



**Grier Substation Rezone & Minor General Plan Amendment  
13860 W. Grier Road Marana, Arizona 85653**

**February 22, 2024**

**Case # Pending**

# Grier Substation Rezone & Minor General Plan Amendment

13860 W. Grier Road Marana, Arizona 85653

*Submitted to:*

**Town of Marana**

Planning and Zoning Division  
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Marana, Arizona 85653

*Prepared for:*

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**February 2024**

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**LIST OF ACRONYMS**

ac	Acre
ACC	Arizona Corporation Commission
AEPCO	Arizona Electric Power Cooperative, Inc
AG	Agriculture
ALTA	American Land Title Association
amsl	Above mean sea level
APN	Assessor's Parcel Number
ASM	Arizona State Museum
AZGFD	Arizona Game and Fish Department

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C	Commercial
CEC	Certificate of Environmental Compatibility
Cfs	Cubic feet per second
CMU	Concrete Masonry Unit
CMID	Cortaro-Marana Irrigation District
CWA	Clean Water Act
DG	Decomposed granite
du/ac	Dwelling units per acre
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
Fps	Feet per second
Ft <sup>2</sup>	Square feet
HDMS	Heritage Data Management System
IPaC	Information for Planning and Consultation
kV	kilovolt
KVA	kilovolt amperes
kW	kilowatts
LOMR	Letter of Map Revision
MUSD	Marana Unified School District
MVA	megavolt amperes
NC	Neighborhood Commercial
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PSA	Purchase Sales Agreement
SP (zoning)	Specific Plan
SP (soils)	Standard Proctor
TEP	Tucson Electric Power Company
TN	Traditional Neighborhood
TOM	Town of Marana
TRSQ	Township Range Section Quarter
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
WOTUS	Waters of the United States
WSS	Web Soil Survey

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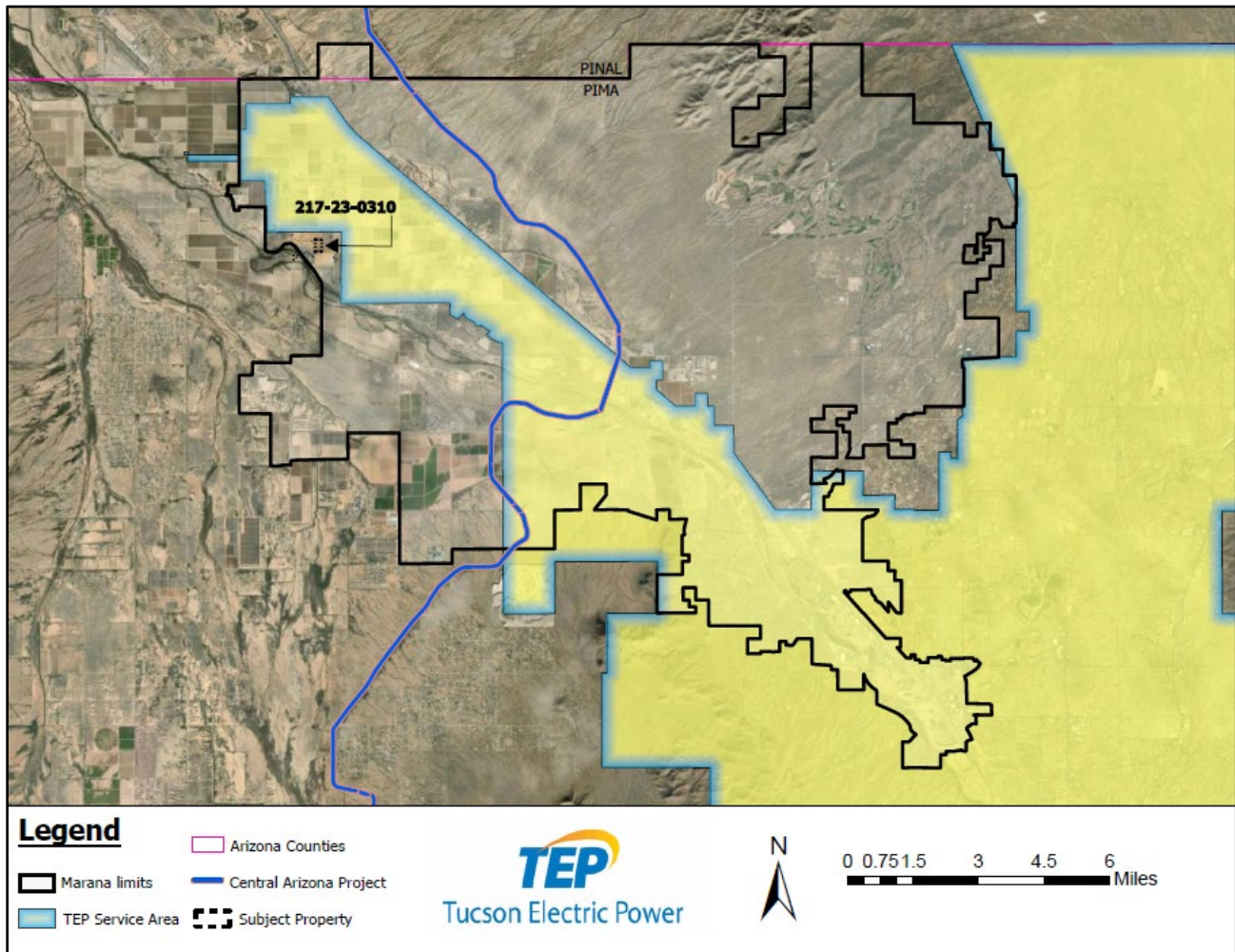


## I. INTRODUCTION

This is a request by Tucson Electric Power Company (TEP) for approval of a rezone of Pima County Assessor Parcel No. (APN) 217-23-0310 (subject parcel) from Small Lot Zone (Zone A) to Neighborhood Commercial (NC) and a minor amendment to the Make Marana 2040 General Plan (General Plan) in order to construct, maintain, and operate a 138/13.8 kilovolt (kV) electric substation. As early as 2007, TEP identified the need for a new substation in the northwest portion of its service area ([Exhibit 1: TEP Service Area](#)) as evidenced in the filing of its 10-year plan with the Arizona Corporation Commission in 2008. The downturn of the economy slowed this need. However, as both the economy and land development have recovered, the need for electric capacity has increased. Due to continued and steady growth in the Town of Marana (TOM), a new substation is needed to support electric services and reliability for current, planned, and future development in TOM and the surrounding area.

The subject parcel is located just outside of TEP’s service area. Transmission and distribution lines would connect the substation to TEP’s facilities in its service area via distribution and transmission lines. TEP operates and maintains generation and transmission facilities throughout Arizona and into New Mexico to bring safe, reliable power to customers in its service area.

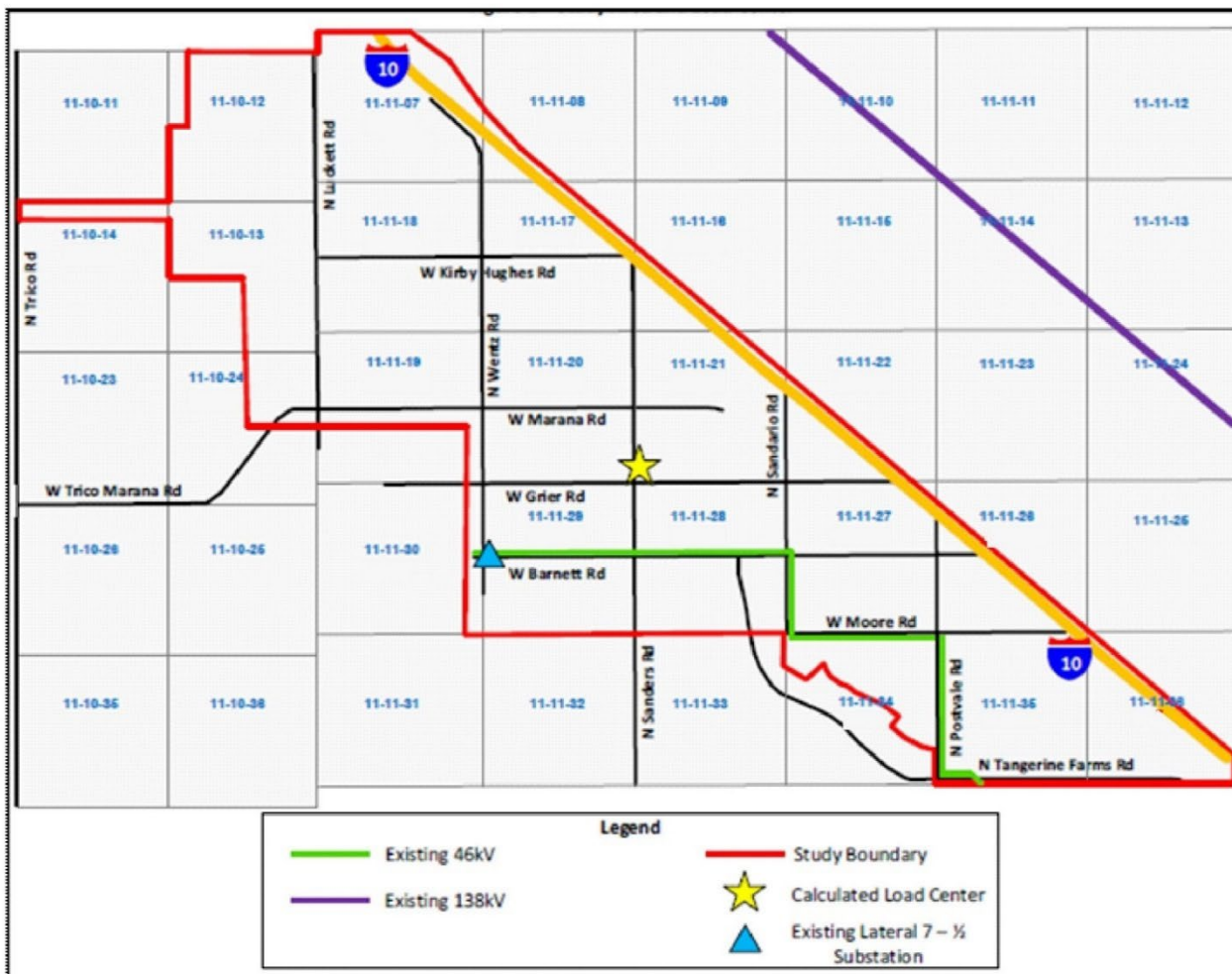
**Exhibit 1. TEP Service Area**



In 2019, TEP completed the *Marana Area Study* to determine how new development can be served reliable electric service in the northwest portion of its service area. The Marana study area encompasses 13.9 square miles, located north of North Tangerine Farms Road, east of North Trico Road, and west of Interstate-10 (**Exhibit 2: TEP Marana Area Study**). The study determined that the 2019 peak demand was 15.10 megavolt amperes (MVA) and a future peak demand of 166.98 MVA at full build-out<sup>1</sup> is anticipated.

Four (4) existing TEP distribution circuits serve the study area. Two circuits are fed from TEP’s existing 46-kV Lateral 7 ½ Substation. The other two circuits are fed from TEP’s 138-kV North Loop Substation. To provide contingency support to existing circuits and allow for greater flexibility in response to outages, construction of a new distribution substation is necessary.

**Exhibit 2. TEP Marana Area Study**



<sup>1</sup> The projected MVA was determined by identifying what each vacant land parcel in the study area is zoned for, finding the total acreage associated with each empty parcel in each Township, Range, Section, and Section Quarter (TRSQ), then multiplying the projected load in kilowatts (kW) per acre, based on that parcel’s zoning, by the number of available acres, and then converting kVA to MVA.

Based off both the 2019 load profile and the forecasted load in the study area, the load center was calculated to be northeast of the intersection of North Sanders Road and West Grier Road. This load center indicates the ideal location for a new TEP 138/13.8-kV substation that will provide adequate power within the Marana study area.

In May of 2023, TEP installed a temporary mobile substation in the study area and is currently performing system upgrades at the Lateral 7 ½ 46-kV Substation to maintain system reliability and keep pace with the growing electrical demand in TOM until a new substation can be built and placed into operation.

To accommodate the existing needs, future load growth, and improve system reliability, as well as retire the Lateral 7 ½ 46-kV Substation, TEP proposes to construct, maintain, and operate the proposed Grier 138/13.8-kV Substation.

The new substation would be sourced from the existing North Loop to Tortolita Quad Circuit (east of I-10), utilizing the recently approved (by the Arizona Corporation Commission (ACC)) Arizona Electric Power Cooperative, Inc. (AEPSCO)/TEP double-circuit Marana to Saguaro 115/138-kV transmission line, which would then loop back to the existing North Loop to Tortolita Quad Circuit via an as yet, undetermined route, in order to provide needed redundancy to the grid. Siting for this undetermined route will follow (in the event of) approval of the rezone and minor plan amendment request. The transmission line will require approval from the ACC.

#### A. Site Selection

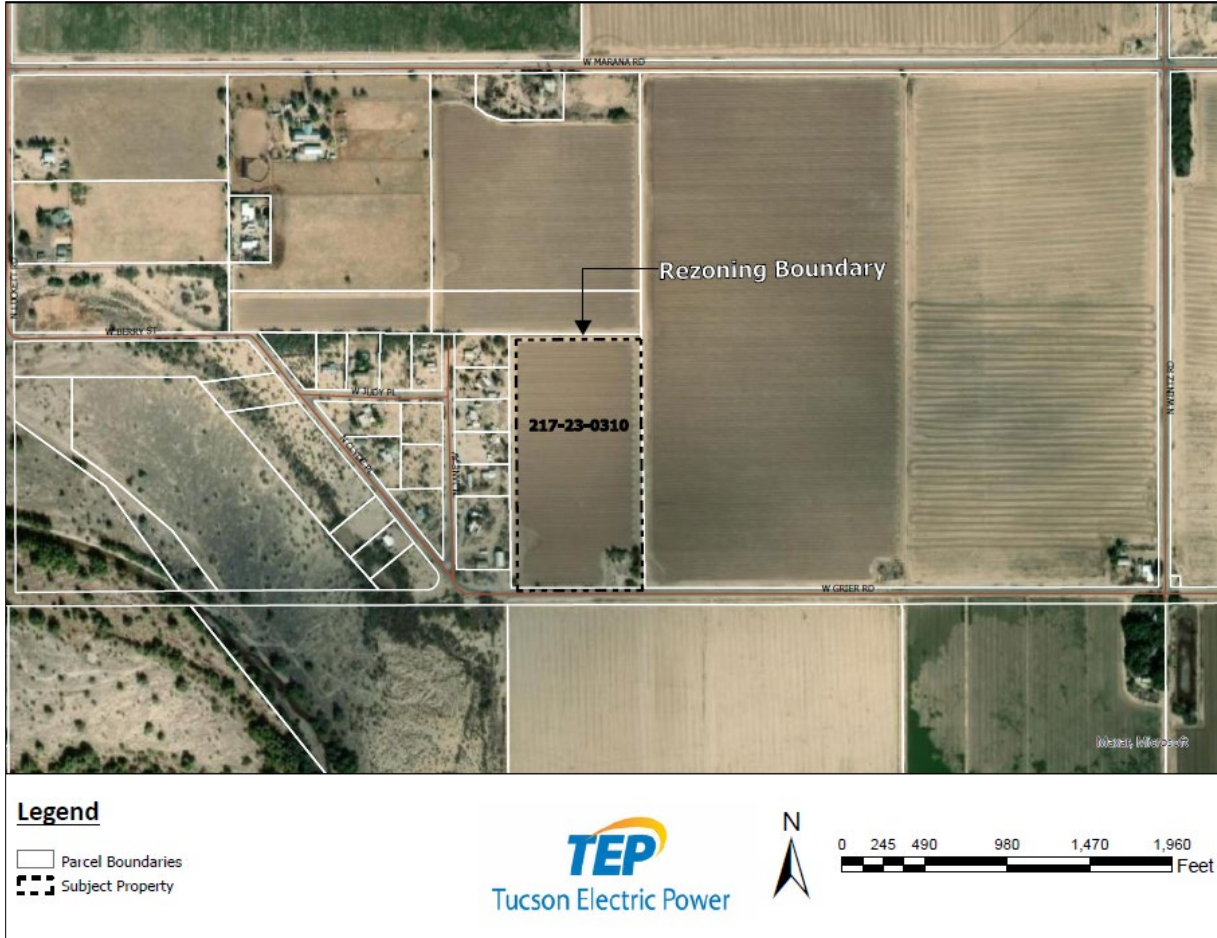
Beginning in 2020, TEP land use planners, engineers, and their consultants conducted a detailed study to identify and evaluate suitable sites near the load center. As outlined below, each site was screened for technical and logistical constraints that are typically applied during the site selection process for new substations. The new substation site must:

- Be available for purchase from a willing seller;
- Meet Substation and Distribution Planning's technical system requirements;
- Accommodate a substation footprint of approximately 12 acres, as well as associated jurisdictional setback requirements;
- Avoid or minimize impacts to natural or cultural resources (i.e., washes, riparian areas, historic properties, threatened or endangered species, etc.);
- Be compatible with surrounding land uses, particularly existing adjacent residential land uses; and
- Be the most cost-effective siting option (e.g., property cost close to market value, least cost for associated improvements necessary to distribute power from the location).

Over a more than two-year period, TEP evaluated 10 potential substation sites to determine the most suitable location for the new substation. The results of the selection process identified the subject parcel as the most suitable location with a willing seller. This location also meets substation and distribution technical system requirements, avoids or minimizes impacts to natural or cultural resources, and is compatible with surrounding land uses.

TEP has entered into a Purchase Sales Agreement (PSA) with Cortaro Farms, Ltd. for the purchase of the subject parcel in Township 11 South, Range 11 East, SW ¼ Section 19, which will be executed in the event a rezone and minor plan amendment are granted by TOM ([Exhibit 3: Grier Substation Location](#)).

**Exhibit 3. Grier Substation Location**



**B. Anticipated Benefits to the Community**

The importance of reliable energy grows more important as technologies develop, and communities grow. High-speed internet and regular access to electricity have become necessary commodities in 2024 and will continue to be so into the future. The General Plan has laid out the top priorities for Marana’s continued development and includes the utilization and improvement of public services and facilities.

Building new substations with the ability to accommodate future upgrades can help ensure the long-term viability and adaptability of the electrical grid. Enhanced voltage control via new substations helps to prevent damage to appliances and electrical equipment, it enhances grid efficiency, and helps to maintain stable voltage levels throughout the system. With modern technologies, a new substation would improve reliability and resilience to the electric grid in TOM, as well as increase the grid’s capacity.

Once in service, the proposed Grier Substation will strengthen electric reliability for customers, meet future energy needs, and expand power capacity in the area to help drive economic development throughout northwestern Marana. The proposed Grier Substation will support several large approved/planned projects in the area including:

- *Southern Arizona Logistics – An industrial and retail planned space covering 1.7 million ft<sup>2</sup>.*
  - *Ranch House (formerly Sanders Grove)- More than 2,500 residential units and commercial space.*
  - *Gladden Farms Commercial Area- A commercial center to include a Fry's Grocery Store, fuel center, retail, and restaurant pads.*
  - *Remington Ranch, Phase 2 - A re-subdivision of Block 1 of Remington Ranch, a residential community.*
  - *Cypress Gardens - A detached single-family residential subdivision.*
- TOM Community and Aquatic Center- multi-generational recreation/community center that includes fitness and exercise facilities, multi-use gymnasium, indoor walking track, reservable classroom and meeting space, and an aquatics facility.*

### C. Adherence to Make Marana 2040 and Strategic Plan 5

The General Plan identifies the subject parcel as being located within the Central Growth Area with a future land use designation of Traditional Neighborhood (TN). The TN category provides for a range of residential densities between 2 du/ac (dwelling units per acre) and 18 du/ac, along with limited commercial, offices, education, and religious institutions and is consistent with existing zoning districts A, R-16, R-10, R-8, R-7, R-6, R-3.5, MH, MR-1, MR-2, NC, VC, and BU.

As the subject parcel is within Zone A, it will require a rezone to NC, which allows for the permissible development of the subject parcel as an electric substation. Also, as the proposed development of the substation exceeds 15 acres, a minor plan amendment to change the subject parcel's designation from TN to Commercial (C) on the General Plan's *Future Land Use Map* would be required.

However, the Grier Substation does support the TOM's goals and policies. Specific goals from the Marana General Plan that the proposed Grier Substation would adhere to, and support include but are not limited to:

- Non-residential development is compatible with existing and planned residential areas (**BE-2**) - TEP 138-kV substations are integrated successfully in residential neighborhoods throughout its service area (see [Appendix A: Examples of Existing TEP Substations](#)),
- Residential areas are well-served by a full range of supporting land uses that contribute to a balanced community (**BE-7**) – The proposed Grier Substation supports existing and future residential development and would be part of the balanced community,
- Multi-family development in Marana is of high design quality and is supported by necessary infrastructure and community serving uses (**BE-9**) – The proposed Grier Substation provides the infrastructure necessary to support multi-family development,
- Marana prioritizes infrastructure enhancements and extensions that support desired new growth and development in an efficient and sustainable manner (**BE-14**) – As communities increasingly transition to renewable energy sources, a high-voltage substation becomes essential for integrating renewable energy into the grid. The substation can handle the fluctuations in power generation from renewable sources like wind and solar, contributing to the TOM's sustainability goals, and

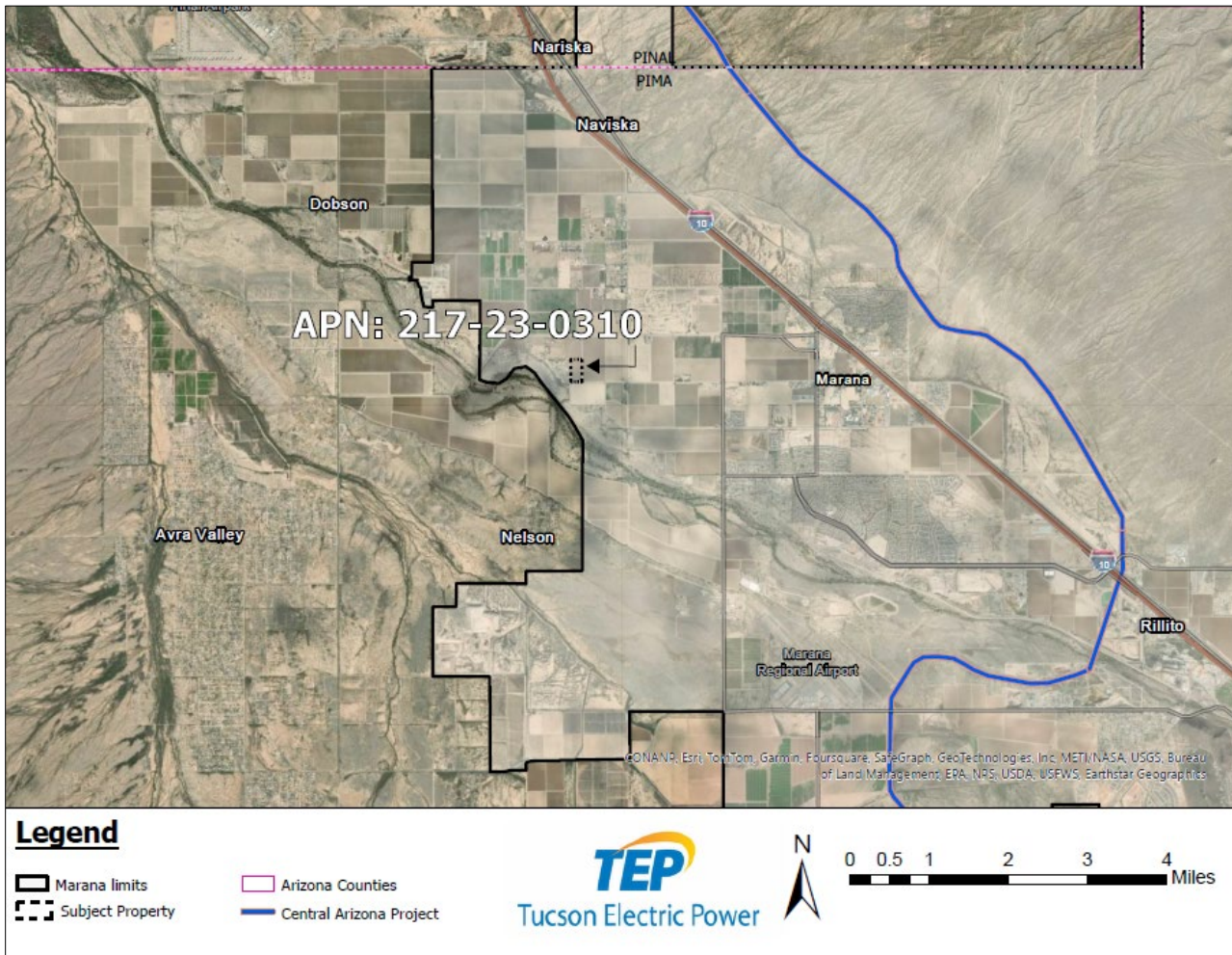
- Maintaining an inventory of development-ready sites to attract future businesses (**PC-7**) - Investing in a 138-kV substation demonstrates foresight in anticipated future growth. This type of infrastructure is designed to accommodate expansion and increased demand over the long term.

## II. DEVELOPMENT CAPABILITY REPORT

### A. Location and Onsite Land Use

As shown in **Exhibit 4: Regional Location**, the subject property is located three miles to the west of downtown Marana, just northwest of the Santa Cruz River. This 19.5413-acre parcel, identified by Pima County Assessor’s Parcel Number (APN): 217-23-0310, is located at 13860 W. Grier Road Marana, Arizona 85653 (temporary address assigned by TOM), in the East half of the Southeast Quarter of the Southwest Quarter of Section 19, Township 11 South, Range 11 East, on the north side of Grier Road, Marana, Pima County, Arizona.

**Exhibit 4. Regional Location**



The property is currently vacant and used as an agricultural field. The southeast corner of the property was formerly a residential site. Historical US Geological Survey (USGS) aerial photographs from 1958 and a historical USGS quadrangle map from 1959 show that the residential structures were present by this time. The rural property

record card for this parcel places the construction date in 1950, and records the main building as a simple, rectilinear, four-family dwelling (four apartments) constructed of painted cement blocks. This building likely served as housing for farm staff and was recorded as having been demolished in 1972. The most recent USGS quadrangle map to depict the possible farm or ranch house dates to 1996, and the rural property record card classifies the parcel as a homesite as late as 1999; however no additional building information was provided with this update. It is possible that a subsequent, temporary structure was added to the property after the demolition of the apartment block in the 1970s. Vestiges of these residential uses are apparent in the remains of building foundations and pads. The area also has a large fan palm on the old homesite along with other native and non-native herbaceous plants as can be seen in [Exhibit 3: Grier Substation Location](#), above. In addition, the subject property has unused irrigation canals on the south property boundary, running parallel to Grier Road and on the north and west sides of the old homesite. Active Cortaro-Marana Irrigation District (CMID) irrigation canals run the length of the east and north property boundaries.

## B. Information on Properties within a Quarter Mile

### 1. Existing Zoning

The subject property is located within the Small Lot Zone (Zone A), one of TOM's Legacy zones. This zoning permits residential, commercial, industrial, and quasi-public land uses so long as each such land use is conducted on a lot no larger than 2.5 acres.

The subject property is farmed, as is allowed per section 17-4-2 of the TOM Code of Ordinance in which agricultural practices may be conducted in a Zone A lot under the same circumstances as they are permitted in the Agriculture (AG) zone.

Zoning within a 1/4 mile of the subject property consists of a mix of residential and Specific Plan (SP) zones, as well as a nearby designated floodplain (see [Exhibit 5: Existing Zoning Within 1/4 Mile of Subject Property and Table 1: Properties within 1/4-mile of Subject Property](#) below):

- North: Anway Farms SP
- South: Zone B – Medium Lot Zone
- East: Zone A – Small Lot Zone
- West: Zone A – Small Lot Zone

Exhibit 5. Existing Zoning within 1/4 Mile of Subject Property

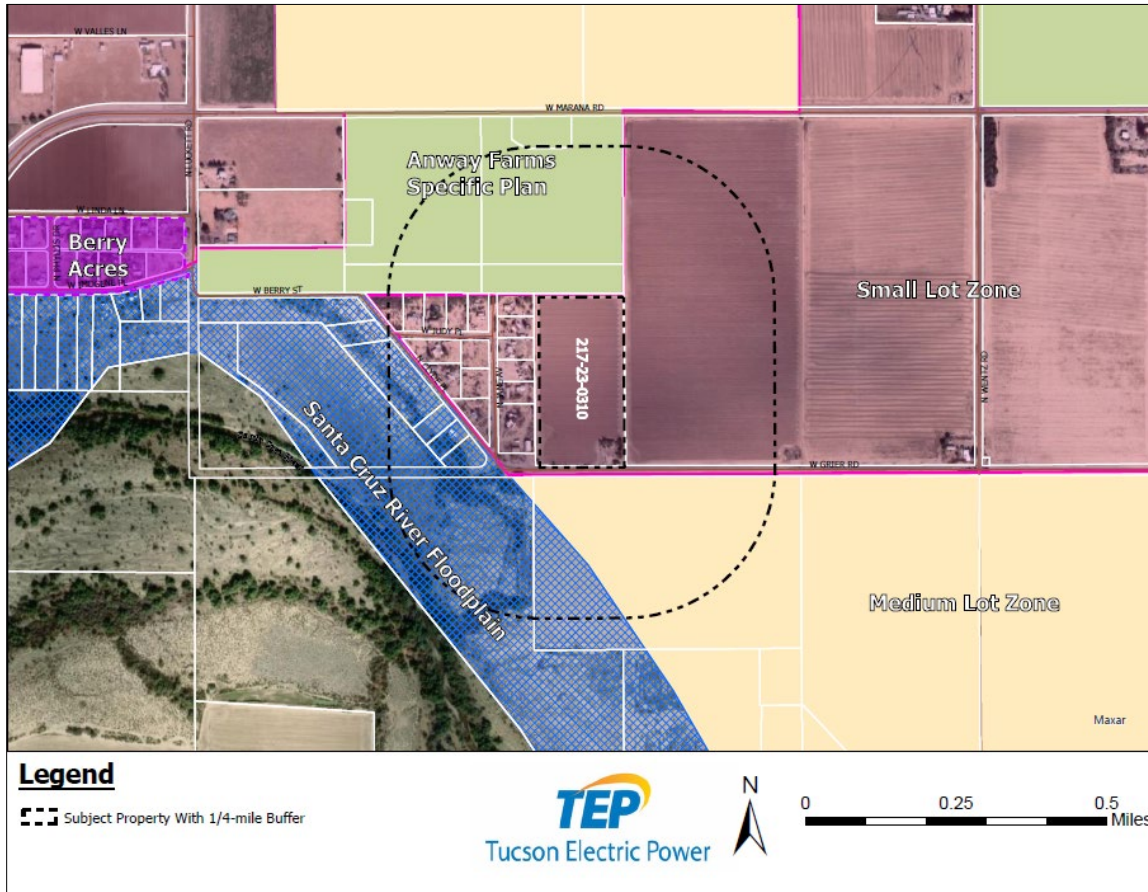


Table 1: Properties within 1/4-mile of Subject Property

	North	South	East	West
<b>Zone (Jurisdictional)</b>	SP- Specific Plan	Zone B Medium-lot Zone	Zone A Small-lot Zone	Zone A- Small-lot Zone Zone D- Designated Floodplain
<b>General Plan Designation</b>	Master Planned Area	Traditional Neighborhood	Traditional Neighborhood	Traditional Neighborhood
<b>Land Use (Existing)</b>	Farmland	Grier Road, Farmland	Farmland	Single-family Residential
<b>Building Height</b>	N/A	N/A	1-story	N/A
<b>Land Use (Future)</b>	Commercial, Technical, Apartments	Likely Residential or Mixed-Use	Likely Residential or Mixed-Use	Residential



## 2. General Plan Land Use Designation

The General Plan identifies the subject parcel as being located within the Central Growth Area with a future land use designation of TN. The TN category provides for a range of residential densities between 2 du/ac and 18 du/ac, along with limited commercial, offices, education, and religious institutions and is consistent with existing zoning districts A, R-16, R-10, R-8, R-7, R-6, R-3.5, MH, MR-1, MR-2, NC, VC, and BU.

As the subject parcel is within Zone A, it will require a rezone to NC, which allows for the permissible development of the subject parcel as an electric substation. Also, as the proposed development of the substation exceeds 15 acres, a minor plan amendment to change the subject parcel's designation from TN to C on the General Plan's *Future Land Use Map* would be required.

However, the Grier Substation does support the TOM's goals and policies. Specific goals from the Marana General Plan that the proposed Grier Substation would adhere to, and support include but are not limited to:

- Non-residential development is compatible with existing and planned residential areas (**BE-2**) - TEP 138-kV substations are integrated successfully in residential neighborhoods throughout its service area (see [Appendix A: Examples of Existing TEP Substations](#)),
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- Maintaining an inventory of development-ready sites to attract future businesses (**PC-7**) - Investing in a 138-kV substation demonstrates foresight in anticipated future growth. This type of infrastructure is designed to accommodate expansion and increased demand over the long term.

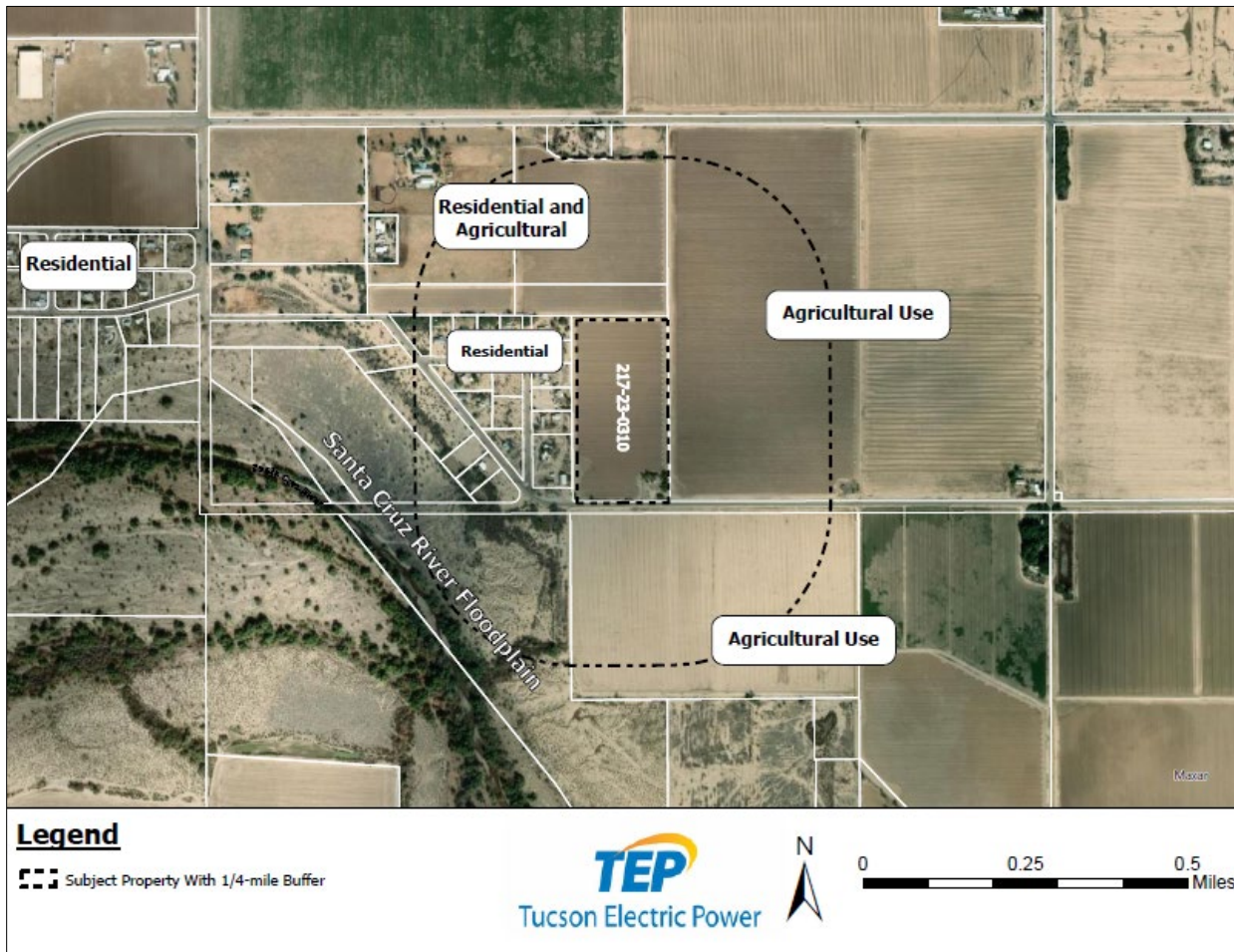
## 3. Surrounding Existing Land Use

Properties to the north, east, and south are farmland. Six residential properties border the west subject property boundary. Five of these parcels are approximately one acre in size. The furthest south parcel is more than 2.5 acres in size.

The floodplain from the Santa Cruz River is located to the southwest, less than a tenth of a mile from the subject property. The surrounding land uses are listed below and depicted in [Exhibit 6: Surrounding Land Use](#):

- North: Farmland
- South: Farmland
- East: Farmland
- West: Residential

Exhibit 6. Surrounding Land Use



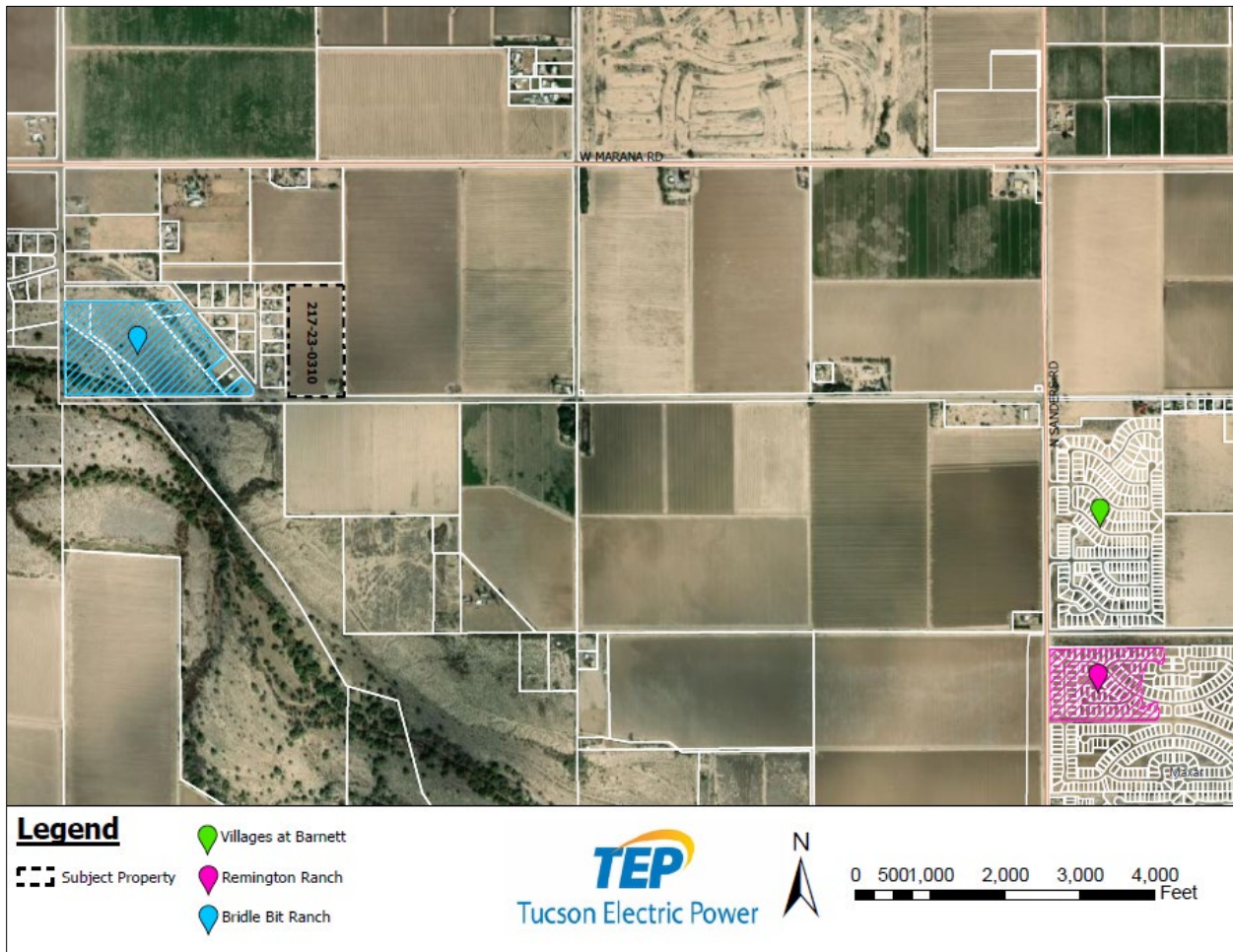
4. Pending and Conditional Rezoning Cases

There are no pending or conditional rezoning cases within five miles of the subject property.

5. Subdivisions & Development Plans

The nearest planned subdivision to the subject property is Bridle Bit Ranch, located on Grier Road, approximately 1/2 mile west. The next nearest planned subdivision is Remington Ranch, located southeast of the subject property at North Sanders Road and West Barnett Road. The nearest active development is Villages at Barnett, located southeast of the subject property at North Sanders Road and West Grier Road (see [Exhibit 7: Subdivisions & Development Plans](#), below.)

Exhibit 7. Subdivisions & Development Plans



C. Septic Systems and Wells

There are no septic systems or wells present on the subject property. The nearest regulated well sites are located approximately 0.5 miles to the east near the intersection of West Grier Road and North Wentz Road. A non-exempt well owned by Tomas Hum is located northwest of the intersection and a non-exempt well owned by Cortaro-Marana Irrigation District (CMID) is located northeast of the intersection.

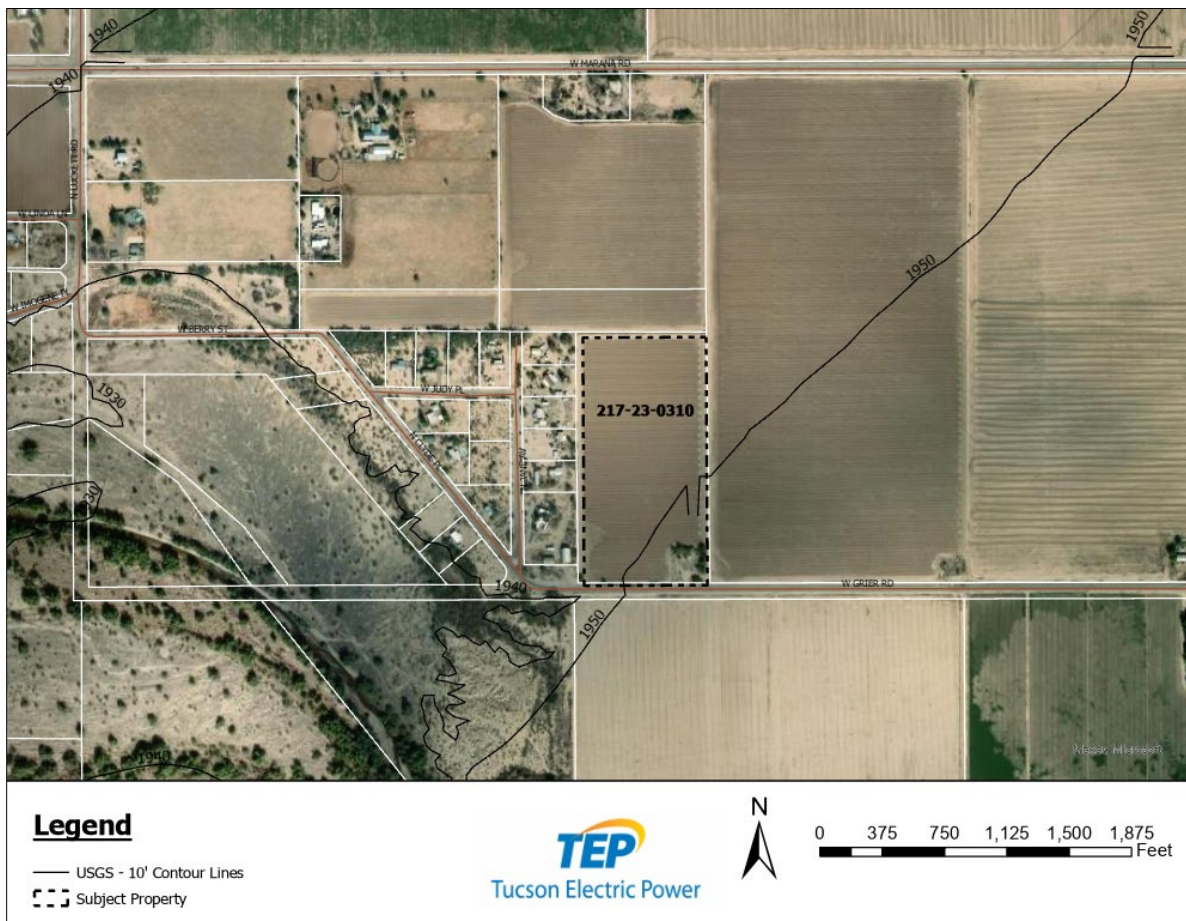
D. Topography and Slope

TEP completed an ALTA survey of the subject property. Elevation points are shown on the survey located in [Appendix B: ALTA Survey](#) and summarized below.

The site is flat with a less than 1% northwest-facing slope and an elevation of 1,950' - 1,952' above mean sea level (amsl). The old home site area in the southeast corner of the subject property, sits approximately two feet higher (1,952' amsl) than the majority of the site (1,950' amsl) (Also see [Exhibit 8: Topography and Slope](#), below).

1. **Hillside and Conservation Areas:**  
No hillside or conservation areas exist onsite.
2. **Rock Outcrops:**  
A review of the Natural Resources Conservation Service (NRCS) soils data found that no rock outcrops are located onsite.
3. **Slopes of 15% or greater:**  
No slopes are 15% or greater.
4. **Other Significant Topographic Features:**  
No other significant topographic features exist onsite.
5. **Existing Grading and Ground Disturbance:**  
As stated previously, the subject property is used for agriculture purposes. As a result, the entire parcel has been graded/regraded/disturbed to support this use. The construction of the substation would not disturb any new areas and as a result of the landscaped buffers and water harvesting basins, some areas that were disturbed will, to some degree, be recovered.

**Exhibit 8. Topography & Slope**



## E. Hydrology

### 1. Off-site Hydrologic Analysis

The off-site hydrologic analysis was divided into three separate components based on their contributing areas. The first contributing area is associated with the Santa Cruz River, located west of the subject parcel. The second is the contributing watershed associated with the runoff stemming from the Tortolita Mountains, located east of the subject parcel. The third was associated with abutting properties located directly east and south of the subject parcel.

#### a) *Santa Cruz River Watershed*

A review of the *Technical Support Data Notebook for the Letter of Map Revision (LOMR) Santa Cruz River, Sanders Road to Pinal County, Arizona*, prepared by JE Fuller/Hydrology and Geomorphology, Inc. (JE Fuller 11-15-2021) for the Pima County Regional Flood Control District, determined that during the 100-year storm event, runoff from the Santa Cruz does not impact the subject parcel. **Exhibit 12: 100-year Flood Limits for the Santa Cruz River** illustrates the 100-year flood limits for the Santa Cruz River and is provided in *Section E.3: Hydraulic Discussion*, below.

#### b) *Tortolita Mountains Watershed*

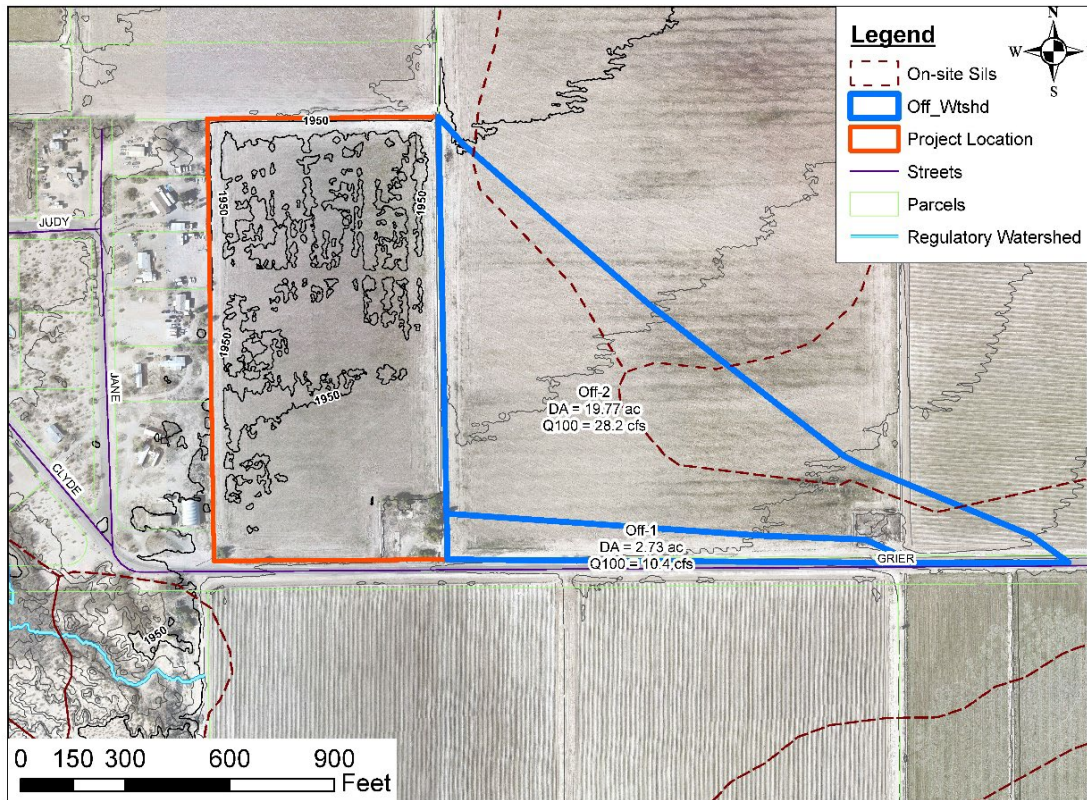
To evaluate the impacts stemming from the Tortolita Mountains Watershed, the *Technical Support Data Notebook for the Letter of Map Revision (LOMR) Santa Cruz River, Sanders Road to Pinal County, Arizona*, was again consulted as the LOMR application included hydrologic and hydraulic analysis associated with this regional watershed. Per this review it was determined that during the 100-year event, runoff from the regional watershed originating in the Tortolita Mountains does not impact the subject parcel. **Exhibit 13: 100-year Flood Limits for the Tortolita Mountains** illustrates the 100-year flood limits for the Tortolita Mountains and is provided in *Section E.3: Hydraulic Discussion*, below.

#### c) *Local Off-site Watersheds*

Given that runoff from the larger watersheds does not impact the subject parcel, the off-site hydrologic analysis focused on the runoff generated solely by the local watersheds directly east and south of the subject parcel. In determining the contributing area impacting the subject parcel from the south and east, aerial topography was confirmed via site reconnaissance. Based on this, it was determined that runoff south of Grier Road flows east and is discharged directly into a tributary of the Santa Cruz River.

Based on existing site topography, runoff generated by the properties to the east of the subject parcel flows northwest. This contributing area is primarily fallow farm fields and a portion of Grier Road. To determine the runoff generated by this contributing area, two off-site watersheds were delineated (Off-1 & Off-2). Two watersheds were created for the purpose of quantifying the design discharges used in the proposed drainage design discussed in Section III.F of this document (see **Exhibit 9: Off-site Watershed**).

## Exhibit 9. Off-site Watershed



To quantify the peak discharges for the watersheds associated with the proposed substation development, Pima County's interpretation of the Rational Method embedded in the online software program, PC Hydro (V7.1), was utilized. PC Hydro is used to quantify peak discharges for watersheds in Pima County encompassing less than 10 square miles. Input parameters used to define the off-site watersheds were based on the parameters recommended in the PC Hydro User Manual. Rainfall data for the 100-year event was extracted from the National Oceanic and Atmospheric Administration (NOAA) 14 dataset. On-site soils information was obtained from the NRCS Soils Survey for Pima County, Arizona. A list of the parameters used in the analysis is provided in [Table 2: Summary of Hydrologic Parameters: Off-site and On-site Watersheds \(Existing Conditions\)](#). Once the parameters were determined, PC Hydro calculated the peak discharges within the program. The results are presented in [Table 3: Summary of Hydrologic Analysis \(Existing Conditions\)](#).

2. On-site Hydrologic Analysis (Existing Conditions)

a) On-site Watersheds

The on-site hydrologic analysis divided the subject parcel into two contributing areas based on the planned future layout of the substation. These two sub-watersheds are presented in **Exhibit 10: On-site Watersheds** below. The analysis for the onsite watersheds was also based on PC Hydro with the parameters obtained from the same sources discussed above. These parameters are also presented in **Table 2: Summary of Hydrologic Parameters: Off-site and On-site Watersheds (Existing Conditions)**. The results of the analysis are presented in **Table 3: Summary of Hydrologic Analysis (Existing Conditions)**.

Exhibit 10. On-site Watersheds

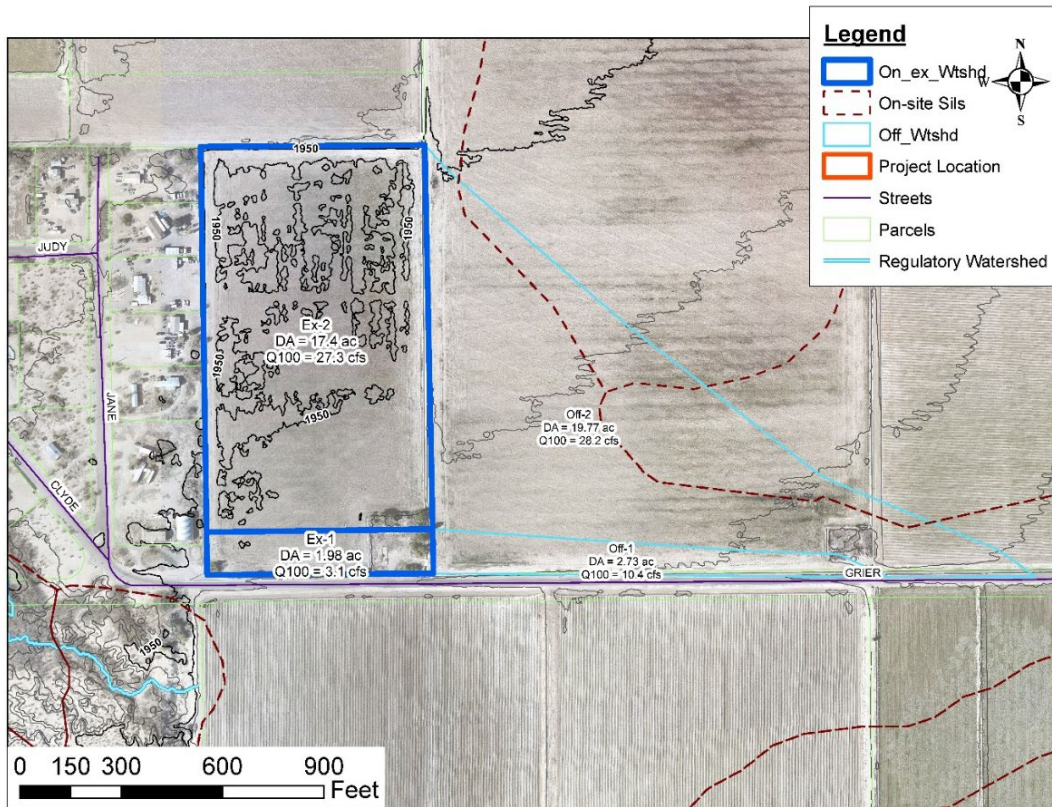


Table 2. Summary of Hydrologic Parameters: Off-site and On-site Watersheds (Existing Conditions)

Contributing Watershed	100-Rainfall Depth (inches)	Hydrologic Soil Type	Impervious Cover (%)	Basin Factor	Watershed Slope (%)	Runoff Coefficient 100-yr Event
Off-1	2.46	100% B	0	0.05	0.8	0.47
Off-2	2.46	72% B, 28% C	0	0.05	0.8	0.5
On-1	2.46	100% B	0	0.05	0.11	0.47
On-2	2.46	100% B	0	0.05	0.11	0.47

Table 3. Summary of Hydrologic Analysis (Existing Conditions): Off-site and On-site Watersheds

Contributing Watershed	Drainage Area (acres)	2-year Peak Discharge (cfs)	10-year Peak Discharge (cfs)	100-year Peak Discharge (cfs)
Off-1	2.70	1	2.4	10.4
Off-2	19.80	2	5.1	28.2
On-1	1.98	0.2	0.5	3.1
On-2	17.40	1.7	4.8	27.3

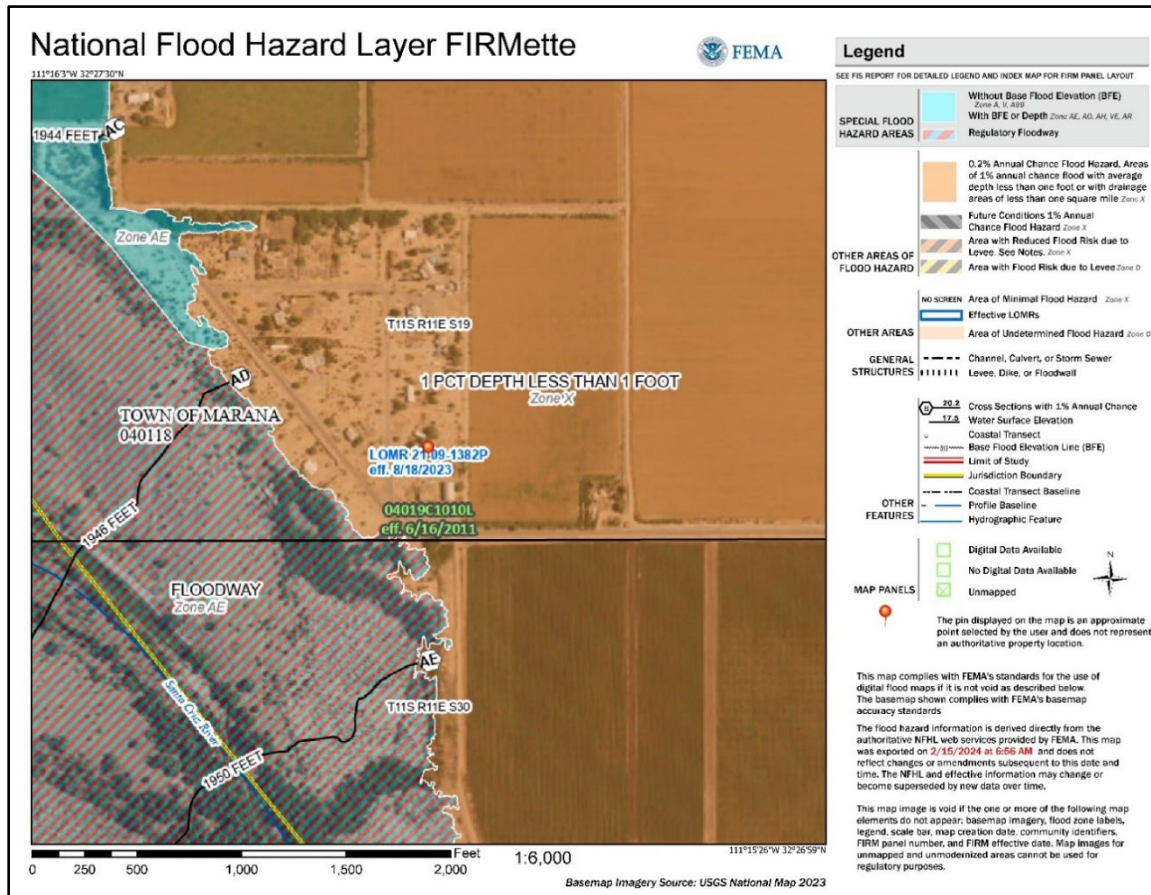
\*cfs = cubic feet per second

3. Hydraulic Analysis

a) Effective Federal Emergency Management Agency Floodplains

A review of Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate Map (FIRM) Panel **04019C1010L**, determined that the subject property does not lie within the 100-year floodplain or floodway for the Santa Cruz River. It does, however, lie within the Special Flood Hazard Zone X, which is associated with the 500-year floodplain. A map illustrating the effective FEMA floodplains is provided in **Exhibit 11: FEMA Floodplain**, below.

Exhibit 11. FEMA Floodplain





*b) Santa Cruz River/ Tortolita Mountains Watershed Flood Inundation Discussion*

A review of the 'Technical Support Data Notebook for the Letter of Map Revision (LOMR) Santa Cruz River, Sanders Road to Pinal County, Arizona' confirmed that the subject parcel is outside of the 100-year floodplain for the Santa Cruz River and is not affected by the Tortolita Mountains Watershed. Exhibits 12 and 13 depict the 100-year flow depths and 100-year floodplain as determined in the LOMR. See **Exhibit 12: Santa Cruz River 100-year Flow Depth** and **Exhibit 13: Tortolita Mountains 100-year Flow Depth**, below.

Exhibit 12. Santa Cruz River 100-year Flow Depth

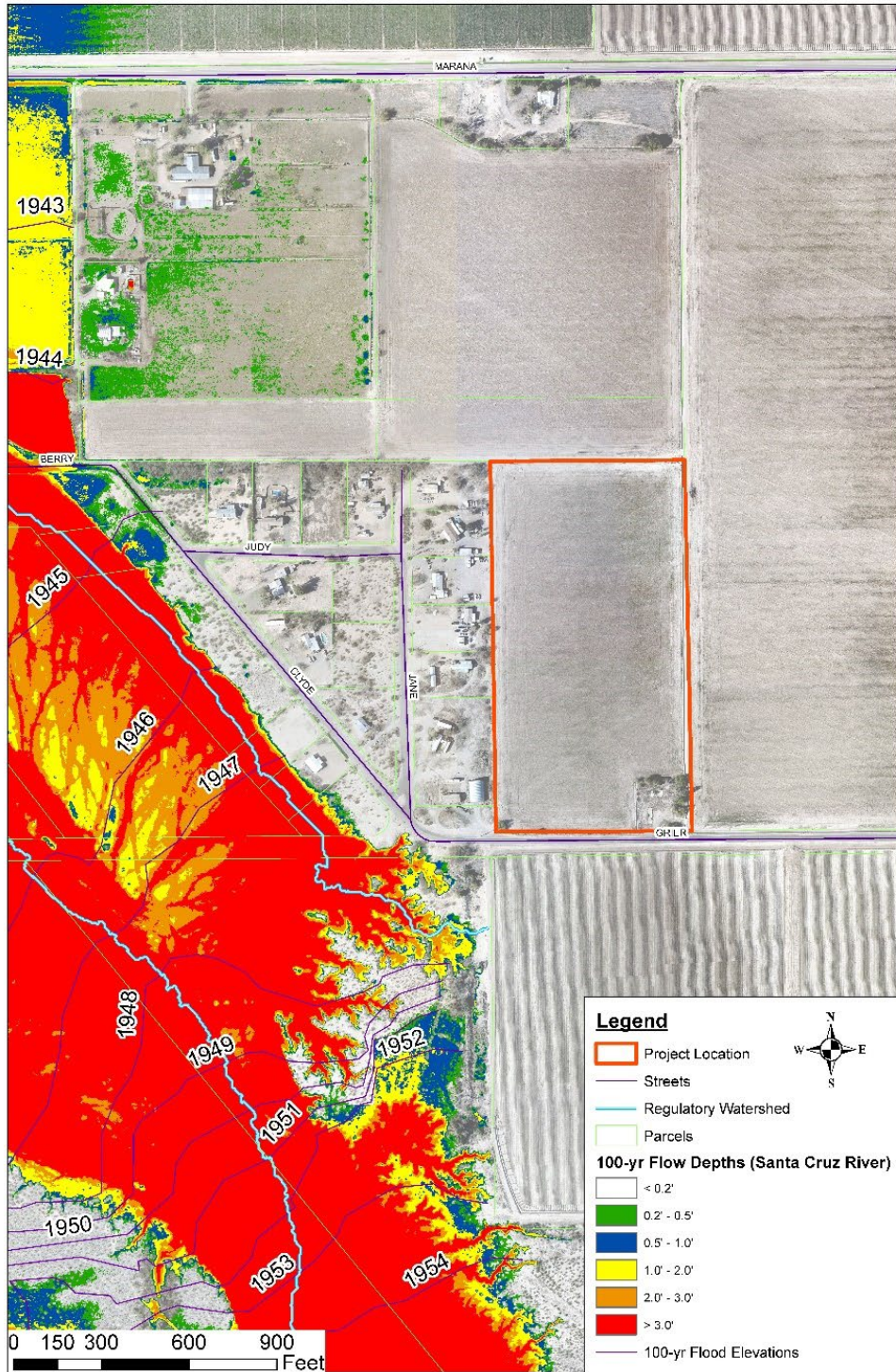


Exhibit 13. Tortolita Mountains 100-year Flow Depth



Because the effective FIRM provides limited information on the flow depths associated with the Special Flood Hazard Zone X, the flow depths impacting the subject parcel were extracted from the hydraulic models generated as part of the *Technical Support Data Notebook for the Letter of Map Revision (LOMR) Santa Cruz River, Sanders Road to Pinal County, Arizona*. **Exhibit 14: Santa Cruz River 500-year Flow Depth** and **Exhibit 15: Tortolita Mountains 500-year Flow Depth** below depict the 500-year flow depths and the 500-year floodplain as determined as part of the LOMR.

Based on the above analysis, it was determined that the subject parcel is impacted by runoff from the Santa Cruz River 500-year flow depth as well as the Tortolita Mountains 500-year flow depth. For the purposes of determining scour and setting the elevations for the fill pads and equipment, the flow parameters associated with the 500-year event from the Santa Cruz River model will be used.

Exhibit 14. Santa Cruz River 500-year Flow Depth

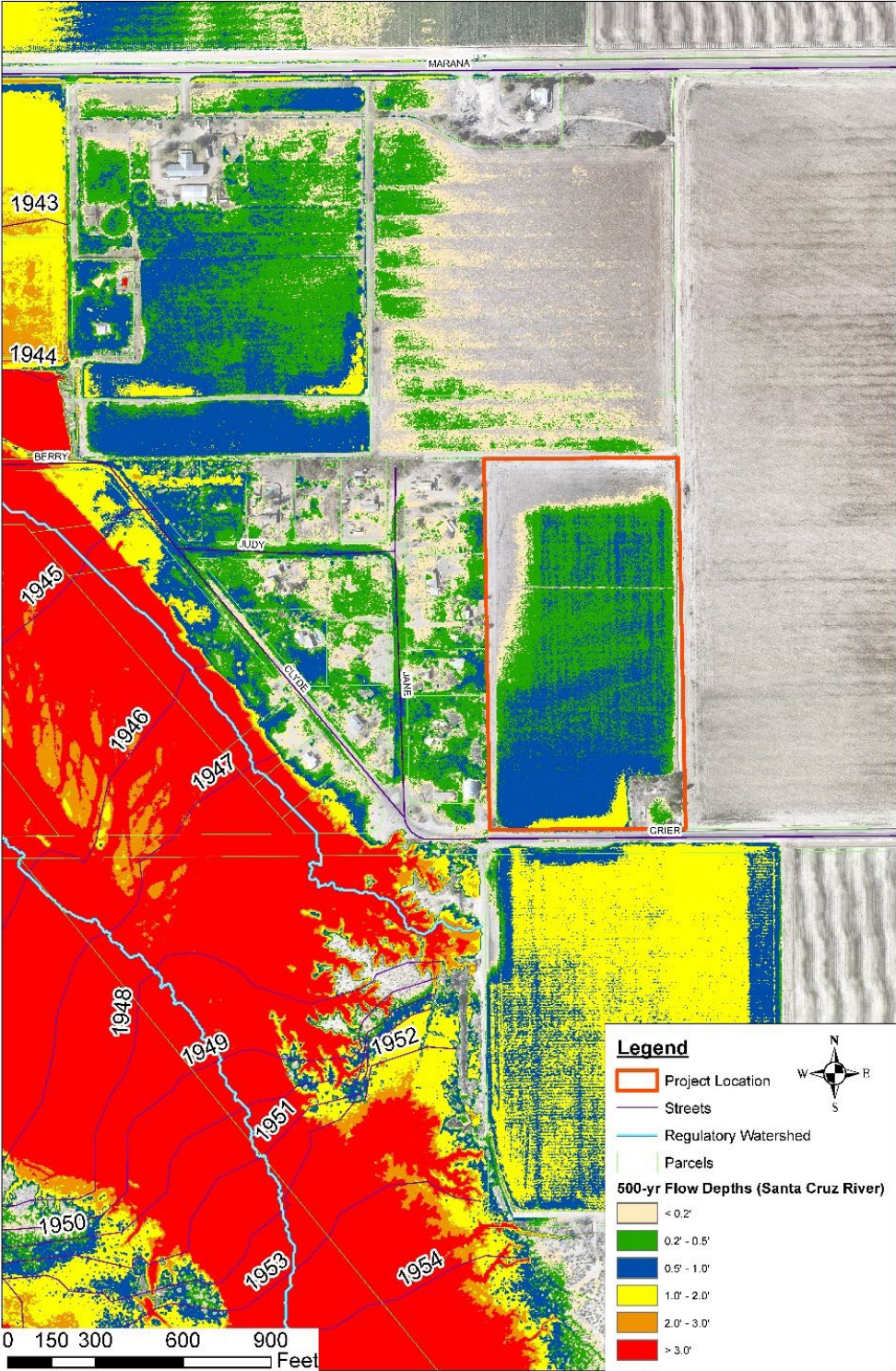
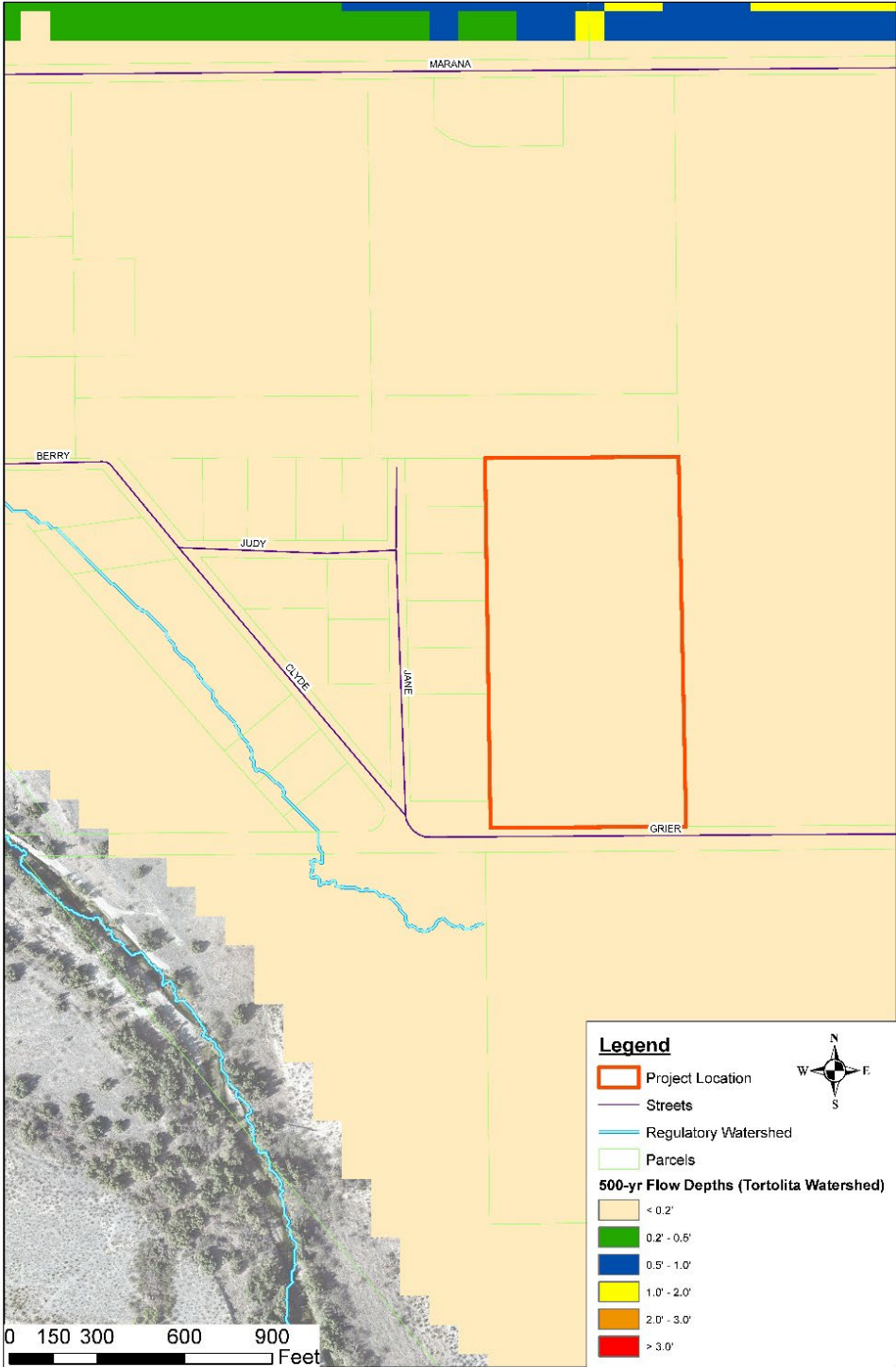


Exhibit 15. Tortolita Mountains 500-year Flow Depth



## F. Vegetation

### 1. Vegetative Communities

The parcel falls within the Lower Colorado Subdivision of the Sonoran Desertscrub biome in southeast Arizona. This ecosystem is characterized by an arid climate with vegetation well-adapted to dry conditions such as creosotebush (*Larrea tridentata*), saguaro (*Carnegeia gigantea*), and mesquite trees (*Prosopis* spp.). The subject property, however, has been converted to farmland and has been mostly stripped of any native vegetation, apart from amaranth, corn, and the occasional desert grass growing within and along the existing irrigation canals.

### 2. Significant Vegetation

There is no significant vegetation within the parcel, as it is an agricultural field. No sensitive flora or fauna species have been identified within the subject property.

### 3. Vegetative Densities

The only vegetation cover is located at the southeast corner of the subject property, associated with the vestiges of the old housing site. Vegetation is limited, however, to a large fan palm tree (*Washingtonia* sp.) and other native and non-native herbaceous growth.

## G. Wildlife

### 1. Background Research

In support of Section 7 of the Endangered Species Act (ESA), the Arizona Game and Fish Department (AZGFD) Heritage Data Management System (HDMS) was accessed in September of 2023 to locate records of habitat and sensitive species occurrence within three miles of the subject property ([Appendix C: AZGFD Online Environmental Review Tool Report](#)). Additionally, personal communication with the US Fish & Wildlife Service (USFWS) field office in Tucson has determined that while cactus ferruginous pygmy owl (*Glaucidium brasilianum cactorum*) may be in the area, there is no suitable habitat for the owl on site and no further action is required ([Appendix D: USFWS Correspondence](#)).

### 2. Presence of Sensitive Species

HDMS online environmental review tool identified eight Special Status species documented as occurring within three miles of the subject property. These species and their status are listed in [Table 4: Special Status Species Documented within 3 Miles of Project Vicinity](#) below.

**Table 4. Special Status Species Documented Within 3 miles of Project Vicinity**

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		2
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo (WDPS)	LT	S	S		1
<i>Cyananthus latirostris</i>	Broad-billed Hummingbird		S			2
<i>Empidonax traillii extimus</i>	Southwestern Willow Flycatcher	LE		S		1
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1
<i>Lanius ludovicianus</i>	Loggerhead Shrike	SC				2
<i>Melospiza aberti</i>	Abert's Towhee		S			2
<i>Myotis velifer</i>	Cave Myotis	SC		S		2

Note: **FWS** – Fish and Wildlife Service; **USFS** – US Forest Service; **BLM** – US Bureau of Land Management; **NPL** – Arizona Native Plant Law; **SGCN** – Species of Greatest Conservation Need; **CCA** - Candidate Conservation Agreement; **LE** - Listed Endangered; **PT** - Proposed Threatened; **SC** - Species of Concern; **S** – Sensitive; **SR** - Salvage Restricted (collection only with permit); **SGCN** – Species of Greatest Conservation Need

3. High densities of given species population

As indicated by the HDMS review, there are no high densities of a given species located within the boundaries of the subject property.

4. Aquatic or Riparian Ecosystems

There are no aquatic or riparian ecosystems present onsite.

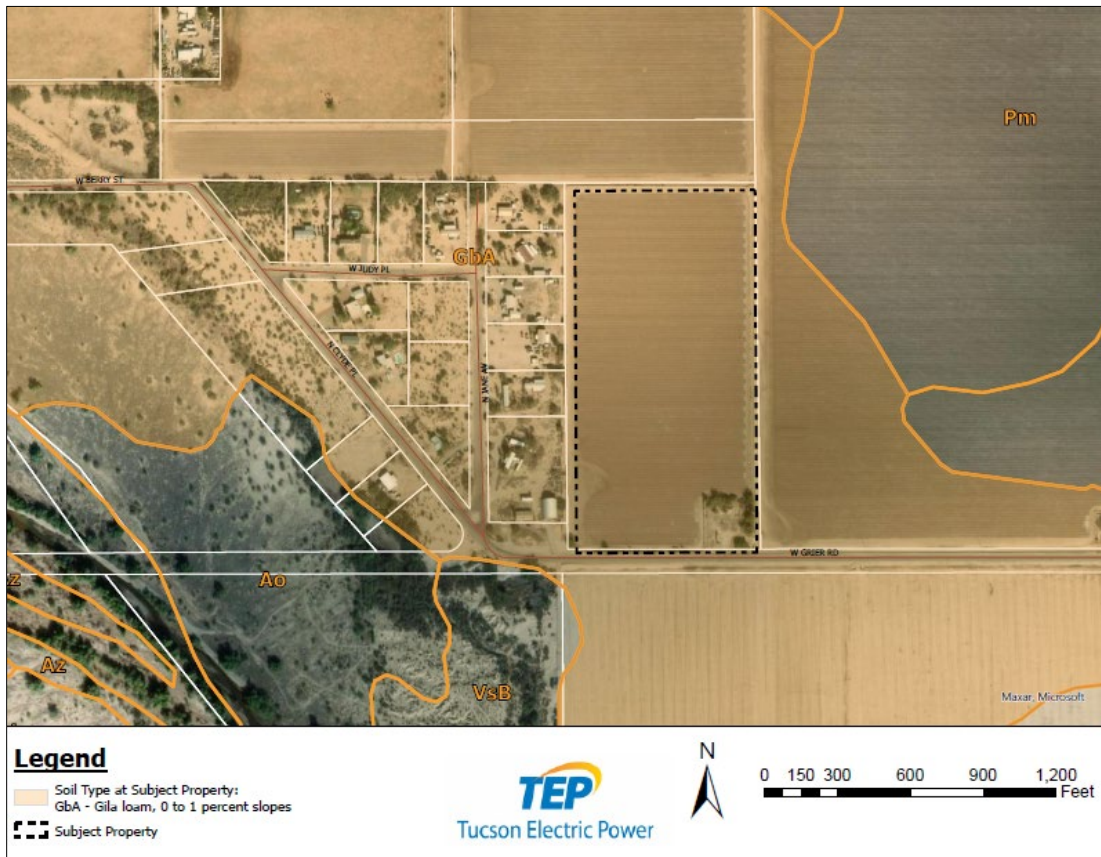
5. Wildlife Corridors

A Pima County Wildlife Movement Area intersects with the subject property, as identified in the AZGFD HDMS report. This is a ‘Special Area’ that is part of the larger Coyote-Ironwood-Tucson Linkage Design, designated for wildlife connectivity between the Tucson Mountains and the Santa Cruz River (see [Appendix B, page 6](#), for map of Wildlife Movement Area).

H. Soils

One soil type is found on the subject parcel. Gila Loam, 0 to 1 percent slopes (GbA), or Hydrologic Soil Group ‘B’ (Pima County Hydro Map) covers 100% of the subject property ([Exhibit 16: Soils](#)). Commonly located on floodplains, the parent material of Gila Loam is mixed stream alluvium and is well drained. There are more than 80 inches between the soil surface and the underground water table, and is described as, ‘Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season’ by the NRCS Web Soil Survey (NRCS WSS).



**Exhibit 16. Soils****I. Viewsheds**

The subject property is located east of the Tucson Mountains just south of Marana Road and west of North Sanders Road. The natural topography of the site is flat and has historically been used as farmland. A gentle <1% slope to the northwest exists on a broader level that would include adjacent properties, allowing for mostly unobstructed views in all directions.

Existing condition site photos were taken from the locations depicted in [Exhibit 17: Site Photo Locations](#) and site photos are provided in [Exhibits 18 & 19: Site Photos](#).

Near- and mid-range views of the subject property, approaching from Grier Road are of agricultural fields, a fan palm at the southeast corner of the subject property, and the residences along North Jane Avenue. Long-range views are mainly of fields and sky. Views from the residences looking east and northeast towards the subject property are of fields in the near- and mid-range. Long-range views are of the Tortolita Mountains. Near- and mid-range views looking south towards the subject property from Marana Road or from the fields to the north are of fields and the residences along North Jane Avenue. Long-range views are of the Tucson Mountains. Near- and mid-range views looking west towards the subject property from the fields to the east are of fields and the residences along North Jane Avenue. Long-range views are of the Silver Bell Mountains.

Exhibit 17. Site Photo Locations

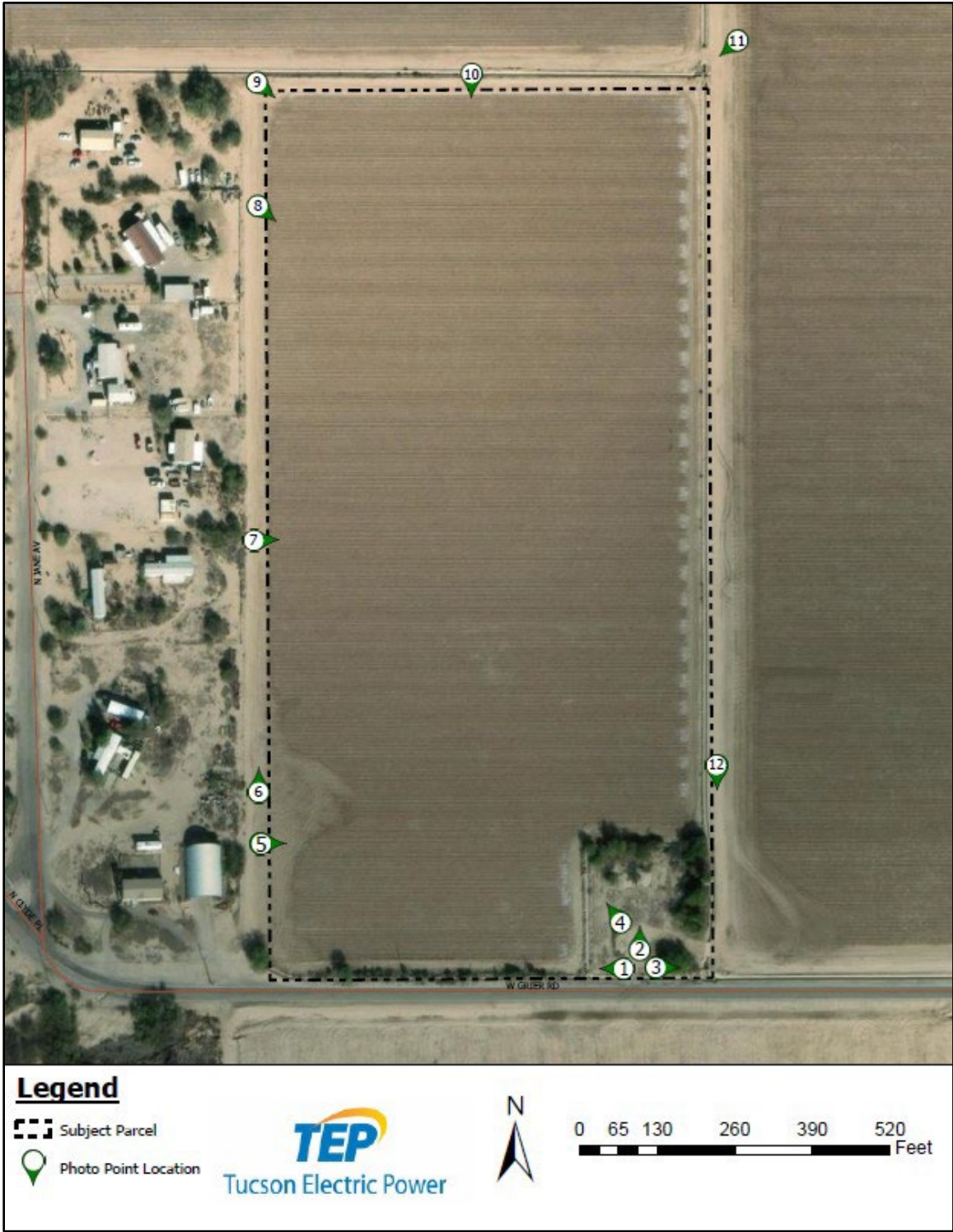


Exhibit 18. Site Photos 1-6



1. View from old homesite in SE corner of the parcel looking West on Grier Rd.



2. View from old homesite in SE corner of parcel looking North



3. View from old home site in SE corner of parcel looking East



4. View from homesite in SE corner of the parcel looking Northwest. Note homes on Jane Ave. in the distance.



5. View from dirt road along West edge of parcel looking East. For reference, note palm tree in SE corner of parcel on old home site.



6. View from dirt road along West edge of parcel looking North.

Exhibit 19. Site Photos 7-12



7. View from dirt road along West edge of parcel looking East.



8. View from dirt road along West edge of parcel looking southeast. For reference, note palm tree in SE corner of parcel on old home site.



9. View from northwest corner of parcel looking southeast. For reference, note palm tree in SE corner of parcel on old home site.



10. View from North side of parcel looking directly South.



11. View from NE corner of the parcel looking SW. Note canals along eastern and northern boundaries of the parcel.



12. View from dirt road along East edge of parcel looking South. Note canal along eastern boundary.

## J. Traffic

The subject property is located on the north side of Grier Road just before it turns to the north to connect with Berry Street. Grier Road is identified by TOM as an arterial street. Grier Road connects with Downtown Marana and the I-10 frontage road. Traffic in this area is typical of a rural setting and composed of residential, commercial – serving residential uses, and agricultural land uses. Marana Road to the north is more heavily trafficked and connects with Trico Road to the west.

## K. Recreation and Trails

There are several city parks within a few miles of the subject property with the closest being less than two miles away. These ‘Open Space’ areas are intended for public recreation and resource conservation, including any passive undisturbed natural areas along the Santa Cruz River. Primary and secondary bikeways are planned near the subject property and will spread throughout Marana per the current General Plan.

Picacho Peak State Park is located roughly 13 miles to the north of the subject property, and the Tucson Mountains division of Saguaro National Park is located roughly 12 miles to the south. The largest park nearby is Ironwood Forest National Monument, located 5 miles to the west.

## L. Cultural, Archaeological and Historic Resources

Information regarding cultural, archaeological, and historical resources on site can be found in the document titled ‘*A Cultural Resources Assessment in Support of the Grier Substation Project, Marana, Pima County, Arizona*’ conducted by WestLand Engineering & Environmental Services in January 2024, which is submitted under separate cover.

WestLand performed a cultural resources assessment to better inform the evaluation of subject property APN 217-23-0310. In order to understand previous survey coverage and known archaeological site density, WestLand reviewed existing archaeological survey and site information available in the AZSITE archaeological database and at the Arizona State Museum (ASM) Archaeological Records Office, in addition to historical maps of the Study Area to assess the potential for historical sites that have not yet been recorded. WestLand found that the subject parcel has not been previously surveyed.

Given the lack of previous survey coverage on the subject parcel, and the proximity of the subject property to the Santa Cruz River, where a high density of prehistoric sites may be expected, WestLand recommended that a Class III survey be conducted. The Class III survey is in progress and a copy of the survey report will be provided to TOM when it is complete. In the event any sites are discovered and determined to be A/NRHP-eligible, they will be mitigated through avoidance or as required by State law.

## M. Existing Utilities

### 1. Water

There is no water service on the subject property. The nearest public water main is located east of the subject property at West Grier Road and North Wentz Road. TEP does not intend to connect to the public water supply as the subject parcel has Type 1 water rights. TEP will either utilize CMID water or drill a well for irrigation purposes. The operation of the substation does not require water.

## 2. Sewer

There is currently no sewer service on the subject property. The substation is unmanned and therefore does not require sewer service.

## 3. Natural Gas

There is currently no natural gas service on the subject property. The substation does not require natural gas for operation.

## 4. Electricity

There is currently no electric service on the subject property. Electricity needed for lighting and security would be powered by facilities built as part of the project.

## 5. Communication

There is currently no communication service on the subject property. TEP will install communication equipment as necessary to link the substation to their electric grid.

## N. Public Facilities

### 1. Police

The nearest Marana Police Department facilities are at 11555 W. Civic Center Drive, approximately three miles east of the subject property.

### 2. Fire

The nearest fire department is Northwest District Station #341, 13535 N. Marana Main Street, approximately 2.8 miles to the East.

### 3. Schools

The subject property is located within the western portion of the Marana Unified School District (MUSD) located to the west of I-10. No schools exist within a mile of the subject property, however several schools are located near downtown Marana. The closest school to the subject property is the Marana campus for La Paloma Academy at 13644 N. Sandario Rd 2.5 miles to the east, along with the Community Christian Preschool located at 13808 N. Sandario Rd adjacent to the La Paloma Academy Marana campus.

### 4. Library

The nearest county-owned library is the Wheeler Taft Abbett Sr. Library located 12 miles away at 7800 N. Schisler Dr. Tucson, AZ 85743.

## III. PROPOSED LAND USE PLAN

### A. Project Overview

TEP proposes to construct, maintain, and operate the Grier 138/13.8 kV Substation to accommodate the existing needs, future load growth, and improve system reliability, as well as retire the Lateral 7 ½ 46-kV Substation in the Marana area. The new substation would be sourced from the existing North Loop to Tortolita Quad Circuit (east of I-10), utilizing the recently approved (by the ACC) AEP/TEP double-circuit Marana to Saguaro 115kV/138-kV transmission line which would then loop back to the existing North Loop to Tortolita Quad Circuit via an as yet, undetermined route, in order to provide needed redundancy to the grid.

To meet the energy needs of TOM, TEP has identified the subject property for the proposed Grier 138/13.8 kV Substation that meets substation and distribution technical system requirements, avoids, or minimizes impacts to natural or cultural resources, and is compatible with surrounding land uses. TEP has entered into a PSA with Cortaro Farms, Ltd. for the purchase of APN 217-23-0310, in Township 11 South, Range 11 East, SW ¼ Section 19.

## B. Relationship to Marana General Plan and Strategic Plan

### 1. Make Marana 2040

Re-zoning the parcel to accommodate a new substation operated and managed by TEP would further the goals of Marana's General Plan through 2040, in that it will provide the energy requirements for current and future development in the area as laid out in the General Plan.

As the subject parcel is within Zone A, it will require a rezone to NC, which allows for the permissible development of the subject parcel as an electric substation. Also, as the proposed development of the substation exceeds 15 acres, a minor plan amendment to change the subject parcel's designation from TN to Commercial (C) on the General Plan's *Future Land Use Map* would be required.

However, the Grier Substation does support the TOM's goals and policies. Specific goals from the Marana General Plan that the proposed Grier Substation would adhere to, and support include but are not limited to:

- Non-residential development is compatible with existing and planned residential areas (**BE-2**) - TEP 138-kV substations are integrated successfully in residential neighborhoods throughout its service area (see Attachment 2 for examples of other TEP substations),
- Residential areas are well-served by a full range of supporting land uses that contribute to a balanced community (**BE-7**) – The proposed Grier Substation supports existing and future residential development and is a part of the balanced community,
- Multi-family development in Marana is of high design quality and is supported by necessary infrastructure and community serving uses (**BE-9**) – The proposed Grier Substation provides the infrastructure necessary to support multi-family development,
- Marana prioritizes infrastructure enhancements and extensions that support desired new growth and development in an efficient and sustainable manner (**BE-14**) – As communities increasingly transition to renewable energy sources, a high-voltage substation becomes essential for integrating renewable energy into the grid. The substation can handle the fluctuations in power generation from renewable sources like wind and solar, contributing to the TOM's sustainability goals, and
- Maintaining an inventory of development-ready sites to attract future businesses (**PC-7**) - Investing in a 138-kV substation demonstrates foresight in anticipated future growth. This type of infrastructure is designed to accommodate expansion and increased demand over the long term.

It is anticipated that a rezone effort now will permit continued growth within the TOM by providing the infrastructure necessary for planned, proposed, and future power demands.

### 2. Strategic Plan 5

The Conceptual Land Use Plan furthers Marana's Strategic Plan 5 by promoting the following Focus Areas' goals and strategies:

#### **Focus Area 5: Proactive Public Services**

**Goal:** Prioritize Infrastructure and Maintenance that Support New Growth and Development in a Proactive and Sustainable Manner.

Approval of this rezone and minor general plan amendment request would allow for the Grier Substation to be constructed and operated to serve current and future needs in support of continued development in Marana, as per their goals listed in the General Plan.

### C. Compatibility with Adjoining Properties

The proposed Grier Substation would be compatible with adjoining properties. TEP has existing 138/13.8 kV substations throughout its service territory, many of which are adjacent to residential uses. See [Appendix A: Examples of Existing TEP Substations](#).

The substation is an unmanned, passive use and is therefore less intensive than the current agricultural use on site or other potential future permitted uses, such as a residential subdivision or mixed-use development.

#### 1. Dust

The substation site would be covered with decomposed granite (DG), gravel, and landscaping to control fugitive dust.

#### 2. Noise

Utilizing advanced technology, the 12-foot-tall masonry wall, and landscape buffers; noise associated with the power transformer would not exceed TOM's minimum regulatory stationary noise source standards of 50db at the property boundary.

#### 3. Traffic

As the substation is unmanned, only 2-4 trips per month are anticipated for the maintenance and operation of the substation. This is likely less traffic than generated by the existing agricultural use and far less traffic than would be generated were the subject parcel to be developed as a residential subdivision.

#### 4. Views

Please see Section III.I below.

#### 5. Safety

The substation is safe and secured. It is monitored via closed-circuit cameras 24/7 from TEP's headquarters.

#### 6. Electric and Magnetic Fields

Electric and magnetic fields (EMFs) are part of our everyday environment. They are emitted by power lines and other electrically powered systems that light, cool, and heat our homes, provide our communications and entertainment, and support other aspects of our modern lifestyle. EMFs also are produced naturally by the Earth.

Concerns related to electric and magnetic fields and their effects on human health have been studied for more than 30 years by scientists, universities, national laboratories, health agencies, and the World Health Organization. According to this large body of research, there are no confirmed health risks caused by exposure to low-level EMFs.

The EMFs associated with power lines and electrical devices are much weaker than those associated with other sources such as microwaves or radio waves; they are considered to be "extremely low frequency" fields at 60 Hertz



(Hz). These EMFs, at the low end of the electromagnetic spectrum, are described as “non-ionizing” because they are not known to damage DNA or cells directly.

TEP’s website has additional information related to EMFs including links to studies conducted by the World Health Organization, National Institutes of Health, National Institute of Environmental Health Sciences, Environmental Protection Agency, National Cancer Institute, and American Cancer Society.

<https://www.tep.com/electric-and-magnetic-fields/>

#### D. Conceptual Site Plan

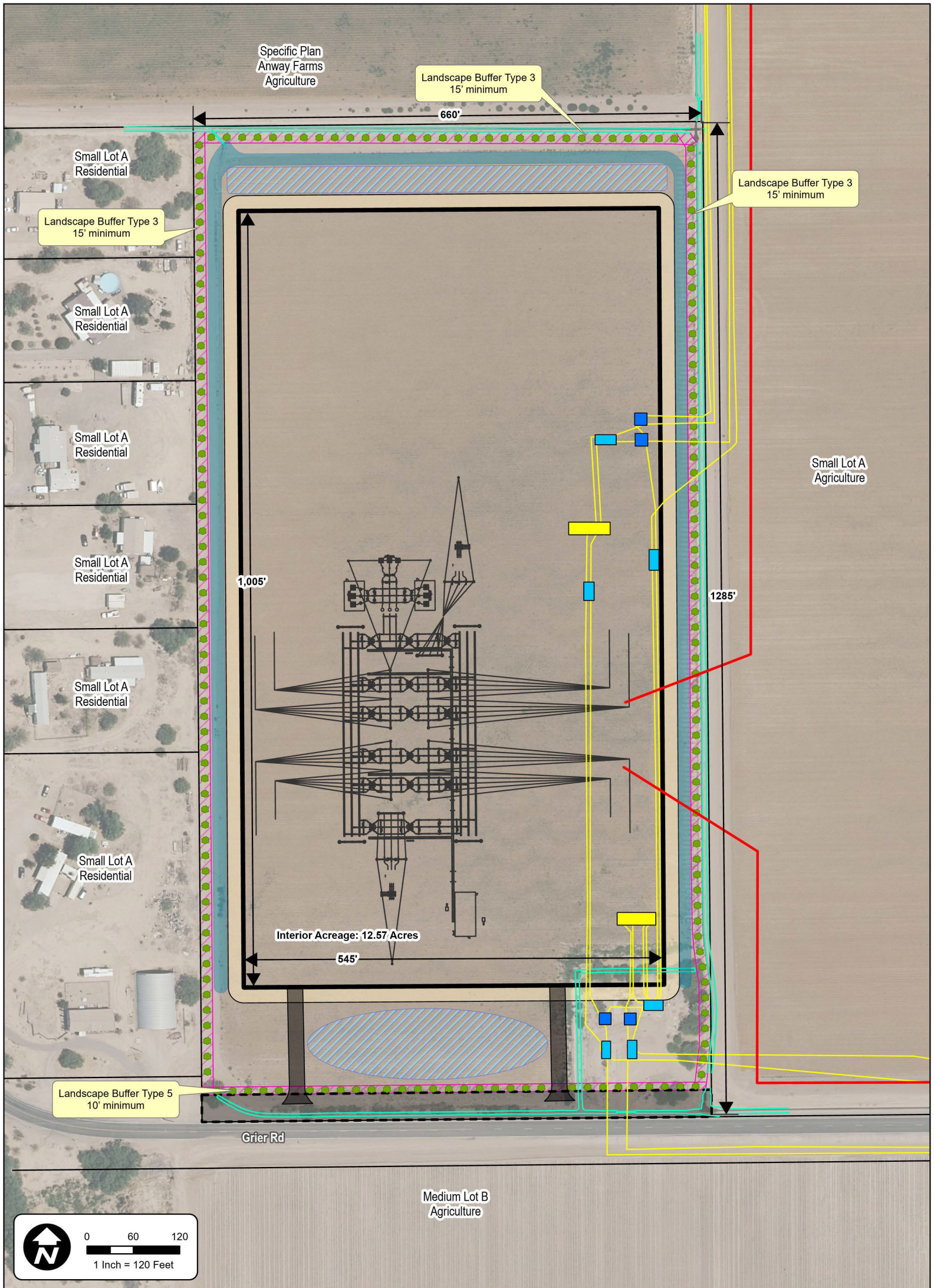
As shown in **Exhibit 20: Conceptual Site Plan**, the 19.54-acres are intended to accommodate the Grier Substation and associated transmission and distribution facilities. The proposed Grier Substation is generally located on the south half of the property, surrounded by a 12-foot-tall decorative masonry wall and 20-foot-wide security road around the perimeter of the wall. The site will be accessed through ingress and egress driveways off Grier Road.

Landscape buffers consisting of drought-tolerant vegetation, typical of the Sonoran Desert will be planted along the perimeter of the property. These landscape buffers effectively create a transition and soften the substation’s impacts on neighboring properties (see **Appendix A: Existing TEP Substation Examples and Exhibits 22-24: Photo Simulations** below).

Drainage features in the form of retention basins and drainage canals are also located on all sides of the property (see Section III.F below for additional information)

Facilities within the wall consist of a grounding grid, static masts, an equipment shelter, a main transformer, current transformers, circuit breakers, H-frame structures, transmission line drop-in structures, pull boxes, switchgear, as well as overhead and buried primary and secondary power lines. H-frame structure heights would be between 50-60-feet tall. Drop-in structure and static mast heights would be approximately 75-feet tall.

Exhibit 20. Conceptual Site Plan



**Grier Substation**

**Conceptual Site Plan**

- |  |   |
|--|---|
| Conceptual Vegetation                    | Landscape Buffers                       |
| 12' Masonry Wall                         | 20' Driveway                            |
| Conceptual Underground Distribution Line | 20' Security Road                       |
| Conceptual Transmission Line             | 35' Future Road Right-of-Way Dedication |
| Irrigation Channel                       | PME                                     |
| Parcels                                  | New Pull Box                            |
| Retention Basin                          | Switchgear                              |
| Drainage Feature                         |   |



Sources: Esri, UNS, TEP, BLM, and Pima County GIS.  
Projection: NAD 1983 UTM Zone 12N  
Basemap: Esri World Imagery

This map is for planning purposes only. TEP and UNS Energy make no warranty of its accuracy.

## E. Proposed Topography

Portions of the site will require import of fill material to properly convey off-site runoff around the substation, while providing adequate drainage inside the substation and elevating the structural elements of the substation above the 500-year floodplain. While achieving these objectives is paramount, it is also the intent to have the substation blend with the neighboring properties and as such, the conceptual grading design will limit the amount of fill being imported to the east and north portions of the subject property, and certain infrastructure elements to be constructed within the interior of the substation (enclosed structures, electrical cabinets etc.). Based on a conceptual grading analysis, the security road will be elevated in the range of +/- two to three feet. The infrastructure within the perimeter of the wall will be elevated in the range of +/- one to two feet depending on the location within the subject property.

## F. Proposed Hydrology

### 1. Drainage Concept

A review of the site topography determined that the subject property is recessed compared to the adjacent properties. The site does contain a small drainpipe located at the northwest corner which empties into the existing drainage canal. This pipe serves to provide positive drainage for the subject property.

The conceptual drainage design will account for these conditions and maintain historic flow paths. Off-site runoff entering from the east will be captured within a diversion channel located on the east side of the proposed access road. This flow will be conveyed north and then west and discharged into the existing pipe, which outfalls into an existing irrigation canal.

On-site runoff will be addressed by a combination of onsite water harvesting/retention, and surface water conveyance/diversion. The site was divided into the following four contributing areas (**Dev-1** thru **Dev-4**):

- **Dev-1**, which consists of the southern area of the subject property, outside of the concrete masonry unit (CMU) wall, will be drained to a water harvesting/retention basin located at the front of the property, between the two driveways. This flow will be fully retained within the shallow (depth = 9") basin.
- **Dev-2** constitutes the developed area of the substation inside the CMU wall. The runoff from this area will drain to the west, exit through a series of openings in the wall and be discharged into a 20-foot-wide, 4:1 slope drainage corridor that will serve to both convey flow to the north and to some degree harvest the on-site runoff.
- **Dev-3** consists of the undeveloped area of the substation, north of Dev-2. This contributing area will be stabilized with DG. Dev-3 will be sloped such that the runoff will drain to the north. Runoff from Dev-3 will be discharged through a series of openings within the CMU wall into a shallow, approximately 40-foot-wide water harvesting/retention basin (depth = 9") located outside of the wall to capture runoff. The basin will contain sufficient volume to accommodate the runoff from 100-year flood events.
- **Dev-4** consists of a diversion channel on the east side of the subject property and a drainage corridor on the west side of the subject property.
  - On the east side of Dev-4, a 20-foot-wide diversion channel will be constructed to collect the off-site runoff from the local watershed to the east. Runoff will flow north and then west through the diversion channel to the existing pipe.
  - On the west side of Dev-4, a 20-foot-wide drainage corridor, extending the length of the parcel will direct water to the north and to the west landscape buffer utilizing swales and contours to further retain runoff. For visual, see [Exhibit 21: Drainage Concept with Contributing Area](#).

Exhibit 21. Drainage Concept with Contributing Area



**Table 5. Summary of Hydrologic Parameters: Off-site and On-site Watersheds (Existing Conditions)**

Contributing Watershed	100-Rainfall Depth (inches)	Hydrologic Soil Type	Impervious Cover (%)	Basin Factor	Watershed Slope (%)	Runoff Coefficient 100-yr Event
Dev-1	2.46	100% B	0	0.05	0.03	0.47
Dev-2	2.46	100% B	0	0.05	0.18	0.52
Dev-3	2.46	100% B	0	0.05	0.5	0.39
Dev-4	2.46	100% B	0	0.05	0.06	0.39

**Table 6. Summary of Hydrologic Analysis: Off-site and On-site Watersheds (Existing Conditions)**

Contributing Watershed	Drainage Area (acres)	2-year Peak Discharge (cfs)	10-year Peak Discharge (cfs)	100-year Peak Discharge (cfs)
Dev-1	2.08	0.3	0.7	4
Dev-2	9.22	2.4	5.6	25
Dev-3	3.78	0.9	2.6	13
Dev-4	3.95	0.1	0.3	2.4

\*cfs = cubic feet per second

**2. Conformance with Current Policies**

FEMA FIRM Panel **04019C1010L** depicts the subject parcel as being located in Special Flood Hazard Zone X, meaning that the subject property is located within the 0.2% annual chance floodplain. To meet FEMA requirements for a critical facility, a portion of the site will be elevated above the water surface elevation for the 500-year event as calculated in the Santa Cruz River model.

The site does not contain any watercourses that could be considered Waters of the United States (WOTUS) as defined by the Clean Water Act (CWA) and as such the project will be compliant with Section 404 of the CWA. A Section 404 Compliance Statement may be required.

The site will be designed in accordance with TOM’s current development standards. Pending approval of the proposed project, a Flood Plain Use Permit will be required. Additionally, it will be required that post-development 2-, 10-, and 100-year peak discharges are less than or equal to the pre-development discharges as stated during the pre-application process.

The subject parcel is on already-disturbed land due to continual agricultural use and a temporary home site. The development of a substation facility will be restricted to a portion of the site and will not disturb additional area outside of the subject property. Additionally, planting native vegetation and incorporating landscaped buffers around the site will recover some of the natural/pre-farm status.

**3. Erosion Protection**

The foundation of the CMU wall, and the structural elements within the substation will account for potential erosion from the 500-year flow event by extending the infrastructure below the scour depth calculated using

the approved methodologies accepted by TOM and Pima County. It is anticipated that the minimum foundation extension will be 3 feet, per agency requirements. Fill pads used to elevate the various structures will be compacted to a minimum of 95% Standard Proctor (SP). In addition, should it be determined that the flow velocities exceed 3 feet-per-second (fps), the fill pads will be armored with rock riprap (Mean Rock Diameter 6 inches, thickness 1 foot, underlined with a Non-Woven Geotextile).

#### 4. Effect on Offsite Properties

The proposed substation project will not adversely impact the adjacent properties. On the upstream (east) side, the elevated security road will be set a minimum of 35 feet inside the property line. This will account for the 15-foot landscape buffer and 20 additional feet to account for the diversion channel and fill slope for the access road. The diversion channel will be used to divert runoff generated from a 100-year storm event on the local watersheds described in Section 2.H.1.d.

On the downstream side (west), the on-site flow will be conveyed beneath the CMU wall via a series of openings at the base of the wall. The flow will be conveyed over the security road and into drainage corridor for water harvesting and flow conveyance. Runoff will be conveyed to an existing 18" pipe and will not be discharged onto the properties west of the subject property.

### G. Vegetation

As the subject parcel has been converted to farmland, it has been mostly stripped of any native vegetation, apart from that growing within the irrigation canals that run along the edges of the subject property. The remaining vegetation on the parcel includes some herbaceous growth of native and non-native grasses and forbs and a lone fan palm tree (*Washingtonia* sp.). All existing vegetation on site will be cleared before construction activities begin.

As shown in **Exhibit 20: Conceptual Site Plan** above and **Exhibits 22-24: Photo Simulations** below, landscape buffers ranging from ten to 15 feet and consisting of native, drought-tolerant plant species and ground cover will be planted along Grier Road and the northern, eastern, and western property boundaries.

### H. Wildlife

The site is adjacent to an important wildlife corridor along a portion of the Santa Cruz River, east of the Silver Bell Mountains. The development of a substation at this location will not affect wildlife movement through the corridor as there is no habitat or cover that currently exists on site. Habitat and cover for wildlife is restricted to directly within the floodplain and quickly transitions into agricultural farmland beyond the banks of the Santa Cruz River. Existing irrigation canals on site may provide habitat for burrowing owls (*Athene cunicularia*) and will be surveyed for before any construction activities occur, as recommended by the Tucson Field Office of the USFWS (**Appendix D**.) In addition to burrowing owls, the property is within the dispersal distance of known cactus ferruginous pygmy owl (*Glaucidium brasilianum cactorum*) nesting territories, however the subject parcel does not support the appropriate habitat elements for continued occupancy. As such, no surveys are recommended for this species, per USFWS guidance (**Appendix D**.)

### I. Viewsheds

Views in the area would change. The proposed Grier Substation would be seen when travelling along Grier Road, from the adjacent residential properties to the west, and from adjacent agricultural fields to the north, east, and south. TEP completed photo simulations of the Grier Substation (see **Exhibit 22: Photo Simulation 1, Exhibit 23: Photo Simulation 2, and Exhibit 24: Photo Simulation 3**). Note that these simulations are for visual purposes only and subject to change pending final engineered plans. Transmission structure (drop-in structures) locations are

subject to ACC approval and may change. Landscape pallet and plant placements are representative and subject to TOM review and approval. TEP makes every effort to work with neighbors to place trees in locations that soften the views of the substation.

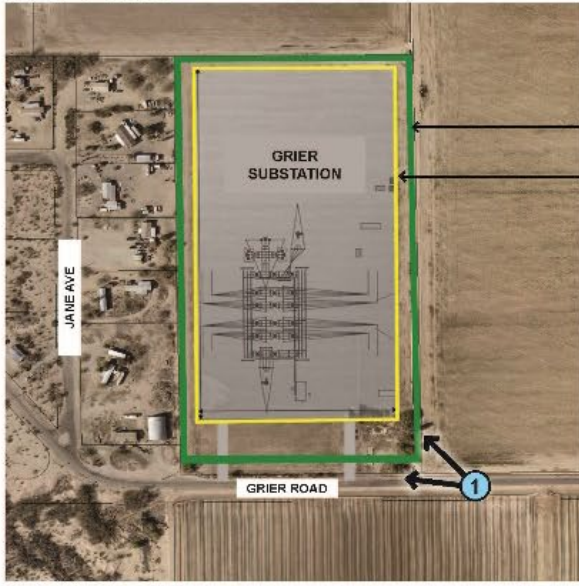
**Exhibit 22** depicts the proposed Grier Substation looking northwest from the south side of Grier Road. This simulation represents the view one would see travelling westbound on Grier Road, or from the adjacent agricultural fields. The residences seen in the existing conditions photo would no longer be visible. As can be seen in the photo simulation, the proposed Grier Substation has an aesthetically pleasing decorative masonry wall and native drought-tolerant landscape buffers that soften the substation in this rural setting.

**Exhibit 23** depicts the proposed Grier Substation looking North from Grier Road. This simulation represents the view one would see travelling along Grier Road or looking from the agricultural fields to the north. The residences to the northwest and fields to the north would no longer be visible.

**Exhibit 24** depicts the proposed Grier Substation looking East from the west property boundary and residences to the west. This is a closer-up view detailing the decorative masonry wall, access road, and landscaping.

Exhibit 22. Grier Substation Photo Simulation #1

VIEW POINT



LANDSCAPE BUFFER / SCREEN

12' DECORATIVE MASONRY WALL

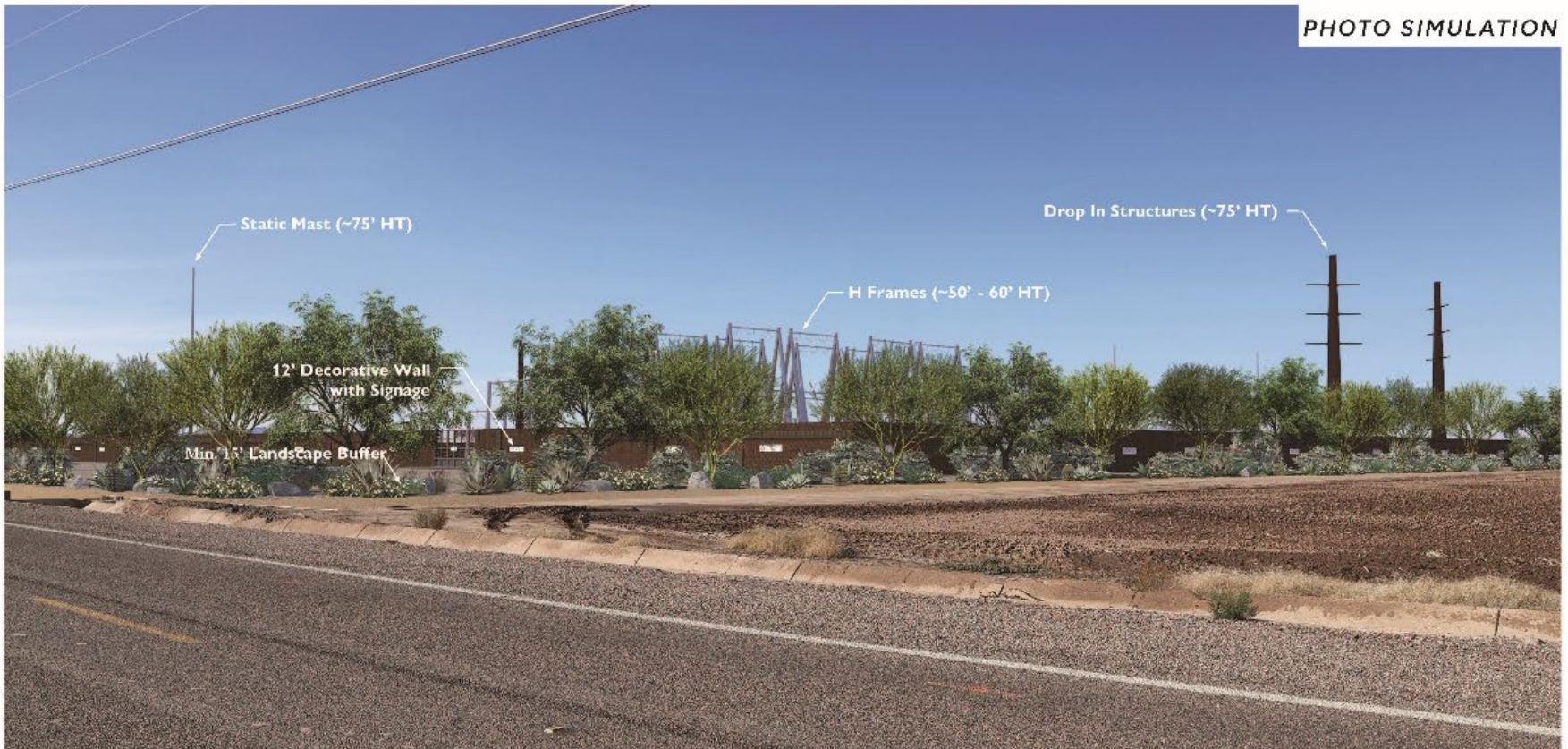
# GRIER SUBSTATION

## PHOTO SIMULATION #1

EXISTING CONDITIONS



PHOTO SIMULATION



Note: This exhibit is for visual purposes only and subject to change pending final engineered plans. Transmission Structure locations are subject to ACC CEC approval. Locations shown are estimates.

FROM THE SOUTHEAST CORNER  
LOOKING NORTHWEST





Exhibit 23. Grier Substation Photo Simulation #2

VIEW POINT



LANDSCAPE BUFFER / SCREEN  
12' DECORATIVE MASONRY WALL

**GRIER SUBSTATION**  
PHOTO SIMULATION #2

EXISTING CONDITIONS



PHOTO SIMULATION



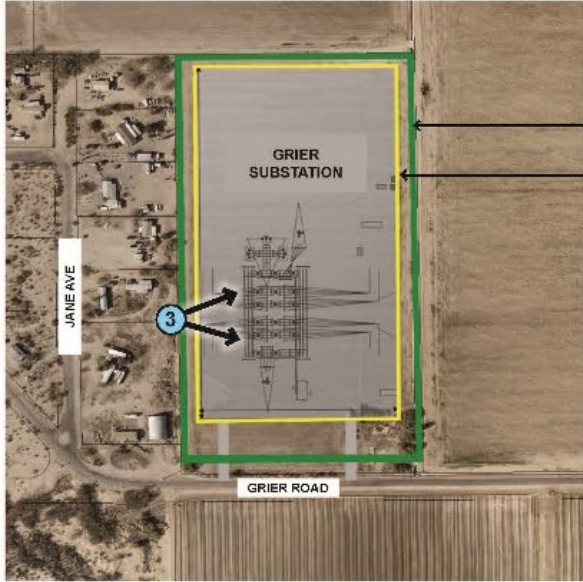
Note: This exhibit is for visual purposes only and subject to change pending final engineered plans. Transmission Structure locations are subject to ACC CEC approval. Locations shown are estimates.

FROM THE SOUTH  
LOOKING NORTH



Exhibit 24. Grier Substation Photo Simulation #3

VIEW POINT



LANDSCAPE BUFFER / SCREEN  
12' DECORATIVE MASONRY WALL

GRIER SUBSTATION  
PHOTO SIMULATION #3

EXISTING CONDITIONS



PHOTO SIMULATION



Note: This exhibit is for visual purposes only and subject to change pending final engineered plans. Transmission Structure locations are subject to ACC CEC approval. Locations shown are estimates.

FROM THE WEST  
LOOKING EAST



## J. Traffic

Primary access will be from Grier Road. Ingress and egress driveways will be constructed as shown in **Exhibit 20: Conceptual Site Plan** above. No other roadway improvements or modifications are anticipated as a result of this project.

Once constructed, the proposed Grier Substation would generate very little traffic, and is expected to be less than that of the current agricultural use on the subject property. Daily trips to the subject property are limited and average 2-4 trips per month for inspection and maintenance.

## K. Proposed Public Utilities

### 1. Water

Grier substation will not need to connect to the public water supply. Water would only be necessary for irrigation purposes. The subject property has Type 1 water rights, therefore TEP will either obtain water from CMID or drill a well.

### 2. Sewer

Grier Substation will not need to connect to the public sewer. The substation is unmanned.

### 3. Natural Gas

Grier Substation will not need to connect to natural gas service.

### 4. Electricity

Grier Substation is an electric substation and electricity needed for lighting and security would be powered by facilities built as part of the project.

### 5. Communication

TEP will install communication equipment as necessary to link the substation to their electric grid.

## L. Public Service Impacts

### 1. Police

The Marana Police Department will serve the site. The nearest Marana Police Department facilities are at 11555 W. Civic Center Drive, approximately three miles east of the subject property.

### 2. Fire & Emergency Services

The site is within the Northwest Fire District boundary and is less than 3 miles east at Northwest Fire District Station #341, 13535 N. Marana Main Street. The Northwest Fire District also serves the adjacent residential properties. The subject parcel has not been annexed into the Northwest Fire District. TEP would initiate annexation prior to development of the substation.

### 3. Refuse

Grier Substation would not require refuse pickup services. Any refuse generated on site will be removed by TEP and disposed of.

### 4. Schools

The proposed land use would not impact schools in the project area.

#### 5. Parks

The proposed land use would not impact parks in the project area.

#### M. Recreation and Trails

The proposed land use would not impact existing recreation and trails in the project area. No recreation or trail opportunities would be provided as part of the substation development.

#### N. Cultural, Archaeological and Historic Resources

The subject property is currently being assessed for the presence of cultural, archaeological, and historic resources. TOM will be provided with a copy of the Class III survey report once it is complete. In the event any sites are discovered and determined to be A/NRHP-eligible, they would be mitigated through avoidance or as required by State law.

## Appendix A – Examples of Existing TEP Substations

Photo 1. Orange Grove Substation at Orange Grove Rd. and La Cañada Dr., looking west.



Photo 2. Kino Substation at 36th Street and Campbell Ave., looking south.



## Appendix B- ALTA Survey



**GENERAL NOTES:**

- THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE COMMITMENT FOR TITLE INSURANCE (TITLE REPORT) ISSUED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, ISSUING OFFICE FIDELITY NATIONAL TITLE AGENCY INC., COMMITMENT AND ORDER No. FP50230500, AMENDMENT 5-DOC, COMMITMENT DATE DECEMBER 20, 2023. EASEMENTS AND ITEMS OF RECORD MAY BE LIMITED TO THOSE SHOWN ON THE NOTED TITLE REPORT. ANYONE HAVING AN INTEREST IN THE SUBJECT PROPERTY SHOULD OBTAIN A COPY OF THE NOTED TITLE REPORT AND REVIEW THE SCHEDULE B ITEMS.
- THE BASIS OF ELEVATIONS FOR THIS PROJECT IS THE PIMA COUNTY DEPARTMENT OF TRANSPORTATION (PCDOT) BENCHMARK T11S-R11E-R03, BEING A CHISELED "X" AT THE SOUTH END OF A CONCRETE HEADWALL LOCATED APPROXIMATELY 33 FEET NORTH AND 13 FEET WEST OF THE SOUTH QUARTER CORNER OF SECTION 19, TOWNSHIP 11 SOUTH, RANGE 11 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA. SAID ELEVATION BEING 1954.65 (NAVD-88) PER THE PCDOT DATA SHEET FOR SAID CONTROL POINT.
- THE BASIS OF BEARINGS FOR THIS PROJECT IS THE EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 19, TOWNSHIP 11 SOUTH, RANGE 11 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA. SAID BEARING BEING SOUTH 00°28'52" EAST, AS SHOWN HEREON.
- REFERENCES USED FOR THIS SURVEY INCLUDE, BUT MAY NOT BE LIMITED TO, THE FOLLOWING:  
GENERAL LAND OFFICE / BUREAU OF LAND MANAGEMENT PLSS RECORDS.  
PIMA COUNTY ROAD PROCEEDING No. 0113.  
(R1) BOOK 01, PAGE 267, MISCELLANEOUS SURVEYS (LS 15933, 1995).  
(R2) BOOK Z-2017, PAGE 237, MISCELLANEOUS SURVEYS (LS 4680, 1993).  
(R2) BOOK Z-2018, PAGE 223, MISCELLANEOUS SURVEYS (LS 4680, 1986).  
(R3) BOOK Z-2020, PAGE 733, MISCELLANEOUS SURVEYS (LS 4680, 1987).  
(R3) BOOK Z-2020, PAGE 958, MISCELLANEOUS SURVEYS (LS 4680, 1987).  
(R4)\*\* BOOK 6, PAGE 61, RECORDS OF SURVEY (LS 11373, 1990).  
(R5) BOOK 31, PAGE 55, RECORDS OF SURVEY (LS 29873, 2003).  
(R6)\*\* BOOK 36, PAGE 79, RECORDS OF SURVEY (LS 29873, 2004).  
(R6)\*\* BOOK 77, PAGE 3, RECORDS OF SURVEY (LS 29873, 2010).  
(R7) BOOK 42, PAGE 18, RECORDS OF SURVEY (LS 25086, 2005).  
(R8) SEQUENCE No. 2023-0540040 MISCELLANEOUS SURVEYS (LS 37933, 2023).  
NOTE: REFERENCES FOLLOWED BY \*\* DENOTE SURVEYS THAT DO NOT USE THE SAME SOUTH LINE FOR SECTION 19 AS THIS SURVEY, SEE SURVEYORS NOTE.
- ASSESSORS PARCEL NUMBERS (APN's), STREET NAMES, OWNERS NAMES AND ADDRESSES, IF SHOWN HEREON, ARE FROM THE PIMA COUNTY GIS WEBSITE, JANUARY 2, 2024.  
(ALTA/NSPS OPTIONAL TABLE ITEM No. 2 and No. 13)
- FLOODPLAIN: PER THE LETTER OF MAP REVISION (LOMR) CASE No. 21-09-1382P, EFFECTIVE DATE AUGUST 18, 2023, THE SUBJECT PARCEL IS LYING WITHIN ZONE "X", DESCRIBED AS 0.2% ANNUAL FLOOD CHANCE HAZARD, AREAS OF 1% ANNUAL FLOOD CHANCE HAZARD WITH AVERAGE DEPTH OF LESS THAN ONE FOOT OR WITH DRAINAGE AREAS OF LESS THAN ONE MILES.  
(ALTA/NSPS OPTIONAL TABLE ITEM No. 3)
- THE TOTAL AREA FOR THE SUBJECT PROPERTY IS 19.5413 ACRES (851,220 SQUARE FEET), MORE OR LESS.  
(ALTA/NSPS OPTIONAL TABLE ITEM No. 4)
- THE TOPOGRAPHY SHOWN HEREON IS BASED ON CLASSIC SURVEY AERIAL TOPOGRAPHIC METHODOLOGY USING AERIAL PHOTOGRAMMETRY CONTROL SET BY PUTT LAND SURVEYING, INC., DECEMBER 2023.  
(ALTA/NSPS OPTIONAL TABLE ITEM No. 5)
- THIS IS AN ABOVE GROUND SURVEY ONLY. ANY UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.  
(ALTA/NSPS OPTIONAL TABLE ITEM No. 11)
- THERE WAS NO OBSERVED EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS AT THE TIME OF THIS SURVEY.  
(ALTA/NSPS OPTIONAL TABLE ITEM No. 16)
- PROPOSED CHANGES IN STREET RIGHT OF WAY LINES WAS NOT PROVIDED TO THE SURVEYOR. THERE WAS NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.  
(ALTA/NSPS OPTIONAL TABLE ITEM No. 17)
- THERE ARE NO PLOTTABLE OFFSITE EASEMENTS CONTAINED IN THE TITLE REPORT FOR THIS PROJECT. THERE IS AN OFFSITE BLANKET EASEMENT (NON-PLOTTABLE) FOR THE PURPOSE OF ELECTRIC TRANSMISSION OR DISTRIBUTION LINE OR SYSTEM, AND RIGHTS INCIDENTAL THERETO, AS SET FORTH IN DOCKET 365, PAGE 113, SCHEDULE "B" ITEM No. 7, OVER THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 19 (APPX 1320 FEET EAST OF THE SUBJECT PARCEL).  
(ALTA/NSPS OPTIONAL TABLE ITEM No. 18)
- THE WORD "CERTIFY" OR "CERTIFICATION" IS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THIS SURVEY AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EXPRESSED OR IMPLIED.
- THIS SURVEY WAS PERFORMED BY PAUL M. COTE, AZ RLS 50761, OR UNDER MY DIRECT SUPERVISION.

**SURVEYORS NOTE:**

THERE ARE TWO LOCATIONS FOR THE SOUTH QUARTER CORNER OF SECTION 19, HEREINAFTER REFERRED TO AS THE "SPETH QUARTER CORNER" (ACCEPTED PER THIS SURVEY) AND THE "HANSEN QUARTER CORNER" (NOT ACCEPTED PER THIS SURVEY).

PER BOOK 6, PAGE 61, RECORDS OF SURVEY (LS 11373, 1990), THE HANSEN QUARTER CORNER APPEARED FIRST, AND WAS SET ON A STRAIGHT LINE FROM THE SOUTHEAST CORNER OF SECTION 19 TO A CALCULATED SOUTHWEST CORNER OF SECTION 19. THE CALCULATED SOUTHWEST SECTION CORNER WAS NOT SET, BUT THE HANSEN QUARTER CORNER WAS SET AS A PART OF BOOK 6, PAGE 61, RECORDS OF SURVEY. IT IS IMPORTANT TO NOTE THAT THE HANSEN QUARTER CORNER WAS CALCULATED IN ORDER TO FURTHER SUBDIVIDE THE SECTION, BUT WAS NOT SET AS A PROPERTY CORNER FOR THAT SURVEY.

FIVE YEARS LATER, THE SPETH QUARTER CORNER WAS SET AT A POSITION 2.9 FEET SOUTH BY 0.7 FEET EAST OF THE HANSEN QUARTER CORNER AS SHOWN IN BOOK 1, PAGE 267, MISCELLANEOUS RECORDS (LS 15933, 1995). IN SAID BOOK 1, PAGE 267, MISCELLANEOUS RECORDS, THE SURVEYOR SPECIFICALLY STATES THE REASONING FOR NOT ACCEPTING THE HANSEN QUARTER CORNER (SEE GENERAL NOTE B THEREIN).

- THIS SURVEY HONORS THE SPETH QUARTER CORNER EVEN THOUGH IT CAME INTO EXISTENCE AFTER THE HANSEN QUARTER CORNER BECAUSE:
- BOOK 1, PAGE 267, MISCELLANEOUS RECORDS EXPLAINS THE REASONING FOR SETTING THE SPETH QUARTER CORNER TO THIS SURVEYORS SATISFACTION.
  - BOOK Z-2018, PAGE 223, MISCELLANEOUS SURVEYS (LS 4680, 1986), BOOK Z-2020, PAGE 733, MISCELLANEOUS SURVEYS (LS 4680, 1987) AND BOOK Z-2020, PAGE 958, MISCELLANEOUS SURVEYS (LS 4680, 1987) ALL PRE-DATE THE HANSEN QUARTER CORNER AND SUBDIVIDED PROPERTIES IN THE SOUTHWEST QUARTER OF SECTION 19 AND MATHEMATICALLY MATCH THE LOCATION OF THE SPETH QUARTER CORNER. BOOK Z-2017, PAGE 237, MISCELLANEOUS SURVEYS (LS 4680, 1993) FURTHER SUBDIVIDED PROPERTIES IN THE SOUTHWEST QUARTER OF SECTION 19 THAT MATHEMATICALLY MATCH THE LOCATION OF THE SPETH QUARTER CORNER.
  - THE NORTH LINE OF THE SOUTH HALF OF THE SOUTHWEST QUARTER OF SECTION 19 IS MONUMENTED AS SHOWN HEREON AND THE LOCATION OF THESE MONUMENTS BEST FIT THE SPETH QUARTER CORNER LOCATION.
  - THE EAST LINE OF THE SOUTHWEST QUARTER OF SECTION 19 IS MONUMENTED AS SHOWN HEREON, AND THE LOCATION OF THESE MONUMENTS BEST FIT THE SPETH QUARTER CORNER LOCATION.

**TITLE REPORT LEGAL DESCRIPTION:**

THE EAST HALF OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 11 SOUTH, RANGE 11 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PIMA COUNTY.

EXCEPT ANY PORTION THEREOF LYING WITHIN GRIER ROAD, TRICO - MARANA ROAD, AND AVRA ROAD.

**SCHEDULE B EXCEPTIONS:**

THE FOLLOWING SURVEY RELATED ITEMS ARE REFERENCED AS SCHEDULE B EXCEPTIONS IN THE AFOREMENTIONED TITLE REPORT:

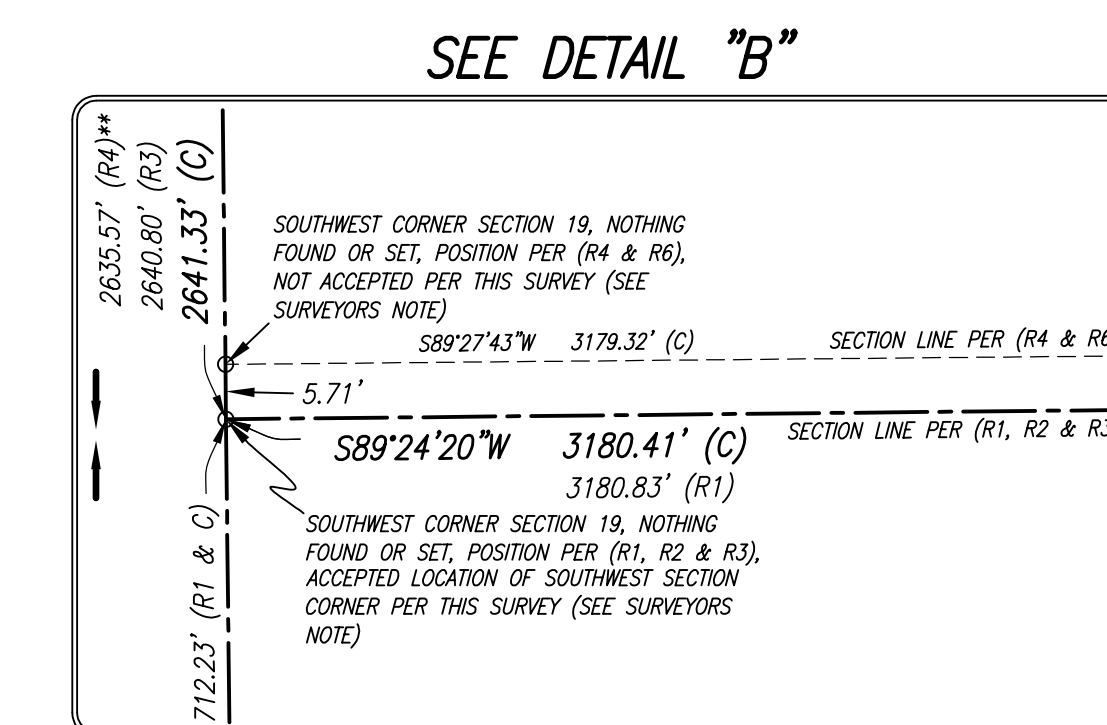
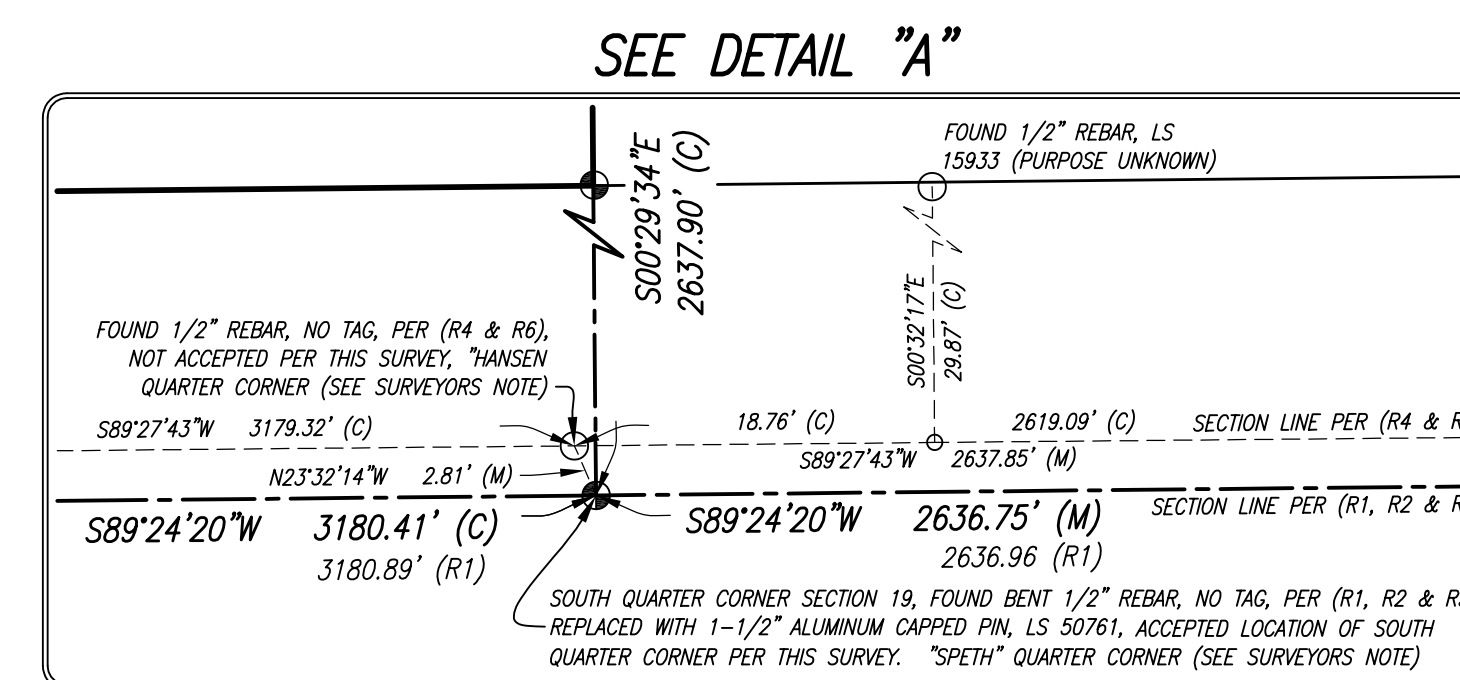
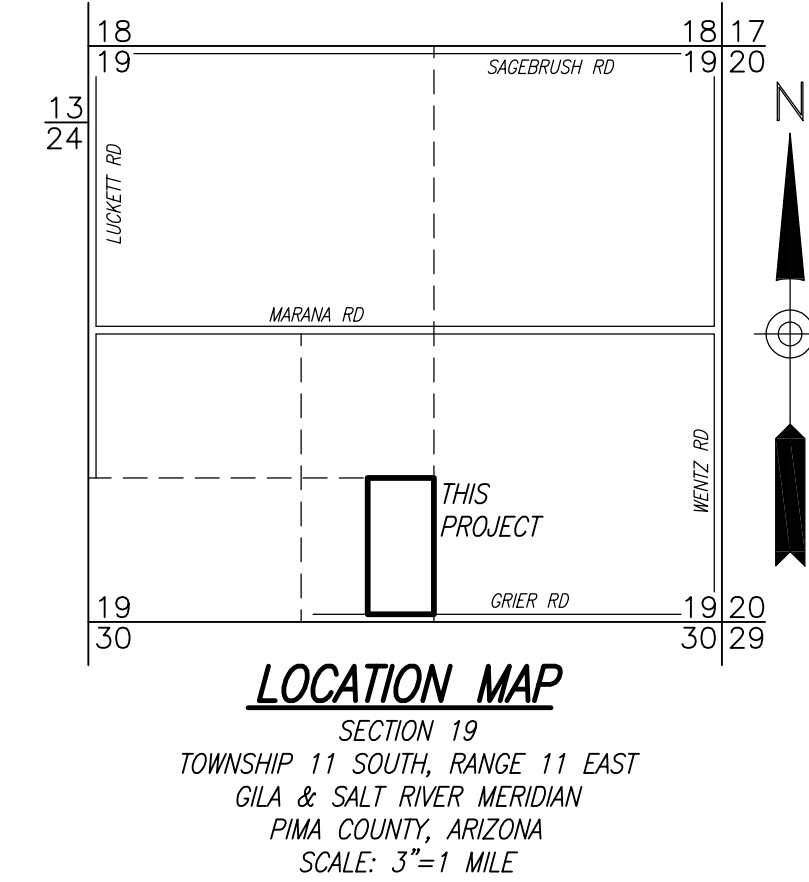
- NOT SURVEY RELATED.
- NOT SURVEY RELATED.
- NOT SURVEY RELATED.
- RESERVATIONS CONTAINED IN THE PATENT FROM THE UNITED STATES OF AMERICA, RECORDED IN BOOK 52 OF DEEDS, PAGE 375.  
(NOT GRAPHICALLY PLOTTABLE - AFFECTS SUBJECT PARCEL)
- NOT SURVEY RELATED.
- MATTERS CONTAINED IN THAT CERTAIN DOCUMENT ENTITLED CONTRACT FOR THE SALE OF REAL ESTATE, RECORDED IN DOCKET 60, PAGE 522.  
(NOT GRAPHICALLY PLOTTABLE - SAID DOCUMENT SUBJECT TO VARIOUS NON-GRAPHICALLY PLOTTABLE ITEMS AND SUBJECT TO BOOK 107 OF MISCELLANEOUS RECORDS, PAGE 151, EASEMENTS LISTED IN SCHEDULE "B" ITEM No. 7, BELOW - SEE DOCUMENT FOR PARTICULARS - AFFECTS SUBJECT PARCEL)
- RIGHT OF WAY FOR CANALS, WELLS SITES AND EASEMENTS, RECORDED IN BOOK 107 OF MISCELLANEOUS RECORDS, PAGE 151. (EASEMENTS ON OR ADJACENT TO THE SUBJECT PARCEL, LATERAL No. 8 and LATERAL No. 8, SUB LATERAL No. 2, SHOWN HEREON)
- MATTERS CONTAINED IN THAT CERTAIN DOCUMENT ENTITLED NON-EXCLUSIVE RIGHT OF WAY USE LICENSE FOR PUBLIC UTILITY FACILITIES, RECORDED IN SEQUENCE No. 2022-2690037.  
(RIGHT OF WAYS SHOWN HEREON)
- ANY RIGHTS OF THE PARTIES IN POSSESSION OF A PORTION OF, OR ALL OF, SAID LAND, WHICH RIGHTS ARE NOT DISCLOSED BY THE PUBLIC RECORDS.  
(NOT GRAPHICALLY PLOTTABLE)
- MATTERS WHICH MAY BE DISCLOSED BY AN INSPECTION AND/OR BY A CORRECT ALTA/ACSM LAND TITLE SURVEY OF SAID LAND.  
(THIS IS AN ALTA/NSPS LAND TITLE SURVEY OF SAID LAND)

**CERTIFICATION:**

TO FIDELITY NATIONAL TITLE INSURANCE COMPANY; to TUCSON ELECTRIC POWER COMPANY, AN ARIZONA CORPORATION; and to CORTARO FARMS LIMITED, AN ARIZONA LIMITED PARTNERSHIP:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 8, 11(a), 11(b), 13, 16, 17, 18 AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JANUARY 12, 2024.

JANUARY 23, 2024  
PAUL M. COTE, ARIZONA, R.L.S.  
ARIZONA REGISTRATION No. 50761



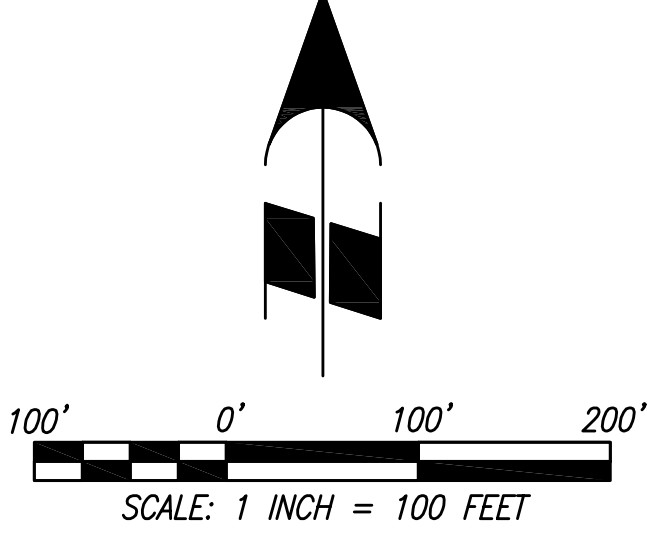
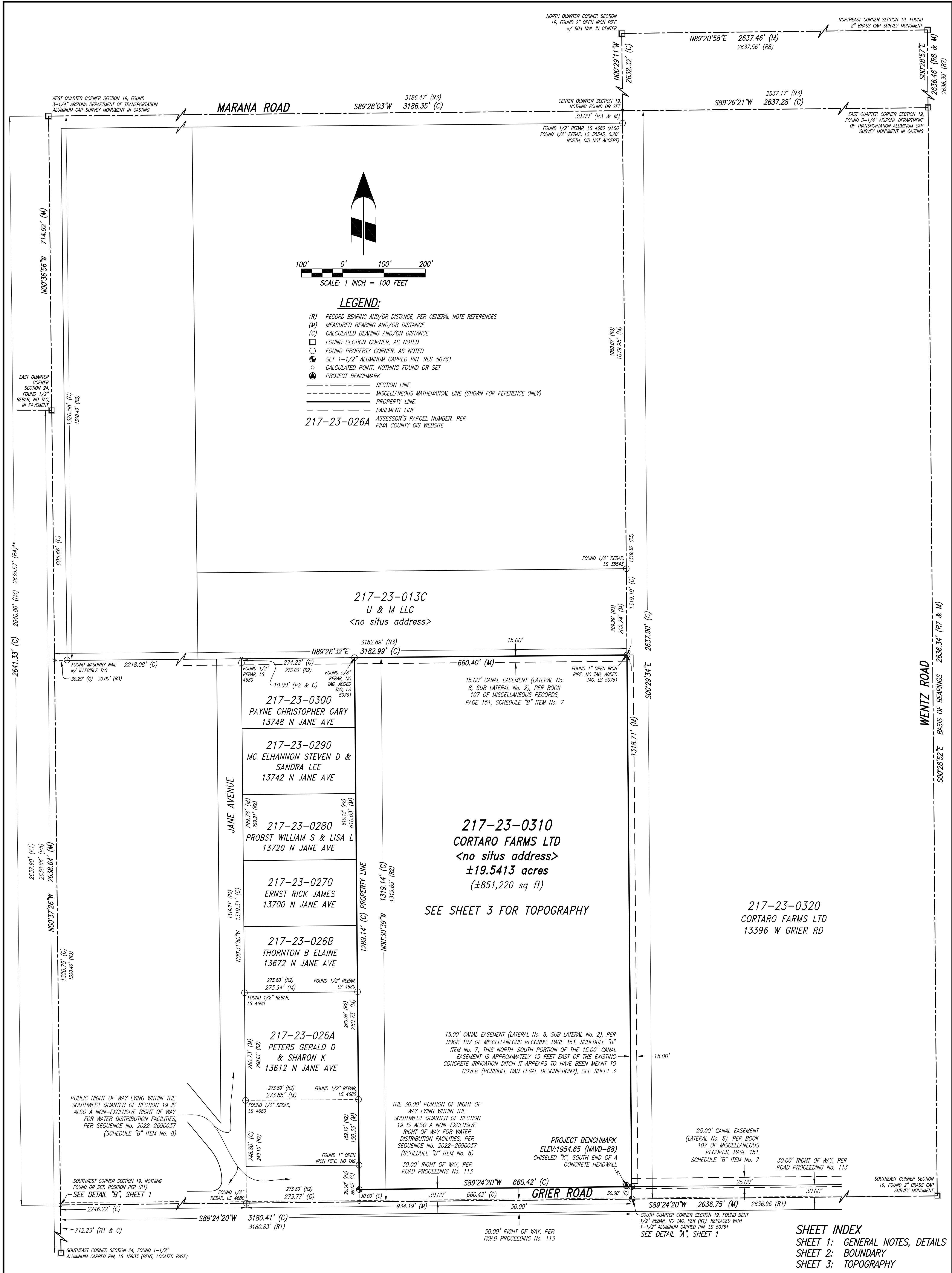
REVISION	NO.	DESCRIPTION
1	1	JANUARY 26, 2024. ADDED SMALL GREEN BLUESTAKING NEAR SOUTHEAST CORNER OF SUBJECT PARCEL, ADDED CMP AND DROP INLET INFORMATION AT NORTHWEST END OF PARCEL. AFFECTS SHEET THREE ONLY.
2	2	JANUARY 30, 2024. PLOTTED SMALL GREEN BLUESTAKING NEAR SOUTHEAST CORNER OF SUBJECT PARCEL (FAILED TO PLOT IN REVISION 1). AFFECTS SHEET THREE ONLY.

**ALTA/NSPS LAND TITLE SURVEY**  
**A PORTION OF THE SOUTHWEST QUARTER OF SECTION 19**  
TOWNSHIP 11 SOUTH, RANGE 11 EAST,  
GILA AND SALT RIVER MERIDIAN,  
PIMA COUNTY, ARIZONA

**PUS PUTT LAND SURVEYING, INC.**  
4817 EAST FIFTH STREET, TUCSON, ARIZONA, 85711  
TELEPHONE: (520) 790-8373 FAX: (520) 512-8373

REGISTERED LAND SURVEYOR  
CERTIFICATE NO. 50761  
PAUL M. COTE, R.L.S.  
DESIGNED: N/A  
DRAWN: PMC  
CHECKED: DLP  
DATE: 1/23/24  
JOB No. 23-169

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**LEGEND:**

- (R) RECORD BEARING AND/OR DISTANCE, PER GENERAL NOTE REFERENCES
- (M) MEASURED BEARING AND/OR DISTANCE
- (C) CALCULATED BEARING AND/OR DISTANCE
- FOUND SECTION CORNER, AS NOTED
- FOUND PROPERTY CORNER, AS NOTED
- SET 1-1/2" ALUMINUM CAPPED PIN, RLS 50761
- CALCULATED POINT, NOTHING FOUND OR SET
- PROJECT BENCHMARK
- SECTION LINE
- - - MISCELLANEOUS MATHEMATICAL LINE (SHOWN FOR REFERENCE ONLY)
- PROPERTY LINE
- - - EASEMENT LINE

217-23-026A ASSESSOR'S PARCEL NUMBER, PER PIMA COUNTY GIS WEBSITE

217-23-013C  
U & M LLC  
<no situs address>

217-23-0300  
PAYNE CHRISTOPHER GARY  
13748 N JANE AVE

217-23-0290  
MC ELHANNON STEVEN D &  
SANDRA LEE  
13742 N JANE AVE

217-23-0280  
PROBST WILLIAM S & LISA L  
13720 N JANE AVE

217-23-0270  
ERNST RICK JAMES  
13700 N JANE AVE

217-23-026B  
THORNTON B ELAINE  
13672 N JANE AVE

217-23-026A  
PETERS GERALD D &  
SHARON K  
13612 N JANE AVE

217-23-0310  
CORTARO FARMS LTD  
<no situs address>  
±19.5413 acres  
(±851,220 sq ft)

SEE SHEET 3 FOR TOPOGRAPHY

217-23-0320  
CORTARO FARMS LTD  
13396 W GRIER RD

PUBLIC RIGHT OF WAY LYING WITHIN THE SOUTHWEST QUARTER OF SECTION 19 IS ALSO A NON-EXCLUSIVE RIGHT OF WAY FOR WATER DISTRIBUTION FACILITIES, PER SEQUENCE No. 2022-2690037 (SCHEDULE "B" ITEM No. 8)

THE 30.00' PORTION OF RIGHT OF WAY LYING WITHIN THE SOUTHWEST QUARTER OF SECTION 19 IS ALSO A NON-EXCLUSIVE RIGHT OF WAY FOR WATER DISTRIBUTION FACILITIES, PER SEQUENCE No. 2022-2690037 (SCHEDULE "B" ITEM No. 8)

15.00' CANAL EASEMENT (LATERAL No. 8, SUB LATERAL No. 2), PER BOOK 107 OF MISCELLANEOUS RECORDS, PAGE 151, SCHEDULE "B" ITEM No. 7, THIS NORTH-SOUTH PORTION OF THE 15.00' CANAL EASEMENT IS APPROXIMATELY 15 FEET EAST OF THE EXISTING CONCRETE IRRIGATION DITCH IT APPEARS TO HAVE BEEN MEANT TO COVER (POSSIBLE BAD LEGAL DESCRIPTION?), SEE SHEET 3

PROJECT BENCHMARK  
ELEV: 1954.65 (NAVD-88)  
CHISELED "X", SOUTH END OF A CONCRETE HEADWALL

25.00' CANAL EASEMENT (LATERAL No. 8), PER BOOK 107 OF MISCELLANEOUS RECORDS, PAGE 151, SCHEDULE "B" ITEM No. 7

30.00' RIGHT OF WAY, PER ROAD PROCEEDING No. 113

SOUTHWEST CORNER SECTION 19, NOTHING FOUND OR SET, POSITION PER (R1) SEE DETAIL "B", SHEET 1

30.00' RIGHT OF WAY, PER ROAD PROCEEDING No. 113

SOUTH QUARTER CORNER SECTION 19, FOUND 1/2" REBAR, NO TAG, PER (R1), REPLACED WITH 1-1/2" ALUMINUM CAPPED PIN, L.S. 50761 SEE DETAIL "A", SHEET 1

**SHEET INDEX**

SHEET 1: GENERAL NOTES, DETAILS  
SHEET 2: BOUNDARY  
SHEET 3: TOPOGRAPHY

NOTICE OF DRAWING AUTHORIZATION: THIS DRAWING IS A COPYRIGHT PROTECTED DOCUMENT PRODUCED BY COMPUTER AIDED DESIGN AND DRAFTING TECHNIQUES. MULTIPLE AND/OR UNAUTHORIZED COPIES OF DRAWING DATA FILES MAY EXIST. ANY USE, REUSE OR MODIFICATION OF THE DRAWING OR ITS DATA FILES WITHOUT THE APPROPRIATE AUTHORIZED SIGNED REGISTERED LAND SURVEYOR SEAL AND WRITTEN VERIFICATION BY PUTT LAND SURVEYING IS PROHIBITED AND WILL BE AT THE USER'S RISK AND FULL LEGAL RESPONSIBILITY.

DESIGNED:	N/A
DRAWN:	PMC
CHECKED:	DLP
DATE:	1/23/24
JOB No.	23-169

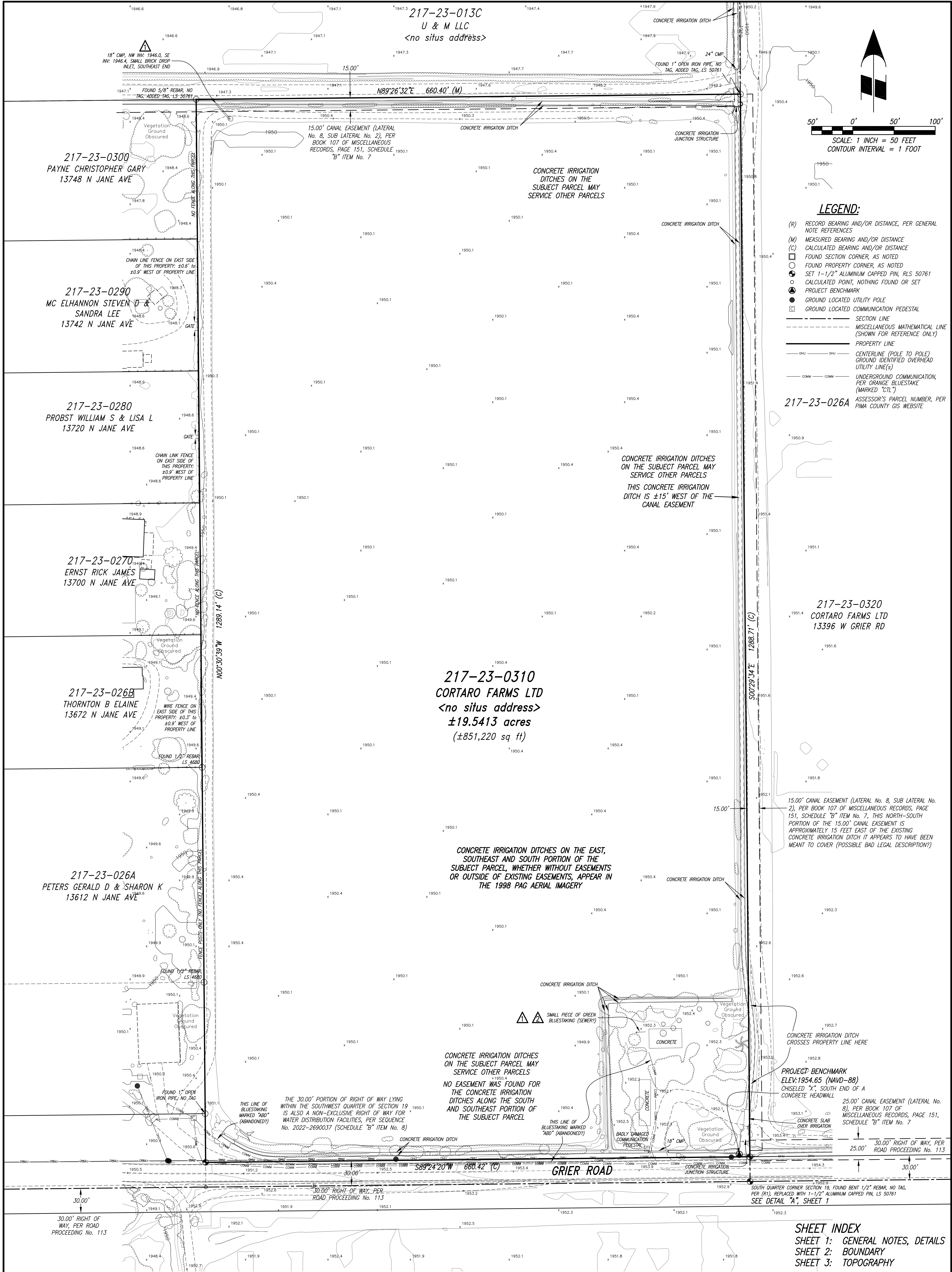


**PLUS** PUTT LAND SURVEYING, INC.

4817 EAST FIFTH STREET, TUCSON, ARIZONA, 85711  
TELEPHONE: (520) 790-8373 FAX: (520) 512-8373

**ALTA/NSPS LAND TITLE SURVEY**  
A PORTION OF THE SOUTHWEST QUARTER OF SECTION 19  
TOWNSHIP 11 SOUTH, RANGE 11 EAST,  
GILA AND SALT RIVER MERIDIAN,  
PIMA COUNTY, ARIZONA

NO.	REVISION
△	JANUARY 26, 2024. ADDED SMALL GREEN BLUESTAKING NEAR SOUTHEAST CORNER OF SUBJECT PARCEL, ADDED CMP AND DROP INLET INFORMATION AT NORTHWEST END OF PARCEL. AFFECTS SHEET THREE ONLY.
△	JANUARY 30, 2024. PLOTTED SMALL GREEN BLUESTAKING NEAR SOUTHEAST CORNER OF SUBJECT PARCEL (FAILED TO PLOT IN REVISION 1). AFFECTS SHEET THREE ONLY.



- LEGEND:**
- (R) RECORD BEARING AND/OR DISTANCE, PER GENERAL NOTE REFERENCES
  - (M) MEASURED BEARING AND/OR DISTANCE
  - (C) CALCULATED BEARING AND/OR DISTANCE
  - FOUND SECTION CORNER, AS NOTED
  - FOUND PROPERTY CORNER, AS NOTED
  - ⊕ SET 1-1/2" ALUMINUM CAPPED PIN, RLS 50761
  - CALCULATED POINT, NOTHING FOUND OR SET
  - PROJECT BENCHMARK
  - GROUND LOCATED UTILITY POLE
  - GROUND LOCATED COMMUNICATION PEDESTAL
- SECTION LINE  
 --- MISCELLANEOUS MATHEMATICAL LINE (SHOWN FOR REFERENCE ONLY)  
 --- PROPERTY LINE  
 --- CHU --- CHU CENTERLINE (POLE TO POLE)  
 --- GROUND IDENTIFIED OVERHEAD UTILITY LINE(S)  
 --- COMM --- COMM UNDERGROUND COMMUNICATION, PER ORANGE BLUESTAKE (MARKED "CTL.")
- 217-23-026A ASSESSOR'S PARCEL NUMBER, PER PIMA COUNTY GIS WEBSITE

217-23-0320  
 CORTARO FARMS LTD  
 13396 W GRIER RD

217-23-0310  
 CORTARO FARMS LTD  
 <no situs address>  
 ±19.5413 acres  
 (±851,220 sq ft)

CONCRETE IRRIGATION DITCHES ON THE EAST, SOUTHEAST AND SOUTH PORTION OF THE SUBJECT PARCEL, WHETHER WITHOUT EASEMENTS OR OUTSIDE OF EXISTING EASEMENTS, APPEAR IN THE 1998 PAG AERIAL IMAGERY

15.00' CANAL EASEMENT (LATERAL No. 8, SUB LATERAL No. 2), PER BOOK 107 OF MISCELLANEOUS RECORDS, PAGE 151, SCHEDULE "B" ITEM No. 7, THIS NORTH-SOUTH PORTION OF THE 15.00' CANAL EASEMENT IS APPROXIMATELY 15 FEET EAST OF THE EXISTING CONCRETE IRRIGATION DITCH IT APPEARS TO HAVE BEEN MEANT TO COVER (POSSIBLE BAD LEGAL DESCRIPTION?)

CONCRETE IRRIGATION DITCHES ON THE SUBJECT PARCEL MAY SERVICE OTHER PARCELS  
 NO EASEMENT WAS FOUND FOR THE CONCRETE IRRIGATION DITCHES ALONG THE SOUTH AND SOUTHEAST PORTION OF THE SUBJECT PARCEL

PROJECT BENCHMARK  
 ELEV: 1954.65 (NAVD-88)  
 CHISELED "X", SOUTH END OF A CONCRETE HEADWALL  
 25.00' CANAL EASEMENT (LATERAL No. 8), PER BOOK 107 OF MISCELLANEOUS RECORDS, PAGE 151, SCHEDULE "B" ITEM No. 7

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DESIGNED:	N/A
DRAWN:	PMC
CHECKED:	DLP
DATE:	1/23/24
JOB No.	23-169



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△	JANUARY 26, 2024. ADDED SMALL GREEN BLUESTAKING NEAR SOUTHWEST CORNER OF SUBJECT PARCEL, ADDED CMP AND DROP INLET INFORMATION AT NORTHWEST END OF PARCEL. AFFECTS SHEET THREE ONLY.
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## Appendix C- Arizona Game & Fish Environmental Online Review Tool 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:**

Grier Substation

**Project Description:**

Re-zoning and substation

**Project Type:**

Energy Storage/Production/Transfer, Energy Transfer, substation

**Contact Person:**

Gerald Berthelette

**Organization:**

Sonoran Land Resources

**On Behalf Of:**

OTHER

**Project ID:**

HGIS-20428

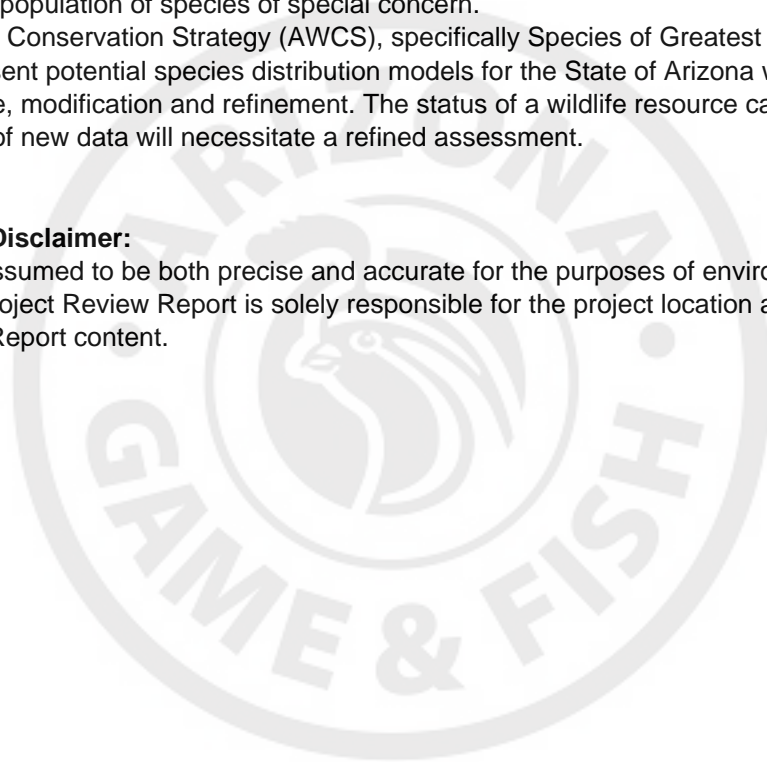
*Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.*

**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. Arizona Wildlife Conservation Strategy (AWCS), specifically Species of Greatest Conservation Need (SGCN), 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:**

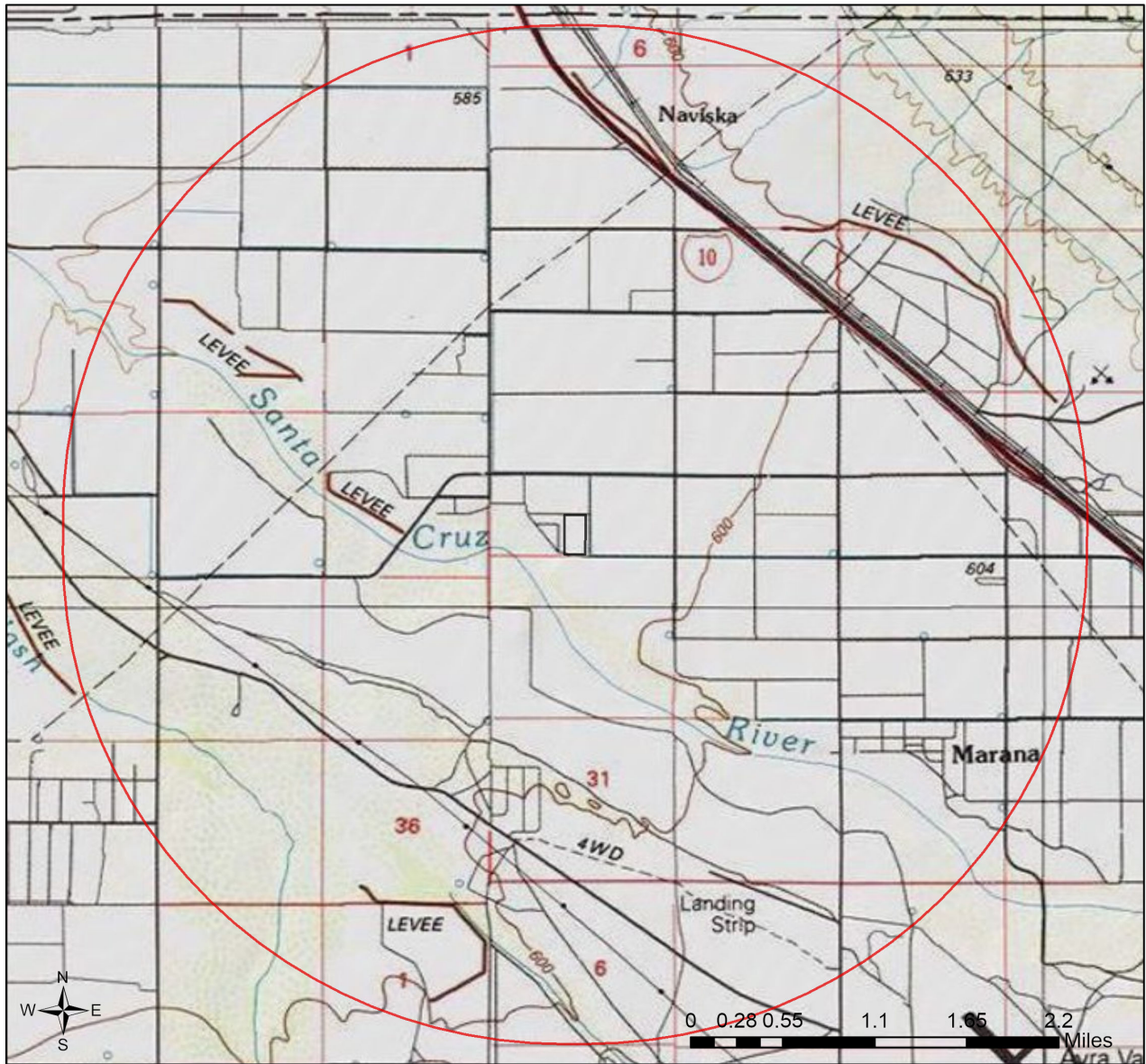
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.



**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](mailto: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

## Grier Substation USA Topo Basemap With Locator Map



- Buffered Project Boundary
- Project Boundary

Project Size (acres): 19.33  
 Lat/Long (DD): 32.4550 / -111.2609  
 County(s): Pima  
 AGFD Region(s): Tucson  
 Township/Range(s): T11S, R11E  
 USGS Quad(s): WEST OF MARANA

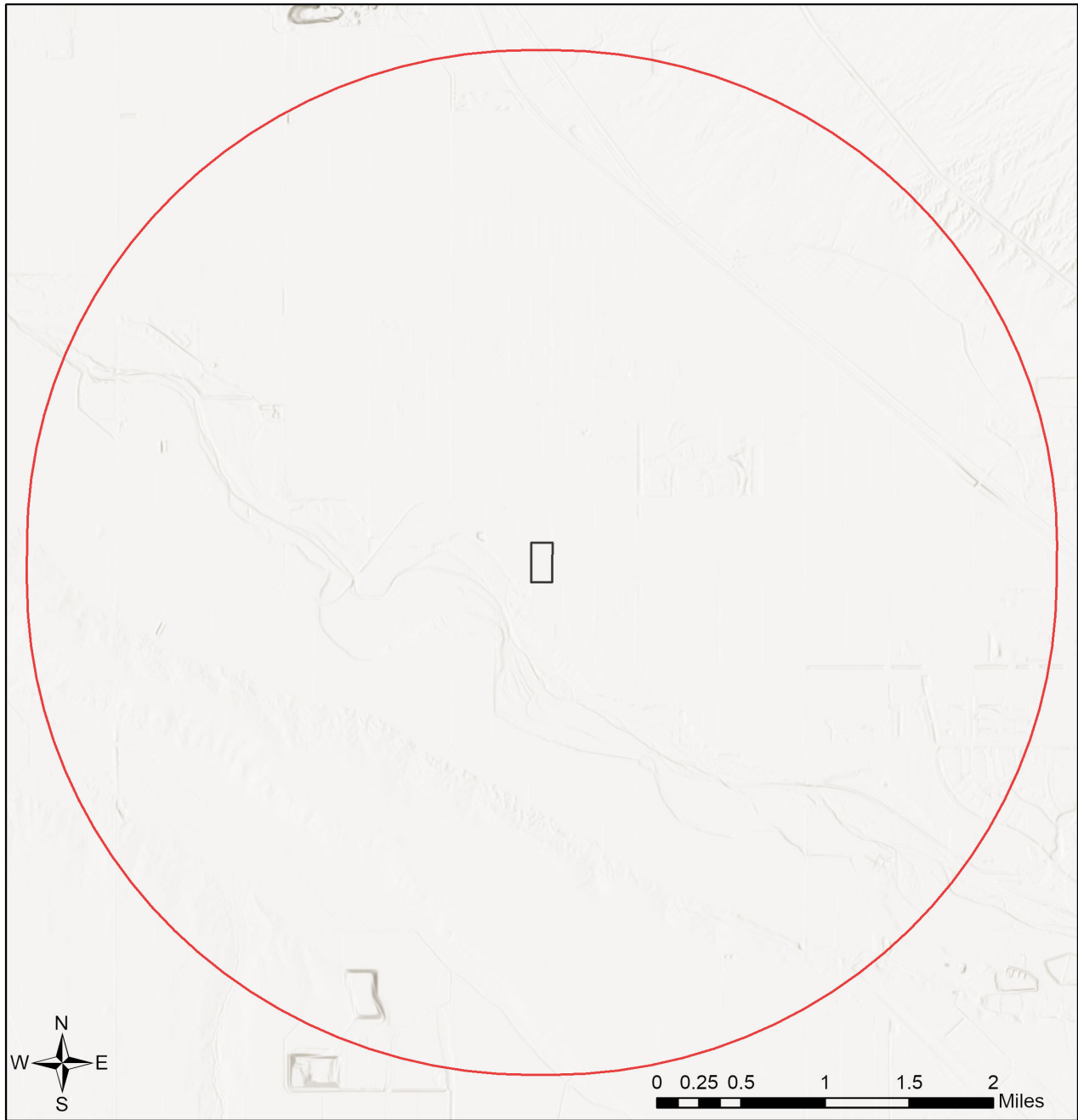
Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community







# Grier Substation

## Web Map As Submitted By User



-  Buffered Project Boundary
-  Project Boundary

Project Size (acres): 19.33  
Lat/Long (DD): 32.4550 / -111.2609  
County(s): Pima  
AGFD Region(s): Tucson  
Township/Range(s): T11S, R11E  
USGS Quad(s): WEST OF MARANA

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



## Grier Substation

### Township/Ranges and Land Ownership



- |  |   |
|--|---|
| <span style="border: 2px solid red; display: inline-block; width: 15px; height: 10px;"></span> Buffered Project Boundary | <span style="background-color: purple; display: inline-block; width: 15px; height: 10px;"></span> National Park/Mon.      |
| <span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Project Boundary        | Private   |
| <span style="background-color: red; display: inline-block; width: 15px; height: 10px;"></span> AZ Game & Fish Dept.      | <span style="background-color: brown; display: inline-block; width: 15px; height: 10px;"></span> State & Regional Parks   |
| <span style="background-color: yellow; display: inline-block; width: 15px; height: 10px;"></span> BLM                    | <span style="background-color: lightblue; display: inline-block; width: 15px; height: 10px;"></span> State Trust          |
| <span style="background-color: tan; display: inline-block; width: 15px; height: 10px;"></span> BOR                       | <span style="background-color: lightgreen; display: inline-block; width: 15px; height: 10px;"></span> US Forest Service   |
| <span style="background-color: orange; display: inline-block; width: 15px; height: 10px;"></span> Indian Res.            | <span style="background-color: darkgreen; display: inline-block; width: 15px; height: 10px;"></span> Wildlife Area/Refuge |
| <span style="background-color: pink; display: inline-block; width: 15px; height: 10px;"></span> Military                 | <span style="border: 1px solid grey; display: inline-block; width: 15px; height: 10px;"></span> Township/Ranges           |
| <span style="background-color: brightgreen; display: inline-block; width: 15px; height: 10px;"></span> Mixed/Other       |   |

Project Size (acres): 19.33  
 Lat/Long (DD): 32.4550 / -111.2609  
 County(s): Pima  
 AGFD Region(s): Tucson  
 Township/Range(s): T11S, R11E  
 USGS Quad(s): WEST OF MARANA

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

**Special Status Species Documented within 3 Miles of Project Vicinity**

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Agelaius phoeniceus	Red-winged Blackbird					2
Amphispiza bilineata	Black-throated Sparrow					2
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		2
Auriparus flaviceps	Verdin					2
Bat Colony						
Buteo swainsoni	Swainson's Hawk					2
Calamospiza melanocorys	Lark Bunting					2
Calypte costae	Costa's Hummingbird					2
Campylorhynchus brunneicapillus	Cactus Wren					2
Cardinalis sinuatus	Pyrrhuloxia					2
Catharus guttatus	Hermit Thrush					2
Charadrius vociferus	Killdeer					2
Chilomeniscus stramineus	Variable Sandsnake					2
Circus hudsonius	Northern Harrier					2
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S	S		1
Columbina inca	Inca Dove					2
Contopus sordidulus	Western Wood-Pewee					2
Corvus cryptoleucus	Chihuahuan Raven					2
Cyananthus latirostris	Broad-billed Hummingbird		S			2
Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S		1
Empidonax wrightii	Gray Flycatcher					2
Eremophila alpestris	Horned Lark					2
Euphagus cyanocephalus	Brewer's Blackbird					2
Falco mexicanus	Prairie Falcon					2
Falco peregrinus anatum	American Peregrine Falcon	SC	S	S		1
Falco sparverius	American Kestrel					2
Geothlypis tolmiei	MacGillivray's Warbler					2
Heloderma suspectum	Gila Monster					1
Icterus bullockii	Bullock's Oriole					2
Icterus cucullatus	Hooded Oriole					2
Incilius alvarius	Sonoran Desert Toad					2
Lanius ludovicianus	Loggerhead Shrike	SC				2
Melanerpes uropygialis	Gila Woodpecker					2
Melospiza lincolni	Lincoln's Sparrow					2
Melospiza aberti	Abert's Towhee		S			2
Micruroides euryxanthus	Sonoran Coralsnake					2
Myotis velifer	Cave Myotis	SC		S		2
Passerculus sandwichensis	Savannah Sparrow					2
Phrynosoma solare	Regal Horned Lizard					2

**Special Status Species Documented within 3 Miles of Project Vicinity**

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Poocetes gramineus	Vesper Sparrow					2
Selasphorus platycercus	Broad-tailed Hummingbird					2
Setophaga nigrescens	Black-throated Gray Warbler					2
Spizella breweri	Brewer's Sparrow					2
Tadarida brasiliensis	Brazilian Free-tailed Bat					2
Toxostoma bendirei	Bendire's Thrasher					2

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
Coyote - Ironwood - Tucson Linkage Design	Wildlife Connectivity Design					
Riparian Area	Riparian Area					
Santa Cruz River	Pima County Wildlife Movement Area - Riparian/Wash					

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 perpallidus	Western Grasshopper Sparrow					
Anthus spragueii	Sprague's Pipit	SC				2
Aquila chrysaetos	Golden Eagle			S		2
Artemisiospiza nevadensis	Sagebrush Sparrow					
Asio otus	Long-eared Owl					2
Athene cucularia hypugaea	Western Burrowing Owl	SC	S	S		2
Auriparus flaviceps	Verdin					2
Botaurus lentiginosus	American Bittern					2
Buteo regalis	Ferruginous Hawk	SC		S		2
Buteo swainsoni	Swainson's Hawk					2
Calcarius ornatus	Chestnut-collared Longspur					2
Calypte costae	Costa's Hummingbird					2
Campylorhynchus brunneicapillus	Cactus Wren					2
Catharus ustulatus	Swainson's Thrush					2
Charadrius montanus	Mountain Plover	SC				2
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)					
Colaptes chrysoides	Gilded Flicker			S		2

**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
<i>Columbina inca</i>	Inca Dove					2
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1
<i>Cyananthus latirostris</i>	Broad-billed Hummingbird		S			2
<i>Dendrocygna autumnalis</i>	Black-bellied Whistling-Duck					2
<i>Empidonax wrightii</i>	Gray Flycatcher					2
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat					
<i>Falco mexicanus</i>	Prairie Falcon					2
<i>Falco peregrinus anatum</i>	American Peregrine Falcon					
<i>Falco sparverius</i>	American Kestrel					2
<i>Glaucidium brasilianum cactorum</i>	Cactus Ferruginous Pygmy-owl					
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1
<i>Heloderma suspectum</i>	Gila Monster					1
<i>Incilius alvarius</i>	Sonoran Desert Toad					2
<i>Lanius ludovicianus</i>	Loggerhead Shrike	SC				2
<i>Lasiurus blossevillii</i>	Western Red Bat		S			2
<i>Lasiurus cinereus</i>	Hoary Bat					2
<i>Lasiurus xanthinus</i>	Western Yellow Bat		S			2
<i>Lepus alleni</i>	Antelope Jackrabbit					2
<i>Lithobates yavapaiensis</i>	Lowland Leopard Frog	SC	S	S		1
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		2
<i>Megascops kennicottii</i>	Western Screech-owl					
<i>Melanerpes uropygialis</i>	Gila Woodpecker					2
<i>Melospiza lincolni</i>	Lincoln's Sparrow					2
<i>Melospiza aberti</i>	Abert's Towhee		S			2
<i>Micrathene whitneyi</i>	Elf Owl					
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					2
<i>Myotis velifer</i>	Cave Myotis	SC		S		2
<i>Myotis yumanensis</i>	Yuma Myotis	SC				2
<i>Nyctinomops femorosaccus</i>	Pocketed Free-tailed Bat					2
<i>Nyctinomops macrotis</i>	Big Free-tailed Bat	SC				2
<i>Parabuteo unicinctus</i>	Harris's Hawk					2
<i>Passerculus sandwichensis</i>	Savannah Sparrow					2
<i>Peucaea carpalis</i>	Rufous-winged Sparrow					2
<i>Phrynosoma solare</i>	Regal Horned Lizard					2
<i>Phyllorhynchus browni</i>	Saddled Leaf-nosed Snake					2
<i>Poocetes gramineus</i>	Vesper Sparrow					2
<i>Progne subis hesperia</i>	Desert Purple Martin					
<i>Spizella breweri</i>	Brewer's Sparrow					2
<i>Tadarida brasiliensis</i>	Brazilian Free-tailed Bat					

**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
Toxostoma bendirei	Bendire's Thrasher					2
Toxostoma lecontei	LeConte's Thrasher			S		2

**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					
Pecari tajacu	Javelina					
Puma concolor	Mountain Lion					
Zenaida asiatica	White-winged Dove					
Zenaida macroura	Mourning Dove					

**Project Type: Energy Storage/Production/Transfer, Energy Transfer, substation**

**Project Type Recommendations:**

Fence recommendations will be dependent upon the goals of the fence project and the wildlife species expected to be impacted by the project. General guidelines for ensuring wildlife-friendly fences include: barbless wire on the top and bottom with the maximum fence height 42", minimum height for bottom 16". Modifications to this design may be considered for fencing anticipated to be routinely encountered by elk, bighorn sheep or pronghorn (e.g., Pronghorn fencing would require 18" minimum height on the bottom). Please refer to the Department's Fencing Guidelines located on Wildlife Friendly Guidelines page, which is part of the Wildlife Planning button at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/>.

Consider impacts of outdoor lighting on wildlife and develop measures or alternatives that can be taken to increase human safety while minimizing potential impacts to wildlife. Conduct wildlife surveys to determine species within project area, and evaluate proposed activities based on species biology and natural history to determine if artificial lighting may disrupt behavior patterns or habitat use. Use only the minimum amount of light needed for safety. Narrow spectrum bulbs should be used as often as possible to lower the range of species affected by lighting. All lighting should be shielded, canted, or cut to ensure that light reaches only areas needing illumination.

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.

Follow manufacturer's recommended application guidelines for all chemical treatments. The U.S. Fish and Wildlife Service, Integrated Pest Management Group has a reference document that serves as their pesticide recommendations for protecting wildlife and fisheries resources, titled "Reducing Risks to Pollinators from Pest Control", [https://www.fws.gov/sites/default/files/documents/Reducing\\_Risks\\_to\\_Pollinators\\_from\\_Pest\\_Control\\_factsheet.pdf](https://www.fws.gov/sites/default/files/documents/Reducing_Risks_to_Pollinators_from_Pest_Control_factsheet.pdf). The Department recommends that direct or indirect impacts to sensitive species and their forage base from the application of chemical pesticides or herbicides be considered carefully.

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/>).

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.

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:**

Analysis indicates that your project is located in the vicinity of an identified **wildlife habitat connectivity feature**. The **County-level Stakeholder Assessments** contain five categories of data (Barrier/Development, Wildlife Crossing Area, Wildlife Movement Area- Diffuse, Wildlife movement Area- Landscape, Wildlife Movement Area- Riparian/Washes) that provide a context of select anthropogenic barriers, and potential connectivity. 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://www.azgfd.com/wildlife/planning/habitatconnectivity/identifying-corridors/>.

Please contact the Project Evaluation Program ([pep@azgfd.gov](mailto:pep@azgfd.gov)) for specific project recommendations.

Analysis indicates that your project is located in the vicinity of an identified **wildlife habitat connectivity feature**. The **Detailed Wildlife Connectivity Assessments** represent ideal connections within or between intact blocks or core habitats. The blocks are currently disconnected or isolated and the linkages should be examined for improving permeability, or are currently intact and in need of preservation and/or enhancement. 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://www.azgfd.com/wildlife/planning/habitatconnectivity/identifying-corridors/>

Please contact the Project Evaluation Program ([pep@azgfd.gov](mailto:pep@azgfd.gov)) for specific project recommendations.



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:

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This review has identified **riparian areas** within the vicinity of your project. During the planning stage of your project, avoid, minimize, or mitigate any potential impacts to riparian areas identified in this report. Riparian areas play an important role in maintaining the functional integrity of the landscape, primarily by acting as natural drainages that convey water through an area, thereby reducing flood events. In addition, riparian areas provide important movement corridors and habitat for fish and wildlife. Riparian areas are channels that contain water year-round or at least part of the year. Riparian areas also include those channels which are dry most of the year, but may contain or convey water following rain events. All types of riparian areas offer vital habitats, resources, and movement corridors for wildlife. The Pinal County Comprehensive Plan (i.e. policies 6.1.2.1 and 7.1.2.4), Open Space and Trails Master Plan, Drainage Ordinance, and Drainage Design Manual all identify riparian area considerations, guidance, and policies. Guidelines to avoid, minimize, or mitigate impacts to riparian habitat can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/>. Based on the project type entered, further consultation with the Arizona Game and Fish Department and Pinal County may be warranted.

HDMS records indicate that **Western Burrowing Owls** have been documented within the vicinity of your project area. Please review the western burrowing owl resource page at: <https://www.azgfd.com/wildlife/speciesofgreatestconservneed/burrowingowlmanagement/>.

## Appendix D- US Fish & Wildlife Service Correspondence

**From:** [Richardson, Scott](#)  
**To:** [Gerald Berthelette](#)  
**Subject:** Re: [EXTERNAL] FW: Parcel I'm calling about with potential CFPO habitat  
**Date:** Monday, January 22, 2024 3:29:01 PM

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Hey Gerry,

Thanks for the reminder on this issue. Things tend to get buried in the black hole that is my email box. Thanks again for bringing me up to speed on this project. Our discussion helped clarify things for me with regard to CFPO. We are not aware of any CFPO currently in the vicinity of the proposed project. And, while the project is within dispersal distance of known CFPO nesting territories, the project area does not support the appropriate habitat elements to 1) provide habitat connectivity such that dispersing CFPO would likely be able to disperse to occupy the project area and 2) provide the necessary elements to support establishment of a CFPO home range or nesting. Based on our knowledge of areas currently occupied by CFPO and due to lack of appropriate habitat elements, it is unlikely that any CFPO currently occupy the project area or are able to disperse into the area to establish a nesting territory. We do not recommend any CFPO surveys in the project area due to lack of suitable habitat. I hope this is helpful. Please do not hesitate to contact me if we can be of any further assistance. Thank you for your consideration of potential impacts from this project on CFPO.

Sincerely,

Scott Richardson  
U.S. Fish and Wildlife Service  
Tucson Suboffice  
(520) 979-7896

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**From:** Gerald Berthelette <[gberthelette@sonoranlandresources.com](mailto:gberthelette@sonoranlandresources.com)>  
**Sent:** Monday, January 22, 2024 10:43 AM  
**To:** Richardson, Scott <[scott\\_richardson@fws.gov](mailto:scott_richardson@fws.gov)>  
**Subject:** [EXTERNAL] FW: Parcel I'm calling about with potential CFPO habitat

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Morning, Scott!

Again, it was great to catch up with you. I'm sure you have plenty on your plate, but I'm wondering if you've gotten a chance to look at my last email regarding CFPO habitat and burrowing owl potential for that site in Marana. You had mentioned providing some official USFWS language for me, indicating that the site probably wasn't a concern for CFPO, but I haven't seen anything come

through yet.

Let me know if I can get you anything further. If you want to re-hash this over the phone, feel free to give me a call today or any day this week you have some time available.

Thanks! Look forward to hearing from you.

Cheers,  
Gerry

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**From:** Gerald Berthelette  
**Sent:** Thursday, January 11, 2024 11:14 AM  
**To:** scott\_richardson@fws.gov  
**Subject:** Parcel I'm calling about with potential CFPO habitat

Hi Scott,

I'll call you in a minute here, we are just about to go on break.

Check out these photos attached...

The parcel is just an ag field right now. There are some decrepit culverts on site, some short ones that run N-S and E-W in the southeast corner of the parcel, and then a full culvert running N-S along the eastern boundary of the parcel. Not much in the way of habitat, here, but there are a few trees in the SE corner of the parcel that could be of some concern.

Gerry Berthelette, Environmental and Land Use Planner II  
[8750 E Speedway Blvd. Suite 230](#)  
[Tucson, AZ 85710](#)  
(520) 989-1096



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