

# RECLAMATION

*Managing Water in the West*

## **Draft Environmental Assessment**

# **Casa Blanca Canal Lining and Rehabilitation**

**Pima-Maricopa Irrigation Project  
Gila River Indian Community  
Pinal County, Arizona**



**U.S. Department of the Interior  
Bureau of Reclamation  
Phoenix Area Office  
Phoenix, Arizona**

**January 2013**

## DISCLAIMER

Pursuant to the requirements of 40 CFR Section 1506.5, EcoPlan Associates, Inc., declares under oath that it has no interest, financial or otherwise, in the outcome of this project.



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January 24, 2013

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Date

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**Prepared for:**

**U.S. Department of the Interior  
Bureau of Reclamation  
Phoenix Area Office  
Phoenix, Arizona**

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**January 2013**

## **Mission Statements**

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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## ACRONYMS AND ABBREVIATIONS

ADEQ	Arizona Department of Environmental Quality
AGFD	Arizona Game and Fish Department
APE	area of potential effects
ASM	Arizona State Museum
BIA	Bureau of Indian Affairs
CAA	Clean Air Act
CAP	Central Arizona Project
CBC	concrete box culvert
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
Community	Gila River Indian Community
Corps	U.S. Army Corps of Engineers
CT	census tract
CWA	Clean Water Act
dBA	decibels
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
FPPA	Farmland Protection Policy Act
ft	feet
FWCA	Fish and Wildlife Coordination Act
GHG	greenhouse gas
GR	Gila River
I-10	Interstate 10
ITA	Indian Trust Assets
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NO <sub>2</sub>	nitrogen dioxide
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PEIS	Programmatic Environmental Impact Statement
PIE	permanent irrigation easement
Pima Agency	agency headquarters in Sacaton constructed by the BIA
PM <sub>2.5</sub>	particulate matter less than 2.5 microns in diameter
PM <sub>10</sub>	particulate matter less than 10 but 2.5 or more microns in diameter
P-MIP	Pima-Maricopa Irrigation Project
Reclamation	U.S. Bureau of Reclamation
Reservation	Gila River Indian Reservation

SCIP	San Carlos Irrigation Project
SHPO	State Historic Preservation Office
SO <sub>2</sub>	sulfur dioxide
TCE	temporary construction easement
THPO	Tribal Historic Preservation Office
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank

## **1.0 PURPOSE AND NEED**

---

### **1.1 INTRODUCTION**

The Gila River Indian Community (Community)/Pima–Maricopa Irrigation Project (P-MIP) is constructing an extensive irrigation system to serve farmland within the Community. The existing Casa Blanca Canal, which is owned by the Bureau of Indian Affairs (BIA) San Carlos Irrigation Project (SCIP), is one of the major irrigation delivery canals of this system. The canal, located in Districts 3 and 5 (Figure 1), branches off from the Pima Lateral along Olberg Road, less than 1 mile north of State Route 87, and traverses west for approximately 16 miles. The Community/P-MIP is proposing to line and rehabilitate the Casa Blanca Canal, which is the subject of this Environmental Assessment (EA).

This Draft EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500–1508), and Department of the Interior NEPA regulations 43 CFR 46). The U.S. Bureau of Reclamation (Reclamation) is the lead federal agency responsible for the preparation of this Draft EA. The Community/P-MIP, the BIA, and the City of Maricopa are cooperating agencies in the preparation of this document.

### **1.2 BACKGROUND**

Congress passed the Colorado River Basin Project Act (Public Law 90-537, as amended) on September 30, 1968. The act authorized the Secretary of the Interior, through Reclamation, to construct the Central Arizona Project (CAP), a water resource development and management project with the primary purpose of furnishing Colorado River water for irrigation, and municipal and industrial uses in central and southern Arizona. Section 403 of the act directs Reclamation to pay the costs associated with construction of CAP water delivery facilities on the Gila River Indian Reservation (Reservation).

By the 1990s, the Community determined that the maximum benefit of its CAP water entitlement could be obtained by integrating CAP water resources into a common-use irrigation system. When fully constructed, this common-use irrigation delivery system, known as P-MIP, will be capable of conveying irrigation water from all available sources to all lands identified for agricultural development in the Community Master Plan for Land and Water Use (Franzoy Corey Engineering, Inc. 1985). On May 15, 2006, the Secretary of the Interior entered into an amended water service contract with the Community for the annual delivery of 311,800 acre-feet of CAP water.

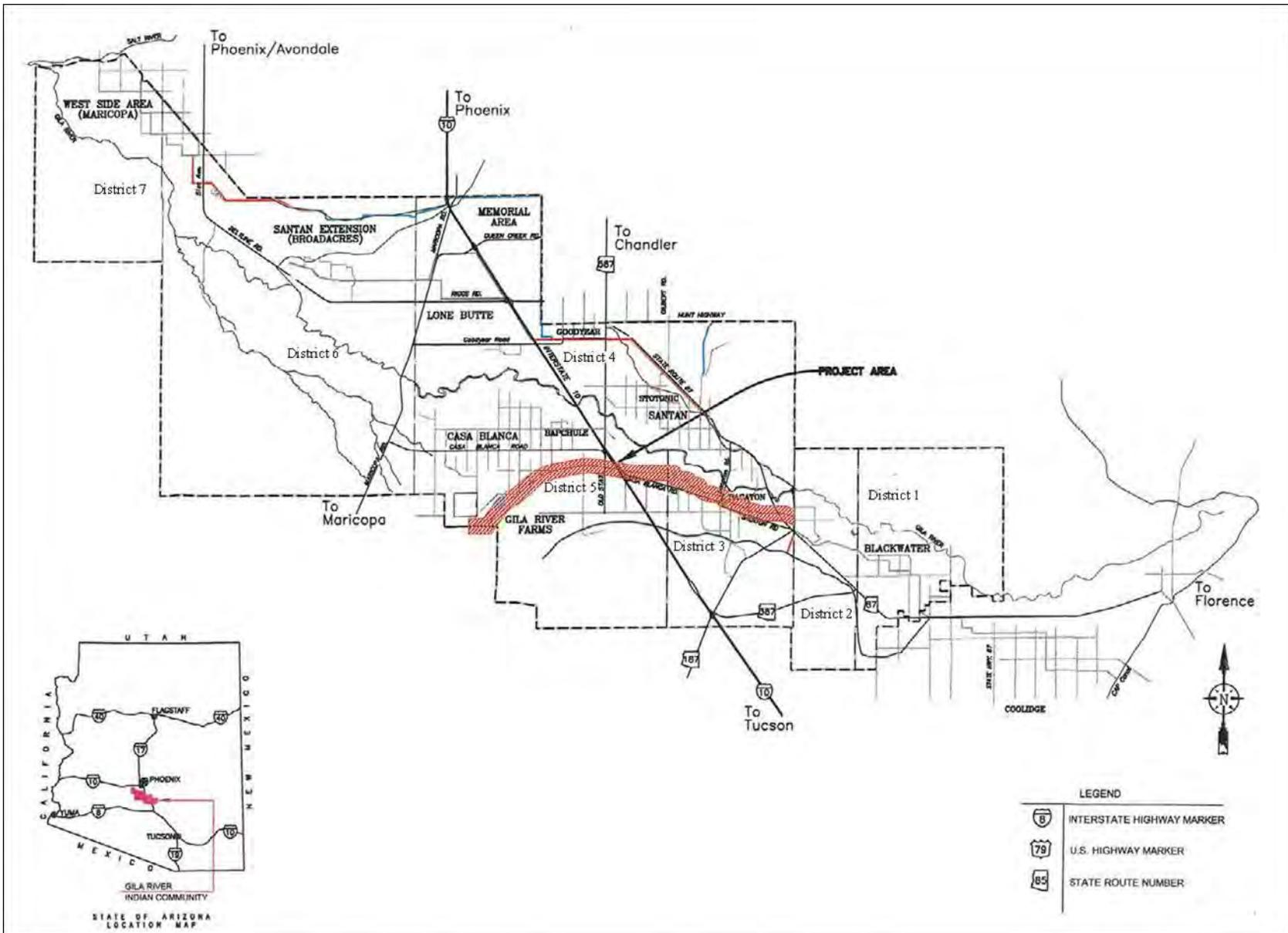


Figure 1. Project location and vicinity

### **1.3 PURPOSE AND NEED FOR ACTION**

The purpose of the proposed project is to improve delivery service by enhancing the efficiency of the irrigation system and by providing more flexibility in its operations to respond to changing needs and conditions. More specifically, the purpose of the project is to conserve water, reduce operation and maintenance costs, and improve irrigation water delivery service to Community farmland.

To address this purpose, the proposed project involves rehabilitation and modernization of the existing Casa Blanca Canal. Primary activities of the rehabilitation would be lining the canal with concrete to reduce seepage, modifying the canal prism (cross-sections and profiles), straightening segments of the alignment to increase system efficiency, and incorporating modernized measurement and control amenities (e.g., check structures, siphons, control gates, turnout structures) to improve delivery service.

The project would include improvements to some wash and roadway crossings within the canal right-of-way. During construction, the proposed project would use existing and new diversion channels to bypass flows around the construction zone within the existing and proposed right-of-way.

### **1.4 PROJECT LOCATION**

The action area for the project includes the existing Casa Blanca Canal, the site proposed for the diversion channels, and other sites affected by construction activities, including staging, stockpiling, and construction access. The existing Casa Blanca Canal is in Township 4 South, Range 5 East, Sections 1–4 and 9–12, and Township 4 South, Range 6 East, Sections 7–9, 13–17, 23, and 24, on the Reservation. A portion of the canal traverses the community of Sacaton (Figure 1).

### **1.5 DECISIONS TO BE MADE**

The responsible official for this Draft EA is the area manager of Reclamation’s Phoenix Area Office. This official must decide whether to implement the proposed action or implement an alternative action that would meet the purpose and need. If the proposed action is implemented, the Community/P-MIP would undertake the lining and rehabilitation of the Casa Blanca Canal and associated land acquisition with funds provided by Reclamation.

### **1.6 PRIOR COMPLIANCE WITH NEPA**

This Draft EA tiers from the Programmatic Environmental Impact Statement (PEIS) for the P-MIP completed in 1997. The PEIS addressed Community plans to construct and operate a common-use irrigation system and place up to 146,330 acres of land into agricultural production. The PEIS allowed for a programmatic-level evaluation of the P-MIP at full implementation. Because adequate details had not yet been determined when the PEIS was prepared, the PEIS included commitments to prepare subsequent NEPA documentation for project components, including those associated with the Casa Blanca Canal lining and rehabilitation.

## **2.0 DESCRIPTION OF ALTERNATIVES**

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This chapter describes the alternatives considered for the project—the no action alternative, the proposed action, and other alternatives considered but eliminated.

The existing Casa Blanca Canal (also known as Canal 11) serves as the main conveyance canal between the Pima Lateral and the western Community border, a distance of approximately 16 miles. Canal 12 serves as a lateral for the Casa Blanca Canal for irrigation delivery. Canal 12 originates east of the community of Sacaton and parallels Canal 11 for approximately 4.7 miles to the west before it merges back into Canal 11 (Figure 2).

Throughout this document, the existing Casa Blanca Canal is referred to as Canal 11, and the proposed irrigation conveyance canal is referred to as the new Casa Blanca Canal.

### **2.1 NO ACTION**

Section 102(2)(E) of NEPA requires that “no action” be considered an alternative in an environmental review whenever there are unresolved conflicts about the proposed action with respect to alternative uses of available resources. A description of “no action” is also customarily used to provide the baseline for comparison of environmental effects of the action alternatives against conditions that are representative of the status quo.

For the purpose of this analysis, the no action alternative assumes that the existing conveyance canal would not be rehabilitated, lined with concrete, or otherwise modernized. P-MIP would continue to use the existing unlined Canal 11 to deliver irrigation water. Water losses due to seepage would not be reduced, and operational efficiencies and economies of realignment/straightening of the conveyance system would not be realized. Repair and maintenance activities that are currently implemented would continue into the foreseeable future.

### **2.2 PROPOSED ACTION**

The proposed action involves the rehabilitation and modernization of the existing water delivery system, which currently serves 6,518 acres in the Casa Blanca area in Districts 3 and 5. The proposed action would maximize the use of the Canal 11 and Canal 12 alignments for the new main conveyance canal. Construction would occur within the existing permanent irrigation easement (PIE) along both canals. In addition, portions of the realignment would require some additional PIE and potentially some temporary construction easements (TCEs), as shown in Appendix A. Primary activities of the rehabilitation would be lining the new canal with concrete to reduce seepage, modifying the canal prism, straightening segments of the alignment, and installing modernized measurement and control devices. The proposed action would be able to serve approximately 30,699 acres of farmland. A rehabilitated diversion drain would be constructed to provide flood control and drainage protection. Throughout the length of the project, a minimum 15-foot-wide operations and maintenance road would be maintained or reconstructed on both sides of the new Casa Blanca Canal (Figure 3). The proposed action is described in more detail in the following sections.

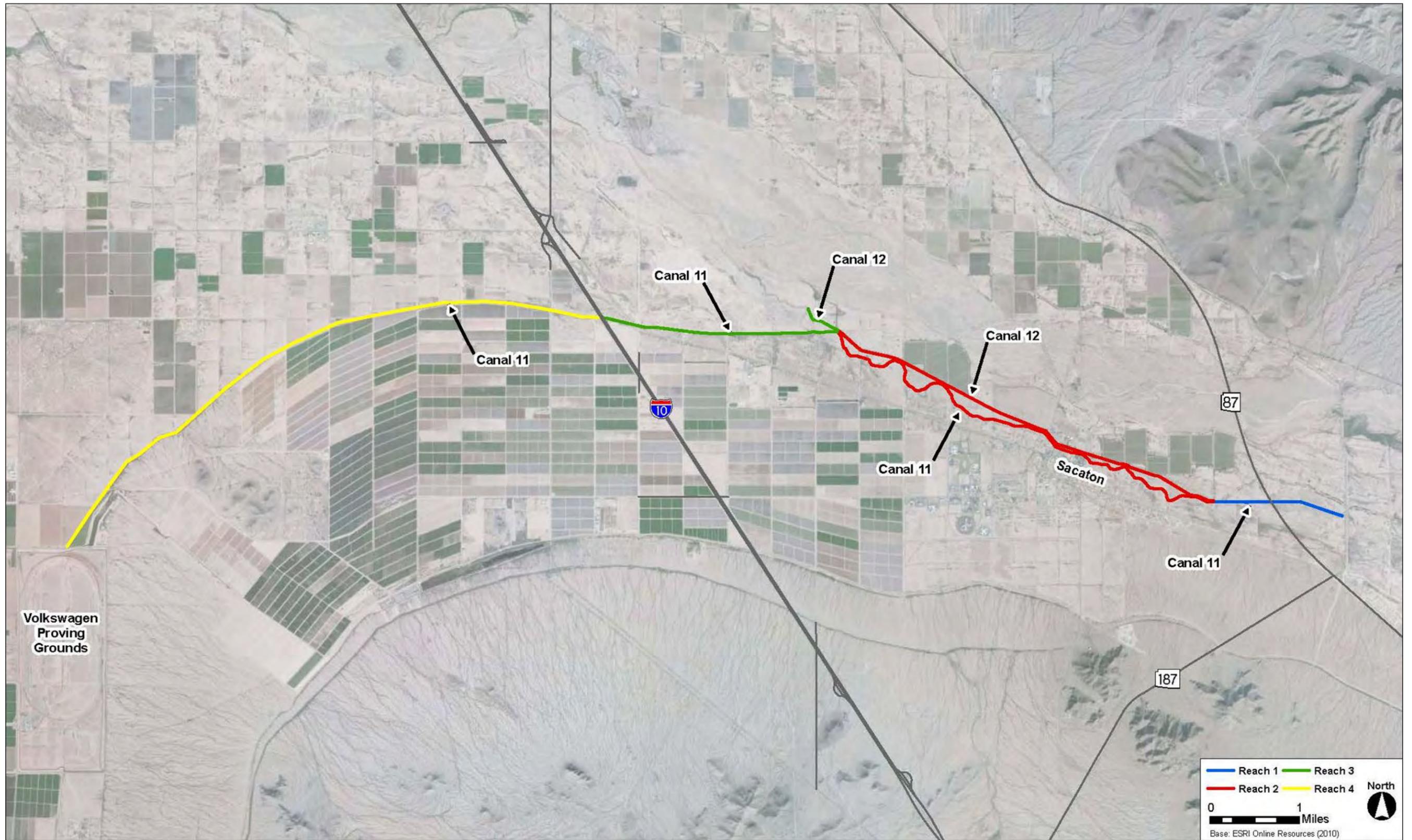


Figure 2. Existing Canals 11 and 12 and reaches

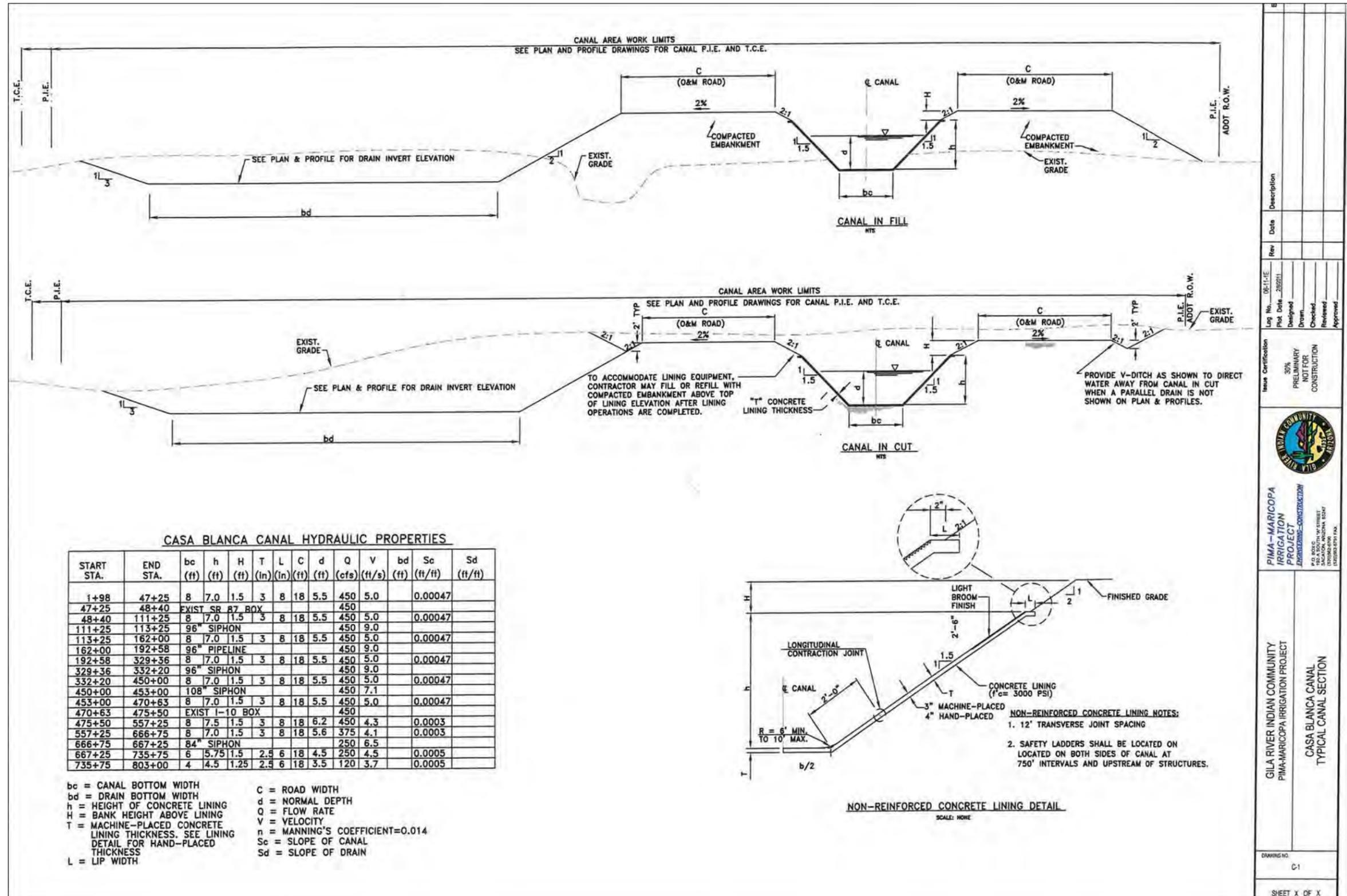


Figure 3. Casa Blanca Canal profile

### **2.2.1 Reach 1, Headworks to Existing Canal 12 Turnout (1.5 miles)**

Beginning at the existing headworks, the new Casa Blanca Canal would be constructed along the north edge of the existing PIE for a distance of approximately 1.5 miles (Reach 1). Figure 3 depicts the alignment of the new Casa Blanca Canal and the centerline of existing Canal 11. The new canal would be constructed with a more efficient profile than the existing canal and would be lined with concrete to minimize seepage losses.

A diversion drain would be constructed parallel to and south of the new canal to intercept upslope storm water runoff. The diversion drain would have a minimum bottom width of 4 feet. The material excavated for the construction of the diversion drain would be used for the new canal embankment. The drain may also be used as a temporary bypass canal to deliver irrigation water during construction of the new Casa Blanca Canal.

An existing State Route 87 box culvert would be maintained during the construction period and incorporated into the new Casa Blanca Canal. A check-drop structure would be constructed just upstream of the culvert.

The segment of the new Casa Blanca Canal in Reach 1 would be designed to convey 450 cubic feet per second (cfs) and would be lined with 3.0-inch-thick unreinforced concrete. The profile would have 1.5-foot horizontal to 1-foot vertical (1.5:1) side slopes, a depth of 7 feet, and a bottom width of 8 feet.

### **2.2.2 Reach 2, Existing Canal 12 Alignment, River Road to Siphon (4.7 miles)**

The majority of Reach 2 traverses the community of Sacaton. Reach 2 extends from the existing Canal 12 alignment near River Road to the Canal 11 siphon, a distance of 4.7 miles. Within Reach 2, Canal 12 generally parallels Canal 11. In this reach, the new Casa Blanca Canal would follow the existing Canal 12 alignment. Canal 11 would be used to continue water deliveries during construction and then, following construction, Canal 11 would be converted to the diversion drain to intercept and convey storm water runoff. The new canal would be designed to convey 450 cfs and would be lined with 3.0-inch-thick unreinforced concrete. The profile would have 1.5-foot horizontal to 1-foot vertical (1.5:1) side slopes, a depth of 7 feet, and a bottom width of 8 feet.

Embankment fill would be borrowed primarily from existing spoil piles in the easements for Canals 11 and 12. Where the spoil is unsuitable, fill material would be generated from borrow strips that would then be backfilled with spoil from the embankments. If spoil quantities are inadequate, the project drain (Canal 11) would be enlarged to generate additional embankment fill.

Some segments of the new Casa Blanca Canal would be piped underground; the majority of the piping occurs in Reach 2. The Reach 2 piping locations include:

- Two 50-foot-long, 108-inch-diameter pipe road siphons,
- 200-foot-long, 108-inch-diameter pipe road and drain siphon at Palm Road,
- 275-foot-long, 96-inch-diameter pipe crossing of the diversion drain, and
- 3,000-foot-long, 96-inch-diameter pipeline through the Sacaton area.

### 2.2.3 Reach 3, Siphon Outlet at Existing Canal 11 to Interstate 10 (2.6 miles)

Reach 3 occurs between the existing Canal 11/Canal 12 siphon and the Interstate 10 (I-10) Arizona Department of Transportation right-of-way, a distance of 2.6 miles. For this reach, the Casa Blanca Canal and diversion drain would follow the Canal 11 alignment. Excavation of the diversion drain would provide fill material for the new Casa Blanca Canal embankment. The diversion drain can also be used as a temporary bypass channel during construction of the new canal.

The segment of the new Casa Blanca Canal in Reach 3 would be constructed to a design capacity of 450 cfs and would be lined with 3.0-inch-thick unreinforced concrete. The profile would have 1.5-foot horizontal to 1-foot vertical (1.5:1) side slopes, a depth of 7 feet, and a bottom width of 8 feet. A 108-inch-diameter pipe siphon would be constructed at the Casa Blanca Road crossing.

Four existing wells in Reach 3 augment the irrigation water supply in this area. These four wells would be protected in place. Because of the close proximity of the wells to the canal, some modification to the well sites would be required. These modifications may include retaining walls and new well outlet connections to the canal. The right bank operations and maintenance road would be routed to the north around the wells.

Irrigation water would flow under I-10 via the existing 10-foot-wide by 7.5-foot-high concrete box culvert (CBC). The diversion drain would flow under I-10 via a CBC constructed within the existing 16-foot-wide by 14-foot-high underpass just south of the existing Canal 11 alignment.

### 2.2.4 Reach 4, Existing Interstate 10 Box Outlet to the Tail End Reservoir (7 miles)

Reach 4 is a 7-mile section between the existing I-10 CBC outlet and the existing tail end reservoir just north of Murphy Road at the Community's border. Within this reach, the new Casa Blanca Canal and diversion drain would follow the existing Canal 11 alignment. Re-excavation of the existing unmaintained diversion drain would provide fill material for the new Casa Blanca Canal embankment.

In Reach 4, the canal would be lined with 2.5- or 3.0-inch-thick unreinforced concrete, and the profile would have 1.5-foot horizontal to 1-foot vertical (1.5:1) side slopes. In this reach, the capacity of the new Casa Blanca Canal would be stepped-down in size as it proceeds west, with a variable bottom width. The capacity and preliminary design dimensions for downstream segments would vary, as noted in Table 1.

**Table 1. Reach 4 design dimensions and capacity.**

Segment Length (ft) from East to West	Bottom Width (ft)	Lining Depth (ft)	Capacity (cfs)
8,175	8.0	7.5	450
10,950	8.0	7.0	375
6,850	6.0	5.7	250
6,725	4.0	4.5	120
4,250	3.0	4.5	60

cfs = cubic feet per second, ft = feet

The Casa Blanca Canal would terminate at the existing tail end reservoir just east of Murphy Road (Figure 4). A distribution lateral at the end of the Casa Blanca Canal delivers water to approximately 2,000 acres in Gila River Farms. This lateral can be served from the Casa Blanca Canal or the tail end reservoir.

Flow into the tail end of the system would be based on predicted demand from delivery schedules, with possible adjustments based on actual demands and real-time conditions. The tail end would be operated to balance supply flow in order to fill all irrigation orders while minimizing waste.

### **2.2.5 Additional Project-Related Actions**

The new Casa Blanca Canal would include multiple turnouts to fields and laterals for irrigation water delivery throughout the service area. A number of new check structures would be incorporated into the canal to control the water, facilitate canal operations, and measure flows.

Throughout the project footprint, turnouts would be typical slide gate structures simplified to allow precasting. Lateral turnouts would require single or multiple gate design, depending on capacity. The proposed check structures are planned at various locations along the new Casa Blanca Canal with overshot gates (i.e., overflow adjustable weirs). The concept would be to speed up construction by standardizing the structures as much as possible to allow reusable forms or precasting.

The new Casa Blanca Canal check structures would have three 6-foot-wide bays with 5.5-foot-high gates. As the capacity decreases along the canal, the checks and gates would change to a two-bay structure and then a one-bay structure. The gates would be standardized with 6-foot-wide by 5.5-foot-high overshot gates and would be automated to maintain a set upstream water surface elevation. Siphon structures would be used for road and drain crossings.

With the proposed action, riprap material would be needed to protect power poles in the diversion drain alignment within Reach 4.

Construction would require equipment storage, stockpiling, and the setup of trailers for contractor offices. These areas would be located within the PIEs and TCEs. Construction vehicles and equipment would access the site using existing roads, including Indian Route 86, a tribal-owned road that is unpaved in the study area.

### **2.2.6 Project Construction**

Canals 11 and 12 are dry each year during the standard yearly maintenance dry-up of the SCIP system. Currently, this dry-up is scheduled as two 5-week dry-ups separated by 3 weeks of irrigation delivery (generally the last Monday in October to the first Monday in December and then a 3-week wet-up followed by a secondary dry-up from the Monday after Christmas to the last Monday in January). To allow for continued construction not limited by the standard yearly dry-up periods, existing channels and the diversion drain would be used to bypass flows around the construction zone.



Figure 4. Tail end reservoir

Well water and deliveries through laterals from the Southside Canal would also be used to extend the dry-up period of Canals 11 and 12 for construction purposes. The capacity of existing wells in the new Casa Blanca Canal service area is estimated at 140 cfs. An additional 60 cfs or more can be delivered from the Southside Canal (Canal 7). During the first season dry-up sequence, the bypass channels would be established and the priority in-channel construction would be completed. The second season dry-up sequence would be used to make transitions and to construct structures and closure sections to allow use of reaches of the completed new Casa Blanca Canal.

Based on the work that must be accomplished during the annual dry-up, it is anticipated that two seasons of dry-up, each approximately 10 weeks in duration, would be required. It is anticipated that construction could begin in fall 2014 and continue for 13 to 15 months; however, adjustments would be made to this schedule as needed.

## **2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED**

### **2.3.1 Canal 11 Alternative**

Consideration was given to lining Canal 11 for its entire length in its existing alignment. Though this alternative would meet basic conveyance needs, this alternative was eliminated from consideration because it would not offer adequate flood control or drainage protection, and it would result in a less efficient system.

### **2.3.2 Sacaton Bypass Alternative**

Consideration was given to an alternative that would reroute a segment of the new Casa Blanca Canal to the north around the community of Sacaton. Though this alternative would meet the purpose and need for the project, it was much longer than the other alternatives within the Gila River floodway and was the most expensive alternative. For these reasons, this alternative was eliminated from further consideration.

## **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

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### **3.1 INTRODUCTION**

The “study area” consists of the Canal 11 and Canal 12 service areas as well as the area between Canal 11 and the Southside Canal. The term “project footprint” is used to indicate all land that would be directly affected by the land acquisition, construction, and operation of the proposed project, with the exception of lands currently or potentially irrigated from the Casa Blanca Canal. Each existing PIE along Canal 11 and Canal 12 varies from 100 to 275 feet wide, with an average width of approximately 150 feet (75 feet on each side of the existing canals). The project footprint consists of the existing PIE as well as the proposed 50-foot-wide TCE on each side of the PIE east of I-10 only (Appendix A). However, there are exceptions to this TCE in culturally sensitive areas where the project would work within the existing PIE and no TCE is anticipated west of I-10.

### **3.2 LAND OWNERSHIP, JURISDICTION, AND LAND USE**

#### **3.2.1 Affected Environment**

The proposed project begins approximately 3.2 miles east of the community of Sacaton at Olberg Road and ends 16 miles west at the Community border with the city of Maricopa. Some lands in the study area are owned by the Community as tribal lands; others are owned by private Community members as allotments. Reservation lands encompass 372,929 acres, of which 275,537 acres are tribal lands and 97,392 acres are privately owned by Community members as allotments. Approximately 5,000 individual allotments are on the Reservation. The allotment system was established by the General Allotment Act of 1887, as amended. When executed between 1916 and 1921, the General Allotment Act allotted each tribal member 20 acres of land divided into two noncontiguous 10-acre parcels. The general practice was to locate one parcel within the SCIP and the other parcel elsewhere on the Reservation. Today, due to inheritance, individual allotments are owned by one to hundreds of people. Land not allotted to individuals remains tribal, owned collectively by the Community.

Portions of the realignment would require some additional PIE and TCEs. One common characteristic in allotted and tribal lands is the trust responsibility of the federal government administered by the BIA. All contracts, deeds, or use of these trust resources must follow federal law, regulation, and policy found in the Bureau of Indian Affairs Manual (1984) and other federal regulations that require consent of landowners involved and, where appropriate, the consent and/or concurrence of the tribal government and approval by the BIA.

The acquisition of tribal lands would use the same procedure as for allotted lands. The tribal council would be consulted for consent or rejection. Upon receipt of consent, the BIA would issue the grant of easement after compensation is deposited with the Community and the Finance Department issues a letter of receipt of compensation to the BIA. Compensation for allotted land is paid directly to the BIA for distribution to landowners.

The general character of the study area is rural. Though surrounding lands include large areas of native, undeveloped desert, agriculture is a predominant land use in the study area. Land devoted to agriculture varies from active cultivation to fallow fields. The Casa Blanca service area, totaling 30,650 acres, is primarily allotted land that is currently farmed, previously farmed, and new irrigable land. The 1985 Master Plan Report identified a total development area of 30,699 acres in the Casa Blanca service area. Estella Ranch is an additional area that could be serviced from the new Casa Blanca Canal. This area is west of the service area and includes approximately 6,465 acres in the Master Plan (Franzoy Corey Engineering, Inc. 1985). To date, no decision has been made regarding the conversion of any new irrigable land for agricultural purposes. If a decision is made to convert such land in the future, said lands will be subject to the NEPA process, including cultural surveys.

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, and other agricultural crops. Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. Designation of prime or unique farmland is made by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). Farmland of statewide or local importance is land, in addition to prime and unique farmlands, that is important for the production of food, feed, fiber, forage, and oilseed crops. Designation of this farmland is determined by the appropriate state or local agency.

The Farmland Protection Policy Act (FPPA) (7 CFR 658) governs the definition and identification of farmlands. The FPPA states that the purpose of the act is to minimize the extent to which federal programs “contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses.” As defined by the FPPA, “farmland” is land that is not already in or committed to urban development. The FPPA requires that federal agencies identify proposed actions that would affect any land classified as farmland before federal approval of any activity that would convert farmland into other land uses. The NRCS administers the FPPA as it relates to protection of farmland.

Prime farmland was identified in the study area; however, all soils within the project footprint are classified by NRCS as farmland of unique importance. Unique farmland is land that does not meet the criteria for prime farmland or farmland of statewide importance but is used for the production of specific high economic crops (NRCS 2011).

The project footprint encompasses approximately 109,296 linear feet of channel. Irrigation infrastructure, including water wells, headworks, and other structures associated with agricultural activities, is present within the project footprint.

Commercial and residential structures are in the study area in the portion of Reach 2 that crosses Sacaton (Figure 2). These structures include single-family homes, churches, schools, and various commercial developments. Scattered structures associated with agricultural lands are also present throughout the remainder of the study area. The Volkswagen Proving Grounds are off-Reservation south of the Reach 4 tail end reservoirs (Figure 2).

Various public roads approach or cross the project footprint, including Olberg Road at the beginning of Reach 1; State Route 87; Sacaton Road, which parallels Canal 11 south beginning

in Reach 1 for a distance of approximately 14 miles; Casa Blanca Road, which crosses Canal 11 from south to north in Reach 3; I-10; and Indian Route 86, which parallels Canal 11 for approximately 6 miles in Reach 4.

No national parks, recreation areas, or designated wilderness areas; wildlife refuges; wild and scenic rivers; or other special status lands or waters are in the study area or vicinity.

### 3.2.2 Environmental Consequences

#### *No Action*

Under the no action alternative, there would be no direct impact to ownership, jurisdiction, or land use because no project would be constructed or implemented. It is assumed that there would be no change in existing patterns of land ownership or land use and that current management and operation of P-MIP facilities in the study area would continue.

#### *Proposed Action*

Construction of the proposed action would require some additional PIE and TCE paralleling the existing canals. Small amounts of PIE may be required. In addition, construction would require the acquisition of a 50-foot-wide TCE on each side of the PIE, but only on the eastern portion of Canal 11 and Canal 12 (east of I-10). This acquisition would include approximately 0.1 acre of agricultural land that would be placed back into production after construction.

The PIE requirements for implementation of the proposed action include 497+/- acres, including 252+/- acres of allotted land and 245 +/- acres of tribal land. The TCE requirements include 139+/- acres of allotted land and 101+/- acres of tribal land. Of these totals, 107+/- acres are allotted lands and 44+/- acres are tribal lands, with these lands located on the eastern portion of the project. There are a total of 88 allotments affected by PIE and TCE requirements. Table 2 lists the allotments affected by PIE and TCE requirements with implementation of the proposed action. Appendix A shows the location of PIE and TCE requirements within each of the reaches.

**Table 2. Allotments impacted by proposed action.**

Casa Blanca Canal Impacted Allotments							
776	807	842	1655	1711	1876	2019	
784	808	844	1656	1712	1890	2388	
785	809	845	1657	1713	1970	2433	
786	810	863	1659	1714	1980	2428	
792	811	1264	1664	1726	1981	3117	
793	821	1321	1665	1786	1985	3154	
798	822	1489	1666	1801	1987	3183	
799	823	1650	1669	1802	1993	3184	
800	824	1651	1683	1825	2016	3191	
801	825	1652	1688	1865	2017	3193	
802	834	1653	1689	1871	2018	3200	

Land to be acquired as PIE and converted to project use under the proposed action would not fall under the purview of the FPPA, which was developed to mitigate actions that would convert farmland to nonagricultural uses. The proposed action would increase cultivated farmland in the

project area. Currently, there are 6,518 acres cultivated from water supplied by the Casa Blanca Canal. Under the proposed action, an additional 24,133 acres would be cultivated, for a total of approximately 30,650 acres in the Casa Blanca service area.

The proposed action would not directly result in residential or commercial displacements because no residences or commercial facilities are within the project footprint.

Construction activities would result in a temporary increase in truck traffic on various roads in the study area for the transport of construction materials and equipment to the construction site. Construction activities would not affect access to the project site or adjacent properties and would not be expected to interfere with traffic flow on public roads; therefore, the proposed action would have no effect on emergency response to the area.

The potential increase in truck traffic during construction would be cumulative to farm and other local traffic. The conversion of farmland for construction would be cumulative to past, present, and future farmland conversions, which have resulted primarily from residential and urban development in the region.

### ***Mitigation***

- Established procedures would be followed in acquisition of permanent irrigation easements and temporary construction easements needed for the project.
- Traffic control devices and/or flaggers would be employed, if needed, to ensure public safety and minimize traffic delays caused by construction.

## **3.3 VISUAL RESOURCES**

### **3.3.1 Affected Environment**

This section addresses the impacts of the project on the overall appearance of the study area as well as scenic vistas from public vantage points. The perceived sensitivity level of a particular vantage point must also be considered. Residential land use, for example, is considered to have a higher visual sensitivity level than agricultural land use.

From the vantage point of Canal 11 and Canal 12 in the center of the study area, the foreground views for the majority of the project length are dominated by undeveloped desert and agricultural fields. For the approximately 1.3-mile stretch of Canal 11 and Canal 12 through Sacaton in Reach 2, the foreground views are dominated by a mix of agricultural land and residential and commercial development.

Midground views include views of the generally dry Gila River and agricultural land to the north. The midground views to the south highlight larger tracts of undisturbed natural landscape sloping up to scattered mountains in the background. Though the tracts of undisturbed desert are larger in this area, the vegetation remains somewhat shrubby and sparse, with larger and slightly denser corridors of vegetation along ephemeral washes draining toward the Gila River.

Background views consist primarily of scattered peaks, with undisturbed native desert and numerous ephemeral drainages to the north and south.

### **3.3.2 Environmental Consequences**

#### ***No Action***

Under the no action alternative, no impacts to the visual character are anticipated.

#### ***Proposed Action***

Implementation of the proposed action would further detract from the study area's rural character by introducing newly built elements into the visual setting. Though the character of the proposed construction would be similar to the existing built environment in the study area, the extent and intensity of the built environment would increase, causing a slight degradation in scenic quality.

Viewscape is "a visual connection that occurs between a person and the spatial arrangement of landscape features" (Du Toit et al. 1993). The degree of impact would be dependent on such considerations as the sensitivity level of the viewer, the viewer's existing setting and viewscape, and the canal's distance and visibility from the viewer's vantage point. Because Canal 11 and Canal 12 currently traverse through Sacaton, there would be only a slight change in the existing scenic quality by lining the canal. A portion of Canal 12 would be piped in Sacaton, which would offer some improvement to the existing scenic quality. Overall, the proposed action would not impact visual resources. The lining of the canals would be cumulative to the past, present, and future project visual resources.

#### ***Mitigation***

No mitigation is proposed.

## **3.4 ENVIRONMENTAL JUSTICE**

### **3.4.1 Affected Environment**

Title VI of the Civil Rights Act of 1964 and related statutes ensure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, and disability. Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which was signed by President Clinton on February 11, 1994, directs that federal programs, policies, and activities do not have disproportionately high and adverse human health and environmental effects on minority populations (e.g., Native American tribes), and low-income population.

The majority of the study area consists of agricultural and undeveloped land, with sparsely scattered single-family dwellings, but a section of Reach 2 passes through Sacaton. The entirety of the study area is on land under the jurisdiction of the Community. Because data from the 2010 U.S. Census were not yet available for the study area, data from the 2005–2009 American Community Survey (2011) were used for this analysis. Data on minority and low-income (below the 2009 poverty level of \$21,954 for a family of four) populations were obtained. Two census tracts (CTs) cover the study area and vicinity (CT 9411 and CT 9412). Census data for these two CTs were compared with those of Pinal County and the State of Arizona as a whole.

Following environmental justice guidance (CEQ 1997), minority populations should be identified where either (1) the majority population exceeds 50 percent or (2) the minority population percentage in the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. For this analysis, the appropriate units of geographic analysis were Pinal County and the State of Arizona. Minority populations, consisting predominately of Native Americans, represented a majority of the population (98.9% and 99.6%, respectively) in CT 9411 and CT 9412 and were meaningfully higher than the comparison populations in Pinal County (41.8%) and the State of Arizona (41.5%).

The percent of the population living below the poverty level in CT 9411 and CT 9412 did not represent a majority of the population; however, the low-income percentage for CT 9411 (41.3%) was considered to be meaningfully higher than the comparison population of Pinal County (13.9%) and the State of Arizona (14.7%). Based on this analysis, CT 9411 and CT 9412 are considered protected populations, warranting further analysis.

### **3.4.2 Environmental Consequences**

#### ***No Action***

Under the no action alternative, there would be no impact on populations or communities defined under EO 12898. Existing conditions would be expected to continue into the foreseeable future.

#### ***Proposed Action***

Impacts to populations protected under EO 12898 could occur along populated segments of the project footprint. With the proposed action, short-term construction-related impacts on this population would be expected when construction is ongoing in the vicinity of sensitive receptors, including residences and one place of worship. These impacts could include the generation of air pollutants (e.g., dust), an increase in noise levels, public safety risk associated with the construction site, and disruption of traffic patterns associated with the movement of construction material and equipment on public roads. These impacts would be most notable in the community of Sacaton, where sensitive receptors abut the project alignment. Because these effects would occur within the entire construction area, not just the area adjacent to a protected population, populations protected under EO 12898 would not be disproportionately affected. In accordance with local and regional rules, regulations, and ordinances, mitigation measures would be implemented to minimize these effects throughout the construction area.

#### ***Mitigation***

See mitigation under the Land Ownership, Jurisdiction, and Land Use; Noise; and Air Quality sections.

## **3.5 SOCIOECONOMIC CONDITIONS**

### **3.5.1 Affected Environment**

Though the majority of the study area is sparsely populated, a portion of Reach 2 passes through Sacaton. In this segment, residences, commercial facilities, schools, and community buildings,

such as a church and a library, are in the study area and in the immediately surrounding vicinity. The remainder of the study area is undeveloped or has been developed for agricultural purposes.

Currently, the Community has approximately 27,777 acres of land under agricultural development and would like to develop upwards of 50,000 additional acres in the near future. There are currently 6,518 acres irrigated in the Casa Blanca area, with the proposed project part of the larger agricultural development planned for the Community. The existing agricultural lands rely on irrigation water delivered through the project canal system for crop production. Irrigation orders placed for Community agriculture are delivered from Coolidge Dam and the CAP, with the former being transported through the Ashurst–Hayden Diversion Dam and the Pima Lateral to Community canal facilities while the latter connects directly to the Pima Lateral. The use of the existing earthen canal system in the study area results in a loss of irrigation water due to seepage and system inefficiencies that would otherwise be available to Community agricultural lands.

### **3.5.2 Environmental Consequences**

#### ***No Action***

Under the no action alternative, no additional farmland would be brought into production, and no additional jobs would be created.

#### ***Proposed Action***

The proposed action would not directly result in residential or commercial displacements because no residences or commercial buildings are within the project footprint.

Implementation of the proposed action would result in approximately 24,133 acres of additional farmland brought into production in the Casa Blanca service area. This added farmland has the potential to create agricultural jobs and add to the local economy.

#### ***Mitigation***

No mitigation is proposed.

## **3.6 INDIAN TRUST ASSETS**

### **3.6.1 Affected Environment**

Indian Trust Assets (ITAs) are legal interests in assets held in trust by the United States for federally recognized Native American tribes or individual Native Americans. ITAs can include, but are not limited to, land resources, water rights, minerals, and hunting and fishing rights. The asset need not be owned outright, but could be some other type of property interest, such as a lease or a right of use. These assets are held by the United States, with the Secretary of the Interior as the trustee. By definition, ITAs cannot be sold, leased, or otherwise encumbered without approval of the United States. It is the general policy of the Department of the Interior to perform its activities in ways that protect ITAs and avoid adverse effects whenever possible.

The Gila River Decree of 1935 recognized the right of the United States to demand and divert Gila River water for irrigation of 50,546 acres of Indian farmland on the reservation. This water

right is considered an ITA. The irrigation water associated with this water right is diverted at the Ashurst–Hayden Diversion Dam. The diversion dam, headworks structure, and the Florence–Casa Grande Canal are SCIP Joint Works facilities used to divert and convey water from the Gila River to the Community. This water is delivered from the Florence–Casa Grande canal into the Pima Lateral. Water is also delivered from the CAP to the Pima Lateral. Both delivery systems provide water to the Casa Blanca Canal.

In the study area, allotted or tribal lands that would be affected by construction or put into production as a result of the proposed project are also considered ITAs.

### **3.6.2 Environmental Consequences**

#### ***No Action***

Under the no action alternative, Canal 11 and Canal 12 would not be rehabilitated. Without rehabilitation, age-related deterioration would be expected to continue, and operational deficiencies would not be corrected.

#### ***Proposed Action***

With water as a primary Indian Trust Asset, consideration was given to the project’s potential to impact irrigation water quality and availability. The project would not alter Gila River water supplies available for diversion and would not interfere with irrigation water delivery. Water that is conserved from lining and from improved operating efficiencies would be put to beneficial use to irrigate additional cropland.

The proposed rehabilitation would extend the useful life of the facilities, ensuring future deliveries of available irrigation water. In addition, the value of any new lands that are put into agricultural production as a result of the project would be enhanced.

#### ***Mitigation***

No mitigation is proposed.

## **3.7 CULTURAL RESOURCES**

Cultural resources are properties that reflect the heritage of local communities, states, and nations. Properties judged to be significant and to retain sufficient integrity to convey that significance are termed “historic properties” and are afforded certain protections in accordance with state and federal legislation. The National Historic Preservation Act (NHPA) defines historic properties as sites, buildings, structures, districts, and objects included in, or eligible for inclusion in, the National Register of Historic Places (NRHP), as well as the artifacts, records, and remains related to such properties. “Traditional cultural properties” (including sacred sites) having heritage value for contemporary communities (often, but not necessarily, Native American groups) also can be listed in the NRHP because of their association with historic cultural practices or beliefs that are important in maintaining the cultural identities of such communities.

Section 106 of the NHPA requires federal agencies to take into account the effects of their activities and programs on NRHP-eligible properties. Regulations for *Protection of Historic*

*Properties* (36 CFR 800), which primarily implement Section 106, were most recently amended in 2004. These regulations define a process for responsible federal agencies to consult with the State Historic Preservation Office (SHPO) or, for reservation consultation, the Tribal Historic Preservation Office (THPO), Native American groups, other interested parties, and, when necessary, the Advisory Council on Historic Preservation to ensure that historic properties are duly considered as federal projects are planned and implemented.

### **3.7.1 Affected Environment**

The following sections describe relevant culture history and previously recorded cultural resources in the study area.

#### ***Culture History***

This section briefly summarizes the culture history of the study area. Human utilization of Southern Arizona spans the past 11,500 years. Nine main chronological periods (Paleo-Indian, Archaic, Early Formative, Pioneer, Colonial, Sedentary, Classic, Protohistoric, and Historic) have been recognized; each is characterized by different social and cultural attributes (Figure 5). More detailed overviews can be found in Bayman 2001, Berry and Marmaduke 1982, Bronitsky and Merritt 1986, Crown and Judge 1991, Fish 1989, Fish and Fish 2008, and Gumerman 1991.

#### ***The Paleo-Indian, Archaic, and Early Formative Periods***

Evidence of occupation during the Paleo-Indian period (ca. 10,000–8,500 B.C.) and Early Archaic periods (ca. 8,500–5000 B.C.) has been elusive in the Community (Huckell 1984a, 1984b). The first definitive evidence of human habitation along the middle Gila River dates to the Middle Archaic period. Recent work on the Community (Bubemyre et al. 1998, Neily et al. 1999, Woodson and Davis 2001) has documented Middle Archaic period sites, and numerous surface finds of projectile points suggest the widespread use of the Phoenix Basin during this period (Loendorf and Rice 2004). Beginning around 1500 B.C., during the Late Archaic period, the first agricultural villages were established in the Sonoran Desert, mainly in southern Arizona (Diehl 2003, Mabry 1998, Matson 1991, Sliva 2003). Comparable preceramic semisedentary horticultural settlements have not been identified in the middle Gila Valley.

The succeeding Early Ceramic period (roughly A.D. 1–550) is characterized by small seasonally occupied hamlets and more widespread use of plain ware pottery in the region. However, pottery was not as widely used as in the later Hohokam occupations, and the range of types produced was comparatively limited (Garraty 2011, Whittlesey and Ciolek-Torrello 1996). Current evidence suggests that specialized pottery production began by around A.D. 450 in the vicinity of South Mountain (Abbott 2009).

YEAR	PERIOD		PHASE	
A.D. 1900	HISTORIC	Late	American Era	Blackwater
A.D. 1800		Early	Hispanic Era	
A.D. 1700	PROTOHISTORIC		-	Bachi
A.D. 1600	<i>Boundary not well defined</i>			
A.D. 1500	CLASSIC		-	-
A.D. 1400			-	Polvorón?
A.D. 1300			-	Civano
A.D. 1200			-	Soho
A.D. 1100	SEDENTARY		-	Santan
A.D. 1000	COLONIAL		-	Sacaton
A.D. 900			-	Santa Cruz
A.D. 800	PIONEER		-	Gila Butte
A.D. 700			-	Snaketown
A.D. 600	EARLY FORMATIVE		-	Estrella/Sweetwater
A.D. 500			-	Vahki
A.D. 400			-	-
A.D. 300			-	-
A.D. 200	Undefined Boundary		-	Red Mountain
A.D. 100			-	-
<<<<<<	Undefined Boundary			
100 B.C.	ARCHAIC	Late Archaic	-	-
500 B.C.		Early Agricultural	-	-
1000 B.C.		Middle	-	-
2000 B.C.		Early	-	-
3000 B.C.	PALEO-INDIAN		-	-
5000 B.C.			-	-
7000 B.C.			-	-
9000 B.C.			-	-
10,000 B.C.			-	-

Figure 5. Chronological periods and phases defined for the study area

## ***The Hohokam Sequence***

The many antecedents of Hohokam cultural attributes imply *in situ* development of Hohokam society from earlier Archaic period populations (Bayman 2001, Cable and Doyel 1987, Doyel 1991, Wallace 1997, Wallace et al. 1995, Wilcox 1979). The Hohokam sequence begins with the Pioneer period (ca. A.D. 55–/650–700), which is marked by the introduction of decorated pottery (Ciolek-Torrello 1995, Wallace et al. 1995, Whittlesey 1995). Over the next five centuries, residents of the middle Gila River valley manufactured decorated pottery on a large scale and supplied it throughout the Phoenix Basin, including the Salt River valley to the north (Abbott 2009). The Hohokam tradition initially appeared in the Phoenix Basin and was characterized by the development of large-scale irrigation agriculture, red-on-buff pottery, a distinctive iconography, exotic ornaments and artifacts, a cremation mortuary complex, and larger as well as more complex settlements (Fish 1989, Howard 2006).

During the Colonial period (ca. A.D. 700–900), villages became more formalized, and groups of houses were arranged around central courtyards (Wilcox et al. 1981). Villages consisted of multiple courtyard groups organized around a large central plaza used for communal gatherings and a cemetery (Abbott and Foster 2003, Fish 1989, Howard 2006, Wilcox et al. 1981). Larger villages contained ballcourts, which likely functioned as loci of intercommunity ceremonial activities and public gatherings. Agricultural intensification occurred in the subsequent Sedentary period (ca. A.D. 900–1150), a time when marketplaces may have emerged and the ballcourt system reached its maximum extent, with more than 230 courts spread across much of central and southern Arizona (Abbott 2009, Abbott et al. 2007, Bayman 2001, Wilcox and Sternberg 1983).

The transition to the Classic period (ca. A.D. 1150–1400) is evidenced archaeologically by various dramatic social, cultural, and economic changes, including changes in burial practices from cremation to inhumation, the replacement of semisubterranean pit-houses with surface structures and walled compounds, and a shift from a focus on red-on-buff pottery to red wares (Bayman 2001; Crown 1994; Doyel 1974, 1980, 1991). The scale of regional interaction and exchange also contracted drastically at this time (Abbott 2009, 2010; Abbott et al. 2007), giving way to more localized patterns of interaction along the various canal systems and the middle Gila River and lower Salt River valleys (Abbott 2000). This span also witnessed the decline of the extensive ballcourt system, which was replaced by widespread construction of platform mounds in the larger villages (Abbott 2003, 2006; Abbott et al. 2007; Bayman 2001).

The end of the Classic period around A.D. 1450 is marked by the collapse of the platform mound system and the abandonment of many Hohokam sites along the lower Salt River (Ravesloot et al. 2009). Possible explanations for these dramatic changes include salinization of fields, epidemics, overpopulation, warfare, and various climatic calamities, such as flooding and drought (Abbott 2003, Bayman 2001, Dean 2000, Ezell 1983, Graybill et al. 2006, Grebinger 1976, Haury 1976, Hegmon et al. 2008, Mindeleff 1897, Ravesloot et al. 2009, Redman 1999, Reid and Whittlesey 1997, Wilcox 1991). These explanations are not mutually exclusive, and likely some combination of factors were responsible for these changes.

### ***The Protohistoric and Historic Period***

The Protohistoric period (ca. A.D. 1500–1700) is generally defined as the interval between the end of the Hohokam Classic period and the earliest evidence of Spanish contact (Wells 2006, Whittlesey et al. 1998). Unfortunately, archaeological evidence of Protohistoric period occupation has been elusive in southern Arizona, and few archaeological sites on the reservation can be firmly assigned to this time span. Historic documents indicate the presence of settlements in the vicinity of the Casa Blanca settlement, along the Gila River between Pima and Gila buttes (Wilson 1999). It is possible that subsurface evidence of Protohistoric period occupation would be encountered in the study area, though settlement more likely was concentrated farther north, closer to the Gila River.

The Historic period is traditionally defined to encompass a span for which written records are available, from about A.D. 1694 to 1950. The first definitive European contact occurred in A.D. 1694, when Father Kino visited the Akimel O’odham villages along the middle Gila River (Ezell 1983, Russell 1908, Wilson 1999). The Akimel O’odham did not experience intensive colonial contact during the Hispanic era (A.D. 1694–1853), however, and interactions were mainly limited to parties traveling through the territory or community members visiting the European settlements to the south. Nevertheless, the Akimel O’odham and possibly Pee Posh communities along the middle Gila River were indirectly affected by introduced European elements, such as new cultigens (e.g., wheat), religious practices, livestock, metal, and especially disease (Ezell 1983; Shaw 1994, 1995; Wells 2006).

The American era (A.D. 1853–1950) began in 1853 with the Gadsden Purchase, when southern Arizona officially became part of the United States (Ezell 1983). Starting in the 1850s, new market opportunities arose to supply grain to the military and to Euro American immigrants heading for California, which benefitted Akimel O’odham and Pee Posh farmers in the region (DeJong 2009, Doelle 1981, Ezell 1983, Hackenberg 1983, Russell 1908). The Community was established soon after in 1859. By the 1870s and 1880s, churches, schools, and trading posts were established at Casa Blanca and Sacaton, which led to the growth of these villages as administrative and commercial hubs on the Community (Webb 1959, Wilson 1999). Around the same time, the BIA constructed an agency headquarters (Pima Agency) in Sacaton, which, starting in the early 1900s, initiated and oversaw the allocation of agricultural allotments to Akimel O’odham and Pee Posh households on the community. Notably, the current study area overlaps a portion of the historic Pima Agency building complex (GR-962) (Woodson and Penta 2002) and associated Pima Agency Farm Reserve (GR-341) (Eiselt et al. 2002). It also encompasses a number of archaeological sites containing evidence of late historic Akimel O’odham and Pee Posh occupations (Garraty and Woodson 2011a).

Starting in the late 1800s, following the establishment of the Pima Agency, the U.S. government placed acculturative pressures on the Akimel O’odham and the Pee Posh people, which affected their traditional livelihoods and culture. Since World War II, however, the Akimel O’odham and Pee Posh people have experienced a resurgence of interest in tribal sovereignty and economic development. The community has now become a self-governing entity, has developed several profitable enterprises in fields such as telecommunications, and has built several casinos. The tribe has also worked to revitalize its farming economy by constructing a water delivery system across the reservation (Ravesloot et al. 2009).

### ***The Casa Blanca Canal***

The late 1800s and early 1900s witnessed an extended period of drought and hardship in the middle Gila Valley, which led to widespread famine, resentment, and an escalation of disputes among Akimel O’odham and Pee Posh communities (Ezell 1983, Hackenberg 1983, Wilson 1999). In response, the BIA Indian Irrigation Service attempted to improve the condition of irrigation facilities on the Community through a series of projects between 1904 and 1915, many of which failed as a result of severe water shortages and destructive floods. One of the most destructive events was a flood in 1905 that washed out the intake of the Little Gila River and filled more than a mile of the channel with silt (Hackenberg 1974, Southworth 1919, Wilson 1999). As a result of this event, a number of existing canals headed on the Little Gila River were no longer functional.

In response to these disasters, the U.S. Reclamation Service (now Reclamation), in conjunction with the Indian Irrigation Service, implemented the Sacaton Project, which was designed to irrigate 10,000 acres of Community land using floodwater from the Gila River, supplemented with water from wells (Pfaff 1996, Southworth 1919). In 1914, as part of the 35,000-acre Casa Blanca Project, several new canal alignments were constructed in the community, including the initial alignment of the Casa Blanca Canal (Pfaff 1994). The Indian Irrigation Service cleared part of the Little Gila River channel in 1913–1914 (Hackenberg 1974), a portion of which was later integrated into the design of the Casa Blanca Canal (Southworth 1914). The initial Casa Blanca Canal channel failed to sustain ongoing agriculture; however, and was abandoned after a short time.

In response to these continuing irrigation problems, Congress approved the San Carlos Project Act in 1924—by far the most ambitious effort to rectify the economic plight of the Akimel O’odham and Pee Posh farmers. This act authorized the construction of a water storage dam on the Gila River, which provided for the irrigation of 50,000 acres of Indian and 50,000 acres of non-Indian land. As part of SCIP, a new, slightly altered alignment of the Casa Blanca Canal was completed in 1928, which made use of portions of the earlier alignment (including the old channel of the Little Gila River). Though still in operation, buried relict alignments connected to the existing Casa Blanca Canal System have been recorded in the project vicinity (Garraty and Woodson 2011b). Unfortunately, SCIP failed to revitalize the O’odham farming economy for various reasons (Hackenberg 1955). The SCIP system continues to be used today, though it has been modified and expanded since its initial construction in the 1920s.

### **3.7.2 Environmental Consequences**

#### ***No Action***

Under the no action alternative, it is assumed that current management and operation of the canal system would continue and that there would be “no adverse effect” to historic properties (cultural resources listed on, or eligible for listing on, the NRHP).

#### ***Proposed Action***

Rehabilitation of the Casa Blanca Canal would entail widening and rehabilitating Canal 11 and Canal 12. In conjunction with P-MIP, three Class III pedestrian surveys have been completed in the Casa Blanca area along, and on either side of, the P-MIP canal corridor to document cultural

resources that would be potentially affected as a result of P-MIP construction efforts. The initial survey covered 19,763 acres in P-MIP's Casa Blanca Management Area, which included the proposed main-stem alignment (Eiselt et al. 2002). A supplemental survey (Baldwin et al. 2005) covered additional parcels within a 1,000-foot-wide corridor centered on Canal 11 (329.6 total acres) that were inaccessible during the initial survey. A recent third survey in 2011 (Darling 2011) was intended to cover three previously inaccessible areas totaling 129.2 acres, much of which remained inaccessible for survey due to the presence of thick vegetation or crop cover. Portions of the area also were surveyed by archaeologists affiliated with the Arizona State Museum in the 1960s (Ayres 1975, Wood 1972). Overall, these previous survey areas covered a considerably larger area than the current construction corridor defined along Canal 11 and Canal 12. Therefore, most of the cultural resources recorded during earlier surveys are situated outside of the current study area.

A total of 32 cultural resources, here defined as archaeological sites, have been identified within the construction corridor for the proposed action (Table 3). Among the 32 sites, 23 are considered eligible for inclusion in the NRHP based on the results of survey or documentary research. Seven sites have been determined to be potentially eligible for the NRHP, pending the results of testing, several of which are proposed for testing as part of the archaeological treatment plan for this project (Garraty and Woodson 2011a). Two ineligible sites also have been recorded within the construction corridor.

Implementation of the proposed action would affect a number of eligible or potentially eligible cultural resources in the study area. To mitigate these potential effects, Garraty and Woodson (2011a) have developed a treatment plan for each of the cultural resources within the area of potential effects (APE) for this project. Table 3 summarizes the proposed treatment for each of the cultural resources within the project APE. The treatment plan would be submitted to the Community's THPO for approval.

**Table 3. Cultural resources and their proposed treatment within the APE.**

Site Number <sup>a</sup>	Other Site Name <sup>b</sup>	NRHP Eligibility	Proposed Action	Reference
GR-338	–	Potentially eligible	Eligibility testing	Eiselt et al. 2002
GR-339	Progressive Colony	Eligible	Data testing	Eiselt et al. 2002
GR-340	AZ U:13:186 (ASM)	Potentially eligible	Eligibility testing	Eiselt et al. 2002
GR-341	Pima Agency Farm Reserve	Eligible	Data testing	Eiselt et al. 2002
GR-342	Progressive Colony	Eligible	Data testing	Eiselt et al. 2002
GR-345	–	Ineligible	No action	Eiselt et al. 2002, Garraty and Woodson 2011b
GR-403	–	Potentially eligible	Avoidance	Eiselt et al. 2002
GR-425	–	Ineligible	No action	Garraty and Woodson 2011b
GR-474	–	Potentially eligible	Eligibility testing	Eiselt et al. 2002
GR-787	Sweetwater Platform Mound Site; AZ U:13:103 (ASM); TCP #2106	Eligible	Data testing	Eiselt et al. 2002, Wood 1972

**Table 3. Cultural resources and their proposed treatment within the APE.**

Site Number <sup>a</sup>	Other Site Name <sup>b</sup>	NRHP Eligibility	Proposed Action	Reference
GR-807	AZ U:13:179 (ASM); AZ U:13:183 (ASM)	Eligible	Data testing	Baldwin et al. 2005, Eiselt et al. 2002, Wood 1972
GR-808	Sweetwater Trading Post; AZ U:13:31 (ASM)	Eligible (SHPO concurrence, 2001)	Data testing	Eiselt et al. 2002, Masse 1974, Wood 1972
GR-880	AZ U:13:39 (ASM); AZ U:13:40 (ASM); AZ U:13:177 (ASM)	Eligible	Data testing	Ayres 1975, Baldwin et al. 2005, Eiselt et al. 2002, Wood 1972
GR-885	–	Potentially eligible	Eligibility testing	Baldwin et al. 2005
GR-887	AZ U:13:94 (ASM)	Eligible (SHPO concurrence, 2000)	Data testing	Baldwin et al. 2005, Barz 1998, Eiselt et al. 2002, Foster et al. 2000, Mitalisky 1935, Wood 1972
GR-915	Hospital Site; AZ U:13:27 (ASM)	Eligible (SHPO concurrence, 1999)	Data testing	Baldwin et al. 2005, Eiselt et al. 2002, Foster and Ravesloot 1999, Vivian and Spaulding 1974, Wasley and Scovill 1969, Woodson and Randolph 1997
GR-929	AZ U:13:93 (ASM)	Eligible (SHPO concurrence, 2000)	Data testing	Eiselt et al. 2002, Foster et al. 2000, Mitalisky 1935, Rosenberg 1976, Wood 1972, Woodson 2000
GR-962	Pima Agency Complex; AZ U:14:3 (ASM)	Eligible	Data testing	ASM Site Files (AZSITE), Woodson and Penta 2002
GR-980	AZ U:13:101 (ASM)	Eligible	Data testing	Ayres 1975, Eiselt et al. 2002
GR-984	–	Eligible	Data testing	Baldwin et al. 2005, Garraty and Woodson 2011b
GR-1147	–	Potentially eligible	Eligibility testing	Baldwin et al. 2005
GR-1150	–	Potentially eligible	Eligibility testing	Baldwin et al. 2005
GR-1406	–	Eligible	Data testing	Baldwin et al. 2005
GR-1412	Cottonwood Canal (H)	Eligible	No action	Garraty and Woodson 2009
GR-1422	Casa Blanca Canal System; AZ U:13:248 (ASM)	Eligible	No action <sup>c</sup>	Garraty and Woodson 2009; Pfaff 1994, 1996
GR-1423	Old Maricopa Canal (H)	Eligible	No action	Garraty and Woodson 2011b
GR-1424	Old Santan Canal (H)	Eligible	No action	Garraty and Woodson 2011b
GR-1538	Sacaton Road	Eligible	Avoidance	Eiselt et al. 2002
AZ U:13:42 (ASM)	Sweetwater Canal (P)	Eligible	Data testing	Miles et al. 2008; Wood 1972; Woodson 2009, 2010

**Table 3. Cultural resources and their proposed treatment within the APE.**

Site Number <sup>a</sup>	Other Site Name <sup>b</sup>	NRHP Eligibility	Proposed Action	Reference
AZ U:13:248 (ASM)	Old State Route 93	Eligible	Avoidance	Wood 1972
AZ AA:6:63 (ASM)	State Route 87	Eligible	Avoidance	ASM Site Files (AZSITE), Eiselt et al. 2002
–	Sacaton Canal (P)	Eligible	No action	Garraty et al. 2009, Woodson and Randolph 2000

– = not applicable

a ASM = Arizona State Museum. GR = Gila River

b H = historic canal; P = prehistoric canal

c GR-1422 (Casa Blanca Canal system) is considered contributing elements to the irrigation component of the SCIP, and thus Historic American Engineering Record documentation constitutes acceptable mitigation under Section 106 for this cultural resource (Pfaff 1996). No further action is required.

Among the 23 NRHP-eligible sites in the study area, Garraty and Woodson propose data testing at most of them (n=15) in advance of construction. Data testing, or Phase I data recovery, is a component of the mitigation process developed to resolve adverse effect (36 CFR 800.6; see Bilsbarrow 2003). The purpose of data testing is to judiciously gather information about a site so that archaeologists can focus subsequent intensive data recovery efforts (Phase II) on features or depositional contexts that can address the investigation’s principal research questions. Data testing typically involves linear trench excavations to expose the subsurface in 4 to 6 percent of the defined area within each archaeological site.

Four of the 26 eligible sites refer to historic canal alignments (GR-1412, 1422, 1423, and 1424) that have been tested and fully documented (Garraty and Woodson 2009, 2011b). Based on prior investigations, the current level of documentation constitutes sufficient mitigation of the potential adverse effects to these sites within the construction corridor. GR-1422 refers to the historic Casa Blanca canal system, which was first constructed in 1914 and integrated into SCIP in 1928. GR-1422 is considered a contributing element of the irrigation component of SCIP, which is eligible for inclusion in the NRHP as a district (Pfaff 1994, 1996). SHPO has agreed that the Historic American Engineering Record documentation of features to be impacted by the proposed CAP (P-MIP) system (i.e., Pfaff 1996) is “acceptable mitigation under Section 106 for any adverse impacts” (Pfaff 1996:6). No action is required to mitigate the effects of construction on this site. Also, no action is proposed for one additional cultural resource, the projected alignment of the prehistoric Sacaton Canal (no site number has been assigned), based on the highly speculative basis for the inferred canal alignment where it intersects the study area (Woodson 2009, 2010).

Eligibility testing is proposed for six potentially eligible sites to assess their eligibility for the NRHP. Like data testing, eligibility testing involves linear trench excavations, but with a general sample fraction of 2 to 3 percent of the defined site area. Avoidance is proposed for one

additional potentially eligible site because it barely overlaps the anticipated area of potential effect for this project.

To minimize impacts to cultural resources, P-MIP would avoid the following culturally sensitive areas:

- Station 231+00 to 241+00 south side (no disturbance beyond the PIE)
- Station 276+00 to 282+00 both sides (no disturbance beyond the PIE)
- Station 461+00 to 471+00 north side (no disturbance beyond the PIE)
- Station 479+00 to 504+00 south side (no disturbance beyond the PIE)
- Station 490+00 to 501+00 north side (no disturbance beyond the PIE)
- Station 515+00 to 531+00 north side (no disturbance beyond the PIE)

### ***Mitigation***

- No ground disturbance would begin until the cultural resources treatment plan has been approved by THPO and requirements of the plan have been fulfilled.

## **3.8 GEOLOGY AND SOILS**

### **3.8.1 Affected Environment**

The project footprint is in the Lower Colorado River Valley Subdivision of the Sonoran Desertscrub portion of the Basin and Range Physiographic Province in Pinal County, Arizona (Brown 1994). The Sonoran Desert evolved after millions of years of volcanic eruption, uplift, mountain building, and faulting. The Basin and Range topography is the result of Pliocene and Miocene east–west-directed extensional tectonic movement (spreading) creating north–south-oriented mountain ranges with intervening north–south-oriented desert plains (U.S. Geological Survey [USGS] 2011a). This province is characterized by broad, subparallel mountain ranges. Young alluvium and alluvium with less abundant talis and eolian deposits (Arizona Geological Survey 2000) characterize much of the project footprint. The Gila River, north of the project footprint, is a meandering, braided stream that is characteristic of a more mature topography.

The Basin and Range seismic source zone extends from Mexico into southern California and includes most of southwestern and central Arizona, including the project footprint. With no known history of earthquake activity, the project footprint is considered tectonically stable, with low levels of seismic activity and no active faults (USGS 2011b).

Five main soil types occur in the project footprint: Denure-Pahaka complex, Glenbar, Indio-Vint complex, Redun-Shontik complex, and Yahana-Indio complex (NRCS 2011). These soil complexes are commonly referred to as sandy loams and loamy alluviums with minor amounts of silt loam, and are characterized by sands, gravels, and silty clays, which allow a moderate absorption of storm water to seep into the group. These are well-drained soils, runoff is medium, and the hazard of water erosion is slight to moderate. No hydric soils or wetlands were mapped within the project footprint (Arizona Game and Fish Department [AGFD] 1978, NRCS 2011).

### **3.8.2 Environmental Consequences**

#### ***No Action***

Under the no action alternative, the canals would not be lined, and the earthen banks would continue to slowly erode.

#### ***Proposed Action***

The potential for land subsidence and earth fissuring would not increase because the proposed action would not contribute to ground water level declines. The proposed action would not likely be affected by seismic activity because of the low seismic potential in the area. Excavation would expose and loosen soils, subjecting them to wind and water erosion. The proposed rehabilitation of the canals (e.g., lining) would improve the flow of sediment-laden water through the system.

With the proposed action, materials generated from project excavation would be largely offset by fill requirements associated with forming earthen berms and other support facilities along the proposed canal PIE. Any excess excavated materials would be transported to adjacent construction areas with fill requirements. The project has been designed to balance the earthwork. Canal embankment would come from excavation for canals and drains. In some cases, the diversion drains would be oversized or excavated to dimensions exceeding those required for drainage conveyance to provide adequate fill material for canal embankments. Though not anticipated, final design may dictate some borrow excavated from designated borrow pits or adjacent fields. Depending on scheduling, some excavated material may need to be temporarily stockpiled until needed for embankment construction. These temporary stockpiles would be within the designated PIE and TCE. Excess excavation is not anticipated. If unanticipated excess materials are encountered during construction, such as unsuitable material, these materials would be spoiled within the PIE on the outside of canal embankments. If there is not adequate room for the unanticipated excess material within the PIE, it would need to be spoiled at approved sites.

During construction activities, vegetative materials would be removed, exposing soils to temporary water and wind erosion. Construction activities would also loosen soils, which may make them more susceptible to erosion by wind and water. However, these are temporary impacts, and lining the canals would reduce soil erosion in the long-term.

The proposed action would directly disturb surface soils within the project footprint as a result of the operation of large equipment and the use of trucks to transfer sediment to storage areas, increasing the potential for soil erosion and sedimentation. Erosion control measures, including physical barriers and post-construction site stabilization, would be used to control storm water runoff and associated sedimentation. With the use of these measures and because of the coarse nature of the sediment piles, soil erosion and sedimentation from the sediment piles would constitute a minor but ongoing effect of project operations. These effects would be incremental to historic, ongoing, and future uses in the project area.

### ***Mitigation***

- Erosion control measures and post-construction site stabilization would be implemented within the project footprint, as necessary.
- Structural barriers or best management practices would be used to prevent the removed sediment from discharging downstream.
- Any excess materials would be spoiled within the PIE on the outside of canal embankments or in an approved disposal site.

## **3.9 WATER RESOURCES AND WATER QUALITY**

### **3.9.1 Affected Environment**

The study area is within the Middle Gila River watershed. The Gila River flows through the study area from east to west. Several small, unnamed ephemeral washes outfall to the Gila River in the project vicinity.

The 649-mile Gila River originates in western New Mexico, flows generally west–southwest across Arizona, and outlets in the Colorado River near the city of Yuma, Arizona. In its upper reaches, the Gila River is free-flowing. Coolidge Dam, approximately 75 miles upstream of the study area, is the only major dam on the Gila River. Stream flow within the Gila River upstream of the Ashurst–Hayden Diversion Dam is highly variable and dependent on upstream releases from Coolidge Dam, flows from tributaries, including the San Pedro River (downstream of Coolidge Dam), and precipitation in the area.

Today, releases from Coolidge Dam are based, in part, on irrigation water orders from the Community. Except during large flood events, all of the water that reaches the Ashurst–Hayden Diversion Dam is diverted to the Florence–Casa Grande Canal for irrigating farmland downstream; therefore, the Gila River downstream of the diversion dam is usually dry.

Water conveyed in the irrigation system comes from several sources. Water diverted from the Gila River is conveyed approximately 36 miles through the Florence–Casa Grande and Pima Lateral canals before reaching the Casa Blanca Canal. Other sources include the Community’s CAP water entitlement and ground water from project wells.

In addition to the previously noted water sources, storm water drainage is conveyed in the irrigation system. Under current conditions, the Southside Canal protective works intercept runoff from the Sacaton Mountains and divert the flow to Santa Cruz Wash. Runoff generated between the Southside Canal and Canal 11 enters Canal 11 and is diverted west to the Santa Cruz River. A number of sumps or basins along the upslope side of Canal 11 collect runoff. During major storm events, these sumps or basins can fill and spill into Canal 11. Flows within the canal system are regulated by numerous gated check structures and wasteways.

The U.S. Army Corps of Engineers (Corps) regulates the discharge of fill material to Waters of the United States, pursuant to Section 404 of the Clean Water Act (CWA), and issues permits for actions proposed within such waters. In discussions between the Corps and P-MIP, the Corps concluded that any discharges associated with the Casa Blanca Canal are related to construction or maintenance of farm irrigation ditches, and are appurtenant and functionally related to

irrigation ditches. The Corps determined the proposed action qualifies for the CWA exemption pursuant to 33 CFR Part 323.4. Therefore, the proposed action is not subject to regulation under Section 404 of the CWA (Appendix B).

### **3.9.2 Environmental Consequences**

#### ***No Action***

Under the no action alternative, the earthen canals would continue to slowly erode, and existing levels of water seepage would continue.

#### ***Proposed Action***

Lining the Casa Blanca Canal under the proposed action would result in the conservation of irrigation water supplies. Temporary impacts to surface water quality could result due to construction activities. Excavation materials would be stockpiled away from the canal and natural drainages to minimize the risk of unintentional transport of excavated materials into surface water supplies. Project construction would require the short-term use of fuels, lubricants, and other fluids to operate construction equipment, which would have the potential to contaminate water resources. The use, storage, and disposal of these materials would be in accordance with federal and state regulations to minimize potential impacts to water resources and downstream water quality.

The use of fertilizers and pesticides on farmland can be a source of pollutants to the water supply. With project implementation, the volume of fertilizers and pesticides applied to cultivated lands in the service area would vary from year to year, proportionate to the number of acres cultivated. No change in the quality of ground water and associated potable water supplies is expected as a result of the project.

Increased agricultural activity would increase the potential for salts from irrigation water to percolate into ground water aquifers, negatively affecting water quality. Salt buildup is managed on agricultural fields by farmers, who apply additional water to the fields, as needed, to leach salt out of the plant root zone.

#### ***Mitigation***

No mitigation is proposed.

## **3.10 FLOODPLAINS AND FLOODING**

### **3.10.1 Affected Environment**

EO 11988, Floodplain Management, which was signed by President Carter on May 24, 1977, requires federal agencies to avoid, where practicable alternatives exist, the short- and long-term adverse impacts associated with floodplain management. In carrying out its responsibilities, federal agencies are required to reduce the risk of flood loss; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains. The 100-year floodplain has not been delineated on the Reservation.

In the project area, storm water generally flows from east to west and from south to north toward the Gila and Santa Cruz rivers (Figure 6). East of I-10, storm water drains northwest into the Little Gila Wasteway and/or the Gila River. West of I-10, storm water drains into two floodways. The Southside Floodway conveys flows from the Southside Canal and storm water collected along the Southside Levee. The Casa Blanca Floodway conveys drainage from the Casa Blanca Canal and storm water drained from laser-leveled farm fields between the Southside and Casa Blanca canals. These two floodways merge in the City of Maricopa.

To protect the irrigation system during large regional flood events, water diversions upstream of the study area at the Ashurst–Hayden Diversion Dam are suspended and the regulation gates in the headworks structure are closed, forcing floodwater to continue downstream in the Gila River channel. The only hydraulic connection to the Gila River from Canal 11 is a wasteway that follows the old Little Gila River channel just east of I-10. The current capacity of Canal 11 through Sacaton is approximately 1,000 cfs. All of the water in the canal can be discharged to the wasteway, as needed to protect irrigation infrastructure.

Currently, Canal 11 acts as a major storm water discharge and conveyance facility that terminates at the existing tail-end reservoir, Sump 960, east of Murphy Road (Figure 4). Sump 960 provides regulatory storage to balance irrigation flows at the end of Canal 11. The primary contributor to flood flows that enter Sump 960 is the upslope area between Canal 11 and the Southside Canal, west of the Little Gila River channel (Figure 6).

West of the Little Gila River channel, flood runoff from upslope terrain is intercepted and diverted to the west by Canal 11. Runoff also enters a number of existing sumps and borrow pits parallel to Canal 11 that provide some storage and attenuation of flows. However, these sumps and basins are not regularly maintained to remove silt and, therefore, do not operate at capacity.

Prior to urban and agricultural development of the project area, local precipitation and storm runoff from the surrounding mountains were primarily conveyed in sandy/gravelly washes. With the development of irrigated agriculture over much of the project area, storm runoff is now conveyed along the edges of the irrigated fields in shallow road ditches. The ditches generally run south to north to a point where they are intercepted by Canal 11 or irrigation sumps along the south side of the canal.

In 1932, the Casa Blanca Floodway was created and its easement recorded. The floodway altered flows in the project area, directing drainage through the City of Maricopa to the Santa Cruz River. Excess flows from the Casa Blanca Canal discharged directly to the Casa Blanca Floodway until sometime after 1997, when the drainage outlet was gated and the flows were diverted into the newly developed western cells of Sump 960. The function of Sump 960 is to capture excess irrigation flows and any storm water that enters Canal 11. This sump has no emergency spillway and only one 36-inch outlet at the upstream portion of the sump, which discharges up to 50 cfs.

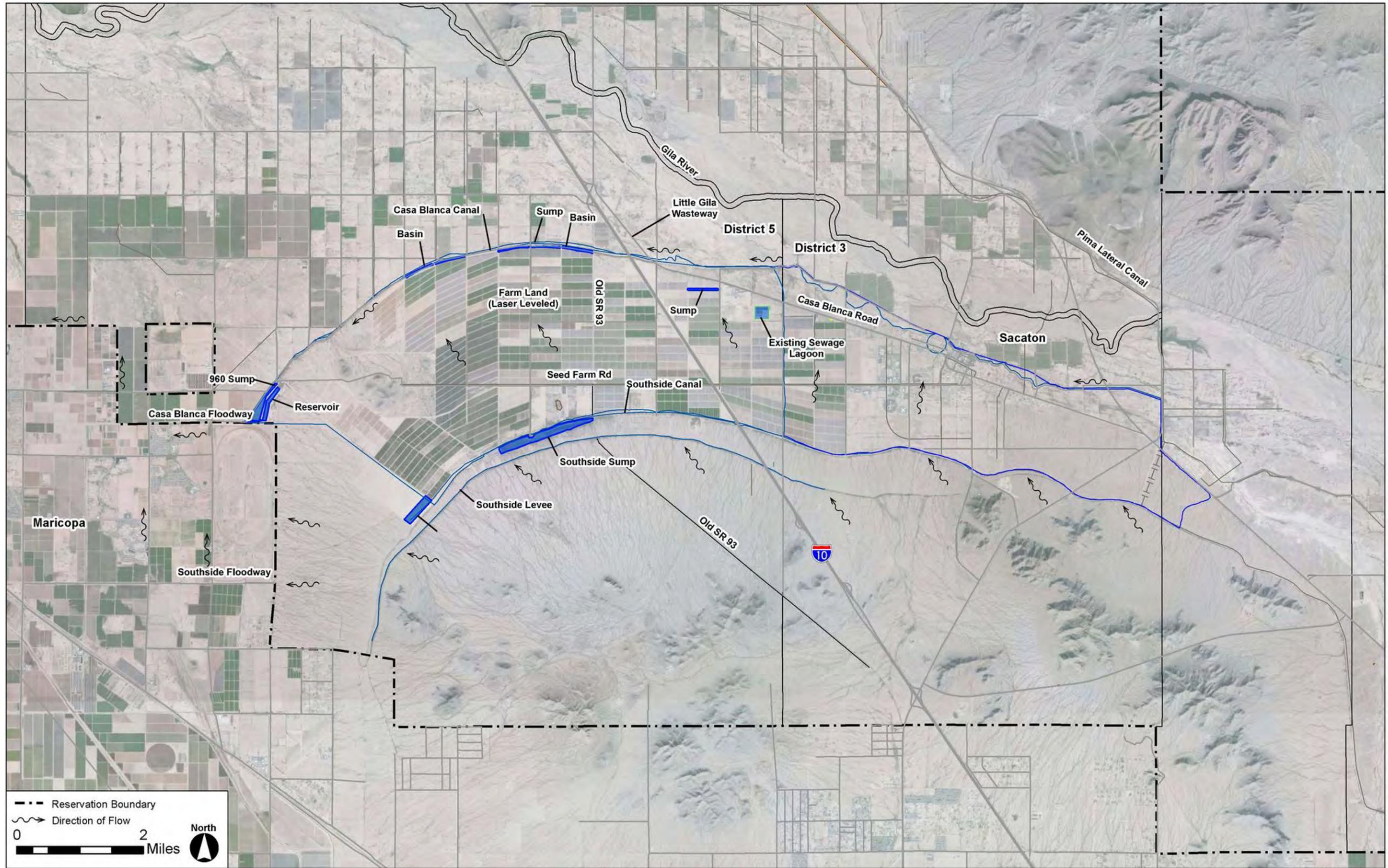


Figure 6. Existing drainage and flow pattern in the project area

The discharge empties into the Casa Blanca Floodway. An adjacent 9,000-square-foot reservoir (Figure 4) captures overflow from the sump and provides an additional 220 acre-feet of storage, accommodating roughly two-thirds of the total runoff from a 50-year storm. The inflow to the reservoir is approximately 1,000 cfs, and the outflow to the Casa Blanca Floodway is about 237 cfs (Millsaps 2010).

### **3.10.2 Environmental Consequences**

#### ***No Action***

Under the no action alternative, canal system operation and diversions of surface water through the study area would be expected to continue for the foreseeable future. No changes to the current flooding regime or alterations to the current floodplain would result from the no action alternative.

#### ***Proposed Action***

Seven reservoirs and a flood control channel are proposed along the south side of Canal 11 to control and divert the 100-year flood peak west to the Casa Blanca Floodway. The proposed reservoirs are at existing sumps and/or basins and upstream of existing road crossings. Sump 960 would be converted into one of the seven in-channel flood control reservoirs. The western portion of Sump 960 would be modified to create a reservoir with a 115-foot bottom width and 3:1 side slopes. This would require the construction of new embankments (levees) to provide freeboard for flood control. This new portion would be controlled by six ungated 36-inch culverts at the inlet and outlet.

The hydrology report completed for the project estimates that these reservoirs would reduce the flow peaks by 30 to 40 percent (Millsaps 2010). For most locations, the reservoirs would reduce the 100-year peak flow to less than that of the 50-year peak flow calculated for the existing condition (without the reservoirs).

The proposed rehabilitation of the reservoirs would not substantially alter the topography of the study area. The only change in surface runoff or drainage of the surrounding area would be a minor increase in outlet discharge to the Casa Blanca Floodway in the vicinity of Sump 960. The proposed rehabilitation would enhance the level of protection for the canal and downstream facilities. Construction of the proposed action is not expected to alter the current or future floodplain or contribute to downstream flooding.

The proposed reconstruction of Sump 960 would reduce the possibility of failure from overtopping. Based on the hydrology report, the discharge would have a 100-year instantaneous peak of 201 cfs, which is similar to post-1932 conditions.

The 100-year discharge from the surrounding undeveloped desert south of the project area was estimated at 2,480 cfs by the Federal Emergency Management Agency. However, the recently completed Community Sacaton Tributary report estimated the discharge for the same general area at 881 cfs. The proposed action's contribution to the total flow exiting the reservation would be limited to approximately 100–200 cfs (Millsaps 2010). Despite this increase, because the construction of the reservoirs and sumps would reduce peak flows by 30–40 percent, the proposed action is not expected to contribute to downstream flooding.

The additional (100–200 cfs) discharge from the rehabilitated system would commingle in the floodway with storm flows from larger areas (e.g., Southside Canal, non-Indian agricultural land, urban lands). Because the additional discharge is so minor compared with these other areas, the project’s cumulative effect on flood flows would be barely discernible.

### ***Mitigation***

No mitigation is proposed.

## **3.11 BIOLOGICAL RESOURCES**

### **3.11.1 Affected Environment**

The study area lies between 1,550 and 1,600 feet in elevation<sup>1</sup> on relatively flat, gently southerly sloping terrain in the Gila River Valley. The Gila River is north of the study area. The project vicinity is mostly undeveloped but supports agricultural use. Overall, the study area is a mixture of natural terrain and agricultural fields.

### ***Vegetation***

The study area consists of active and fallow agricultural fields; related infrastructure, including access roads and irrigation canals; and limited residential development interspersed with natural terrain and native plants. The native plant community in the area is classified as Lower Colorado River Valley subdivision of the Sonoran Desertscrub biotic community (Turner and Brown 1994). Plants of undeveloped areas include creosote bush (*Larrea tridentata*), four-wing saltbush (*Atriplex canescens*), triangle-leaf bursage (*Ambrosia deltoidea*), paloverde (*Parkinsonia* spp.), and mesquite (*Prosopis* spp.). Other species present in “disturbed” areas, including access roads, consist of Russian thistle (*Salsola kali*), Southern goldenbush (*Isocoma pluriflora*), and annual shrubs and grasses. Plants occurring along the canals (when present) are predominately mesquite and saltbush. Robust stringers of mature mesquite are along both sides of Canal 12 near its beginning. However, these mesquite patches decrease toward the western end of the project corridor. Small, isolated stands and ribbons of riparian vegetation, including saltcedar (*Tamarix* spp.), mesquite, Goodding’s willow (*Salix gooddingii*), tree tobacco (*Nicotiana glauca*), and cattail (*Typha* spp.), are present in PIE and TCE areas.

### ***Wildlife***

Due to previous ground disturbance, most of the study area consists of low-quality wildlife habitat. This habitat is concentrated beyond the edges of the roads along the canals and where vegetation has been allowed to establish in the canals. Surrounding areas, such as agricultural fields and residential developments, may include marginal habitat for small mammals and birds. Native desert habitat supports various levels of wildlife use.

Some examples of wildlife expected to inhabit the natural desert in the study area are zebra-tailed lizards (*Callisaurus draconoides*), rattlesnakes (*Crotalus* spp.), desert cottontail (*Sylvilagus audubonii*), Round-tailed ground squirrels (*Xerospermophilus tereticaudus*), mice (*Peromyscus* spp.), javelina (*Pecari tajacu*), and coyotes (*Canis latrans*). Breeding birds may include red-tailed hawk (*Buteo jamaicensis*), Gambel’s quail (*Lophortyx gambelii*), mourning

<sup>1</sup> Elevation in this document is referenced to mean sea level.

dove (*Zenaida macroura*), Gila woodpecker (*Melanerpes uropygialis*), curve-billed thrasher (*Toxostoma curvirostra*), phainopepla (*Phainopepla nitens*), verdin (*Auriparus flaviceps*), burrowing owl (*Athene cunicularia hypugea*), and roadrunner (*Geococcyx californianus*) (Turner and Brown 1994). Many of these species probably use the agricultural fields and canal access roads. The canals attract wildlife due to the presence of water, as evidenced by various mammal and avian tracks along the muddy edges.

**Migratory Birds**

The study area, including PIE and TCE areas, supports migratory bird breeding habitat, including potential nesting support structures, and the burrows of Western burrowing owls.

**Western Burrowing Owl**

In Arizona, the Western burrowing owl occurs in open areas, generally year-round, with only a few winter records on the Colorado Plateau in the northeast part of the state. They are known from the Navajo Nation, broad valleys near Seligman, along the bottomlands of the Colorado River, the lower Colorado River Valley, the Yuma area, south and southeast Arizona, and in agricultural areas of Maricopa and Pinal counties.

Their habitat is variable in open, well-drained grasslands, steppes, deserts, prairies, and agricultural lands, often associated with burrowing mammals. They are sometimes found in open areas such as vacant lots near human habitation, golf courses, or airports.

**Federally Listed Species**

The U.S. Fish and Wildlife Service (USFWS) list of endangered, threatened, proposed, and candidate species for Pinal County (USFWS 2012) was reviewed by a qualified biologist to identify listed species that may occur in the study vicinity. The potential presence of these species is presented in Table 4.

**Table 4. Potential presence of USFWS species listed in Pinal County.**

Name	Status	Habitat Requirements	Potential for Occurrence
<b>Threatened and Endangered Species</b>			
Arizona hedgehog cactus <i>Echinocereus triglochidiatus</i> var. <i>arizonicus</i>	E	Ecotone between interior chaparral and Madrean evergreen woodland.  Elevation: 3,200 to 5,200 feet.	The study area is below the elevation range of the Arizona hedgehog cactus and is outside the current known range. The nearest known occurrences are approximately 50 miles northeast of the study area (USFWS 2008a).  No potential for occurrence.
Desert pupfish <i>Cyprinodon macularius</i>	E	Shallow springs, small streams, and marshes. Tolerates saline and warm water.  Elevation: <4,000 feet.	The study area is outside the current range of the desert pupfish. The nearest naturally occurring or introduced populations are approximately 65 miles north of the study area in a tributary of Tonto Creek, though several refugia exist in the Phoenix area (USFWS 2008b).  No potential for occurrence.

**Table 4. Potential presence of USFWS species listed in Pinal County.**

<b>Name</b>	<b>Status</b>	<b>Habitat Requirements</b>	<b>Potential for Occurrence</b>
Gila chub <i>Gila intermedia</i>	E	Pools, springs, cienegas, and streams.  Elevation: 2,000 to 5,500 feet.	The study area is outside the current range of the Gila chub. The nearest naturally occurring or introduced populations are approximately 54 miles west of the study area in a tributary of the Gila River (USFWS 2008c).  No potential for occurrence.
Gila topminnow <i>Poeciliopsis occidentalis occidentalis</i>	E	Small streams, springs, and cienegas within vegetated shallows.  Elevation: <4,500 feet.	The study area is outside the current range of the Gila topminnow. The nearest naturally occurring or introduced populations are approximately 50 miles northeast of the study area along the Salt River (USFWS 2008d).  No potential for occurrence.
Lesser long-nosed bat <i>Leptonycteris curasoae yerbabuena</i>	E	Desertscrub habitat with agave and columnar cacti present as food plants.  Elevation: 1,600 to 11,500 feet.	No food plants, such as saguaro and agave, are present in the study area, and none were observed within the project footprint. The project falls within the foraging range of bats occupying the closest roost, approximately 40 miles to the south; however, occurrence is unlikely because no individuals have ever been detected in the vicinity, and food plants have not been observed (USFWS 2008e, AGFD 2004a).  No potential for occurrence.
Loach minnow <i>Tiaroga cobitis</i>	E	Benthic species of small to large perennial streams with swift, shallow water over cobble and gravel. Recurrent flooding and natural hydrograph important.  Elevation: <8,000 feet.	The study area is outside the current range of the loach minnow. The nearest known population is in the Aravaipa Creek, a tributary of the San Pedro River, approximately 70 miles east of the study area (USFWS 2008f).  No potential for occurrence.
Mexican spotted owl <i>Strix occidentalis lucida</i>	T	Nests in canyons and dense forests with multilayered foliage structure.  Elevation: 4,100 to 9,000 feet.	No suitable habitat occurs in the study area. No mixed conifer or pine forest with multilayered foliage structure is present in the study vicinity. The study area is below the elevation range of the species (USFWS 2012).  No potential for occurrence.
Nichol Turk's head cactus <i>Echinocactus horizonthalonius var. nicholii</i>	E	Sonoran desertscrub.  Elevation: 2,400 to 4,100 feet.	The study area is outside the known distribution of the species and below the elevation range of the species. The nearest known populations lie at least 40 miles south, in the foothills of the Vekol Mountains (USFWS 2008g).  No potential for occurrence.

**Table 4. Potential presence of USFWS species listed in Pinal County.**

Name	Status	Habitat Requirements	Potential for Occurrence
<p>Ocelot <i>Leopardus pardalis</i></p>	<p>E</p>	<p>Desertscrub in Arizona. Humid tropical and subtropical forests and savannahs in areas south of the United States.  Elevation: &lt;8,000 feet.</p>	<p>Though occasional individuals cross into Arizona from Mexico, migrant ocelots would be expected to avoid the study vicinity due to the presence of humans, noise, and traffic in the area and the extensive surrounding disturbed environment. No individuals have been detected in the study vicinity, and the closest known occurrence is approximately 50 miles east, along US 60 (USFWS 2010).  Low potential for occurrence.</p>
<p>Razorback sucker <i>Xyrauchen texanus</i></p>	<p>E</p>	<p>Riverine and lacustrine areas; generally not in fast-moving water; may use backwaters.  Elevation: &lt;6,000 feet.</p>	<p>The study area is outside the current range of the razorback sucker. The Gila River historically supported razorback suckers and was stocked as recently as the late 1980s by the AGFD upstream of San Carlos Reservoir, approximately 100 miles east of the study area, though no individual razorbacks have been detected since the reintroductions (USFWS 1991; Leslie Fitzpatrick, biologist, USFWS, personal communication, May 2009).  No potential for occurrence.</p>
<p>Southwestern willow flycatcher <i>Empidonax traillii extimus</i></p>	<p>E</p>	<p>Cottonwood/willow and saltcedar vegetation communities along rivers and streams.  Elevation: &lt;8,500 feet.</p>	<p>No suitable breeding habitat is present. No dense thickets of riparian vegetation in the study vicinity. The nearest known breeding populations are approximately 35 miles east along the Gila River, where territorial flycatchers were detected as recently as 2010, though occurrences of transient <i>Empidonax traillii</i> have been detected along the Gila River approximately 35 miles west of the study area (AGFD 2004b, Graber et al. 2012, USFWS 2008h). Patches of riparian trees along the canal and reservoir, notably near Snakehill Road (1.8 miles west of I-10) in the Southside Canal and at the upper end of the reservoir east of Murphy Road, may represent suitable migration stopover habitat. However, this patch of riparian trees along the Southside Canal will not be impacted by this project.  Low potential for occurrence and most likely only during migration due to the unsuitability of the habitat for breeding in the study area.</p>
<p>Spikedace <i>Meda fulgida</i></p>	<p>E</p>	<p>Medium to large perennial streams with moderate- to swift-velocity waters over cobble and gravel substrate. Recurrent flooding and natural hydrograph important to withstand invading exotic species.  Elevation: &lt;6,000 feet.</p>	<p>The study area is outside the current range of the spikedace. The nearest known populations are in Aravaipa Creek, a tributary of the San Pedro River, approximately 70 miles upstream of the study area (USFWS 2002).  No potential for occurrence.</p>

**Table 4. Potential presence of USFWS species listed in Pinal County.**

Name	Status	Habitat Requirements	Potential for Occurrence
<p>Yuma clapper rail</p> <p><i>Rallus longirostris yumanensis</i></p>	E	<p>Fresh water and brackish marshes.</p> <p>Elevation: &lt;4,500 feet.</p>	<p>Continuous stands of cattails occur within the project footprint, varying from less than 1 acre to approximately 3 acres. Notably large patches occur near Snakehill Road, 1.8 miles west of I-10 (two patches of 3.4 and 1.4 acres) in the Southside Canal and a 0.5 acre patch (0.8 acre of this patch exists just outside the PIE) at the upper end of the reservoir east of Murphy Road. These patches are smaller than typical occupied patches elsewhere in the range and would be considered marginal breeding habitat at best. Consistent occurrences have also been detected along the Gila and Salt rivers in the Phoenix area, as close as 25 miles northwest and north of the study area, though the nearest known Yuma clapper rail occurrences are approximately 21 miles southeast of the study area, in Picacho Reservoir (USFWS 2008i). Patches of cattails within the project footprint would most likely only support transient individuals.</p> <p>Low potential for occurrence and most likely only during movement between more suitable breeding habitats.</p>
<b>Candidate Species</b>			
<p>Acuña cactus</p> <p><i>Echinomastus erectocentrus</i> var. <i>acunensis</i></p>	C	<p>Well-drained knolls and gravel ridges in Arizona Upland Subdivision of Sonoran desertscrub.</p> <p>Elevation: 1,300 to 2,000 feet.</p>	<p>The study area occurs outside the known range for the acuña cactus, and no suitable habitat occurs (USFWS 2008j).</p> <p>No potential for occurrence.</p>
<p>Desert tortoise, Sonoran population</p> <p><i>Gopherus agassizii</i></p>	C	<p>Primarily rocky (often steep) hillsides and bajadas of Mohave and Sonoran desertscrub but may encroach into desert grassland, juniper woodland, interior chaparral habitats, and even pine communities. Washes and valley bottoms may be used in dispersal.</p> <p>Elevation: &lt;7,800 feet.</p>	<p>Though the study area occurs within the known range of the Sonoran Desert tortoise, there is little to no suitable habitat present. The closest known occurrences are approximately 3 miles south in the Sacaton Mountains (AGFD 2004c, USFWS 2011).</p> <p>Low potential for occurrence only where suitable habitat exists.</p>
<p>Northern Mexican garter snake</p> <p><i>Thamnophis eques megalops</i></p>	C	<p>Cienegas, stock tanks, large-river riparian woodlands and forests, streamside gallery forests.</p> <p>Elevation 130 to 8,500 feet.</p>	<p>The study area lies outside the current known range of the Northern Mexican garter snake. The nearest known occurrences are approximately 75 miles northeast, in the Tonto Creek drainage (AGFD 2004d).</p> <p>No potential for occurrence.</p>

**Table 4. Potential presence of USFWS species listed in Pinal County.**

Name	Status	Habitat Requirements	Potential for Occurrence
Roundtail chub <i>Gila robusta</i>	C	Cool to warm waters of rivers and streams; often occupy the deepest pools and eddies of large streams.  Elevation: 1,000 to 7,500 feet.	The study area is outside the current range of the roundtail chub. The nearest known populations are in the canal system near the Granite Reef Diversion Dam on the Salt River, approximately 35 miles north of the study area (AGFD 2004e).  No potential for occurrence.
Tucson shovel-nosed snake <i>Chionactis occipitalis klauberi</i>	C	Sonoran desertscrub; associated with soft, sandy soils with sparse gravel.  Elevation: 785 to 1,662 feet.	Suitable habitat is found throughout the study area, especially west of I-10. The nearest known occurrences are approximately 5 miles southwest of the western end of the study area, along State Route 238 (AGFD 2004f).  Potential for occurrence where suitable habitat exists.
Yellow-billed cuckoo <i>Coccyzus americanus</i>	C	Large blocks of riparian woodlands. Cottonwood, willow, or tamarisk galleries.  Elevation: <6,500 feet.	No suitable habitat is found in the study area. The nearest dense thickets of riparian vegetation are outside the study area, approximately 3 miles north, though the Gila River is not considered perennial in that stretch. There are no perennial streams in the study area. The nearest known yellow-billed cuckoo occurrences are approximately 21 miles southeast of the study area, in Picacho Reservoir (AGFD 2004g).  No potential for occurrence.

C = Candidate, E = Endangered, T = Threatened (USFWS 2012).

### 3.11.2 Environmental Consequences

#### Vegetation

##### **No Action**

Under the no action alternative, the existing canals would not be rehabilitated, lined with concrete, or otherwise modernized. P-MIP would continue to use the existing unlined Canal 11 and Canal 12 to deliver irrigation water. Water losses due to seepage would not be reduced, and vegetation would continue to benefit from this seepage. Existing impacts to fauna, such as clearing vegetation, due to current operation and maintenance activities related to the canals and irrigation systems would continue under the no action.

##### **Proposed Action**

Rehabilitation of the canal under the proposed action would result in permanent and temporary impacts on vegetation. Approximately 9.9 miles of thin stringers of vegetation, usually about one to two trees/bushes thick outside, are parallel to Canals 11 and 12. Construction would have moderate impacts through loss of vegetation from clearing activities. Vegetation not cleared would be impacted and degraded due to loss of seepage from the canals.

Project effects on vegetation resources would be incremental to the reasonably foreseeable past and future actions. The incremental effect of the proposed project on vegetation would be mostly short-term and negligible.

## Wildlife

### **No Action**

Under the no action alternative, the existing canals would not be rehabilitated, lined with concrete, or otherwise modernized. P-MIP would continue to use the existing unlined Canals 11 and 12 to deliver irrigation water. Water losses due to seepage would not be reduced, and repair and maintenance activities that are currently implemented would continue into the foreseeable future.

### **Proposed Action**

Permanent impacts to wildlife under the proposed action include the removal of habitat as a result of canal rehabilitation and associated construction activities. Individual small mammals, lizards, and snakes may be impacted during construction by crushing, loss of habitat (vegetation clearing), and/or disruption of movement and foraging activities. Under the proposed action, construction activities would result in some displacement or avoidance by wildlife of adjacent natural areas due to noise and/or human presence. These effects would be temporary and limited to the period of construction. Removal of vegetation, present within the canal PIE, due to rehabilitation of the existing canal would eliminate habitat for some wildlife species.

Individual active migratory bird nests may be destroyed due to construction-related activities. Construction would have moderate impacts through the loss of vegetation that supports migratory bird nesting habitat. To minimize potential impacts, P-MIP would ensure compliance with the Migratory Bird Treaty Act (MBTA). Between March 1 and August 31, all vegetation scheduled to be disturbed by the proposed project that may contain active bird nests would be surveyed immediately prior (within 24 hours) to being disturbed. If an active nest or nests are discovered, vegetation-clearing activities would not be allowed to proceed in the vicinity of the nest(s). No activities would occur within an appropriate buffered distance from active nests until after the young birds have fledged from the nests. In addition, every attempt would be made to complete land-clearing activities from September 1 through February 28 to avoid the breeding season of migratory birds.

Construction of the proposed action would temporarily impact approximately 200 acres of potential plant and wildlife habitat. Much of this land has been developed for agriculture; however, even developed lands can represent suitable wildlife habitat. For example, burrowing owls are known to inhabit abandoned agricultural fields or the berms surrounding active or fallow fields (deVos 1998). Project construction may impact the burrowing owl by eliminating burrows or otherwise disturbing their habitat; therefore, mitigation measures requiring the survey and potential relocation of burrowing owls would be implemented.

Project effects on wildlife resources would be incremental to the reasonably foreseeable past and future actions. The incremental effect of the proposed project on wildlife would be mostly short-term and negligible.

## Federally Listed Species

### **No Action**

Under the no action alternative, the existing canals would not be rehabilitated, lined with concrete, or otherwise modernized. P-MIP would continue to use the existing unlined canals to deliver irrigation water. Water losses due to seepage would not be reduced, and operation and maintenance activities that are currently implemented would continue into the foreseeable future.

### **Proposed Action**

#### *Tucson Shovel-nosed Snake*

The Tucson shovel-nosed snake is found 5 miles southwest of the project area. Many other occurrences have been detected within 15 miles (AGFD 2004f), and individuals may occur in the project area. Though the project footprint includes little undisturbed Sonoran desertscrub, the sandy nature of the soils provide suitable habitat for the snake. Soils in the western half of the project area (west of I-10) are particularly well suited for the snake. If shovel-nosed snakes are present within the project footprint, the proposed action may impact individuals through displacement or death. To minimize impacts, any Tucson shovel-nosed snake observed in the construction area would be avoided and allowed to proceed through the construction footprint.

#### *Sonoran Desert Tortoise*

The Sonoran Desert tortoise (tortoise) has been found in the Sacaton and Santan Mountains less than 4 and 10 miles, respectively, from the study area (AGFD 2004c). Suitable tortoise habitat in the project area is limited to undisturbed Sonoran Desertscrub habitat that makes up little of the study area. The sandy nature of the soils in the area precludes development of suitable sheltersites. Tortoise presence in the project area is likely restricted to individuals moving between the Santan and Sacaton mountains. If tortoises are present in the project footprint, the proposed action may impact individuals through displacement or inadvertent death.

#### *Southwestern Willow Flycatcher*

The nearest known breeding populations are approximately 35 miles east along the Gila River west of Kearny, Arizona, where territorial flycatchers were detected as recently as 2010, though occurrences of transient *Empidonax traillii* have been detected along the Gila River approximately 35 miles west of the study area (Graber et al. 2012, AGFD 2004b).

Riparian vegetation stand sizes are so small that their use as potential resting habitat during migration is unlikely. There is no suitable Southwestern willow flycatcher habitat present, nor would any Southwestern willow flycatcher habitat be impacted by project construction.

### *Yuma Clapper Rail*

Two disjunct locations in the project area support cattail (*Typha domingensis*)/open water habitat that could potentially be used by the Yuma clapper rail (Figure 7). Site 1 is a 1-mile reach of the diversion drain just west of I-10 along the south side of Canal 11. Site 2 consists of two patches of habitat in separate basins at the upstream end of the tail end reservoir. All of the patches can provide suitable resting and foraging habitat during migration. Two of the three patches of habitat are large enough to provide potential breeding habitat. However, the isolated nature of this habitat reduces its value as a potential breeding site. In addition, ongoing operation and maintenance activities routinely remove the habitat within the diversion drain.

Figures 8 and 9 show the locations of the Yuma clapper rail surveys that were conducted at two locations on May 4, 2012, and May 14, 2012, using the Standard North American Marsh Bird Monitoring Protocol (Conway 2008).

No Yuma clapper rails (or rails of any species) were observed during either survey. A Biological Assessment was prepared that concluded there would be “no effect” to the Yuma clapper rail from the proposed project. The USFWS does not provide comments on “no effect” determinations. The Biological Assessment is on file in Reclamation’s office.

Cumulative effects to federally listed species would be similar to those described for vegetation.

### ***Mitigation***

- To prevent the introduction and establishment of invasive weed species, all construction equipment would be power-washed at the contractor’s storage facility prior to entering the construction site.
- To prevent the off-site transport of invasive species seeds from the site, the contractor would power-wash all equipment prior to leaving the site.
- Where appropriate, all disturbed soils that would not be landscaped or otherwise permanently stabilized by construction would be seeded using species native to the project vicinity.
- P-MIP would employ a qualified biologist to ensure compliance with the MBTA. Every attempt would be made to complete land-clearing activities from September 1 through February 28 to avoid the breeding season of migratory birds. If clearing activities occur during the breeding period (March 1 through August 31), a qualified biologist would begin surveying the area in mid-February to determine the presence or absence of nesting birds.
- Between March 1 and August 31, all vegetation scheduled to be disturbed by the proposed project that may contain active bird nests would be surveyed immediately prior (within 48 hours) to being disturbed. If an active nest or nests are discovered, vegetation-clearing activities would not be allowed to proceed in the vicinity of the nest(s). No activities would occur within an appropriate buffered distance from active nests until after the young birds have fledged from the nest.

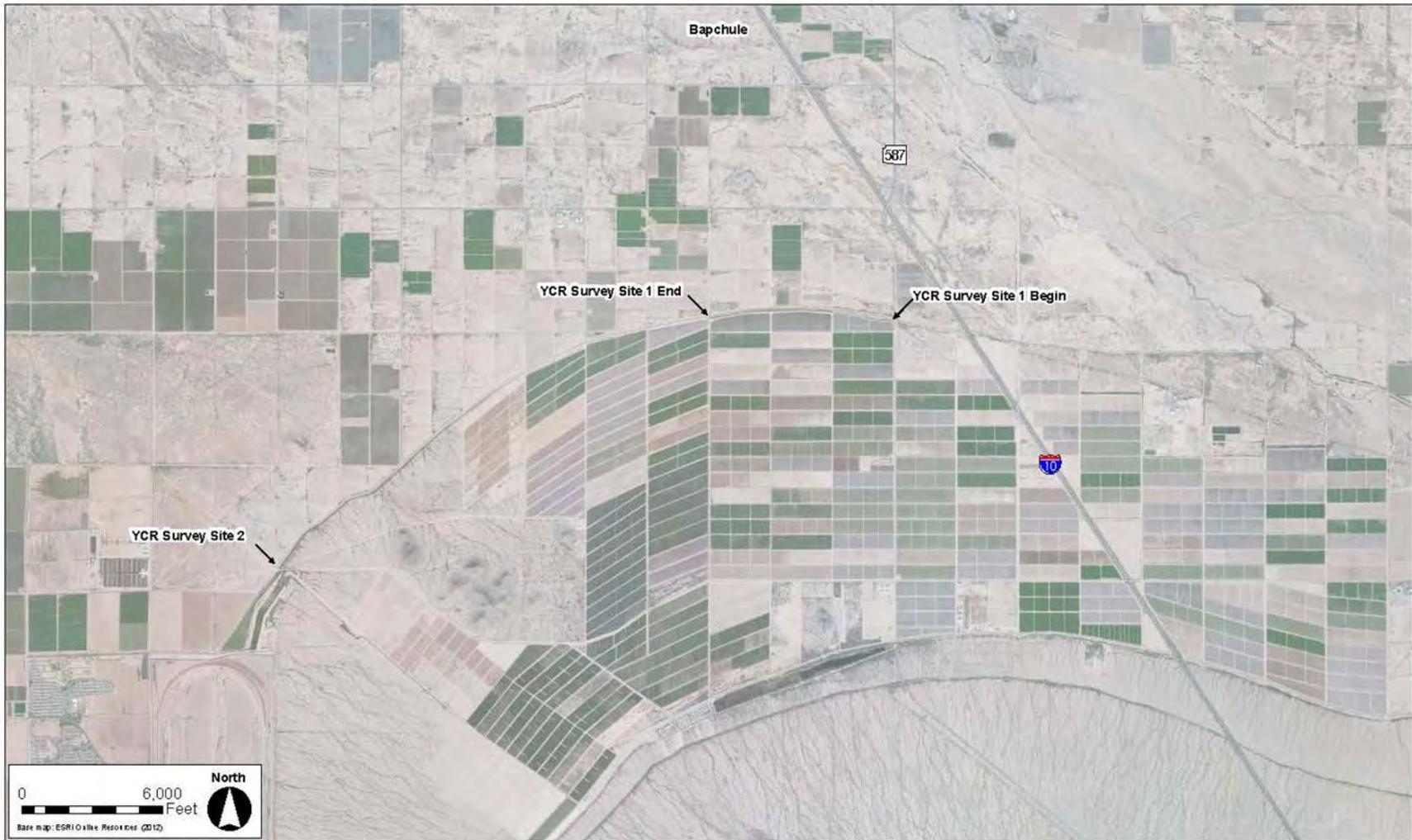


Figure 7. Overview of Yuma clapper rail survey points



Figure 8. Yuma clapper rail Survey Site 1



Figure 9. Yuma clapper rail Survey Site 2

- The contractor would employ a biologist to complete a preconstruction survey for burrowing owls 96 hours prior to construction in all suitable habitat that would be disturbed. The biologist would possess a burrowing owl survey protocol training certificate issued by the AGFD. Upon completion of the surveys, the contractor would provide survey results to the Phoenix area Reclamation office.
- If any burrowing owls are located during preconstruction surveys or construction, the contractor would employ a biologist holding a permit from the USFWS to relocate burrowing owls from the study area, as appropriate. Organizations such as Wild at Heart and Liberty Wildlife also could be contacted to remove/relocate burrowing owls.
- If burrowing owls or active burrows are identified during the preconstruction surveys or during construction, no construction activities would take place within 100 feet of any active burrows until the owls are relocated.
- If Sonoran Desert tortoises are encountered during construction, the contractor would follow the “Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects.” Any tortoises relocated would be moved by a biologist trained under the “Guidelines.”
- If Tucson shovel-nosed snakes are observed by construction crews during construction, they would be avoided and allowed to proceed out of the construction footprint on their own volition.
- If any federally listed species are identified in the project area, construction activities would be halted until consultation with the USFWS can be initiated.
- Contractor personnel would be instructed not to collect, disturb, or molest wildlife species.

## **3.12 NOISE**

### **3.12.1 Affected Environment**

Ambient noise levels in rural portions of the study area are relatively low. Higher noise levels are associated with vehicular traffic on I-10, BIA Route 85, Casa Blanca Road, and Sacaton Road. Noise is also generated from operation of farm equipment and machinery on adjacent agricultural lands. In Sacaton, urban activities, including motor vehicle travel on city streets, contribute to ambient noise levels.

In general, residences, schools, hotels, hospitals and nursing homes are considered to be the most sensitive to noise. Agricultural and industrial land uses are considered the least noise-sensitive. In the study area, sensitive noise receptors occur within 500 feet along the project alignment in Sacaton. These include residences, a school, and a church.

### **3.12.2 Environmental Consequences**

#### ***No Action***

Under the no action alternative, it is anticipated that existing noise sources and low noise intensity would prevail into the foreseeable future.

### ***Proposed Action***

Numerous environmental factors determine the level of perceptibility of sound at a given point of reception. These factors include distance from the source of sound to receptor, surrounding terrain, ambient sound level, time of day, and wind direction. The characteristics of a sound (i.e., loudness, pitch, and duration) are also important factors for determining possible noise effects. Generally, at distances greater than 50 feet from a noise source, every doubling of the distance produces a 6 decibel (dBA)<sup>2</sup> reduction in sound. Additional noise attenuation (approximately 1.5 dBA for every doubling of distance) is provided by “soft” natural topography, such as soil, shrubs, and trees between the point of noise generation and noise reception. There is also a 15–20 dBA reduction between the exterior and interior of most homes. The operation of earthmoving equipment, concrete mixers, portable generators, haul trucks, and power equipment would result in short-term levels of noise of varying duration and magnitude along the project alignment. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated and, as a result, change the noise levels along the project alignments as construction progresses. Typical noise levels generated by representative pieces of construction equipment are listed in Table 5. Generally, noise levels become intrusive at 70 dBA.

**Table 5. Typical construction equipment and reference maximum (L<sub>max</sub>) noise levels.**

<b>Sound Source</b>	<b>dBA (L<sub>max</sub> at 50 ft)</b>
Haul truck	80–92
Cement mixer truck	
Backhoe	
Excavator	
Grader	
Scrapers	
Front-end loader	76–82
Generators	70–80
Utility trucks	72

For the purpose of this EA, temporary noise impacts during construction are considered substantial if they would appreciably interfere with affected land uses. Substantial interference could result when sustained daytime noise at sensitive receptor locations equals or exceeds 90 dBA for one week or more, or construction activities would adversely affect noise-sensitive receptors at night, or both.

Eleven residential structures, one church, and one school (Headstart and Disabilities Program) are within 500 feet of the proposed new Casa Blanca Reach 2 canal alignment in Sacaton. Because of their close proximity to the canal, maximum noise may sporadically reach 80–90 dBA at nine of the residents and the church during peak construction. Maximum noise at the affected properties would fall below 80 dBA once the construction activities move beyond a distance of 200 feet. At a distance of 500 feet, maximum noise levels would be less than 70 dBA. Noise at the school is not expected to exceed 72 dBA. No substantial adverse effect on sensitive receptors is anticipated.

<sup>2</sup> Sound pressure levels (decibels) on the A-scale of a sound meter are abbreviated dBA.

Temporary construction noise from the proposed action would be incremental to noise generated by traffic on nearby city streets and highways, and noise generated by agricultural activity on adjoining farmland.

### ***Mitigation***

- Construction equipment would be equipped with properly functioning mufflers.
- Unnecessary idling time of construction machinery would be minimized in urban areas.
- Construction would be limited to daytime hours (6 a.m. to 7 p.m.) in urban areas.
- P-MIP would notify nearby residents in areas where peak noise levels may exceed 80 dBA.

## **3.13 AIR QUALITY**

### **3.13.1 Affected Environment**

As directed by the federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six “criteria” pollutants in 40 CFR 50. These standards were adopted by the EPA to protect the public health and welfare. The six pollutants of concern are carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone, sulfur dioxide (SO<sub>2</sub>), lead, and particulate matter (PM<sub>10</sub>, inhalable coarse particles less than 10 but 2.5 or more microns in diameter, and PM<sub>2.5</sub>, fine particles less than 2.5 microns in diameter). States are required to adopt standards that are at least as stringent as the NAAQS.

The CAA requires that states classify air basins (or portions thereof) as either “attainment” or “nonattainment” with respect to criteria pollutants. If an air basin does not meet the NAAQS for one or more pollutants, then the area is classified as “nonattainment” for that pollutant. For nonattainment areas, states are required to formulate and submit State Implementation Plans to the EPA that outline measures the state would use to attain and maintain compliance with NAAQS (40 CFR 51).

In January 2011, the EPA approved the Tribal Implementation Plan (Community 2008). Community lands in Pinal County are currently designated attainment/unclassifiable for the following NAAQS pollutants: 8-hour ozone, CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub>. In 2001, the EPA designated Community lands attainment/unclassifiable under the 8-hour ozone NAAQS and made the Community a separate Air Quality Control Region for the purposes of managing ozone.

Current federal visibility regulations (CAA) were designed to protect mandatory Class I areas for visibility (e.g., national park and wilderness areas) and are aimed primarily at the regulation of industrial point sources such as power plants and mining smelters. No specially designated areas are in the study area or vicinity.

EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance, which was signed by President Obama on October 5, 2009, directs federal agencies to promote pollution prevention and reduce emissions of greenhouse gases (GHGs) from actions under their control. In accordance with EO 13514, the CEQ defines GHGs as carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The CEQ has

proposed an annual reference threshold of 25,000 metric tons of direct carbon dioxide (CO<sub>2</sub>)-equivalent GHG emissions as a useful indicator for agencies to consider when analyzing potential action-specific GHG emissions in NEPA documents (CEQ 2010). This threshold was considered relevant by the CEQ because it is a minimum standard for reporting GHG emissions from specified industries under the CAA (EPA's Mandatory Reporting of Greenhouse Gases Final Rule, 74 Federal Register 56260). Regional sources of CO<sub>2</sub>-equivalent GHGs include combustion emissions from heavy equipment and light vehicles.

### **3.13.2 Environmental Consequences**

#### ***No Action***

Under the no action alternative, there would be no direct impact to air quality because no project construction would occur. Existing sources and activities of air pollutant emissions—fugitive dust from agricultural production—would persist into the foreseeable future.

#### ***Proposed Action***

Operations associated with the proposed action would result in the ongoing generation of fugitive dust in the study area. The use of unpaved roads (for site access as well as for site operations) would result in a minor but ongoing increase in particulates (PM<sub>10</sub>). Because more than 1 acre of ground would be disturbed during construction, an Earth Moving Permit, including a Dust Control Plan, would be required from the Community Department of Environmental Quality.

Under high wind conditions, sediment stored on-site could become a source of fugitive dust. However, due to the coarse nature of the sediment being removed and stored, the presence of fine particles in these sediment piles would be limited, and any dust generated from these piles would be expected to be minor, intermittent, and localized.

The operation of motor vehicles, including trucks, and other heavy equipment during project construction would generate minor amounts of engine combustion products such as nitrogen and NO<sub>2</sub>, CO<sub>2</sub>, CO, and reactive organic gases. A minor amount of electricity would also be consumed in the construction of the proposed action. The burning of fossil fuels in the generation of electricity would result in a minor and indirect effect from the proposed action. The emissions generated on-site would not produce measurable changes in ambient concentrations of regulated pollutants or result in a change in attainment status for the air quality region. In consideration of GHGs, the annual emission of CO<sub>2</sub>-equivalent GHGs from the proposed action would be substantially below the threshold proposed by the CEQ to be relevant to the decision-making process.

Construction activities, including the operation of earthmoving equipment, would generate fugitive dust, a minor transient effect on ambient air quality in the study area. The temporary operation of construction equipment and motor vehicles would generate minor amounts of engine combustion products described previously.

The gaseous and particulate emissions would contribute to pollutants emitted into the atmosphere from other natural and human sources. These sources include fugitive dust from nearby agricultural operations and vehicular travel on unpaved rural roads, and the emission of engine

combustion products from vehicular travel on local roadways in the study area. With the proposed action, however, increases in long-term operational efficiencies would reduce the number of annual trip miles required by service vehicles to maintain irrigation delivery infrastructure, minimally reducing the emission of CO<sub>2</sub>-equivalent GHGs and other byproducts of engine combustion.

### ***Mitigation***

- The contractor would obtain an Earth Moving Permit, including a Dust Control Plan, from the Community Department of Environmental Quality.
- The contractor would minimize land disturbance during site preparation and construction.
- To suppress dust on unpaved roads during construction, the contractor would use watering trucks, chemical dust suppressants, or other reasonable precautions.
- Trucks hauling soil or sediment would be covered.
- With the exception of long-term storage of sediment, unused materials would be removed from the project footprint following construction.
- All disturbed lands that would not be permanently incorporated into project operations, except sediment piles, would be revegetated or otherwise stabilized.

## **3.14 HAZARDOUS MATERIALS**

### **3.14.1 Affected Environment**

A review of a regulatory database (Allands 2011) was performed to identify the presence of hazardous materials or similar environmental concerns that may be adversely affected by the proposed action.

State (Arizona Revised Statutes 49-1001 to -1014) and federal (Resource Conservation and Recovery Act Facilities Subtitle 1) laws require that persons who own or have owned underground storage tanks containing “regulated substances” complete a notification form and register the tank with the state.

The regulatory database search report found one registered underground storage tank (UST) and one registered leaking underground storage tank (LUST) within the project footprint. The UST/LUST is the Sacaton Service Station on the corner of Pima Road and Casa Blanca Road.

Use, storage, and disposal of hazardous materials and solid waste during construction have the potential to adversely affect the environment if these materials are improperly managed. Potential impacts could be associated with the release of these materials to the environment. Direct impacts of such releases would include contamination of soil, water, and vegetation, which could result in indirect impacts to wildlife, aquatic life, and humans.

### 3.14.2 Environmental Consequences

#### *No Action*

Under the no action alternative, the project would not be constructed, and there would be no impact on hazardous materials.

#### *Proposed Action*

Implementation of the proposed action would not affect any known hazardous materials sites. The nearest hazardous materials site is a UST/LUST in Sacaton. Construction activities would not affect this site.

Construction would require the short-term use of fuels, lubricants, and other fluids that create a potential contamination hazard. These and other hazardous substances would be stored and handled in accordance with federal and Community regulations. Any spills or leaks of hazardous material would require immediate corrective action and cleanup to minimize the impact on sensitive resources. Any spills would be reported immediately to the appropriate federal and Community agencies.

Hazardous materials and other hazardous substances that are used in construction would be disposed of in accordance with applicable laws and regulations. Excess or unused quantities of hazardous materials would be removed upon project completion. Though hazardous waste<sup>3</sup> generation is not anticipated, any such wastes produced during construction would be properly containerized, labeled, and transported to an approved hazardous waste disposal facility. All nonhazardous waste materials, including construction refuse, garbage, sanitary waste, and concrete, would be removed from the work area and transported to an approved disposal facility.

#### *Mitigation*

- The contractor would ensure that appropriate Occupational Safety and Health Administration recommendations are followed for levels of personal protective equipment (i.e., dust masks and protective eyewear to minimize contact with airborne dust) to be used by all persons entering or working within the project footprint.
- If storage occurs on-site, fuel and lubricants would be placed in clearly marked above-ground containers that would be provided with secondary containment.
- Any hazardous wastes would be properly containerized, labeled, and transported to a permitted disposal facility in accordance with federal and state regulations.

<sup>3</sup> Hazardous waste is defined in 40 CFR 261.

## 4.0 ENVIRONMENTAL COMMITMENTS

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The following section is a comprehensive listing of the mitigation measures incorporated into the Casa Blanca Canal EA. These mitigation measures will be implemented as part of the proposed project.

### *P-MIP/Contractor Responsibilities*

- Established procedures would be followed in acquisition of permanent irrigation easements and temporary construction easements needed for the project.
- Traffic control devices and/or flaggers would be employed, if needed, to ensure public safety and minimize traffic delays caused by construction.
- No ground disturbance would begin until the cultural resources treatment plan has been approved by THPO and requirements of the plan have been fulfilled.
- Erosion control measures and post-construction site stabilization would be implemented within the project footprint, as necessary.
- Structural barriers or best management practices would be used to prevent the removed sediment from discharging downstream.
- Any excess materials would be spoiled within the PIE on the outside of canal embankments or in an approved disposal site.
- To prevent the introduction and establishment of invasive weed species, all construction equipment would be power-washed at the contractor's storage facility prior to entering the construction site.
- To prevent the off-site transport of invasive species seeds from the site, the contractor would power-wash all equipment prior to leaving the site.
- Where appropriate, all disturbed soils that would not be landscaped or otherwise permanently stabilized by construction would be seeded using species native to the project vicinity.
- P-MIP would employ a qualified biologist to ensure compliance with the MBTA. Every attempt would be made to complete land-clearing activities from September 1 through February 28 to avoid the breeding season of migratory birds. If clearing activities occur during the breeding period (March 1 through August 31), a qualified biologist would begin surveying the area in mid-February to determine the presence or absence of nesting birds.
- Between March 1 and August 31, all vegetation scheduled to be disturbed by the proposed project that may contain active bird nests would be surveyed immediately prior (within 48 hours) to being disturbed. If an active nest or nests are discovered, vegetation-clearing activities would not be allowed to proceed in the vicinity of the nest(s). No activities would occur within an appropriate buffered distance from active nests until after the young birds have fledged from the nest.
- The contractor would employ a biologist to complete a preconstruction survey for burrowing owls 96 hours prior to construction in all suitable habitat that would be disturbed. The biologist would possess a burrowing owl survey protocol training certificate issued by the AGFD. Upon

completion of the surveys, the contractor would provide the survey results to the Phoenix area Reclamation office.

- If any burrowing owls are located during preconstruction surveys or construction, the contractor would employ a biologist holding a permit from the USFWS to relocate burrowing owls from the study area, as appropriate. Organizations such as Wild at Heart and Liberty Wildlife also could be contacted to remove/relocate burrowing owls.
- If burrowing owls or active burrows are identified during the preconstruction surveys or during construction, no construction activities would take place within 100 feet of any active burrows until the owls are relocated.
- If Sonoran Desert tortoises are encountered during construction, the contractor would follow the “Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects.” Any tortoises relocated would be moved by a biologist trained under the “Guidelines.”
- If Tucson shovel-nosed snakes are observed by construction crews during construction, they would be avoided and allowed to proceed out of the construction footprint on their own volition.
- If any federally listed species are identified in the project area, construction activities would be halted until consultation with the USFWS can be initiated.
- Contractor personnel would be instructed not to collect, disturb, or molest wildlife species.
- Construction equipment would be equipped with properly functioning mufflers.
- Unnecessary idling time of construction machinery would be minimized in urban areas.
- Construction would be limited to daylight hours (6 a.m. to 7 p.m.) in urban areas.
- P-MIP would notify nearby residents in areas where peak noise levels may exceed 80 dBA.
- The contractor would obtain an Earth Moving Permit, including a Dust Control Plan, from the Community Department of Environmental Quality.
- The contractor would minimize land disturbance during site preparation and construction.
- To suppress dust on unpaved roads during construction, the contractor would use watering trucks, chemical dust suppressants, or other reasonable precautions.
- Trucks hauling soil or sediment would be covered.
- With the exception of long-term storage of sediment, unused materials would be removed from the project footprint following construction.
- All disturbed lands that would not be permanently incorporated into project operations, except sediment piles, would be revegetated or otherwise stabilized.
- The contractor would ensure that appropriate Occupational Safety and Health Administration recommendations are followed for levels of personal protective equipment (i.e., dust masks and protective eyewear to minimize contact with airborne dust) to be used by all persons entering or working within the project footprint.
- If storage occurs on-site, fuel and lubricants would be placed in clearly marked above-ground containers that would be provided with secondary containment.

- Any hazardous wastes would be properly containerized, labeled, and transported to a permitted disposal facility in accordance with federal and state regulations.

## **5.0 CONSULTATION AND COORDINATION**

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### **5.1 LIST OF AGENCIES AND PERSONS CONTACTED**

Reclamation submitted information on the project proposal to the following entities during the development of this Draft EA. The names of the individuals are retained in the administrative record.

#### **5.1.1 Indian Communities**

- Ak-Chin Indian Community
- Gila River Indian Community
- Hopi Tribe

#### **5.1.2 Local Government Agencies**

- City of Maricopa Interim City Manager
- City of Maricopa Public Works
- Pinal County Public Works
- Maricopa County Flood Control District

#### **5.1.3 State Agencies**

- Arizona Department of Environmental Quality
- Arizona Department of Transportation
- AGFD
- Arizona Department of Water Resources

#### **5.1.4 Federal Agencies**

- BIA
- Corps
- NRCS
- USFWS
- USGS

#### **5.1.5 Other Organizations**

- El Paso Natural Gas
- Gila River Farms
- Gila River Indian Irrigation and Drainage District
- Southwest Gas

## 5.2 PUBLIC INVOLVEMENT

Reclamation sent out a news release on May 23, 2011, soliciting public comments on the project proposal (Appendix C). No responses were received from the public. However, four agency response letters were received (Appendix B). Agency comments and Reclamation and P-MIP responses are summarized in Table 6.

**Table 6. Agency comments on scoping.**

Agency	Comment	Response
Corps	(Letter dated August 23, 2011) The Corps stated that the Casa Blanca Canal is nonjurisdictional and that CWA permitting is not required.	None necessary.
Arizona Department of Environmental Quality (ADEQ)	(Letter dated May 20, 2012) The ADEQ stated that disturbance of particulate matter is anticipated during construction and requested measures be implemented to minimize disturbance.	Mitigation measures have been included to minimize disturbance during construction.
NRCS	(Email dated May 3, 2011) The NRCS stated that the project does not fall under purview of the Farmland Protection Policy Act.	None necessary.
City of Maricopa	(Letter dated May 27, 2011) The City of Maricopa requested to be a cooperating agency. The City of Maricopa is concerned with potential floodplain impacts associated with the proposed project.	Reclamation included the City of Maricopa as a cooperating agency. Reclamation and P-MIP have discussed the proposed project in depth with City of Maricopa officials. Potential floodplain impacts are discussed in Section 3.10, Floodplains and Flooding.

## **6.0 LIST OF PREPARERS**

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This Draft EA has been prepared by P-MIP and Reclamation with the assistance of EcoPlan Associates, Inc.

The following individuals participated in the development of this document:

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- Duane Mallicoat, P.E., Ph.D., Mallicoat Engineering
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## 7.0 RELATED ENVIRONMENTAL LAWS/DIRECTIVES

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The CEQ regulations encourage agencies to “integrate the requirements of NEPA with other planning and environmental review procedures required by law.” Coordinating NEPA procedures with those of other federal environmental statutes and EOs facilitates NEPA objectives by promoting efficiencies in environmental planning and development of relevant information on which to base agency decisions. This integrative approach to NEPA ensures planning, review, and compliance processes run concurrently rather than consecutively with procedures required by other environmental laws.

The following is a list of federal laws, EOs, and other directives that apply to the action alternatives discussed in this Draft EA:

The National Environmental Policy Act of 1969, as amended, requires federal agencies to evaluate the potential environmental consequences of major federal actions. An action becomes “federalized” when it is implemented, wholly or partially funded, or requires authorization by a federal agency. The intent of NEPA is to promote consideration of environmental impacts in the planning and decision-making process prior to project implementation. NEPA also encourages full public disclosure of the proposed action, accompanying alternatives, potential environmental effects, and mitigation.

This EA has been prepared in accordance with NEPA, CEQ regulations (40 CFR 1500–1508), and Department of the Interior NEPA regulations (43 CFR 46). Pursuant to those regulations, scoping information was made available for public comment. Those comments were considered during the preparation of this document.

The Fish and Wildlife Coordination Act (FWCA) of 1958, as amended, provides a procedural framework for the consideration of fish and wildlife conservation measures in federal water resource development projects.

A FWCA report was prepared by the USFWS for the P-MIP PEIS. Scoping information and the Draft EA were provided to the USFWS for comment on mitigating losses to wildlife that may result from the project. This review process satisfies the coordination requirements of the FWCA. The Endangered Species Act of 1973, as amended, provides protection for plants and animals that are currently in danger of extinction (endangered) and those that may become so in the foreseeable future (threatened). Section 7 of this law requires federal agencies to ensure that their activities do not jeopardize the continued existence of threatened or endangered species or adversely modify designated critical habitat.

The USFWS list of endangered, threatened, proposed, and candidate species for Pinal County was reviewed by a qualified biologist to determine which listed species may occur in the project vicinity. Table 4 examines the potential for endangered, threatened, proposed, and candidate species for Pinal County. Reclamation determined that the proposed action would not affect federally listed species.

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former

Soviet Union for the protection of migratory birds. The MBTA prohibits the take, possession, import, export, transport, selling, or purchase of any migratory bird, their eggs, parts, or nests. Land-clearing activities are proposed from September 1 through February 28 to avoid the breeding season of migratory birds. If clearing activities occur during the breeding period (March 1 through August 31), a qualified biologist would begin surveying the area in mid-February to determine the presence or absence of nesting birds. Nests, if found, will be removed during the building stage, prior to egg-laying. The nests of any actively breeding birds will be flagged for avoidance by construction crews.

The Western burrowing owl was identified as potentially occurring in the project vicinity. Mitigation measures have been included to avoid impacts to this species. Vegetation-clearing activities are proposed to occur outside of the breeding season to avoid impacts to migratory species.

The Clean Air Act (CAA) of 1963, as amended, requires any federal entity engaged in an activity that may result in the discharge of air pollutants to comply with all applicable air pollution control laws and regulations (federal, state, or local). It also directs the attainment and maintenance of NAAQS for six different criteria pollutants: carbon monoxide, ozone, particulate matter, sulfur oxides, oxides of nitrogen, and lead. Air quality in the project area is in attainment of NAAQS.

Short-term construction emissions (particulate matter) associated with the proposed project would have localized and minor effects on the air quality in the project vicinity. Adoption of mitigation measures identified under the Air Quality section would reduce dust emissions that could result from implementation activities.

The National Historic Preservation Act of 1966, as amended, mandates that all federally funded undertakings that have the potential to affect historic properties are subject to Section 106 of the NHPA. Federal agencies are responsible for the identification, management, and nomination to the NRHP of cultural resources that could be affected by federal actions.

No ground disturbance would begin until the cultural resources treatment plan has been approved by THPO and requirements of the plan have been fulfilled.

The Resource Conservation and Recovery Act, as amended, establishes thresholds and protocols for managing and disposing of solid waste. Solid wastes that exhibit the characteristic of hazardous waste, or are listed by regulation as hazardous waste, are subject to strict accumulation, treatment, storage, and disposal controls.

The proposed project is not expected to generate hazardous waste as defined and regulated under the Resource Conservation and Recovery Act. To minimize the possible impact of hazardous materials (petroleum, oil, and lubricants) used during construction, all equipment would be periodically inspected for leaks. Any major leaks would be promptly corrected. Nonhazardous solid waste would be disposed of in accordance with state and federal regulations at an approved landfill.

Executive Order (EO) 11988 (Floodplain Management) requires federal agencies to avoid, where practicable alternatives exist, the short- and long-term adverse impacts associated with floodplain

development. Federal agencies are required to reduce the risk of flood loss; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains in carrying out agency responsibility.

Most of the study area is within the 500-year floodplain of the Gila River and the Santa Cruz Wash. The proposed action would not reduce floodplain capacity or increase the flood risk to people or property.

Executive Order 11990 (Wetlands) requires federal agencies, in carrying out their land management responsibilities, to take action that would minimize the destruction, loss, or degradation of wetlands and take action to preserve and enhance the natural and beneficial values of wetlands. Wetlands in the construction area are exempted under the Clean Water Act pursuant to 33 CFR Part 323.4, based on the Corps comment letter dated August 23, 2011.

Executive Order 12898 (Environmental Justice) requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health and environmental effects of their programs, policies, and activities on minority and low-income populations.

Because the project would not introduce disproportionately high and adverse human health and environmental effects on minority and low-income populations, there would be no adverse effect as defined by this EO.

Executive Order 13514 (Federal Leadership in Environmental, Energy, and Economic Performance) directs federal agencies to promote pollution prevention and reduce emissions of GHGs from actions under their control. In accordance with EO 13514, the CEQ defines GHGs as carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

The proposed action would result in a short-term increase in CO<sub>2</sub>-equivalent GHGs during construction and a long-term decrease in CO<sub>2</sub>-equivalent GHGs due to increased operational efficiencies of water delivery infrastructure.

Secretarial Order 3175 (512 Departmental Manual 2) requires that if any Department of the Interior agency actions impact ITAs, the agency must explicitly address those impacts in planning and decision-making, and the agency must consult with the tribal government whose trust resources are potentially affected by the federal action.

Reclamation has reviewed the proposed action for possible effects to ITAs. Rehabilitation of the Casa Blanca Canal would provide for greater utilization of the water rights associated with water from the Gila River and other sources. In addition, the value of Community lands would be enhanced in areas where water that is conserved as a direct result of the project is available for irrigation.

Water that is conserved from lining and from improved operating efficiencies would be put to beneficial use to irrigate cropland. The proposed rehabilitation would extend the useful life of the facilities, ensuring future deliveries of available irrigation water. In addition, the value of any new lands that are put into agricultural production as a result of the project would be enhanced.

The Farmland Protection Policy Act and 7 CFR 658 are intended to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural purposes. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, and oilseed crops and is available for these uses. In general, prime farmland has acceptable soil conditions with few rocks, a favorable temperature and growing season, and an adequate and dependable water supply from precipitation or irrigation. Unique farmland is land other than prime farmland that is used for production of specific high-value foods and fiber crops.

The NRCS has general responsibility nationwide for implementing the FPPA and to review projects that may affect prime, unique, or statewide important farmland and/or wetlands associated with agriculture. The proposed action would not result in the conversion of prime or unique farmland to nonagricultural purposes.

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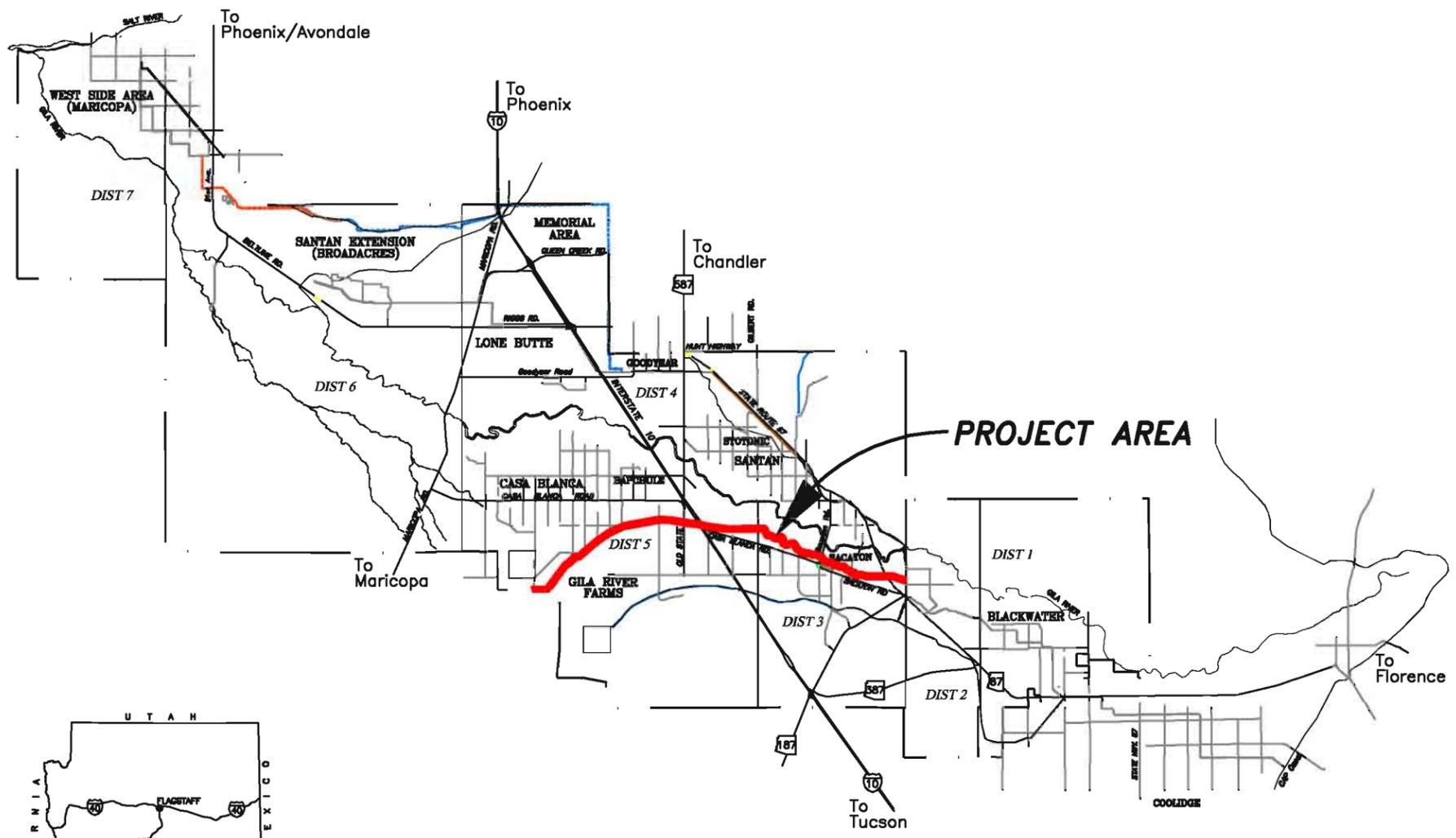
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**Appendix A      Geometric Plans Showing Temporary Construction  
Easements and Permanent Irrigation Easements**

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# PIMA-MARICOPA IRRIGATION PROJECT GEOMETRIC LAYOUT EXHIBIT CASA BLANCA CANAL REACH CB-III

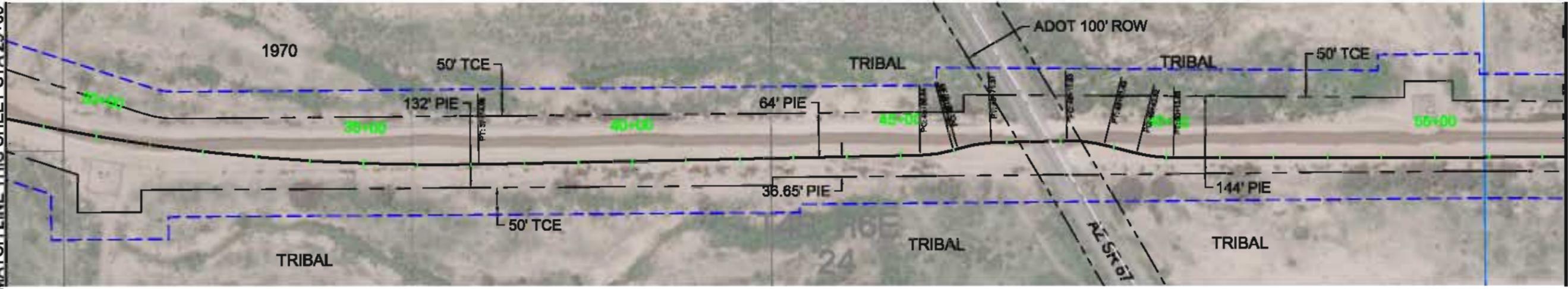
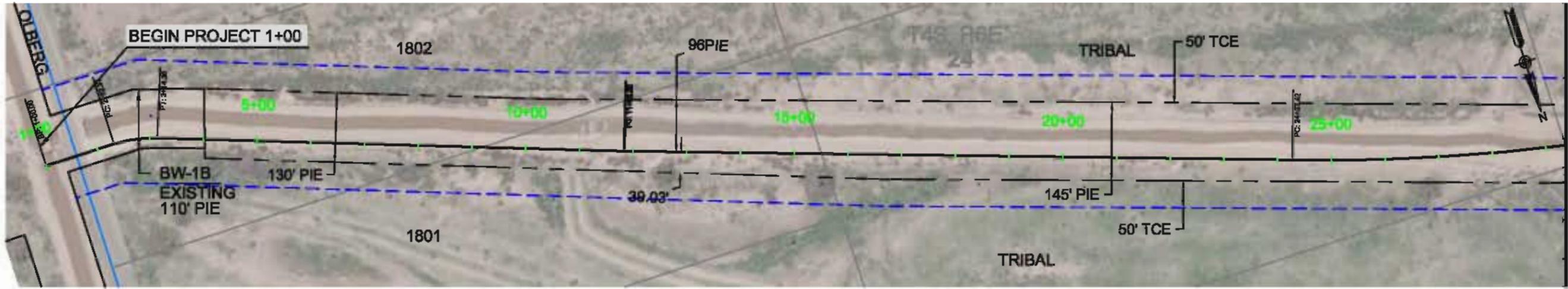


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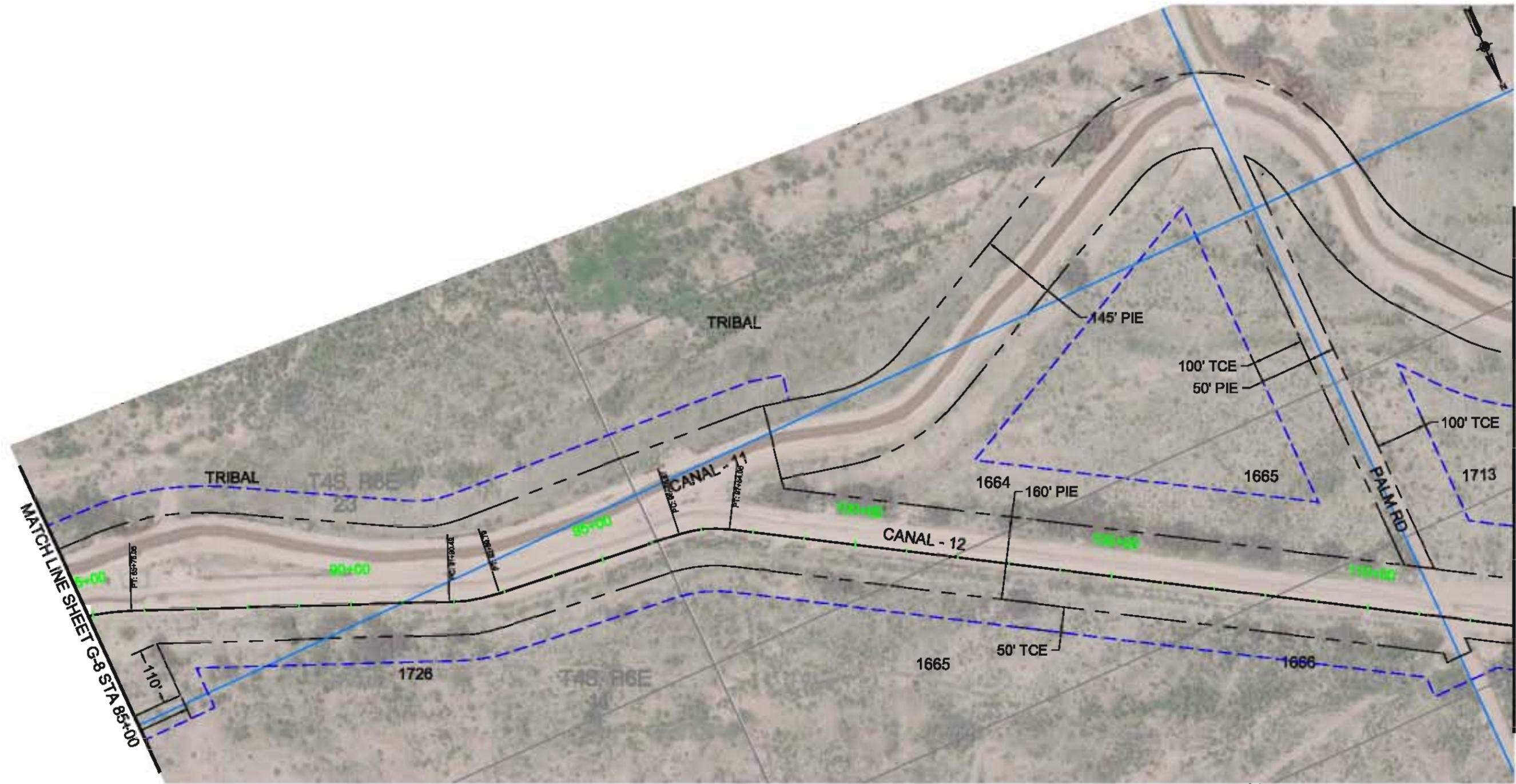
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	P.O. BOX C 1824 SOUTH "A" STREET SACATON, ARIZONA 85347 (520) 854-0100 (520) 854-0101 FAX				
GILA RIVER INDIAN COMMUNITY PIMA-MARICOPA IRRIGATION PROJECT	GEOMETRIC LAYOUT CASA BLANCA CANAL REACH CB-III LOCATION EXHIBIT AND LEGEND				
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	SHEET 1 OF 1				

# PERMANENT IRRIGATION EASEMENT



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<b>PIMA-MARICOPA IRRIGATION PROJECT</b> <small>P.O. BOX 100 STREET BUCKSON, ARIZONA 85707</small> <small>PROPOSAL# 078</small>	
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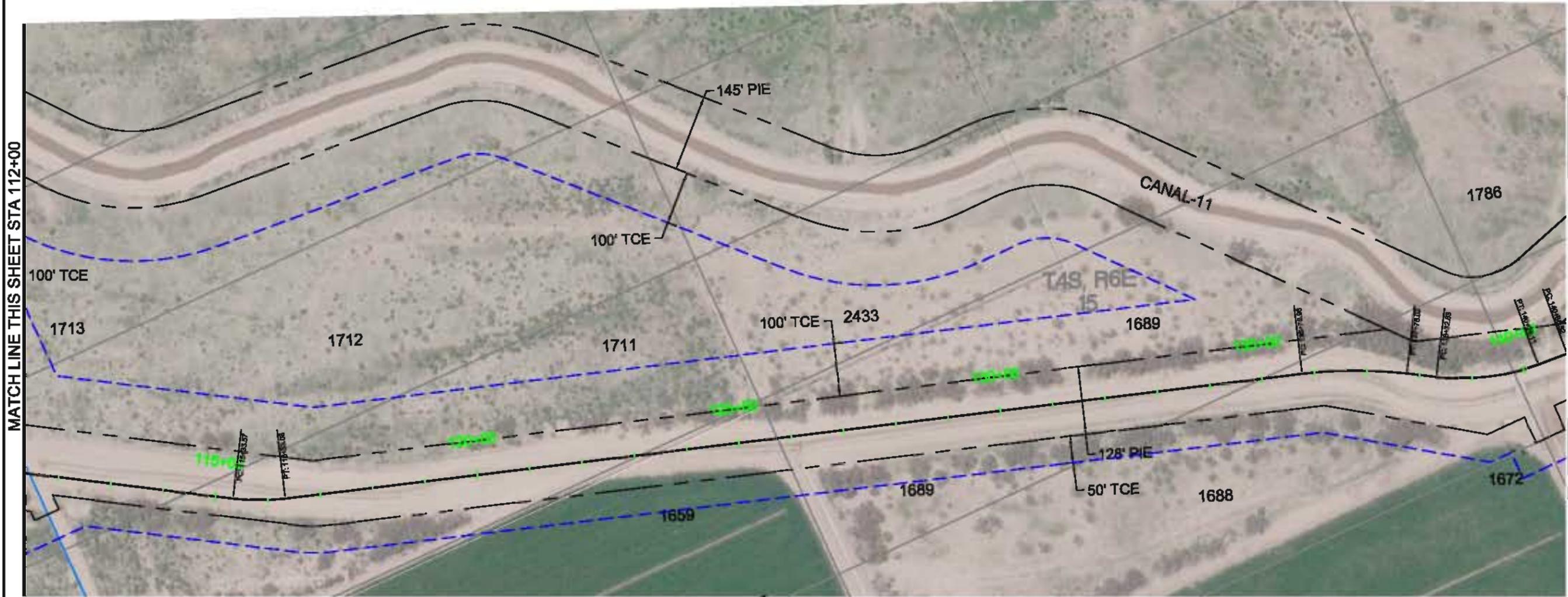


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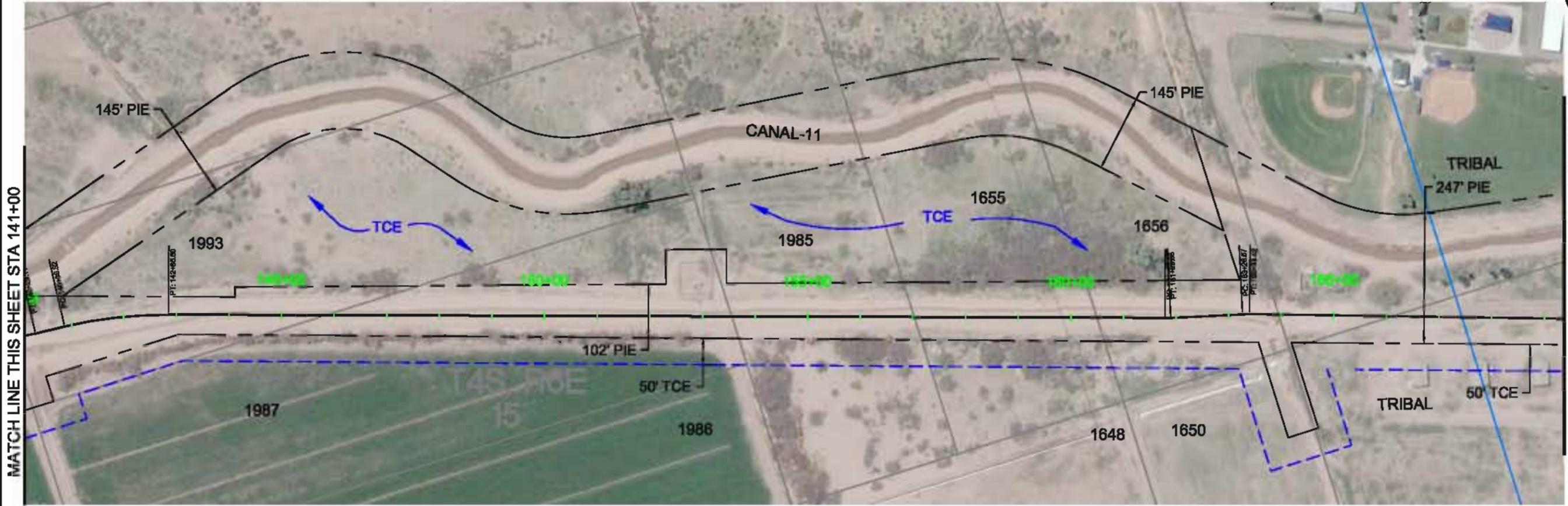
  

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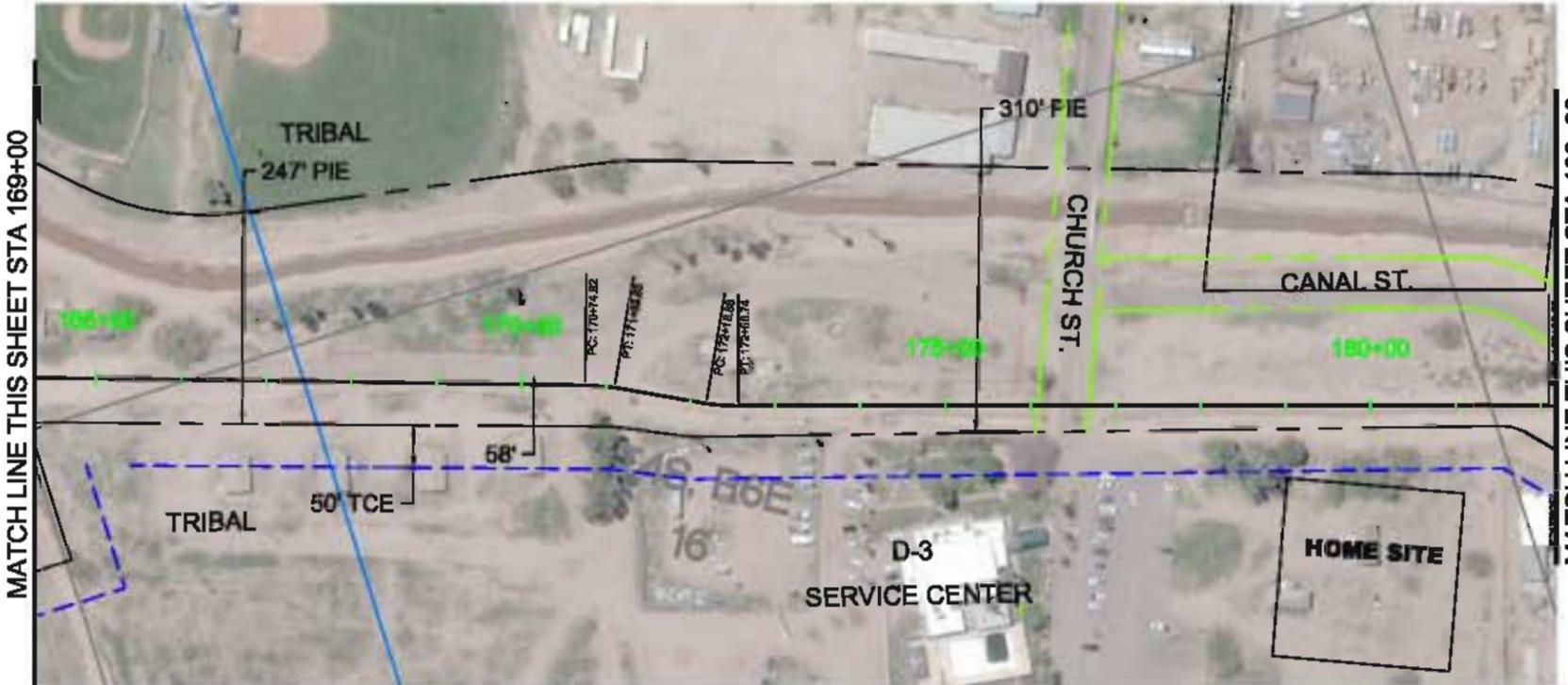
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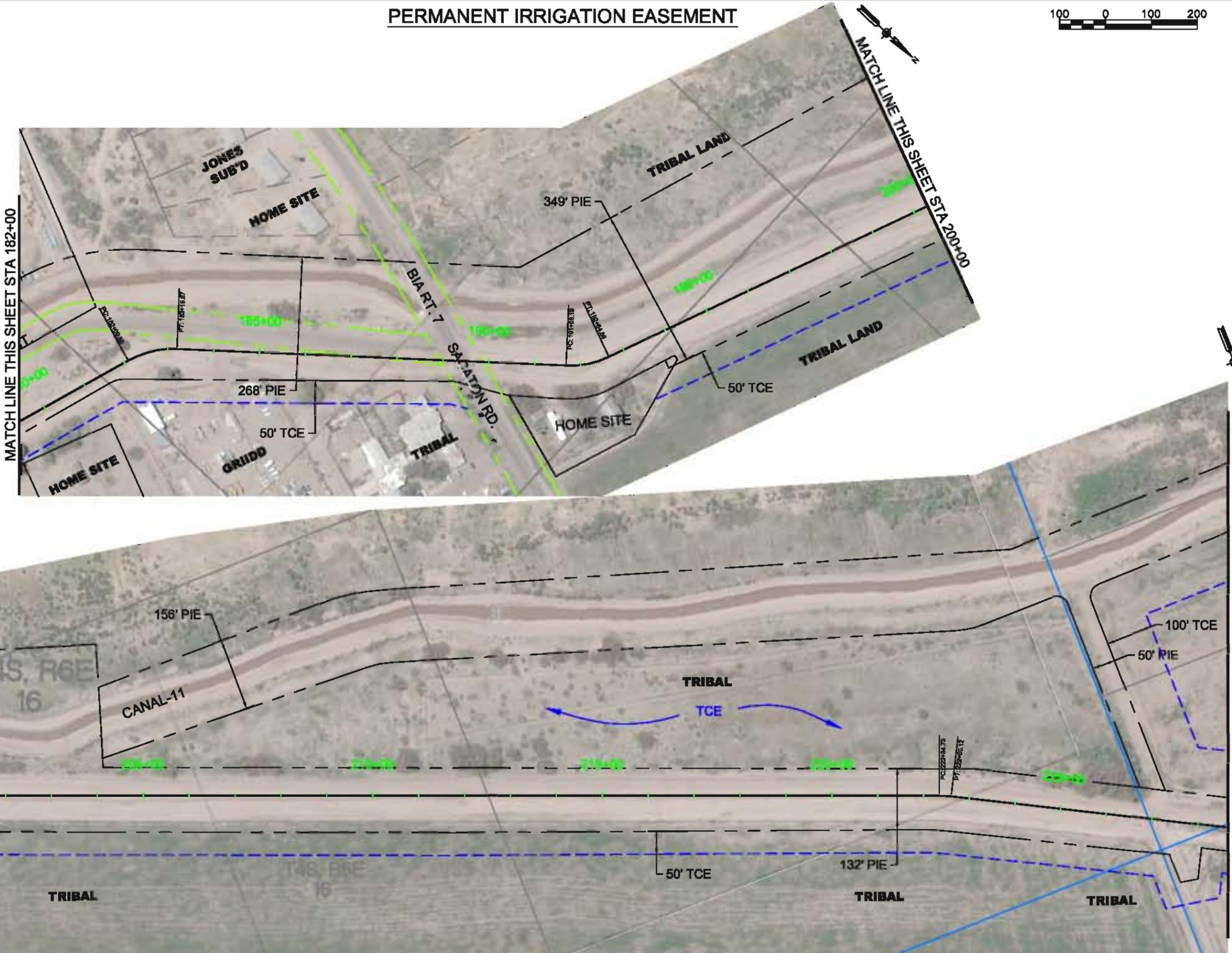


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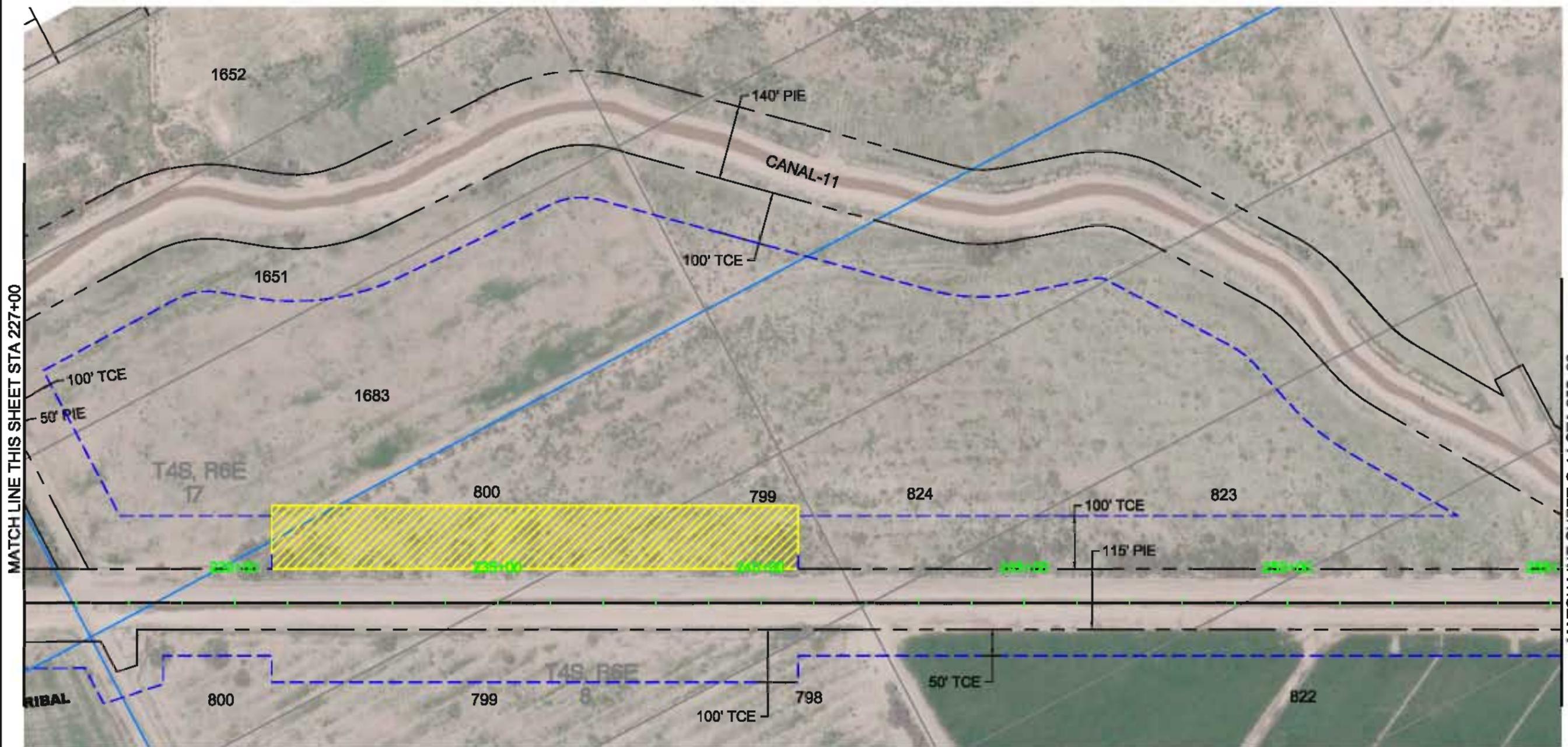
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PIMA-MARICOPA IRRIGATION PROJECT P.O. BOX 600 SACATON, ARIZONA 85347 (520) 885-1111					
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# PERMANENT IRRIGATION EASEMENT



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<b>PIMA-MARICOPA IRRIGATION PROJECT</b> <small>P.O. BOX 15          1504 SOUTH WY STREET          SACATON, ARIZONA, 85647          phone: 520-885-1111          pima.maricopa@pima.maricopa.net</small>					
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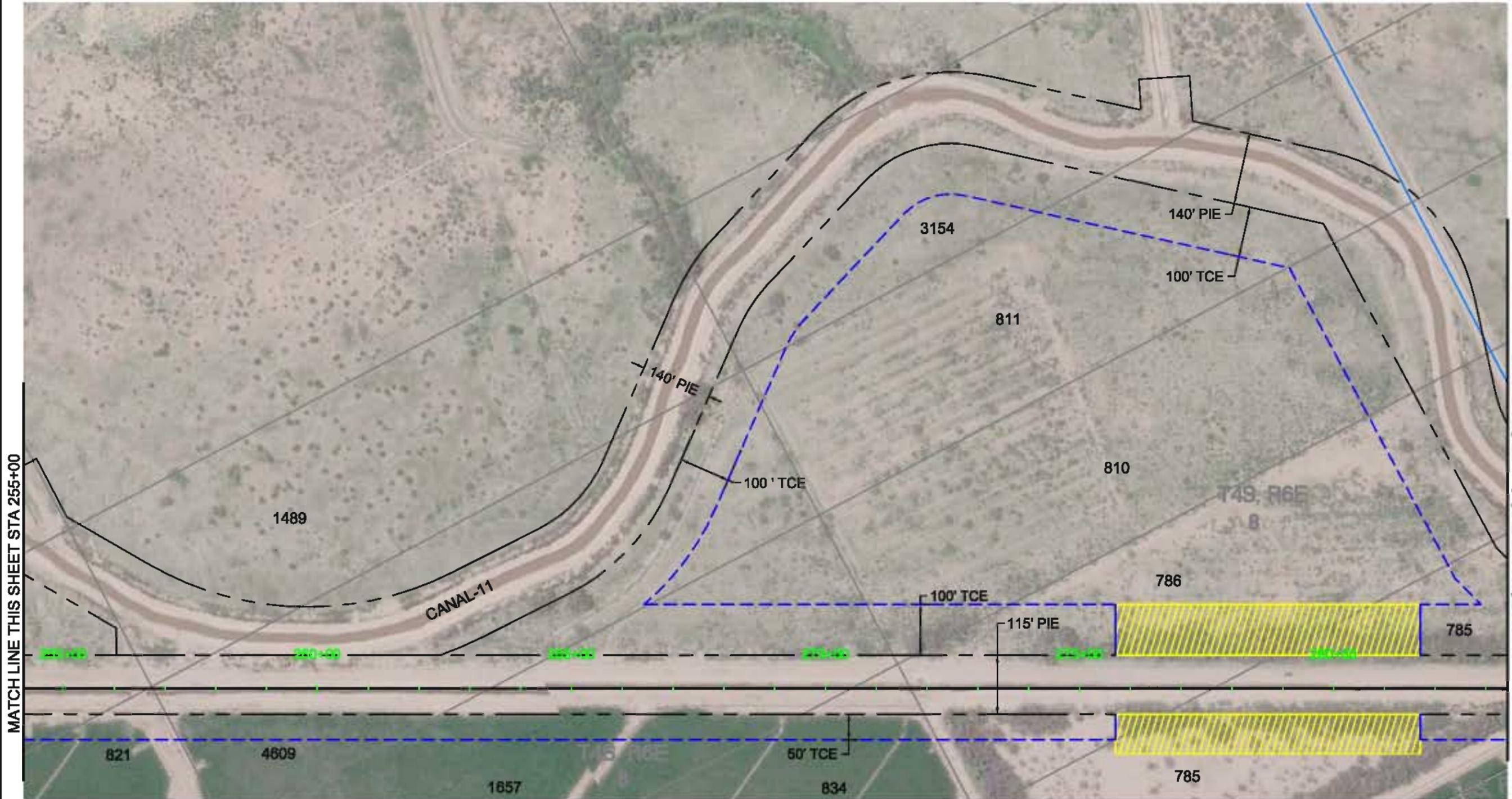


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<b>Plot Date</b> 4-20-12				
<b>Designed</b> RRE				
<b>Drawn</b> AJ				
<b>Checked</b> RRE				
<b>Reviewed</b> DD				
<b>Approval</b>				
<b>ISSUE CERTIFICATION</b> I, <b>DAVID D. DYER</b> , a duly Licensed Professional Engineer in the State of Arizona, do hereby certify that the above described project was designed, drawn, checked, and reviewed by me or under my direct supervision and that I am a duly Licensed Professional Engineer in the State of Arizona.				
<b>PIMA-MARICOPA IRRIGATION PROJECT</b> GEODETIC LAYOUT STA. 227+00 TO STA. 255+00				
<b>GILA RIVER INDIAN COMMUNITY</b> PIMA-MARICOPA IRRIGATION PROJECT				
<b>DRAWING NO.</b> G-13				
SHEET 1 OF 24				

# PERMANENT IRRIGATION EASEMENT

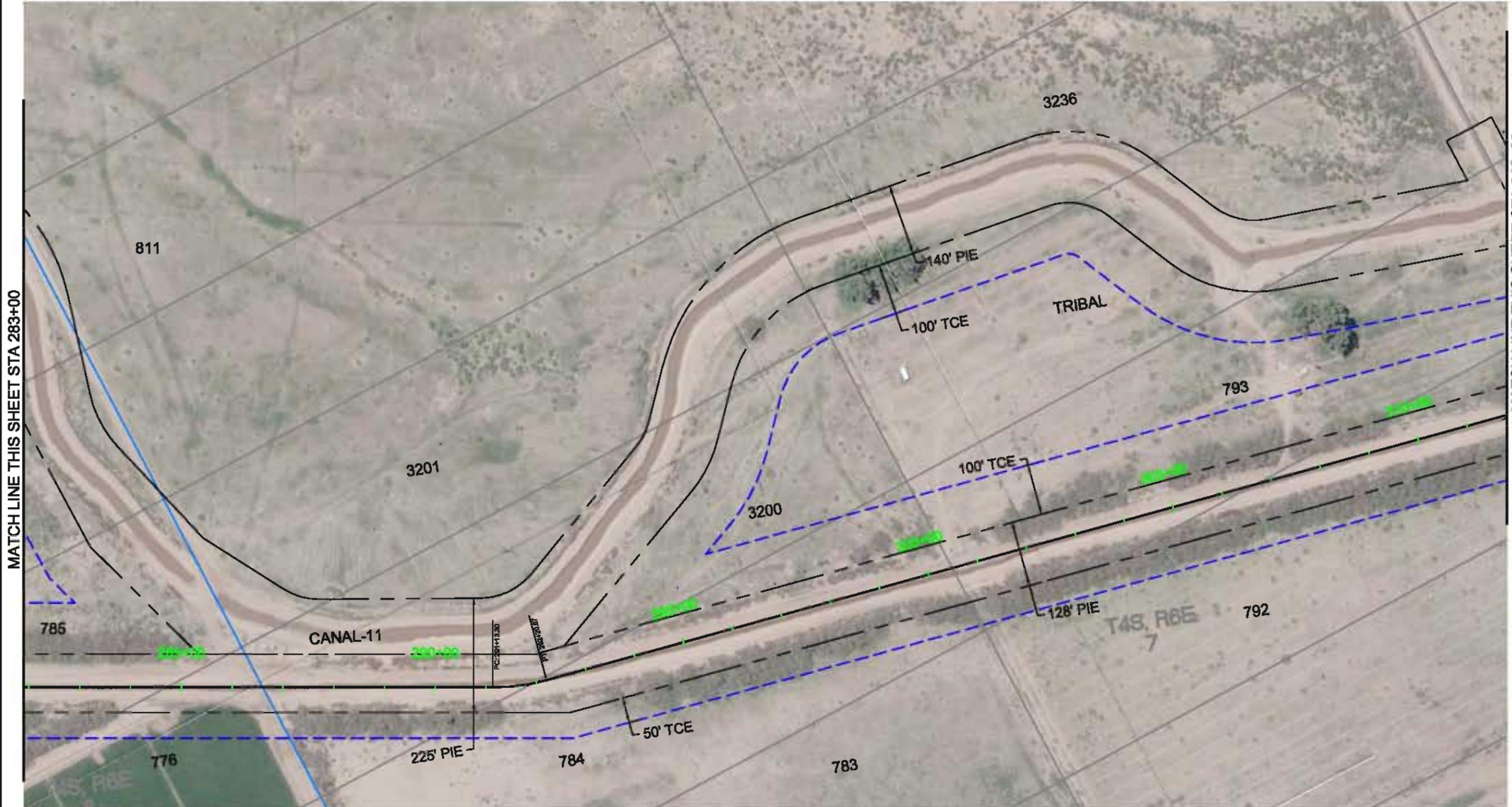
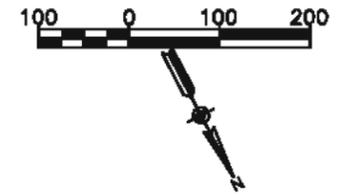


MATCH LINE THIS SHEET STA 255+00

MATCH LINE THIS SHEET STA 283+00

<b>Log No.</b> 06-11-IE	<b>Plot Date</b> 8-2-2011	<b>Design</b> R.R.E.	<b>Drawn</b> AJ	<b>Checked</b>	<b>Reviewed</b> R.R.E.	<b>Approved</b>
<b>Issue Certification</b>						
						
<b>PIMA-MARICOPA IRRIGATION PROJECT</b> <small>P.O. BOX 15                  150A SOUTH 1ST STREET                  SACATON, ARIZONA 85347                  pima@pima-irrigation.com                  pima-irrigation.com</small>						
<b>GILA RIVER INDIAN COMMUNITY</b> PIMA-MARICOPA IRRIGATION PROJECT				<b>GEODETIC LAYOUT</b> STA. 255+00 TO STA. 283+00		
<b>DRAWING NO.</b> G-14						
SHEET 1 OF 24						

**PERMANENT IRRIGATION EASEMENT**

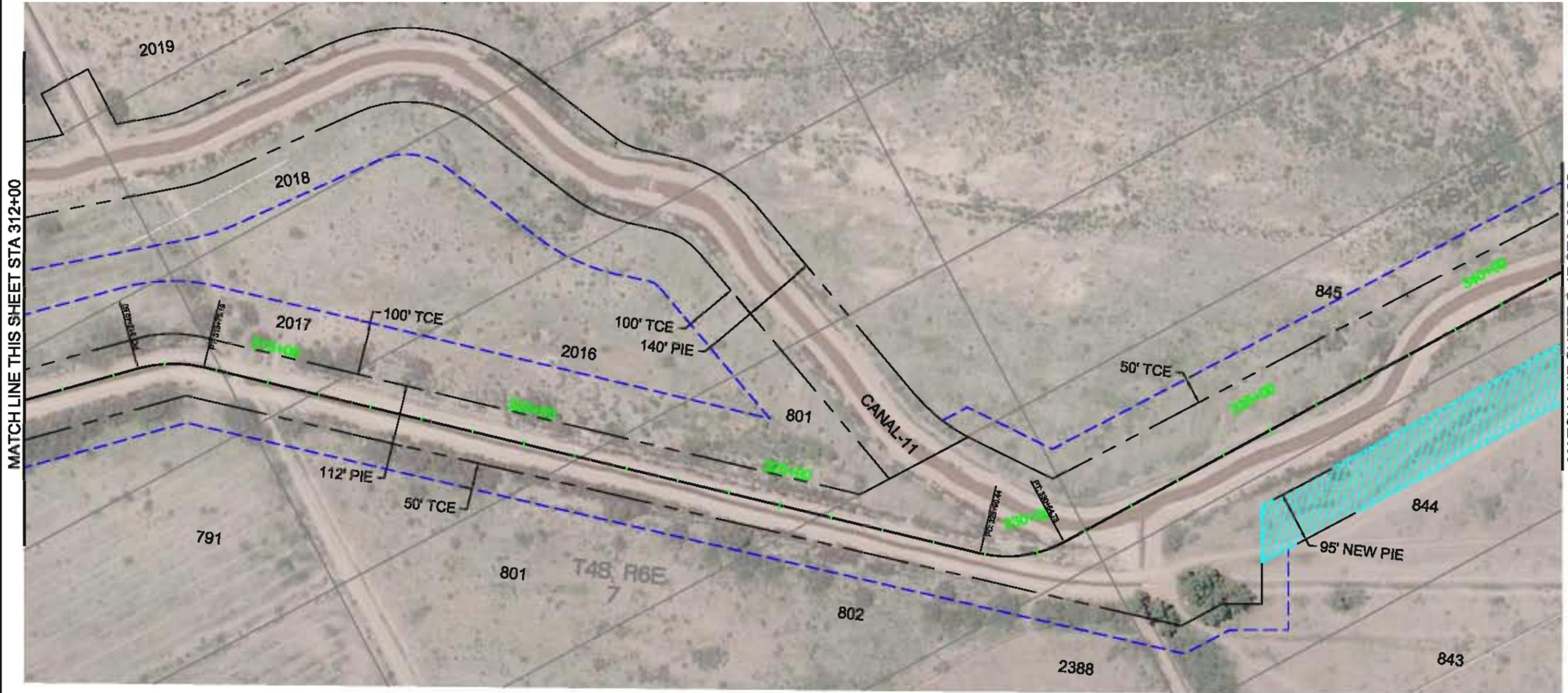


MATCH LINE THIS SHEET STA 283+00

MATCH LINE THIS SHEET STA 312+00

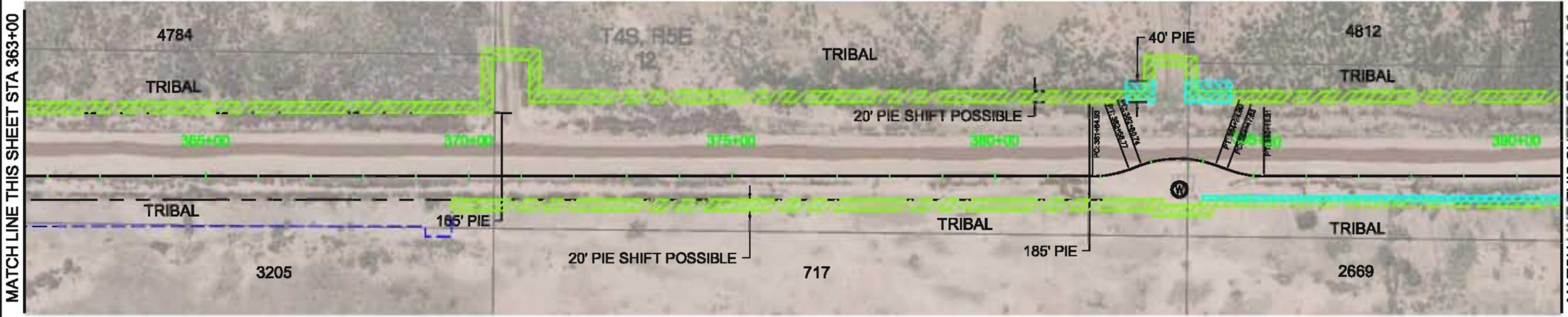
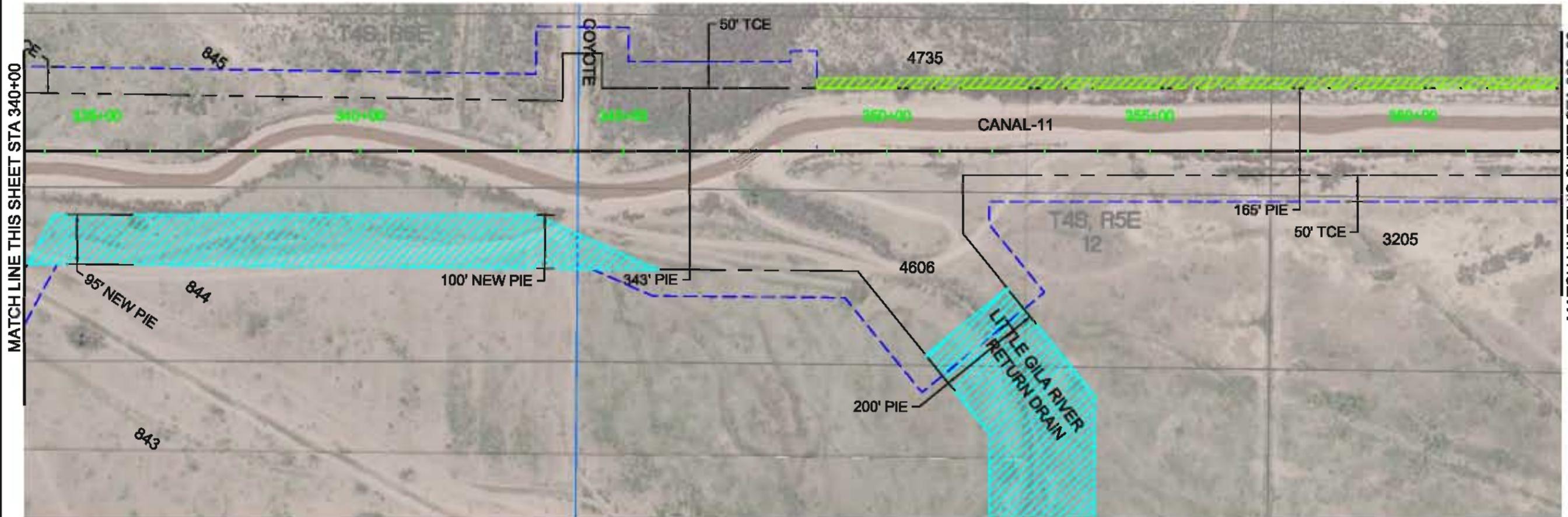
		Issue Certification Preliminary Motor Construction		Log No. 06-11-IE Plot Date 4-20-12 Designed R.E.E. Drawn AJ Checked Reviewed R.E.E. Approved	Rev Date Description	By
GILA RIVER INDIAN COMMUNITY PIMA-MARICOPA IRRIGATION PROJECT		PIMA-MARICOPA IRRIGATION PROJECT		STA. 283+00 TO STA. 312+00 GEODETIC LAYOUT		
DRAWING NO. G-15		SHEET 1 OF 24				

# PERMANENT IRRIGATION EASEMENT



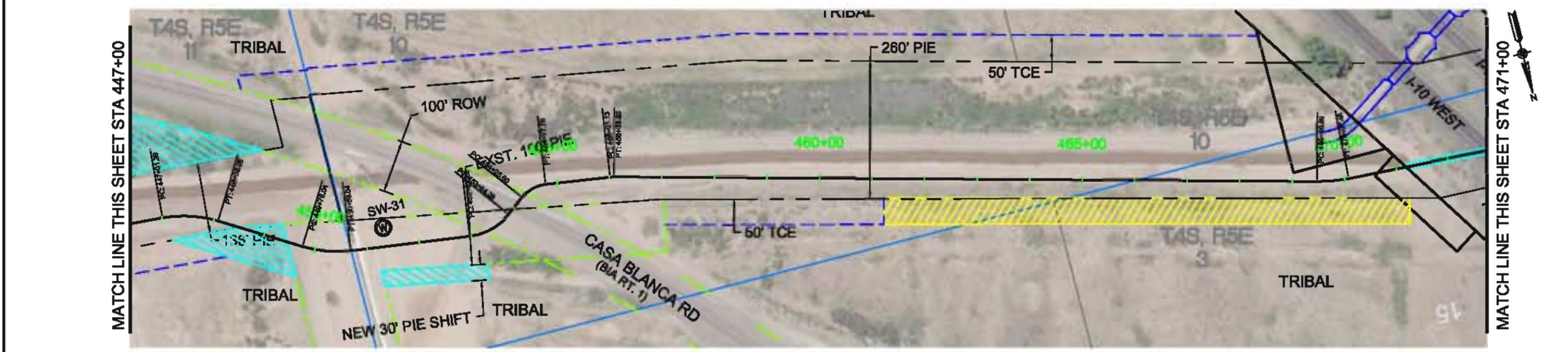
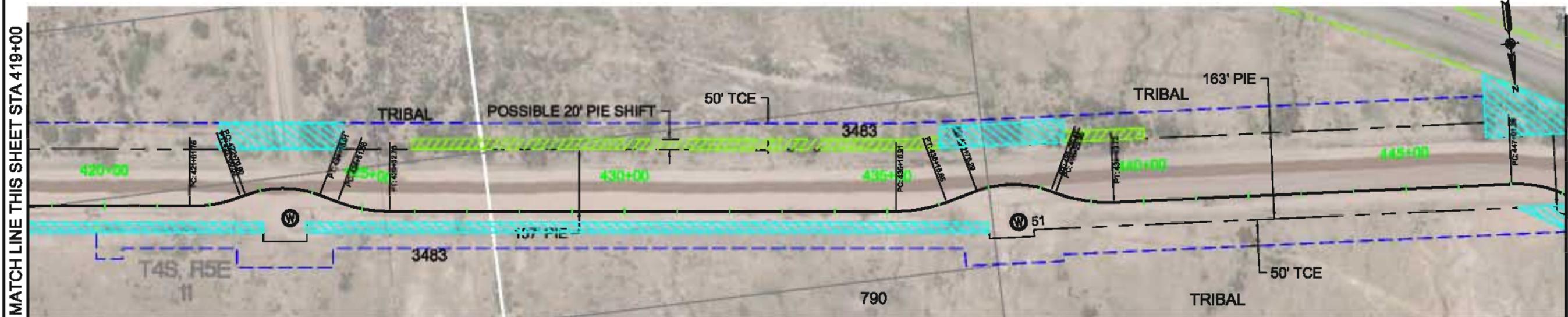
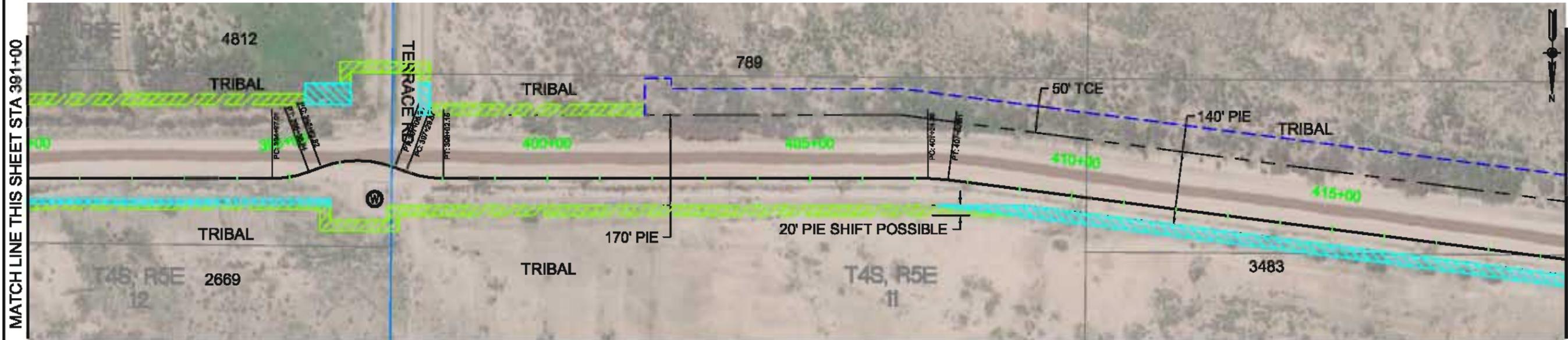
	By						
	Description						
	Date						
	Rev						
Log No.	08-11-1E	Proj. Date	5-2-2	Designed	R.E.E.	Drawn	AJ
Issue Certification	PRELIMINARY NOT FOR CONSTRUCTION						
PIMA - MARICOPA IRRIGATION PROJECT	 <small>P.O. BOX 15 150-A SOUTH W STREET TACSONA, ARIZONA 85701 pima.maricopa.az.us</small>						
GILA RIVER INDIAN COMMUNITY PIMA-MARICOPA IRRIGATION PROJECT	GEODETIC LAYOUT STA. 312+00 TO STA. 341+00						
DRAWING NO.	G-16						
SHEET	OF -						

# PERMANENT IRRIGATION EASEMENT



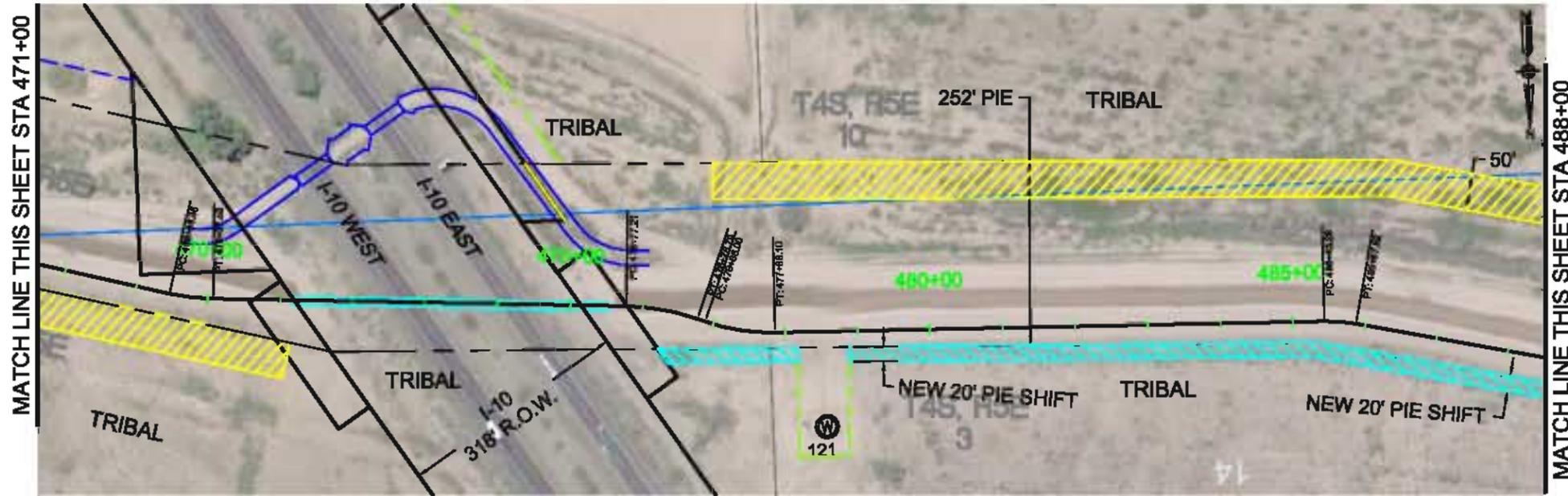
MATCH LINE THIS SHEET STA 340+00	MATCH LINE THIS SHEET STA 363+00	MATCH LINE THIS SHEET STA 391+00	MATCH LINE THIS SHEET STA 363+00	MATCH LINE THIS SHEET STA 391+00	MATCH LINE THIS SHEET STA 363+00	MATCH LINE THIS SHEET STA 391+00		
Log No. 08-11-1E Plot Date 5-9-12 Designed R.R.E. Drawn AJ Checked R.R.E. Reviewed R.R.E. Approved			Issue Certification DELIVERY WITH CHECKS			PIMA-MARICOPA IRRIGATION PROJECT P.O. BOX 158 1584 SOUTH W STREET SAN TONIA, ARIZONA 85717 (520) 745-1111 www.pima.maricopa.gov		
GILA RIVER INDIAN COMMUNITY PIMA-MARICOPA IRRIGATION PROJECT			GEODETTIC LAYOUT STA. 340+00 TO STA. 391+00			DRAWING NO. G-17 SHEET OF -		

# PERMANENT IRRIGATION EASEMENT

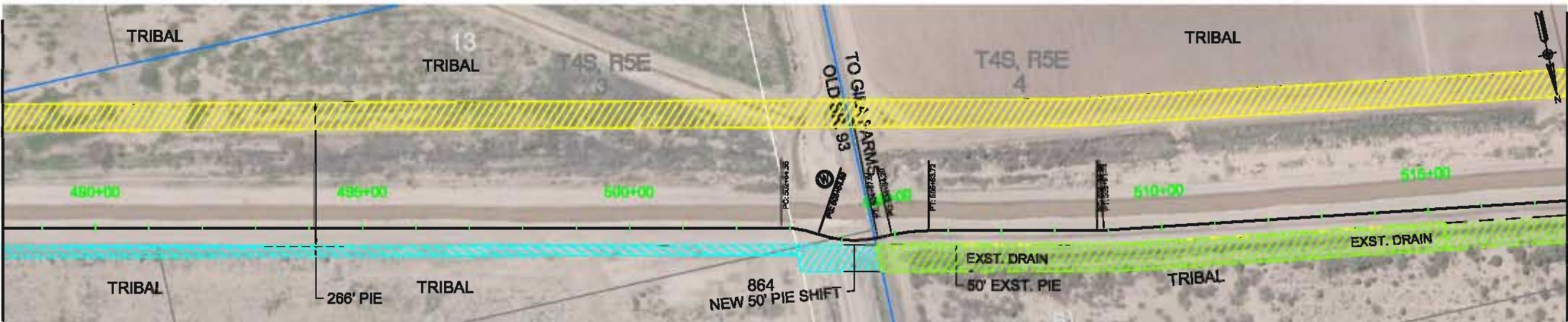


By					
Description					
Date					
Rev					
Log No.	06-11-IE	Drawn	JJ	Checked	RE
Proj. Data	4-20-12	Reviewed	DD	Approval	
Designed	RE				
Issue Certification					
<b>PIMA-MARICOPA IRRIGATION PROJECT</b> P.O. BOX 15 1504 SOUTH 11 <sup>TH</sup> STREET SACATON, ARIZONA 85347 pima@pima-irrigation.com					
GILA RIVER INDIAN COMMUNITY PIMA-MARICOPA IRRIGATION PROJECT					
GEODETIC LAYOUT STA. 391+00 TO STA. 471+00					
DRAWING NO.		G-18			
SHEET		OF -			

PERMANENT IRRIGATION EASEMENT



MATCH LINE THIS SHEET STA 488+00



MATCH LINE THIS SHEET STA 517+00

MATCH LINE THIS SHEET STA 517+00



MATCH LINE THIS SHEET STA 545+00

Log No.	06-11-1E
Proj. No.	429-12
Designed	RRE
Drawn	AJ
Checked	
Reviewed	RRE
Approval	

Issue Certification	
Author	
Checker	
Reviewer	



PIMA-MARICOPA IRRIGATION PROJECT  
 P.A. BROS. 1500 SOUTH 11TH STREET TACSON, ARIZONA 85717  
 520-843-2222

GILA RIVER INDIAN COMMUNITY  
 PIMA-MARICOPA IRRIGATION PROJECT  
 GEODETIC LAYOUT  
 STA. 471+00 TO STA. 545+00

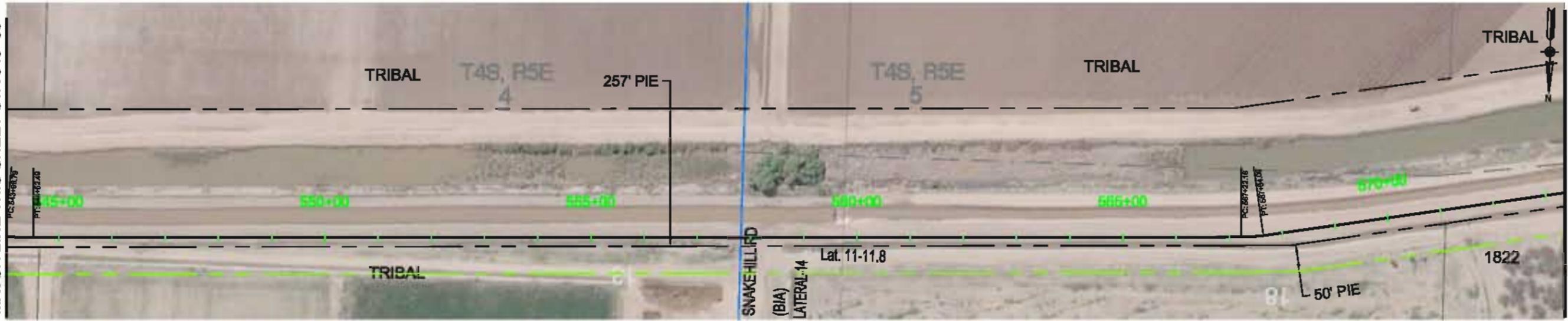
DRAWING NO. G-19

SHEET 1 OF 24

PERMANENT IRRIGATION EASEMENT



MATCH LINE THIS SHEET STA 545+00



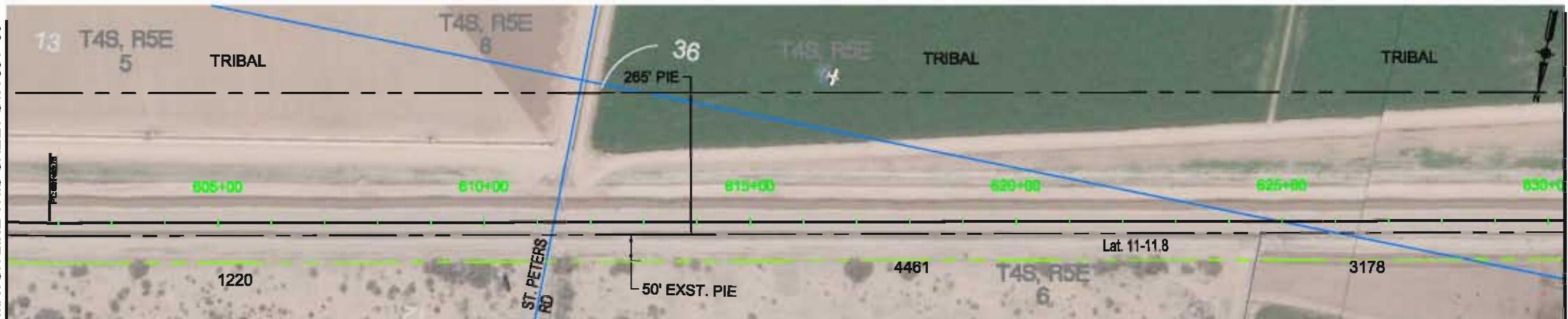
MATCH LINE THIS SHEET STA 572+00

MATCH LINE THIS SHEET STA 572+00



MATCH LINE THIS SHEET STA 601+00

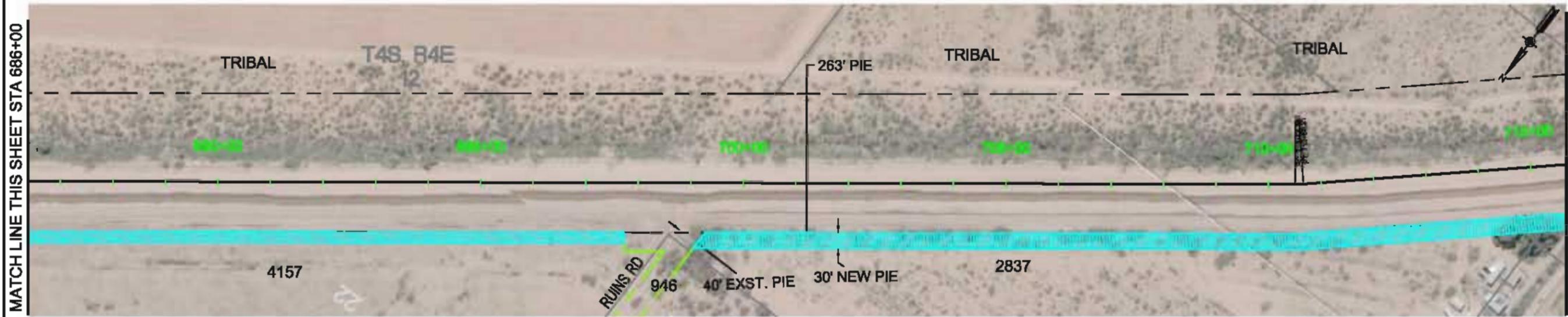
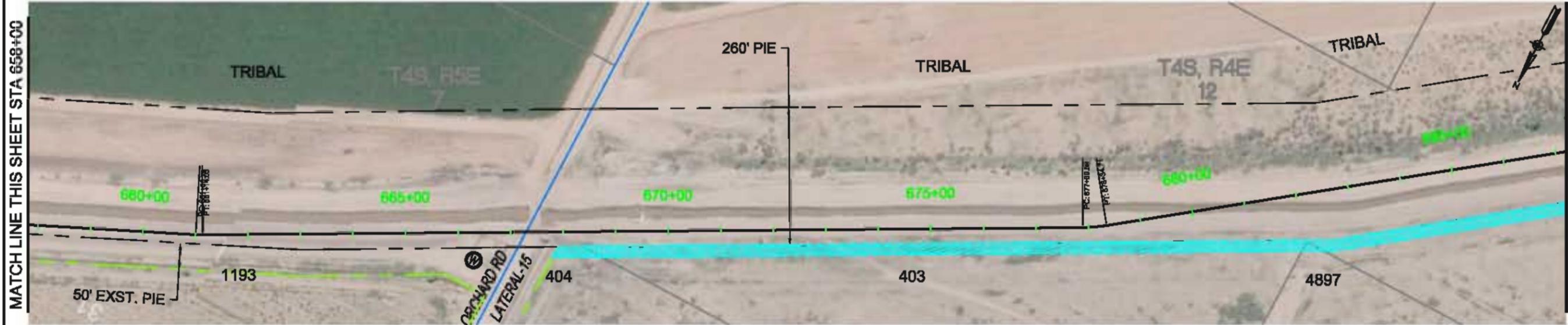
MATCH LINE THIS SHEET STA 601+00



MATCH LINE THIS SHEET STA 629+00

By	
Description	
Date	
Rev	
Log No.	06-11-IE
Proj. Date	05-2011
Designed	RZE
Drawn	AJ
Checked	
Reviewed	RZE
Approved	
Issue Certification	PRELIMINARY NOT FOR CONSTRUCTION
PIMA-MARICOPA IRRIGATION PROJECT 1504 SOUTH 1/4 STREET SACATON, ARIZONA 85641 PHOENIX, ARIZONA	
GILA RIVER INDIAN COMMUNITY PIMA-MARICOPA IRRIGATION PROJECT GEODETIC LAYOUT STA. 545+00 TO STA. 629+00	
DRAWING NO.	G-20
SHEET	- OF -

# PERMANENT IRRIGATION EASEMENT



Log No.	Rev	Date	Description
06-11-IE	1	03-2011	DESIGNED
			DRAWN
			CHECKED
			APPROVED

Issue Certification

PRELIMINARY  
NOT FOR  
CONSTRUCTION

PIMA-MARICOPA  
IRRIGATION  
PROJECT

P.O. BOX 15  
1504 SOUTH 'Y' STREET  
TACSON, ARIZONA 85701  
www.pima-maricopa.com

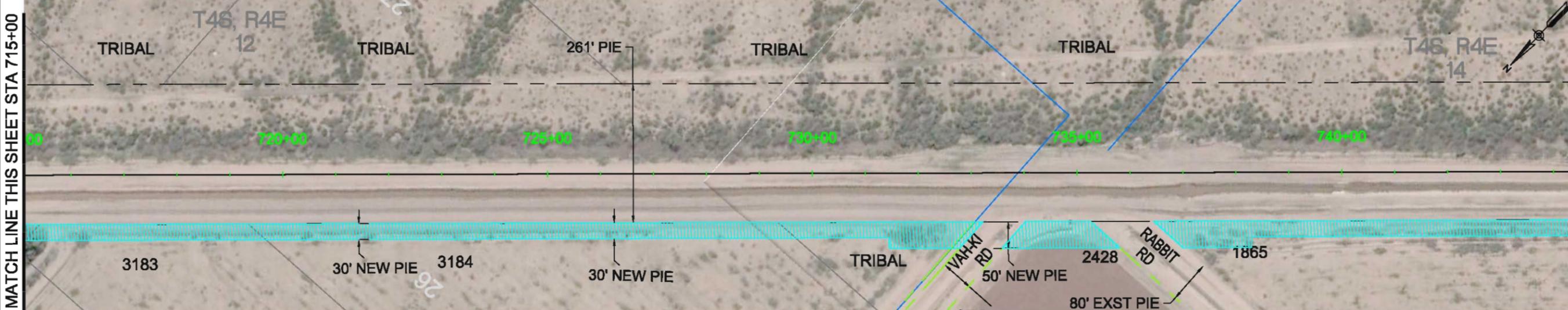
GILA RIVER INDIAN COMMUNITY  
PIMA-MARICOPA IRRIGATION PROJECT

GEODETIC LAYOUT  
STA. 629+00 TO STA. 715+00

DRAWING NO. G-21

SHEET - OF -

# PERMANENT IRRIGATION EASEMENT



MATCH LINE THIS SHEET STA 715+00

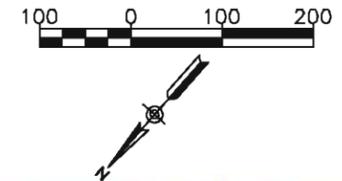
MATCH LINE THIS SHEET STA 743+00

MATCH LINE THIS SHEET STA 743+00

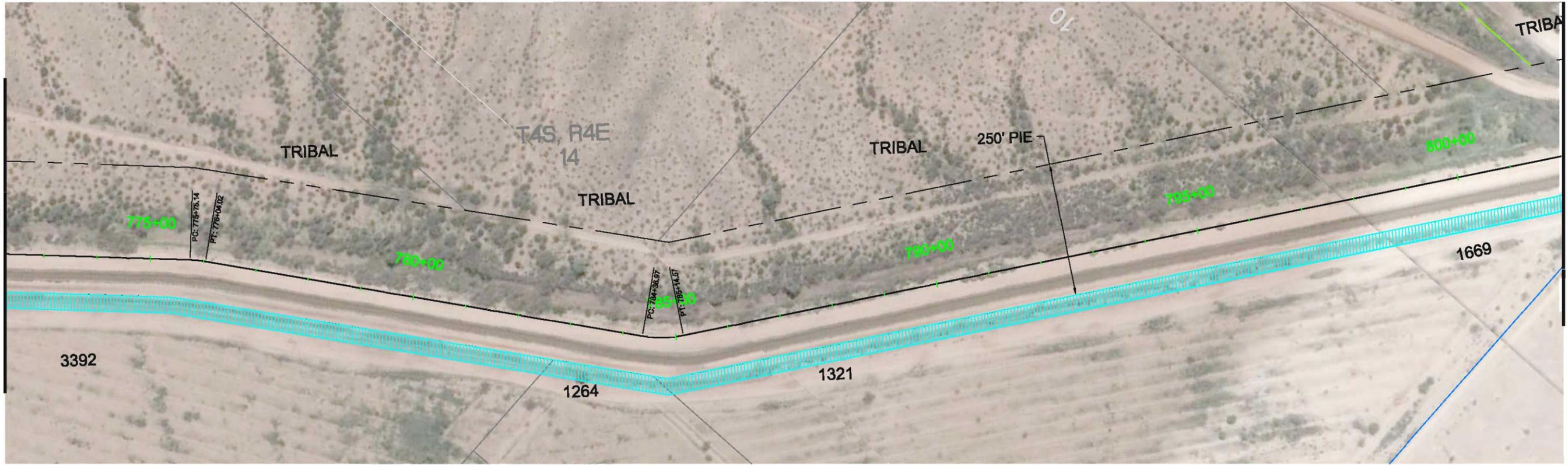
MATCH LINE THIS SHEET STA 772+00

By	
Description	
Date	
Rev	
Log No. 06-11-E	
Plat. Date 05/2011	
Designed R.R.E.	
Drawn AJ	
Checked	
Reviewed R.R.E.	
Approved	
Issue Certification	PRELIMINARY NOT FOR CONSTRUCTION
	
PIMA-MARICOPA IRRIGATION PROJECT	ENGINEERING-CONSTRUCTION
GILA RIVER INDIAN COMMUNITY PIMA-MARICOPA IRRIGATION PROJECT	P.O. BOX 6 1824 SOUTH W. STREET SACATON, ARIZONA 85347 (928) 854-2100 (928) 854-2101 fax
DRAWING NO.	G-22
SHEET - OF -	

# PERMANENT IRRIGATION EASEMENT

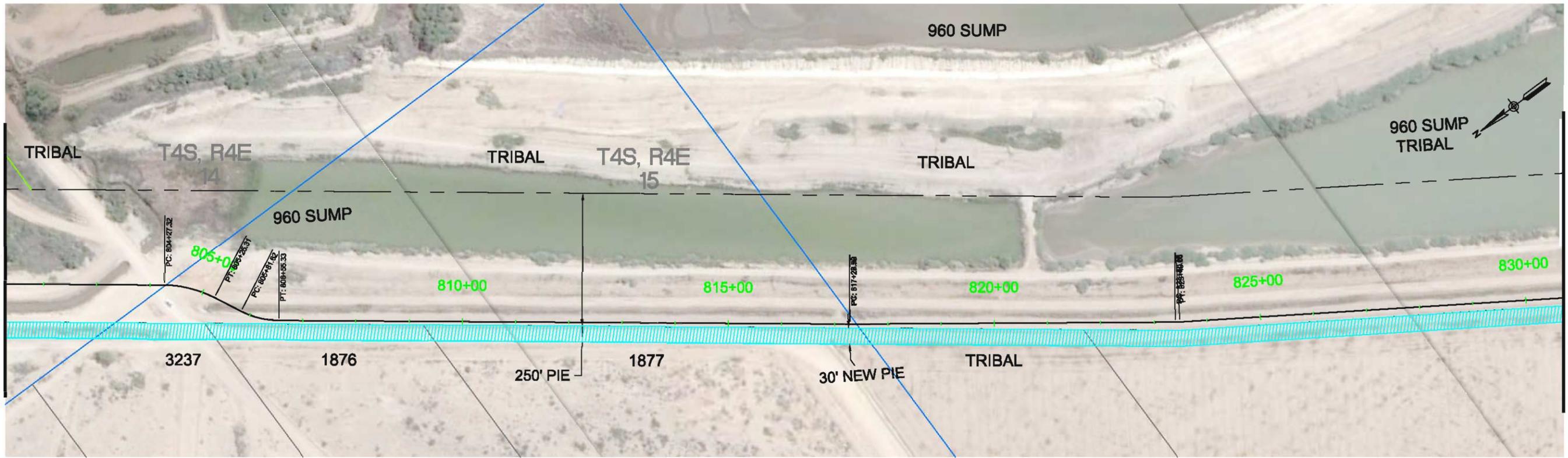


MATCH LINE THIS SHEET STA 772+00



MATCH LINE THIS SHEET STA 801+00

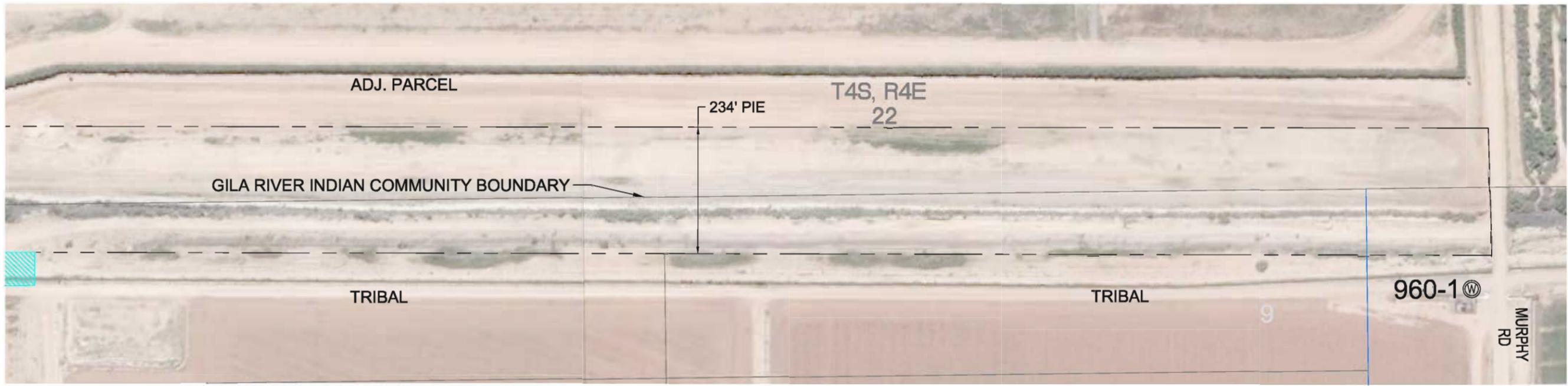
MATCH LINE THIS SHEET STA 801+00



MATCH LINE THIS SHEET STA 830+00

	By				
	Rev	Date	Description		
	06-11-1E	8-9-2011			
Log No.	Plot Date	Designed	Drawn	Checked	Reviewed
	8-9-2011	R.R.E.	AJ		R.R.E.
Issue Certification					Approved
	PRELIMINARY	NOTICE	CONSTRUCTION		
					
<b>PIMA-MARICOPA IRRIGATION PROJECT</b> ENGINEERING-CONSTRUCTION					
GILA RIVER INDIAN COMMUNITY PIMA-MARICOPA IRRIGATION PROJECT GEODETIC LAYOUT STA. 772+00 TO STA. 830+00					
<small>P.O. BOX C                  180-A SOUTH 9th STREET                  SCOTTSDALE, ARIZONA 85067                  (602)995-8700 FAX</small>					
DRAWING NO. G-23					
SHEET 1 OF 24					

# PERMANENT IRRIGATION EASEMENT



By				
Rev				
Date				
Description				
Log No.	06-11-1E			
Plot Date	8-3-2011			
Designed	R.R.E.			
Drawn	AJ			
Checked				
Reviewed	R.R.E.			
Approved				
Issue Certification				
	PRELIMINARY			
	NOT FOR			
	CONSTRUCTION			
<b>PIMA-MARICOPA</b> <b>IRRIGATION</b> <b>PROJECT</b> <b>ENGINEERING-CONSTRUCTION</b>				
<small>P.O. BOX C          192-A SOUTH "K" STREET          SACATON, ARIZONA 85347          (520) 963-8791 FAX</small>				
GILA RIVER INDIAN COMMUNITY		PIMA-MARICOPA IRRIGATION PROJECT		
GEODETTIC LAYOUT		STA. 830+00 TO STA. 876+98		
DRAWING NO. G-24				
SHEET 1 OF 24				

## **Appendix B    Agency Correspondence**

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**DEPARTMENT OF THE ARMY**  
LOS ANGELES DISTRICT, CORPS OF ENGINEERS  
ARIZONA-NEVADA AREA OFFICE  
3636 NORTH CENTRAL AVENUE, SUITE 900  
PHOENIX, ARIZONA 85012-1939

REPLY TO  
ATTENTION OF:

August 23, 2011

Office of the Chief  
Regulatory Division

Mr. Ian Shavitz  
Akin Gump Strauss Hauer & Feld L.L.P.  
1333 New Hampshire Avenue NW  
Washington, District of Columbia 20036-1564

File Number: SPL-2011-00471-SDM

Dear Mr. Shavitz:

I am responding to your letter dated July 26, 2011 regarding the proposal by the Gila River Indian Community to conduct construction and maintenance activities on a section of the Pima-Maricopa Irrigation Project (P-MIP) known as the Casa Blanca Canal. The project involves construction and maintenance activities to Canal 11 and Canal 12, and the appurtenant drain that protects these canals from storm water flow. The proposed work primarily involves reshaping and lining the irrigation canals; reshaping and removing vegetation and accumulated sediment from drainage channels; and installing and replacing structures that are appurtenant and functionally related to the irrigation channel, including siphons, drop structures and check structures. The projects are located within the Gila River Indian Community, Pinal County, Arizona, as shown on the attached maps.

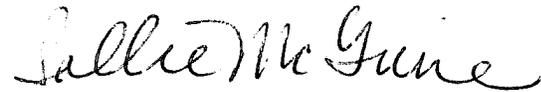
We have reviewed the proposed activities described in your letter and have concluded that the discharges are directly associated with the "Construction or maintenance of farm...irrigation ditches," and the maintenance, grade control and repair or abandonment of the drainage features are "appurtenant and functionally related to irrigation ditches" as identified in 33 CFR Part 323.4(a)(3). The "recapture" provision at 33 CFR Part 323.4(b) does not apply to the proposed activities.

Based on the information you have provided, we have determined the proposed project qualifies for the Clean Water Act exemption pursuant to 33 CFR Part 323.4. Therefore, the activity is not prohibited by, or subject to, regulation under Section 404 of the Clean Water Act.

Thank you for your letter. If you have questions please contact me at (602) 230-6950 or by e-mail at [sallie.mcguire@usace.army.mil](mailto:sallie.mcguire@usace.army.mil)

Please be advised that you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,

A handwritten signature in cursive script that reads "Sallie McGuire".

Sallie McGuire  
Chief, Arizona Branch  
Regulatory Division



Janice K. Brewer  
Governor

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007  
(602) 771-2300 • [www.azdeq.gov](http://www.azdeq.gov)

May 20, 2011

Mr. John McGlothlen  
Bureau of Reclamation  
Phoenix Area Office  
6150 West Thunderbird Road  
Glendale, AZ 85306

RE: Gila River Indian Reservation: Scoping Letter for the Proposed Rehabilitation  
of the Casa Blanca Canal

Dear Mr. McGlothlen:

The ADEQ Air Quality Division has reviewed your letter dated May 6, 2011, concerning your request for a scoping letter for the Proposed Rehabilitation of the Casa Blanca Canal. Your project is not located in a nonattainment area or a maintenance area for regulated air pollution and, as described, may have a de minimis impact on air quality. Disturbance of particulate matter, however, is anticipated during the construction phase. Considering prevailing winds, to comply with other applicable air pollution control requirements and minimize adverse impacts on public health and welfare, the following information is provided for consideration:

## REDUCE DISTURBANCE of PARTICULATE MATTER during CONSTRUCTION

This action, plan or activity may temporarily increase ambient particulate matter (dust) levels. Particulate matter 10 microns in size and smaller can penetrate the lungs of human beings and animals and is subject to a National Ambient Air Quality Standard (NAAQS) to protect public health and welfare. Particulate matter 2.5 microns in size and smaller is difficult for lungs to expel and has been linked to increases in death rates; heart attacks by disturbing heart rhythms and increasing plaque and clotting; respiratory infections; asthma attacks and cardiopulmonary obstructive disease (COPD) aggravation. It is also subject to a NAAQS.

The following measures are recommended to reduce disturbance of particulate matter, including emissions caused by strong winds as well as machinery and trucks tracking soil off the construction site:

Northern Regional Office  
1801 W. Route 66 • Suite 117 • Flagstaff, AZ 86001  
(928) 779-0313

Southern Regional Office  
400 West Congress Street • Suite 433 • Tucson, AZ 85701  
(520) 628-6733

Mr. John McGlothlen  
May 20, 2011  
Page 2 of 2

- I. Site Preparation and Construction
  - A. Minimize land disturbance;
  - B. Suppress dust on traveled paths which are not paved through wetting, use of watering trucks, chemical dust suppressants, or other reasonable precautions to prevent dust entering ambient air;
  - C. Cover trucks when hauling soil;
  - D. Minimize soil track-out by washing or cleaning truck wheels before leaving construction site;
  - E. Stabilize the surface of soil piles; and
  - F. Create windbreaks.
  
- II. Site Restoration
  - A. Revegetate any disturbed land not used;
  - B. Remove unused material; and
  - C. Remove soil piles via covered trucks.

The following rules applicable to reducing dust during construction, demolition and earth moving activities are enclosed:

- Arizona Administrative Code R18-2-604 through -607
- Arizona Administrative Code R18-2-804

Should you have further questions, please do not hesitate to call me at (602) 771-2375, or Lhamo at (602) 771-2373.

Very truly yours,



Diane L. Arnst, Manager  
Air Quality Planning Section

Enclosures (2)

cc: Bret Parke, EV Administrative Counsel  
Lhamo LeMoine, Administrative Secretary  
File No. 259366

- c. If the burning would occur at a solid waste facility in violation of 40 CFR 258.24 and the Director has not issued a variance under A.R.S. § 49-763.01.
- E. Open outdoor fires of dangerous material. A fire set for the disposal of a dangerous material is allowed by the provisions of this Section, when the material is too dangerous to store and transport, and the Director has issued a permit for the fire. A permit issued under this subsection shall contain all provisions in subsection (D)(3) except for subsections (D)(3)(e) and (D)(3)(f). The Director shall permit fires for the disposal of dangerous materials only when no safe alternative method of disposal exists, and burning the materials does not result in the emission of hazardous or toxic substances either directly or as a product of combustion in amounts that will endanger health or safety.
- F. Open outdoor fires of household waste. An open outdoor fire for the disposal of household waste is allowed by provisions of this Section when permitted in writing by the Director or a delegated authority. A permit issued under this subsection shall contain all provisions in subsection (D)(3) except for subsections (D)(3)(e) and (D)(3)(f). The permittee shall conduct open outdoor fires of household waste in an approved waste burner and shall either:
1. Burn household waste generated on-site on farms or ranches of 40 acres or more where no household waste collection or disposal service is available; or
  2. Burn household waste generated on-site where no household waste collection and disposal service is available and where the nearest other dwelling unit is at least 500 feet away.
- G. Permits issued by a delegated authority. The Director may delegate authority for the issuance of open burning permits to a county, city, town, air pollution control district, or fire district. A delegated authority may not issue a permit for its own open burning activity. The Director shall not delegate authority to issue permits to burn dangerous material under subsection (E). A county, city, town, air pollution control district, or fire district with delegated authority from the Director may assign that authority to one or more private fire protection service providers that perform fire protection services within the county, city, town, air pollution control district, or fire district. A private fire protection provider shall not directly or indirectly condition the issuance of open burning permits on the applicant being a customer. Permits issued under this subsection shall comply with the requirements in subsection (D)(3) and be in a format prescribed by the Director. Each delegated authority shall:
1. Maintain a copy of each permit issued for the previous five years available for inspection by the Director;
  2. For each permit currently issued, have a means of contacting the person authorized by the permit to set an open fire if an order to extinguish open burning is issued; and
  3. Annually submit to the Director by May 15 a record of daily burn activity, excluding household waste burn permits, on a form provided by the Director for the previous calendar year containing the information required in subsections (D)(3)(e) and (D)(3)(f).
- H. The Director shall hold an annual public meeting for interested parties to review operations of the open outdoor fire program and discuss emission reduction techniques.
- I. Nothing in this Section is intended to permit any practice that is a violation of any statute, ordinance, rule, or regulation.

#### Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Amended effective October 2, 1979 (Supp. 79-5). Correction, subsection (C) repealed effective October 2, 1979, not shown (Supp. 80-1). Former Section R9-3-602 renumbered without change as Section R18-2-602 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-602 renumbered to R18-2-802, new Section R18-2-602 renumbered from R18-2-401 effective November 15, 1993 (Supp. 93-4). Amended by final rulemaking at 10 A.A.R. 388, effective March 16, 2004 (Supp. 04-1).

#### R18-2-603. Repealed

#### Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-603 renumbered without change as Section R18-2-603 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-603 renumbered to R18-2-803, new Section R18-2-603 renumbered from R18-2-403 effective November 15, 1993 (Supp. 93-4). Repealed effective October 8, 1996 (Supp. 96-4).

#### R18-2-604. Open Areas, Dry Washes, or Riverbeds

- A. No person shall cause, suffer, allow, or permit a building or its appurtenances, or a building or subdivision site, or a driveway, or a parking area, or a vacant lot or sales lot, or an urban or suburban open area to be constructed, used, altered, repaired, demolished, cleared, or leveled, or the earth to be moved or excavated, without taking reasonable precautions to limit excessive amounts of particulate matter from becoming airborne. Dust and other types of air contaminants shall be kept to a minimum by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means.
- B. No person shall cause, suffer, allow, or permit a vacant lot, or an urban or suburban open area, to be driven over or used by motor vehicles, trucks, cars, cycles, bikes, or buggies, or by animals such as horses, without taking reasonable precautions to limit excessive amounts of particulates from becoming airborne. Dust shall be kept to a minimum by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means.
- C. No person shall operate a motor vehicle for recreational purposes in a dry wash, riverbed or open area in such a way as to cause or contribute to visible dust emissions which then cross property lines into a residential, recreational, institutional, educational, retail sales, hotel or business premises. For purposes of this subsection "motor vehicles" shall include, but not be limited to trucks, cars, cycles, bikes, buggies and 3-wheelers. Any person who violates the provisions of this subsection shall be subject to prosecution under A.R.S. § 49-463.

#### Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-604 renumbered without change as Section R18-2-604 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-604 renumbered to R18-2-804, new Section R18-2-604 renumbered from R18-2-404 effective November 15, 1993 (Supp. 93-4).

**R18-2-605. Roadways and Streets**

- A. No person shall cause, suffer, allow or permit the use, repair, construction or reconstruction of a roadway or alley without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Dust and other particulates shall be kept to a minimum by employing temporary paving, dust suppressants, wetting down, detouring or by other reasonable means.
- B. No person shall cause, suffer, allow or permit transportation of materials likely to give rise to airborne dust without taking reasonable precautions, such as wetting, applying dust suppressants, or covering the load, to prevent particulate matter from becoming airborne. Earth or other material that is deposited by trucking or earth moving equipment shall be removed from paved streets by the person responsible for such deposits.

**Historical Note**

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-605 renumbered without change as Section R18-2-605 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-605 renumbered to R18-2-805, new Section R18-2-605 renumbered from R18-2-405 effective November 15, 1993 (Supp. 93-4).

**R18-2-606. Material Handling**

No person shall cause, suffer, allow or permit crushing, screening, handling, transporting or conveying of materials or other operations likely to result in significant amounts of airborne dust without taking reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods to prevent excessive amounts of particulate matter from becoming airborne.

**Historical Note**

Section R18-2-606 renumbered from R18-2-406 effective November 15, 1993 (Supp. 93-4).

**R18-2-607. Storage Piles**

- A. No person shall cause, suffer, allow, or permit organic or inorganic dust producing material to be stacked, piled, or otherwise stored without taking reasonable precautions such as chemical stabilization, wetting, or covering to prevent excessive amounts of particulate matter from becoming airborne.
- B. Stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents, as to prevent excessive amounts of particulate matter from becoming airborne.

**Historical Note**

Section R18-2-607 renumbered from R18-2-407 effective November 15, 1993 (Supp. 93-4).

**R18-2-608. Mineral Tailings**

No person shall cause, suffer, allow, or permit construction of mineral tailing piles without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Reasonable precautions shall mean wetting, chemical stabilization, revegetation or such other measures as are approved by the Director.

**Historical Note**

Section R18-2-608 renumbered from R18-2-408, new Section R18-2-408 adopted effective November 15, 1993 (Supp. 93-4).

**R18-2-609. Agricultural Practices**

A person shall not cause, suffer, allow, or permit the performance of agricultural practices outside the Phoenix and Yuma planning areas, as defined in 40 CFR 81.303, which is incorporated by reference in R18-2-210, including tilling of land and application of fertilizers without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne.

**Historical Note**

Section R18-2-609 renumbered from R18-2-409 effective November 15, 1993 (Supp. 93-4). Amended by final rulemaking at 6 A.A.R. 2009, effective May 12, 2000 (Supp. 00-2). Amended by final rulemaking at 11 A.A.R. 2210, effective July 18, 2005 (Supp. 05-2).

**R18-2-610. Definitions for R18-2-611**

The definitions in Article 1 of this Chapter and the following definitions apply to R18-2-611:

1. "Access restriction" means restricting or eliminating public access to noncropland with signs or physical obstruction.
2. "Aggregate cover" means gravel, concrete, recycled road base, caliche, or other similar material applied to noncropland.
3. "Artificial wind barrier" means a physical barrier to the wind.
4. "Best management practice" means a technique verified by scientific research, that on a case-by-case basis is practical, economically feasible, and effective in reducing PM<sub>10</sub> emissions from a regulated agricultural activity.
5. "Chemical irrigation" means applying a fertilizer, pesticide, or other agricultural chemical to cropland through an irrigation system.
6. "Combining tractor operations" means performing two or more tillage, cultivation, planting, or harvesting operations with a single tractor or harvester pass.
7. "Commercial farm" means 10 or more contiguous acres of land used for agricultural purposes within the boundary of the Maricopa PM<sub>10</sub> nonattainment area.
8. "Commercial farmer" means an individual, entity, or joint operation in general control of a commercial farm.
9. "Committee" means the Governor's Agricultural Best Management Practices Committee.
10. "Cover crop" means plants or a green manure crop grown for seasonal soil protection or soil improvement.
11. "Critical area planting" means using trees, shrubs, vines, grasses, or other vegetative cover on noncropland.
12. "Cropland" means land on a commercial farm that:
  - a. Is within the time-frame of final harvest to plant emergence;
  - b. Has been tilled in a prior year and is suitable for crop production, but is currently fallow; or

**ARTICLE 8. EMISSIONS FROM MOBILE SOURCES (NEW AND EXISTING)****R18-2-801. Classification of Mobile Sources**

- A. This Article is applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization but are not classified as motor vehicles, agricultural vehicles, or agricultural equipment used in normal farm operations.
- B. Unless otherwise specified, no mobile source shall emit smoke or dust the opacity of which exceeds 40%.

**Historical Note**

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Amended effective February 3, 1993 (Supp. 93-1). Former Section R18-2-801 renumbered to Section R18-2-901, new Section R18-2-801 renumbered from R18-2-601 effective November 15, 1993 (Supp. 93-4).

**R18-2-802. Off-road Machinery**

- A. No person shall cause, allow or permit to be emitted into the atmosphere from any off-road machinery, smoke for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.
- B. Off-road machinery shall include trucks, graders, scrapers, rollers, locomotives and other construction and mining machinery not normally driven on a completed public roadway.

**Historical Note**

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-802 renumbered to Section R18-2-902, new Section R18-2-802 renumbered from R18-2-602 effective November 15, 1993 (Supp. 93-4).

**R18-2-803. Heater-planer Units**

No person shall cause, allow or permit to be emitted into the atmosphere from any heater-planer operated for the purpose of reconstructing asphalt pavements smoke the opacity of which exceeds 20%. However three minutes' upset time in any one hour shall not constitute a violation of this Section.

**Historical Note**

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-803 renumbered to Section R18-2-903, new Section R18-2-803 renumbered from R18-2-603 effective November 15, 1993 (Supp. 93-4).

**R18-2-804. Roadway and Site Cleaning Machinery**

- A. No person shall cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.
- B. In addition to complying with subsection (A), no person shall cause, allow or permit the cleaning of any site, roadway, or alley without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions may include applying dust suppressants. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

**Historical Note**

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Amended effective February 3, 1993 (Supp. 93-1). Former Section R18-2-804 renumbered to Section R18-2-904, new Section R18-2-804 renumbered from R18-2-604 effective November 15, 1993 (Supp. 93-4).

**R18-2-805. Asphalt or Tar Kettles**

- A. No person shall cause, allow or permit to be emitted into the atmosphere from any asphalt or tar kettle smoke for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%.
- B. In addition to complying with subsection (A), no person shall cause, allow or permit the operation of an asphalt or tar kettle without minimizing air contaminant emissions by utilizing all of the following control measures:
1. The control of temperature recommended by the asphalt or tar manufacturer;
  2. The operation of the kettle with lid closed except when charging;
  3. The pumping of asphalt from the kettle or the drawing of asphalt through cocks with no dipping;
  4. The dipping of tar in an approved manner;
  5. The maintaining of the kettle in clean, properly adjusted, and good operating condition;
  6. The firing of the kettle with liquid petroleum gas or other fuels acceptable to the Director.

**Historical Note**

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-805 renumbered to Section R18-2-905, new Section R18-2-805 renumbered from R18-2-605 effective November 15, 1993 (Supp. 93-4).

**Sarah Beloshapka**

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**From:** McGlothlen, John W [JMclglothlen@usbr.gov]  
**Sent:** Friday, May 13, 2011 11:49 AM  
**To:** Sarah Beloshapka  
**Subject:** FW: Casa Blanca Canal on the Gila River Indian Reservation  
**Attachments:** Casa Blanca Canal Soil Report.pdf

Sarah,

Please include the e-mail response from Mr. Glover under the scoping comments section of the admin record. Note in particular that the proposed action does not fall under the FPPA. Thank you.

*John McGlothlen  
Bureau of Reclamation  
Phoenix Area Office  
6150 W. Thunderbird Rd.  
Glendale, AZ 85306  
(623) 773-6256*

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**From:** Glover, Leslie - Phoenix, AZ [mailto:Leslie.Glover@az.usda.gov]  
**Sent:** Friday, May 13, 2011 10:57 AM  
**To:** McGlothlen, John W  
**Cc:** Lauer, Debbie - Phoenix, AZ  
**Subject:** Casa Blanca Canal on the Gila River Indian Reservation

Mr. McGlothlen,

This message is in response to the Environmental Assessment for the proposed Casa Blanca Canal on the Gila River Indian Reservation. This particular project does not fall under the purview of the Farmland Protection Policy Act, because this act was developed to mitigate actions that would convert farmland to nonagricultural uses.

Just for you information, I have included a soils report for the proposed area. The proposed canal has the potential to convert approximately 7824 acres of prime and unique farmland with a relative value of 78.

Leslie Glover II  
Soil Scientist  
NRCS Arizona  
(602) 280-8837

6/15/2011



May 27, 2011

Randy Chandler  
Area Manager  
Bureau of Reclamation  
United States Department of the Interior  
6150 West Thunderbird Road  
Glendale, Arizona 85306-4001

Dear Mr. Chandler:

This letter is to file a preliminary list of impact considerations regarding the Environmental Assessment (EA) for the Proposed Rehabilitation of the Casa Blanca Canal on the Gila River Indian Reservation per your letter dated May 2, 2011.

Consistent with the National Environmental Policy Act (NEPA) process, the City requests Cooperating Agency status for this project. We believe that issues discovered through the City's recent Master Drainage Study and hydrology and hydraulic modeling completed by the Federal Emergency Management Agency (FEMA) remap effort will be important considerations in generating a Finding of No Significant Impact (FONSI) for the Casa Blanca Canal project.

The City believes that additional analysis is needed due to potential floodplain impacts currently being documented by FEMA as part of the ongoing re-map project. A potential new floodplain has been identified in the northeastern corner of Maricopa's City Limits named the Sacaton Mountain Drainage. This watershed is generated entirely within the GRIC community and is discharged into the City of Maricopa. The existing Casa Blanca Canal plays a significant role in the hydrology of this watershed. It is difficult to accurately model this watershed due the Gila River Indian Community's (GRIC) sovereign nation status and non-participation in the National Flood Insurance Program (NFIP). This new floodplain has the potential to adversely affect many existing homes and platted residential lots in the Tortosa subdivision.

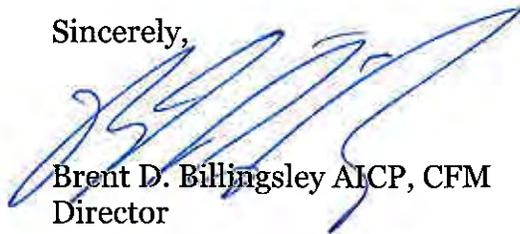
In a May 19, 2011 telephone call between Brent Billingsley, our Development Services Director, and John McGlothlen with the Bureau of Reclamation, Staff was assured that cooperation with City was appreciated and that any information the City and FEMA could provide would be useful in the NEPA process.

The City of Maricopa's preliminary list of concerns is as follows:

- Creation of a new FEMA floodplain within the City of Maricopa for the Sacaton Mountain Drainage will have adverse effects on Maricopa residents and on the City as a whole.
- Lack of hydrology/hydraulic and topographical information on GRIC property including bank height, siphons and structures located on the reservation could be accentuating the actual flood flows from the Sacaton Mountain Drainage in the FEMA hydrologic model.
- Due to construction of the Casa Blanca Canal we believe that the historic drainage condition has been changed and additional flows have been directed toward Maricopa. Historically, we believe that the Sacaton Mountain Drainage flood waters used to sheet flow to northwest before the construction of the canal.
- A significant detention facility has been constructed to potentially hold flood water from the Sacaton Mountains (and what appears to be water from the Casa Blanca Canal) for agricultural irrigation purposes at the south end of the Casa Blanca Canal. The redirection of the historic drainage patterns to the end of the canal coupled with the detention facility could have catastrophic results following a flood event.

In conclusion, I would like to thank you for including the City of Maricopa in this process. If you have any additional or related concerns on the content of this letter, please do not hesitate to contact Brent Billingsley at (520) 316-6942. The City is prepared to provide copies of our studies, maps and models as well as our contacts with FEMA regarding the on-going remap effort.

Sincerely,



Brent D. Billingsley AICP, CFM  
Director  
Development Services

CC. Mayor Anthony Smith  
Brenda Fischer

## **Appendix C    News Release**

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Phoenix Area Office  
Glendale, Arizona

**Media Contact:** Patricia Cox (623) 773-6214  
[pacox@lusbr.gov](mailto:pacox@lusbr.gov)

John McGlothlen (623) 773-6256  
[jwmcglothlen@usbr.gov](mailto:jwmcglothlen@usbr.gov)

Released on May 23, 2011

## **Bureau of Reclamation seeks public comments on plan to line and rehabilitate the Casa Blanca Canal**

Before preparing an Environmental Assessment on a proposed project to line and rehabilitate the Casa Blanca Canal on lands within the Gila River Indian Reservation, approximately 30 miles south of Phoenix, Arizona, the Bureau of Reclamation is seeking public input on the issues and concerns that should be addressed in that document.

The project proposed by the Gila River Indian Community (Community)/Pima–Maricopa Irrigation Project (P–MIP) would use Federal funds from the Bureau of Reclamation. After the public scoping period has ended, Reclamation will prepare an Environmental Assessment (EA) to evaluate the potential environmental consequences of the proposed project. The Community/P–MIP and Bureau of Indian Affairs will serve as cooperating agencies in the preparation of the EA.

The P–MIP is constructing an extensive irrigation system to serve farmlands within the Community. The Casa Blanca Canal is one of the major irrigation delivery canals of this system. The purpose of the project is to improve delivery service by enhancing the efficiency of the irrigation system and by providing more flexibility in its operations to respond to changing needs and conditions.

You are encouraged to offer comments on the scope of the upcoming EA, including potential environmental issues and alternatives to the proposed project that would meet the stated purpose and need. Your comments should be submitted by June 2, 2011, to be considered in the Draft EA. Comments can be mailed to Mr. John McGlothlen at the Bureau of Reclamation, Phoenix Area Office, 6150 West Thunderbird Road, Glendale, Arizona 85306; or faxed to 623-773-6486; or emailed to [jmcglothlen@usbr.gov](mailto:jmcglothlen@usbr.gov).

The full Notice of Public Scoping Notice can be obtained by calling Reclamation's Environmental Resource Management Division at (623) 773-6251, by e-mailing [jharagara@usbr.gov](mailto:jharagara@usbr.gov), or by downloading it from the Phoenix Area Office website at <http://www.usbr.gov/lc/phoenix/>

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Reclamation is the largest wholesale water supplier and the second largest producer of hydroelectric power in the United States, with operations and facilities in the 17 Western States. Its facilities also provide substantial flood control, recreation, and fish and wildlife benefits.

#### 052311 Casa Blanca CONTACTS

Casa Grand Dispatch  
520 836 0343

Arizona Republic  
602 444 8044

East Valley Tribune  
480 898 6463

Arizona Daily Star  
520 573 4107

Eloy Enterprise  
520 466 7333

FLorence Reminder  
520 868 5898