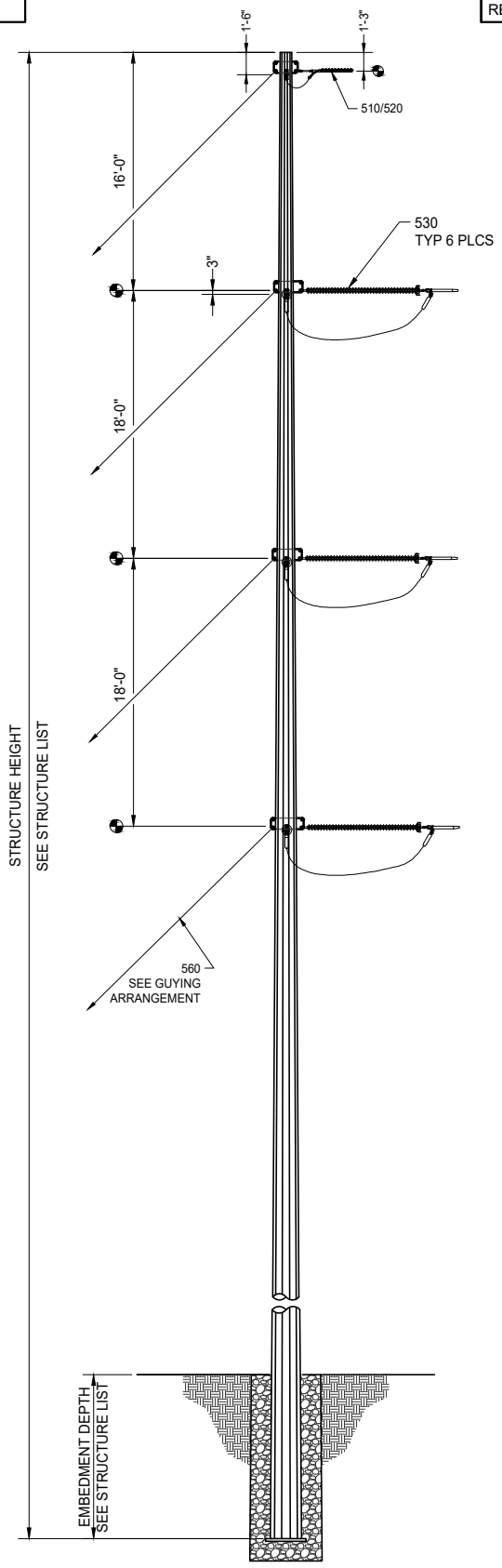

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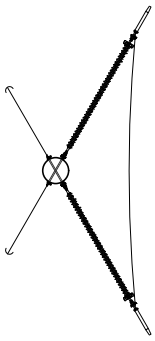
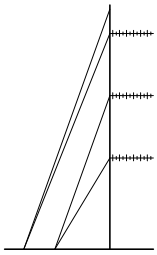
560	GUY & ANCHOR ASSEMBLY	4
570	BRACES & CROSSARM ASSEMBLY	-
580	GROUNDING ASSEMBLY	1
590	MISCELLANEOUS ASSEMBLY	-

* SEE STRUCTURE LIST FOR SPECIFIC ASSEMBLIES

OPGW/OHGW



CONDUCTOR



GUYING ARRANGEMENT

REFERENCE DRAWINGS

DSGN	DCT	12/28/2022
DRN	WF	12/28/2022
CKD	*	*

SCALE: NONE

FOR 8.5x11 DWG ONLY

POWER ENGINEERS

BRIGHTNIGHT ENERGY

THREE SISTERS 230kV GEN-TIE

DEADEND (65-90°)

JOB NUMBER 0239831

REV A

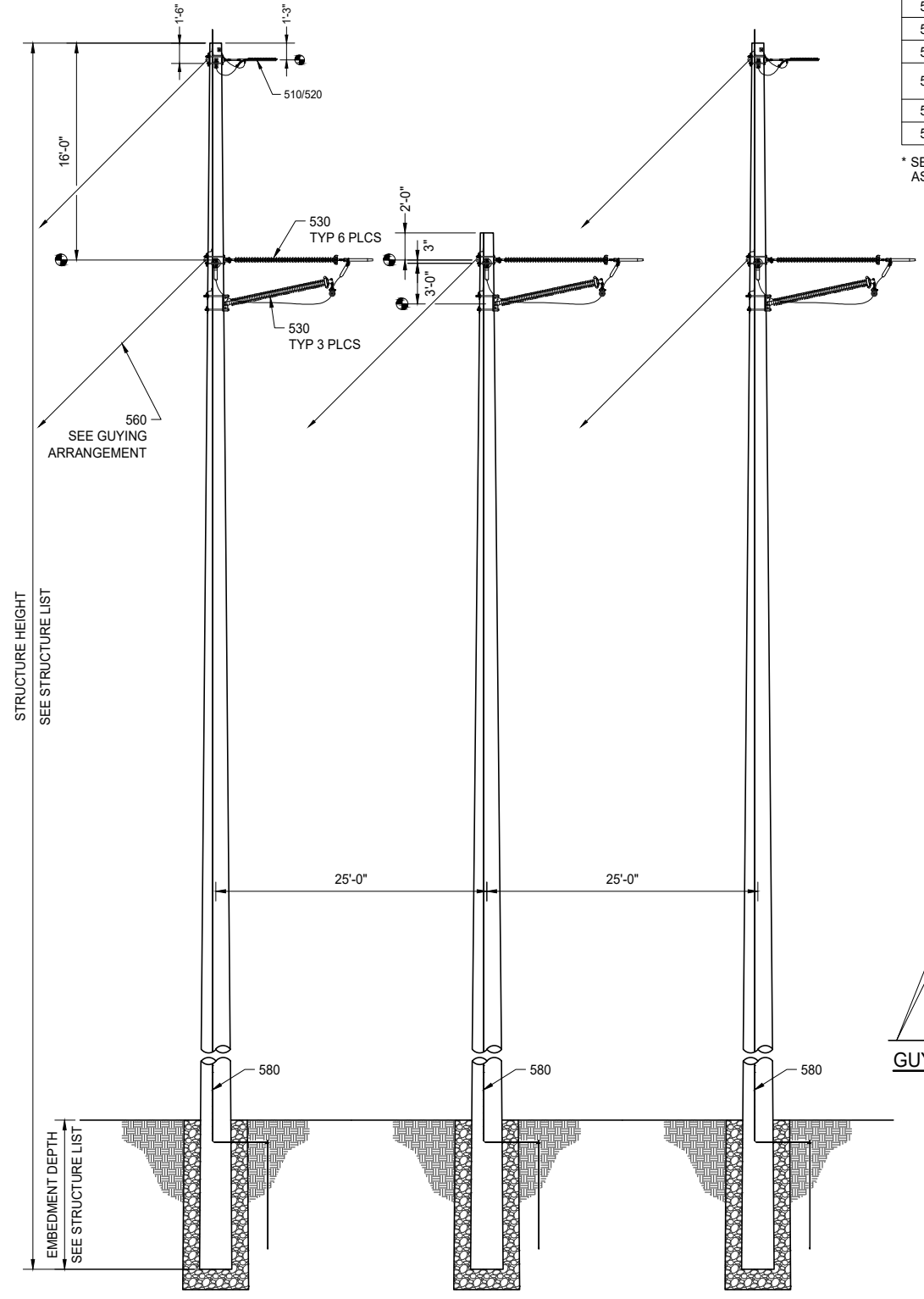
DRAWING NUMBER 530.005

0239831.500.dwg

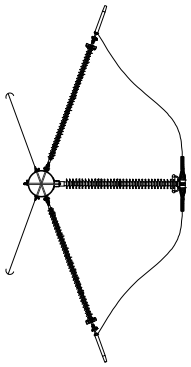
REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
A	ISSUED FOR REVIEW	12/28/22	WF	DCT	*	*

DETAIL	DESCRIPTION	QTY
510	OHGW ASSEMBLY	-
520	OPGW ASSEMBLY	2
530	CONDUCTOR ASSEMBLY	3
540	UNDERBUILD ASSEMBLY	-
550	COMMUNICATION ASSEMBLY	-
560	GUY & ANCHOR ASSEMBLY	5
570	BRACES & CROSSARM ASSEMBLY	-
580	GROUNDING ASSEMBLY	3
590	MISCELLANEOUS ASSEMBLY	-

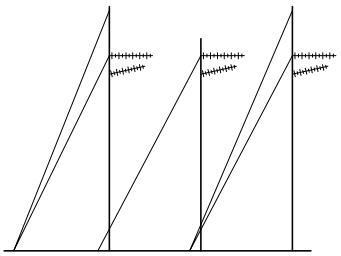
* SEE STRUCTURE LIST FOR SPECIFIC ASSEMBLIES



OPGW/OHGW



CONDUCTOR



GUYING ARRANGEMENT

DSGN	DCT	12/28/2022		
DRN	WF	12/28/2022		
CKD	*	*		
SCALE:	NONE			
FOR 8.5x11 DWG ONLY				

REFERENCE DRAWINGS

POWER ENGINEERS

BRIGHTNIGHT ENERGY

THREE SISTERS 230kV GEN-TIE

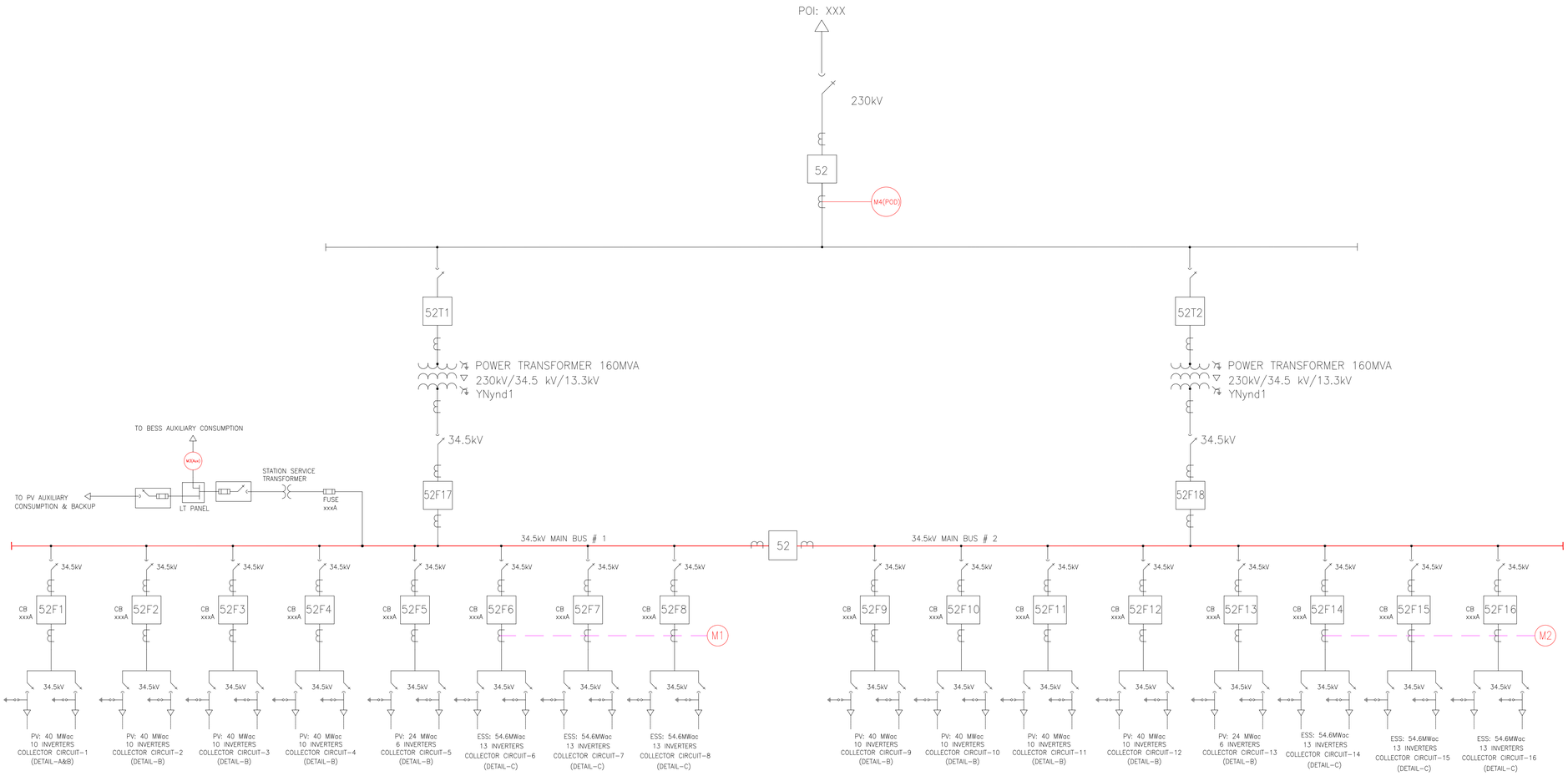
DEADEND (10-65°), HORIZONTAL

JOB NUMBER 0239831

REV A

DRAWING NUMBER 500.006

0239831.500.dwg



Legend:-	
Symbol	Description
M1 — M2	Storage Facility Meter
M3(Aux)	Storage Auxiliary Power Meter
M4(POD)	POD Meter
	DC Fuse
	SPD
	MCCB/LV Breaker
	Transformer
	AC Fuse
52	Breaker with CT
	Disconnect Switch
DC AC	Inverter
	Battery Unit

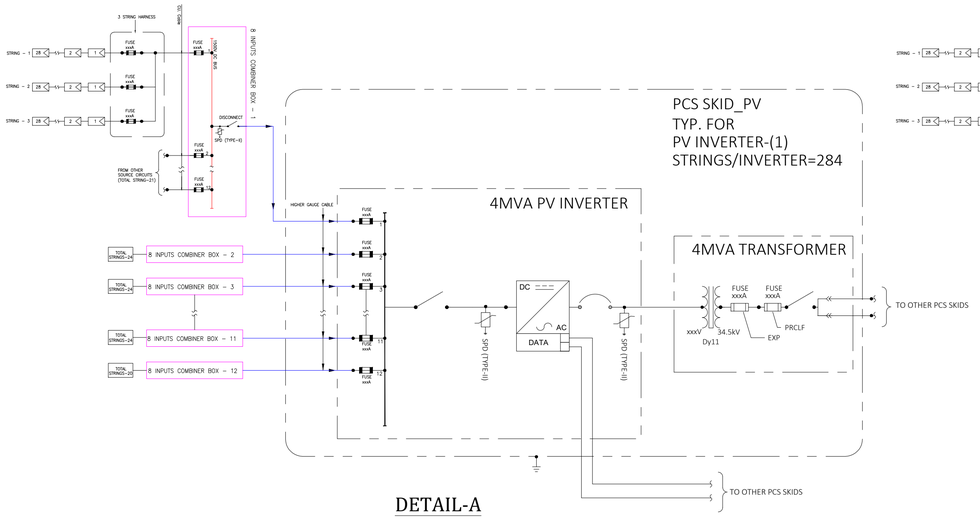
Project Details (Solar PV+BESS)	
Evacuation Voltage	230kV
Frequency	60Hz
Solar PV AC Capacity	300 MWac
PV Inverter Rating	4MWac
PV Inverter Trafo. Rating	4MVA
PV Inverter Quantity	92 Nos.
BESS Capacity	300 MWac
BESS MWh	1200 MWh
BESS Inverter Rating	4.2 MWac
BESS Transformer Rating	4.2 MVA
BESS Inverter Quantity	78 Nos.

DATE	REV.	REVISION PARTICULARS	DRN. BY	CKD. BY	APPD. BY
2022-12-29	01	PV INVERTER QUANTITY REVISED	MA	PS	KP
2022-06-20	00	FIRST ISSUE	MA	PS	KP

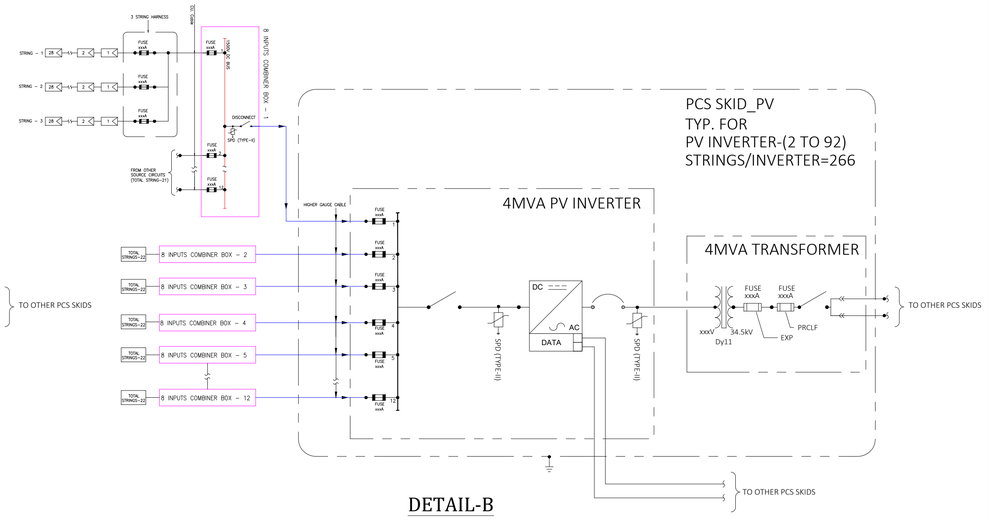
BRIGHT NIGHT **BrightNight Power**

PROJECT NAME	THREE SISTERS (THIS)				
DRAWN		TITLE:- SINGLE LINE DIAGRAM (PVS)			
APPROVED		PURPOSE CODE	DRAWING NO.	REV.	SHEET
SCALE	NTS	ISSUE FOR BID	00	01	1 OF 2

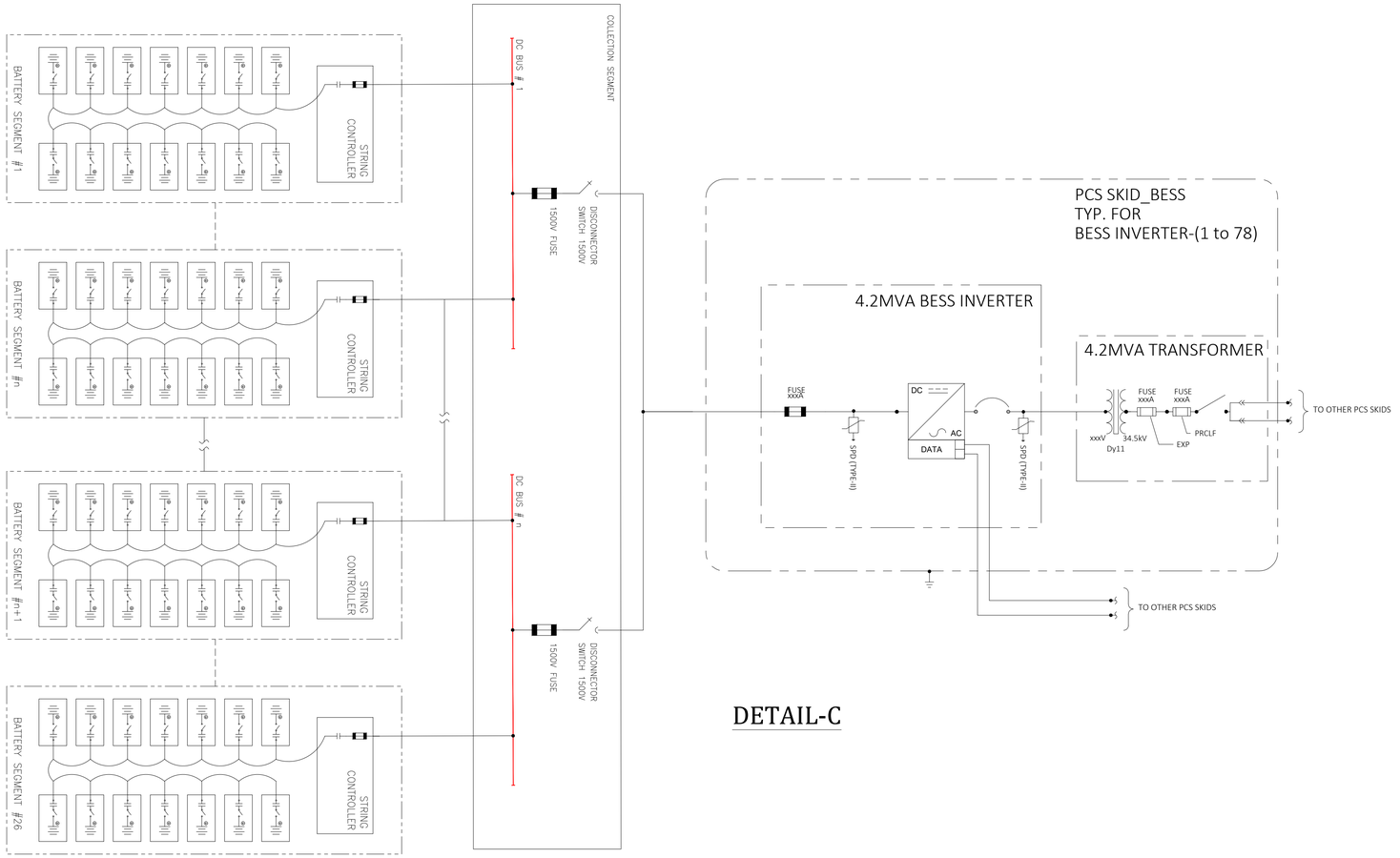
NOTE :-



DETAIL-A



DETAIL-B



DETAIL-C

Legend:-

Symbol	Description
M1 — M2	Storage Facility Meter
MSMxx	Storage Auxiliary Power Meter
MPOD	POD Meter
	DC Fuse
	SPD
	MCCB/LV Breaker
	Transformer
	AC Fuse
52	Breaker with CT
	Disconnect Switch
DC AC DATA	Inverter
	Battery Unit

2022-12-29	01	PV INVERTER QUANTITY REVISED	MA	PS	KP
2022-06-20	00	FIRST ISSUE	MA	PS	KP
DATE	REV.	REVISION PARTICULARS	DRN. BY	CKD. BY	APPD. BY

BRIGHT NIGHT **BrightNight Power**

PROJECT NAME: THREE SISTERS (THIS)

DRAWN

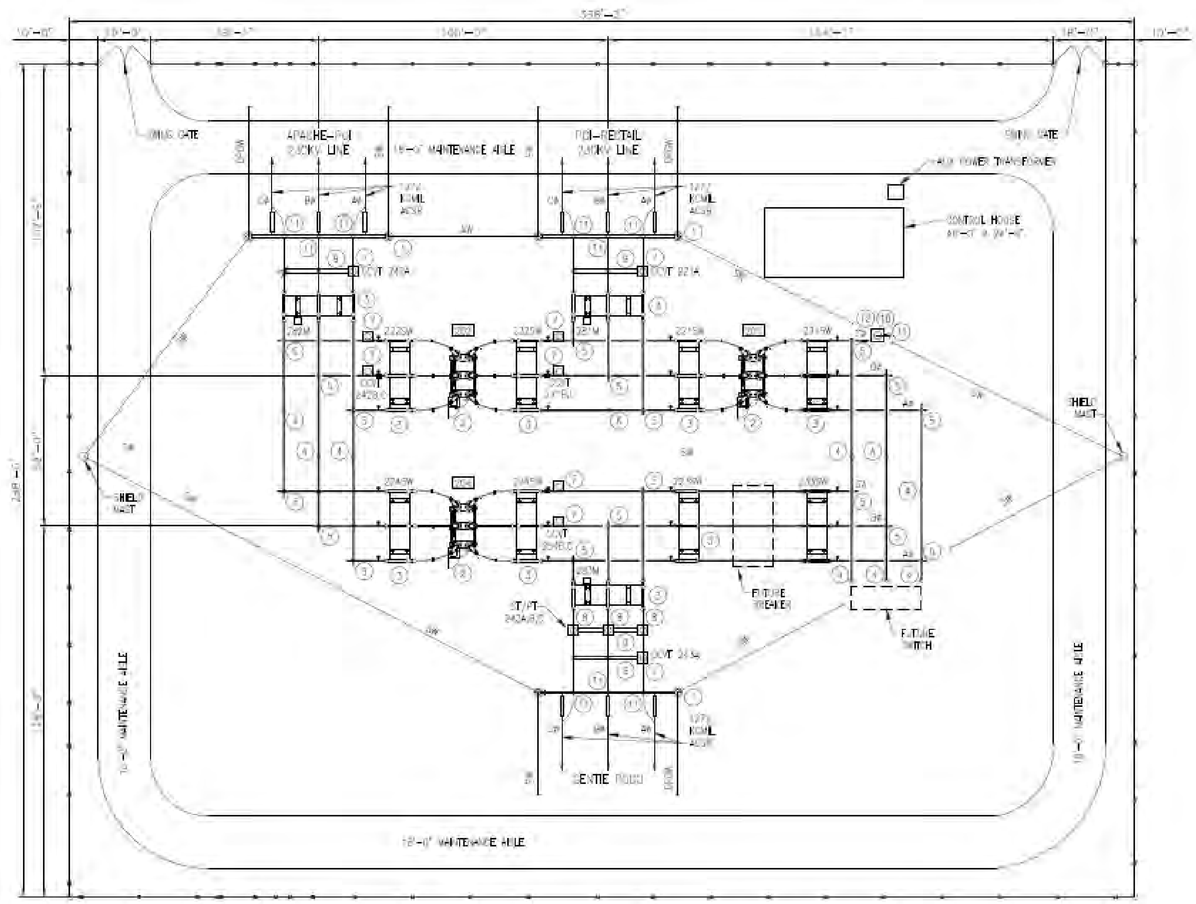
APPROVED

TITLE:- SINGLE LINE DIAGRAM (PVS)

PURPOSE CODE	DRAWING NO.	REV.	SHEET
ISSUE FOR BID	00	01	2 OF 2

SCALE: NTS

SATELLITE SUB



MINIMUM CLEARANCE REQUIREMENTS	
DESCRIPTION	
OPERATING VOLTAGE	230KV
CENTER TO CENTER PHASE TO PHASE	15'-0"
VERTICAL BREAK DISCONNECT SWITCH	[illegible]
PHASE TO GROUND	[illegible]
BOTTOM OF INSULATOR/BUSHING TO TOP OF FOUNDATION	8'-6"
VERTICAL CLEARANCE TO UNGROUNDED LIVE PARTS TO TOP OF FDN.	[illegible]

ITEM NUMBER	QUANTITY	DESCRIPTION
1	3	DEAD END STRUCTURE (H-FRAME)
2	3	GAS CIRCUIT BREAKER
3	[illegible]	DISCONNECT SWITCH
4	9	SINGLE PHASE HIGH BUS SUPPORT
5	18	SINGLE PHASE LOW BUS SUPPORT WITH A-FRAME
6	[illegible]	SINGLE PHASE LOW BUS SUPPORT
7	9	CCVT
8	3	CT/PT COMBO (REVENUE METERING)
9	6	SUPPORT STRUCTURE
10	3	STATION SERVICE TRANSFORMER
11	18	SURGE ARRESTER
12	[illegible]	FUSE

NO.	DATE	REVISIONS	BY	APP'D	NO.	DATE	REVISIONS	BY	APP'D	REFERENCE DRAWINGS	NOTES
										PDI 230KV SUBSTATION SINGLE LINE DIAGRAM	

Arizona's G&T Cooperatives

Southwest Transmission Cooperative, Inc.

PDI 230KV SUBSTATION
EQUIPMENT PLAN

PROJ. NO. [illegible]

THREE SISTERS SOLAR PROJECT
APPLICATION FOR CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT H: EXISTING PLANS/LAND USE

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit H of an application for a Certificate of Environmental Compatibility must consider the following:

> *"To the extent applicant is able to determine, state the existing plans of the state, local government and private entities for other developments at or in the vicinity of the proposed site or route."*

EXISTING PLANS ANALYSIS

This section summarizes land use at and around the Project Area including zoning and planned and proposed use. Land ownership for the approximately 1.5-mile-long gen-tie is primarily on private property with uniform zoning in a rural area. Surrounding land use is not expected to be limited or adversely affected by the Project.

Installation of the gen-tie line (including the 500-ft-wide corridor), the Project substation and the Project switchyard (Proposed Transmission Corridor), facilitates development of the larger Three Sister's Solar Project, including solar energy generating faciality with battery energy storage. The Cochise County Comprehensive Plan (CCCP; Cochise County 2015a), last revised in 2015, included goals and policies regarding land uses in Cochise County. State law requires Arizona counties to identify policies and practices to encourage use of renewable energy within the Comprehensive Planning process. Under Section 102 – Comprehensive Plan Elements and embedded within *Goal and Policy E. Renewable Energy*, the CCCP states that Cochise County will support local renewable energy development, particularly by supporting utility-scale projects based on the University of Arizona's Renewable Energy Opportunity Analysis (University of Arizona 2013) and other tools for determining land suitability for renewable energy. According to the REOA, the gen-tie line lies within an area mapped as both suitable for large scale solar facilities greater than 5 megawatts (MW) and suitable for large scale solar facilities equal to or below 5 MW. The CCCP also outlines specific area plans. The Mid-Sulphur Springs Valley Plan (Cochise County 1999) area is located approximately 1.5 miles south of the gen-tie line. However, this plan does not contain specific goals or policies relating to solar or renewable energy.

The CCCP maps the Project within Growth Area Plan Designation Category D-Rural Area which is geared toward providing local services, tourism, or intensive uses not appropriate in more populated parts of the county, such as power plants and feedlots (Cochise County 2015a). The Project is zoned RU-4 Rural. The

Three Sisters Solar Project would be considered a solar energy power plant (SEPP) defined as utility-scale, non-residential solar projects that supply power to off-site consumers. SEPPs are considered permitted uses in Industry zoning districts and special uses in Rural and General Business zoning districts (Cochise County 2021).

Based on a review of publicly available information and discussions with Cochise County Development Services Department planning staff, new development plans in the vicinity of the Project are limited. There is an existing potato processing facility located at 1980 Highway 191 (206-01-011J) that has been the subject of requested facility expansions in the past and recently submitted an application for a Special Use Modification for the phased addition of approximately 150,000 square feet (pers. Comm. Ms. Sandoval with Mr. Robert Kirschmann, on January 3, 2023). That property is located approximately 4 miles southwest of the Project. This Project would not impact the proposed expansion of that operation.

The Cochise County 2040 Long-Range Transportation Plan (2015b) outlines plans for changes to transportation routes until 2040. There are no county transportation plans within the Project Area. The closest plan is the widening or upgrading of Kansas Settlement Road by 2040, which lies approximately four miles east of the Project area.

The Arizona Department of Transportation (ADOT) has multiple future transportation plans. There are no plans within the Project Area outlined in ADOT's Long-Range Transportation Plan, as well as ADOT's Current 5-year program (ADOT 2018, 2022). The closest planned transportation route change is a bridge upgrade along Highway 191 approximately six miles northwest of the Willcox Playa.

REFERENCES

ADOT. 2018. Long-range Transportation Plan 2016-2040. Dated February 2018.

_____. 2022. 2023-2027 Five-year Transportation Facilities Construction Program. Effective June 17, 2022.

Cochise County. 1999. Mid-Sulphur Springs Valley Plan. November 15, 1999.

_____. 2015a. Cochise County Comprehensive Plan. Effective 1984, includes Amendments through 2015.

_____. 2015b. Cochise County 2040 Long-Range Transportation Plan Final Report dated May 12, 2015.

_____. 2021. County Zoning Regulations. Effective July 8, 2021.

University of Arizona. 2013. Renewable Energy Opportunity Analysis Project Overview. University of Arizona Cooperative Extension with the College of Agriculture, Planning and Landscape Architecture. Available at: https://extension.arizona.edu/renewable-energy-opportunity-analysis, accessed August 5, 2021.

THREE SISTERS SOLAR PROJECT
APPLICATION FOR CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT I: NOISE, RADIO, AND TELEVISION INTERFERENCE

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit I of an application for a Certificate of Environmental Compatibility must consider the following:

> *"Describe the anticipated noise emission levels and any interference with communication signals which will emanate from the proposed facilities."*

This Exhibit provides a summary of potential Project effects to these resources within and near the Three Sisters Solar Project. The Project includes the approximately 1.5-mile-long gen-tie line within a 500-fit-wide corridor, the approximately 8-acre Project substation, and approximately 8-acre Project switchyard (Proposed Transmission Corridor). Note that references to "Exhibits" refer to exhibits to the CEC application.

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1. REGULATORY SETTING

The Project is located in an unincorporated area of Cochise County. The County does not have an ordinance addressing noise levels; however, the Cochise County Zoning Regulations identify noise and vibration violations as public nuisances which are reportable.

2. NOISE EMISSIONS

There are no noise-sensitive receptors (NSRs) along the transmission line corridor. The areas nearest the Project Area which may be affected by Project construction noise include farmlands and cattle structures. These areas are not considered NSRs, and there are rarely contain people in these who would be affected by noise emissions.

Noise impacts during operations and maintenance of the Project are expected to therefore be negligible due to the absence of NSRs along the corridor (i.e., no measurable change in current conditions) to minor in magnitude (i.e., a small, but measurable change in current conditions).

3. COMMUNICATIONS INTERFERENCE

Overhead transmission lines do not generally interfere with normal radio reception. The Project would operate under Federal Communications Commission (FCC) regulations which require that best engineering principles be used to guard against harmful interference to authorized radio users from the transmission line.

For the Project, the level of radio/television/equipment interference would be very low. According to the National Renewable Energy Laboratory (NREL 2017) the risk of electromagnetic and/or radar interference from solar photovoltaic (PV) arrays is low risk. PV systems equipment such as transformers and electric cables are not sources of electromagnetic interference (EMI) because of their low frequency (60 hertz [Hz]) of operation and PV panels themselves do not emit EMI.

Fort Huachuca is the largest military installation in Arizona, located near Sierra Vista in Cochise County. Fort Huachuca has a long history of providing electronic and communications testing and training for national defense. Their facilities include the 2,500 square mile Buffalo Solder Electronic Test Range (U.S. Army 2022). The Project is located well outside the Buffalo Solder Electronic Test Range. The applicant has identified Fort Huachuca as a Project stakeholder and is coordinating directly with the Office of the Commanding General to address any Project concerns. A direct communication with Alanna Riggs who works with Matt Walsh, in the Office of the Commanding General, on December 15, 2022, noted that Fort Huachuca had no concerns with regards to the planned gen-tie line. It is located outside its electrical testing range complex and is near the existing AEPCO line so does not present a new feature on the landscape. The Project will comply with all Federal Aviation Administration and Federal Communications Commission rules.

4. REFERENCES

NREL/FS-5J00-67440, April 2017. Electro-Magnetic Interference from Solar Photovoltaic Arrays, U.S. Department of the Navy, Renewable Energy Program Office (REPO) (nrel.gov).

U.S. Army. 2022. History of Fort Huachuca. Available at: https://home.army.mil/huachuca/index.php/about/history. Last updated 10/17/2022. Accessed on 12/12/2022.

THREE SISTERS SOLAR PROJECT
APPLICATION FOR CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT J: SPECIAL FACTORS

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit J of an application for a Certificate of Environmental Compatibility must consider the following:

Describe any special factors not previously covered herein, which applicant believes to be relevant to an informed decision on its application.

1. INTRODUCTION

This Exhibit includes information on the public and agency involvement program that has been conducted for the Project. The outreach efforts provided information to agencies and individuals, solicited information on the Project area and preliminary alternatives, and helped to identify potential issues relative to the Project.

2. PUBLIC INVOLVEMENT PROGRAM SUMMARY

To reach the affected residents and agencies, BrightNight and WestLand instituted multiple public participation activities, including public open house meetings, jurisdictional meetings, agency briefings, newsletter mailings, newspaper advertisements, and a website. Feedback was received on how the public viewed the proposed project and how the project may impact the proposed location.

2.1 Project Fact Sheet

Two newsletters have been or will be prepared during the public involvement process to provide technical information to the public, announce the public open house, and inform the public of the various methods to comment on the Project (e.g., in writing, by telephone, and via the Project's website or email address) and otherwise become involved in the siting process.

Newsletter One

The first Project mailings were prepared and distributed on November 18, 2022. Approximately 52 residents and landowners were identified within a 2-mile radius of the Project area and received newsletter flyers. Thirty-five (35) agencies and key stakeholders within the Project area received stakeholder letters. These mailings described the Project and announced the upcoming public open house meeting (December 7, 2022) and the Project's Siting Committee hearings (February 27, 2023) and provided the Project website for further information. The content included an overview of the Project's purpose and need, a description

of the infrastructure being proposed and information about when, where, and how the public could be involved. The flyers were distributed in both English and Spanish.

The fact sheet inadvertently labeled S. Anderson Road incorrectly on the Project Area map, as shown on Google Earth. WestLand confirmed the correct alignment with Cochise County and revised mailings (Exhibit J-1) were redistributed on November 23, 2022.

BrightNight received email correspondence in response to the mailings from the United States Army Corps of Engineers (Exhibit J-2). Arizona Game and Fish Department (Exhibit J-3), and the Arizona Governor's office (Exhibit J-4).

Newsletter Two

The second Project newsletter mailing will be prepared and distributed to the same mailing list used in the previous newsletter mailing prior to the Hearing. The newsletter will provide an overview of the CEC application process, status of the environmental studies completed, and provide a second announcement of the Project's Siting Committee hearings (February 27, 2023).

2.2 Website

The Project website (https://brightnightpower.com/three-sisters/) was created and continually maintained to provide access to information and electronic versions of distributed materials. Through the website, viewers can access Project information and are provided contact information for submitting their comments or questions. The website address was advertised in newsletters, at the public open house, and in a paid newspaper advertisement. A copy of this website is included in Exhibit J-5.

2.3 Public Open House

An in-person public open house was held for the Project on December 7, 2022, at the Willcox Community Center in Willcox, Arizona. This meeting was announced in the first project newsletter, through a paid newspaper advertisement, and on the Project website. Seven members of the community and stakeholders attended the open house meeting. Attendees included private landowners and representatives from the County planner's office, the Arizona Department of Environmental Quality, Arizona Electric Power Cooperative (AEPCO), and Arizona Game and Fish Department (Exhibit J-6).

The format of the meeting was an informal open house arrangement held from 5:00 to 7:00 p.m., which allowed community members to attend at their convenience, review informational displays, and have one-on-one personal communication with members of the Project team to provide comments or ask questions. The meeting consisted of several stations with large maps and text boards with highlighted details of the Project, including the Project's purpose and need, proposed facilities, permitting requirements, and photo realistic simulations of the Project. A community brochure summarizing the Project was developed for the

website and distributed to attendees (Exhibit J-7). Comment forms were available to allow attendees to provide input on the proposed Project. A copy of the blank comment form is included in Exhibit J-8.

2.4 Media

A paid advertisement was published in the November 23, 2022 edition of the Herald Review to announce the December 7, 2022 open house meeting (Exhibit J-9).

Additional paid advertisements will be prepared for distribution and are anticipated to be sent out in January 2023. These media announcements will announce the dates of the Project's Siting Committee hearings and information about when, where, and how the public could be involved in the process.

2.5 Jurisdiction/Agency Coordination

Throughout the Project, team members held meetings with local jurisdiction and agency representatives, including elected officials and planning staff and others to relay information on the Project, answer questions, and request feedback. These meetings enable the Project team to identify stakeholder issues, consider suggestions during the planning process, and relay information on developments in the Project. The Applicant also met with and received information from private landowners/lessees during the planning process.

Two key stakeholders identified by the county planning staff included Fort Huachuca and Boeing. Fort Huachuca conducts electromagnetic field testing and Boeing uses the Willcox Playa to land spacecraft. A contact with the Office of the General at Fort Huachuca indicated that there were no concerns with regards to the gen-tie line as it was not within their testing area, and it is in close proximity to an existing transmission line. Boeing has not yet provided a response. Boeing has the option to utilize the Willcox Playa as a landing area for the Starliner spacecraft at a site in the northcentral portion of the Willcox Playa which is unlikely to be affected by the Project.

A list of agency meeting/outreach is included as **Table J-1**.

Table J-1. Jurisdiction/Agency Coordination

Contact Date	Affiliation
12/7/2022	Willcox City Manager Caleb Blaschke
12/7/2022	Willcox Economic Development Director Dan Coxworth
12/7/2022	Cochise County Planner Robert Kirschmann
TBD	Cochise County Supervisor Peggy Judd
TBD	Arizona Game and Fish Department

BrightNight also met with several private landowners whose land potentially could be crossed directly by the Project route to review right-of-way constraints and feasibility issues. BrightNight has secured easements for the majority of the gen-tie path and is completing negotiations with the remaining landowners.