ADOT
Infrastructure Delivery and Operations

PROJECT DETERMINATION FORM

Project Number	County and ADOT District	Project Name and Highway	Final Project Assessment Date
010 PN 173 F0270 01C	Pinal	GILA RIVER BRIDGE	July 13, 2022
	Central District	PHOENIX-CASA GRANDE HIGHWAY	

Project Description:	Bridge - Rehab + Add Capacity

Existing Program	
Yes	No
X	

Program Year	Programmed Budget
FY 23	$110,000,000
	PA Construction Cost Estimate
	$101, 525, 000

Operating Partnership Category					
S	F	T	D	Z	N/A
		X			

Public Hearing: In the Highway Development Process, at least one public hearing or the opportunity for a hearing will be offered for any project that:

	Requires a significant amount of new right-of-way:
	Substantially changes the layout or function of connecting roadway or the facility being improved;
	Has a significant adverse impact on abutting real property;

	Otherwise has a significant social, economic, environmental or other effect
	Is controversial on environmental grounds;
	Or has significant floodplain encroachment
X	None of the above conditions apply

Recommends:

Yes:	No:				
	x	Public Forum	Environmental Category		
	x	Offer a combined Location / Design Hearing	Class 1	Class II	Class III
	x	Offer Separate Location/Design Hearing		X	
	x	Hold a Design Public Hearing			

Concur:

DocuSigned by: Trent Kelso 6423A54C536D484... 10/14/2022
Trent Kelso — Project Manager, Project Management Group — Date

DocuSigned by: Paul O'Brien C44E3DEFE42B423... 10/19/2022
Paul O'Brien — Manager, Environmental Planning — Date

DocuSigned by: Hiren Shah FCA16A8867D74BB... 10/14/2022
Hiren Shah — Manager, Roadway Predesign Section — Date

DocuSigned by: Randy Everett 465E125CB703429... 10/19/2022
Randy Everett — District Administrator, Central District — Date

DocuSigned by: Michael DenBleyker 8F51D09EA7284F0... 10/20/2022
Michael DenBleyker — Roadway Group Manager, Roadway Engineering Group — Date

DocuSigned by: Dave Eberhart 0982C40D1CF54F5... 10/19/2022
David Eberhart — State Bridge Engineer — Date

Comments:

010 PN 173 F0270 01C
010-C(224)S
GILA RIVER BRIDGE
PHOENIX-CASA GRANDE HIGHWAY
I-10

FINAL PROJECT ASSESSMENT

July 13, 2022

PREPARED BY
RONALD FOLUCH PE
ROADWAY PREDESIGN SECTION
ROADWAY ENGINEERING GROUP

ADOT
Infrastructure Delivery and Operations

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A. INTRODUCTION

Project 010 PN 173 F0270 01C, Federal Aid No. 010-C(224)S, Bridges over the Gila River, is a project to replace the EB and WB bridges. The project is located on I-10 at MP 173.12 in Pinal County, 12.5 miles south of Chandler city limits. The project limits extend from approximately MP 172 to 174. The project is located entirely within the Gila River Indian Community.

The project is programmed for construction in Fiscal Year (FY) 2023, in the 2023-2027 ADOT Five-Year Program for $110,000,000. The project will utilize CRRSAA, NHPP, and State Match funding.. The estimated construction cost to replace the bridges is $101, 525, 000.

The purpose of this project is to replace the existing bridges that are at the end of their service life, have maintenance issues, scour concerns, along with narrow shoulders and deteriorating decks.

B. BACKGROUND DATA

Milepost Strip Maps show the following projects previously constructed within or adjacent to the project limits:

Table 1: Previous Construction Projects

Project Number	Begin Milepost	End Milepost	Record Drawings Date	Description
I-10-3(47)	173.20	173.70	1964	Bridges EB & WB
I-10-3(57)	168.70	175.52	1969	2 Rdwys @ 38’ BC-AC
I-10-3(126)	169.80	188.12	1976	Safety
I-10-3(929)	167.30	175.46	1981	HS ACFC
I-10-3-946	174.50	174.50	1984	Bridge Repair
ER-10-3(202)	173.10	173.80	1984	Emergency Flood Repairs
ER-10-3-212	173.10	173.10	1987	Flood Damage
IR-10-3(228)	160.0	178.0	1990	Safety
ER-10-3(340) H3434 02C	173.12	173.12	1997	Channel Clean-Out
ER-10-3(340) H3434 03C	173.12	173.12	1999	Spur Dike
IM-010-C(008)A H6016 01C	163.00	220.00	2009	Sign Rehabilitation & Up-Date
NH-010-C(214)T H8925 01C	173.39	176.15	2018	Pavement Preservation

The typical highway section on the approaches consists of two 38' roadways, one eastbound (EB) and one westbound (WB). Each direction has two 12' travel lanes, a paved 4' inside shoulder and a 10' paved outside shoulder. The median maintains a constant width of 76' from inside edge of pavement I-10 EB, to inside edge of pavement I-10 WB. The record drawing cross slope is 1.5 % sloping away from the median. I-10 Mileposts and Stations increase from the west to the east.

This section of I-10 is classified as “Rural Principal Interstate.” The terrain classification is “level.” The posted speed limit is 75 mph (EB & WB). The average project elevation is 1200'. Design exceptions are not required per an AASHTO controlling design criteria report.

The adjacent land is used primarily for agricultural purposes and is held in trust by the United States for the benefit of the Gila River Indian Community or individual Community members. There are no horizontal or vertical curves within the project limits.

The existing right of way corridor is an easement granted by the Gila River Indian Community (GRIC) and the Bureau of Indian Affairs (BIA). The easement is generally 300' wide (150' left and right of the existing median centerline) except in the areas of the existing guide banks and spur dikes where the easement width varies.

Table 2: Major Structures Located Within The Project Limits

Structure Number	Beginning MP	Structure Name
1085	173.12	Gila River Bridge EB
1086	173.12	Gila River Bridge WB

The existing bridges (eastbound and westbound) are 35'-2" wide from the outside of the barrier to the outside of the barrier and are separated by 72'-10". The roadway consists of two 12' travel lanes and 3' inside and outside shoulders. The cross slope is 1.5% sloping away from median.

Existing Gila River Bridge

The existing bridges over the Gila River, Structure Numbers 1085 & 1086, were originally constructed in 1964 under project I-10-3(47). Each bridge is a seventeen-span pre-stressed concrete girder bridge, 1,337' long with a 15 degree right skew and no AC overlay. The bridge top slab is 6.5" thick with 1.5" clear cover to the main reinforcement. Both the top slab thickness and clear cover of the existing bridges do not meet the current ADOT Bridge Design Guidelines.

The typical section of the Gila River Bridge consists of a 30' clear roadway with 2'-7 barriers on each side of the bridge. The superstructure consists of 6 type-III AASHTO girders spaced at 5'-7" apart and a cantilever slab of 3'-7" to each side. The abutments and all piers are supported by steel pile foundation with cantilever wing walls. There are expansion joints at the abutments and 10' approach slabs at each end. The existing bridge deck has a cross slope of 1.5 %. The existing bridges have substandard bridge railing that will be replaced with this project. The average elevation is approximately 1200 ft. above sea level.

The ADOT Bridge Inspection Report (based on the inspection dated January 9, 2019) noted the ratings of the deck condition as 5 (Fair), the superstructure condition as 6 (Fair), the substructure as 6 (Fair-Good). Based on the Inspection Report, the top slab has some spalls that are denser at pier locations. There are extensive hairlines to narrow sized map cracks throughout the top slab. The top of the deck has impact damage at the curbs with numerous spalls, and exposed rebar. Both the top slab thickness and clear cover of the existing bridge do not meet the current ADOT Bridge Design Guidelines. The bottom of the deck overhangs exhibit minor transverse cracking with minor efflorescence. There are numerous exposed rebar at the overhangs.

In addition, the bridges themselves are substandard with functionally inadequate cross-sections. The existing bridge decks are not wide enough to provide additional travel lanes, full shoulders, or emergency lanes.

Figure 1: Bridge Elevation Looking North

Figure 2: River Erosion Has Exposed Fondations

Figure 3: Bridge Deck Condition Issues

Crash Data

A crash analysis was conducted within the study area to determine crash patterns and trends. The data used for the analysis is from the most recent five-year period, January 1, 2014, to December 31, 2018. The detailed crash summary data is available upon request.

The data shows that there were 140 crashes in the study area. Of those, 73 (52 percent) occurred in the westbound (WB) direction and 67 (48 percent) occurred in the eastbound (EB) direction. Thirty-Nine (28 percent) of the total crashes were reported as possible or suspected minor injury. There were no fatal or serious injury crashes within the study area over the most recent five-year period.

Additional information related to crashes is shown below:

- 67% of the total crashes occurred during daylight hours.
- 45% of the total crashes were Lane departure crashes.
- The number of crashes peaked at MP 173 for both directions of travel.
- 50% of the total crashes were reported as "speed too fast for conditions."
- 4% of the total crashes were reported as striking the bridge railing.

Based on the data review, there appears to be nothing unusual about this segment of I-10. There are no recommendations for immediate action. However, parts of the study area were identified in ADOT's RDSIP (2012) as segments that could benefit from countermeasures such as alignment delineation and lighting (ADL). Any improvement made shall conform to ADOT standards and guidelines.

ADA Features

There are no Americans with Disabilities Act (ADA) features within the project limits.

Guardrail

There is approximately 3,450 feet of existing guardrail within the project limits. Three guardrail runs are in eastbound direction and three runs are in westbound direction. The existing guardrail and end terminals consist of ET2000 and or SRT 350s. All guardrail shall be replaced with new MASH compliant guardrail and end terminals.

The following locations and lengths of guardrail are approximate.

Table 3: Existing Eastbound Guardrail Summary

FIS Asset Id	MP	Length (ft)	Lane Location	Embankment Curb (ft)	Crossing Feature
919102	173.02	612	Right	485' w/spillway	Gila River Bridge Approach
919111	173.05	481	Left	None	Gila River Bridge Approach
N/A	173.39	N/A	Right	None	Gila River Bridge Departure
919182	173.41	130	Left	None	Gila River Bridge Departure

Note: There is a median drop inlet structure just south of the south end of bridges.

Table 4: Existing Westbound Guardrail Summary

FIS Asset Id	MP	Length (ft)	Lane Location	Embankment Curb (ft)	Crossing Feature
191103	173.73	1701	Right	None	Gila River Bridge Approach
919126	173.48	407	Left	None	Gila River Bridge Approach
919127	173.15	122	Left	None	Gila River Bridge Departure
N/A	173.14	N/A	Right	None	Gila River Bridge Departure

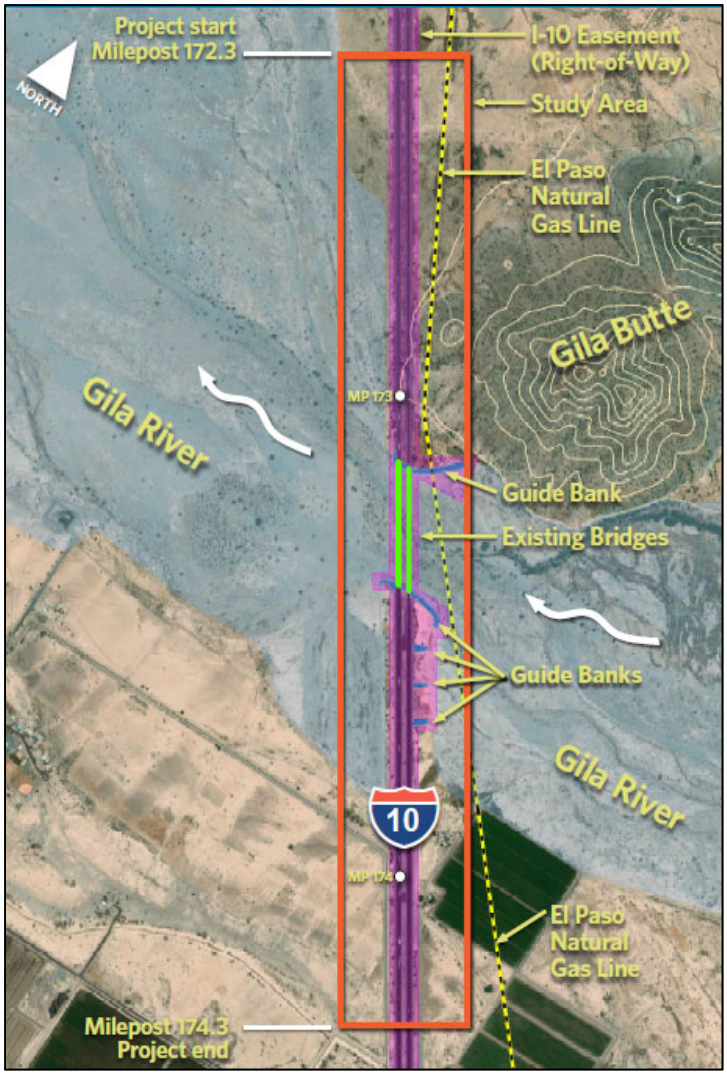
There is 75 feet of chain-link cable barrier fence in the median at each bridge approach.

Utilities

Permitted utility facilities that are listed in ADOT's Statewide Utility Permit Log within or near the project limits, are given in Section B of the Appendix, titled "Detailed Utility Permits Listing."

There is a high-pressure gas line that runs nearly parallel to I-10, located outside of the easement boundaries, north and east of the interstate, as shown in Figure 4 below.

Figure 4: High-Pressure Gas Line



There are numerous existing and future irrigation facilities located south of the Gila River, within the project limits. These facilities include:

1. An existing irrigation canal (Canal 13) running northwest/southeast adjacent to, but outside of, the existing ADOT easement

2. An existing and active siphon under I-10 serving Canal 13

3. A proposed future Pima-Maricopa Irrigation Project (P-MIP) canal with associated right-of-way (known as MAR 8B); and

4. An existing Canal 13 siphon under I-10 that is not currently in use but that may be used in the future for the MAR 8B site or for a potential future MAR 8A site, both of which would be served by Canal 13 East utilizing both siphons.

Additional utility companies in the area that need to be contacted during design:

EL PASO GAS
GILA RIVER TELECOMMUNICATIONS
GILA RIVER INDIAN COMMUNITY UTILITY AUTHORITY
SALT RIVER PROJECT
SAN CARLOS IRRIGATION PROJECT
PIMA-MARICOPA IRRAGATION PROJECT

Traffic Data

The posted speed limit is 75 mph throughout the project limits.

ADOT Multimodal Planning Division (MPD) provided the estimated Average Annual Daily Traffic (AADT) volumes and traffic factors (K, D and T) listed below:

Table 5: Traffic Projections

Location	Year 2022 VPD*	AADT Projected Year 2042 VPD*	K*	D*	T*
MP 167.49 to MP 175.82	63,640	72,382	9	51	14.3

* VPD: Vehicles Per Day, K: Design Hour Factor, D: Directional Distribution Factor, T: Truck and Recreational Vehicle Factor

Existing Hydrology / Hydraulics

Existing conditions – The watershed contributing to the crossing is vast, extending to both New Mexico and Mexico. It contains multiple features that regulate flow, including dams, levees, and various flood control features.

Figure 5: Gila River Watershed Upstream of the I-10 Crossing

The 17 span bridges are supported by 1.5-foot-thick concrete pier walls resting on a concrete cap and pile system. The pile cap is a rectangular concrete structure approximately 28.5 feet long by 3.5 feet wide by 2.3 feet deep. The cap rests on 18 14-inch cast-in-place (CIP) piles. According to the 1964 record drawing, the piles along the pier are driven approximately 24 to 28 feet below the river bottom. Piles at the abutments are driven 14 feet deep. Bridge abutment protection uses guide banks constructed with cement soil alluvium (CSA) in 9-inch lifts. Additionally, the southern roadway embankment contains three spur dikes to deflect overbank floodwaters.

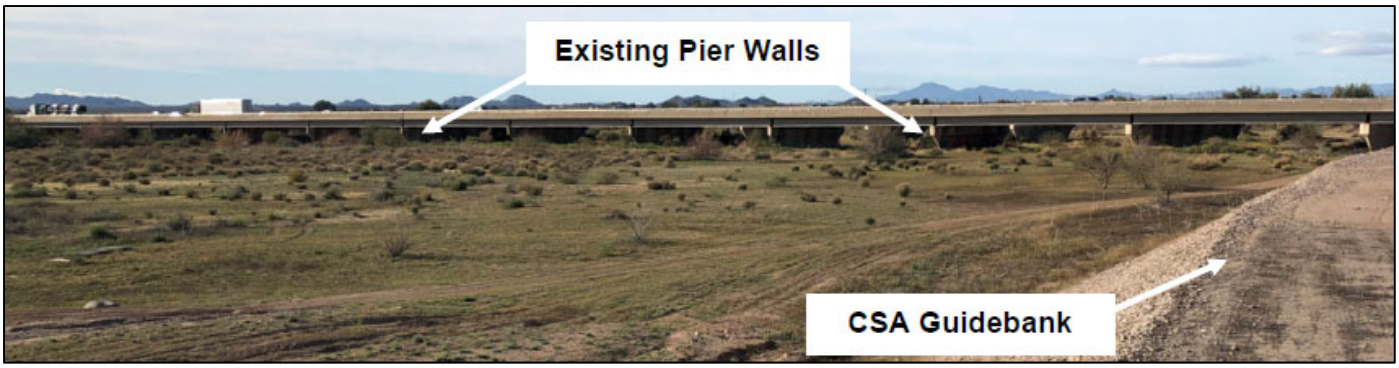


Figure 6:Gila River Bridge Looking West

The Gila River flows from east to west through the existing structures. Farther west, the river confluences with the Salt River and Agua Fria River at Tres Rios. It continues westward, where it eventually outfalls into the Colorado River near Yuma, Arizona. The river can be characterized as a sandy clayey loam riverbed with moderate vegetation consisting of desert shrubs and weeds in the overbanks. Based on a desktop review and field photographic evidence, the river floodplain appears to be approximately 3,000 to 5,000 feet wide. The channel geometry can be characterized as mild in sinuosity, with a 30-degree skew to the I-10 alignment.

When the results are compared with the previous review of historic gage data, it is apparent that the capacity of the existing structure is well below numerous flow rates that have occurred within the area. To date, five flow events in the 20,000 cfs or greater range have occurred since the bridge was built. These all occurred after the Coolidge Dam was constructed beginning in late 1920 and completed in 1928. During a flood event in 1983, flood waters overtopped and washed out the freeway embankment south of the bridges, resulting in the closure of I-10 for several weeks. It was the largest post-dam flow measured - occurring on October 2, 1983, with a maximum flow of 100,000 cfs. In 1993, an event measured as 74,900 cfs at the I-10 crossing caused floodwaters to rise to within inches of the bridge girders. Concerns over roadway flooding and the potential for damage to the superstructure of the bridges caused by floating debris prompted the State to again consider closure of I-10.

The 2-D hydraulic modeling of the river indicates the existing bridges have approximately one foot of freeboard for the historic design storm event—and even less if the East Maricopa Floodway peak discharge is coincidental to the peak river flows. The 50-year design guideline for a Class I structure such as this is three feet of freeboard. Average velocities through the structure could be characterized as mild to average, with a range of 3 to 4 feet per second for non-overtopping events. However, the overtopping event results in a significant increase in velocities through the bridge opening.

Additional results from the 2-D modeling indicate the spur dikes and guide banks are operating as intended. Flowlines are directed through the opening and away from roadway embankment. It should be noted the upstream guide banks are flanked during events in excess of 20,000 cfs.

Raising the elevation of the new structures by approximately two feet to accommodate three feet of freeboard during the design storm event will help to reduce the risk of future overtopping of the bridge and the upstream roadway and future closures of I-10. I-10 is one of the most heavily traveled highways in Arizona, and as a key commerce corridor, it serves as a pipeline for the movement of goods locally, regionally, nationally, and internationally. Maintaining an operational interstate is paramount in the movement of these goods and services.

Erosion Adjacent to Existing Roadway

There are existing slope erosion issues just northwest of the Gila River Bridges near MP 173. New bridge construction will mitigate the erosion with the new roadway side slopes and approaches.

Figure 7: Erosion under Curb and Pavement I-10 EB MP 173.07

Figure 8: Slope erosion I-10 WB MP 173.14

Figure 9: Slope erosion I-10 EB MP 173.13

See section C of the Appendix for a listing of drainage features taken from the ADOT Features Inventory System.

Drainage of the I-10 roadway is accomplished using the cross-slope of the roadway to drain to the median or the outside of the roadway into the surrounding land. The bridge decks have 4-inch drains at 20-foot centers that collect the runoff and empty it into the river below. The bridge opening spans approximately half of the natural riverbed, causing a contraction of the flow in the Gila River. Two spur dikes on the upstream side of the westbound bridge help to contract the flow and protect the bridge abutments, piers and roadway embankments from scour. Three groin dikes also protect the upstream side of the westbound freeway from erosion caused by flow parallel to the roadway embankment after precipitation events.

Guide Banks

The use of guide banks at bridges increases the efficiency of the bridge opening through the proper alignment of the flow of water. Additionally, they have beneficial effects on the observed contraction scour and offer abutment scour protection. During design the geometry of the guide banks will be evaluated to ensure there is sufficient material based on the design flood to meet criteria as required by and using guidance from the ADOT Highway Drainage Design Manual: Hydraulics.

Spur Dikes

At this bridge location, there are spur dikes along the upstream side of the highway fill slope. These spur dikes reduce the tendency for water to flow parallel to the highway, which if allowed could result in rapid scouring of the fill slope and potential damage to the roadway near the bridge. The combination of the guide banks and the spur dikes cause areas of what is described as ineffective flow, where the water tends to pool rather than flow. This reduces the scouring potential of the flood in these areas; water will pool there due to the guide banks, and as the flood recedes it will flow perpendicularly to the fill slope from the flow alignment properties of the spur dikes. It is anticipated that these flow alignment properties will be maintained without changing the geometry of the spur dikes, as there are no proposed changes to the waterway in these locations that would cause them to be insufficient.

Environmental

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by ADOT pursuant to 23 U.S.C. 326 and a Memorandum of Understanding dated January 3, 2018, and executed by FHWA and ADOT. Pending the outcome of technical studies and approvals, the anticipated impacts of this undertaking are expected to be beneath the threshold of significant. A Categorical Exclusion is anticipated to be completed in compliance with the National Environmental Policy Act.

a. Potential hazardous waste sites

A search for hazardous materials concerns will be conducted for the project area and surrounding vicinity using an environmental database radius report provided by GeoSearch to determine potential hazardous material concerns, and visual reconnaissance of the project area and vicinity to evaluate for the presence of undocumented hazardous materials concerns. In addition, suspect asbestos containing

materials and lead-based paint sampling and testing will be completed for the bridge, paint striping, and other suspect materials that may be impacted by future improvements. A Preliminary Initial Site Assessment report and Hazardous Materials Evaluation Report will be completed and approved as part of the environmental clearance process.

b. 404 Permit requirements

Impacts to jurisdictional waters of the US (WOTUS) are anticipated, thus a jurisdictional determination and Clean Water Act (CWA) Section 404 permit is required. A jurisdictional delineation will be prepared and submitted to the US Army Corps of Engineers. It is anticipated that loss of WOTUS would not exceed 0.5 acre. Therefore, the project would qualify for authorization under CWA Section 404 Nationwide Permit #14 with a Pre-Construction Notification to the US Army Corps of Engineers. The Gila River Indian Community (Community) administer the water quality standards under the CWA; thus, an application would be submitted to the Community for CWA Section 401 water quality certification.

c. Floodplain encroachment

A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the project area indicates that this project is located within an undetermined or unmapped floodplain area. According to the FEMA on-line mapping service, the project area is located in FIRM 04021C0425E. Coordination with Pinal County's Flood Control will be completed during design.

d. Wetlands

No wetlands were observed within or adjacent to the project limits.

e. Noise mitigation

Traffic volumes, speeds, and truck percentages are not anticipated to increase as a result of this project. Traffic noise levels are expected to stay consistent with the current conditions, and no mitigation measures would be required. Construction-related noise levels will be in accordance with ADOT standard specifications and local rules or ordinances.

f. Air quality

The project is not located within a nonattainment or maintenance area. Per review of the Mobile Source Air Toxics (MSAT), this project is eligible for level 1 review: no analysis for the project with no potential for meaningful MSAT effects.

g. Section 4(f) lands

There are no publicly owned parks, recreation areas, or wildlife refuges within or adjacent to the project area. In addition, there are no trailheads or recreational trails within the project area or ¼ mile of the bridge. Historic properties and Traditional Cultural Properties (TCPs) are potentially Section 4(f)-protected. As discussed in the section below, these properties are adjacent to the project limits and would require evaluation to determine their National Register eligibility and the applicability of Section 4(f). Section 106 consultation will occur to determine which properties are historically significant and thus protected under Section 4(f) regulations.

h. Archaeological impacts, mitigation measures

The I-10 project limits have been surveyed for cultural resources. A records search was completed by the Community Cultural Resource Management Program (CRMP) to ensure the identification of all cultural resources within the project limits. As a result of the Community-CRMP records search, approximately 21 previously recorded archaeological sites, 12 previously recorded historic sites, one roadside memorial, and two TCPs lie within, or abut, the 300 to 950-ft-wide I-10 easement corridor. Many of the archaeological site boundaries overlap with other identified site boundaries. A TCP report will be completed for this project to ensure that all properties significant to the Community are identified. The Community-CRMP would handle any new cultural resource surveys and/or archaeological work, if it is determined during final design that new surveys and/or archaeological work would be needed.

i. Biological impacts

A list of threatened, endangered, proposed and candidate species that may occur within the project vicinity will be obtained from the U.S. Fish & Wildlife Service Information, Planning, and Consultation System and evaluated during the environmental clearance process for this project. Additional coordination with the Community will be conducted to receive information regarding sensitive species that may occur in the project area. The project is not located within designated critical habitat for any species. No species-specific surveys are required, but a general site visit will be conducted to survey structures for bats and bird species protected by the Migratory Bird Treaty Act, and to assess habitat suitability for species being evaluated in the Biological Evaluation.

j. Prime and Unique Farmlands

The project is located within Natural Resources Conservation Service (NRCS) map: Gila River Indian Reservation, Arizona, Parts of Maricopa and Pinal Counties (AZ658). Farmlands are adjacent to the project limits. NRCS identifies the land as being “farmland of unique importance” within the project limits. Impacts to farmlands are not anticipated and will be confirmed during final design. If impacts are identified, the Farmland Conversion Impact Rating (Form AD 1006) will be completed to determine if the impacts rate 160 or greater points. Coordination with NRCS, Community, and AZ agricultural agencies will be required if the rate score is over 160 in order to determine possible avoidance, measures to minimize or reduce impacts to the farmlands.

k. NPDES Permit

This project will involve more than one acre of ground disturbance and will require authorization under a National Pollutant Discharge Elimination System (NPDES) general permit. A stormwater pollution prevention plan (SWPPP) will be prepared.

l. Overview

All areas that will potentially be disturbed during construction will be accounted for in the environmental technical study documents and permits, including staging areas, easements, or off-site locations used during construction. To ensure design changes are accounted for through final design,

coordination between the environmental planner and project designer will occur at every major plan stage submittal.

C. PROJECT SCOPE

The new bridges will provide a sufficient clear roadway width to accommodate 3 lanes in each direction and optimal vertical clearance. The decision to construct bridges with a 60-foot clear roadway is based on team and partner consensus, input from a value engineering study and the following factors:

- **Operations:** New bridges will facilitate future expansion and will increase the level of capacity for the facility.

- **Safety:** Increased shoulder width will help mitigate run-off-road crashes and facilitate emergency vehicle response.

- **Environment:** New bridges will treat storm water runoff that is currently discharging directly into the Gila River by including first flush mitigation.

- **Construction:** Improved work zone conditions that can expedite the project delivery and keep two lanes of traffic open in each direction during construction.

- **Right-of-way**: Recommendations that eliminate the need for additional right-of-way. Temporary easements may be required.

During the first construction phase a new portion of each bridge is constructed toward the center median between the existing EB and WB bridges, while maintaining traffic on the existing bridges.

The second phase is expected to shift traffic about 38’ towards the center median on to a newly constructed portion of the bridges. It will accommodate 2 lanes of traffics in each direction.

Demolition of the existing bridges and final construction of the new bridges will take place. Drilled shaft foundations will be used to minimize construction impact/footprint and will be designed to accommodate scour conditions.

The new bridges will facilitate three travel lanes and wider shoulders. A future forth lane could be added without additional construction or the need for design exceptions.

The new bridges with a 4.5’ higher elevation on the south end of the bridges and a 5.5’higher elevation than the existing profile on the north will provide additional freeboard and yield an approximately 3’ difference in surface elevations.

Due to the raised roadway deck of the proposed bridges, the roadways approaching the bridges will also be raised and will cause additional fill to be placed along the roadway embankments. The additional fill will not increase the backwater elevation.

The new bridges will have a cross slope set to meet the 2% requirement. The total construction duration is approximately 18 months.

Figure 10: Typical Section Full Bridge Replacement with a 60’ clear roadway width

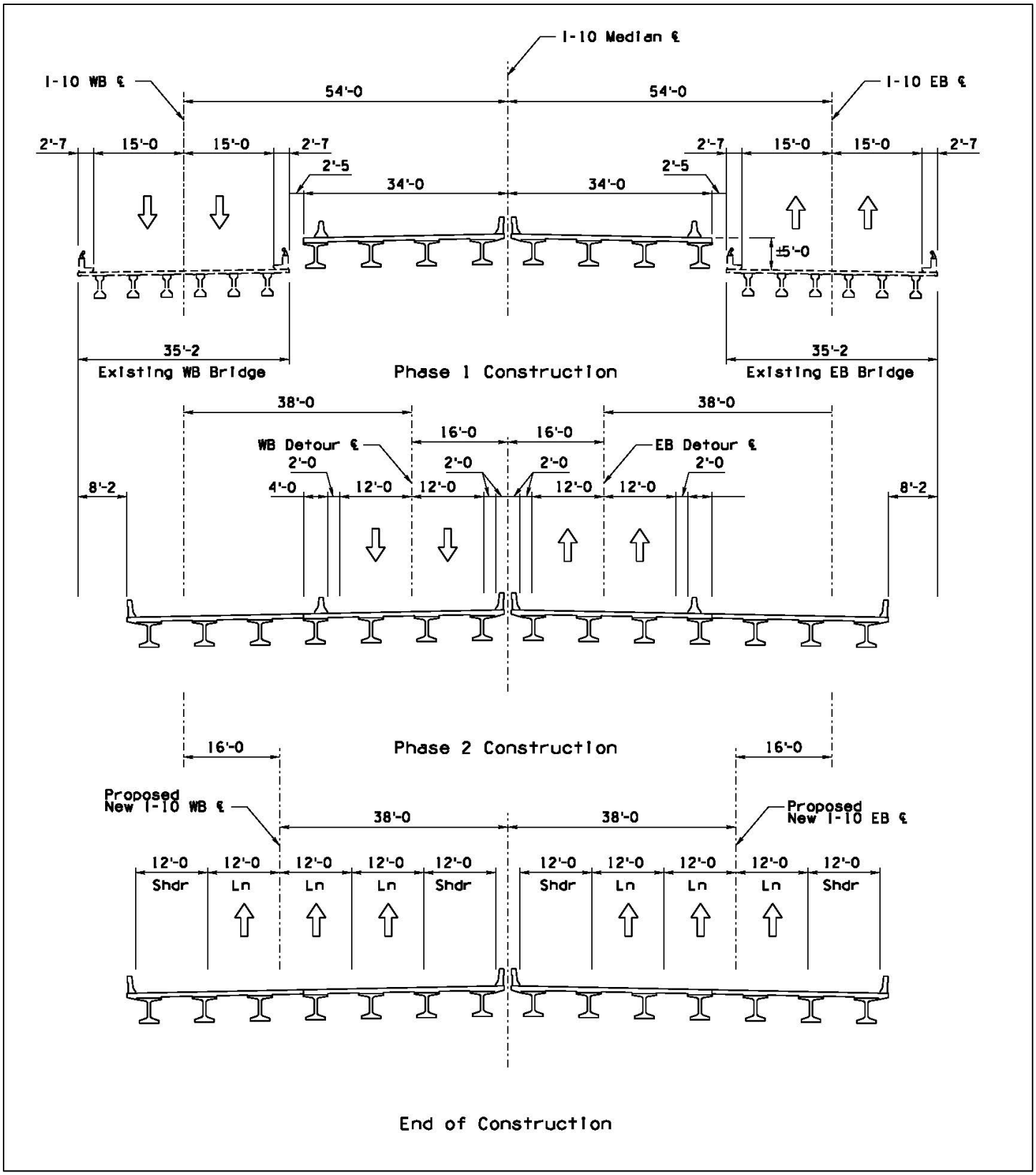


Figure 11: Construction Phase -1

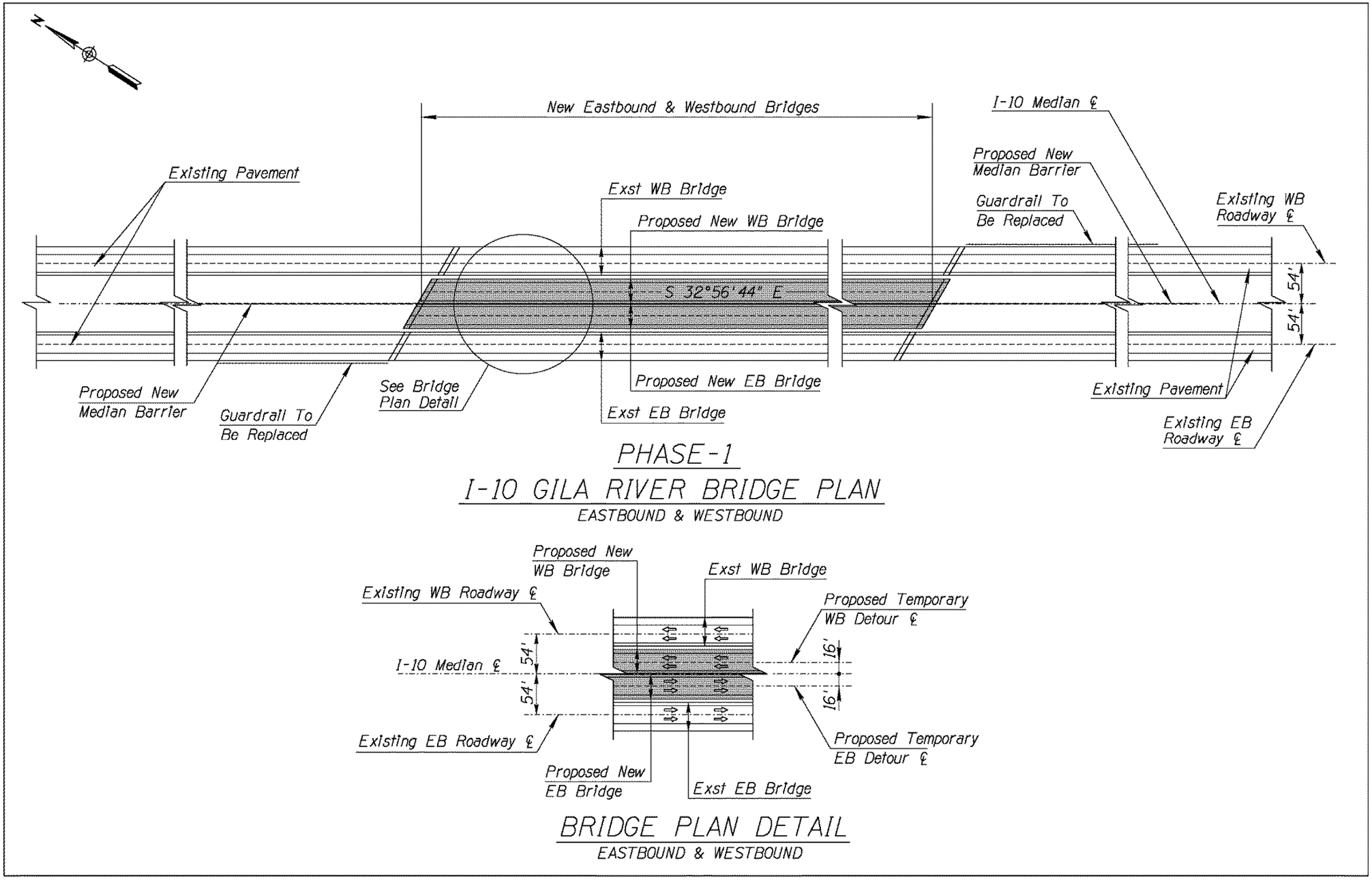


Figure 12: Construction Phase -2

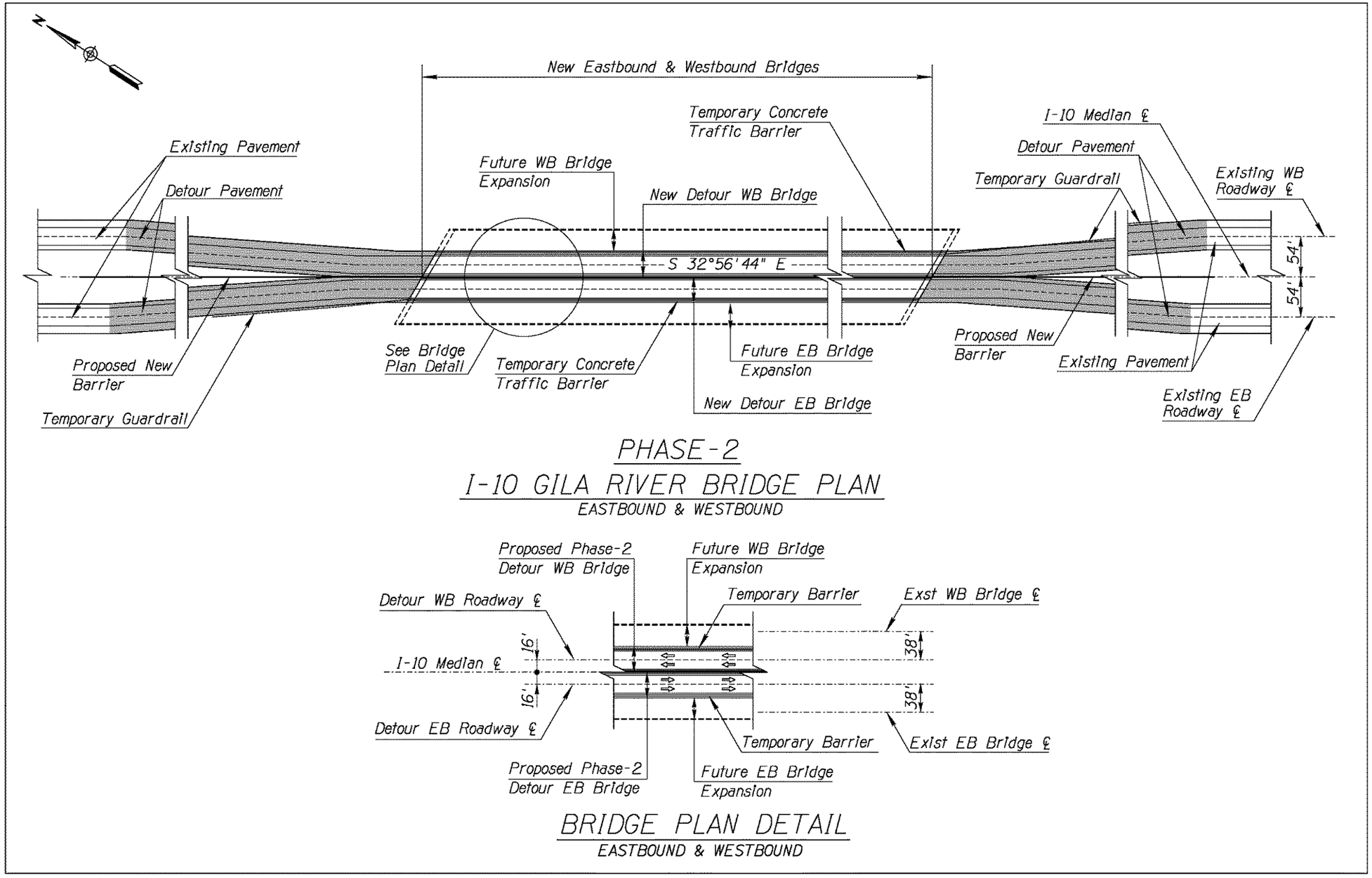
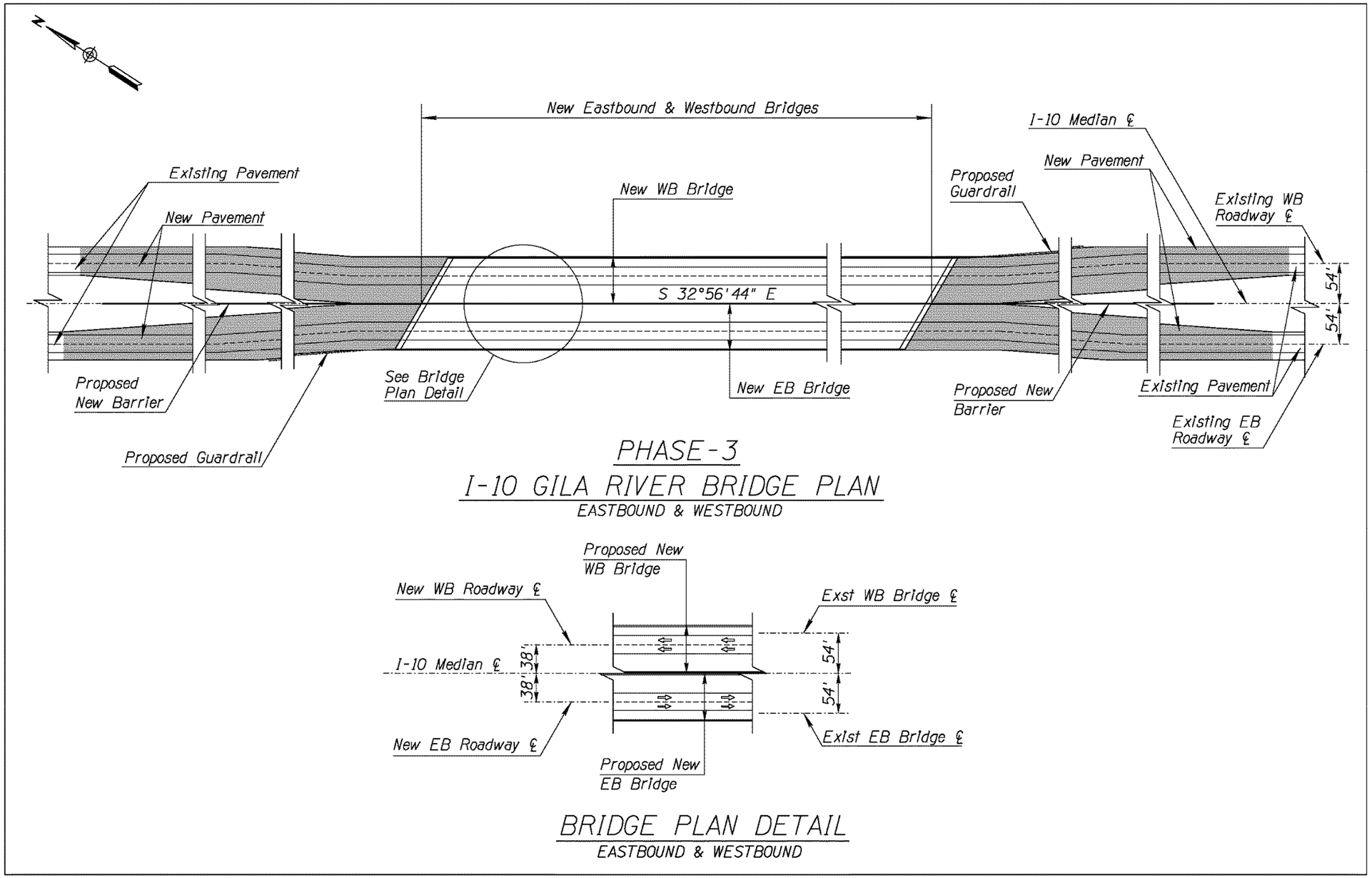


Figure 13: Construction Phase -3



ACCELERATED BRIDGE CONSTRUCTION (ABC)

The ADOT Bridge Group ABC Decision Making Matrix is shown in the following table. The rating score indicates that cost will be considered; however cost is not the primary factor in determining the preferred alternative for this project. It is recommended that further evaluation of the ABC technique be incorporated into the final bridge selection report.

ADOT ABC Decision Making Matrix

Category	Decision-Making Item	Possible Points	Points Allocated	Scoring Guidance
Railroad	Railroad/ Rail Transit under Bridge?	4	0	0 No track under bridge 2 Minor track under bridge 4 Major track(s) under bridge
Construction Impacts	ADT (Combined ADT on and under bridge)	10	5	1 ADT under 10,000 3 ADT 10,000 to 25,000 5 ADT 25,000 to 50,000 6 ADT 50,000 to 75,000 7 ADT 75,000 to 100,000 10 ADT 100,000+
	Allowable Lane Closure (Roadway on Bridge)	4	4	0 Long Term Lane Reduction Allowed During Construction 4 No Long Term Lane Reduction Allowed During Construction
	Allowable Lane Closure (Roadway under Bridge)	4	0	0 Long Term Lane Reduction Allowed During Construction 4 No Long Term Lane Reduction Allowed During Construction
	Allowable Bridge Closure (Roadway on Bridge)	6	6	0 Bridge Can closed - Viable Detour Available 6 Bridge Cannot be Closed
	Allowable Roadway Closure (Roadway under bridge)	4	4	0 Roadway under can be closed 4 Roadway under cannot be closed
	Permanent Align Shift w/ single phase an option	3	0	0 A permanent alignment shift is achievable to facilitate construction 3 A permanent alignment shift is achievable, but undesirable.
	Is phased construction with widening an option?	8	6	0 Widening will fit updated standards or future roadway improvements 6 Widening achievable, but undesireable due to unused investment 8 No alternatives available for widening
	Impact to Local Access (Local business access, Local resident access etc.)	6	6	0 Minor or no impact to access 3 Moderate impact to access 6 Major impact to access
Project Duration	Impacts Critical Path of the Total Project?	8	4	0 Minor or no impact to critical path of total project 4 Moderate impact to critical path of the total project 8 Major impact to critical path of the total project
	Restricted Construction Time (Environmental schedules, Economic Impact- e.g. local business access, special events, etc.)	10	6	0 No construction time restrictions 3 Minor construction time restrictions 6 Moderate construction time restrictions 10 Major construction time restrictions
	Seasonal Limitations for conventional construction?	4	4	0 No seasonal limitations for conventional construction 4 Seasonal limitations for conventional construction
Environment	Does ABC mitigate a critical environmental impact or sensitive environmental issue?	5	0	0 ABC does not mitigate an environmental issue 2 ABC mitigates a minor environmental issue 3 ABC mitigates several minor environmental issues 4 ABC mitigates a major environmental issue 5 ABC mitigates several major environmental issues
Safety	Safety (Workers Concerns)	8	4	0 Short duration impact 4 Normal duration impact 8 Extended duration impact
	Safety (Traveling Public Concerns)	8	4	0 Short duration impact 4 Normal duration impact 8 Extended duration impact
Economy of Scale	Bridge Economy of Scale (repetition of components in a bridge or bridges in a project) (Total spans=sum of all spans on all bridges on the project)	4	4	0 1 total span 1 2 total spans 2 3 total spans 3 4 total spans 4 5+ total spans
Risk Management	Does ABC allow management of a particular risk?	4	2	0-4 Use judgement to determine if risks can
	Total Possible	100		
		Sum of Points:	59	

Roadway

The roadway will be widened to the inside median to accommodate the new bridges. Vertically new slopes will be placed per Roadway Design Guidelines. For the purpose of this Project Assessment the estimated quantities are based on reconstructing the entire roadway for a distance of 2000 feet from the bridges in both directions and 108 feet wide from edge to edge including the median.

Traffic

Add smart work zone specifications and bid items to project bid package.

Designer should work with District to determine the functionality requirements needed for the smart work zone system. Designer should develop a concept of operations for the systems and develop specifications specific to this project as well as final costs. Assumed cost for the smart work zone technology would be 10% of the total MOT cost.

Provide a lump sum cost to maintenance of traffic as a bid item. Providing a lump sum cost to maintenance of traffic would eliminate the need for traffic control plans. The designer would be required to develop construction sequencing plans and initial costs for traffic control bid items for back up documentation. In addition, the designer would be required to develop the contract duration for the 108 spec for backup documentation. The designer would provide special provisions for contractor to bid on Traffic control items.

Advantages:

- Contractor prepares traffic control plans and has ownership of the construction phasing and traffic control set ups.
- Simplifies the administrative processes. Field inspectors are still needed but not required to provide daily quantities.

Disadvantages:

- If ADOT requires traffic control adjustments outside the original scope of work it would require a change order to the contract.

Pavement

Preliminary Pavement Structural Recommendation: The roadway pavement structural recommendation was prepared with a very limited analysis. This recommendation may change upon availability of FWD data, borings and a pavement core report on the actual pavement condition during design phase.

Asphaltic Concrete (AC):

For I-10 Mainline:

AC Type: AC (3/4") EP Special Mix - (416 Mix)
Unit Weight: 145 lbs/cu-ft
AR-ACFC 59 lbs/sy
The preliminary pavement section is 10" of AC over 12" of AB.

Drainage

The footprint of the roadway will remain the same; therefore, no drainage easements are needed.

First Flush Bridge Runoff

The Gila River Indian Community (GRIC) has requested that the new Gila River Bridges accommodate a drainage system that treats the first flush bridge runoff before discharging into Gila River. The existing Gila River Bridges have deck drains that discharge directly into Gila River.

The profile of the newly constructed bridges will be arched with a crest vertical curve that allow will water to flow into detention basins at the ends of the new bridges eliminating the need for deck drains. Preliminary analysis for eliminating deck drains is based on design using guidance from HEC-21. The analysis concludes that the proposed bridge geometry does not require the deck drains based on a design spread of the shoulder width and the width of half a lane (16 ft). The first flush runoff would be percolated into the soil and discharged into the river after flowing into the detention basins.

Advantages:

- The proposed system meets the requirements of treating bridge runoff before discharging into Gila River.
- The proposed system is anticipated to be entirely contained within the existing easement area.
- Channeling the first flush drainage would minimize the number of areas needed for maintenance.
- The basins would be easily accessible from I-10.

D. DEVELOPMENT CONSIDERATIONS

Coordination with Future Projects:

There are three I-10 projects in the development phase that will be considered as part of this project.

- I-10 Corridor Study, Loop 202 to SR 387

  ADOT is planning to add capacity to Interstate 10 (I-10) from milepost (MP) 161.0 at the State Route (SR) 202L (Santan) traffic interchange to MP 187.1, east of the traffic interchange at SR 387. The approximately 26-mile corridor is located primarily within the Gila River Indian Community and also within the cities of Phoenix and Chandler in Maricopa County, Arizona, and

within the city of Casa Grande in Pinal County. An Environmental Assessment and Design Concept Report will evaluate widening options as well as the No Build Alternative.

- I-10 Pavement Rehabilitation, SR 587 to SR 387
- I-10 Pavement Rehabilitation, Riggs Road to north approach of the Gila River Bridge

Designated Ingress/Egress

Access to and egress from highway construction zones presents a significant challenge to both travelers and work crews when the work is taking place on or adjacent to a highway that is open to traffic. This is especially true if the highway, such as Interstate 10, carries high traffic volumes or traffic speeds are high.

Safety challenges include:

- Motorists following construction vehicles into the work space;
- Acceleration and deceleration of construction vehicles as they exit and enter open lanes of traffic;
- Proximity of parked or staged equipment to passing motorists.

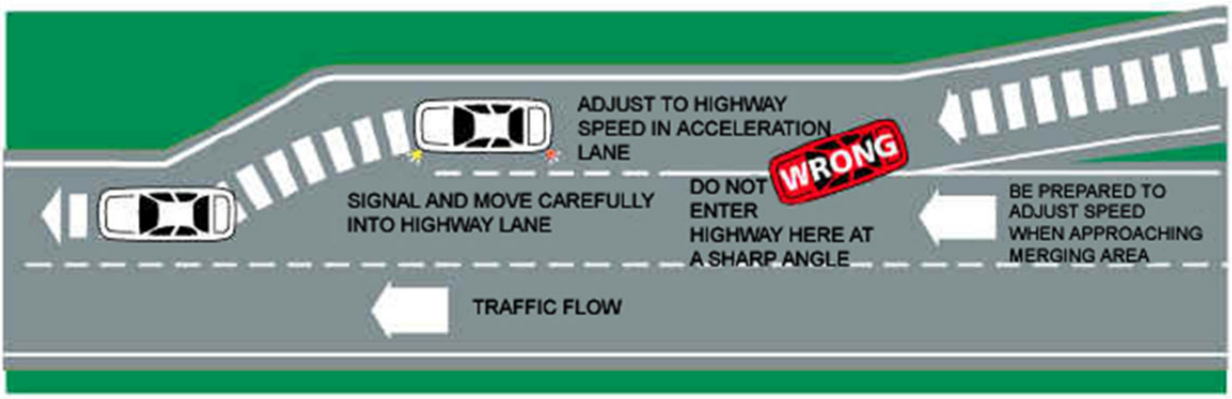
Access and egress issues are most effectively addressed in the temporary traffic control planning and design phase before construction begins. The designer should address how contractors will safely move personnel, materials and equipment into and out of the work area with minimum disruption to traffic and exposure of workers to the traveling public.

Designated Ingress/Egress although adding cost to the overall project provides a safe and viable way for entering and exiting the project. This designation keeps construction traffic from random ingress/egress while protecting the travelling public on I-10.

As well, given the lengths (have utilized 1,350LF – previous projects) allows for truck traffic hauling borrow or construction materials the ability to enter from or merge with I-10 traffic without impeding the natural flow in a safe and concise manner.

It should be noted, that the project will be accessed the project through the median, which will require all construction traffic, contractor & agency personnel to enter from or exit to the 'high speed' lane'. Providing acceleration and deceleration lanes has the ability to protect ALL traffic within the project corridor.

The Contractor is to choose ingress/egress locations to control interaction with traveling public.



Designated Ingress/Egress although adding cost to the overall project provides a safe and viable way for entering and exiting the project. This designation keeps construction traffic from random ingress/egress while protecting the travelling public on I-10.

- Additional grading & pavement required for EB & WB for ingress and egress
- Assume 4" AC on 6" ABC structural section @ 10' width
- Ingress lane 1000' in length
- Egress lane 1500' in length in order to allow trucks the ability to gain speed for traffic merge
- One acceleration/deceleration lane in each direction required
- Warranted by high posted speeds and large amount of truck traffic
- Provides one clear entrance/exit each direction into work zone
- Eliminates multiple access points to I-10 traffic

Estimated cost: TOTAL: DECEL/ACCEL LANES (EB & WB) = $254,648

A+B Bidding

Consider changing from a set calendar day project to an A+B project delivery method. The A is the money quantity for the project items, and B is related to how many days the contractor can build the project in. B is the value assigned to each day (this value is given by ADOT) multiplied by how many days the contractor bids.

Advantages:

- Shorter project duration
- Incentivize contractor to finish project quicker
- Reduced impact to traveling public

Disadvantages:

- A contractor can have very high bid item prices and still win the project because they bid less days
- Negotiations will be more difficult due to how critical time is

- Contractor will work long hours/weekends in order to meet the accelerated schedule which may lead to manpower shortage on ADOT's side

Traffic

- Pavement markings will be .090" Extruded Thermoplastic.
- The lane lines striping will be preformed, type 1 white stripe.
- Temporary markings will be used until final permanent marking is placed. Cost estimate includes cost associated with temporary markings.
- Install new Type "C" raised pavement markers (at 40' spacing) for the roadway lane lines and install Type "E" raised pavement markers (at 20' spacing) for the roadway inside edge line. Reset any existing object markers and signs disturbed by construction.
- Install 12 inch shoulder rumble strips throughout the project.
- Reset any existing object markers and signs disturbed by construction.

ADOT Traffic control requirements will be in accordance with the 2009 Manual on Uniform Traffic Control Devices (MUTCD), the Arizona Supplement to the 2009 MUTCD and/or by special provisions. At least two lanes of traffic will be maintained at all times during construction.

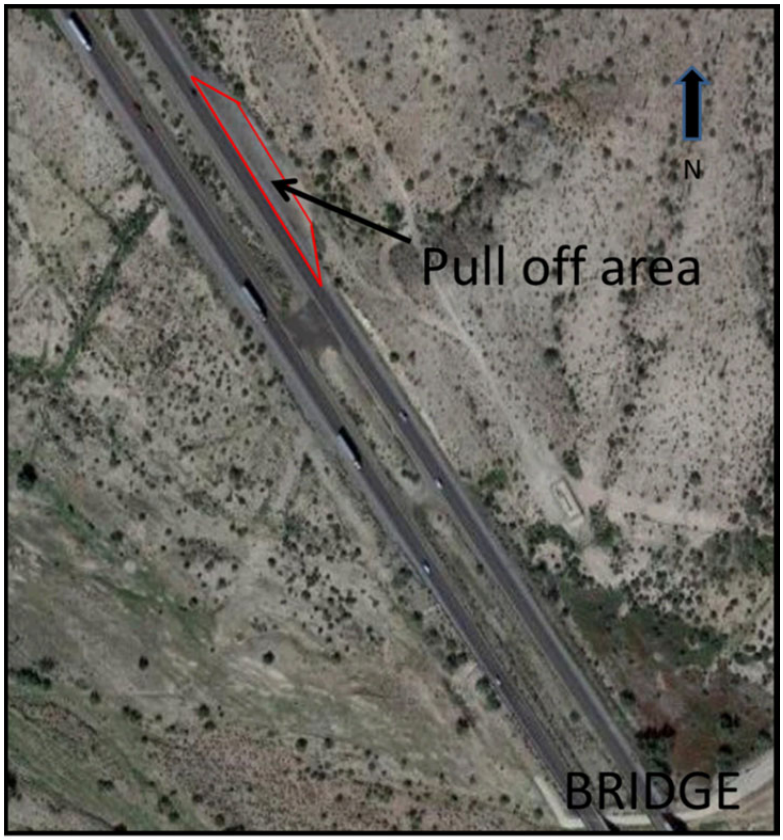
Provide a lump sum cost to maintenance of traffic as a bid item.

There will be no construction work on Saturdays, Sundays and/or holidays that impacts traffic. It is the contractor's responsibility to replace any items that are damaged during construction at no cost to ADOT.

Roadside Development

There is an area about a quarter mile north of the bridges on the east side of the road that is being used as a vehicle pull-off area. This area should be landscaped to discourage the use as a pull-off area without proper deceleration and acceleration tapers next to a high speed roadway. See the photo on the next page.

Figure 14: Pull off area



Safety and Miscellaneous

- All trees that have a minimum trunk diameter of 4” or will ultimately have a trunk diameter of 4” during construction within the roadway clear zone will require removal; the District will provide an updated quantity during final design.

- All disturbed areas including any staging areas, stockpile areas, equipment areas and any areas where noxious or invasive weeds will be removed shall be seeded with a native seed mix indigenous to the project site.

No major utility conflicts are anticipated; however, during final design ADOT’s Utility and Railroad Engineering Section or a designated consultant will investigate the impact of the project on any existing utility locations.

Erosion control plans will be required.

Coordination with the Gila River Indian Community will be required.

The proposed construction will be confined within the existing easement; however, temporary construction easements will be needed for construction access and materials staging.

The construction season is a consideration for this project due to the elevation and seasonal water levels within the Gila River. The Asphaltic concrete shall be placed between March 15 to May 31 or September 1 to October 31.

Pavement smoothness incentives ($9000/Lane Mile) and pavement quality incentives ($3/Ton) will be included in the itemized cost estimate.

E. OTHER REQUIREMENTS

This project will be designed by ADOT Bridge Design Section. The ADOT Bridge Design Engineer is Navaphan Viboolmate (602) 712-8478. The ADOT Statewide Project Manager is Trent Kelso (602) 712-6685.

This project will be administered using Federal (CRRSAA and NHPP) Funds and will be administered under the ADOT/FHWA Operating Partnership Agreement under Category S.

A customized project schedule will be developed by Project Management Group which will reflect the full scope of work.

F. ESTIMATED COST

Table 6: Estimated Construction Cost

	Cost
Roadway	$9,968,000
Traffic	$8,173,000
Bridge	40,098,000
Project Wide	$43,285,768
Total	$101,525,000

The estimated costs are based upon current unit prices obtained from ADOT's "Construction Costs Data Base."

G. REQUIRED ACTION BY PROJECT REVIEW BOARD (PRB) AND/OR PRIORITY PLANNING ADVISORY COMMITTEE (PPAC)

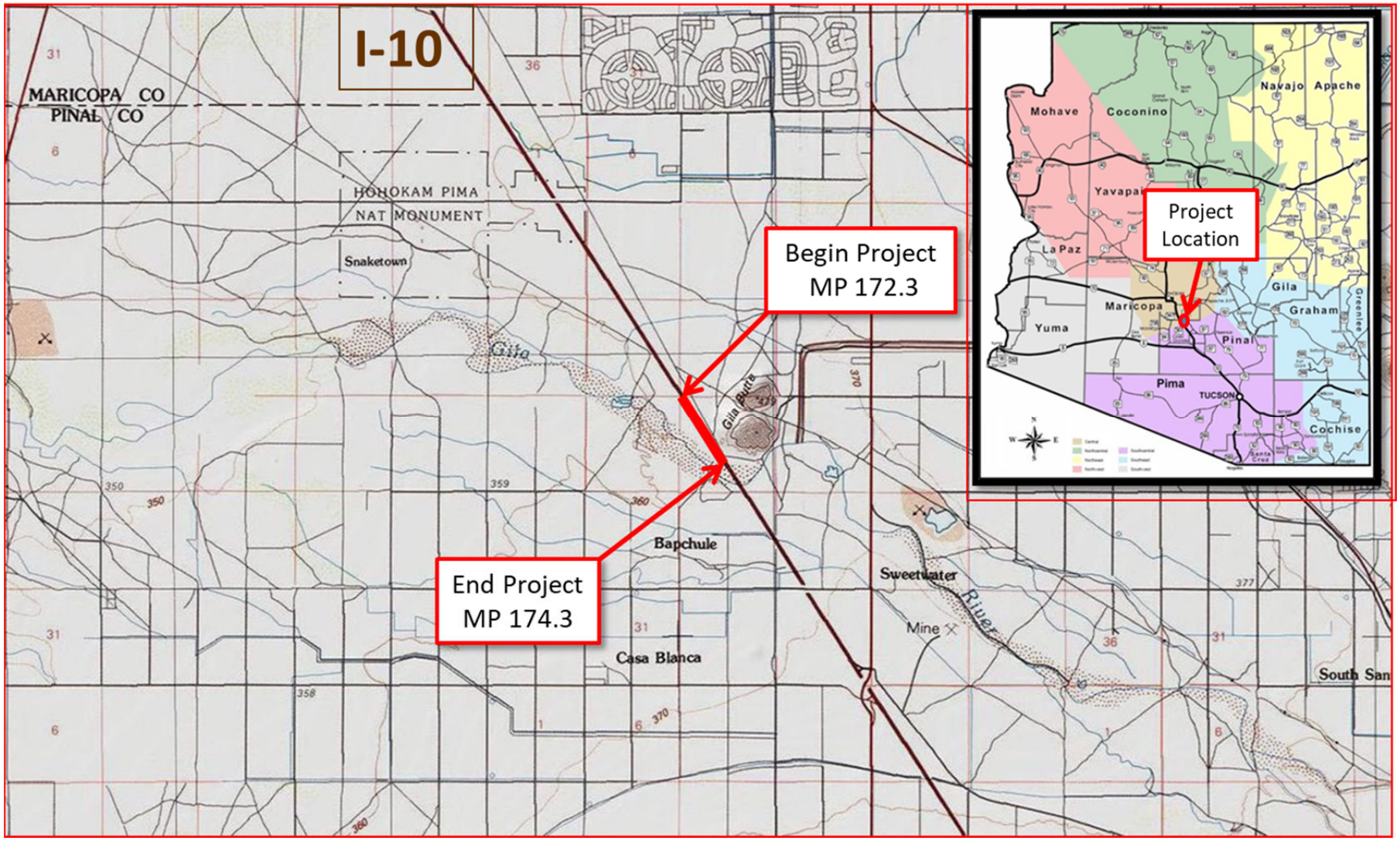
The project is currently programmed in the 2023-2027 ADOT Tentative Five-Year Transportation Facilities Construction Program. During final design, the Project Manager will be required to submit this project to the Project Review Board (PRB), and potentially submit it to the Priority Planning Advisory Committee (PPAC) for scope, schedule, or budget updates.

H. INVOLVEMENT SHEET

PROJECT 010 PN 173 F0270 01C
BRIDGES OVER THE GILA RIVER

Contacted	Attended Kick-Off Meeting	Organization	Involvement				Comments (Issues Which Make Involvement Significant or Minimal)
			Significant	Minimum	None	Unknown	
X		Central District	X				Construction Engineering and Administration
X	X	Project Management	X				Project Manager: Trent Kelso (602) 712-6685
X	X	Roadway Design	X				Prepare Plans Erica Eggen (602) 712-7794
X	X	Pavement Design	X				Prepare Pavement Design Report Dann Harnanan (602) 712-7243
X	X	Bridge Design	X				Bridge Design Navaphan Viboolmate (602) 712-8478
X	X	Drainage Design		X			Drainage Oversite
X	X	Traffic Design	X				Pavement Marking & Signing
X	X	Geotechnical Services	X				Perform Geotechnical Field Investigation
X	X	Environmental Planning	X				Environmental Documentation & Clearance. Determine Need for Archaeological/Cultural Resource Survey
X	X	Roadside Development	X				Seeding Plan and SWPPP John Hucko
X	X	Right of Way		X			Right of Way Clearance Letter
X	X	Utilities & Railroads		X			Utility Clearance Letter Priscilla Thompson
X	X	Contracts & Specifications	X				Plans, Specifications and Estimate (PS&E) Package Advertise Project
X		FHWA		X			Federal Funds Project to be Administered Under ADOT-FHWA Operating Partnership Agreement Procedures – Category S
X	X	Engineering Survey	X				Field Survey

Figure 15: Location Map



APPENDIX

APPENDIX A

ITEMIZED COST ESTIMATE

Arizona Department of Transportation

Estimated Engineering Construction Cost

Itemized Estimate

Project Number: 010 PN 173 F0270 01C

Location: BRIDGES OVER THE GILA RIVER

9-Jun-22

Version: FINAL PROJECT ASSESSMENT

ROADWAY

Item No	Item Description	Unit	Quantity	Unit Price	Amount
2010011	CLEARING AND GRUBBING	ACRE	12	$7,000.00	$84,000
2020019	REMOVAL OF EMBANKMENT CURB	L.FT.	485	$10.00	$4,850
2020071	REMOVE GUARD RAIL	L.FT.	3,454	$7.00	$24,178
2020087	REMOVE BITUMINOUS PAVEMENT (MILLING) (4")	SQ.YD.	7,390	$4.00	$29,560
2020088	REMOVE BITUMINOUS PAVEMENT (MILLING) (4 1/2" TO 6")	SQ.YD.	6,076	$5.00	$30,380
2020101	REMOVE FENCE	L.FT.	200	$5.00	$1,000
2030301	ROADWAY EXCAVATION	CU.YD.	30,145	$60.00	$1,808,700
2030900	BORROW ()	CU.YD.	10,000	$40.00	$400,000
3030022	AGGREGATE BASE, CLASS 2	CU.YD.	14,508	$75.00	$1,088,100
4040111	BITUMINOUS TACK COAT	TON	42	$800.00	$33,600
4040116	APPLY BITUMINOUS TACK COAT	HOUR	139	$200.00	$27,800
4040125	FOG COAT	TON	13	$1,200.00	$15,600
4040163	BLOTTER MATERIAL	TON	40	$100.00	$4,000
4040282	ASPHALT BINDER (PG 76-16)	TON	1,332	$1,350.00	$1,798,200
4140040	ASPHALTIC CONCRETE FRICTION COURSE (ASPHALT-RUBBER)	TON	460	$75.00	$34,500
4140042	ASPHALT RUBBER MATERIAL (FOR AR-ACFC)	TON	45	$1,000.00	$45,000
4140044	MINERAL ADMIXTURE (FOR AR-ACFC)	TON	5	$90.00	$450
4160004	ASPHALTIC CONCRETE (3/4" MIX) (END PRODUCT) (SPECIAL MIX)	TON	26,654	$65.00	$1,732,510
4160031	MINERAL ADMIXTURE	TON	253	$90.00	$22,770
9050005	GUARD RAIL, W-BEAM, SINGLE FACE	L.FT.	3,454	$40.00	$138,160
9050025	GUARD RAIL TERMINAL	EACH	10	$6,000.00	$60,000
9100001	CONCRETE BARRIER	L.FT.	4,000	$140.00	$560,000
9240052	MISCELLANEOUS WORK (GUIDE BANK)	L.SUM	1	$985,000.00	$985,000
9240066	MISCELLANEOUS WORK (PILLOW WALLS)	L.SUM	1	$1,040,010.00	$1,040,010
				ROADWAY	**$9,968,368**

TRAFFIC

6070038	SLIP BASE	EACH	2	$400.00	$800
6070055	SIGN POST (PERFORATED) (2 1/2 S)	L.FT.	50	$25.00	$1,250
6070057	SIGN POST (PERFORATED) (2 1/2 T)	L.FT.	151	$30.00	$4,530
6070060	FOUNDATION FOR SIGN POST (CONCRETE)	EACH	14	$350.00	$4,900
6080005	REGULATORY, WARNING, OR RKER SIGN PANEL	SQ.FT.	112	$35.00	$3,920
6080025	FLAT SHEET ALUMINUM SIGN PANEL	SQ.FT.	24	$42.00	$1,008

6080101	MISCELLANEOUS WORK (SIGNS)	L.SUM	1	$2,000.00	$2,000
7010005	MAINTENANCE AND PROTECTION OF TRAFFIC	L.SUM	1	$7,700,000.00	$7,700,000
7030027	DELINEATOR ASSEMBLY (FLEXIBLE) (SURFACE-MOUNTED)	EACH	140	$110.00	$15,400
7030095	MILEPOST MARKER (S-10)	EACH	2	$450.00	$900
7040005	PAVEMENT MARKING (WHITE EXTRUDED THERMOPLASTIC) (0.090")	L.FT.	15,500	$1.25	$19,375
7040006	PAVEMENT MARKING (YELLOW EXTRUDED THERMOPLASTIC) (0.090")	L.FT.	15,500	$1.25	$19,375
7042031	PRIMER-SEALER FOR PCCP THERMOPLASTIC STRIPING	L.FT.	21,000	$0.15	$3,150
7042051	REMOVAL OF CURING COMPOUND FOR STRIPING	L.FT.	21,000	$0.80	$16,800
7060013	PAVEMENT MARKER, RAISED, TYPE C	EACH	260	$5.00	$1,300
7060017	PAVEMENT MARKER, RAISED, TYPE E	EACH	520	$5.00	$2,600
7080201	WATERBORNE-TYPE I PAVEMENT MARKING (PAINTED) (WHITE)	L.FT.	13,000	$0.50	$6,500
7080202	WATERBORNE-TYPE I PAVEMENT MARKING (PAINTED) (YELLOW)	L.FT.	10,400	$0.50	$5,200
7320150	ELECTRICAL CONDUIT (3") (RIGID METAL)	L.FT.	4,500	$80.00	$360,000
9280036	GROUND-IN RUMBLE STRIP (8 INCH)	L.FT.	15,100	$0.25	$3,775
				TRAFFIC	**$8,172,783**

BRIDGE

2020002	REMOVE BRIDGE	L.SUM	1	$4,000,000.00	$4,000,000
2030501	STRUCTURAL EXCAVATION	CU.YD.	420	$150.00	$63,000
2030506	STRUCTURE BACKFILL	CU.YD.	288	$150.00	$43,200
6010003	STRUCTURAL CONCRETE (CLASS S) (F'C = 3,500)	CU.YD.	4,680	$1,200.00	$5,616,000
6010005	STRUCTURAL CONCRETE (CLASS S) (F'C = 4,500)	CU.YD.	5,640	$1,400.00	$7,896,000
6011140	F-SHAPE BRIDGE CONCRETE BARRIER AND TRANSITION (34")	L.FT.	5,600	$250.00	$1,400,000
6011345	DECK JOINT ASSEMBLY (STRIP SEAL JOINT)	L.FT.	580	$350.00	$203,000
6011371	APPROACH SLAB (SD 2.01)	SQ.FT.	3,806	$45.00	$171,270
6014973	PRECAST, P/S MEMBER (UBT50)	L.FT.	16,244	$500.00	$8,122,000
6015101	RESTRAINERS, VERTICAL EARTHQUAKE (FIXED)	EACH	240	$200.00	$48,000
6015102	RESTRAINERS, VERTICAL EARTHQUAKE (EXPANSION)	EACH	48	$250.00	$12,000
6050002	REINFORCING STEEL	LB.	2,252,800	$2.75	$6,195,200
6090048	DRILLED SHAFT FOUNDATION (48")	L.FT.	7,760	$800.00	$6,208,000
9130111	RECONSTRUCT RAIL BANK PROTECTION	L.FT.	400	$300.00	$120,000
				BRIDGE	**$40,097,670**

PROJECT WIDE

810XX01	EROSION CONTROL AND POLLUTION PREVENTION (EROSION CONTROL EROSION CONTROL	COST	1%		$582,388
901XX01	MOBILIZATION ()	COST	10%		$5,823,882
924XX02	CONTRACTOR QUALITY CONTROL	COST	2%		$1,164,776
925XX01	CONSTRUCTION SURVEYING AND LAYOUT	COST	1%		$582,388
934XX01	MISCELLANEOUS WORK (Miscellaneous 10%)	COST	10%		$5,823,882
				PROJECT WIDE SUBTOTAL	**$13,977,317**

407X006	AR-ACFC SMOOTHNESS INCENTIVE	LANE MILE	7	$9,000.00	$63,000
407X008	ASPHALT MATERIALS QUALITITY INCENTIVE	TON	26,654	$3.00	$79,962
951X001	CONSTRUCTION ENGINEERING	COST	15%		$10,832,421
951X002	CONTINGENCY	COST	5%		$3,610,807
951X009	TERO TRIBAL TAX	COST	7%		$5,055,130
951X010	INDIRECT COST ALLOCATION	COST	10.50%	$9,647,132.00	$9,647,132
970Z020	PUBLIC RELATIONS	COST		$20,000.00	$20,000
				PROJECT WIDE	**$43,285,768**

Summary

Section	Total
ROADWAY	**$9,968,000**
TRAFFIC	**$8,173,000**
BRIDGE	**$40,098,000**
PROJECT WIDE	**$43,286,000**
Total Project Cost	**$101,525,000**

APPENDIX B

DETAILED UTILITY PERMITS LISTING

All Permits Report By Route

This report was generated by Priscilla Thompson (DOT\C4445) on 8/9/2019 8:47:30 AM based on filter:Route: I-10, I-10 F AND Start MP >= 172 AND End MP <= 176 AND Sort Order by: [Maint Org], [Route], [Start MP], [Owner]

District	Maint Org	Insp Org	Permit #	Type	Owner	Applicant	Route	Start MP	End MP	Purpose	Issue Date	Expire Date	Comp. Date	Cancel Date
Phoenix Maintenance			1219582	AERX	GILA RIVER INDIAN COMMUNITY UTILITY AUTHORITY 6023207106	Wilson Utility Construction Co. 4806335555	I-10	175	175	New pole installed and cross I-10 with 12KV OH line	10/28/2017	10/30/2018	01/17/2019	
Phoenix Maintenance	7801		22938	MISC	SALT RIVER PROJECT	Unknown	I-10	143	197	STREET LIGHT MAINTENANCE	01/14/1969	01/14/1970	01/14/1970	
Phoenix Maintenance	7801		55496	MISC	GILA RIVER TELECOMMUNICATIONS	Unknown	I-10	175.88	175.88	BORE FIBER OPTIC CABLE	11/08/1990		07/09/1992	
Phoenix Maintenance	7820		95248	MISC	SAN CARLOS IRRIGATION PROJECT	Unknown	I-10	175	175	REHAB EXISTING DISTRIBUTION POWER	01/04/2005	07/04/2005	04/17/2005	
South Central	8155		32331	UNDR	ARIZONA DEPARTMENT OF TRANSPORTATION	Unknown	I-10	133.3	186.6	INSTALL 6" WATER MAIN	11/21/1975	01/21/1976	01/21/1976	
South Central	8155	8155	1200312	UNDR	GILA RIVER TELECOMMUNICATIONS, INC. 5207963333	RONALD ALLISON 5207963333	I-10	175.83	175.83	place communication lines by directional bore across the highway	11/08/2007	02/05/2008	06/03/2008	
South Central	8155		92635	UNDR	GILA RIVER INDIAN COMMUNITY	Unknown	I-10	175.91	175.94	TO EXTEND 8" PVC TROUGH ADOT RIGHT-OF-WAY	11/06/2003	02/06/2004	02/06/2004	

APPENDIX C

DRAINAGE FEATURES

Asset Id	Feature	Sub-Feature	Route	Lane Location	From MP/Offset	To MP/Offset	Length/ Area(ft)
1524692	Pipe Opening Location	CMPA	I 010 (EB)	Right	172.12	172.12	
1524693	Pipe Opening Location	CMPA	I 010 (EB)	Right	172.23	172.23	
1524694	Pipe Opening Location	CMPA	I 010 (EB)	Right	172.35	172.35	
1524695	Pipe Opening Location	CMPA	I 010 (EB)	Right	172.48	172.48	
1524696	Pipe Opening Location	CMPA	I 010 (EB)	Right	172.59	172.59	
1524697	Pipe Opening Location	CMP	I 010 (EB)	Right	172.87	172.87	
1527154	Pipe Opening Location	Concrete	I 010 (EB)	Left	173.77	173.77	
1527155	Pipe Opening Location	Concrete	I 010 (EB)	Right	173.77	173.77	
1526235	Pipe Opening Location	CMP	I 010 (EB)	Median	173.4	173.4	
1528597	Pipe Opening Location	CMPA	I 010 (WB)	Right	172.84	172.84	
1528598	Pipe Opening Location	CMPA	I 010 (WB)	Right	172.59	172.59	
1528599	Pipe Opening Location	CMPA	I 010 (WB)	Right	172.48	172.48	
1528600	Pipe Opening Location	CMPA	I 010 (WB)	Right	172.35	172.35	
1528601	Pipe Opening Location	CMPA	I 010 (WB)	Right	172.23	172.23	
1528602	Pipe Opening Location	CMPA	I 010 (WB)	Right	172.12	172.12	
1528603	Pipe Opening Location	CMPA	I 010 (WB)	Right	172	172	
1528604	Pipe Opening Location	CMPA	I 010 (EB)	Right	172.01	172.01	
1526239	Catch Basin	Flush	I 010 (EB)	Median	173.42	173.42	
1527156	Catch Basin	Other	I 010 (EB)	Median	172.85	172.85	
1527157	Catch Basin	Other	I 010 (EB)	Median	172.86	172.86	
1524700	Spillway	Single Inlet	I 010 (EB)	Right	173.04	173.04	
1526229	Curb	Single Curb	I 010 (EB)	Right	173.05	173.13	484.26
1526237	Dikes	Dike	I 010 (WB)	Right	173.48	173.41	468.02
1527165	Dikes	Dike	I 010 (WB)	Right	173.6	173.6	150.95
1527166	Dikes	Dike	I 010 (WB)	Right	173.68	173.68	150.93
1527168	Dikes	Dike	I 010 (EB)	Median	172.93	172.93	26.17
1527169	Dikes	Dike	I 010 (EB)	Median	172.85	172.85	43.59
1527170	Dikes	Dike	I 010 (EB)	Median	172.59	172.59	52.5
1527171	Dikes	Dike	I 010 (EB)	Median	172.48	172.48	55.76
1527172	Dikes	Dike	I 010 (EB)	Median	172.35	172.35	64.92
1527173	Dikes	Dike	I 010 (EB)	Median	172.23	172.23	49.77
1527174	Dikes	Dike	I 010 (EB)	Median	172.12	172.12	48.94
1527175	Dikes	Dike	I 010 (EB)	Median	172.01	172	48.76
1526231	Dikes	Dike	I 010 (WB)	Right	173.14	173.15	678.11
1527159	Dikes	Dike	I 010 (EB)	Median	173.76	173.76	61.01
1527160	Dikes	Dike	I 010 (EB)	Median	173.58	173.57	51.3
1527161	Dikes	Dike	I 010 (EB)	Median	173.51	173.51	60.28
1527162	Dikes	Dike	I 010 (WB)	Right	173.53	173.53	157.8
1524698	Dikes	Dike	I 010 (EB)	Right	173.39	173.39	189.51
1528613	Dikes	Dike	I 010 (WB)	Right	172.59	172.59	51.53
1528614	Dikes	Dike	I 010 (WB)	Right	172.47	172.47	49.85
1528615	Dikes	Dike	I 010 (WB)	Right	172.34	172.34	56.55
1528616	Dikes	Dike	I 010 (WB)	Right	172.23	172.23	52.14
1528617	Dikes	Dike	I 010 (WB)	Right	172.11	172.11	45.53
1528618	Dikes	Dike	I 010 (WB)	Right	172	172	51.59

1527651	Ditch	Other Ditch	I 010 (WB)	Right	172.76	172.71	272.68
1527167	Bank Protection	Soil Cement	I 010 (WB)	Right	173.68	173.68	89.88
1526238	Bank Protection	Rip Rap	I 010 (WB)	Right	173.42	173.42	34.66
1526230	Bank Protection	Soil Cement	I 010 (EB)	Center	173.12	173.14	1015.21
1526236	Bank Protection	Soil Cement	I 010 (WB)	Center	173.39	173.47	805.18
1527163	Bank Protection	Soil Cement	I 010 (WB)	Right	173.52	173.53	139.73
1527164	Bank Protection	Soil Cement	I 010 (WB)	Right	173.6	173.61	133.03
1526232	Bank Protection	Soil Cement	I 010 (WB)	Right	173.16	173.15	39.92
1526233	Bank Protection	Rip Rap	I 010 (WB)	Right	173.15	173.14	53.5
1524701	Bank Protection	Soil Cement	I 010 (EB)	Right	173.12	173.14	149.37
1524699	Bank Protection	Soil Cement	I 010 (EB)	Right	173.39	173.39	293.07
1529249	Levee	Levee	I 010 (WB)	Right	172.84	172.71	687.29
919101	Roadway Cut Ditches	Unpaved Cut Ditch	I 010 (EB)	Right	172.78	172.86	417.25
919105	Roadway Cut Ditches	Unpaved Cut Ditch	I 010 (WB)	Right	173.02	172.84	967.25
1524702	Other Drainage Issues	Other Drainage Issues	I 010 (EB)	Right	173.07	173.07	
1526234	Other Drainage Issues	Other Drainage Issues	I 010 (WB)	Right	173.14	173.14	
1529259	Drainage Access Point	Drainage Access Point	I 010 (EB)	Median	172.85	172.85	
1530225	Drainage Access Point	Drainage Access Point	I 010 (EB)	Median	172.86	172.86	