

City of Phoenix

JURISDICTIONAL DETERMINATION AND
SECTION 404 PERMIT
CONSULTANT GUIDANCE MANUAL



City of Phoenix



OFFICE OF
**ENVIRONMENTAL
PROGRAMS**



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Acronyms and Abbreviations

404 – Section 404 of the Clean Water Act (CWA)

AJD – Approved Jurisdictional Determination

AGFD – Arizona Game and Fish Department

CAO – City of Phoenix (City) Archaeology Office

City – City of Phoenix

CWA – Clean Water Act

EPA – Environmental Protection Agency

FEMA – Federal Emergency Management Agency

FIRM – Flood Insurance Rate Map

GIS – Geographic Information System

HP – Historic Preservation Office

INCRA – Initial Natural/Cultural Resources Assessment

IPaC – Information for Planning and Consultation

JD – Jurisdictional Determination

NTP – Notice to Proceed

NWI – National Wetlands Inventory

NWP – Nationwide Permit

OEP – Office of Environmental Programs

ORM – Operations and Maintenance Business Information Link (OMBIL) Regulatory Module

PCN – Preconstruction Notification

PJD – Preliminary Jurisdictional Determination

PM – Project Manager

SOW – Scope of Work

TNW – Traditional Navigable Water

USACE – US Army Corps of Engineers

USFWS – US Fish and Wildlife Service

Waters – Waters of the US

Important Links

ADEQ Water Quality Certification program: <http://www.azdeq.gov/node/565>

ADEQ GIS eMaps: <https://www.azdeq.gov/emaps>

City of Phoenix Section 404 Consultant Guidance, Fillable USACE Forms, and Physical Characteristics Table:
<https://www.phoenix.gov/oep/Section-404>

EPA's Current Definition of Waters: <https://www.epa.gov/wotus/current-implementation-waters-united-states>

FEMA's Flood Map Service Center: <https://msc.fema.gov/portal/home>

USACE JDs:

[Field Guide to OHWM Determinations in the Arid West – August 2008](#)

[2017 Minimum Standards for Acceptance of Aquatic Resources Delineation Reports](#)

[Map and Drawing Standards](#)

[RGL 16-01 Appendix 1 – Request for Corps JD Form](#)

[Wetland Determination Regional Supplements and Guidance](#)

AJDs:

[AJD Form Instructional Guidebook](#)

[AJD Form](#)

[Dry Land AJD Form](#)

PJDs:

[RGL 16-01 Appendix 2 – PJD Form](#)

[ORM Upload Sheet \(Rapanos\)](#)

USACE NWPs and PCN

[NWP Program](#)

[2021 General Conditions \(Page 47\)](#)

[2021 Arizona Regional Conditions](#)

[PCN Requirements, General Condition No. 32 \(Page 59\)](#)

[ENG Form 6082](#)

USACE Permit Finder: <https://permits.ops.usace.army.mil/orm-public>

USFWS National Wetlands Inventory: <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>

1. City of Phoenix Overview

1.1. Introduction

The City of Phoenix (City) has multiple natural washes, watercourses, and other features within its boundaries that are considered Waters of the US (Waters). The definition of Waters has a long and complicated history, but the current definition can be found on the [Environmental Protection Agency's \(EPA\) website](#). Dredge or fill activities within these Waters are regulated under Section 404 of the Clean Water Act (CWA). Pre-construction authorizations from the US Army Corps of Engineers (USACE) may be required to allow impacts to these Waters. Those authorizations are issued via Nationwide Permits (NWPs) or Individual Permits.

It is expected that the Environmental Consultant has experience in CWA and expertise in obtaining Section 404 permits for various agencies and entities. However, the City's process for Section 404 permitting is unique. The purpose of this manual is to provide guidance to the City's Environmental Consultants on our process for coordinating, preparing, and submitting Section 404 documents. The goals of this manual are to:

- 1) Increase awareness of the City's Section 404 communication and coordination process
- 2) Establish expectations for the quality of submittals provided to the City
- 3) Reduce the number of submittals required to achieve a product ready to be sent to the USACE

Because CWA regulations have changed so rapidly in the last few years, we ask that our consultants take the time to educate themselves on the current and anticipated regulatory changes that may affect their work and the permitting strategy for their City project. Current regulations shall supersede this manual where there are conflicts, but in all cases, such divergences must first be discussed with the City's 404 Program Coordinator.

The majority of the City's CWA permitting is undertaken by just a few City departments—primarily Parks, Water Services, and Street Transportation. Each project is managed by its Project Manager (PM). The PM is primarily responsible for coordinating with the Office of Environmental Programs (OEP) 404 Program Coordinator (referred herein as the 404 Coordinator), who is the single point of contact with the USACE for City projects and activities. However, Environmental Consultants can also reach out directly to the City's 404 Coordinator, copying the Department PM, if questions arise while scoping the Jurisdictional Determination (JD) or permitting approach.

Need Help?

Reach out to the City's 404 Program Coordinator, who is the **single point of contact with the USACE**.

Tricia Balluff
404 Program Coordinator
tricia.balluff@phoenix.gov
602-534-1775

The role of the 404 Coordinator is one of the most unique aspects of the City's approach to CWA permitting. This role was developed because of notice of violation negotiations with the USACE in the 1990s. No communication with the USACE shall occur, whether by departments or consultants, without first discussing with the 404 Coordinator. This position is primarily responsible for the following on City projects/activities:

- Assessing City projects early and providing initial recommendation for appropriate JD and 404 permitting approaches
- Collaboratively discussing JD and permitting approach with City consultants prior to submittal of their scope of work; working together to adjust the approach if needed as project develops
- Coordinating with the USACE on an ongoing basis and for project-specific needs
- Reviewing and approving all JD and 404 permitting submittals
- Submitting documents to USACE

1.2. Internal Natural/Cultural Resources Assessment

As mentioned, the 404 Coordinator reviews City projects early in design to provide initial recommendations for Section 404 and other environmental compliance considerations. This is generally done via the City's internal environmental review process, known as the Initial Natural/Cultural Resource Assessment (INCRA). The Department PM is responsible for providing project-specific information to the 404 Coordinator, the City Archaeologist, and the City's Historic Preservation Office for this review. The Department PM then receives project-specific guidance for environmental compliance from these parties. These results must be reviewed to ascertain what environmental resources may be affected by the project, what possible studies or analysis should be considered, and/or what CWA permits are required.

The Department PM will provide INCRA assessment results to the selected environmental consultant. The consultant should develop a scope of work that responds to the assessment results. Do not include additional services unless you have specifically discussed them with the 404 Coordinator. This will assist in properly scoping the services needed by the City. Do not reach out to the USACE while developing the scope of work. Instead, work with the City's 404 Coordinator to develop the scope of work and all other aspects of JD/permit documents. If discussion with the USACE is necessary, request the 404 Coordinator to initiate the outreach.

404 Program Coordinator Role

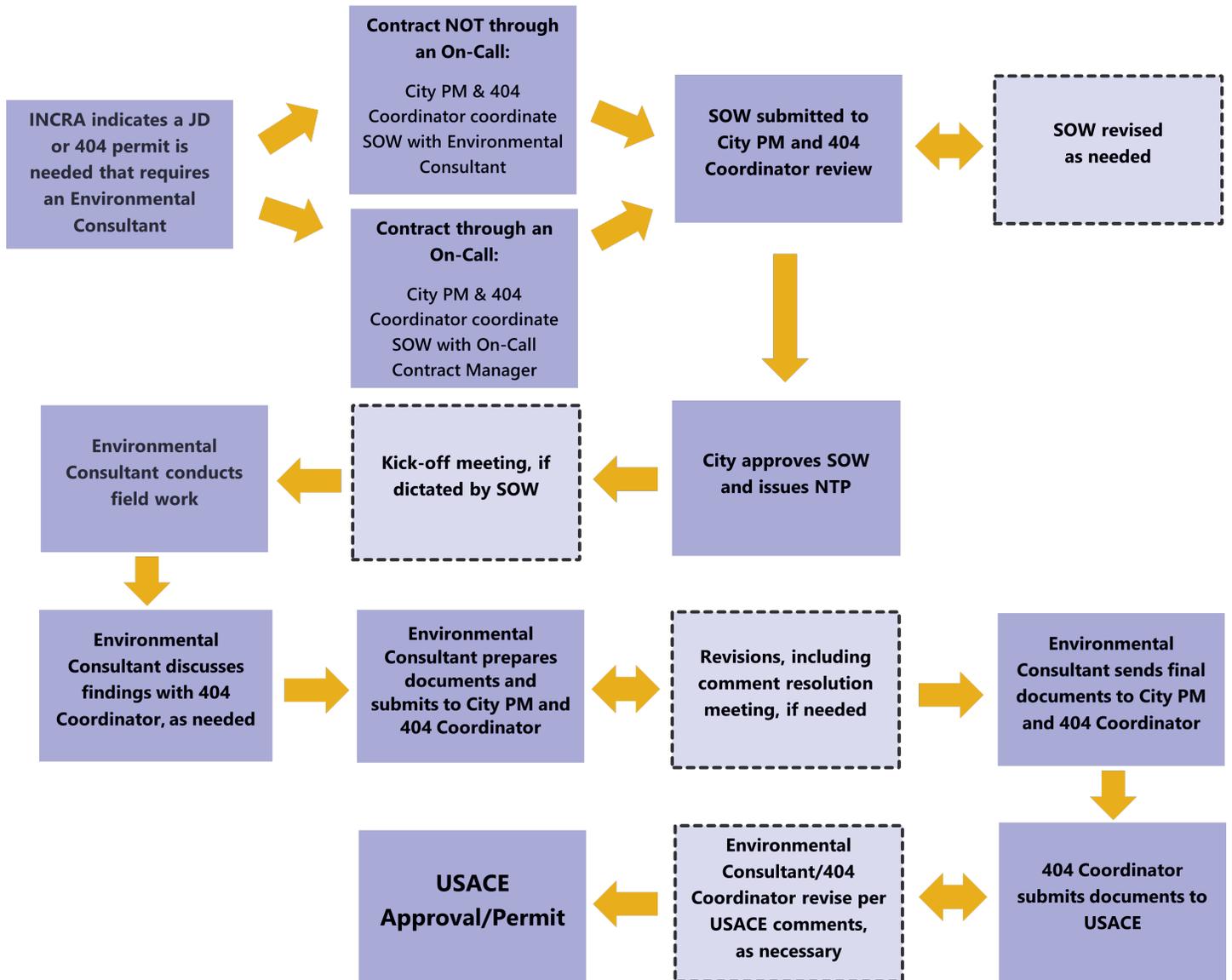
The 404 Program Coordinator is the only authorized point of contact with the USACE. Do not reach out to the USACE when developing the scope of work. Instead, reach out to the City's 404 Program Coordinator, who can respond to your questions and who will reach out to the USACE if necessary.

1.3. City 404 Coordination and Communication

As the Environmental Consultant on a City project, you likely have been engaged because you have an environmental on-call contract with the City or have been otherwise selected. The process for each of these procurement methods is somewhat different, particularly as related to the communication protocols and processing. The on-call contract introduces the City On-Call Contract Manager into the scoping and negotiation process. The On-Call Contract Manager is responsible for facilitating the contract negotiations and managing the specific tasks that you may receive from the City under the On-Call contract. For the other contracting methods,

the Department PM is responsible for all aspects needed to deliver the City's project. Further, the On-Call contract will have pre-established billing rates and assumptions that have already been negotiated and are applicable to the permitting scope of work. There is no difference in the technical work requirements and expectations regardless of which method is used to contract for permitting services. Figure 1 demonstrates the steps in the scope of work negotiations, documentation preparation, USACE submittals, and post-approval distribution process for the Environmental Consultant through both contracting methods.

Figure 1. City CWA Coordination Process



2. Jurisdictional Determinations

The criteria for determining which watercourse features are subject to jurisdiction by the USACE (Waters) have changed several times in recent years and these criteria should be well understood before preparing a Jurisdictional Determination (JD). The USACE's current definition for Waters is found at the [EPA's website](#). The USACE has regional manuals, guidance documents, and standard forms for use in evaluating washes and watercourse features as potential Waters for preparing JDs.

Based on Arizona's current guidance (i.e., post-Rapanos), the USACE's jurisdiction over non-navigable watercourses, including ephemeral washes, is evaluated through the Preliminary Jurisdictional Determination (PJD) or Approved Jurisdictional Determination (AJD) processes. Practically, the PJD process is more expedient than the AJD process. The City generally defaults to the PJD process rather than undertake the AJD process due to its familiarity and faster approval timeline. The City also generally only pursues PJDs if the anticipated acreage of impact is likely to result in the need for a Pre-Construction Notification (PCN) or Individual Permit. Otherwise, the City assumes watercourses are jurisdictional bank to bank and proceeds without a PJD under a non-notifying Nationwide Permit.

2.1. Fieldwork

Prior to conducting any fieldwork, the Environmental Consultant should work with the Department PM to determine the maximum extent, or "worst-case scenario," of the proposed project to define your survey area. The maximum extent of the project should include typical project activities such as staging areas, laydown yards, and detour routes in addition to the general limits of construction. The goal is to complete one site visit that includes the maximum extent of project to avoid subsequent site visits and potential revisions to a JD after it has been approved by the USACE. If it is determined that the maximum extent of the project area is not located entirely on City land, you will need to coordinate with the Department PM to obtain a Landowner Agreement Form to gain access to non-City owned parcels. An example of the Landowner Agreement Form is included in Appendix B.

An aerial desktop review of the survey area should occur before conducting the fieldwork to make a general plan to inspect all features that could appear on the aerial to be a watercourse. Photographs of all potential or suspected features are necessary to make it clear to the USACE that they were investigated. It is just as, if not more, important to include photographs and documentation of the watercourses the City is NOT proposing as Waters, as it allows the USACE to see what you saw in the field and why you do not think it is justified as Waters. Photographs and documentation of non-jurisdictional waterbodies are key to a complete and successful submittal. If the City sees something on an aerial that raises a question about whether it is a potential Waters and there are no photographs or acknowledgement of it on the aerial, the Environmental Consultant will be asked to go back out to take photos and properly document it for the USACE's review at their own expense.

Document What Is—and What Is Not—Waters

Photographs and documentation of non-jurisdictional waterbodies are key to a complete and successful submittal, as they allow the USACE to understand what you saw in the field and why you do not think it is justified as Waters.

2.2. Photographs

Each Waters or feature that is investigated during the field visit should have at least one upstream and downstream photo. The City prefers that four photographs are taken at each potentially jurisdictional feature, with an upstream/downstream series occurring at both ends of the feature, ideally capturing where the feature enters and exits the survey area. The photos should also have a scalable object such as a yardstick or other measuring pole to assist in documenting the width of the watercourse feature or Waters.

2.3. JD and Project Area Geodatabase Template

The City has established an ArcGIS geodatabase template that the Environmental Consultant should use as the base for JD maps, including designation of the survey area. Using this geodatabase template allows the 404 Coordinator to easily integrate new City JDs into an existing ArcGIS database. The 404 Coordinator will provide you with the geodatabase after Notice-to-Proceed (NTP) is received or it can be downloaded from the [OEP website](#). Please coordinate with the 404 Coordinator if you have questions regarding the geodatabase.

The geodatabase contains two polygon Feature Classes, Jurisdictional Wash and Project Area. The Jurisdictional Wash Feature Class is meant to house all potential Waters in your project area. Fill out each field for each Waters, as applicable or known. The Project Area Feature Class will include your agreed-upon survey area. Environmental Consultants are expected to populate both Feature Classes and update the database as their work progresses. After the JD has been accepted by the USACE, finalize the Feature Classes, create a compressed zipped file of the geodatabase, and send it back to the 404 Coordinator.

2.4. Preliminary Jurisdictional Determination

The premise of the PJD process is that the USACE has jurisdiction over any wash or watercourse feature that shows evidence of an Ordinary High-Water Mark (OHWM), irrespective of its downstream connectivity to a Traditional Navigable Water (TNW). The [August 2008 Field Guide to OHWM Determinations in the Arid West](#) should be used to determine the OHWM of a Waters. A USACE-approved PJD is not an official determination that there are Waters present, but rather an acknowledgement that there are watercourses/features present in the area surveyed, and they have the potential to be Waters. The PJD process makes conservative assumptions about the status of a watercourse as a Waters to expedite the review and approval process at the USACE. The geographic boundaries of the identified waterbodies as agreed to by the USACE are used to calculate acreage impacts to assist in determining the applicable Section 404 permit and notification requirements.

Nearly all City's projects involving more than a non-notifying Section 404 permit are completed via a PJD. Key components of the PJD submittal to the City/USACE

Preliminary Jurisdictional Determination Attachments

- Cover Letter
- Location Figures
- Appendix 1 – Request for Corps JD Form
- Appendix 2 - PJD Form
- ORM Data Sheet
- PJD Maps
- Ground Photographs
- Physical Characteristics Table
- NWI Map
- KMZ
- Wetlands

are included in the USACE's [Minimum Standards for Acceptance of Aquatic Resources Delineation Reports](#), and additional City-specific details are included below. An example of a completed City PJD is also included in Appendix A.

Cover Letter. The cover letter should be clear and concise. It should specifically state that the City is requesting a PJD; prior to preparation, confirm with the 404 Coordinator who will be the signatory or Applicant for the project. Identify the date that the field visit was completed and who from what organization completed the field work. State that the field work was completed in accordance with the 2008 Field Guide to OHWM Determinations in the Arid West. Include the latitude and longitude of the center coordinates of the project area, in decimal degrees, NAD 83 datum. Summarize the number of proposed jurisdictional Waters and non-jurisdictional features as well as the acreage of Waters and, if present, acreage of wetlands. The cover letter is to be submitted to the City in Microsoft Word format to facilitate its transfer onto the City's letterhead, which will not be provided to the Environmental Consultant. Include the Landowner Agreement Form as an attachment, as necessary. An example of a cover letter is included in Appendix B.

Location Figures. Generate two to four figures displaying the location of your project area at different extents, including, but not limited to, state, vicinity, topographic, and floodplain maps. The size of the figures should be no more than 11 inches by 17 inches. Multiple maps may be required for large sites. Features such as roads should be clearly labeled so the location of the project is easily identifiable. The vicinity map should display landownership if there are multiple landownerships within or adjacent to the survey area. All maps with an aerial background should include recent imagery taken within the past two years.

RGL 16-01 Appendix 1 – Request for Corps JD Form and Appendix 2 - PJD Form. Fillable versions of the [Appendix 1 – Request for Corps JD Form](#) and [Appendix 2 – PJD Form](#) are located at the City's [OEP 404 website](#). Be sure to check each box in the Supporting Data section of the Appendix 2 – PJD Form to reflect what is being included in the submittal. In addition to the location figures mentioned above, at a minimum include the [National Wetlands Inventory \(NWI\) maps](#), [FEMA/FIRM maps](#) (list the panel numbers that intersect your survey area), and photographs (aerial and ground) in the PJD submittal package. These should be signed by the appropriate Department representative (Applicant), who is typically not the Department PM. The Applicant is usually the Department Deputy Director over the Department PM. Confirm with the 404 Coordinator who will be the Applicant or signatory.

ORM Data Sheet. This [ORM Data Sheet](#) table should include all Waters to be reviewed by the USACE and contain the requisite information. If your project area contains less than three (3) Waters, then the ORM Data Sheet is not required. If you are uncertain how to complete this document, reach out to the 404 Coordinator.

PJD Maps. Maps of potential Waters are to be prepared based on field observations, not solely from a desktop survey of your project area. The maps are a critical component of the submittal to the USACE and one of the key pieces of information needed for assessing the on-site features. It cannot be emphasized enough how important the maps are to the success of the permitting process and for the City's long-term relationship with the USACE. Graphics should always be provided in a Geographic Information System (GIS) format and include the components listed in the [USACE Map and Drawing Standards](#). Below is a specific list of the minimum components that are required with every submittal to the City/USACE. Appendix A shows an example PJD map at the expected level of quality to be submitted to the City/USACE.

1. A maximum of 11x17 (tabloid size) with recent aerial imagery (preferably taken within two years).
2. USACE Section 404 Jurisdictional Delineation Label with legend.
3. Project Information: Project name, City project number, project location (provided in US Geological Survey Public Land Survey System).
4. Project Area: Solid black outline.
5. Control Coordinates (Latitude and longitude in decimal degrees, NAD 83 datum) at opposite corners of the project area.
6. Photo Points with photo numbers and photo directions:
The photo numbers and photo orientations need to match the descriptions in the ground photographs photo log. Photo points, numbers, and orientations are required for both potential Waters and features that are recommended as non-jurisdictional. The photo numbers should be in order both numerically and spatially to facilitate a streamlined review while simultaneously looking through the maps and photo log.
7. Flow Arrows: Point towards the direction of flow for the potential Waters.
8. Feature Numbers: Each feature should have a unique identifier (i.e., A, B, C, or 1, 2, or 3).
9. OHWM: Display as a red outline to delineate the location of an observed OHWM.
10. Potential Waters of the US: Display as yellow, semi-transparent fill.
11. Wetlands (if applicable; see Section 2.4.1): Semi-transparent green outline and fill.
12. Acreage Callout: Include a callout with the acreage of potential Waters to at least one hundredth of a degree (two decimal places).
13. Label any local roads, highways, and known landmarks that are pertinent to the PJD application.

Photo Points

Photo points should be listed in order both numerically *and* spatially on the maps to streamline reviews between the graphics and the photo log.

If your project area contains less than five Waters, also provide a “blank” version of the PJD map that only contains the Project Area boundary, Control Coordinates, and labeled roads and landmarks.

Ground Photographs. Create a photo log of each feature investigated during the field visit. Each photo shall be clearly labeled as to which feature or Waters the photo represents; its upstream/downstream orientation; and the cardinal/ordinal direction of the photograph. Take the time to carefully review the PJD maps and photo log together to be sure the numbered photo arrows on the maps match and correlate with the information in the photo log. Send the photog log as a separate document during the first submittal to the City for ease of review.

Physical Characteristics and Other Information Table. Include a table of the physical characteristics observed or not observed at each investigated feature. Refer to the [City's OEP 404 website](#) for a usable table.

NWI Map. This should be a recent image produced specifically for the project and PJD submittal. Use the US Fish and Wildlife Service's [NWI website](#) or NWI GIS data to produce a custom map. The NWI map is one of the multiple tools used to assist the City/USACE in determining whether Waters or wetlands are present in your survey area. This is not the primary source for determining a feature as Waters, and the inclusion of the NWI map is not intended for this purpose.

KMZ. If your survey area contains more than five Waters, include a .kmz file of all potential Waters and the survey area in your submittal to the City. The .kmz file is created in ArcGIS by converting the JD and Project Area Geodatabase. The .kmz file will be provided to the USACE to assist in their review.

2.4.1. Wetland Delineations

Wetlands. Occasionally, wetlands are found in and around City project areas. These are generally associated with larger watercourses such as the Salt River and Cave Creek Wash and are generally located at storm drain outfalls, but they can occur in other locations.

Normally, these resources would be identified as part of the INCRA assessment but may also be found during the field work for a PJD. If wetlands are discovered or suspected, immediately contact the 404 Coordinator to discuss how to proceed. If directed to conduct a wetlands analysis as part of the PJD, follow the [USACE procedures](#) and incorporate the findings into the PJD documentation, including maps and wetland delineation forms.

Wetlands

If wetlands are discovered or suspected, immediately contact the 404 Program Coordinator to discuss how to proceed.

2.5. Dry Land Approved Jurisdictional Determination

On occasion, and only at the discretion of the 404 Coordinator, the City may utilize a Dry Land AJD. The Dry Land AJD may be used to prove that the project area only contains dry land, and no potential Waters are present (i.e., no present feature exhibits an OHWM). Based on environmental consultant observations during PJD field work, they may propose the use of a Dry Land AJD to the 404 Coordinator.

The Dry Land AJD utilizes many of the same components required for a PJD, including fieldwork to document the lack of potential Waters, a cover letter, location figures, RGL 16-01 [Appendix 1 – Request for Corps JD Form](#), maps displaying the survey area, photo locations, numbers, and directions, and a Ground Photographs photo log. One significant difference from the PJD process is the inclusion of the [Dry Land AJD Form \(Rapanos\)](#). Instructions for how to fill out the AJD Form is in the [USACE JD Form Instructional Guidebook](#). Similarly to the RGL 16-01 Appendix 2 PJD Form, at a minimum, the Supporting Data section of the Dry Land AJD form must include a [NWI map; FEMA/FIRM maps](#) (list the panel numbers that intersect your survey area); and photographs (aerial and ground). Aerial imagery should be recent (taken within the prior two years).

2.6. Approved Jurisdictional Determination

The AJD process requires a detailed analysis to determine whether a water feature(s) having an OHWM has a significant nexus (connection) with a downstream TNW. Multiple data sources are required to address the nexus matter including hydrologic data (e.g., historical flow patterns), physical characteristics, and other attributes (e.g., size of the watershed, average annual rainfall). The proximity of a watercourse to a TNW and the physical characteristics of the flow path will generally determine the extent of data needed to establish or negate a significant nexus between that feature and a downstream TNW. The [USACE's AJD Form](#) (based on the Rapanos guidance) is required for each feature included in the AJD analysis. Instructions for how to fill out the AJD Form is in the [USACE JD Form Instructional Guidebook](#).

The AJD approach is rarely used on City projects. The majority of City AJDs to date have been associated with projects within current or recently converted Arizona State Land Department (ASLD) land areas where ASLD may

be seeking and/or has obtained an AJD. It is rare that the City will have separately sought an AJD without the involvement of other state or federal agencies. The USACE map of AJDs can be found on the [USACE website](#).

3. Section 404 Permits

3.1. Nationwide Permits

Nationwide permits (NWP) are a type of general permit within the [NWP Program](#) for actions that are similar in nature and are likely have a minor effect on Waters and jurisdictional wetlands. Currently, there are 59 NWPs, which are issued for five-year periods and thereafter must be renewed. The NWPs were last reissued in December 2021 and are set to expire on March 14, 2026.

The authorization to conduct activities in accordance with the NWPs already exists if their terms and conditions are met. The 404 Coordinator and the Environmental Consultant shall work cooperatively to determine if and how the proposed activities will comply with the terms and conditions of the NWPs. Where at all possible, working with the Department PM to modify a project design or the proposed discharges to comply with the terms of an NWP is preferred over having to apply for a Section 404 Individual Permit. The most common NWPs used by the City include NWP #3, #14, #18, #43, and #58, although the City's diverse activities may result in the use of other NWPs as well.

While the phrase "Nationwide Permit" suggests a single set of criteria to be followed, in actuality, two sets of criteria, which are known in the regulations as "terms and conditions," must be satisfied to allow use of an NWP. These include the [General Conditions](#) associated with the Nationwide Permit Program and the [Arizona Regional Conditions](#). Impacts to wetlands, species protected under the Endangered Species Act, and/or cultural/historic resources will trigger the need for a PCN as stated in the General Conditions. Further, effects to USACE Civil Works projects such as Rio Salado and Tres Rios, will necessitate a PCN.

2021 Arizona Regional Conditions and Permitting Triggers

The 2021 NWP Regional Conditions for Arizona require a PCN for activities resulting in *any* loss of intermittent or perennial Waters. Loss of wetlands over 0.1 acre requires an Individual Permit.

Separate documentation for biological and cultural resources is required by the City when using an NWP. Through the INCRA process, an initial assessment will have been made by the 404 Coordinator about the biological resources that may be impacted by the proposed project. The Environmental Consultant will complete biological resources documentation (e.g., biological technical memorandum, biological evaluation, etc.) as agreed upon with the 404 Environmental Coordinator, which should be included as part of your scope of work. Similarly, the INCRA process will also identify cultural resources and/or historic properties that may be impacted by the proposed undertaking. As a Certified Local Government, the City is responsible for managing resources within the community. The City Archaeology Office (CAO) and Historic Preservation Office (HP) will have determined what, if any, cultural resources work will need to be completed by the Environmental Consultant. The INCRA assessment also provides information on the proximity of known cultural resources to Waters. As a

general rule, if known cultural resources are within 100 feet of a Water, discuss with the 404 Coordinator the impact this proximity will have on the 404 permitting approach.

When a Section 404 permit is utilized, compliance with Section 401 of the CWA is also required. In Arizona, Section 401 of the CWA refers to the [Arizona Department of Environmental Quality \(ADEQ\) Water Quality Certification \(WQC\) program](#). At this time, all NWP are conditionally certified by the ADEQ, meaning no additional documentation or notification to ADEQ is required when using an NWP. However, there are limitations to the conditional certification, which are discussed in further detail in Section 4 below.

3.1.1. Non-Notification

Each NWP has a description of what activities are allowed or not allowed and what thresholds cannot be exceeded before an Individual Permit must be utilized. Some NWPs, like NWP #58, also identify thresholds that, if not exceeded, can result in what is known as a “non-notifying permit.” The INCRA assessment may also provide initial information about whether a non-notifying permit is potentially applicable. When it appears that a non-notifying situation is possible, be sure to confirm that the General Conditions and the Regional Conditions can be met as well and discuss your findings with the 404 Coordinator.

Some NWPs do not require a PJD unless a PCN is deemed necessary. While a PJD and PCN may not be necessary, it is important to note that activities in the affected potential Waters are still regulated and all other requirements of the NWP description, General Conditions, and Regional Conditions are applicable to the work. In this instance, the Environmental Consultant may be asked to provide a memorandum that is a full synopsis of the potential or assumed Waters, impacts to said assumed Waters, and the research and rationale for the use of a non-

notifying NWP permit. These materials should be provided to the Department PM/On-Call Contract Manager and 404 Coordinator for approval. They should also be provided to the contractor so that they can be adhered to during construction of the project. The memorandum should include the following:

- Project Background Information: Include a summary of the project and the proposed scope of work. Identify the specific scope elements that pertain to impacts within assumed Waters.
- *Survey Methods: Include a summary of the site visit that was completed and methodology used to complete the site visit.
- *Survey Results: Disclose the number and acreage of assumed Waters within the project.
- Materials Reviewed: Disclose what level of design plans were reviewed.

Non-Notification Attachments

- Location figures*
- Impacts to Waters maps
- Ground Photographs*
- Physical Characteristics Table*
- Statement of Compliance with the General and Regional Conditions
- Design plans
- Biological resources analysis (or IPaC and AGFD Online Review tool if analysis is completed within the memorandum)
- CAO and HP responses from the INCRA assessment

*Not necessary if a PJD has already been completed

- Impacts to Waters: Discuss the proposed impacts to assumed Waters based on the design plans and include a table of acreages all proposed impacts (temporary and permanent). The acreages reported in this section should match the graphics that will accompany the memorandum.
- INCRA Assessment: Describe the initial permit determination and any modifications to that determination resulting from continued coordination with the 404 Coordinator.
- Biological Resources Analysis: Provide an evaluation of the potential for the project area to support threatened or endangered species, candidate species, state sensitive species, and species protected under the Migratory Bird Treaty Act. This may be done in the memorandum or completed separately depending on the agreed upon SOW. The analysis should include mitigation measures to reduce the potential impact to species that may be present in the project area, regardless of federal listing status. Include the USFWS Information for Planning and Consultation (IPaC) and the Arizona Game and Fish Department's (AGFD) Online Environmental Review tool as attachments.
- Cultural Resources: Provide a statement indicating whether cultural resources are located within 100 feet of any on-site potential Waters. Include CAO and HP responses from the INCRA assessment as attachments. All information and maps provided by CAO and HP are not public information and may not be shared outside of the project team.
- Final Recommendations: Include rationale for which NWP is being used and provide support that the proposed project does not exceed the thresholds set forth in the NWP and complies with the Regional and General Conditions. A statement as to how the project is certified under Section 401 of the CWA should also be included; refer to Section 4 below for additional information.

Items that are starred above would not be necessary if a PJD already exists for the project. The Impacts to Waters map(s) will be a combination of the PJD Maps described in Section 2.4 above and the Drawings and Illustrations subsection in Section 3.1.2 below. At its core, these graphics will include most of the elements described in the PJD Maps, with the addition of design plans overlaid on assumed Waters and impacts to those assumed Waters. Permanent versus temporary impacts should be identified separately using different semi-transparent colors and impact acreage callouts at each assumed Waters should be provided. Because this memorandum will not be submitted to the USACE, the USACE Section 404 Jurisdictional Delineation Label with legend does not need to be included in the graphics.

3.1.2. Pre-Construction Notification

The requirements for a PCN are stated in [General Condition No. 32](#). Typically, at least 60% design plans are required before completing a PCN to accurately document the level of anticipated impact by the proposed project. Often, plans that are below this level of completion do not include impacts to Waters resulting in misinformation or misrepresentation of anticipated impacts from your project. This situation should be avoided to the greatest extent possible, because if the footprint of the project or scope of work within Waters changes after the PCN has been approved or submitted to the USACE, additional approval and coordination with the USACE is required. This can be costly and cause delays in the project schedule. An example of a City PCN is included in Appendix C. A summary of the selected submittal components follows.

Cover Letter. The cover letter should identify that the request for a PCN is coming from the City; unless they are unavailable, the signatory or Applicant should be the same individual who signed PJD submittal. The 404 Coordinator will confirm the signatory during their review of the PCN. Include the USACE File Number in the "Regarding" line. Direct the letter to the Regulatory Chief but include an "Attention to" line identifying the assigned USACE PM. Provide a brief summary of the project and include the center coordinates and the cadastral location. Summarize the previous coordination or approvals that have taken place with the USACE and make sure to state which NWP(s) authorizations are being sought and why. If anything has changed (e.g., survey area size, Waters delineation) from the time the PJD was approved, summarize the changes in a table and disclose new acreages and graphics, as needed. Graphics depicting the changes must be distinguished using different symbology to show the modifications to the JD area. Summarize the anticipated acreage impacts to Waters, differentiating between temporary and permanent and the source of the impact. Finally, be clear that, with the attached materials, the letter is a request by the City for an authorization of a PCN. The cover letter shall be submitted to the City in Word format to facilitate its transfer onto the City's template, which will not be provided to the Environmental Consultant.

ENG Form 6082 (dated October 2019). The [ENG Form 6082](#) is the current application form for the NWP Program. Instructions for how to fill out ENG Form 6082 are included at the end of the document. Again, the signatory or Applicant should be the same person identified in the PJD for your project. Because this is intended to be a brief document, where there is insufficient space in any of the items (boxes), additional information should be provided in a separate document, if needed to adequately provide the information requested. The additional information should be labeled "Supplemental Information"; it should contain adequate data identifying which project the information is associated with, including the USACE File Number. A table with a breakdown of impacts at each Waters is required as an accompanying part of the PCN which can be provided in the Supplemental Information. Items 8 thru 10, identifying an Authorized Agent, are not to be filled out unless specifically directed to do so by the 404 Coordinator who will determine the need/desire for an Agent during coordination with the Department PM and you are requested and are willing to accept the agent role and responsibilities. ENG Form 4345 is included in the example provided in Appendix C, as the form most

PCN Attachments

- ENG Form 6082
- ENG Form 6082 Supplement, if necessary
- Impacts to Waters Maps
- Design Plans (60% or greater)
- Statement of Compliance with the General and Regional Conditions
- Cultural Resources Documentation
- Biological Resources Documentation

Elements of a Good Submittal

Think about your submittal from the USACE's point of view. Have you provided all the information needed? Is it well organized? Quality submittals thoroughly and clearly demonstrate:

- Work occurring in the Waters
- Steps taken to avoid or minimize impacts to Waters

commonly used by the City for PCNs to date. The City is now transitioning to ENG Form 6082. Because no example of a City project with ENG Form 6082 is available, and although ENG 4345 differs from the current application form, this example has been included since several components are the same and required for the submittal of ENG Form 6082.

Drawings and Illustrations. Multiple types of illustrations are included in the PCN. Routinely, state and project location Maps are submitted as part of the PJD, so they are not required during the PCN stage. Design plans and cross sections of the dredge and fill areas are commonly used to demonstrate the proposed project and activities. Sometimes, all or portions of construction drawing sets can be provided, if they provide a clear representation of the work and the impacts to on-site Waters.

Graphics should always be generated in GIS and include the components listed in the [USACE Map and Drawing Standards](#). At a minimum, the PCN Impact Graphics generated in GIS should have the design plans (Stage III/60% or higher) overlaid on Waters with an aerial background to provide a plan view of the proposed project activities occurring in Waters. It is vital that recent aerial imagery (taken within two years) is used for the PCN Impact graphics as they usually depict the current condition of the project area and assist the USACE with assessing impacts to Waters. Typically, the PJD graphics can serve as a starting point for the PCN Impact graphics, minus the photo points/numbers/photo directions. Include the project area, wash numbers, flow direction arrows, and calculate permanent and temporary impacts based on the proposed design. Permanent versus temporary impacts should be identified separately on the aerial using different semi-transparent colors. Include acreage callouts of the impact types (permanent vs. temporary) for each Waters. The delineation of Waters that was approved in the PJD should be clearly displayed. Lastly, the legend for the PCN impact graphics should be simple, clear, and concise and include at a minimum the survey area boundary, the delineation of Waters, and the differentiation of impact types. The PCN Impact graphics should support the discussion included in the ENG Form 6082 and any supplemental document(s). The PCN impact graphics shown in Appendix C are characteristic of the clarity, comprehensiveness, and accuracy expected by the City.

PCN Impact Graphics

PCN Impact Graphics generated in GIS should overlay design plans (Stage III/60% or higher) on Waters with an aerial background to provide a plan view of the proposed project activities. The aerial background should be recent and taken within at least two years.

Statement of Compliance with the General and Regional Conditions. The City prefers that a separate document in a table format is provided with the PCN submittal that includes a statement explaining how the project complies with each General and Regional condition.

Cultural Resources Documentation. Include the responses provided by the CAO and HP from the INCRA assessment and any other agreed-upon documentation produced by the Environmental Consultant. If cultural resources are present within 100 feet of Waters, plan to prepare a draft Section 106 consultation letter for submittal with the PCN and for use by the USACE.

Biological Resources Documentation. Include the biological resources studies and documentation that was agreed to by the 404 Coordinator. If likely to be required by the Endangered Species Act, plan to prepare

draft Section 7 consultation materials for submittal with the PCN and for use by the USACE. Confirm this is needed and the level (i.e., informal, formal) with the 404 Coordinator prior to doing the work.

3.2. Individual Permits

It is highly unlikely that you will be asked to prepare an Individual Permit application for the City because the City's activities are usually not of the scale and scope to necessitate this type of permit. If this occurs, expect that there will be a high degree of coordination with the Department PM, the On-Call Manager (if applicable), and the 404 Coordinator to develop the scope of work and throughout the permit production.

4. Section 401 Water Quality Certifications

In Arizona, Section 401 of the CWA defers to the [ADEQ WQC program](#). The 401 WQC requirements for a project may be identified during the INCRA process or may be identified later in design. If not identified in advance of your scope of work, evaluate the potential need for an Individual 401 certification and discuss with the 404 Coordinator if you believe one is required based on the project circumstances. In general, all NWP's are conditionally certified by ADEQ unless an Individual Section 404 Permit is required or discharge occurs within the OHWM of an Outstanding Arizona Water, an Impaired Water, a Not Attaining Water, or a lake. To determine if those features are present in your project area, check ADEQ's website, here: <https://www.azdeq.gov/emaps>. If a 401 WQC application is required, choose the appropriate form from ADEQ's website, which is based on the 404 permitting requirements. Individual Section 401 certification applications follow the same City communication, review, and submittal process as Section 404 permitting does, including coordination with the 404 Coordinator.

5. Timelines

Securing a permit from the USACE takes time. This approval time needs to be accounted for in the overall project or activity schedule. The 404 Coordinator is knowledgeable of and will share the anticipated permitting schedule with the Department PM and the On-Call Contract Manager so that proper expectations are established and/or so other aspects of a project can be effectively addressed. The Department PMs must coordinate with the 404 Coordinator to ensure that the guidance in this manual is followed and there is a timely completion of their projects.

Timelines

The permitting process can be lengthy. The 404 Program Coordinator will share the anticipated permitting schedule with the Department PM or On-Call Contract Manager to ensure the overall project schedule accounts for the permitting process.

While each project is different, for many capital projects, a PJD and a PCN can be undertaken so that both can be obtained during the design phase, thereby having the USACE permit in hand when the project is ready to start construction. This is because a PJD is not predicated on design features, and the PCN can be developed at the 60 – 75% design stage, or when sufficient information is available to accurately represent the dredge or fill that will occur in on-site Waters. This is most effective when the Department PM coordinates early with the 404 Coordinator and brings on the Environmental Consultant early in the project development planning or design.

Routine maintenance activities are typically authorized by non-notifying permits, and the maintenance personnel work through their Department environmental staff or directly with the 404 Coordinator to determine permitting needs and adjust their schedules or activities, as needed. If a routine maintenance activity does require a PCN, the process and timing described in this guidance manual will apply.

5.1. PJD

Based on the City's experience and recent submittals to the USACE, a PJD typically takes 3 – 4 months for approval from the time all requisite information has been provided. Of course, this timeline can be affected by a number of factors, including the USACE's workload and staff availability and the City's project priorities as expressed to the USACE. The 404 Coordinator is in regular contact with the USACE regulatory office and will apprise the Environmental Consultant, Department PM, and/or the On-Call Manager of the anticipated timelines as that information is known.

5.2. Dry-Land AJD

Similar to the AJD, the Environmental Consultant will need to rely on the 404 Coordinator for a timeline for this determination based on discussions with the USACE, but generally is about the same timeline as a PJD.

5.3. AJD

The timeline for AJD approvals is much less predictable because the City seldomly utilizes this approach. The Environmental Consultant should rely on the 404 Coordinator for information from the USACE if an AJD is being sought.

5.4. PCN

Historically, a complete PCN submitted to the USACE has been authorized within a 3- to 4-month window, irrespective of which type of NWP is utilized. The 404 Coordinator does have some ability to request the order of City PCNs being reviewed. This may be helpful on projects where the timeline is very tight and there is very little opportunity to modify the schedule. However, the City only uses this approach as a last resort and is highly reluctant to do so frequently. It is best to work with the Department PM and/or the On-Call Contract Manager to find other means to account for the USACE's authorization timeline. The 404 Coordinator will take the lead in determining what can and cannot be requested of the USACE in terms of review timing based on ongoing discussions and coordination with the USACE.

5.5. Individual Permit

Individual permits can take an average of 12 months. Individual permit applications are also more costly to prepare. The City emphasizes avoiding and minimizing impacts in Waters to the extent practicable. Often, this can also result in avoiding an individual permit and instead being able to use a NWP. Expect that if an Individual Permit is required, the 404 Coordinator will be working closely with the USACE, the Department PM, and the Environmental Consultant.

Appendix A

Example of a PJD Submittal Package



City of Phoenix

October 2, 2019

Ms. Sallie Diebolt
Chief, Arizona Branch
Regulatory Division—Los Angeles District
U.S. Army Corps of Engineers
3636 N. Central Ave., Suite 900
Phoenix, AZ 85012-1939

RE: Preliminary Jurisdictional Delineation
City of Phoenix Zoo Parking Lot Extension
U.S. Army Corps of Engineers File No. To Be Assigned

Dear Ms. Diebolt:

The City of Phoenix is planning to extend the parking facilities at the Phoenix Zoo to meet future projected demands. The project is in Sections 4 and 9 of Township 1 North, Range 4 East, on the Tempe (1982), Arizona, U.S. Geological Survey 7.5-minute quadrangle (Figure 1—Project location and Figure 2—Project vicinity). The approximate project midpoint is 33.451647° N, 111.951375° W, NAD 83. The project is within the City of Phoenix on land administered by the Parks and Recreation Department. Adjacent land is primarily natural open space, with some developed recreational and utility facilities. The project is located outside the designated 100-year floodplain limits (Figure 3—Federal Emergency Management Agency-designated floodplains).

used aerial photography, the U.S. Fish and Wildlife Service National Wetlands Inventory (map attached), topographic maps, and other information to help identify potential Waters of the United States (Waters). In addition, a ground survey to identify potential Waters was completed on September 6, 2019, by . The aerial photo was taken in 2016. Within the survey area, two drainages totaling approximately 0.35 acre are proposed as Waters.

This letter serves as a request for review and issuance of the Preliminary Jurisdictional Determination. Included for your review are the following items:

- Figure 1—Project location
- Figure 2—Project vicinity
- Figure 3—Federal Emergency Management Agency—designated floodplains
- Table 1—Drainage characteristics
- Aerial showing potential Waters and photo points
- Blank aerial
- Ground photos
- Appendix 1—Request for Corps Jurisdictional Determination
- Appendix 2—Preliminary Jurisdictional Determination Form
- U.S. Fish and Wildlife Service National Wetlands Inventory map

Preliminary Jurisdictional Delineation

October 2, 2019

Page 2 of 2

If you have any questions or require additional information, please feel free to contact the City's 404 Program Coordinator, Tricia Balluff, at 602-534-1775 or by email at tricia.balluff@phoenix.gov. Thank you for your assistance.

Sincerely,



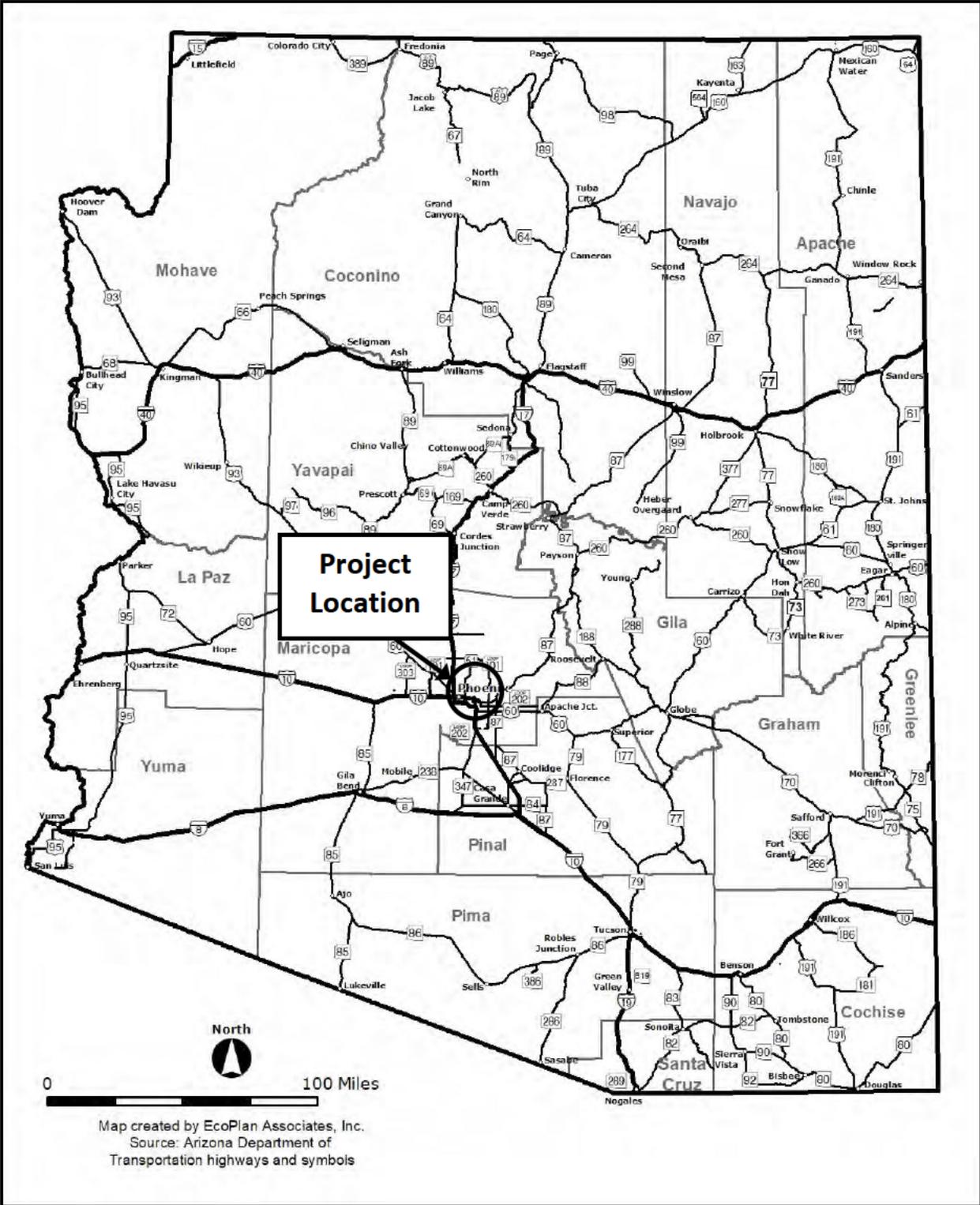
Judy Weiss

Deputy Director

City of Phoenix Parks and Recreation Department

Enclosures

c: Tricia Balluff, City of Phoenix Office of Environmental Programs



City of Phoenix Zoo Parking Lot Extension

Figure 1. Project location



City of Phoenix Zoo Parking Lot Extension

Figure 2. Project vicinity

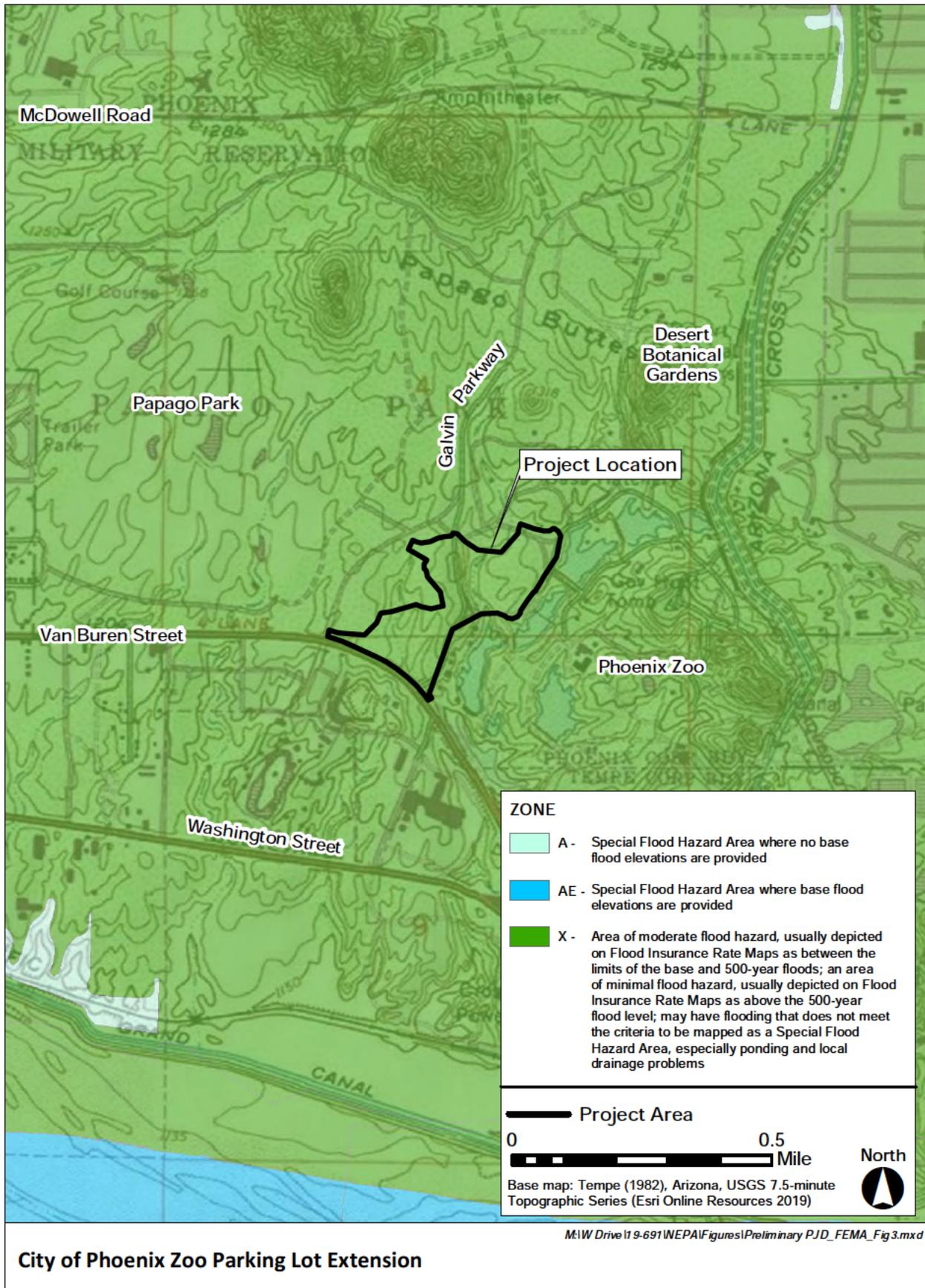


Figure 3. Federal Emergency Management Agency–designated floodplains

Table 1. Drainage characteristics

Drainage Name	Latitude Midpoint (NAD 83)	Longitude Midpoint (NAD 83)	Ordinary High Water Mark Field Indicators								Cowardin Type	Dominant Vegetation	Active Channel Width (feet)	Linear Feet (feet)	Area of Water of the United States (acres)	Yes/No		Aerial Sheet No.	Comments
			Vegetation Difference Between Drainage and Upland	Change in Soil Characteristics	Waterline Mark on Bank/ Water Stains	Destruction of Terrestrial Vegetation	Shelving or Cut Banks	Exposed Roots	Sediment Deposits	Presence of Litter or Debris						Water of the United States?			
Drainage 1	33.452580	111.950852	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Riverine	LCR SDS-MS	3-15	525	0.13	Yes	1	Flow enters via one corrugated metal pipe and exits via four corrugated metal pipes downstream and eventually flows into a zoo pond.	
Drainage 2	33.450751	111.952344	No	Yes	No	No	Yes	No	No	No	Riverine	LCR SDS-MS	2-4			No	1	Flow in drainage is parking lot runoff. No visible downstream drainage outlet.	
Drainage 3	33.451231	111.953027	No	Yes	No	No	Yes	No	No	No	Riverine	LCR SDS-MS	2-4			No	1	Flow in drainage is parking lot runoff that drains into a retention area that has no visible connection to Drainage 4.	
Drainage 4	33.450892	111.953541	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Riverine	LCR SDS-MS	4-30	705	0.22	Yes	1	Flow exits survey area through a box culvert under Van Buren Street.	

LCR SDS-MS = Lower Colorado River Sonoran Desertscrub-Mixed Scrub Series



Latitude and Longitude

Latitude and Longitude

Project No 19-691
 City of Phoenix Zoo Parking Lot Extension
 Location: T1N, R4E, Sections 4 and 9;
 Tempe, Arizona, US Geological Survey
 7.5' Topographic Series
 Project Midpoint: 33 451647° N, 111 951375° W, NAD 83
 Aerial photo printed September 20, 2019, by
 (Esri Online Resources) Created by

● Photo Point
 ~~~~~ Direction of Flow  
 → Photo Direction

0 200 Feet  
 1 inch = 200 feet

\*\*\*\* PRELIMINARY (RGL 16-01) \*\*\*\*

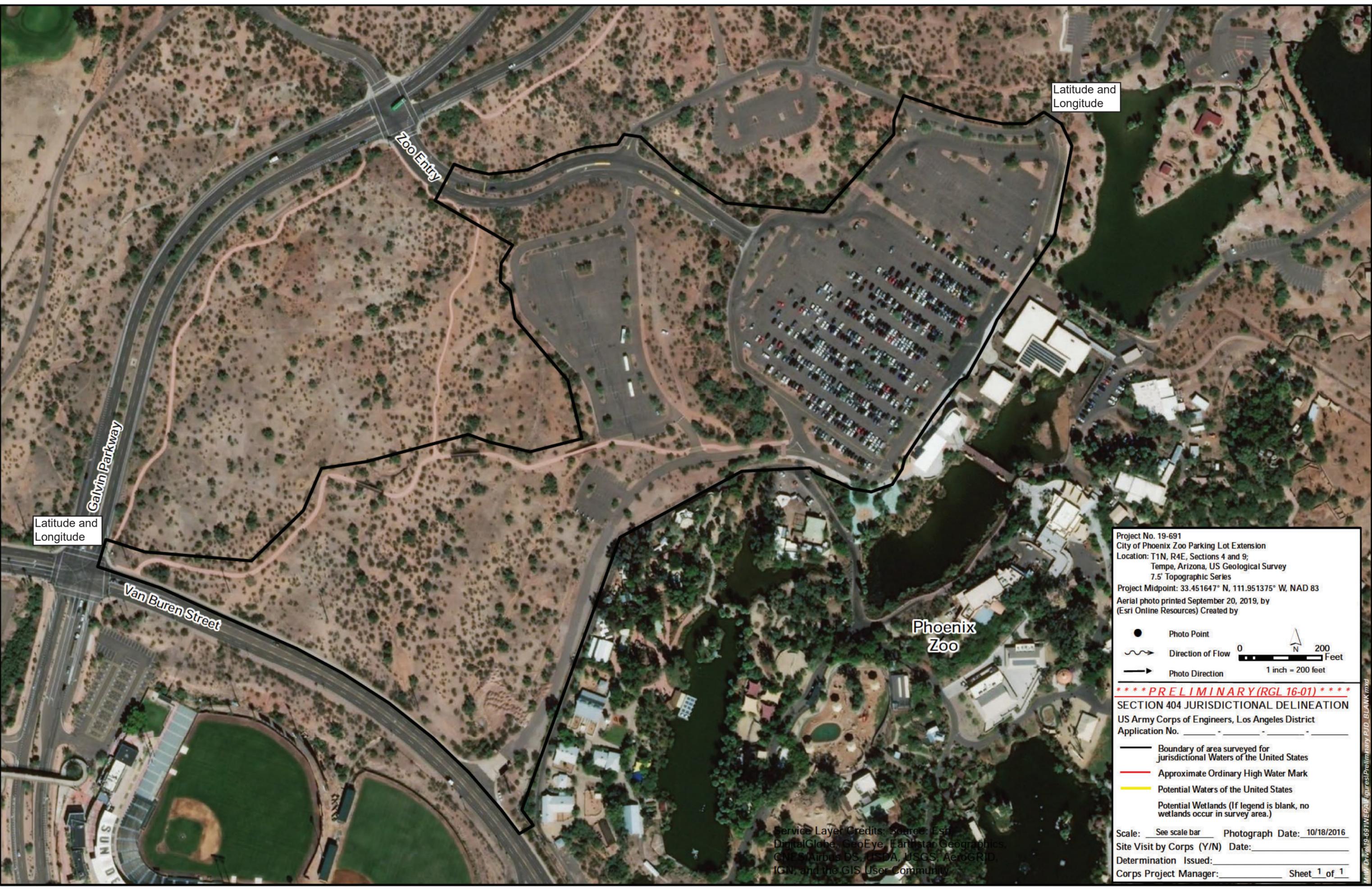
**SECTION 404 JURISDICTIONAL DELINEATION**  
 US Army Corps of Engineers, Los Angeles District  
 Application No. \_\_\_\_\_

- Boundary of area surveyed for jurisdictional Waters of the United States
- Approximate Ordinary High Water Mark
- Potential Waters of the United States
- Potential Wetlands (If legend is blank, no wetlands occur in survey area.)

Scale: See scale bar Photograph Date: 10/18/2016  
 Site Visit by Corps (Y/N) Date: \_\_\_\_\_  
 Determination Issued: \_\_\_\_\_  
 Corps Project Manager: \_\_\_\_\_ Sheet 1 of 1

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNR/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Latitude and Longitude

Latitude and Longitude

Project No. 19-691  
City of Phoenix Zoo Parking Lot Extension  
Location: T1N, R4E, Sections 4 and 9;  
Tempe, Arizona, US Geological Survey  
7.5' Topographic Series  
Project Midpoint: 33.451647° N, 111.951375° W, NAD 83  
Aerial photo printed September 20, 2019, by  
(Esri Online Resources) Created by

- Photo Point
- ~ Direction of Flow
- Photo Direction

0 200 Feet  
1 inch = 200 feet

**\*\*\*\* PRELIMINARY (RGL 16-01) \*\*\*\***  
**SECTION 404 JURISDICTIONAL DELINEATION**  
US Army Corps of Engineers, Los Angeles District  
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- Boundary of area surveyed for jurisdictional Waters of the United States
- Approximate Ordinary High Water Mark
- Potential Waters of the United States
- Potential Wetlands (If legend is blank, no wetlands occur in survey area.)

Scale: See scale bar Photograph Date: 10/18/2016  
Site Visit by Corps (Y/N) Date: \_\_\_\_\_  
Determination Issued: \_\_\_\_\_  
Corps Project Manager: \_\_\_\_\_ Sheet 1 of 1

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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**Photo 1. View of Drainage 1 at the north end, looking upstream (northeast).**



**Photo 2. View of Drainage 1 at the north end, looking downstream (southwest).**



**Photo 3. View of Drainage 1, looking upstream (north).**



**Photo 4. View of Drainage 1, looking downstream (south).**



**Photo 5. View of Drainage 1 at the south end, looking upstream (north).**



**Photo 6. View of Drainage 1 at the south end, looking downstream (south).**



**Photo 7. View of Drainage 2, looking upstream (north).**



**Photo 8. View of Drainage 2, looking downstream (south).**



**Photo 9. View of Drainage 3, looking upstream (north).**



**Photo 10. View of Drainage 3, looking downstream (south).**



**Photo 11. View of Drainage 3 retention area, looking west.**



**Photo 12. View of Drainage 4 at the north end, looking upstream (northeast).**



**Photo 13. View of Drainage 4 at the north end, looking downstream (southwest).**



**Photo 14. View of Drainage 4, looking upstream (northwest).**



**Photo 15. View of Drainage 4, looking downstream (southeast).**



**Photo 16. View of Drainage 4, looking upstream (north).**



**Photo 17. View of Drainage 4 at the south end, looking downstream (south) toward Van Buren Street.**



**Photo 18. View of Drainage 4 at the south end, looking upstream (north) from the drainage outlet.**



**Photo 19. View of Drainage 4 at the south end, looking downstream (south) toward the drainage outlet.**

**Appendix 1 - REQUEST FOR CORPS JURISDICTIONAL DETERMINATION (JD)**

To: Los Angeles District

- I am requesting a JD on property located at: Phoenix Zoo, 455 N. Galvin Parkway  
(Street Address)  
City/Township/Parish: Phoenix County: Maricopa State: AZ  
Acreage of Parcel/Review Area for JD: 0.35  
Section: 4 & 9 Township: 1N Range: 4E  
Latitude (decimal degrees): 33.451647N Longitude (decimal degrees): 111.951375W  
(For linear projects, please include the center point of the proposed alignment.)
- Please attach a survey/plat map and vicinity map identifying location and review area for the JD.
- I currently own this property.  I plan to purchase this property.  
 I am an agent/consultant acting on behalf of the requestor.  
 Other (please explain): \_\_\_\_\_
- Reason for request: (check as many as applicable)  
 I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.  
 I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.  
 I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.  
 I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.  
 I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.  
 A Corps JD is required in order to obtain my local/state authorization.  
 I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.  
 I believe that the site may be comprised entirely of dry land.  
 Other: \_\_\_\_\_
- Type of determination being requested:  
 I am requesting an approved JD.  
 I am requesting a preliminary JD.  
 I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.  
 I am unclear as to which JD I would like to request and require additional information to inform my decision.

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

\*Signature: Judy Weiss Date: 10-2-19

- Typed or printed name: Judy Weiss, Deputy Director  
Company name: City of Phoenix Parks and Recreation Department  
Address: 200 W. Washington St., Phoenix, AZ 85003  
\_\_\_\_\_  
Daytime phone no.: 602.262.6011  
Email address: judy.weiss@phoenix.gov

**\*Authorities:** Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.  
**Principal Purpose:** The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.  
**Routine Uses:** This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.  
**Disclosure:** Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

**Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM**

**BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR PJD:**

**B. NAME AND ADDRESS OF PERSON REQUESTING PJD:** Judy Weiss, City of Phoenix, 200 W. Washington St. Phoenix, AZ 85003

**C. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Los Angeles District

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:**

**(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)**

State: Arizona County/parish/borough: Maricopa City: Phoenix

Center coordinates of site (lat/long in degree decimal format):

Lat.: 33.451647N Long.: 111.951375W

Universal Transverse Mercator: NAD 83

Name of nearest waterbody: Salt River

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

Office (Desk) Determination. Date:

Field Determination. Date(s):

**TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.**

| Site number | Latitude (decimal degrees) | Longitude (decimal degrees) | Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable) | Type of aquatic resource (i.e., wetland vs. non-wetland waters) | Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404) |
|-------------|----------------------------|-----------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 1           | 33.452580                  | 111.950852                  | 0.13                                                                                         | non-wetland                                                     | Non-Section 10                                                                                            |
| 4           | 33.450892                  | 111.953541                  | 0.22                                                                                         | non-wetland                                                     | Non-Section 10                                                                                            |
|             |                            |                             |                                                                                              |                                                                 |                                                                                                           |
|             |                            |                             |                                                                                              |                                                                 |                                                                                                           |
|             |                            |                             |                                                                                              |                                                                 |                                                                                                           |
|             |                            |                             |                                                                                              |                                                                 |                                                                                                           |

- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "*may be*" waters of the U.S. and/or that there "*may be*" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

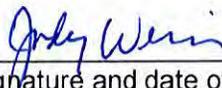
**SUPPORTING DATA. Data reviewed for PJD (check all that apply)**

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

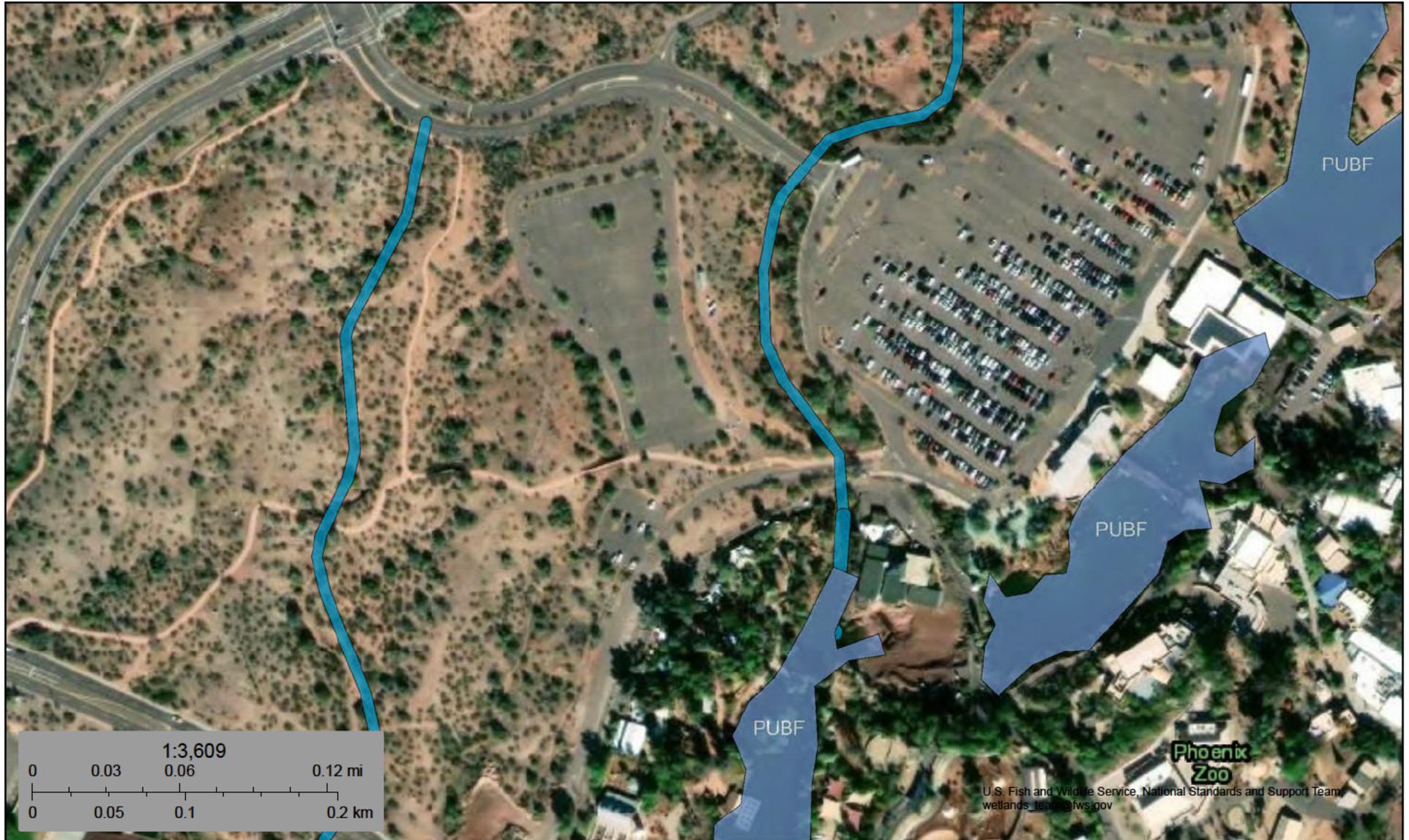
- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:  
Map: Project location maps, floodplain map
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report. Rationale: \_\_\_\_\_
- Data sheets prepared by the Corps: \_\_\_\_\_
- Corps navigable waters' study: \_\_\_\_\_
- U.S. Geological Survey Hydrologic Atlas: \_\_\_\_\_
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Tempe (1982), Arizona, 7.5' topo
- Natural Resources Conservation Service Soil Survey. Citation: AZ655
- National wetlands inventory map(s). Cite name: USFWS National Wetlands Inventory map
- State/local wetland inventory map(s): \_\_\_\_\_
- FEMA/FIRM maps: 04013C2230L (effective 10/16/2013)
- 100-year Floodplain Elevation is: \_\_\_\_\_ (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): October 2016  
or  Other (Name & Date): Ground Photographs, September 2019
- Previous determination(s). File no. and date of response letter: \_\_\_\_\_
- Other information (please specify): \_\_\_\_\_

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

\_\_\_\_\_  
Signature and date of  
Regulatory staff member  
completing PJD

  
\_\_\_\_\_  
Signature and date of  
person requesting PJD  
(REQUIRED, unless obtaining  
the signature is impracticable)<sup>1</sup>

<sup>1</sup> Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.



September 17, 2019

### Wetlands

- |                                |                                   |          |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Emergent Wetland       | Lake     |
| Estuarine and Marine Wetland   | Freshwater Forested/Shrub Wetland | Other    |
|                                | Freshwater Pond                   | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

# Appendix B:

## Landowner Agreement Form Letter

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**LANDOWNER AUTHORIZATION**

*I am aware that the City of Phoenix (City) is requesting a preliminary jurisdictional delineation (PJD) from the U.S. Army Corps of Engineers for the [Project name] in Phoenix, Maricopa County, Arizona. The area of this PJD encompasses approximately [XX] acres of lands owned and managed by [owner/company/agency/name].*

*I grant the City permission to enter this property and submit and receive information to/from the U.S. Army Corps of Engineers (Corps) in relation to this PJD on my behalf. I also grant the U.S. Army Corps of Engineers permission to enter the property.*

---

Signature

Printed Name

Date

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email: \_\_\_\_\_

# Appendix C:

## Example of a PCN Submittal Package

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**City of Phoenix**  
WATER SERVICES DEPARTMENT

August 3, 2020

Ms. Sallie Diebolt, Chief  
Arizona Section Regulatory Branch  
U.S. Army Corps of Engineers  
3636 North Central Avenue, Suite 900  
Phoenix, AZ 85012

Re: Section 404 NWP No. 12 and NWP No. 18 Pre-Construction Notification  
City of Phoenix Zone 3D and 4A, Segment 1 Water Line  
Corps File No.: SPL-2020-00190

Dear Ms. Diebolt:

The City of Phoenix (City) is requesting the U.S. Army Corps of Engineers (USACE) authorize a Preconstruction Notification (PCN) for Section 404 Nationwide Permit (NWP) 12 (Utility Line Activities) and NWP 18 (Minor Discharge) for Segment 1 of the Zone 3D and 4A Water Line (Water Services Department No. WS85500442) project.

Segment 1 of the Zone 3D and 4A Water Line involves installing a new 66-inch pipeline from the 24th Street Water Treatment Plant to the intersection of Shea Boulevard and 32nd Street. The project will primarily traverse City right-of-way (ROW), although it will cross under SR 51 which is Arizona Department of Transportation (ADOT) ROW. The approximate center coordinates of the survey area are 33.558557, -112.035743 (decimal degrees, NAD 83). The cadastral location of the survey area is Township 2 North, Range 3 East, portions of Section 3 and 10; and Township 3 North, Range 3 East, portions of Section 23-26, 34, and 35 (Gila and Salt River Meridian).

A Preliminary Jurisdictional Delineation (PJD) was submitted and approved by the USACE in May 2020 (*Corps File No. SPL-2020-00190*). *Nineteen jurisdictional waters of the U.S. (Waters)* are present in the survey area totaling 0.512 acres. Based on the 90% Design Plans, the project is anticipated to result in approximately 0.017 acre of permanent loss to Waters from the buried riprap apron installation, 0.038 acre of permanent impact from the access road, and 0.329 acre of temporary impact from construction equipment and vehicles maneuvering in the site. A Preconstruction Notification is required due to project activities occurring in a documented cultural site.

Two NWP's are anticipated to be utilized to authorize the construction of this project; NWP 12 and NWP 18. NWP 12 will be used to authorize all temporary construction and access activities, including permanent impacts as a result of the access road, and temporary impacts from equipment and vehicles maneuvering within the site. The access road is functionally a temporary feature of this project that will be removed, and the area restored to preconstruction grade after construction is complete; however, because the road will remain in place for one

year, it has been identified as a permanent impact. NWP 18 will be used to authorize the permanent loss of Waters as a result of the buried riprap installation.

The highest specified threshold requirements are held by NWP 18 which authorizes up to 0.10 acre of loss of Waters, and no more than 25 cubic yards of material discharged below the plane of the OHWM. This project meets those thresholds with 0.017 acre of loss of Waters from approximately 7 cubic yards of riprap (See ENG Form 4345). Thus, General Condition 28 is complied with and multiple NWP's are allowed to authorize this project.

This letter serves as a request for review and authorization of a Preconstruction Notification for NWP 12 and NWP 18. Included for your review are the following items:

- Corps Application for Department of the Army Permit (ENG Form 4345)
- Figure 1: State Map
- Figure 2: Vicinity Map
- Figure 3: Floodplain and Topography Map
- Figure 4: PCN Sheet Index
- Figures 5a to 5i: Impacts to Waters of the U.S. Maps
- Selected Engineering Drawings and Details
- Statement of Compliance with Nationwide Permit General and Regional Conditions
- Biological Assessment
- Cultural Resources Compliance

If you have any questions or require additional information, please call the City's 404 Program Coordinator, Tricia Balluff, at 602-534-1775 or email Tricia at [tricia.balluff@phoenix.gov](mailto:tricia.balluff@phoenix.gov).

Sincerely,



Darlene Helm  
Deputy Director, Water Services Department  
City of Phoenix

cc: Tricia Balluff, Environmental Programs Coordinator, City of Phoenix



U.S. Army Corps of Engineers (USACE)  
**APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT**  
 33 CFR 325. The proponent agency is CECW-CO-R.

*Form Approved -  
 OMB No. 0710-0003  
 Expires: 02-28-2022*

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at [whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil](mailto:whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

**PRIVACY ACT STATEMENT**

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpclid.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

**(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)**

|                    |                      |                  |                              |
|--------------------|----------------------|------------------|------------------------------|
| 1. APPLICATION NO. | 2. FIELD OFFICE CODE | 3. DATE RECEIVED | 4. DATE APPLICATION COMPLETE |
|--------------------|----------------------|------------------|------------------------------|

**(ITEMS BELOW TO BE FILLED BY APPLICANT)**

|                                                                                                                                                                                                                            |  |  |                                                                                                                                                                       |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| 5. APPLICANT'S NAME<br>First - Darlene                      Middle -                      Last - Helm<br>Company - Deputy Director, City of Phoenix Water Services Department<br>E-mail Address - darlene.helm@phoenix.gov |  |  | 8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)<br>First - Not Applicable (N/A)    Middle -                      Last -<br>Company -<br>E-mail Address - |  |  |
| 6. APPLICANT'S ADDRESS:<br>Address- 200 West Washington<br>City - Phoenix                      State - Arizona    Zip - 85003    Country - USA                                                                             |  |  | 9. AGENT'S ADDRESS:<br>Address- N/A<br>City -                                      State -                      Zip -                      Country -                  |  |  |
| 7. APPLICANT'S PHONE NOs. w/AREA CODE<br>a. Residence N/A                      b. Business 602.534.9137                      c. Fax N/A                                                                                    |  |  | 10. AGENTS PHONE NOs. w/AREA CODE<br>a. Residence                      b. Business                      c. Fax                                                        |  |  |

**STATEMENT OF AUTHORIZATION**

11. I hereby authorize, \_\_\_\_\_ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

\_\_\_\_\_  
SIGNATURE OF APPLICANT

\_\_\_\_\_  
DATE

**NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY**

|                                                                                                                                                                                                                                                |  |                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------|
| 12. PROJECT NAME OR TITLE (see instructions)<br>City of Phoenix Zone 3D and 4A, Segment 1 Water Line (WS85500442)                                                                                                                              |  |                                                                              |
| 13. NAME OF WATERBODY, IF KNOWN (if applicable)<br>Dreamy Draw Wash and Myrtle Wash                                                                                                                                                            |  | 14. PROJECT STREET ADDRESS (if applicable)<br>Address N/A                    |
| 15. LOCATION OF PROJECT<br>Latitude: 33.558557° N                      Longitude:-112.035743° W                                                                                                                                                |  | City -                                      State-                      Zip- |
| 16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)<br>State Tax Parcel ID: Multiple                      Municipality: City of Phoenix<br>Section - 3 and 10; 23-26, 34, and 35    Township - 2N; 3N                      Range - 3E |  |                                                                              |

17. DIRECTIONS TO THE SITE

The project area can be accessed from numerous locations. From central Phoenix, take State Route (SR) 51 north to the Glendale exit, turn east on East Lincoln, then south on 20<sup>th</sup> Street, then east on East Maryland Avenue to the southern terminus of the pipeline. The pipeline generally travels northward and can be accessed along 21<sup>st</sup> Street, crossing East Lincoln on its way to East Myrtle Avenue, where it turns west to approximately the 20<sup>th</sup> Street Alignment. The 'cactus garden' along 20<sup>th</sup> Street and the northern portion of the pipeline within the urban development area can be accessed by taking 22<sup>nd</sup> Street north from East Lincoln, then turn west on East Orangewood Avenue to 20<sup>th</sup> Street. The Phoenix Mountain Preserve (PMP) portion of the pipeline can be accessed from SR 51 at the Northern Avenue/Dreamy Draw Park exit. Travel east until the Dreamy Draw Park parking is reached. The northern terminus of the project can be reached by taking SR 51 to the Shea Boulevard exit west to 32<sup>nd</sup> Street, and then turn southward to the northern terminus of the pipeline.

18. Nature of Activity (Description of project, include all features)

The City of Phoenix (City) Water Services Department (WSD) is planning to construct 4.7 miles of 66-inch concrete coated steel water transmission main (pipeline) as part of the City's preparation for water supply resiliency in an anticipated hotter and drier future. With shortages potentially looming on the Colorado River, these improvements will provide greater flexibility for moving Salt and Verde River water supplies to existing customers and areas of the City that are currently entirely dependent on Colorado River water and at risk for shortages. The project area alternates between developed urban environments and undeveloped desert biome. Developed urban environments occur on the northern and southern termini of the project area with an undeveloped desert biome in the central portion. In the urban sections, the project area is surrounded by residential lots including homes, community parks, churches, and schools with the addition of commercial businesses located at the northern terminus of the project. The central portion of the project area is comprised of the PMP/Dreamy Draw Park where the majority of undeveloped desert is located, with a small portion of undeveloped desert in Granada Park. The project area occurs entirely within the City and will be constructed primarily within existing City-owned lands and right-of-way. Adjacent lands are private or ADOT-owned. Temporary construction easements are anticipated from private landowners near the 20<sup>th</sup> Street and Myrtle Wash (#2) crossing, and an Encroachment Permit will be needed from ADOT where the pipeline crosses under SR 51. Temporary traffic controls, including local street lane closures and flaggers, will be utilized. Multiple contractor use areas outside of waters of the US (Waters) will be required for parking, staging, and stockpiling within the project area (See Figure 1).

A total of 19 Waters are present in the project area. All Waters in the project area are ephemeral washes, the majority of which occur in the PMP. All washes generally flow in a westerly direction, some of which are culverted as they pass under local roads and the former 22nd Street alignment/existing bike path within the PMP. No wetland or special aquatic sites are present within the project area. Larger washes such as Dreamy Draw Wash (#32) have sandy-bottoms; smaller washes typically have rocky sides and bottoms reflecting the rocky conditions of the site. In the PMP, braiding and dense vegetation is limited to Dreamy Draw Wash. A light to moderate density of xeroriparian vegetation line the other on-site washes. Myrtle Wash (#2) is also heavily vegetated with landscaped trees and shrubs. The majority of the pipeline and all Waters are located within the Cave Creek-Arizona Canal Diversion Channel watershed (10-digit Hydrologic Unit Code [HUC]: 1507010206) of the Agua Fria sub-basin (8-digit HUC: 15070102). The pipeline north of Station 219+00 is within the Indian Bend Wash watershed (10-digit HUC: 1506010602) of the Lower Salt sub-basin (8-digit HUC 15060106). Portions of the project area are located within the 100-year floodplain, including sections of Washes #1, #27, #29 – #31, and Dreamy Draw Wash (#32), but the project will not impact the floodplain elevations or pre-construction grades.

| Wash No. or Name | Approximate Sta No.   | EXISTING                                                               | PROPOSED                                                                                                                                                                                                             |                                                   |                                   |
|------------------|-----------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------|
|                  |                       | Drainage Structure Type height by width by length                      | Existing Structure Changes/New Structure                                                                                                                                                                             | Drainage Structure Type height by width by length | Riprap Protection Length by width |
| 1                | 44+71.70 – 44+80.31   | 2-66" x 64' reinforced concrete pipes (RCP)                            | Remove existing RCPs and replace in-kind with new Class 3 RCPs. See Drawing 26.                                                                                                                                      | 2-66" x 64' Class 3 RCPs                          | N/A                               |
| Myrtle Wash (#2) | 409+40 – 409+60       | N/A                                                                    | N/A. See Drawing 34. Shotcrete/riprap is currently present along the wash bottom which would be restored after the pipeline is buried.                                                                               | N/A                                               | N/A                               |
| 7                | 449+10                | N/A                                                                    | N/A. See Drawing 45.                                                                                                                                                                                                 | N/A                                               | N/A                               |
| 8                | 449+30 – 121+40       | Upstream concrete spillway and downstream drainage culvert under SR 51 | Protect in place existing drainage structures. Install new 10' long riprap apron above the pipeline and bury it below the existing ground surface elevation. Detail 24 on Drawing 95 and Detail 33 on Drawing 97.    | N/A                                               | 10' x 8'                          |
| 9                | 122+10                | Downstream concrete spillway                                           | Protect in place existing drainage structure. Install new 10' long riprap apron above the pipeline and bury it below the existing ground surface elevation. See Detail 24 on Drawing 95 and Detail 33 on Drawing 97. | N/A                                               | 10' x 4'                          |
| 15               | 129+90                | Downstream concrete spillway                                           | Protect in place existing drainage structure. Install new 10' long riprap apron above the pipeline and bury it below the existing ground surface elevation. See Detail 24 on Drawing 95 and Detail 33 on Drawing 97. | N/A                                               | 10' x 3'                          |
| 18               | 139+00 – 139+20       | N/A                                                                    | Install new 10' long riprap apron above the pipeline and bury it below the existing ground surface elevation. See Detail 24 on Drawing 95 and Detail 33 on Drawing 97.                                               | N/A                                               | 10' x 10'                         |
| 19               | 141+70 – 141+90       | N/A                                                                    | Install new 10' long riprap apron above the pipeline and bury it below the existing ground surface elevation. See Detail 24 on Drawing 95 and Detail 33 on Drawing 97.                                               | N/A                                               | 10' x 8'                          |
| 20               | 149+40                | N/A                                                                    | Install new 10' long riprap apron above the pipeline and bury it below the existing ground surface elevation. See Detail 24 on Drawing 95 and Detail 33 on Drawing 97.                                               | N/A                                               | 10' x 8'                          |
| 22               | 157+60 – 158+10       | 12' x 11' x 116' corrugated metal pipe (CMP)                           | Remove existing CMP and replace in-kind with new Type 2 aluminized corrugated steel pipe (CSP). See Drawings 55 and 56.                                                                                              | 12' x 11' x 116' CSP                              | N/A                               |
| 23               | 162+82.64             | 30" x 83' CMP                                                          | Remove existing CMP and replace in-kind with new Type 2 aluminized CSP. See Drawing No. 57.                                                                                                                          | 30" x 83' CSP                                     | N/A                               |
| 25               | 164+01.74             | 30" x 88' CMP                                                          | Remove existing CMP and replace in-kind with new Type 2 aluminized CSP. See Drawing No. 57.                                                                                                                          | 30" x 88' CSP                                     | N/A                               |
| 26               | 166+70 – 167+10       | 54" x 62' CMP<br>54" x 64' CMP                                         | Remove existing CMPs and replaced in-kind with new Type 2 aluminized CSPs. See Drawing No. 58.                                                                                                                       | 54" x 62' CSP<br>54" x 64' CSP                    | N/A                               |
| 27               | 169+31.85             | 60" x 163' CMP                                                         | N/A. The water pipeline will be installed 2' above the existing CMP, which would be protected in place. See Drawing No. 59.                                                                                          | 60" x 163' CMP                                    | N/A                               |
| 28               | 176+41.85             | 30" x 70' CMP                                                          | Remove existing CMP and replace in-kind with new Type 2 aluminized CSP. See Drawing No. 60.                                                                                                                          | 30" x 70' CSP                                     | N/A                               |
| 29               | 179+83.69 – 181+51.52 | 132" x 160' CMP                                                        | Remove existing CMP and replace in-kind with new Type 2 aluminized CSP. See Drawings No. 61 and 62.                                                                                                                  | 132" x 60' CSP                                    | N/A                               |

|                        |                                      |                    |                                                                                                                                                                                                                  |                |               |
|------------------------|--------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------|
| 30                     | 185+18.71                            | 42" x 102' CMP     | Remove existing CMP and replace in-kind with new Type 2 aluminized CSP. See Drawing 63.                                                                                                                          | 42" x 102' CSP | N/A           |
| 31                     | 302+10                               | Downstream 48" CMP | Protect in place existing drainage structure. Install new 10' long riprap apron above the pipeline and bury it below the existing ground surface elevation. See Drawings 64 and 65; and Detail 24 on Drawing 95. | N/A            | 10' x 6'      |
| Dreamy Draw Wash (#32) | 310+00 – 310+10; and 500+90 – 501+00 | N/A                | Install new 10' long riprap apron above the pipeline at both crossings and bury it below the existing ground surface elevation. See Drawings 67, 68, and 89; and Detail 24 on Sheet 95.                          | N/A            | 2 - 10' x 12' |

The project scope of work includes: salvaging native and other plants per the City's ordinance, trenching and excavation, removing and replacing existing culverts, placing bedding material and the pipeline, constructing air relief valves, backfilling, hauling of excess excavation materials, installing riprap in un-culverted washes within the PMP to prevent erosion and scouring, burying the riprap aprons, regrading Waters to pre-construction grades, replanting the salvaged plants, and reseeding the disturbance area outside of Waters. Culvert end points and invert elevations within the survey area will be surveyed so that the replacement culverts match those locations and elevations.

Trenching for the pipeline will require a temporary 20-foot wide access road be constructed in the PMP. The access road would be located parallel to the pipeline alignment so that excavated material can be loaded into trucks and hauled off-site. How the access road crosses Waters will be determined on-site by the contractor. Some crossings may be completed at-grade with modifications made to the side slopes outside of Waters (as necessary); or dirt fill may be placed in Waters accompanied by temporary culverts to maintain downstream flows. After the trench is dug and the pipeline is installed, the trench will be backfilled. At the end of each work day, if the trench has not been backfilled, the open trench will be covered as a safety precaution to prevent wildlife from entering the trench and to allow surface water to flow downstream if there is a storm event. Construction will be conducted when surface water is not present in Waters, and if Waters become inundated after a heavy storm event, construction will cease until Waters are void of surface water. Construction is anticipated to begin in the 1st Quarter of 2021 and last approximately 3 years; the PMP section itself will take approximately one year to complete.

Approximately 0.017 acre of permanent loss is anticipated from installing riprap aprons in the PMP where the pipeline alignment crosses Waters lacking culverts (#8, #9, #15, #18 – #20, #31, and Dreamy Draw Wash [#32]) to prevent future erosion and scour in washes at the pipeline. Because the pipeline will be buried well below the OHWM and the replacement culvert end points and invert elevations be will surveyed so that the replacement culverts match those locations and elevations, these activities are considered a temporary impact to Waters. General construction equipment and vehicles maneuvering throughout the work area would also contribute to the temporary impacts for this project totaling 0.329 acre. The access road required for construction is also ultimately a temporary impact to Waters since it will be removed and restored to preconstruction condition once construction is complete; however, because it will remain in place for one year within the PMP, it has been identified as a permanent impact. Therefore, approximately 0.038 acre of permanent impacts to Waters is anticipated. Only one Waters, Wash #27, is anticipated to have no impacts as a result of this project because all construction activities occurring above the existing CMP along the old 22<sup>nd</sup> Alignment/bike pathway and outside of the natural wash bed. The restoration of impacted Waters to a pre-construction grade, including the culvert replacements, will result in the same stormwater flow capacity as the existing condition. In summary, 0.017 acre of permanent loss, 0.038 acre of permanent impact, and 0.329 acre of temporary impact is anticipated from this project.

Two nationwide permits (NWP) are anticipated to be utilized to authorize the construction of this project: NWP 12 and NWP 18. NWP 12 will be used to authorize all temporary construction and access activities, including permanent impacts as a result of the access road and temporary impacts from equipment and vehicles maneuvering within the site. As stated above, although the access road is considered a permanent impact because of its one-year duration in the PMP, the road will be removed and the area restored to preconstruction grades; functionally, the access road is a temporary impact. NWP 18 will be used to authorize the permanent loss of Waters as a result of the buried riprap installation. The highest specified threshold requirements are held by NWP 18 which authorizes up to 0.10 acre of loss of Waters and no more than 25 cubic yards of material discharged below the plane of the OHWM. This project will result in 0.017 acre of loss of Waters (Table 2) and approximately 7 cubic yards of riprap (Table 1) which would satisfy General Condition 28 and allow the use of two NWP.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of the project is to prevent water shortages to City residences that are solely dependent on Colorado River water. Installing the new pipeline from a City water treatment plant to these areas of the City will allow the City to have the ability to distribute water supplies from the Salt and Verde Rivers.

**USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED**

20. Reason(s) for Discharge

The only new material being permanently discharged into Waters is a 10-foot riprap apron at the pipeline crossing in Waters that currently do not have a culvert. Riprap is being installed to prevent future erosion and scour in Waters that do not have currently have a culvert or shotcrete/riprap installed. Waters with existing culverts in the pipeline alignment will be removed and replaced to match the current end points and invert elevations so that the replacements have the same stormwater flow capacity as the existing condition. These culverts are currently lacking riprap aprons; therefore, riprap aprons will not be installed at these locations in order to match the existing condition.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type: Riprap  
Amount in Cubic Yards: 7.260

| Drainage Name    | Approximate Sta No.   | Riprap (cy) |
|------------------|-----------------------|-------------|
| 1                | 44+71.70 – 44+80.31   | 0.00        |
| Myrtle Wash (#2) | 409+40 – 409+60       | 0.00        |
| 7                | 449+10                | 0.00        |
| 8                | 449+30 – 121+40       | 0.807       |
| 9                | 122+10                | 0.269       |
| 15               | 129+90                | 0.269       |
| 18               | 139+00 – 139+20       | 1.613       |
| 19               | 141+70 – 141+90       | 1.613       |
| 20               | 149+40                | 0.538       |
| 22               | 157+60 – 158+10       | 0.00        |
| 23               | 162+82.64             | 0.00        |
| 25               | 164+01.74             | 0.00        |
| 26               | 166+70 – 167+10       | 0.00        |
| 27               | 169+31.85             | 0.00        |
| 28               | 176+41.85             | 0.00        |
| 29               | 179+83.69 – 181+51.52 | 0.00        |

|                        |                                      |              |
|------------------------|--------------------------------------|--------------|
| 30                     | 185+18.71                            | 0.00         |
| 31                     | 302+10                               | 0.807        |
| Dreamy Draw Wash (#32) | 310+00 - 310+10; and 500+90 - 501+00 | 1.344        |
| <b>Totals</b>          |                                      | <b>7.260</b> |

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Permanent loss to Waters are anticipated at #8, #9, #15, #18, #19, #20, #31, and Dreamy Draw Wash (#32) from installing riprap where the pipeline crosses Waters to prevent future erosion and scour within Waters. Waters within the PMP, except for #27, are anticipated to be permanently impacted by a temporary 20-foot wide access road that will remain in plan for one year. All Waters throughout the survey area, except #27, will experience temporary impacts from construction equipment and vehicles maneuvering within the site. The construction limits have been identified by the design team as the smallest possible boundary to construct the project and will need to maneuver throughout the entire width of the construction limits. Thus, the entire length of each wash in the construction limits is anticipated to be temporarily impacted by construction activities. Wash #27 is not anticipated to be temporarily or permanently impacted by project activities because all activities will occur above the existing CMP along the old 22<sup>nd</sup> Alignment/bike pathway, outside of the natural wash bed.

Table 2. Summary of Impacts to Waters of the US.

| Drainage Name         | Amount of Waters (ac) | Permanent Loss (ac) | Permanent Impacts (ac) | Temporary Impacts (ac) |
|-----------------------|-----------------------|---------------------|------------------------|------------------------|
| 1                     | 0.035                 | 0.000               | 0.000                  | 0.031                  |
| Myrtle Wash (#2)      | 0.058                 | 0.000               | 0.000                  | 0.000                  |
| 7                     | 0.054                 | 0.000               | 0.000                  | 0.046                  |
| 8                     | 0.022                 | 0.003               | 0.006                  | 0.009                  |
| 9                     | 0.006                 | 0.0005              | 0.002                  | 0.002                  |
| 15                    | 0.008                 | 0.001               | 0.002                  | 0.002                  |
| 18                    | 0.015                 | 0.002               | 0.005                  | 0.004                  |
| 19                    | 0.010                 | 0.001               | 0.003                  | 0.002                  |
| 20                    | 0.015                 | 0.002               | 0.005                  | 0.003                  |
| 22                    | 0.036                 | 0.000               | 0.000                  | 0.030                  |
| 23                    | 0.015                 | 0.000               | 0.000                  | 0.012                  |
| 25                    | 0.014                 | 0.000               | 0.000                  | 0.013                  |
| 26                    | 0.026                 | 0.000               | 0.000                  | 0.023                  |
| 27                    | 0.037                 | 0.000               | 0.000                  | 0.000                  |
| 28                    | 0.010                 | 0.000               | 0.000                  | 0.008                  |
| 29                    | 0.066                 | 0.000               | 0.000                  | 0.061                  |
| 30                    | 0.016                 | 0.000               | 0.000                  | 0.014                  |
| 31                    | 0.029                 | 0.002               | 0.004                  | 0.009                  |
| Dreamy Draw Wash (32) | 0.040                 | 0.005               | 0.011                  | 0.013                  |
| <b>Totals (Acre)</b>  | <b>0.512</b>          | <b>0.017</b>        | <b>0.038</b>           | <b>0.329</b>           |

23. Description of Avoidance, Minimization, and Compensation (see instructions)

Avoidance of Waters is not feasible since this project would require work within Waters to complete the project. Conventional earthmoving and construction equipment will be used to complete the project; some of the equipment will be specialized for working in rocky conditions. Staging of vehicles and equipment, as well as stockpiling of construction materials and excavated materials are anticipated to occur within the project area, outside of Waters. Disturbance will be limited to the construction limits and appropriate temporary measures (i.e. fencing) will be installed at these limits to ensure that all construction-related activities are contained within those work areas. The restoration of the impacted Waters to a pre-construction condition, including the culvert replacements, will result in the same flow capacity as the existing condition. Where culverts currently exist in the survey area, the replacement culvert end points and invert elevations will be surveyed so that the replacement culverts match those. As a result, downstream flows and hydraulic characteristics will remain the same as the pre-construction condition. Restoration activities such as replanting salvaged vegetation and reseeding activities will occur soon after the trench has been backfilled to prevent erosion. The project has been designed to avoid and minimize adverse effects, both temporary and permanent, to Waters to the maximum extent practicable. The pipeline alignment within the PMP will follow the old 22<sup>nd</sup> Street alignment to minimize impacts to undisturbed Waters and construction activities at Wash #27 will completely avoid impacting Waters. No change will occur to the primary function of the affected watercourses. Although there is permanent loss associated with the riprap aprons, these aprons will be buried and ground surface elevations will be restored. Therefore, there will not be any permanent loss of aquatic functions and values or streambed associated with the project; thus, a compensatory mitigation plan is not proposed.

24. Is Any Portion of the Work Already Complete?  Yes  No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- 525 Wilshire Boulevard

City - Santa Monica State - CA Zip - 90401

b. Address- 2002 East Myrtle Avenue

City - Phoenix State - AZ Zip - 85020

c. Address-2001 East Northview Avenue

City - Phoenix State - AZ Zip -85020

d. Address- 2033 East Lamar Rd

City - Phoenix State - AZ Zip -85016

e. Address- 6744 North 21st Street

City – Phoenix State - AZ Zip -85016  
 f. Address- 6815 North 21st Street  
 City – Phoenix State - AZ Zip -85016

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

| AGENCY                                                | TYPE APPROVAL*          | IDENTIFICATION NUMBER | DATE APPLIED | DATE APPROVED | DATE DENIED |
|-------------------------------------------------------|-------------------------|-----------------------|--------------|---------------|-------------|
| ADEQ                                                  | Conditional Section 401 | N/A                   | N/A          | N/A           | N/A         |
| Phoenix Archaeology and Historic Preservation Offices | Section 106             | N/A                   | 2/27/2020    | 3/4/2020      | N/A         |
|                                                       |                         |                       |              |               |             |
|                                                       |                         |                       |              |               |             |

\* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

        *Darwin Hill*                      8/5/2020              \_\_\_\_\_      \_\_\_\_\_  
 SIGNATURE OF APPLICANT      DATE      SIGNATURE OF AGENT      DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

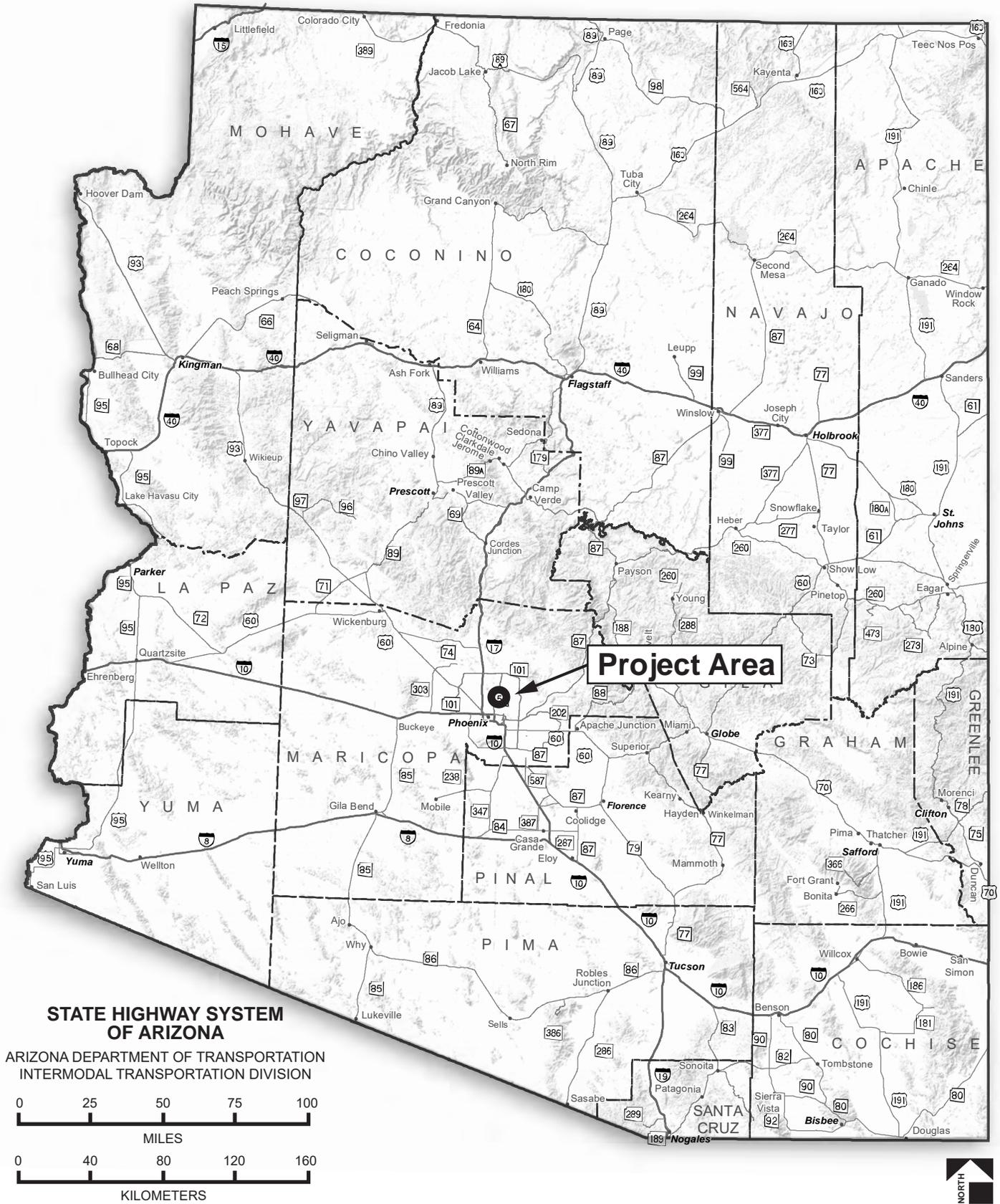
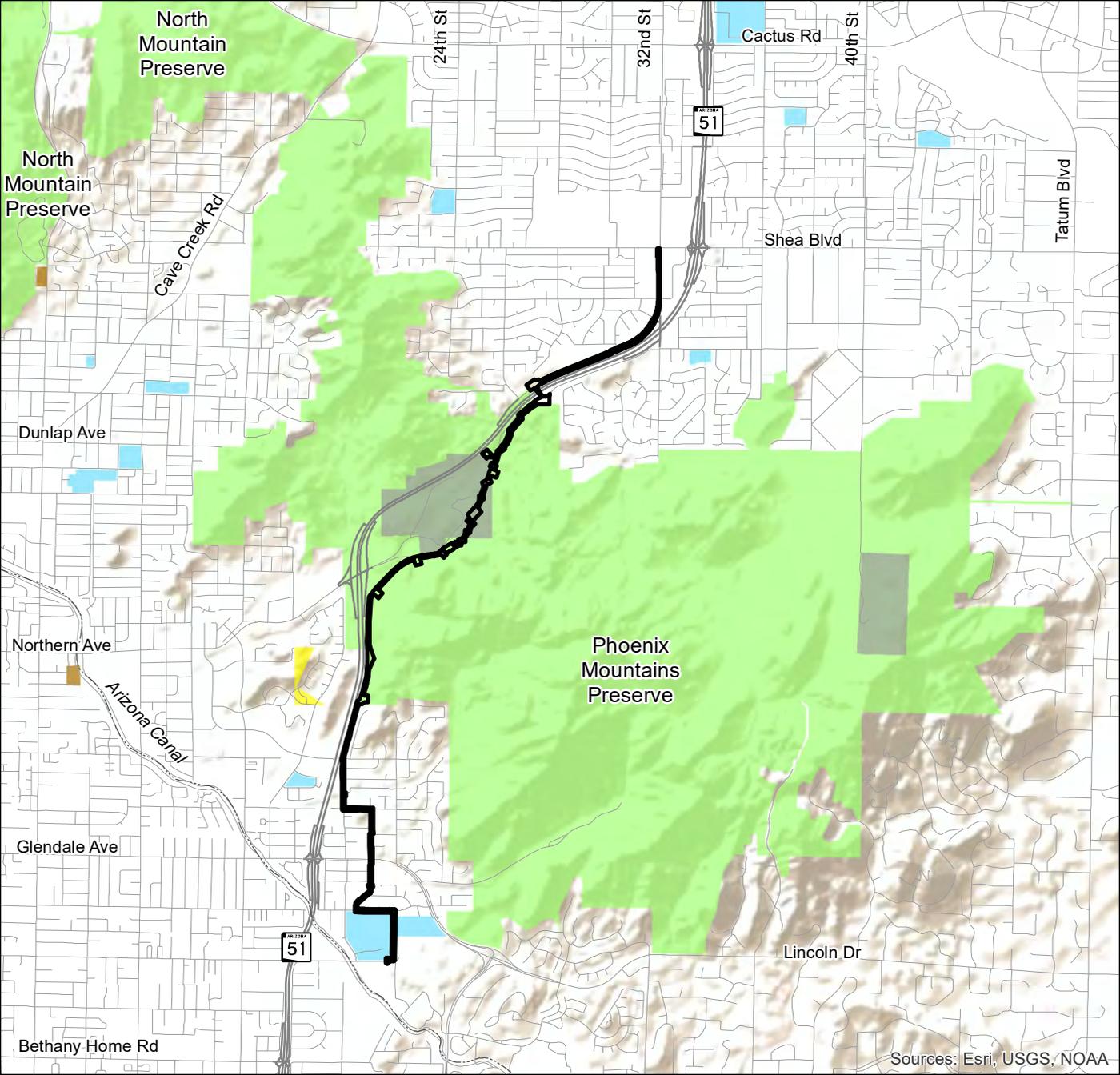


Figure 1 - State Map



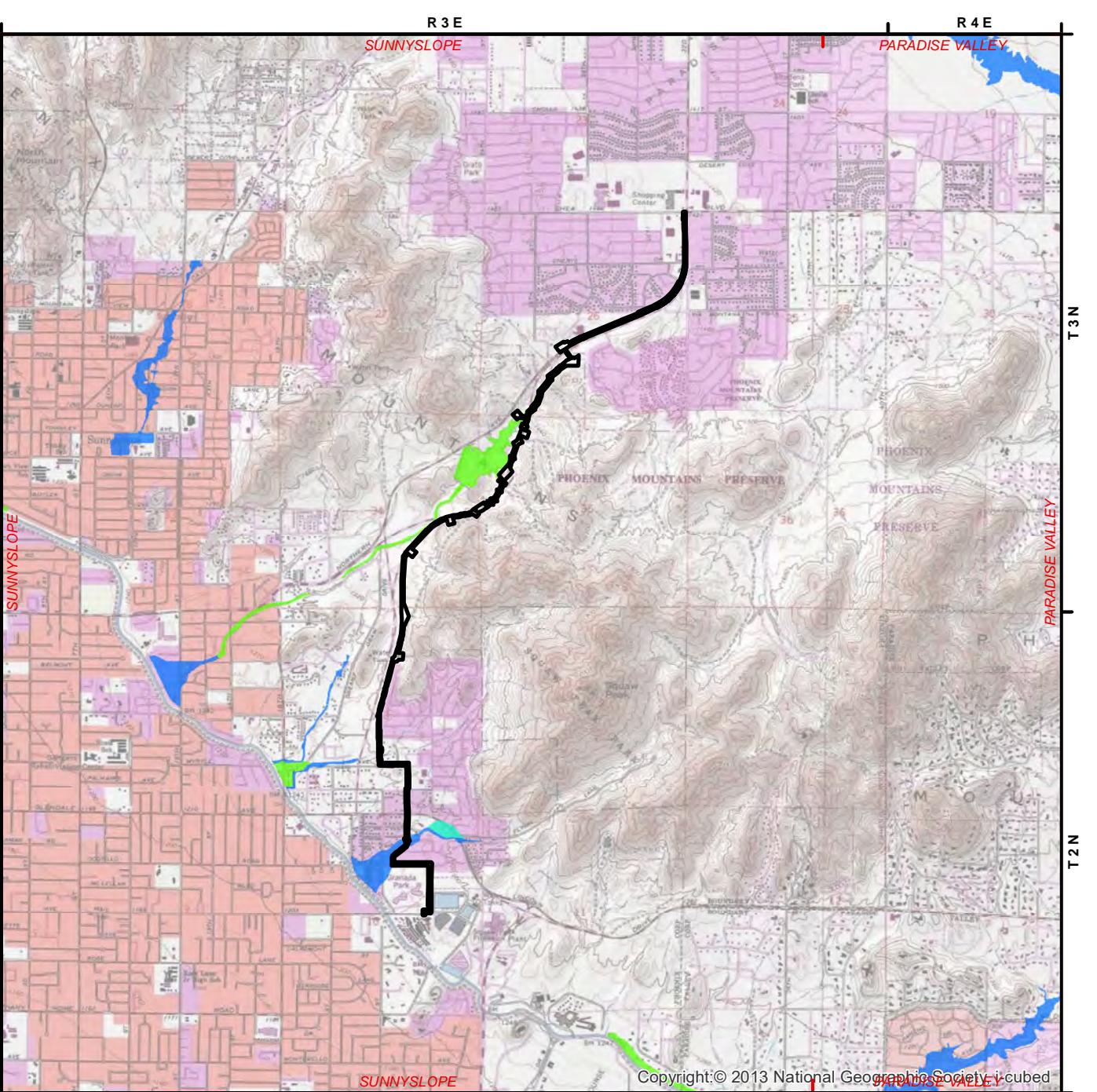
Sources: Esri, USGS, NOAA

Source: Land ownership GIS coverage provided by Arizona State Land Department; Parks GIS coverage provided by Maricopa, Pinal, and Pima Counties (2013); Arizona Transportation Information System GIS Coverage (2013)

Figure 2 - Vicinity Map

- Key**
- Project Area
  - Bureau of Land Management
  - Bureau of Reclamation
  - City of Phoenix Community Parks
  - City of Phoenix Regional Parks
  - County Land
  - Private Land



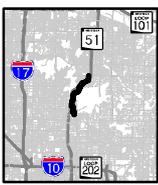


Source: National Flood Hazard Layer (NFHL) provided by FEMA January 2016.  
 USGS 7.5' Quadrangle Paradise Valley, Ariz. (1973)  
 USGS 7.5' Quadrangle Sunnyslope, Ariz. (1972)

Copyright: © 2013 National Geographic Society, i-cubed

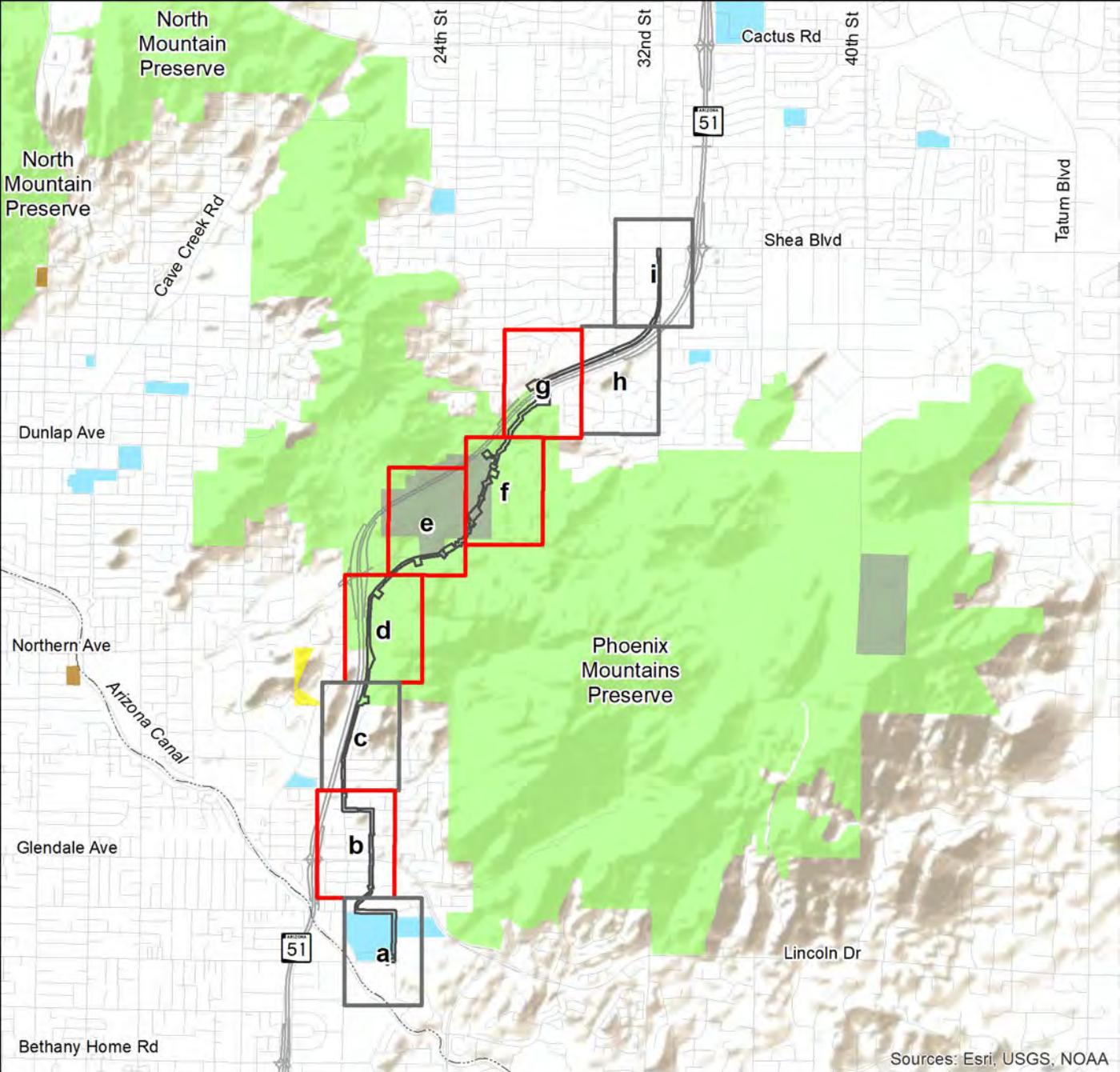
**Key**

-  Project Area
-  Zone A
-  Zone AE
-  Zone AO



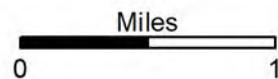
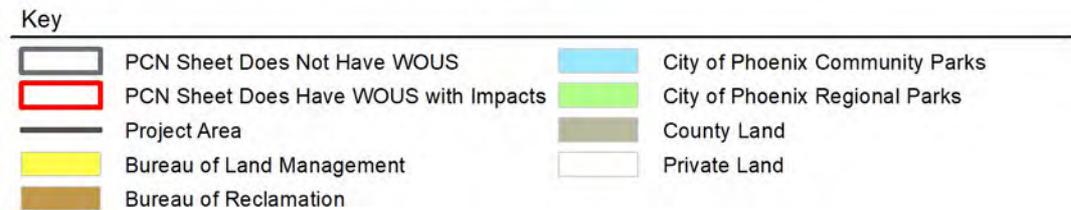
**Figure 3**  
**Floodplain and Topography Map**





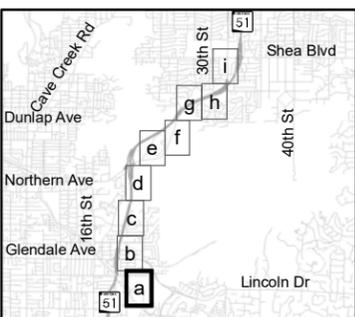
Source: Land ownership GIS coverage provided by Arizona State Land Department; Parks GIS coverage provided by Maricopa, Pinal, and Pima Counties (2013); Arizona Transportation Information System GIS Coverage (2013)

Figure 4 - PCN Sheet Index



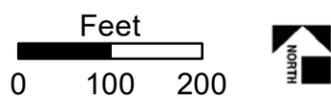


Aerial: Maricopa County Assessor 2019



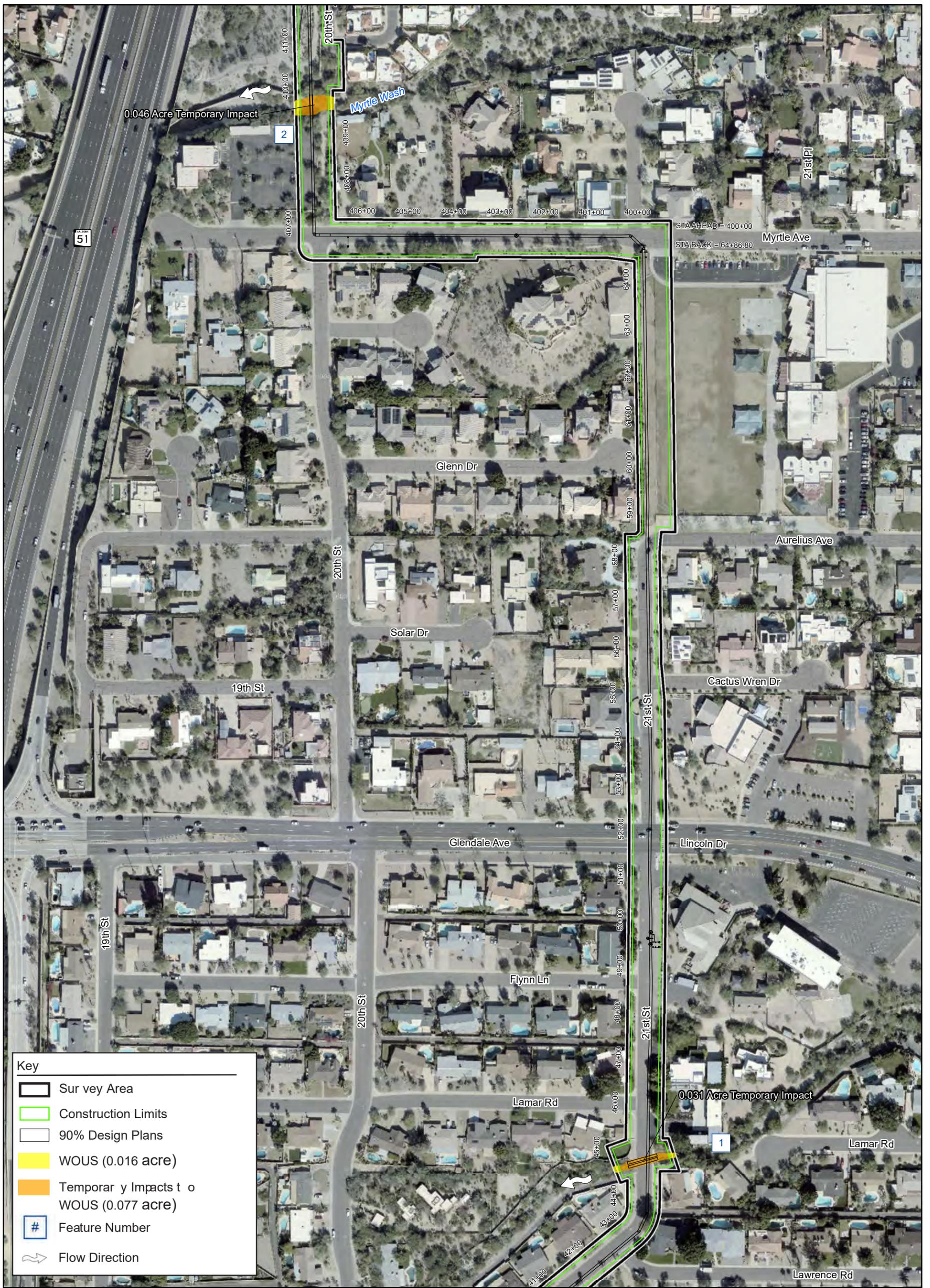
Impacts to Waters of the U.S.  
City of Phoenix Zone 3D and 4A, Segment 1 Waterline

Source: USGS 7.5' Quadrangles  
Sunnyslope, Ariz. (1972);  
T2N, R3E, Sec. 10;  
UTM 1983 Zone 12S;  
403844.68mE, 3710726.20mN

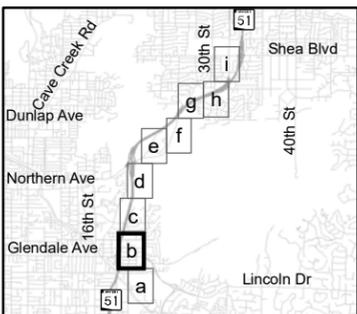


June 2020

Figure 5a

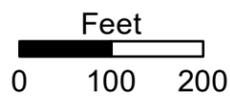


Aerial: Maricopa County Assessor 2019



Impacts to Waters of the U.S.  
City of Phoenix Zone 3D and 4A, Segment 1 Waterline

Source: USGS 7.5' Quadrangles  
Sunnyslope, Ariz. (1972);  
T2N, R3E, Sec. 3 and 10;  
UTM 1983 Zone 12S;  
403623.25mE, 3711579.65mN

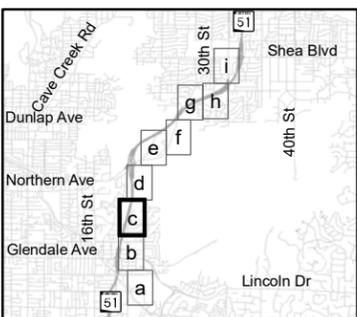


June 2020

Figure 5b

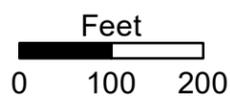


Aerial: Maricopa County Assessor 2019



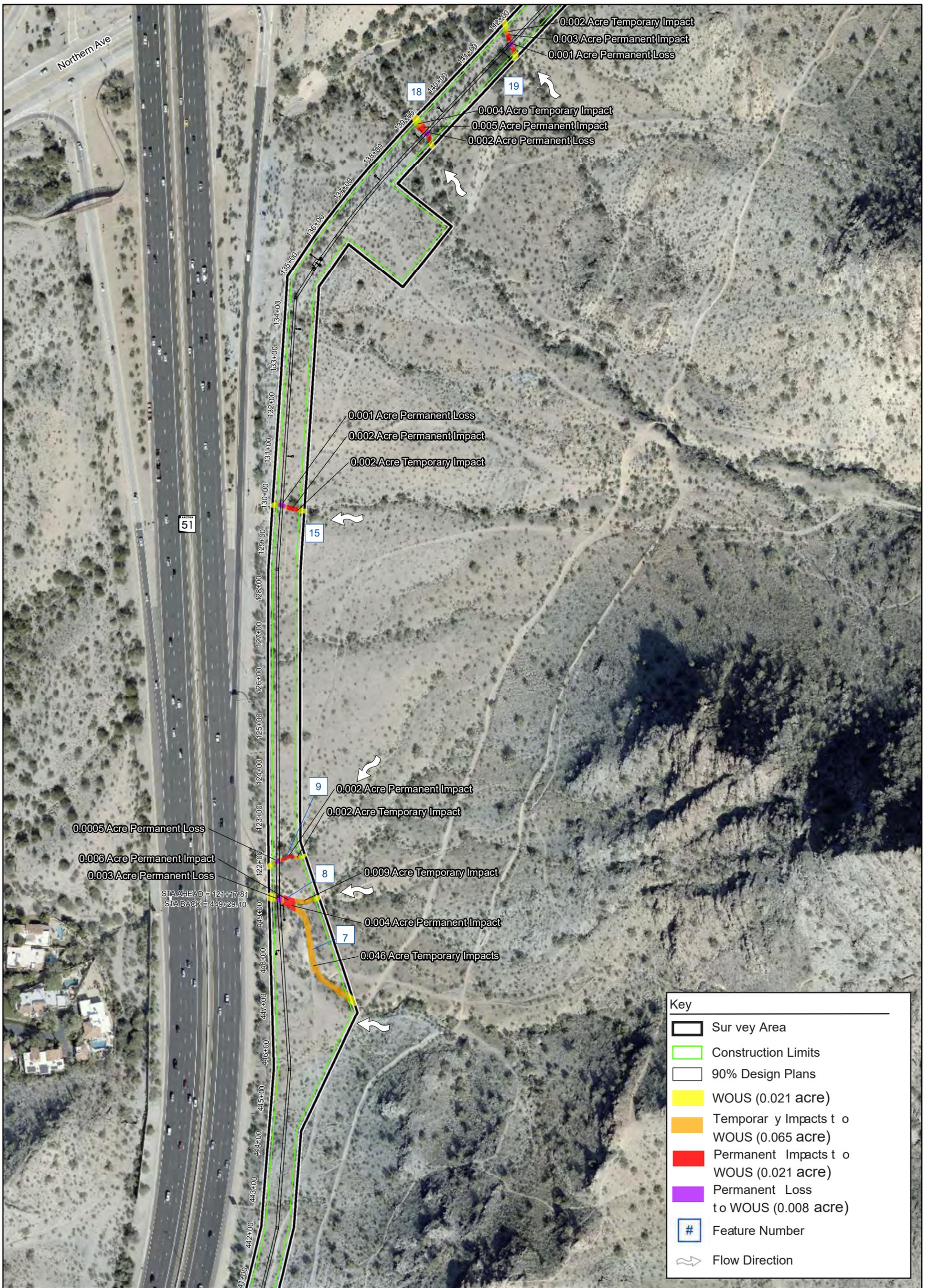
Impacts to Waters of the U.S.  
City of Phoenix Zone 3D and 4A, Segment 1 Waterline

Source: USGS 7.5' Quadrangles  
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T2N, R3E, Sec. 3  
UTM 1983 Zone 12S;  
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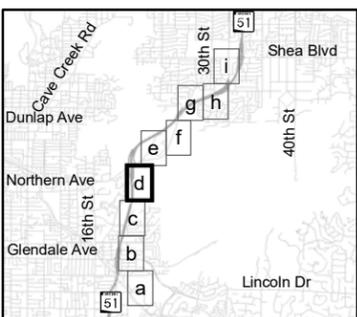


June 2020

Figure 5c

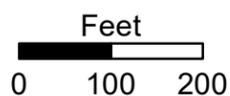


Aerial: Maricopa County Assessor 2019



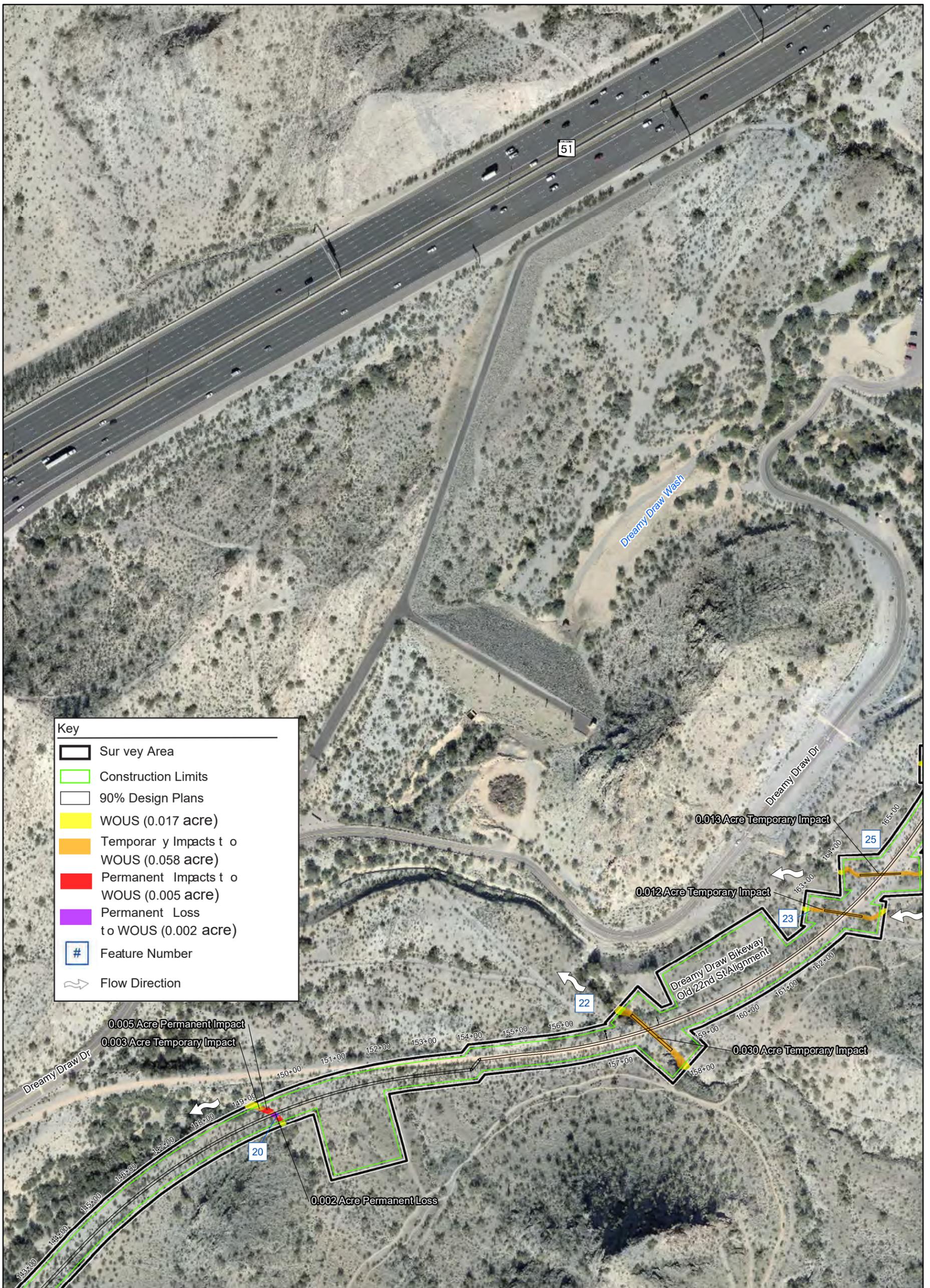
Impacts to Waters of the U.S.  
City of Phoenix Zone 3D and 4A, Segment 1 Waterline

Source: USGS 7.5' Quadrangles  
Sunnyslope, Ariz. (1972);  
T2N, R3E, Sec. 3  
T3N, R3E, Sec. 34;  
UTM 1983 Zone 12S;  
403827.77mE, 3713286.53mN

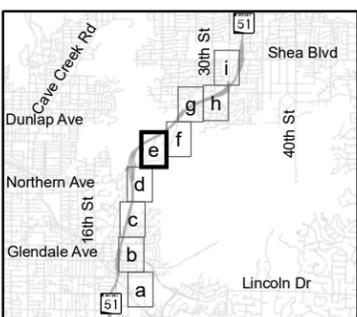


June 2020

Figure 5d

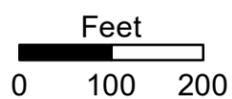


Aerial: Maricopa County Assessor 2019



Impacts to Waters of the U.S.  
City of Phoenix Zone 3D and 4A, Segment 1 Waterline

Source: USGS 7.5' Quadrangles  
Sunnyslope, Ariz. (1972);  
T3N, R3E, Sec. 34 35;  
UTM 1983 Zone 12S;  
404248.97mE, 3714139.97mN

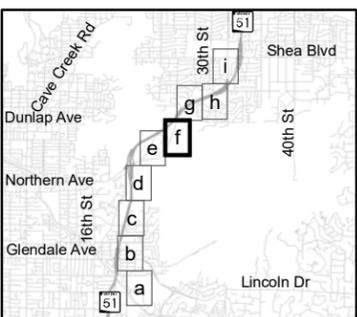


June 2020

Figure 5e

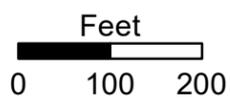


Aerial: Maricopa County Assessor 2019



Impacts to Waters of the U.S.  
City of Phoenix Zone 3D and 4A, Segment 1 Waterline

Source: USGS 7.5' Quadrangles  
Sunnyslope, Ariz. (1972);  
T3N, R3E, Sec. 26 and 35;  
UTM 1983 Zone 12S;  
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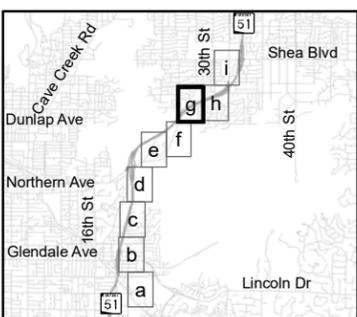


June 2020

Figure 5f

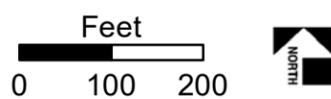


Aerial: Maricopa County Assessor 2019



Impacts to Waters of the U.S.  
City of Phoenix Zone 3D and 4A, Segment 1 Waterline

Source: USGS 7.5' Quadrangles  
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UTM 1983 Zone 12S;  
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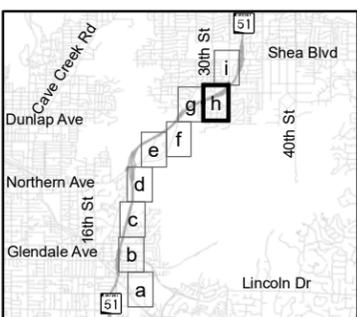


June 2020

Figure 5g

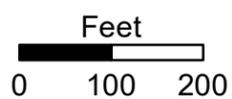


Aerial: Maricopa County Assessor 2019



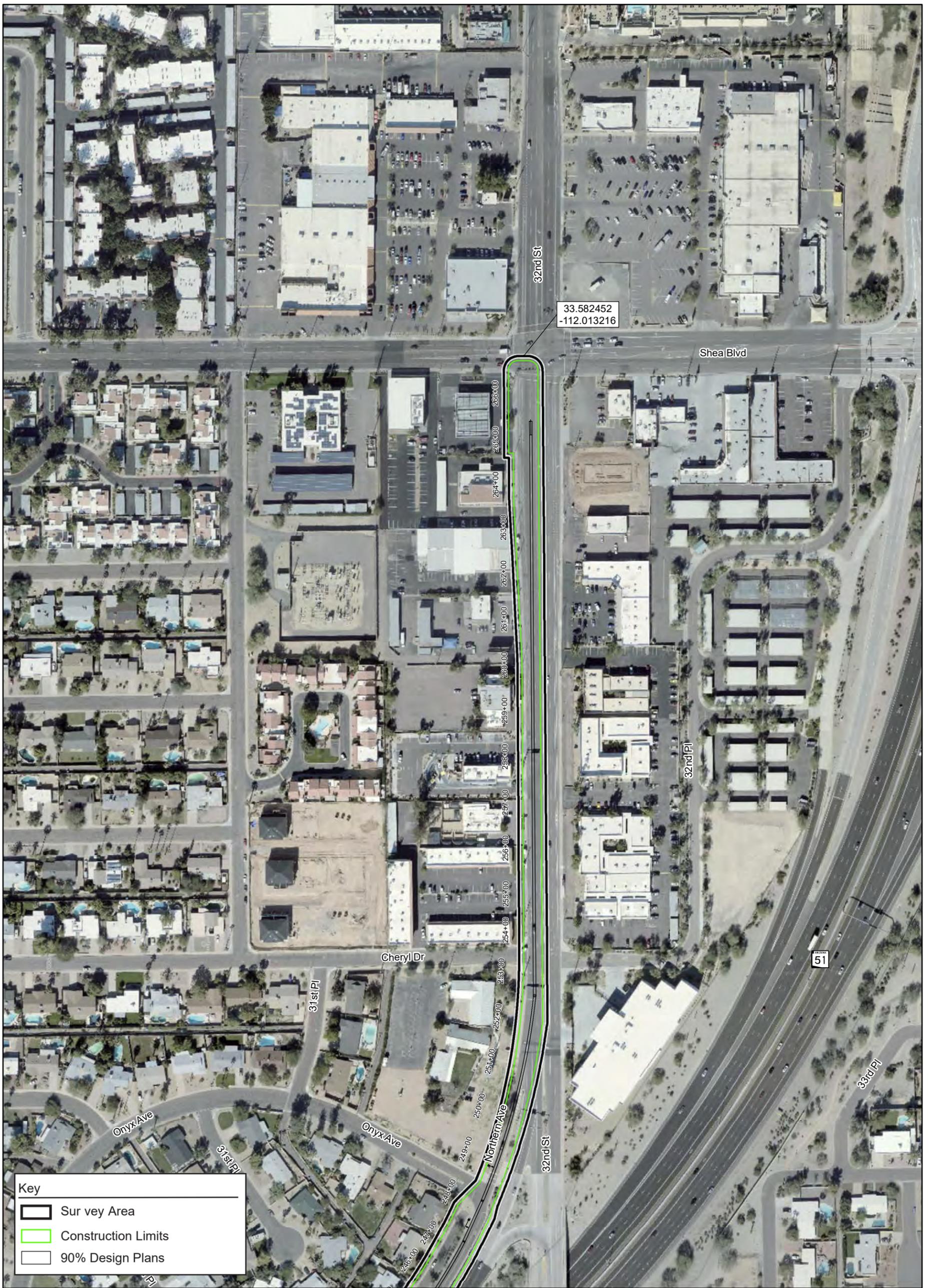
Impacts to Waters of the U.S.  
City of Phoenix Zone 3D and 4A, Segment 1 Waterline

Source: USGS 7.5' Quadrangles  
Sunnyslope, Ariz. (1972);  
T3N, R3E, Sec. 25, and 26;  
UTM 1983 Zone 12S;  
405764.0mE, 3715571.14mN



June 2020

Figure 5h

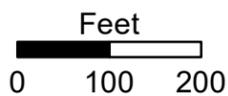


Aerial: Maricopa County Assessor 2019



Impacts to Waters of the U.S.  
City of Phoenix Zone 3D and 4A, Segment 1 Waterline

Source: USGS 7.5' Quadrangles  
Sunnyslope, Ariz. (1972);  
T3N, R3E, Sec. 23, 24, 25, and 26;  
UTM 1983 Zone 12S;  
406020.32mE, 3716424.58mN



June 2020

Figure 5i





SEGMENT 1 PIPELINE ALIGNMENT  
 PHOENIX STREET – MARICOPA CO.  
 24TH STREET WTP TO 32ND  
 STREET AND SHEA BOULEVARD



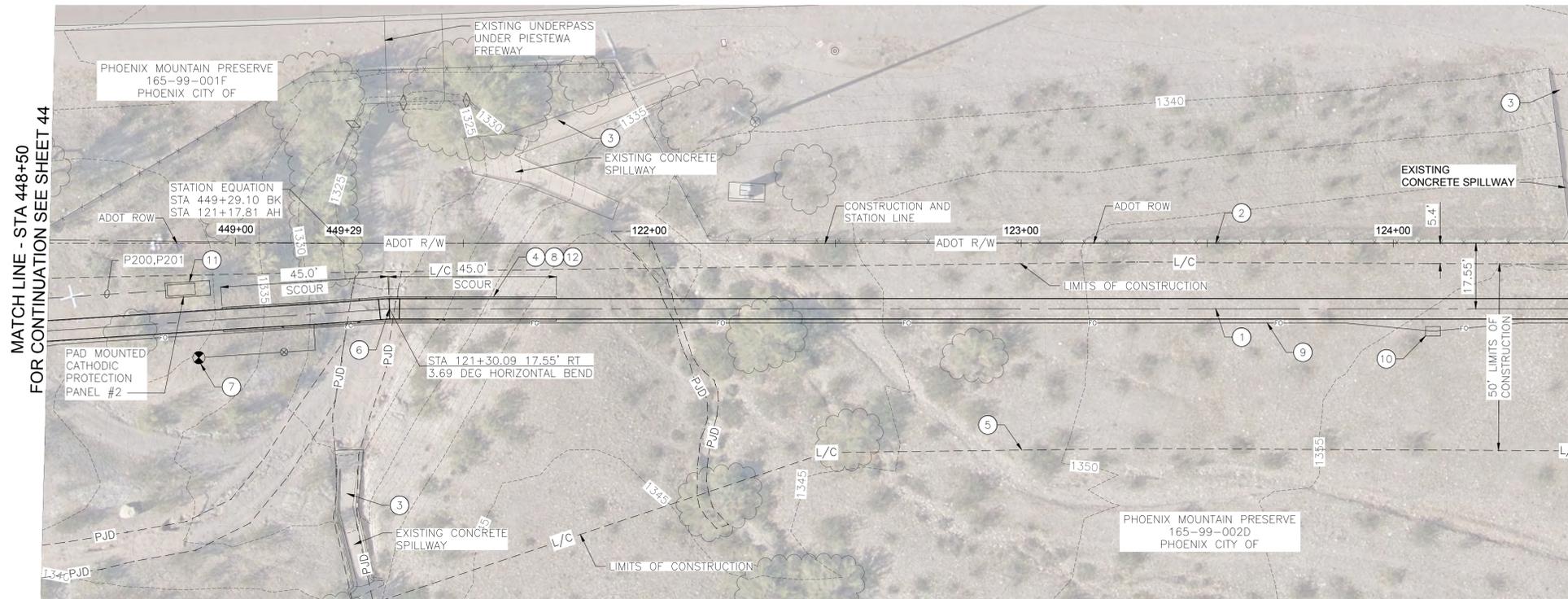
**PRELIMINARY  
 NOT FOR  
 CONSTRUCTION**

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 45  | 345   |          |



**CONSTRUCTION NOTES**

| NO. | DESCRIPTION                                                                                                                              | UNIT | QTY  |
|-----|------------------------------------------------------------------------------------------------------------------------------------------|------|------|
| 1   | CONSTRUCT 66-INCH ID MORTAR LINED AND POLYURETHANE COATED WELDED STEEL PIPE.                                                             | LF   | 412  |
| 2   | PROTECT IN PLACE EXISTING FENCE.                                                                                                         |      |      |
| 3   | PROTECT IN PLACE EXISTING CONCRETE SPILLWAY.                                                                                             |      |      |
| 4   | CONCRETE ENCASEMENT OF 66" PIPELINE PER DETAIL 3 ON SHEET 107 FOR ADDITIONAL SCOUR PROTECTION.                                           | LF   | 90   |
| 5   | CONTRACTOR SHALL PERFORM SURFACE RESTORATION TO DISTURBED AREAS.                                                                         | SY   | 2294 |
| 6   | INSTALL 3.69 DEGREE BEND FITTING.                                                                                                        | EA   | 1    |
| 7   | INSTALL BLOW OFF ASSEMBLY PER DETAIL 9 ON SHEET 91. TANGENTIAL OUTLET FLANGE TO BE EXTENDED SO FLANGE IS OUTSIDE OF CONCRETE ENCASEMENT. | EA   | 1    |
| 8   | CONTRACTOR SHALL RESTORE WASH TO EXISTING CONDITIONS AND ELEVATIONS PER DETAIL 24 ON SHEET 95.                                           |      |      |
| 9   | INSTALL 4" PVC SCH 40 CONDUIT.                                                                                                           | LF   | 413  |
| 10  | INSTALL PULL BOX PER DETAIL 36 ON SHEET 98.                                                                                              | EA   | 1    |
| 11  | CONTRACTOR TO INSTALL NEW PAD MOUNTED CATHODIC PROTECTION PANEL #2.                                                                      | EA   | 1    |
| 12  | INSTALL ADDITIONAL SCOUR PROTECTION PER DETAIL 39 ON SHEET 99.                                                                           |      |      |



MATCH LINE - STA 448+50  
FOR CONTINUATION SEE SHEET 44

MATCH LINE - STA 124+50  
FOR CONTINUATION SEE SHEET 47

SEE SHEET 46 FOR PROFILE

| NO. | DESCRIPTION | REV BY | CHK BY | DATE |
|-----|-------------|--------|--------|------|
|     |             |        |        |      |
|     |             |        |        |      |
|     |             |        |        |      |
|     |             |        |        |      |
|     |             |        |        |      |
|     |             |        |        |      |
|     |             |        |        |      |
|     |             |        |        |      |
|     |             |        |        |      |
|     |             |        |        |      |



PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**WATER PLAN AND PROFILE**  
 CITY OF PHOENIX, ARIZONA  
 STREET TRANSPORTATION DEPARTMENT  
 SEGMENT 1 PIPELINE ALIGNMENT  
 24TH STREET WTP TO 32ND STREET  
 AND SHEA BOULEVARD  
 WS85500442

|             |             |             |           |               |           |
|-------------|-------------|-------------|-----------|---------------|-----------|
| DR: JEG     | DES: JRR    | CK: LAJ     | SHEET NO: | TOTAL SHEETS: | AS BUILT: |
| DATE: 06/30 | DATE: 06/30 | DATE: 06/30 | 45        | 345           |           |

SCALE: = HORIZ 1" = 20' VERT 1" = 4'

90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION TMSG1-C-SHT-004-068.DWG, 8/12/2019









SEGMENT 1 PIPELINE ALIGNMENT  
 PHOENIX STREET – MARICOPA CO.  
 24TH STREET WTP TO 32ND  
 STREET AND SHEA BOULEVARD



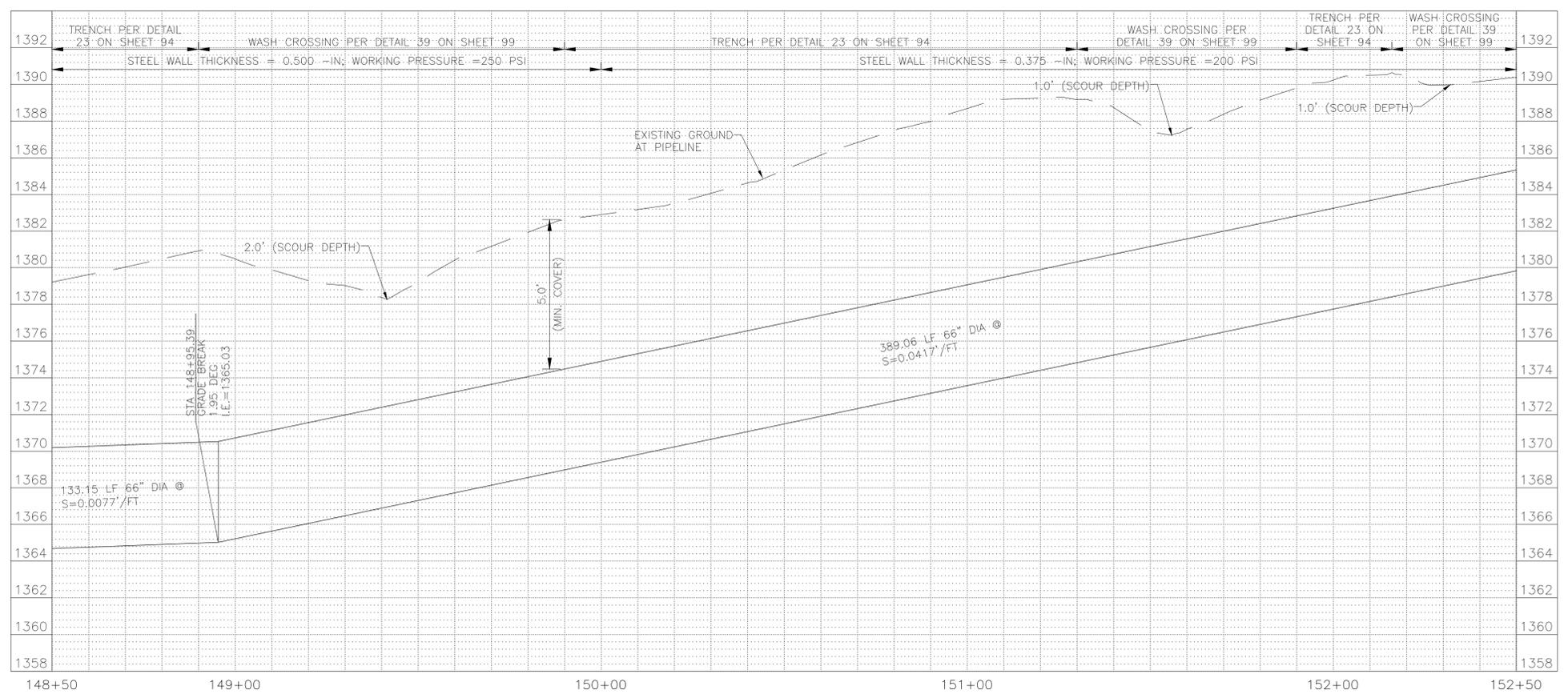
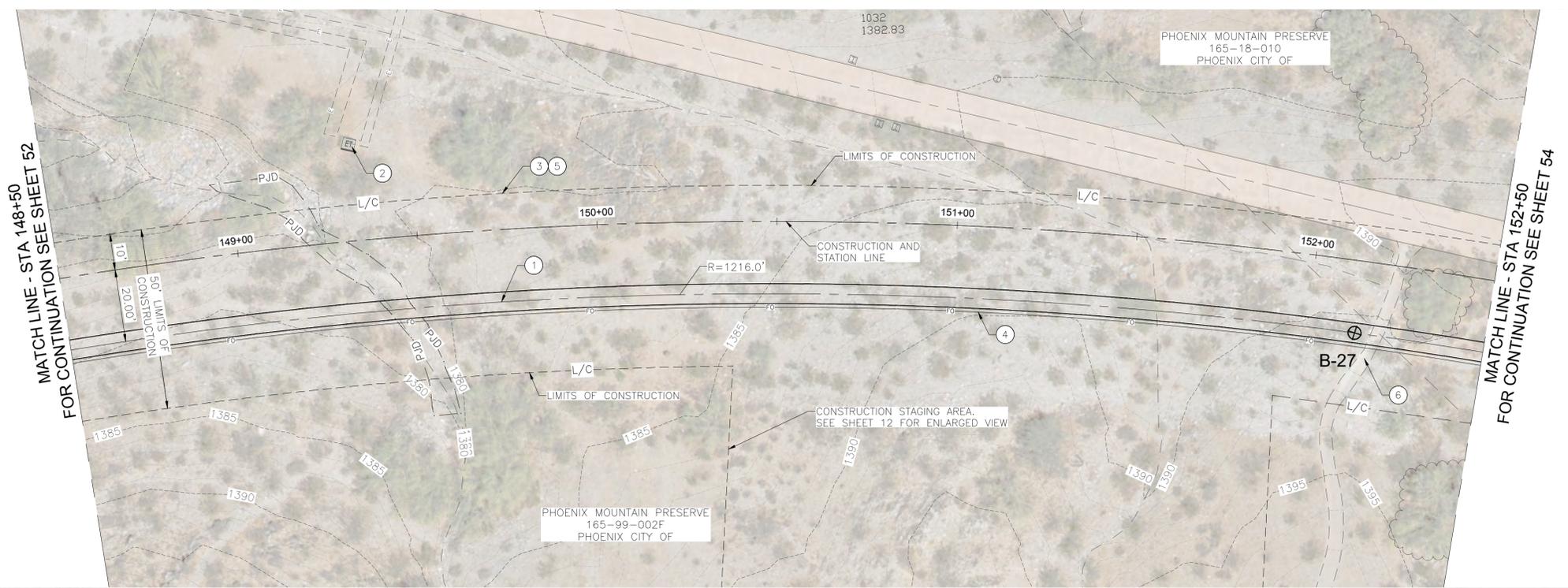
**PRELIMINARY  
 NOT FOR  
 CONSTRUCTION**

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 53  | 345   |          |



**CONSTRUCTION NOTES**

| NO. | DESCRIPTION                                                                                     | UNIT | QTY  |
|-----|-------------------------------------------------------------------------------------------------|------|------|
| 1   | CONSTRUCT 66-INCH ID MORTAR LINED AND POLYURETHANE COATED WELDED STEEL PIPE.                    | LF   | 394  |
| 2   | PROTECT IN PLACE EXISTING UTILITY EQUIPMENT.                                                    |      |      |
| 3   | CONTRACTOR SHALL PERFORM SURFACE RESTORATION TO DISTURBED AREAS.                                | SY   | 2195 |
| 4   | INSTALL 4" PVC SCH 40 CONDUIT.                                                                  | LF   | 392  |
| 5   | CONTRACTOR SHALL CAP AND ABANDON IN PLACE ALL IRRIGATION LINES ENCOUNTERED DURING CONSTRUCTION. |      |      |
| 6   | RESTORE EXISTING TRAILS IN KIND. CONTRACTOR TO MATCH EXISTING GRADE.                            |      |      |



| NO. | DESCRIPTION | REV BY | CHK BY | DATE |
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PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**WATER PLAN AND PROFILE**  
 CITY OF PHOENIX, ARIZONA  
 STREET TRANSPORTATION DEPARTMENT  
 SEGMENT 1 PIPELINE ALIGNMENT  
 24TH STREET WTP TO 32ND STREET  
 AND SHEA BOULEVARD  
 WS85500442

|             |             |             |                |               |           |
|-------------|-------------|-------------|----------------|---------------|-----------|
| DR: JEG     | DES: JRR    | CK: LAJ     | SHEET NO:      | TOTAL SHEETS: | AS BUILT: |
| DATE: 06/30 | DATE: 06/30 | DATE: 06/30 | 53             | 345           |           |
| SCALE: =    |             |             | HORIZ 1" = 20' | VERT 1" = 4'  |           |

90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION TMSG1-C-SHT-004-068.DWG. 8/12/2019

SEGMENT 1 PIPELINE ALIGNMENT  
 PHOENIX STREET – MARICOPA CO.  
 24TH STREET WTP TO 32ND  
 STREET AND SHEA BOULEVARD



**PRELIMINARY  
 NOT FOR  
 CONSTRUCTION**

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 55  | 345   |          |



| NO. | DESCRIPTION | REV BY | CHK BY | DATE |
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| NO. | DESCRIPTION | REV BY | CHK BY | DATE |
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| CONSTRUCTION NOTES |                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |      |  |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|--|
| NO.                | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                    | UNIT | QTY  |  |
| 1                  | CONSTRUCT 66-INCH ID MORTAR LINED AND POLYURETHANE COATED WELDED STEEL PIPE.                                                                                                                                                                                                                                                                                                                                                                   | LF   | 400  |  |
| 2                  | CONTRACTOR SHALL RECORD EXISTING CULVERT INVERTS AND SIZE. CONTRACTOR SHALL REMOVE THE EXISTING CULVERT AS NEEDED FOR THE INSTALLATION OF THE 66-INCH PIPE. CONTRACTOR SHALL REPLACE CULVERTS PER DETAIL 33 ON SHEET 97 WITH NEW TYPE 2 ALUMINIZED CORRUGATED STEEL PIPE PER THE CITY OF PHOENIX ADDENDUM TO MAG SECTIONS 621 AND 760. CONTRACTOR SHALL PLACE THE NEW CULVERT AT THE RECORDED INVERTS AND RETURN GRADE TO EXISTING CONDITIONS. | LF   | 116  |  |
| 3                  | CONTRACTOR SHALL PERFORM SURFACE RESTORATION TO DISTURBED AREAS.                                                                                                                                                                                                                                                                                                                                                                               | SY   | 2222 |  |
| 4                  | CONTRACTOR INSTALL SAFETY RAIL PER MAG DETAIL 145 TYPE 4 AND PER CITY OF PHOENIX DETAIL P1174.                                                                                                                                                                                                                                                                                                                                                 | LF   | 100  |  |
| 5                  | INSTALL COMBINATION AIR VALVE PER DETAIL 17 ON SHEET 93.                                                                                                                                                                                                                                                                                                                                                                                       | EA   | 1    |  |
| 6                  | INSTALL BLOW OFF ASSEMBLY PER DETAIL 9 ON SHEET 91.                                                                                                                                                                                                                                                                                                                                                                                            | EA   | 1    |  |
| 7                  | CONTRACTOR SHALL CAP AND ABANDON IN PLACE ALL IRRIGATION LINES ENCOUNTERED DURING CONSTRUCTION.                                                                                                                                                                                                                                                                                                                                                |      |      |  |
| 8                  | CONTRACTOR SHALL REMOVE AND REPLACE EXISTING BIKE PATH SIMILAR TO CITY OF PHOENIX DETAIL P1130. BIKE PATH SHALL MATCH EXISTING WIDTH AND MATERIAL. A.C. PAVEMENT OR CONCRETE THICKNESS TO MATCH EXISTING.                                                                                                                                                                                                                                      | LF   | 400  |  |
| 9                  | RESTORE EXISTING TRAILS IN KIND. CONTRACTOR TO MATCH EXISTING GRAD.                                                                                                                                                                                                                                                                                                                                                                            |      |      |  |
| 10                 | FOR WORK WITHIN FCDMC EASEMENT AND FEE LANDS, REFER TO TRENCH DETAIL 23 NOTE 6 ON SHEET 94.                                                                                                                                                                                                                                                                                                                                                    |      |      |  |
| 11                 | INSTALL 4" PVC SCH 40 CONDUIT.                                                                                                                                                                                                                                                                                                                                                                                                                 | LF   | 401  |  |
| 12                 | INSTALL PULL BOX PER DETAIL 36 ON SHEET 98.                                                                                                                                                                                                                                                                                                                                                                                                    | EA   | 1    |  |

SEE SHEET 102 FOR TABLE OF VALUES.



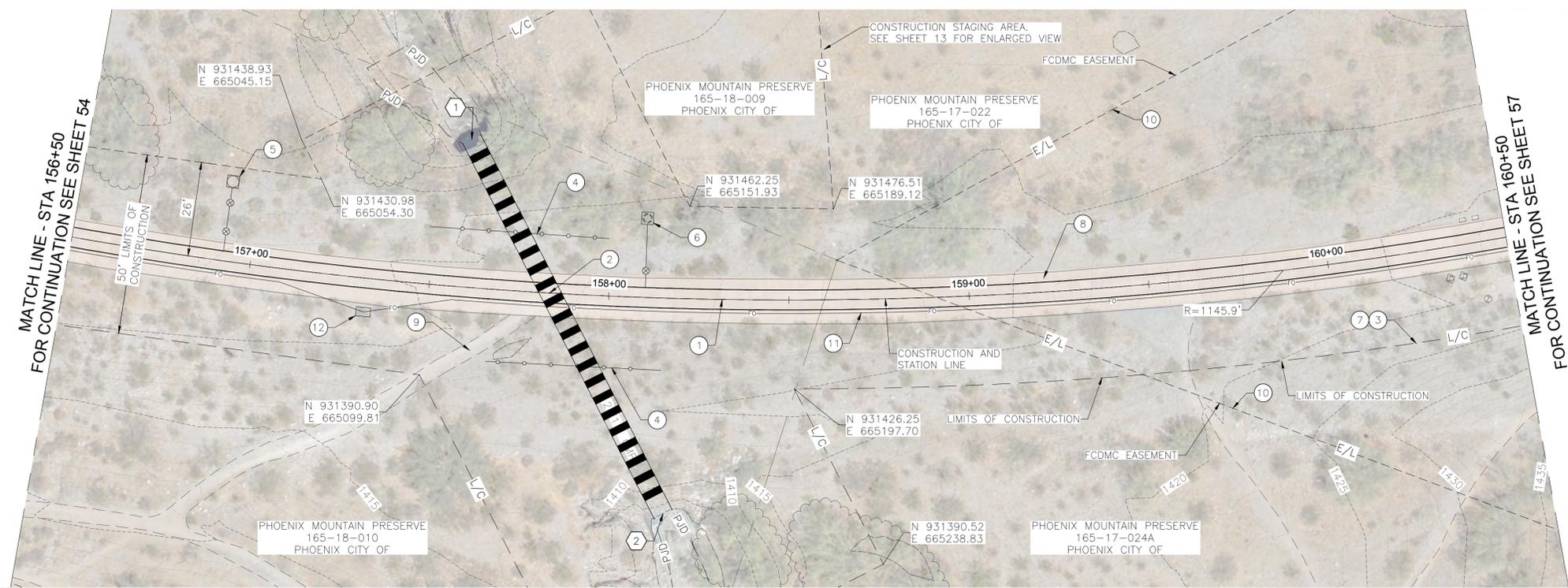
PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**WATER PLAN**

**CITY OF PHOENIX, ARIZONA**  
 STREET TRANSPORTATION DEPARTMENT  
 SEGMENT 1 PIPELINE ALIGNMENT  
 24TH STREET WTP TO 32ND STREET  
 AND SHEA BOULEVARD  
 WS85500442

|             |             |             |           |               |           |
|-------------|-------------|-------------|-----------|---------------|-----------|
| DR: JEG     | DES: JRR    | CK: LAJ     | SHEET NO: | TOTAL SHEETS: | AS BUILT: |
| DATE: 06/30 | DATE: 06/30 | DATE: 06/30 | 55        | 345           |           |

SCALE: = HORIZ 1" = 20' VERT 1" = 4'



SEE SHEET 56 FOR PROFILE

90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION

TMSG1-C-SHT-004-068.DWG, 8/12/2019





SEGMENT 1 PIPELINE ALIGNMENT  
PHOENIX STREET - MARICOPA CO.  
24TH STREET WTP TO 32ND  
STREET AND SHEA BOULEVARD



**PRELIMINARY  
NOT FOR  
CONSTRUCTION**

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 58  | 345   |          |



**CONSTRUCTION NOTES**

| NO. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                    | UNIT | QTY  |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|
| 1   | CONSTRUCT 66-INCH ID MORTAR LINED AND POLYURETHANE COATED WELDED STEEL PIPE.                                                                                                                                                                                                                                                                                                                                                                   | LF   | 400  |
| 2   | CONTRACTOR SHALL RECORD EXISTING CULVERT INVERTS AND SIZE. CONTRACTOR SHALL REMOVE THE EXISTING CULVERT AS NEEDED FOR THE INSTALLATION OF THE 66-INCH PIPE. CONTRACTOR SHALL REPLACE CULVERTS PER DETAIL 33 ON SHEET 97 WITH NEW TYPE 2 ALUMINIZED CORRUGATED STEEL PIPE PER THE CITY OF PHOENIX ADDENDUM TO MAG SECTIONS 621 AND 760. CONTRACTOR SHALL PLACE THE NEW CULVERT AT THE RECORDED INVERTS AND RETURN GRADE TO EXISTING CONDITIONS. | LF   | 62   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                | LF   | 64   |
| 3   | CONTRACTOR SHALL PERFORM SURFACE RESTORATION TO DISTURBED AREAS.                                                                                                                                                                                                                                                                                                                                                                               | SY   | 2222 |
| 4   | CONTRACTOR INSTALL SAFETY RAIL PER MAG DETAIL 145 TYPE 4 AND PER CITY OF PHOENIX DETAIL P1174.                                                                                                                                                                                                                                                                                                                                                 | LF   | 100  |
| 5   | INSTALL COMBINATION AIR VALVE PER DETAIL 17 ON SHEET 93.                                                                                                                                                                                                                                                                                                                                                                                       | EA   | 1    |
| 6   | INSTALL BLOW OFF ASSEMBLY PER DETAIL 8 ON SHEET 91.                                                                                                                                                                                                                                                                                                                                                                                            | EA   | 1    |
| 7   | CONTRACTOR SHALL CAP AND ABANDON IN PLACE ALL IRRIGATION LINES ENCOUNTERED DURING CONSTRUCTION.                                                                                                                                                                                                                                                                                                                                                |      |      |
| 8   | CONTRACTOR SHALL REMOVE AND REPLACE EXISTING BIKE PATH SIMILAR TO CITY OF PHOENIX DETAIL P1130. BIKE PATH SHALL MATCH EXISTING WIDTH AND MATERIAL. A.C. PAVEMENT OR CONCRETE THICKNESS TO MATCH EXISTING.                                                                                                                                                                                                                                      | LF   | 400  |
| 9   | RESTORE EXISTING TRAILS IN KIND. CONTRACTOR TO MATCH EXISTING GRADE.                                                                                                                                                                                                                                                                                                                                                                           |      |      |
| 10  | FOR WORK WITHIN FCDMC EASEMENT AND FEE LANDS, REFER TO TRENCH DETAIL 23 NOTE 6 ON SHEET 94.                                                                                                                                                                                                                                                                                                                                                    |      |      |
| 11  | CONTRACTOR SHALL REMOVE AND REPLACE EXISTING HEADWALL PER MAG DETAIL 501-5.                                                                                                                                                                                                                                                                                                                                                                    | EA   | 1    |
| 12  | INSTALL 4" PVC SCH 40 CONDUIT.                                                                                                                                                                                                                                                                                                                                                                                                                 | LF   | 402  |
| 13  | INSTALL PULL BOX PER DETAIL 36 ON SHEET 98.                                                                                                                                                                                                                                                                                                                                                                                                    | EA   | 1    |
| 14  | INSTALL COMBINATION AIR VALVE PER DETAIL 42 ON SHEET 100.                                                                                                                                                                                                                                                                                                                                                                                      | EA   | 1    |

SEE SHEET 102 FOR TABLE OF VALUES.



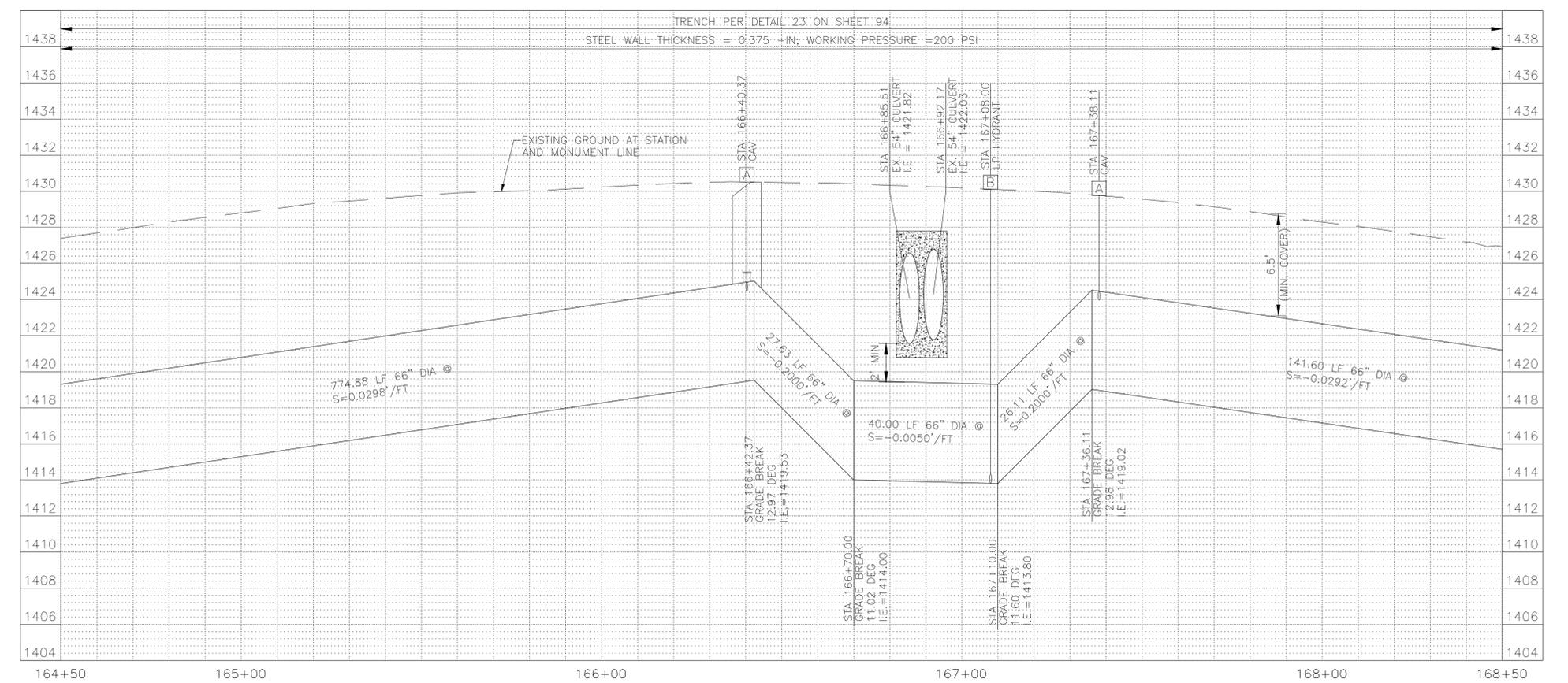
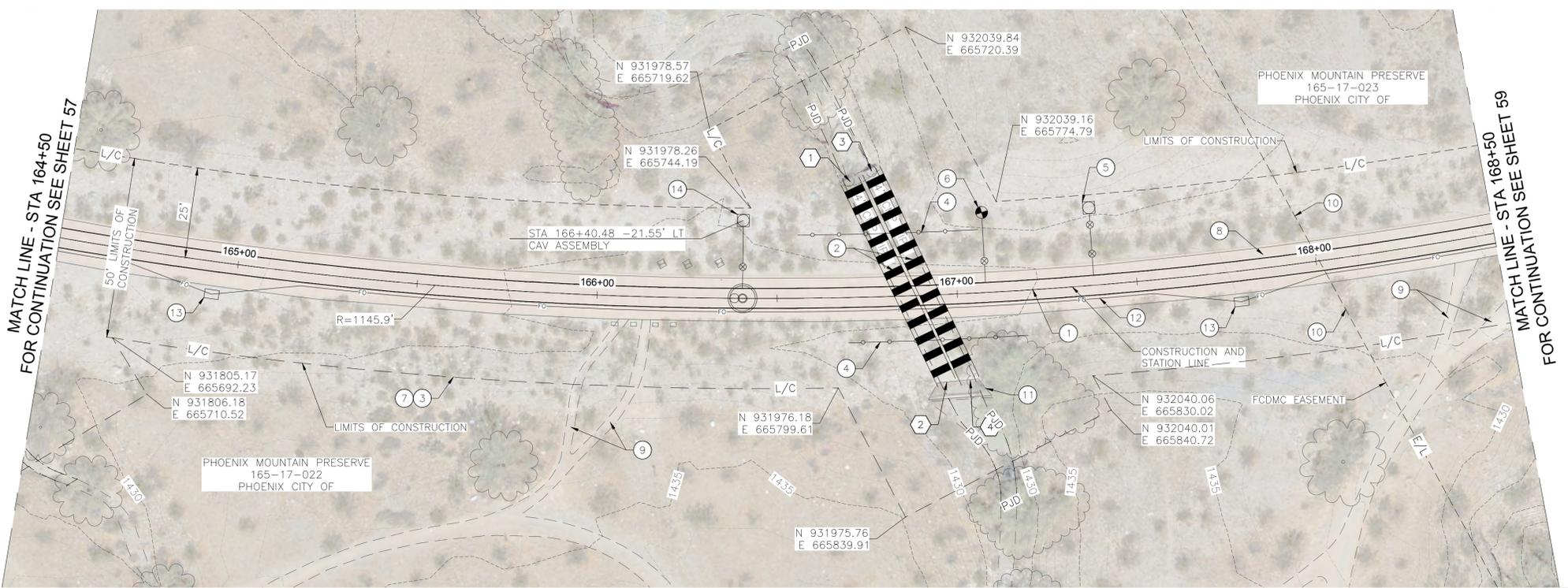
PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**WATER PLAN AND PROFILE**

**CITY OF PHOENIX, ARIZONA**  
STREET TRANSPORTATION DEPARTMENT  
SEGMENT 1 PIPELINE ALIGNMENT  
24TH STREET WTP TO 32ND STREET  
AND SHEA BOULEVARD  
WS85500442

| DR:              | DES:             | CK:              | SHEET | TOTAL  | AS    |
|------------------|------------------|------------------|-------|--------|-------|
| JEG              | JRR              | LAJ              | NO:   | SHEETS | BUILT |
| DATE: 06/30/2019 | DATE: 06/30/2019 | DATE: 06/30/2019 | NO:   | 58     | 345   |

SCALE: HORIZ 1" = 20'  
VERT 1" = 4'



| NO. | DESCRIPTION | REV BY | CHK BY | DATE |
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90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION





SEGMENT 1 PIPELINE ALIGNMENT  
PHOENIX STREET - MARICOPA CO.  
24TH STREET WTP TO 32ND  
STREET AND SHEA BOULEVARD



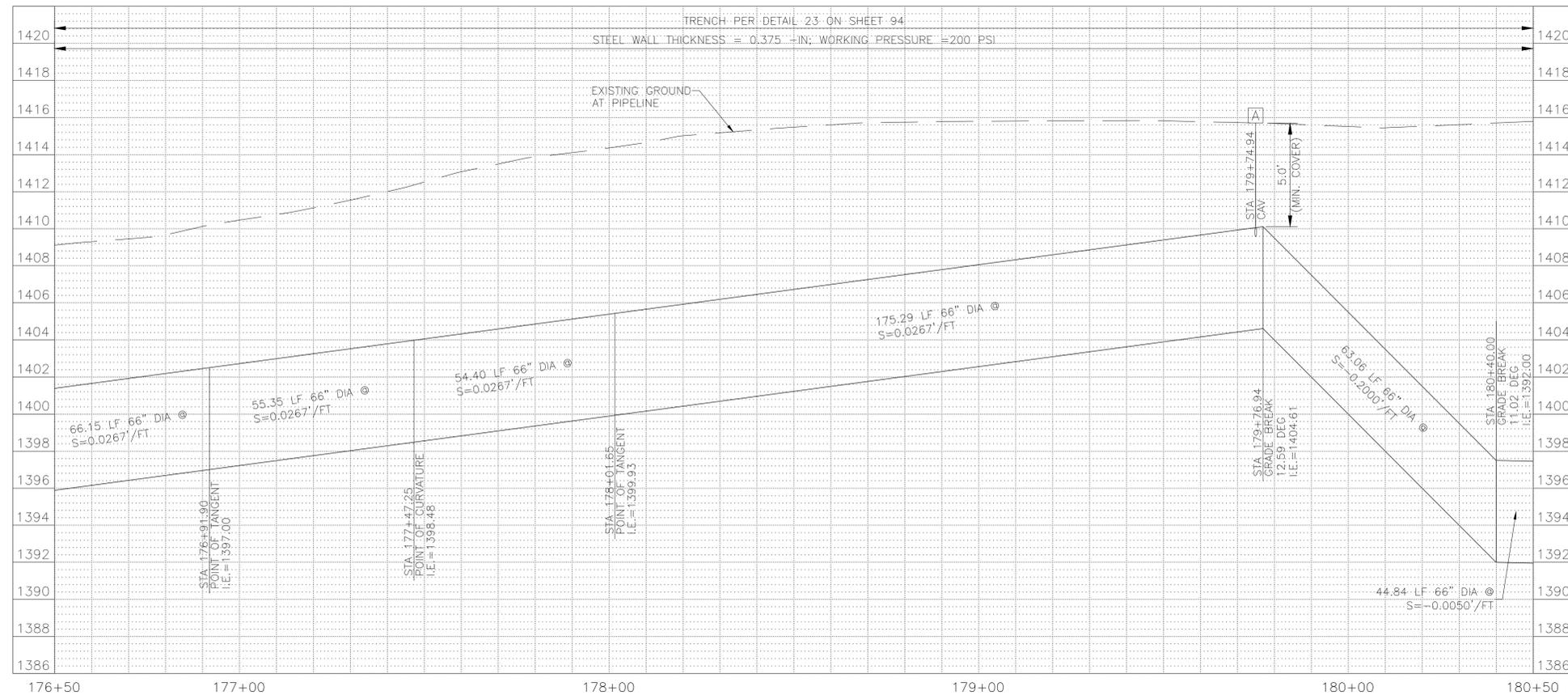
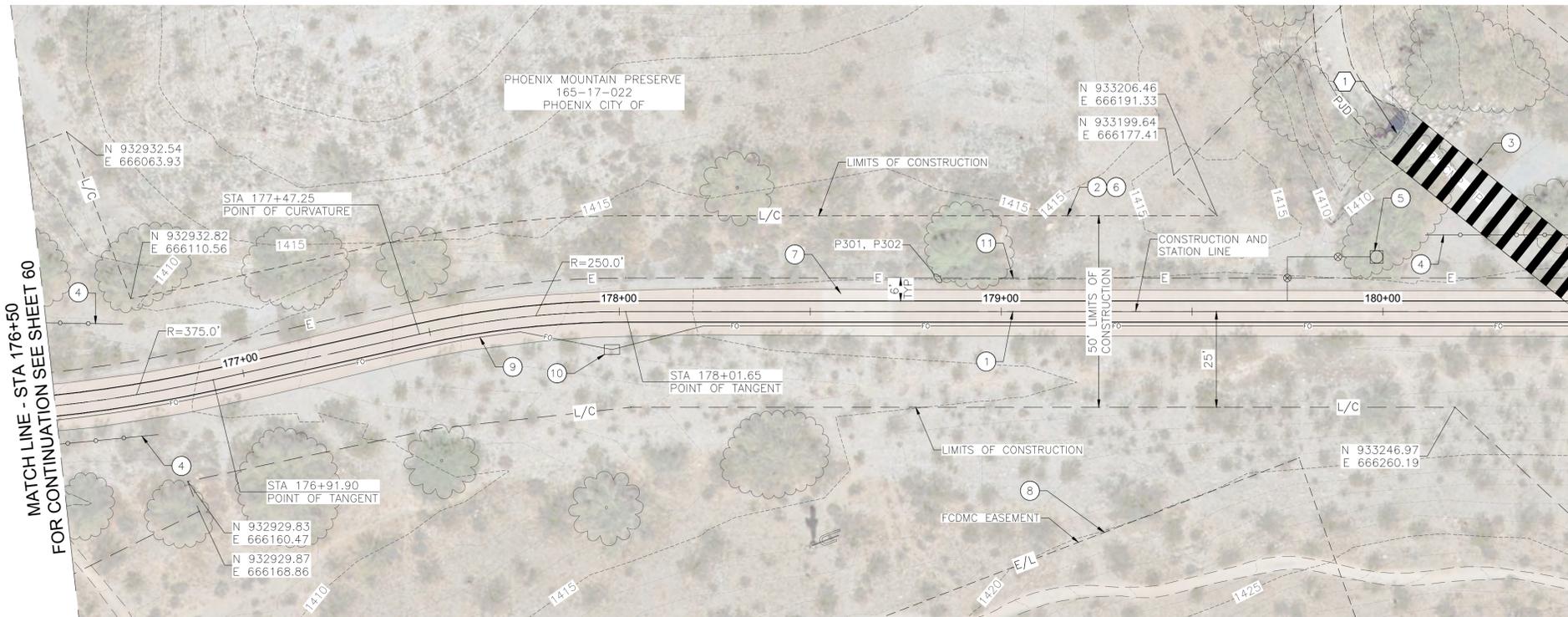
**PRELIMINARY  
NOT FOR  
CONSTRUCTION**

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 61  | 345   |          |



**CONSTRUCTION NOTES**

| NO. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                    | UNIT | QTY  |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|
| 1   | CONSTRUCT 66-INCH ID MORTAR LINED AND POLYURETHANE COATED WELDED STEEL PIPE.                                                                                                                                                                                                                                                                                                                                                                   | LF   | 400  |
| 2   | CONTRACTOR SHALL PERFORM SURFACE RESTORATION TO DISTURBED AREAS.                                                                                                                                                                                                                                                                                                                                                                               | SY   | 2222 |
| 3   | CONTRACTOR SHALL RECORD EXISTING CULVERT INVERTS AND SIZE. CONTRACTOR SHALL REMOVE THE EXISTING CULVERT AS NEEDED FOR THE INSTALLATION OF THE 66-INCH PIPE. CONTRACTOR SHALL REPLACE CULVERTS PER DETAIL 33 ON SHEET 97 WITH NEW TYPE 2 ALUMINIZED CORRUGATED STEEL PIPE PER THE CITY OF PHOENIX ADDENDUM TO MAG SECTIONS 621 AND 760. CONTRACTOR SHALL PLACE THE NEW CULVERT AT THE RECORDED INVERTS AND RETURN GRADE TO EXISTING CONDITIONS. | LF   | 60   |
| 4   | CONTRACTOR INSTALL SAFETY RAIL PER MAG DETAIL 145 TYPE 4 AND PER CITY OF PHOENIX DETAIL P1174.                                                                                                                                                                                                                                                                                                                                                 | LF   | 85   |
| 5   | INSTALL COMBINATION AIR VALVE PER DETAIL 17 ON SHEET 93.                                                                                                                                                                                                                                                                                                                                                                                       | EA   | 1    |
| 6   | CONTRACTOR SHALL CAP AND ABANDON IN PLACE ALL IRRIGATION LINES ENCOUNTERED DURING CONSTRUCTION.                                                                                                                                                                                                                                                                                                                                                |      |      |
| 7   | CONTRACTOR SHALL REMOVE AND REPLACE EXISTING BIKE PATH SIMILAR TO CITY OF PHOENIX DETAIL P1130. BIKE PATH SHALL MATCH EXISTING WIDTH AND MATERIAL, A.C. PAVEMENT OR CONCRETE THICKNESS TO MATCH EXISTING.                                                                                                                                                                                                                                      | LF   | 400  |
| 8   | FOR WORK WITHIN FCDMC EASEMENT AND FEE LANDS, REFER TO TRENCH DETAIL 23 NOTE 6 ON SHEET 94.                                                                                                                                                                                                                                                                                                                                                    |      |      |
| 9   | INSTALL 4" PVC SCH 40 CONDUIT.                                                                                                                                                                                                                                                                                                                                                                                                                 | LF   | 400  |
| 10  | INSTALL PULL BOX PER DETAIL 36 ON SHEET 98.                                                                                                                                                                                                                                                                                                                                                                                                    | EA   | 1    |
| 11  | CONDUIT ROUTING FROM NEW SERVICE ENTRANCE METER PEDESTAL (SES#3) INSTALLED NEAR DREAMY DRAW RECREATIONAL AREA RESTROOM TO THE RTU PANEL 3D-4A SHALL CONFORM TO MAXIMUM CONDUIT BENDS PER NEC. CONTRACTOR SHALL ADJUST THE HANDHOLE LOCATIONS TO ALLOW WORKABLE PULLING TENSION ON CABLES. CONTRACTOR SHALL INSTALL ADDITIONAL PULL BOXES OR HANDHOLES AS REQUIRED.                                                                             | LF   | 400  |



SEE SHEET 102 FOR TABLE OF VALUES.



PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**WATER PLAN AND PROFILE**  
**CITY OF PHOENIX, ARIZONA**  
**STREET TRANSPORTATION DEPARTMENT**  
**SEGMENT 1 PIPELINE ALIGNMENT**  
**24TH STREET WTP TO 32ND STREET**  
**AND SHEA BOULEVARD**  
**WS85500442**

|             |             |             |                |               |           |
|-------------|-------------|-------------|----------------|---------------|-----------|
| DR: JEG     | DES: JRR    | CK: LAJ     | SHEET NO:      | TOTAL SHEETS: | AS BUILT: |
| DATE: 06/30 | DATE: 06/30 | DATE: 06/30 | 61             | 345           |           |
| SCALE: =    |             |             | HORIZ 1" = 20' | VERT 1" = 4'  |           |

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90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION

TWSG1-C-SHT-004-068.DWG, 8/12/2019



SEGMENT 1 PIPELINE ALIGNMENT  
PHOENIX STREET - MARICOPA CO.  
24TH STREET WTP TO 32ND  
STREET AND SHEA BOULEVARD



**PRELIMINARY  
NOT FOR  
CONSTRUCTION**

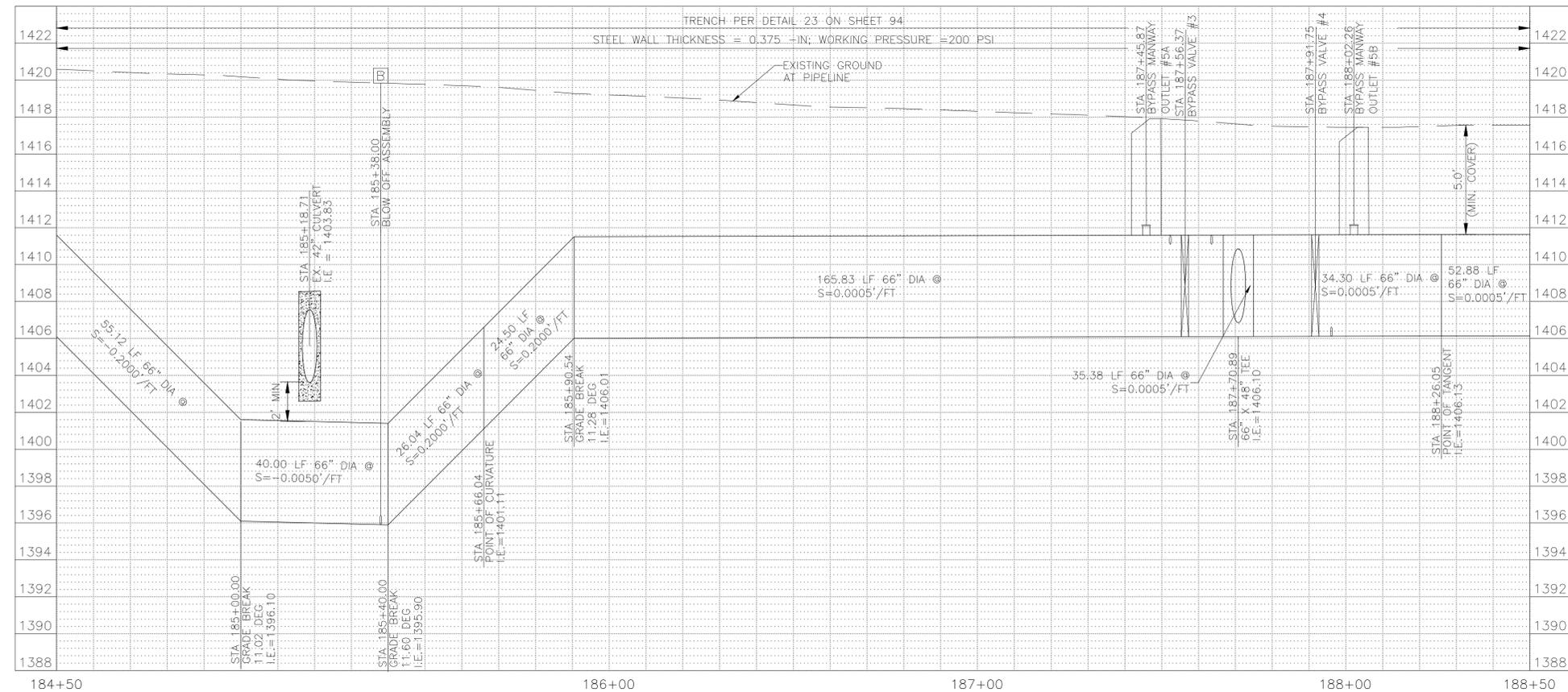
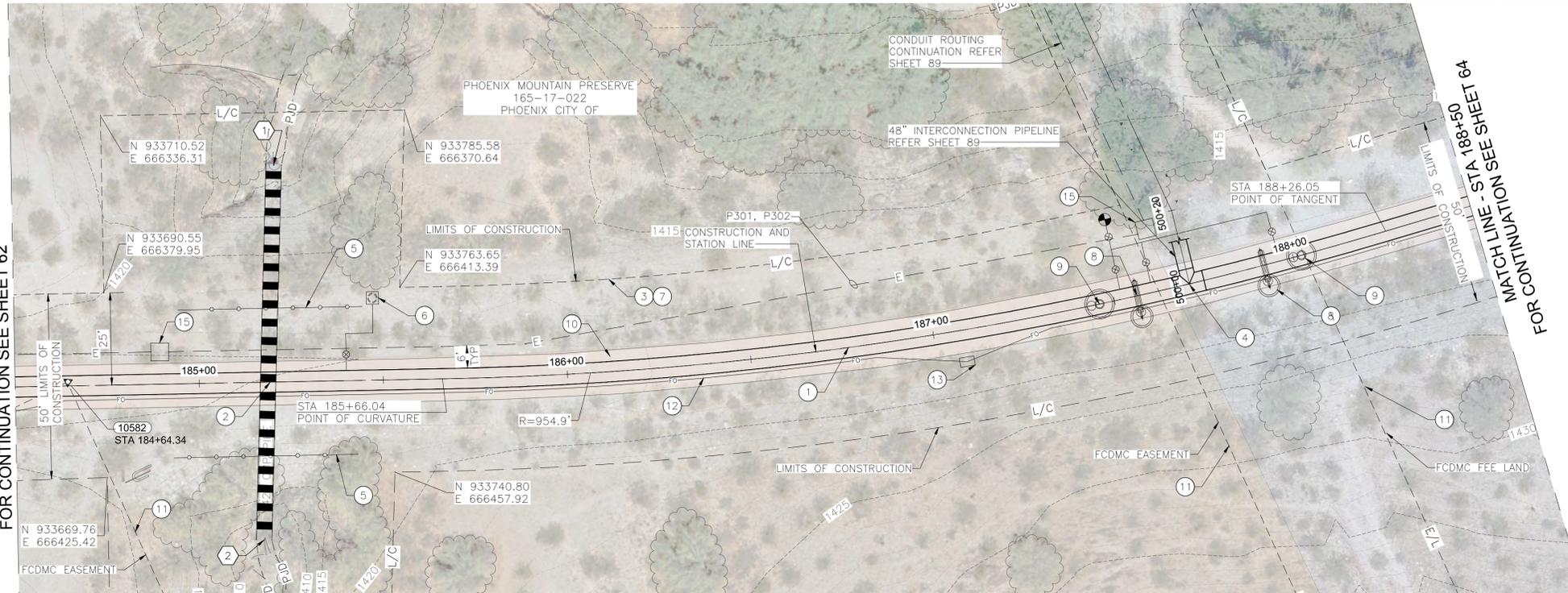
| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 63  | 345   |          |



**CONSTRUCTION NOTES**

| NO. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                       | UNIT | QTY  |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|
| 1   | CONSTRUCT 66-INCH ID MORTAR LINED AND POLYURETHANE COATED WELDED STEEL PIPE.                                                                                                                                                                                                                                                                                                                                                                      | LF   | 400  |
| 2   | CONTRACTOR SHALL RECORD EXISTING CULVERT INVERTS AND SIZE. CONTRACTOR SHALL REMOVE THE EXISTING CULVERT AS NECESSARY FOR THE INSTALLATION OF THE 66-INCH PIPE. CONTRACTOR SHALL REPLACE CULVERTS PER DETAIL 33 ON SHEET 97 WITH NEW TYPE 2 ALUMINIZED CORRUGATED STEEL PIPE PER THE CITY OF PHOENIX ADDENDUM TO MAG SECTIONS 621 AND 760. CONTRACTOR SHALL PLACE THE NEW CULVERT AT THE RECORDED INVERTS AND RETURN GRADE TO EXISTING CONDITIONS. | LF   | 102  |
| 3   | CONTRACTOR SHALL PERFORM SURFACE RESTORATION TO DISTURBED AREAS.                                                                                                                                                                                                                                                                                                                                                                                  | SY   | 2222 |
| 4   | INSTALL 66" X 48" TEE. SEE DETAIL 34 ON SHEET 97 FOR MINIMUM REINFORCEMENT DETAILS.                                                                                                                                                                                                                                                                                                                                                               | EA   | 1    |
| 5   | CONTRACTOR INSTALL SAFETY RAIL PER MAG DETAIL 145 TYPE 4 AND PER CITY OF PHOENIX DETAIL P1174.                                                                                                                                                                                                                                                                                                                                                    | LF   | 100  |
| 6   | INSTALL BLOW OFF ASSEMBLY PER DETAIL 9 ON SHEET 91.                                                                                                                                                                                                                                                                                                                                                                                               | EA   | 1    |
| 7   | CONTRACTOR SHALL CAP AND ABANDON IN PLACE ALL IRRIGATION LINES ENCOUNTERED DURING CONSTRUCTION.                                                                                                                                                                                                                                                                                                                                                   |      |      |
| 8   | INSTALL BYPASS ISOLATION VALVE PER DETAIL 16 ON SHEET 93.                                                                                                                                                                                                                                                                                                                                                                                         | EA   | 2    |
| 9   | INSTALL ACCESS MANWAYS WITH MANHOLE PER DETAIL 6 ON SHEET 90.                                                                                                                                                                                                                                                                                                                                                                                     | EA   | 2    |
| 10  | CONTRACTOR SHALL REMOVE AND REPLACE EXISTING BIKE PATH SIMILAR TO CITY OF PHOENIX DETAIL P1130. BIKE PATH SHALL MATCH EXISTING WIDTH AND MATERIAL. A.C. PAVEMENT OR CONCRETE THICKNESS TO MATCH EXISTING.                                                                                                                                                                                                                                         | LF   | 400  |
| 11  | FOR WORK WITHIN FCDMC EASEMENT AND FEE LANDS, REFER TO TRENCH DETAIL 23 NOTE 6 ON SHEET 94.                                                                                                                                                                                                                                                                                                                                                       |      |      |
| 12  | INSTALL 4" PVC SCH 40 CONDUIT.                                                                                                                                                                                                                                                                                                                                                                                                                    | LF   | 401  |
| 13  | INSTALL PULL BOX PER DETAIL 36 ON SHEET 98.                                                                                                                                                                                                                                                                                                                                                                                                       | EA   | 1    |
| 14  | INSTALL HANDHOLE PER DETAIL 35 ON SHEET 98.                                                                                                                                                                                                                                                                                                                                                                                                       | EA   | 2    |
| 15  | CONDUIT ROUTING FROM NEW SERVICE ENTRANCE METER PEDIESTAL (SES#3) INSTALLED NEAR DREAMY DRAW RECREATIONAL AREA RESTROOM TO THE RTU PANEL 3D-4A SHALL CONFORM TO MAXIMUM CONDUIT BENDS PER NEC. CONTRACTOR SHALL ADJUST THE HANDHOLE LOCATIONS TO ALLOW WORKABLE PULLING TENSION ON CABLES. CONTRACTOR SHALL INSTALL ADDITIONAL PULL BOXES OR HANDHOLES AS REQUIRED.                                                                               | LF   | 400  |

MATCH LINE - STA 184+50  
FOR CONTINUATION SEE SHEET 62



SEE SHEET 102 FOR TABLE OF VALUES.



PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**WATER PLAN AND PROFILE**  
**CITY OF PHOENIX, ARIZONA**  
**STREET TRANSPORTATION DEPARTMENT**  
**SEGMENT 1 PIPELINE ALIGNMENT**  
**24TH STREET WTP TO 32ND STREET**  
**AND SHEA BOULEVARD**  
**WS85500442**

| DR:   | JEG   | DES:  | JRR   | CK:   | LAJ   | SHEET NO: | TOTAL SHEETS: | AS BUILT: |
|-------|-------|-------|-------|-------|-------|-----------|---------------|-----------|
| DATE: | 06/30 | DATE: | 06/30 | DATE: | 06/30 | NO:       | 63            | 345       |

SCALE: HORIZ 1" = 20'  
VERT 1" = 4'

| NO. | DESCRIPTION | REV BY | CHK BY | DATE |
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90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION

SEGMENT 1 PIPELINE ALIGNMENT  
 PHOENIX STREET – MARICOPA CO.  
 24TH STREET WTP TO 32ND  
 STREET AND SHEA BOULEVARD



**PRELIMINARY  
 NOT FOR  
 CONSTRUCTION**

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 64  | 345   |          |



**CONSTRUCTION NOTES**

| NO. | DESCRIPTION                                                                                                                                                                                               | UNIT | QTY  |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|
| 1   | CONSTRUCT 66-INCH ID MORTAR LINED AND POLYURETHANE COATED WELDED STEEL PIPE.                                                                                                                              | LF   | 429  |
| 2   | PROTECT IN PLACE EXISTING HEADWALL.                                                                                                                                                                       |      |      |
| 3   | CONTRACTOR SHALL PERFORM SURFACE RESTORATION TO DISTURBED AREAS.                                                                                                                                          | SY   | 3840 |
| 4   | INSTALL 42.69 DEGREE BEND FITTING.                                                                                                                                                                        | EA   | 1    |
| 5   | INSTALL 59.42 DEGREE BEND FITTING.                                                                                                                                                                        | EA   | 1    |
| 6   | INSTALL 48.40 DEGREE BEND FITTING.                                                                                                                                                                        | EA   | 1    |
| 7   | INSTALL 19.02 DEGREE BEND FITTING.                                                                                                                                                                        | EA   | 1    |
| 8   | INSTALL BLOW OFF ASSEMBLY PER DETAIL 9 ON SHEET 91. INSTALL ISOLATION VALVE AS SHOWN AWAY FROM VERTICAL BANK EDGES.                                                                                       | EA   | 1    |
| 9   | INSTALL COMBINATION AIR VALVE PER DETAIL 17 ON SHEET 93.                                                                                                                                                  | EA   | 1    |
| 10  | EXISTING CITY OF PHOENIX IRRIGATION LINE. CONTRACTOR SHALL CAP AND ABANDON IN PLACE ALL IRRIGATION LINES ENCOUNTERED DURING CONSTRUCTION.                                                                 |      |      |
| 11  | CONTRACTOR SHALL RESTORE WASH TO EXISTING CONDITIONS AND ELEVATIONS PER DETAIL 24 ON SHEET 95.                                                                                                            |      |      |
| 12  | FOR WORK WITHIN FCDMC EASEMENT AND FEE LANDS, REFER TO TRENCH DETAIL 23 NOTE 4 ON SHEET 94.                                                                                                               |      |      |
| 13  | INSTALL PULL BOX PER DETAIL 36 ON SHEET 98.                                                                                                                                                               | EA   | 3    |
| 14  | INSTALL 4" PVC SCH 40 CONDUIT.                                                                                                                                                                            | LF   | 427  |
| 15  | CONTRACTOR SHALL REMOVE AND REPLACE EXISTING BIKE PATH SIMILAR TO CITY OF PHOENIX DETAIL P1130. BIKE PATH SHALL MATCH EXISTING WIDTH AND MATERIAL. A.C. PAVEMENT OR CONCRETE THICKNESS TO MATCH EXISTING. | LF   | 82   |

SEE SHEET 102 FOR TABLE OF VALUES.



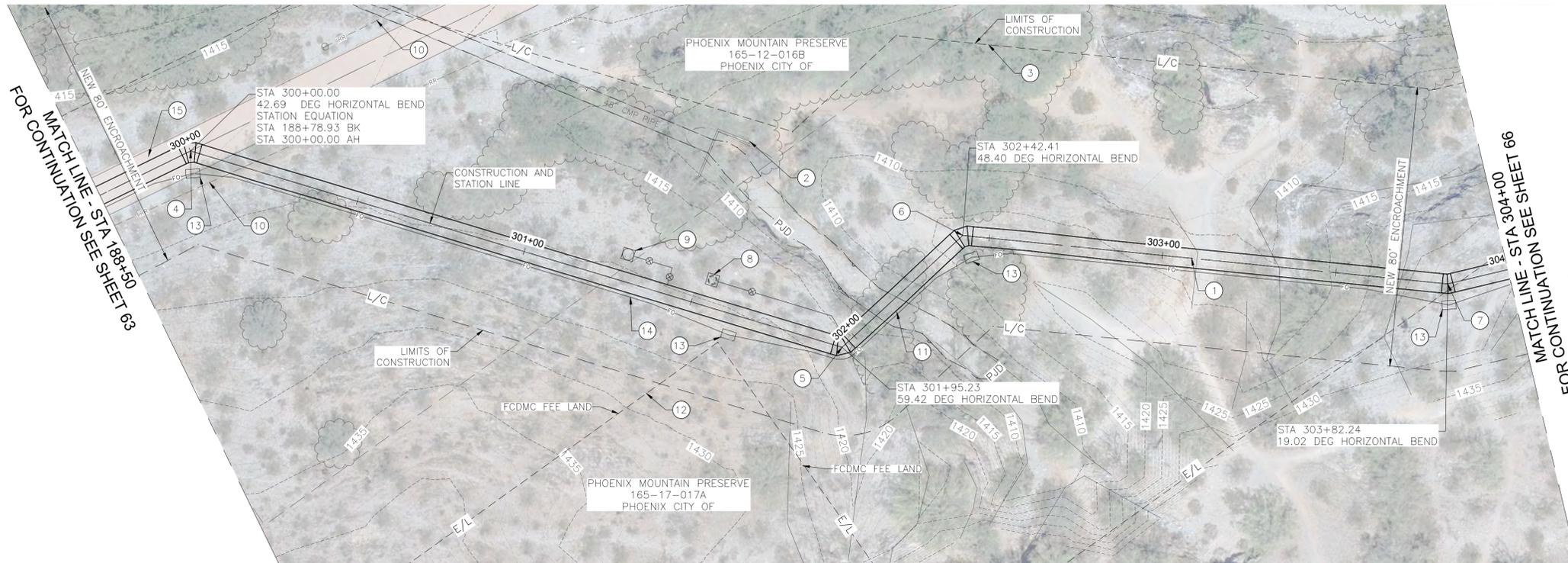
PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**WATER PLAN**

**CITY OF PHOENIX, ARIZONA**  
 STREET TRANSPORTATION DEPARTMENT  
 SEGMENT 1 PIPELINE ALIGNMENT  
 24TH STREET WTP TO 32ND STREET  
 AND SHEA BOULEVARD  
 WS85500442

| DR:              | DES:             | CK:              | SHEET | TOTAL  | AS    |
|------------------|------------------|------------------|-------|--------|-------|
| JEG              | JRR              | LAJ              | NO.   | SHEETS | BUILT |
| DATE: 06/30/2019 | DATE: 06/30/2019 | DATE: 06/30/2019 | 64    | 345    |       |

SCALE: HORIZ 1" = 20'  
 VERT 1" = 4'



MATCH LINE - STA 188+50  
 FOR CONTINUATION SEE SHEET 63

MATCH LINE - STA 304+00  
 FOR CONTINUATION SEE SHEET 66

SEE SHEET 065 FOR PROFILE

| NO. | DESCRIPTION | REV BY | CHK BY | DATE |
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90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION

TWSG1-C-SHT-004-068.DWG, 8/12/2019







SEGMENT 1 PIPELINE ALIGNMENT  
PHOENIX STREET – MARICOPA CO.  
24TH STREET WTP TO 32ND  
STREET AND SHEA BOULEVARD



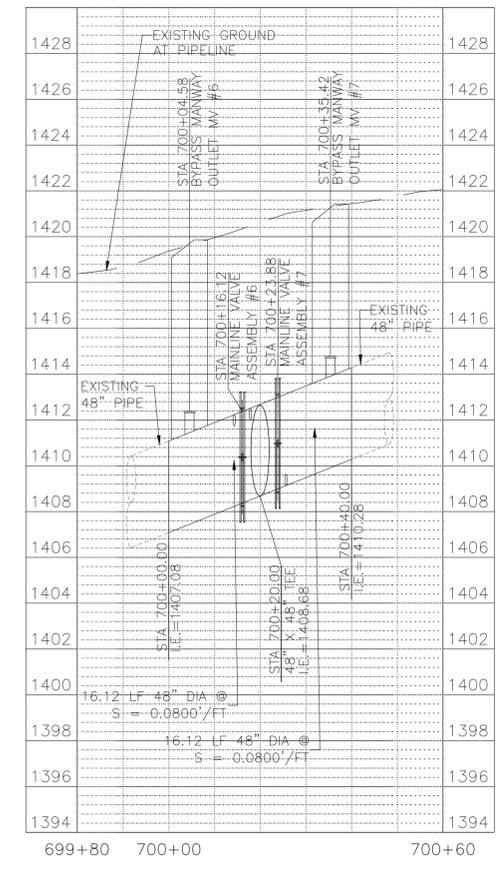
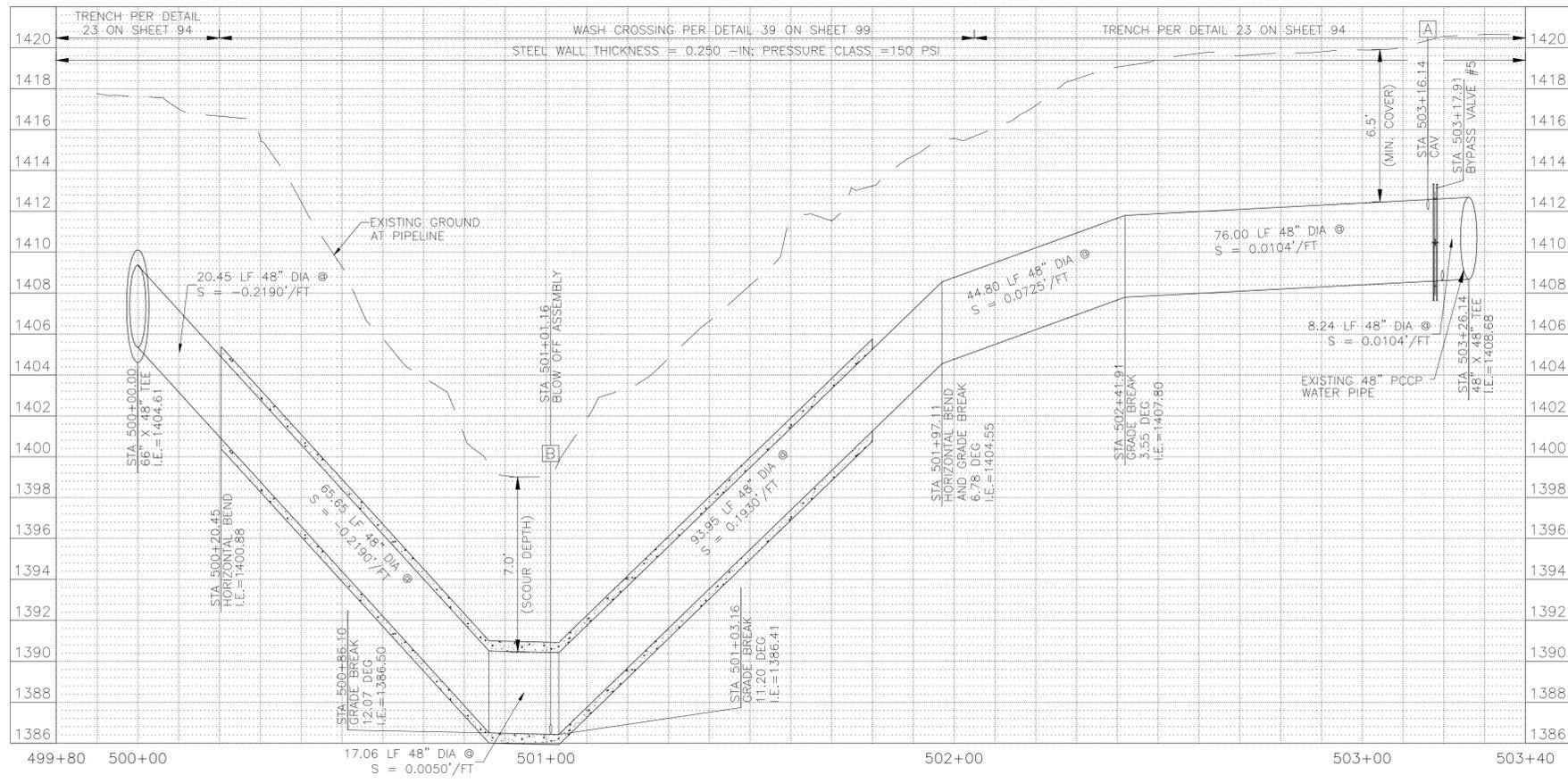
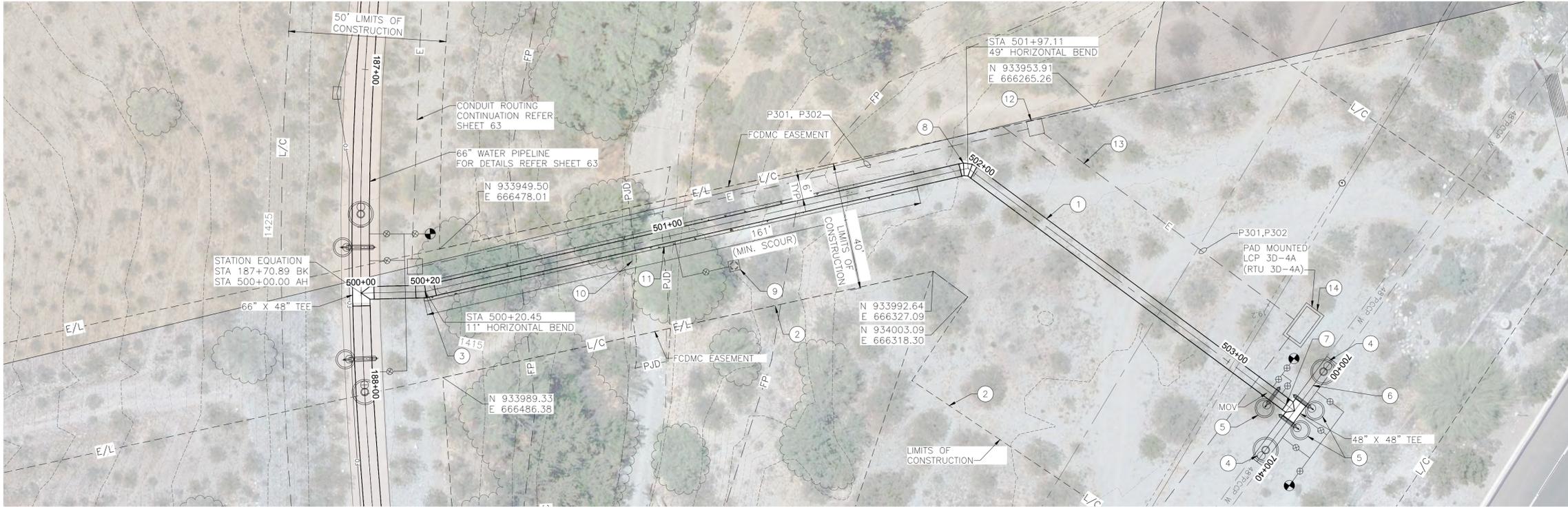
**PRELIMINARY  
NOT FOR  
CONSTRUCTION**

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 89  | 266   |          |



**CONSTRUCTION NOTES**

| NO. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                        | UNIT | QTY  |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|
| 1   | CONSTRUCT 48-INCH ID MORTAR LINED AND POLYURETHANE COATED WELDED STEEL PIPE.                                                                                                                                                                                                                                                                                       | LF   | 326  |
| 2   | CONTRACTOR SHALL PERFORM SURFACE RESTORATION TO DISTURBED AREAS.                                                                                                                                                                                                                                                                                                   | SY   | 1572 |
| 3   | INSTALL 11 DEGREE BEND FITTING.                                                                                                                                                                                                                                                                                                                                    | EA   | 1    |
| 4   | INSTALL ACCESS MANWAYS WITH MANHOLE PER DETAIL 4 ON SHEET 90.                                                                                                                                                                                                                                                                                                      | EA   | 1    |
| 5   | INSTALL 48 INCH BYPASS ISOLATION VALVES PER DETAIL 16 ON SHEET 93.                                                                                                                                                                                                                                                                                                 | EA   | 3    |
| 6   | CONTRACTOR SHALL IDENTIFY IN THE FIELD LOCATION OF PCCP PIPE JOINTS. CONTRACTOR SHALL REMOVE A SECTION OF PCCP PIPE AND INSTALL A SPOOL OF 48-INCH STEEL PIPE PER DETAIL 31 ON SHEET 97.                                                                                                                                                                           |      |      |
| 7   | INSTALL A 48 X 48 TEE. SEE DETAIL 14 ON SHEET 92 FOR MINIMUM OUTLET REINFORCEMENT.                                                                                                                                                                                                                                                                                 | EA   | 1    |
| 8   | INSTALL 49 DEGREE BEND FITTING.                                                                                                                                                                                                                                                                                                                                    | EA   | 1    |
| 9   | INSTALL BLOW OFF ASSEMBLY PER DETAIL 9 ON SHEET 91. TANGENTIAL OUTLET TO BE EXTENDED SO FIRST FLANGE IS OUTSIDE OF CONCRETE ENCASUREMENT.                                                                                                                                                                                                                          | EA   | 1    |
| 10  | CONTRACTOR SHALL RESTORE WASH TO EXISTING CONDITIONS AND ELEVATIONS PER DETAIL 24 ON SHEET 95.                                                                                                                                                                                                                                                                     |      |      |
| 11  | CONCRETE ENCASUREMENT OF 48" PIPELINE PER DETAIL 3 ON SHEET 107 FOR ADDITIONAL SCOUR PROTECTION.                                                                                                                                                                                                                                                                   | LF   | 85   |
| 12  | INSTALL HANDHOLE PER DETAIL 35 ON SHEET 98.                                                                                                                                                                                                                                                                                                                        | EA   | 1    |
| 13  | CONDUIT ROUTING FROM NEW SERVICE ENTRANCE METER PEDESTAL (SES#3) INSTALLED NEAR DREAMY DRAW RECREATIONAL AREA RESTROOM TO THE RTU PANEL 3D-4A SHALL CONFORM TO MAXIMUM CONDUIT BENDS PER NEC. CONTRACTOR SHALL ADJUST THE HANDHOLE LOCATIONS TO ALLOW WORKABLE PULLING TENSION ON CABLES. CONTRACTOR SHALL INSTALL ADDITIONAL PULL BOXES OR HANDHOLES AS REQUIRED. |      |      |
| 14  | CONTRACTOR TO INSTALL NEW PAD MOUNTED RTU 3D-4A PANEL. CONTRACTOR TO REFER SHEET 101 FOR CONDUIT ROUTING TO ANTENNA FROM LCP-3D-4A PANEL.                                                                                                                                                                                                                          | EA   | 1    |



| REVISION BY CITY OF PHOENIX | DESCRIPTION | NO. | REV BY | CHK BY | DATE |
|-----------------------------|-------------|-----|--------|--------|------|
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PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**BYPASS PIPING PMP**  
**CITY OF PHOENIX, ARIZONA**  
**STREET TRANSPORTATION DEPARTMENT**  
**SEGMENT 1 PIPELINE ALIGNMENT**  
**24TH STREET WTP TO 32ND STREET**  
**AND SHEA BOULEVARD**  
**WS85500442**

|         |          |         |           |               |           |
|---------|----------|---------|-----------|---------------|-----------|
| DR: JEG | DES: JRR | CK: LAJ | SHEET NO: | TOTAL SHEETS: | AS BUILT: |
| DATE:   | DATE:    | DATE:   | 89        | 337           |           |

SCALE: %U = 1"=4'  
              1"=20'

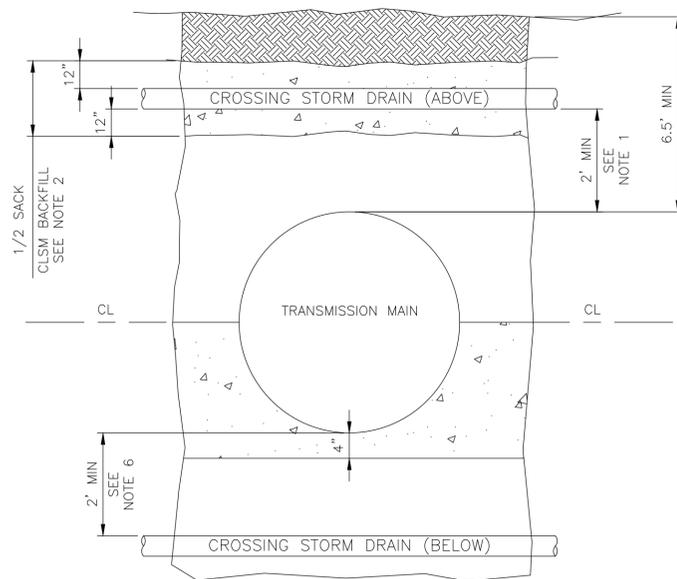
90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION

TMSG1-C-082.DWG, 6/19/2020

SEGMENT 1 PIPELINE ALIGNMENT  
PHOENIX STREET – MARICOPA CO.  
24TH STREET WTP TO 32ND  
STREET AND SHEA BOULEVARD

NOTES:

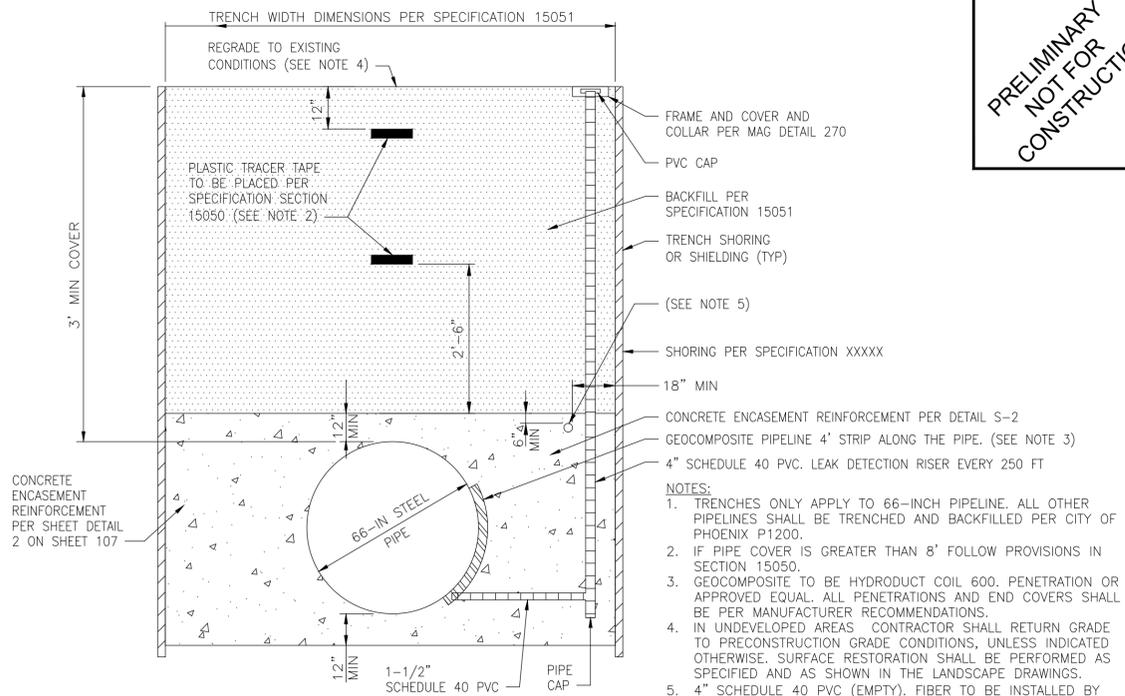
- 1' CLEARANCE ALLOWABLE IF STORM DRAIN IS SMALLER THAN 18" IN DIAMETER.
- 1/2 SACK CLSM MUST EXTEND A MINIMUM OF 1' AROUND STORM DRAIN. SEE NOTE 5.
- ALL TRANSMISSION MAIN JOINTS SHALL BE WELDED OR RESTRAINED 10 FEET EACH SIDE OF THE STORM DRAIN.
- BEDDING AND HAUNCHING MATERIAL SHALL BE PER 2019 MAG STANDARD SPECIFICATION SECTION 601.4, OR PROJECT SPECIFIC SPECIFICATIONS.
- ADDITIONAL DEPTH OF CLSM SHALL BE USED IN LOCATIONS WHERE BACKFILL MATERIAL BETWEEN THE TRANSMISSION MAIN CANNOT BE PROPERLY COMPACTED.
- ADD 1/2 SACK CLSM AS DETAILED FOR A LENGTH OF 10' WITHIN EXCAVATION TRENCH.



TRANSMISSION MAIN/STORM  
DRAIN CROSSING

DETAIL No. 19

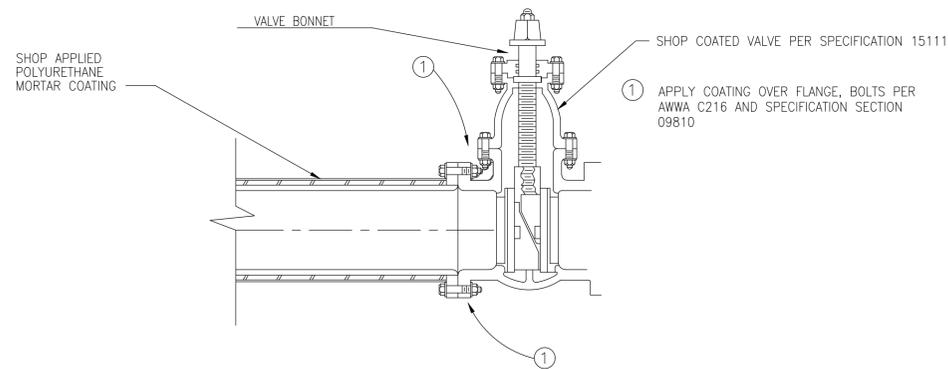
NO SCALE



DETAIL No. 22

TRENCH DETAIL "TYPE A"

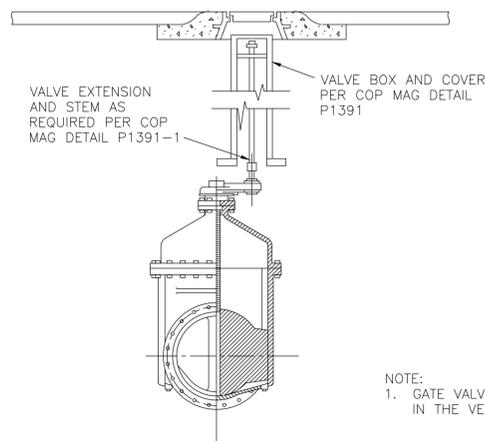
NO SCALE



DETAIL No. 20

COATING AT VALVE CONNECTIONS

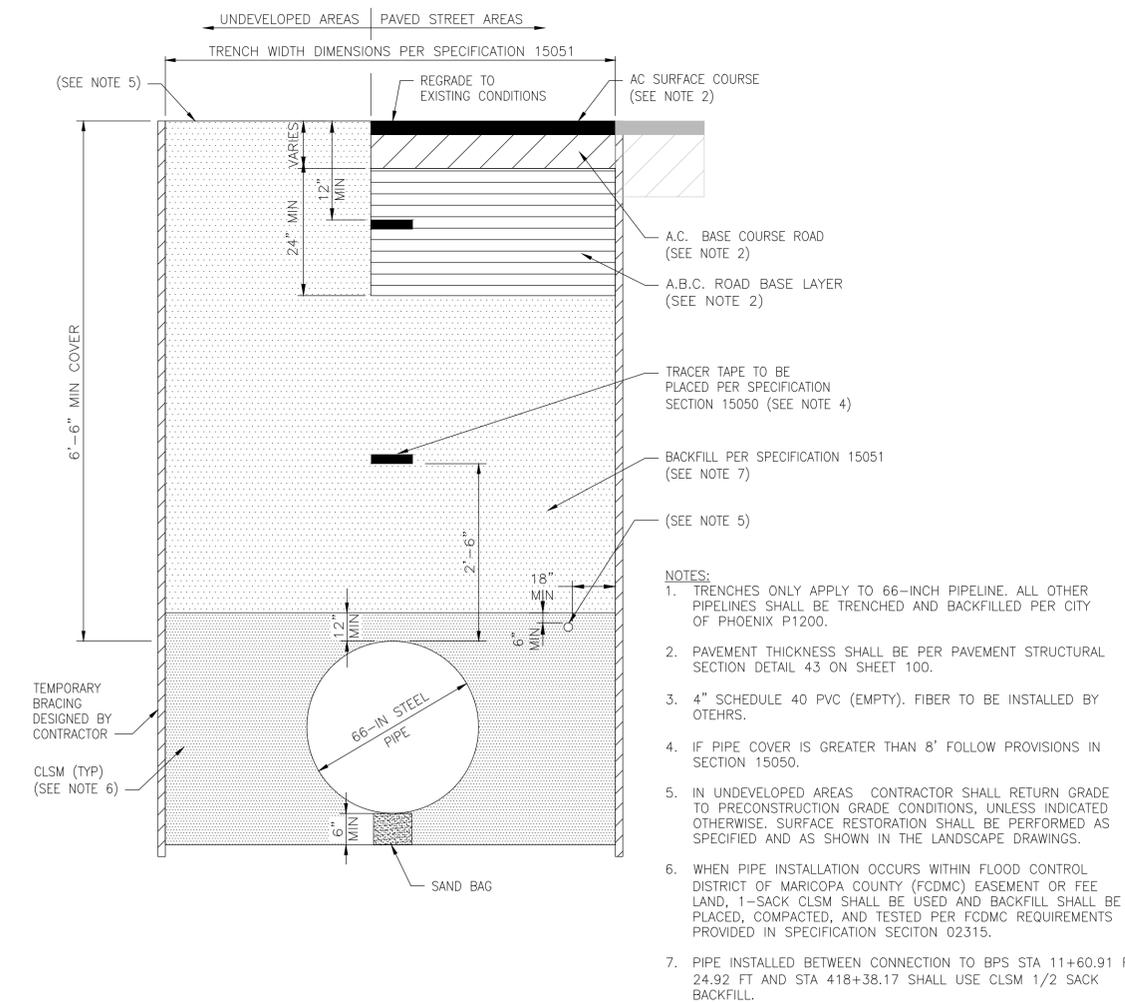
NO SCALE



GATE VALVES  
36" AND SMALLER  
ALL PIPE MATERIALS

DETAIL No. 21

NO SCALE



DETAIL No. 23

TRENCH DETAIL "TYPE B"

NO SCALE

PRELIMINARY  
NOT FOR  
CONSTRUCTION

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 94  | 345   |          |



| REVISION BY | DESCRIPTION | REV BY | CHK BY | DATE |
|-------------|-------------|--------|--------|------|
| NO.         |             |        |        |      |

| REVISION BY | DESCRIPTION | REV BY | CHK BY | DATE |
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| NO.         |             |        |        |      |

| REVISION BY | DESCRIPTION | REV BY | CHK BY | DATE |
|-------------|-------------|--------|--------|------|
| NO.         |             |        |        |      |



PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

CIVIL DETAILS V

CITY OF PHOENIX, ARIZONA  
STREET TRANSPORTATION DEPARTMENT

SEGMENT 1 PIPELINE ALIGNMENT  
24TH STREET WTP TO 32ND STREET  
AND SHEA BOULEVARD  
WS85500442

| DR:   | DES:  | CK:   | SHEET | TOTAL  | AS    |
|-------|-------|-------|-------|--------|-------|
| JEG   | JRR   | LAJ   | NO.   | SHEETS | BUILT |
| DATE: | DATE: | DATE: | 94    | 345    |       |

SCALE: NTS

90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION

TMSG1-CD-005.DWG, 3/18/2020

SEGMENT 1 PIPELINE ALIGNMENT  
PHOENIX STREET - MARICOPA CO.  
24TH STREET WTP TO 32ND  
STREET AND SHEA BOULEVARD

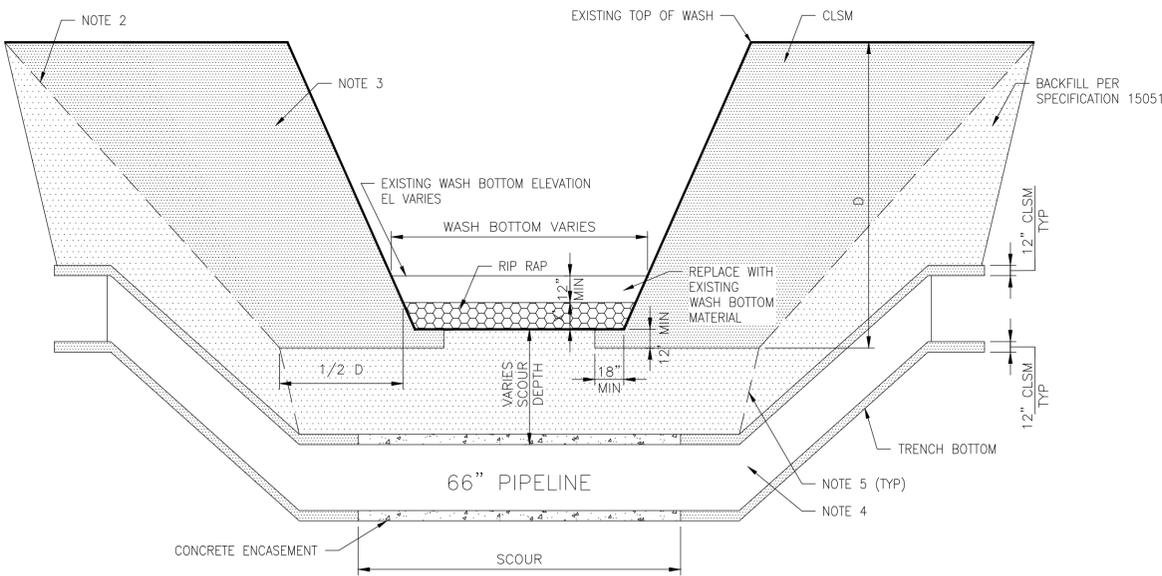
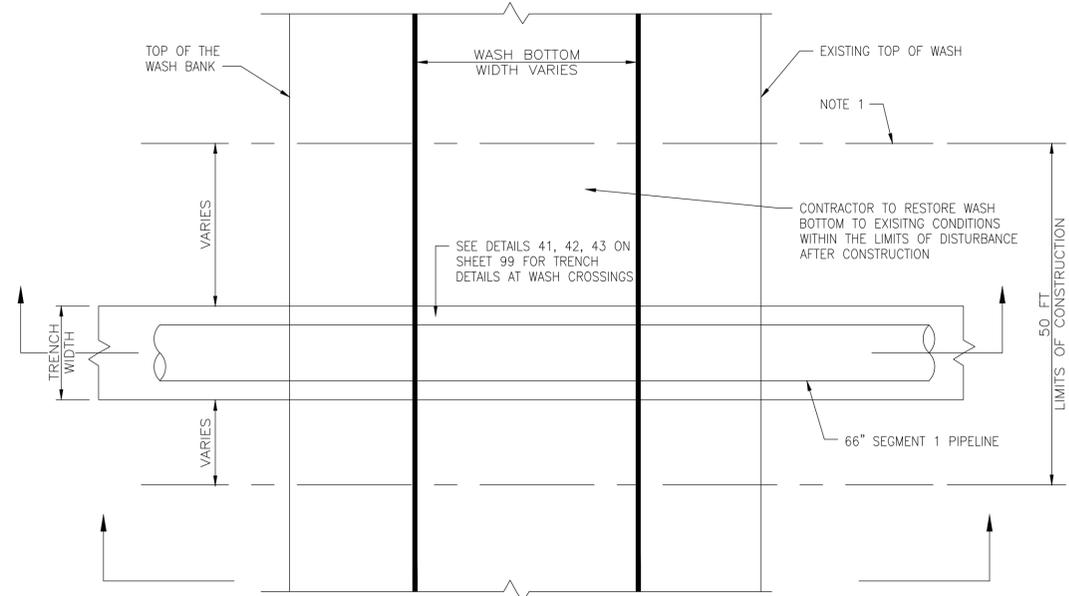
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PRELIMINARY  
NOT FOR  
CONSTRUCTION

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 95  | 345   |          |

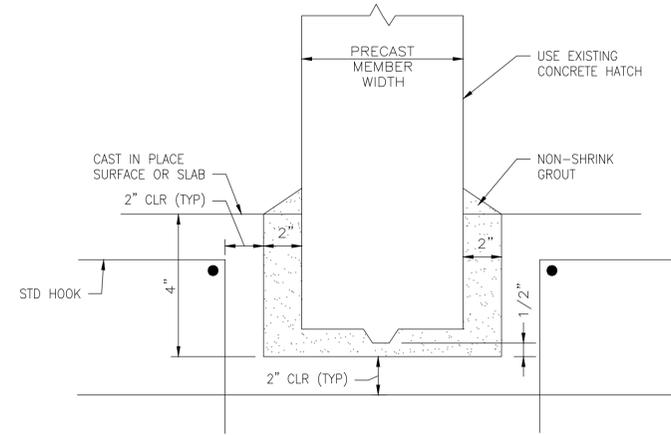


- NOTES:
- CONTRACTOR SHALL LIMIT IMPACTS OF CONSTRUCTION ACTIVITIES TO THE SET LIMITS OF DISTURBANCE SHOWN.
  - CONTRACTOR SHALL REMOVE MATERIAL AS NECESSARY TO CREATE A DRIVABLE SURFACE TO ALLOW INSTALLATION OF PIPELINE
  - AFTER COMPLETION OF CONSTRUCTION CONTRACTOR SHALL RESTORE BANKS OF THE WASHES TO EXISTING CONDITIONS AS SHOWN USING CLSM AND PER SPECIFICATION SECTION 02907. FORMS SHALL BE USED TO MIMIC THE EXISTING CONDITIONS OF THE WASH WALLS. WASH WALLS SHALL BE STAINED TO MATCH NATURAL WASH CONDITIONS
  - FOR DIMENSIONS AND SLOPES OF PIPELINES SEE INDIVIDUAL C SHEETS AT WASH CROSSINGS.
  - CONTRACTOR TO EXTEND CLSM FOR WASH CROSSING AT STATION 500+95.

DETAIL No. 24

TYPICAL WASH CROSSING DETAIL

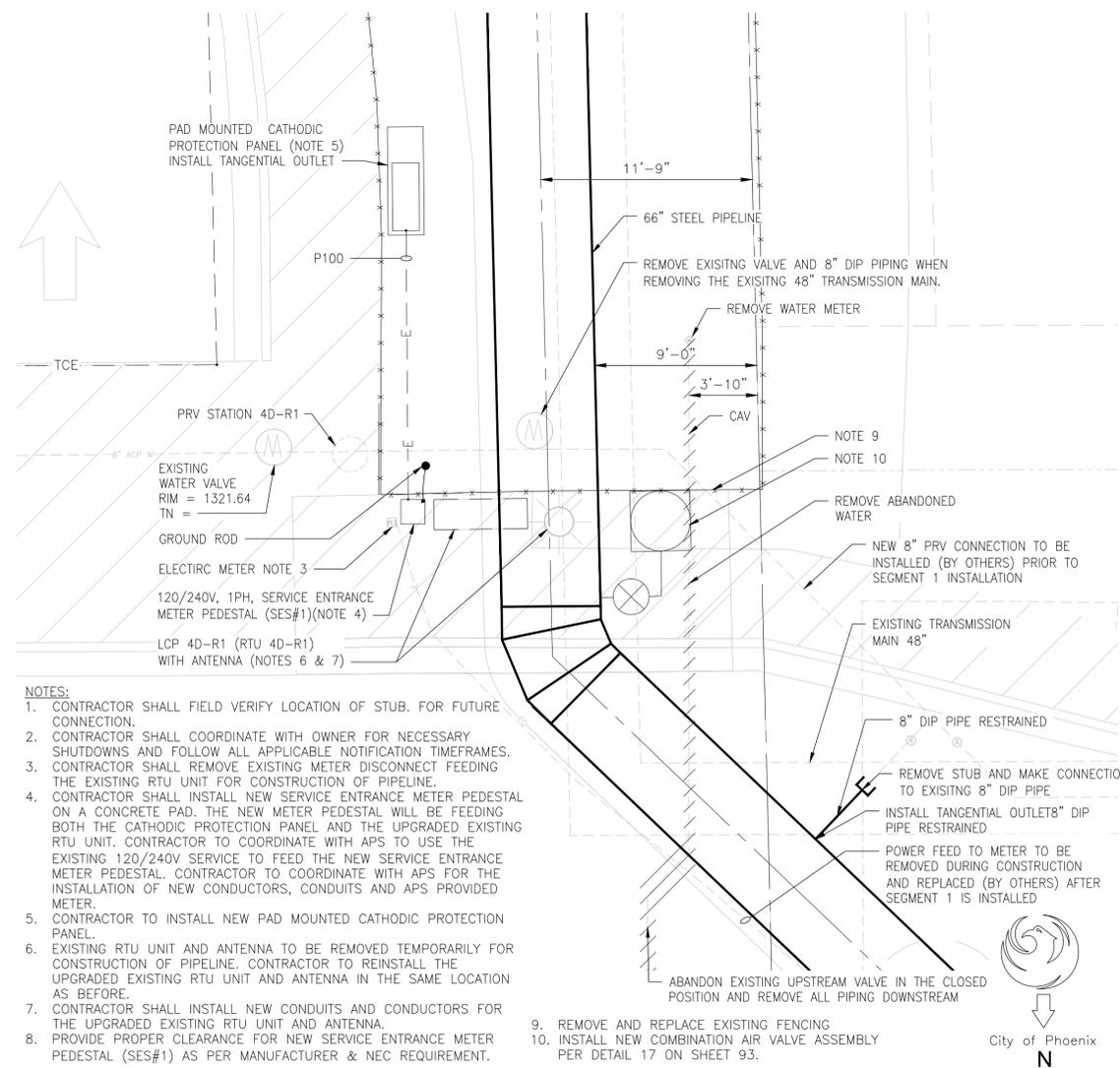
NO SCALE



DETAIL No. 25

CAST IN PLACE AND PRECAST INTERFACE

NO SCALE



- NOTES:
- CONTRACTOR SHALL FIELD VERIFY LOCATION OF STUB. FOR FUTURE CONNECTION.
  - CONTRACTOR SHALL COORDINATE WITH OWNER FOR NECESSARY SHUTDOWNS AND FOLLOW ALL APPLICABLE NOTIFICATION TIMEFRAMES.
  - CONTRACTOR SHALL REMOVE EXISTING METER DISCONNECT FEEDING THE EXISTING RTU UNIT FOR CONSTRUCTION OF PIPELINE.
  - CONTRACTOR SHALL INSTALL NEW SERVICE ENTRANCE METER PEDESTAL ON A CONCRETE PAD. THE NEW METER PEDESTAL WILL BE FEEDING BOTH THE CATHODIC PROTECTION PANEL AND THE UPGRADED EXISTING RTU UNIT. CONTRACTOR TO COORDINATE WITH APS TO USE THE EXISTING 120/240V SERVICE TO FEED THE NEW SERVICE ENTRANCE METER PEDESTAL. CONTRACTOR TO COORDINATE WITH APS FOR THE INSTALLATION OF NEW CONDUCTORS, CONDUITS AND APS PROVIDED METER.
  - CONTRACTOR TO INSTALL NEW PAD MOUNTED CATHODIC PROTECTION PANEL.
  - EXISTING RTU UNIT AND ANTENNA TO BE REMOVED TEMPORARILY FOR CONSTRUCTION OF PIPELINE. CONTRACTOR TO REINSTALL THE UPGRADED EXISTING RTU UNIT AND ANTENNA IN THE SAME LOCATION AS BEFORE.
  - CONTRACTOR SHALL INSTALL NEW CONDUITS AND CONDUCTORS FOR THE UPGRADED EXISTING RTU UNIT AND ANTENNA.
  - PROVIDE PROPER CLEARANCE FOR NEW SERVICE ENTRANCE METER PEDESTAL (SES#1) AS PER MANUFACTURER & NEC REQUIREMENT.
  - REMOVE AND REPLACE EXISTING FENCING
  - INSTALL NEW COMBINATION AIR VALVE ASSEMBLY PER DETAIL 17 ON SHEET 93.

DETAIL No. 26

CONNECTION TO PRV STATION 4D-R1

1" = 5'-0"



PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**CIVIL DETAILS VI**  
**CITY OF PHOENIX, ARIZONA**  
**STREET TRANSPORTATION DEPARTMENT**  
**SEGMENT 1 PIPELINE ALIGNMENT**  
**24TH STREET WTP TO 32ND STREET**  
**AND SHEA BOULEVARD**  
**WS85500442**

| DR: JEG | DES: JRR | CK: LAJ | SHEET NO. | TOTAL SHEETS | AS BUILT |
|---------|----------|---------|-----------|--------------|----------|
|         |          |         | 95        | 345          |          |

SCALE: AS SHOWN

90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION TMSG1-CD-006.DWG, 3/18/2020

SEGMENT 1 PIPELINE ALIGNMENT  
PHOENIX STREET - MARICOPA CO.  
24TH STREET WTP TO 32ND STREET AND SHEA BOULEVARD

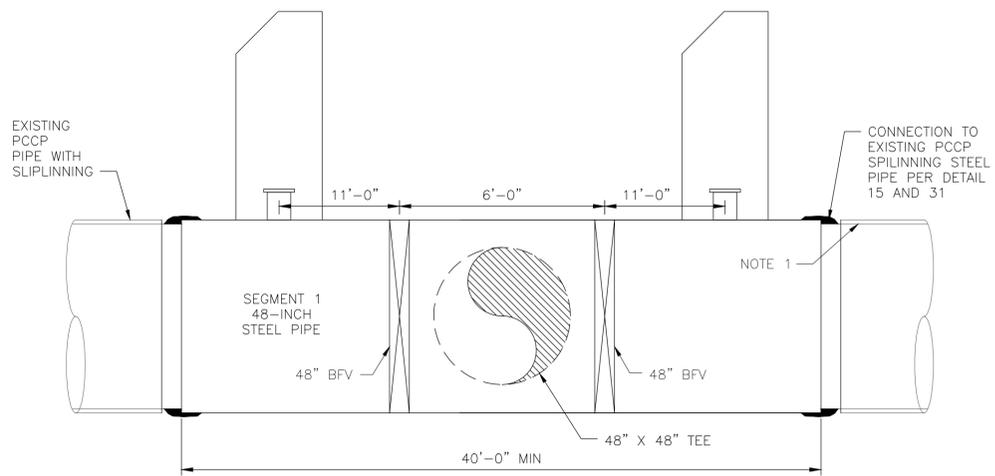
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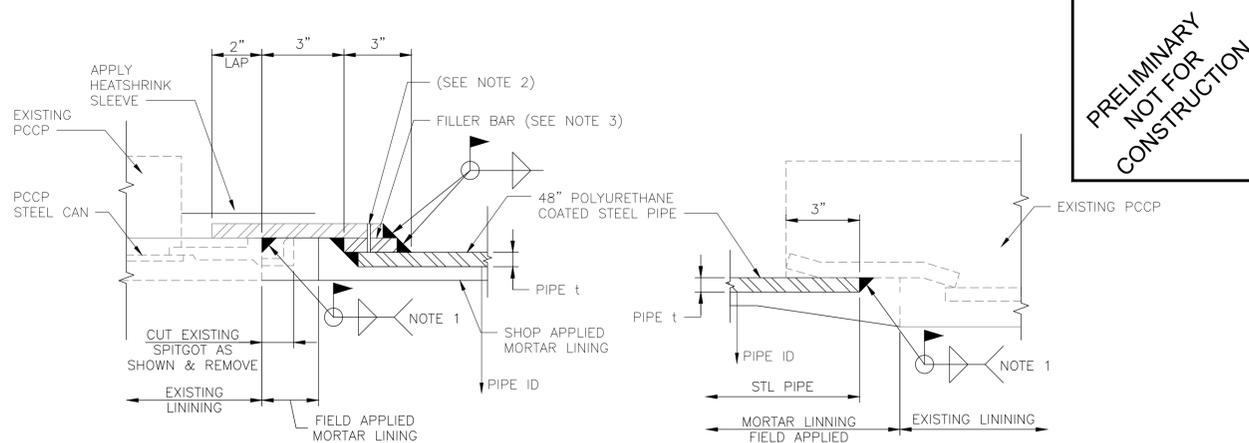
**PRELIMINARY  
NOT FOR  
CONSTRUCTION**

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
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| 9               | ARIZ. | WS85500442 | 97  | 345   |          |

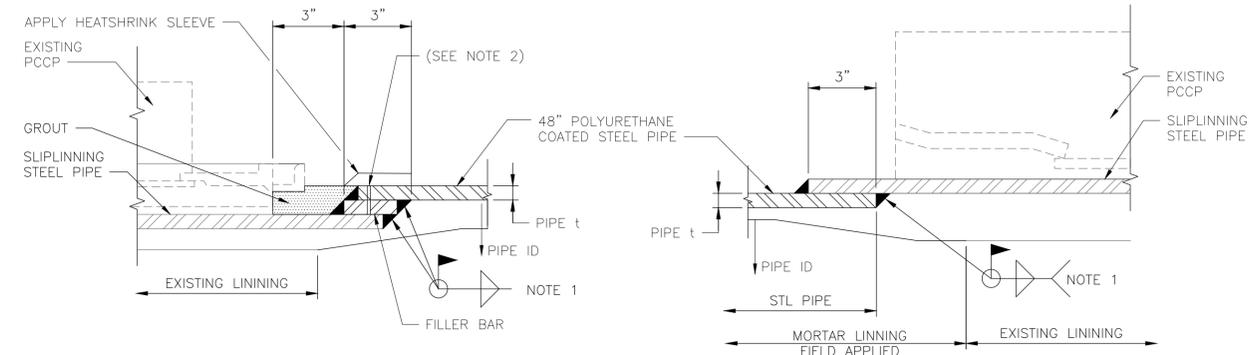


- NOTES:**
- COORDINATE WITH PCCP SLIPLINING CONTRACTOR TO INSTALL SLIPLINING WITH MIN 6" STEEL EXPOSED FOR BUTT WELD CONNECTION. HEATSHRINK SLEEVE TO BE APPLIED TO EXPOSED STEEL AREA AT CONNECTION.
  - INSTALL VALVES AND MANWAYS AS SHOWN ON PLAN AND PROFILE.

DETAIL No. **31** 48-INCH CONNECTION DETAIL NO SCALE



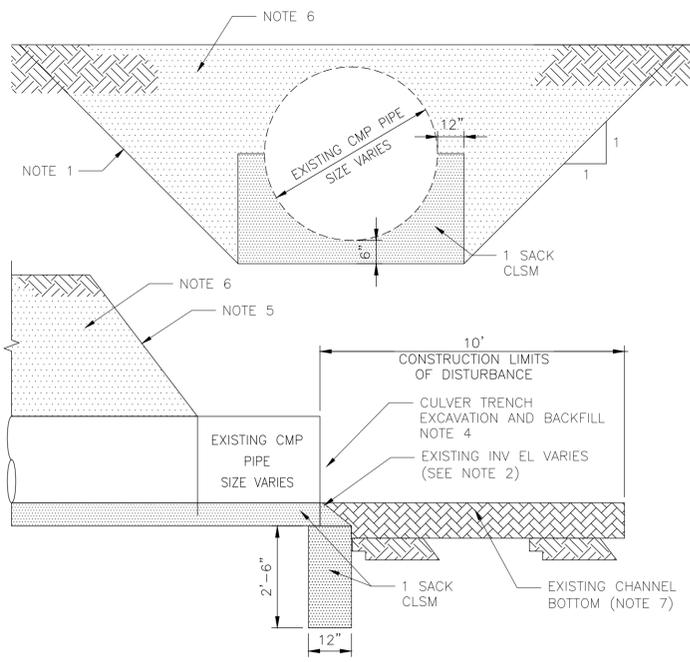
CONNECTION TO PCCP PIPE (SLIPLINING NOT COMPLETED)



CONNECTION TO SLIPLINING STEEL (SLIP LINING COMPLETED)

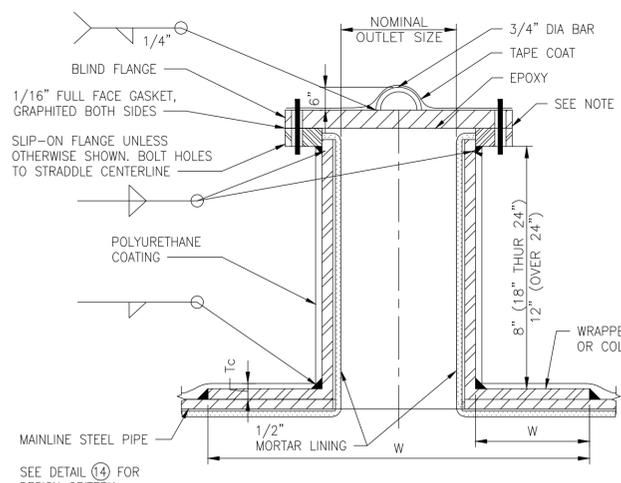
- NOTES:**
- PERFORM WELD INSPECTION PER THE SPECIFICATIONS, SECTION 15052.
  - DRILL AND TAP 4-1/4" NPT HOLES EQUALLY SPACED PRIOR TO WELDING. PLUG WELD TAPPED HOLES ON COMPLETION OF TEST PER SECTION 15052 OR TEST PER INSPECTOR'S INSTRUCTION.
  - CONTRACTOR TO FIELD VERIFY EXISTING PCCP PIPE OR SLIP LINING PIPE INNER DIAMETER AND PROVIDE FILLER BARS AS NEEDED TO MAKE THE CONNECTIONS AS SHOWN. FILLER BARS SHALL BE MINIMUM THICKNESS OF THE NEW STEEL PIPE.

DETAIL No. **32** CONNECTION DETAIL NO SCALE



- NOTES:**
- CONTRACTOR SHALL CUT AWAY FROM THE CULVERT AS NEEDED TO REMOVE THE CULVERT IN ITS ENTIRETY.
  - CONTRACTOR SHALL VERIFY AND RECORD THE EXISTING CULVERT INVERT ELEVATIONS (INLET AND OUTLET). ONCE THE PROJECT PIPELINE IS INSTALLED CONTRACTOR SHALL RETURN CULVERT TO THE EXISTING INVERT ELEVATIONS (INLET AND OUTLET). CONTRACTOR SHALL RE-INSTALL CULVERT PER CITY OF PHOENIX STORM WATER POLICY REQUIREMENTS.
  - CULVERTS SHALL BE REPLACED IN KIND AND SHALL NOT REQUIRE HEADWALLS UNLESS INDICATED ON THE DRAWINGS. CULVERT END SECTIONS SHALL BE REPLACED IN KIND WHERE INDICATED.
  - CONTRACTOR SHALL PLACE RIP RAP WITH D50 OF 6-INCHES AND THICKNESS OF 1-FOOT AT THE FACE OF THE BACKFILL AND AROUND THE REPLACED IN KIND CULVERT TO MITIGATE EROSION OF BACKFILL.
  - THE CULVERT TRENCH EXCAVATION AND BACKFILL SHALL BE AS PER MAG SPECIFICATION 601.
  - CONTRACTOR SHALL RESTORE EXISTING CHANNEL BOTTOM TO EXISTING CONDITIONS. CONTRACTOR TO REMOVE ANY EXCESS MATERIAL PRIOR TO COMPETITION OF PROJECT.

DETAIL No. **33** CULVERT DETAIL NO SCALE



**NOTE:**  
ALL EXPOSED METAL SURFACES ARE TO BE RUST FREE AND SHOP COATED WITH APPROVED RUSH INHIBITOR.

- NOTES:**
- FLANGE DESIGN AND THICKNESS SHALL CONFORM TO AWWA C-207 AND BE EITHER CLASS D OR E DEPENDING ON PIPE DESIGN AND PRESSURE.
  - DETAILS OF COLLAR AND/OR WRAPPER DESIGN ARE TO BE SUBMITTED WITH SHOP DRAWINGS.
  - A WRAPPER SHALL BE REQUIRED WHEN OUTLET DIAMETER IS EQUAL TO OR GREATER THAN ONE HALF THE INSIDE DIAMETER OF THE MAIN LINE PIPE.
  - ALL WELDS SHALL DEVELOPE 125% OF PLATE STRENGTH.
  - INCLUDE FOR MANWAYS.

| WORKING PRESSURE (psi) | OUTLET TYPE (in) | REINFORCEMENT TYPE | MAIN PIPE |         |        | OUTLET  |         |        | REINFORCEMENT |        |        |
|------------------------|------------------|--------------------|-----------|---------|--------|---------|---------|--------|---------------|--------|--------|
|                        |                  |                    | ID (in)   | OD (in) | T (in) | ID (in) | OD (in) | t (in) | TC (in)       | w (in) | W (in) |
| 250                    | 30               | Collar             | 66.00     | 68.00   | 0.500  | 30.00   | 31.00   | 0.25   | 0.31          | 15.00  | 61.00  |
| 200                    | 30               | Collar             | 66.00     | 67.75   | 0.3750 | 30.00   | 31.00   | 0.25   | 0.3125        | 13.00  | 57.00  |
| 200                    | 48               | Wrapper            | 66.00     | 67.75   | 0.3750 | 48.00   | 49.63   | 0.31   | 0.3750        | 22.00  | 94.00  |

**Notes:**  
1) Dimensions shown are a minimum requirement. New outlets added or alternate reinforcement dimensions submitted shall be accompanied by design and calculations in the submittal for approval by the engineer.

DETAIL No. **34** RADIAL FLANGED SIDE OUTLET AWWA C-303 (CCP AND STEEL) NO SCALE

PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**CIVIL DETAILS VIII**  
CITY OF PHOENIX, ARIZONA  
STREET TRANSPORTATION DEPARTMENT  
SEGMENT 1 PIPELINE ALIGNMENT  
24TH STREET WTP TO 32ND STREET AND SHEA BOULEVARD  
WS85500442

| DR: | DES: | CK: | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----|------|-----|-----------|--------------|----------|
| JEG | JRR  | LAJ | 97        | 345          |          |

SCALE: NO SCALE

90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION TMSG1-CD-008.DWG, 8/12/2019

SEGMENT 1 PIPELINE ALIGNMENT  
PHOENIX STREET – MARICOPA CO.  
24TH STREET WTP TO 32ND STREET AND SHEA BOULEVARD

**PRELIMINARY  
NOT FOR  
CONSTRUCTION**

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 99  | 345   |          |



| REVISION BY | DESCRIPTION | REV BY | CHK BY | DATE |
|-------------|-------------|--------|--------|------|
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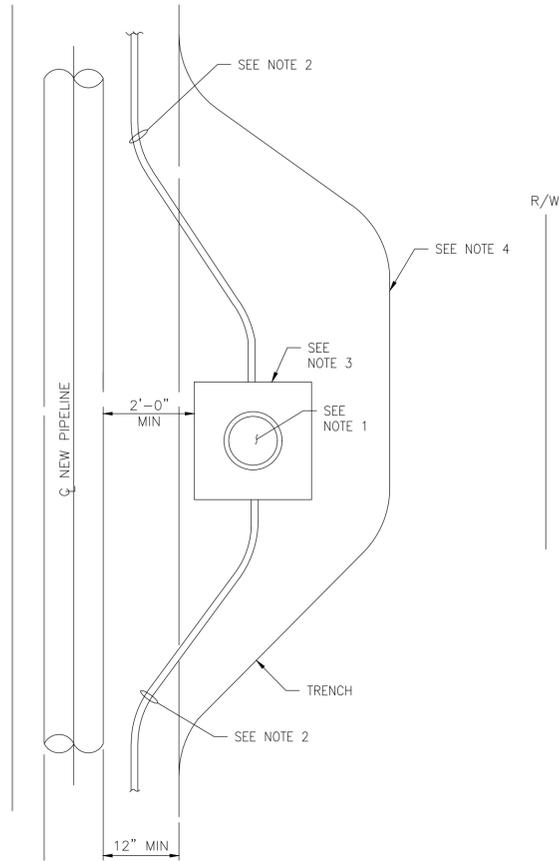


NOTE:  
1. FIBER OPTIC VAULT ASSEMBLY. SEE SPECS AND DETAIL 35/SHT98.

DETAIL No. 37

PARK REGULATION SIGN

NO SCALE



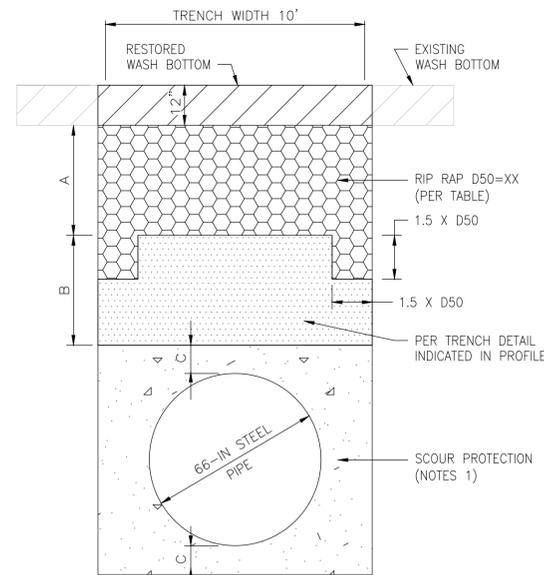
- NOTES:
- FIBER OPTIC VAULT ASSEMBLY. SEE SPECS AND DETAIL 35/SHT98.
  - 1-4" CONDUITS, SCHEDULE 40 PVC, SWEEP (LESS THAN 10 DEGREE BEND) TO VAULT ENTRY. CHANGES IN DIRECTION OF THE FIBER OPTIC CONDUIT BY MORE THAN 10 DEGREES SHALL BE ACCOMPLISHED USING PVC COATED RGS BENDS WITH A MINIMUM RADIUS OF 12 TIMES THE CONDUIT DIAMETER.
  - PENETRATE AND PLUG CONDUIT AT VAULT. CONTRACTOR TO PROVIDE PULL TAPE INSIDE THE CONDUITS FOR FUTURE FIBER PULLS
  - TRENCH REQUIRED (12"MIN) FROM VAULT.

DETAIL No. 38

FIBER OPTIC HANDHOLE LOCATION

NO SCALE

| WASH LOCATION | SCOUR DEPTH (in) | A (in) | B (in) | C (in) | D50 | TOE DEPTH (in) | CONCRETE ENCASEMENT |
|---------------|------------------|--------|--------|--------|-----|----------------|---------------------|
| 434+75        | 18               | 12     | 15.96  | 12     | 8   | 12             | YES                 |
| 437+20        | 12               | 12     | 39.63  | 0      | 8   | 12             | NO                  |
| 438+20        | 12               | 12     | 61.53  | 0      | 8   | 12             | NO                  |
| 439+70        | 12               | 12     | 42.32  | 0      | 8   | 12             | NO                  |
| 439+90        | 12               | 12     | 36.54  | 0      | 8   | 12             | NO                  |
| 440+75        | 12               | 12     | 84.24  | 0      | 8   | 12             | NO                  |
| 441+55        | 12               | 12     | 55.21  | 0      | 8   | 12             | NO                  |
| 442+75        | 12               | 12     | 47.66  | 0      | 8   | 12             | NO                  |
| 444+55        | 12               | 12     | 36.93  | 0      | 8   | 12             | NO                  |
| 445+10        | 12               | 12     | 114.30 | 0      | 8   | 12             | NO                  |
| 446+95        | 12               | 12     | 90.24  | 0      | 8   | 12             | NO                  |
| 122+10        | 12               | 12     | 108.24 | 0      | 8   | 12             | NO                  |
| 126+45        | 18               | 18     | 34.20  | 0      | 12  | 18             | NO                  |
| 127+40        | 12               | 12     | 70.43  | 0      | 8   | 12             | NO                  |
| 129+90        | 18               | 18     | 32.54  | 0      | 12  | 18             | NO                  |
| 131+85        | 12               | 12     | 37.26  | 0      | 8   | 12             | NO                  |
| 133+85        | 12               | 12     | 37.84  | 0      | 8   | 12             | NO                  |
| 139+10        | 42               | 36     | 12.56  | 6      | 24  | 36             | YES                 |
| 141+80        | 18               | 12     | 39.58  | 0      | 8   | 12             | NO                  |
| 142+85        | 12               | 12     | 37.77  | 0      | 8   | 12             | NO                  |
| 144+05        | 12               | 12     | 36.84  | 0      | 8   | 12             | NO                  |
| 149+40        | 24               | 18     | 41.93  | 0      | 12  | 18             | NO                  |
| 151+55        | 12               | 12     | 46.64  | 0      | 8   | 12             | NO                  |
| 152+30        | 12               | 12     | 41.69  | 0      | 8   | 12             | NO                  |
| 500+95        | 84               | 84     | 0.48   | 6      | 24  | n/a            | YES                 |
| 302+10        | 24               | 18     | 32.49  | 0      | 12  | 18             | NO                  |
| 310+05        | 60               | 48     | 24.52  | 6      | 8   | 12             | YES                 |

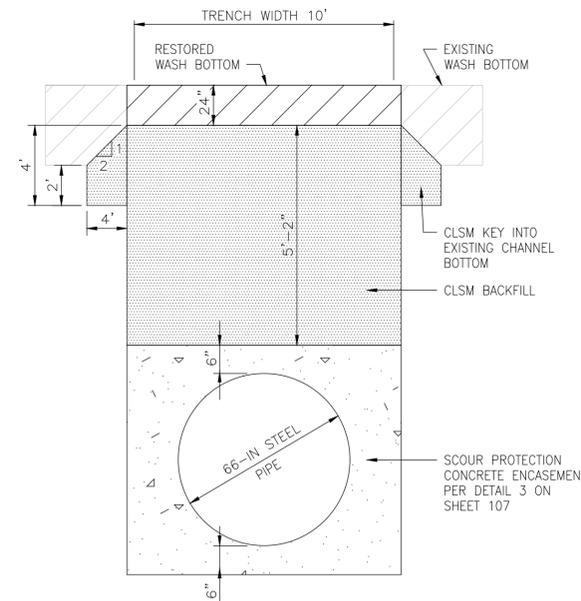


- NOTES:
- CONCRETE ENCASEMENT REQUIRED FOR SCOUR PROTECTION AS SHOWN IN PLAN & PROFILE DRAWINGS. IF NO CONCRETE ENCASEMENT IS SHOWN IN PLAN & PROFILE, USE TRENCH DETAIL INDICATED IN PROFILE FOR THIS DEPTH OF TRENCH.

DETAIL No. 39

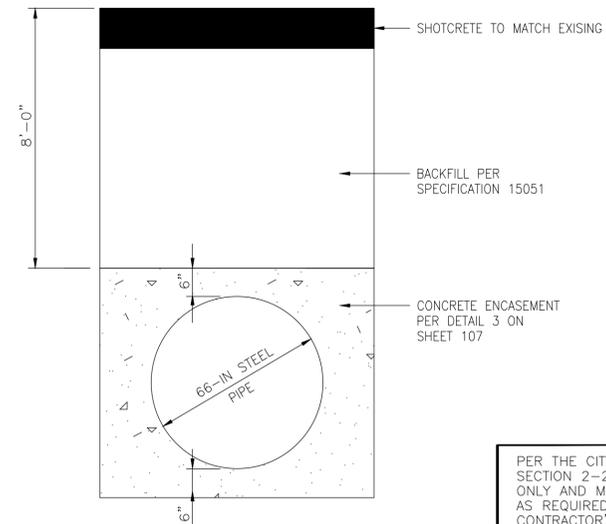
WASH CROSSING TRENCH SECTION A

NO SCALE



WASH CROSSING TRENCH SECTION B

NO SCALE



WASH CROSSING TRENCH SECTION C - MYRTLE WASH

DETAIL No. 41

NO SCALE

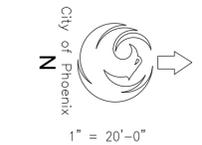
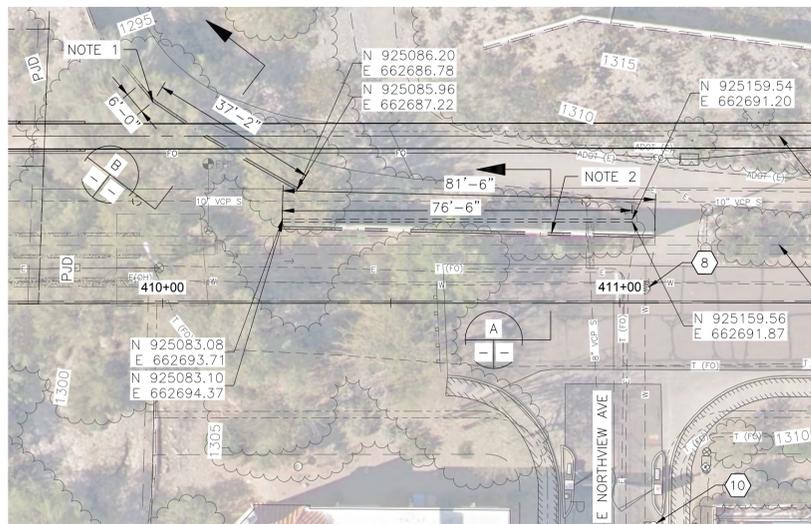


PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

| CIVIL DETAILS X                                   |          |         |           |               |           |
|---------------------------------------------------|----------|---------|-----------|---------------|-----------|
| CITY OF PHOENIX, ARIZONA                          |          |         |           |               |           |
| STREET TRANSPORTATION DEPARTMENT                  |          |         |           |               |           |
| SEGMENT 1 PIPELINE ALIGNMENT                      |          |         |           |               |           |
| 24TH STREET WTP TO 32ND STREET AND SHEA BOULEVARD |          |         |           |               |           |
| WS85500442                                        |          |         |           |               |           |
| DR: JEG                                           | DES: JRR | CK: LAJ | SHEET NO: | TOTAL SHEETS: | AS BUILT: |
| DATE:                                             | DATE:    | DATE:   | 99        | 345           |           |
| SCALE: NO SCALE                                   |          |         | 99        | 345           |           |

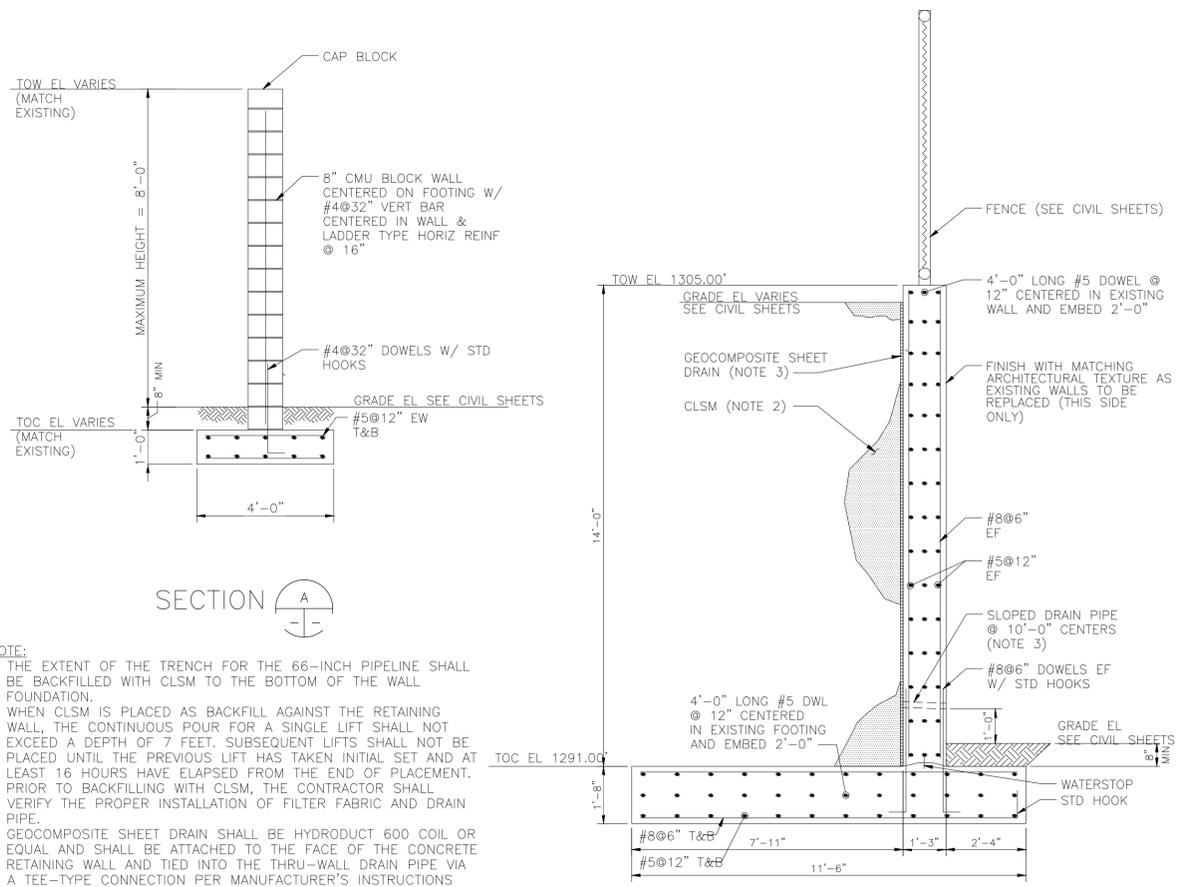
90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION TMSG1-CD-010.DWG, 3/20/2020

SEGMENT 1 PIPELINE ALIGNMENT  
PHOENIX STREET - MARICOPA CO.  
24TH STREET WTP TO 32ND  
STREET AND SHEA BOULEVARD



- NOTES:**
- EXISTING WALL SHALL BE DEMOLISHED A MAXIMUM OF 43 FEET FROM THE NORTHERN MOST EDGE, MEASURED ALONG THE WALL. CONTRACTOR SHALL CONFIRM WITH ENGINEER PRIOR TO REMOVING ADDITIONAL PORTIONS OF WALL. WALL SHALL BE REPLACED AS DETAILED.
  - EXISTING WALL TO BE DEMOLISHED IN PROJECT (WS85507004) REPLACEMENT WALL SHALL BE CONSTRUCTED AS DETAILED 3'-0" FROM THE WEST MOST EDGE OF THE NEW 48 INCH PCCP PIPE. MATCH EXISTING ARCHITECTURAL FINISHES FROM THE EXISTING WALL TO THE NEW WALL.
  - EXISTING WALLS THAT REMAIN MUST BE PROPERLY SHORED UNTIL CONSTRUCTION HAS BEEN COMPLETED. NO EXCAVATED MATERIAL OR EQUIPMENT SHALL BE PLACED ON TOP OF THE SOIL BEING RETAINED BY THE EXISTING WALL.
  - CONTRACTOR SHALL RECORD ELEVATION AND POSITION OF EXISTING WALL THATS SHOWN TO BE. CONTRACTOR SHALL INSTALL WALL TO EXISTING CONDITIONS.

**WALL REPLACEMENT ENLARGED VIEW**

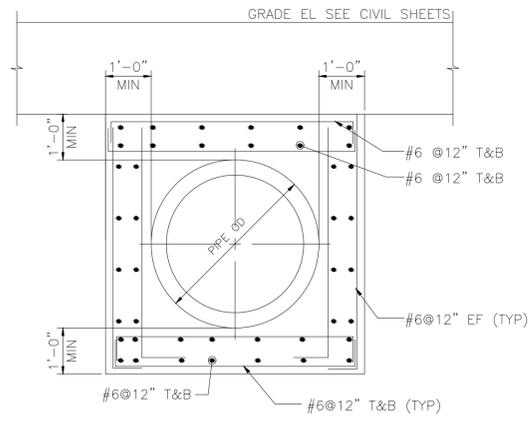


- NOTE:**
- THE EXTENT OF THE TRENCH FOR THE 66-INCH PIPELINE SHALL BE BACKFILLED WITH CLSM TO THE BOTTOM OF THE WALL FOUNDATION.
  - WHEN CLSM IS PLACED AS BACKFILL AGAINST THE RETAINING WALL, THE CONTINUOUS POUR FOR A SINGLE LIFT SHALL NOT EXCEED A DEPTH OF 7 FEET. SUBSEQUENT LIFTS SHALL NOT BE PLACED UNTIL THE PREVIOUS LIFT HAS TAKEN INITIAL SET AND AT LEAST 16 HOURS HAVE ELAPSED FROM THE END OF PLACEMENT. PRIOR TO BACKFILLING WITH CLSM, THE CONTRACTOR SHALL VERIFY THE PROPER INSTALLATION OF FILTER FABRIC AND DRAIN PIPE.
  - GEOCOMPOSITE SHEET DRAIN SHALL BE HYDRODUCT 600 COIL OR EQUAL AND SHALL BE ATTACHED TO THE FACE OF THE CONCRETE RETAINING WALL AND TIED INTO THE THRU-WALL DRAIN PIPE VIA A TEE-TYPE CONNECTION PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

DETAIL No. 1

WALL DETAIL

3/8" = 1' = 0"

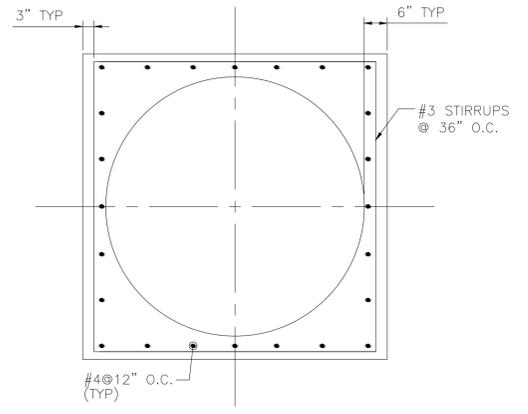


- NOTES:**
- THE PIPE ENCASEMENT IS DESIGNED FOR A MAXIMUM OF 4000 PSF VERTICAL LOAD AND A MAXIMUM OF 1600 PSF UNIFORM LATERAL LOAD.
  - SEE CIVIL SHEETS FOR PLAN DIMENSIONS.
  - 28 DAY CONCRETE STRENGTH SHALL BE MIN 4000 PSI.
  - PREPARE SUBGRADE IN ACCORDANCE WITH SPECIFICATION DIVISION 31 20 00.

DETAIL No. 2

ENCASEMENT DETAIL

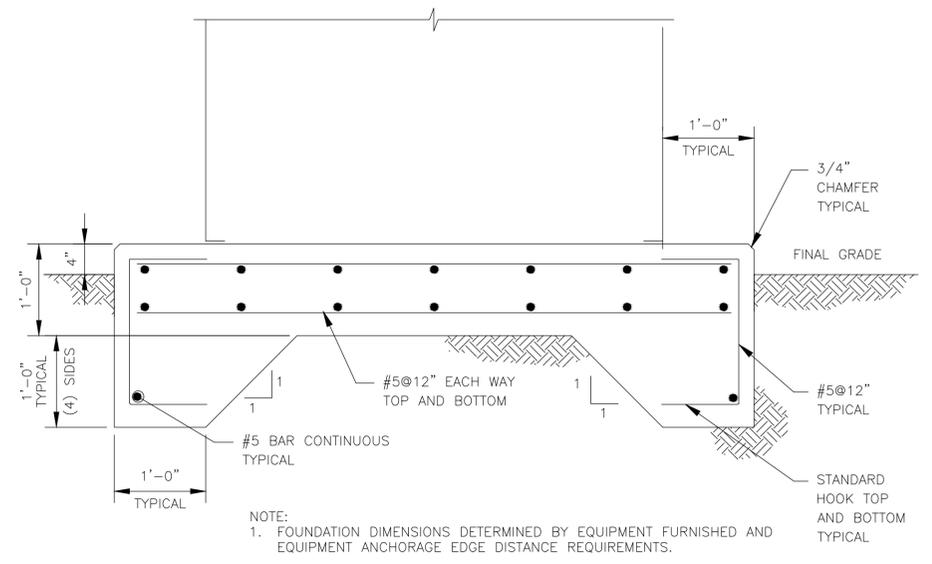
NO SCALE



DETAIL No. 3

CONCRETE ENCASEMENT AT WASH CROSSING FOR SCOUR PROTECTION

NO SCALE



- NOTE:**
- FOUNDATION DIMENSIONS DETERMINED BY EQUIPMENT FURNISHED AND EQUIPMENT ANCHORAGE EDGE DISTANCE REQUIREMENTS.

DETAIL No. 4

EXTERIOR EQUIPMENT FOUNDATION

NO SCALE

**PRELIMINARY NOT FOR CONSTRUCTION**

| F.H.W.A. REGION | STATE | PROJ. NO.  | NO. | TOTAL | AS BUILT |
|-----------------|-------|------------|-----|-------|----------|
| 9               | ARIZ. | WS85500442 | 107 | 345   |          |



| REVISION BY CITY OF PHOENIX | DESCRIPTION | NO. | REV BY | CHK BY | DATE |
|-----------------------------|-------------|-----|--------|--------|------|
|                             |             |     |        |        |      |
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|                             |             |     |        |        |      |
|                             |             |     |        |        |      |

PER THE CITY OF PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF THE CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**STRUCTURAL DETAILS III**  
CITY OF PHOENIX, ARIZONA  
STREET TRANSPORTATION DEPARTMENT  
SEGMENT 1 PIPELINE ALIGNMENT  
24TH STREET WTP TO 32ND STREET  
AND SHEA BOULEVARD  
WS85500442

|                |                |                |           |               |           |
|----------------|----------------|----------------|-----------|---------------|-----------|
| DR: SMH        | DES: EAP       | CK: PT         | SHEET NO: | TOTAL SHEETS: | AS BUILT: |
| DATE: 06/30/20 | DATE: 06/30/20 | DATE: 06/30/20 | 107       | 345           |           |

SCALE: AS SHOWN

90% DESIGN SUBMITTAL - PRELIMINARY NOT FOR CONSTRUCTION TMSG1-S-004.DWG, 6/24/2020



**City of Phoenix Transmission Main (WS85500442) Zone 3D and 4A**  
**USACE File No.: SPL-2020-00190**  
**Statement of Compliance with Nationwide Permit No. 12 and Nationwide Permit No.**  
**18 General and Regional Conditions**

- 1. Navigation.** Waters of the United States (Waters) in the project area are ephemeral. There will be no effect on navigation as a result of the proposed project.
- 2. Aquatic Life Movements.** Waters in the project area are ephemeral and do not support aquatic life; project construction will not impact aquatic life movements.
- 3. Spawning Areas.** There are no spawning areas located within the project area; there would be no effect to spawning areas as a result of the project.
- 4. Migratory Bird Breeding Areas.** There are no migratory bird breeding areas located within the project area; there will be no effect from discharges into Waters.
- 5. Shellfish Beds.** There are no shellfish beds in the project area; there would be no effect to shellfish beds.
- 6. Suitable Material.** Project area soils and Controlled Low Strength Material (CLSM) will be used on the project. No unsuitable materials (e.g., trash, debris, car bodies, asphalt, etc.) will be used. Materials used for construction or discharged into Waters will be free from pollutants. Acceptable construction materials that will or may contact water in Waters could include: untreated lumber or steel cages for shoring the trench sides; sand bedding; crushed/fractured (imported) stone or riprap; and native soil or excavated rock, including rip rap. The use of project area soils, imported bedding, and on-site rip rap should present no environmental concerns.

The contractor will take sufficient precautions, considering various conditions, to prevent discharges of fuel, oil, bitumen, calcium chloride, fresh Portland cement, fresh Portland cement concrete, raw sewage, muddy water, chemicals or other harmful materials into a Waters from the work and storage areas, all as described in their Spill Control and Containment Plan. Excess excavation material from the project construction will not be deposited in the Waters, but will be removed from the site or disposed of according to applicable state and federal regulations.

**7. Water Supply Intakes.** No known water supply intakes are within the project limits or in the immediately surrounding area. The City's 24<sup>th</sup> Street Water Treatment Plant (24<sup>th</sup> Street/Lincoln Drive) is the supplier for the water in the transmission main, but the Plant's source is the Arizona Canal. Neither the Plant's source nor intakes will be impacted by the project. Therefore, there will be no effect to water supply intakes.

**8. Adverse Effects from Impoundments.** Impoundments will not occur within Waters due to project activities. The access road traversing through the project within the PMP would cross Waters at-grade, or be culverted to maintain flows. Minor soil buildups of side cast materials will likely occur in Waters during the trench excavation, but these will be limited and made up of excavated rock that would not create any impoundments. Trenches will be covered soon after the pipeline is installed which will further reduce the potential for impoundments. In the event of high flows, construction equipment and materials will be removed from Waters as necessary and any open trenches in Waters would be covered with steel plates to facilitate downstream flows.

**9. Management of Water Flows.** Waters in the project area are ephemeral; therefore, site dewatering and/or the use of temporary dikes or impoundments are not anticipated. Construction activities will temporarily cease if flows occur and any open trenches across Waters would be covered with steel plates

to facilitate downstream flows. The access road will cross Waters at-grade or be culverted to maintain downstream flows. In addition, to the greatest extent possible, construction activities will be conducted to reduce the impedance of high flows. It is planned that only a 200-300 linear foot of trench will be open at any one time as the pipeline work proceeds. Excavated soils and bedding materials will be placed as backfill as soon as possible to allow the pipeline to progress forward, thereby reducing any impacts to the conveyance capacity of on-site Waters. Excess material will be removed from the project area during this process. Design of stormwater management facilities will be in compliance with the City's Stormwater Policies and Standards Manual, current edition.

**10. Fills Within 100-year Floodplains.** The Flood Control District of Maricopa County Online map (FIRM Panel 1735) indicates that portions of the project within the PMP is located in the Dreamy Draw Floodplain (Zone A). In the southern portion of the pipeline between Ocotillo Road and Lamar Road, the pipeline traverses an unnamed floodplain (Zone AE, FIRM Panel 1745). At this location the pipeline construction is entirely within the boundary of 21<sup>st</sup> Street.

Any temporary sidecasted excavation materials that may end up in the Dreamy Draw Floodplain will be removed within the same or following work day. The access road in the PMP will be in place for one year, but will be removed after construction is complete and will be restored to preconstruction grades after construction is complete. Excavated material in 21<sup>st</sup> Street portion of the project will be removed from the site as the excavation occurs and returned for the backfilling operation due to the very limited work area needed to keep one lane of traffic open at all times. Therefore, the excavated materials would not be subject to transport and redistribution. Because the disturbance areas will be returned to their pre-construction grades upon installation of the pipeline, the proposed work will have no effect on the 100-year floodplain or surrounding topography.

**11. Equipment.** Because of the rocky conditions at the site, heavy excavation equipment will be used to perform the work. Disturbance will be limited to the permitted work areas, and temporary chain link fence with screening fabric will be installed to ensure that all construction-related activities are contained within the permitted work areas. No wetlands, mudflats, or other special aquatic sites are within the project limits or surrounding area; therefore, project construction will not occur in special aquatic sites.

**12. Soil Erosion and Sediment Controls.** Greater than 1 acre of ground disturbance is anticipated to occur; therefore, an Arizona Pollution Discharge Elimination System (AZDES) Construction General Permit and associated Stormwater Pollution Prevention Plan (SWPPP) will be required. Best management practices will be followed during construction activities to prevent discharge of pollutants into Waters.

All disturbed upland areas not paved or otherwise landscaped or permanently stabilized by construction will be seeded using species native to the project vicinity. Native plants deemed suitable for salvage will be salvaged and replanted as part of the site restoration. Over the long-term, the project area should eventually produce a natural vegetation community consistent with the existing condition. No seeding will occur within Waters. Further information on the ecological setting of the project area can be found in the *Biological Site Assessment for City of Phoenix Zone 3D and 4A, Segment 1 Water Line*.

**13. Removal of Temporary Fills.** After the construction is completed, temporarily disturbed areas will be promptly cleared of all materials placed therein or resulting from the construction operations. Temporarily disturbed areas within on-site Waters, including the access road, will be returned to preconstruction grades following the completion of construction activities.

**14. Proper Maintenance.** During construction, periodic inspections and maintenance will be required to protect the installed work and to protect the safety of construction personnel and the public. The contractor will be required to erect chain link fence, crossing signs, and traffic control devices as needed to provide adequate protection. The maintenance shall be a continuous effort, conducted daily with adequate

equipment and personnel to maintain the work in a satisfactory manner at all times until the work is accepted. After completion of work, all perimeter fencing and extraneous materials will be removed from the site and riprap will be installed to prevent erosion at the pipeline crossings will be maintained to prevent future erosion and silt in Waters. The City will maintain the pipeline in perpetuity.

**15. Single and Complete Project.** The project is considered a single and complete project. All Waters disturbing activities associated with this project have been identified.

**16. Wild and Scenic Rivers.** No designated Wild and Scenic Rivers are located within or in the vicinity of the project area; therefore, no Wild and Scenic Rivers will be impacted by project construction.

**17. Tribal Rights.** The project is not located on tribal land and no impacts to reserved tribal water rights, treaty fishing, or hunting will occur as a result of the proposed project.

**18. Endangered Species.** The US Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) decision support system was accessed on January 17, 2020, to obtain a species list for the project area. The habitat requirements and current distribution information for each of the species on the list were reviewed by a qualified biologist (Angela Muszynski, Logan Simpson), and it was determined that there is no suitable habitat present for any federally-listed threatened, endangered, or proposed species in the project area or in the project vicinity. There are no critical habitats that have been designated or proposed under the Endangered Species Act (ESA; 16 U.S.C. 1531–1544, as amended) in the project area. The Arizona Game and Fish Department's (AGFD) On-line Environmental Review Tool was queried to obtain a list of special status species that have been documented within 3 miles of the project area by the AGFD – those include Mohave Desert tortoise, Sonoran Desert tortoise, Bald Eagle, Gila monster, and Phoenix (Squaw Peak) talussnail. Based on the analysis, it is likely that only the Sonoran Desert tortoise and Gila monster would be expected to be found in the project area.

**19. Migratory Bird and Bald and Golden Eagle Permits.** A qualified biologist has completed a 100% survey of the project area (refer to the Biological Site Assessment Report) and will conduct a second survey immediately prior to construction. The City will apply for a Relocation Permit from the US Fish and Wildlife as a precautionary measure in case nests or individual species covered under the Migratory Bird Treaty Act (MBTA) are discovered prior to construction. Thus, the project would comply with the MBTA and the Bald and Golden Eagle Protection Act. The project would not cause a “take” of any migratory birds or bald and golden eagles.

**20. Historic Properties.** The City's Archaeology Office and their Historic Preservation Office have evaluated the pipeline alignment. The project crosses with 250 feet of AZ T:8:55 (ASM) and within the boundary of AZ T:8:54 (ASM), both of which are historic mining sites that are not eligible for the National Register of Historic Places (NRHP). However, the project also crosses AZ T:8:53 (ASM), the historic Rico Mine, which has been determined eligible for inclusion in the NRHP. Data recovery excavations have previously been conducted within all three sites. Stone (1990) recommended that the important data at AZ T:8:53 (ASM) had been recovered through archaeological and archival investigations. Nonetheless, the project may have the potential to cause effects to this property from the construction activities. As a result, under General Condition 20 (Historic Properties), this Pre-Construction Notification is being submitted to authorize the work.

**21. Discovery of Previously Unknown Remains and Artifacts.** If previously unidentified cultural resources are encountered during activities related to the construction of the project, the contractor will stop work immediately at that location and shall take all reasonable steps to secure the preservation of those resources. All discoveries will be treated in accordance with NAGPRA (Public Law 101-601; 25 U.S.C. 3001-3013) or Arizona Revised Statutes (A.R.S. § 41-844 and A.R.S. § 41-865) and the City's Historic Preservation Ordinance Section 802 (A.1). The US Army Corps of Engineers will be contacted immediately to notify of the discovery.

**22. Designated Critical Resource Waters.** The project area does not contain any critical resource waters, including National Oceanic and Atmospheric Administration designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, or outstanding national resource waters or other waters officially designated by the State of Arizona as having any particular environmental or ecological significance.

**23. Mitigation.** The project has been designed to avoid and minimize adverse effects, both temporary and permanent, to Waters to the maximum extent practicable. No change will occur to the primary function of the affected watercourses. There will not be any significant permanent loss of aquatic functions and values associated with the project; therefore, a compensatory mitigation plan is not proposed.

**24. Safety of Impoundment Structures.** No impoundment structures are within the proposed project area; this project will not affect the safety of impoundment structures.

**25. Water Quality.** The proposed project will not create either point or non-point sources of pollution that have more than a very minimal impact on water quality. The majority of the project and all Waters drain to the Arizona Canal Diversion Channel watershed (10-digit HUC: 1507010206). The northern portion of the project (north of Station 219+00) drains into the Indian Bend Wash (IBW) watershed (10-digit HUC: 1506010602) (IBW). The IBW is proposed as Impaired (2020) by the Arizona Department of Environmental Quality (ADEQ). The construction activities for the pipeline will not contribute to the impairment of IBW.

NWP No. 12 and NWP No. 18 are conditionally certified for water quality. The 401 general conditions will be complied with by the City when installing the pipeline. Once construction is complete, no facilities will remain in place that could cause a permanent change in water quality in the project area or downstream of the project area. Therefore, the project will not adversely impact water quality.

**26. Coastal Zone Management.** This project is not located in a coastal zone; the proposed work will not affect coastal zone management.

**27. Regional and Case-By-Case Conditions.**

*Regional Condition 1:* This condition is not applicable because the project area is not a suitable habitat for federally listed fish species.

*Regional Condition 2:* This condition is not applicable because no wetlands, mudflats, vegetated shallows, or riffle and pool complexes are located within the project area.

*Regional Condition 3:* A completed ENG Form 4345 is included for review with this Pre-Construction Notification application. Written descriptions and detailed drawings have been submitted as part of this authorization request.

*Regional Condition 4:* This condition is not applicable because no perennial Waters, intermittent Waters, special aquatic sites, Outstanding Arizona Waters, impaired Waters, or Essential Fish Habitat is located within the project area, and the project area is located within the City of Phoenix, Arizona.

*Regional Condition 5:* This condition is not applicable because no vernal pools are located within the project area.

*Regional Conditions 6, 7, and 8:* These conditions are not applicable because the project is located within the City of Phoenix, Arizona.

*Regional Condition 9:* The project is seeking a NWP No. 12 and NWP No. 18 authorization which is not subject to this condition.

*Regional Condition 10:* This condition is not applicable since compensatory mitigation is not anticipated for this project.

**28. Use of Multiple Nationwide Permits.** Two NWPs are required to authorize this project. NWP 12 will be used to authorize all temporary construction and access activities, including permanent impacts as a result of the access road and temporary impacts from equipment and vehicles maneuvering within the site. Although the access road is considered a permanent impact because of its one-year duration in the PMP, the road will be removed, and the area restored to preconstruction grades, thus, the access road is considered a temporary impact. NWP 18 will be used to authorize the permanent loss of Waters as a result of the riprap installation. The highest specified threshold requirements are held by NWP 18 which authorizes up to 0.10 acre of loss of Waters and no more than 25 cubic yards of material discharged below the plane of the OHWM. This project will result in 0.017 acre of loss of Waters and approximately 7 cubic yards of riprap below the plane of the OHWM. Therefore, the use of multiple nationwide permits is permitted.

**29. Transfer of Nationwide Permit Verifications.** The City will retain ownership of the project area in perpetuity.

**30. Compliance Certification.** After completion of the work, the City will submit a signed certification regarding the completed work.

**31. Activities Affecting Structures or Works Built by the United States.** Dreamy Draw Dam is present in the vicinity of the project area, which is an authorized Civil Works projects (USACE projects). However, the project would not impact Dreamy Draw Dam, and therefore, there would be no effect to USACE projects as a result of the proposed project.

**32. Preconstruction Notification.** Materials submitted herein to the USACE constitute a NWP Pre-Construction Notification and include all additional information required to complete the application package.



T E C H N I C A L  
M E M O R A N D U M

**To:** Tricia Balluff, Environmental Programs Coordinator, City of Phoenix  
**From:** [REDACTED]  
[REDACTED]  
[REDACTED]  
**Date:** May 6, 2020  
**Subject:** Biological Site Assessment for City of Phoenix Zone 3D and 4A, Segment 1  
Water Line

---

## INTRODUCTION

The City of Phoenix (City) Water Services Department is designing additional infrastructure to continue its mission of providing a reliable water supply to its 1.7 million customers. There are three proposed segments of this overarching infrastructure project, of which this Biological Site Assessment will evaluate potential impacts from Segment 1. Segment 1 consists of the installation of a new 66-inch pipeline from the 24<sup>th</sup> Street Water Treatment Plant to the intersection of Shea Boulevard and 32<sup>nd</sup> Street (see Figures 1–4 in Attachment A). The proposed pipeline alignment between these termini are as follows:

1. Beginning at the 24<sup>th</sup> Street Water Treatment Plant, the pipeline will go through Granada Park north to Ocotillo Road.
2. Along Ocotillo Road, the pipeline will head west and turn north onto 21<sup>st</sup> Street, and follow 21<sup>st</sup> Street until it reaches Myrtle Avenue.
3. From Myrtle Avenue, the pipeline will head west and turn north at the entry of an existing equestrian trail. It will follow the equestrian trail through a community cactus garden, an alley bounded by the State Route (SR) 51 sound wall and local neighborhood, and enter the Phoenix Mountain Preserve (PMP).
4. Within the PMP, the pipeline will run parallel to SR 51 in undeveloped portions of the park, then head in a north-easterly direction to primarily occur underneath a designated bike path. In total, the pipeline will span approximately 1.92 miles in the PMP at which point it will turn west and cross underneath SR 51.
5. After the pipeline crosses underneath SR 51, it will follow Northern Avenue/32<sup>nd</sup> Street to terminate at Shea Boulevard.

The project will occur within and adjacent to the City right-of-way (ROW) and through lands managed by the Arizona Department of Transportation (ADOT). New ROW is anticipated to be acquired from ADOT prior to the construction of the pipeline. The project will include a preconstruction geotechnical investigation, construction of the pipeline, and restoration of all disturbed areas. A Clean Water Act Section 404 Preconstruction Notification is anticipated to be required by the US Army Corps of Engineers due to the associated impacts to cultural sites within jurisdictional waters of the US.

The preconstruction geotechnical investigation will include boring and potentially digging test pits at various locations along the proposed pipeline alignment. Access to complete the geotechnical activities will involve driving rubber-tired trucks and rubber-tracked drill rigs to the boring/test pit locations. All borings are anticipated to be drilled and back-filled within the same day, and if test pits are determined to be required, all open pits will be backfilled after the investigation is complete. If test pits require more than one day to complete the investigation, they will be covered at the end of each work day as a safety precaution and to prevent terrestrial wildlife from falling into the test pit.

The 66-inch pipeline will be installed by digging an open trench, except when it crosses underneath SR 51 where the pipeline installation will be completed by horizontal drilling. Some plants within the pipeline alignment will be salvaged prior to the trenching activities and placed in a temporary nursery; and the top layer of soil in the PMP will be stockpiled and preserved to assist in restoring the area after construction is complete. After the pipeline is installed, it will be buried and restoration activities will commence. Restoration activities will involve replacing the stockpiled topsoil, seeding temporarily disturbed areas with a native seed mix, and replanting salvaged plants within the pipeline alignment to assist in minimizing the appearance of the excavated area. Disturbed areas within the PMP may also be stained to match adjacent undisturbed soils, as needed. All salvaged plants will be monitored for a period up to one year and replaced if not viable. During the one year establishment period, invasive species will also be monitored and treated as needed.

The pipeline will be approximately 4.72 miles long and will require a 70- to 100-foot corridor for installation with additional areas adjacent to the alignment for staging equipment, storing material, and removing and replacing existing culverts (Figures 4.1–4.3). It is anticipated that approximately 53.40 acres of ground disturbance will be generated by this project; of that amount, only 33.61 acres will impact natural ground surfaces. Table 1 summarizes the anticipated ground disturbance at each section of the pipeline.

**Table 1.** Summary of Ground Disturbance

| <b>Pipeline Section</b>                            | <b>Disturbance to Natural Ground Surface?</b> | <b>Length (miles)</b> | <b>Acres</b> |
|----------------------------------------------------|-----------------------------------------------|-----------------------|--------------|
| Granada Park                                       | Yes                                           | 0.28                  | 3.08         |
| Local Roads                                        | No                                            | 1.99                  | 19.79        |
| Equestrian Trail                                   | Yes                                           | 0.53                  | 4.30         |
| PMP-Undeveloped                                    | Yes                                           | 1.24                  | 17.83        |
| PMP-Bike Path                                      | Yes*                                          | 0.68                  | 8.40         |
| Ground Disturbance Total(s)                        |                                               | 4.72                  | 53.40        |
| <b>Natural Ground Surface Disturbance Total(s)</b> |                                               | <b>2.73</b>           | <b>33.61</b> |

\*Although the bike path is an impermeable surface, additional space is required on either side of the bike path to remove and replace culverts which will require vegetation removal.

conducted agency coordination, a literature search, and a biological survey of the project area to determine the potential presence of threatened, endangered, and sensitive species in support of

an anticipated Clean Water Act Section 404 permit application. The methodology and findings of this Biological Site Assessment are presented below.

## **SURVEY METHODS**

A survey of the project area was conducted by ██████████ on January 20, 2020. Prior to the survey, the project area boundaries were uploaded to handheld global positioning system (GPS) units to allow for an accurate determination of the project area while in the field. Species lists were reviewed and a literature search was conducted to identify documented occurrences of threatened, endangered, or sensitive species in the project vicinity. The characteristics of the physical and natural environment were also identified based on a review of topographic maps and aerial photos of the project area, online resources, and geographic information system (GIS) data.

The project area was surveyed on foot by walking the proposed pipeline alignment to document existing conditions, characterize plant communities, document wildlife species, and identify any protected biological resources that may be present. Particular attention was paid to locating burrows or other potential shelter sites (e.g., caliche caves in washes) that could be used by the Sonoran desert tortoise (*Gopherus morafka*) and stick nests that will indicate use of the area by nesting birds.

## **ECOLOGICAL SETTING**

The project area is located within the Sonoran Desert Ecoregion (Marshall et al. 2000), which has a characteristic bimodal rainfall pattern, high summer temperatures, and mild winters. The project is located in the northcentral portion of the Phoenix Basin within and adjacent to central Phoenix residential communities. The project area is located at elevations ranging from approximately 1,260 to 1,460 feet above mean sea level. Photographs of the representative vegetation and topography in the project area are provided in Attachment B.

The project area alternates between developed urban environments and undeveloped desert habitat. Developed urban environments occur on the northern and southern termini of the project area with the undeveloped desert habitat primarily located in the central portion. In the urban environments, the project area is surrounded by residential lots including homes, community parks, churches, and schools with established commercial businesses at the northern terminus of the project. The central portion of the project area is comprised of the PMP where the majority of undeveloped desert habitats are present; although a small portion of Granada Park has also been left undeveloped and also contains natural desertscrub vegetation (Figure 4). Several ephemeral washes are present in the project area, the majority of which occur in the PMP. They all generally flow in a westerly direction; some of the washes are culverted as they intersect 21<sup>st</sup> Street and the bike path within the PMP.

The project area occurs within the Lower Colorado River subdivision of the Sonoran Desertscrub Biotic Community (Turner and Brown 1994), which is characterized by high temperatures, low precipitation, and an assemblage of plant and wildlife species that is specifically adapted to these conditions. Vegetation within undeveloped portions of the project area is typical of the creosotebush-white bursage vegetation association, with dominant plant species that include creosotebush (*Larrea tridentata*), brittlebush (*Encelia farinosa*), burrobush (*Ambrosia dumosa*), triangle-leaf bursage (*Ambrosia deltoidea*), paloverde trees (*Parkinsonia* spp.), mesquite trees (*Prosopis* spp.), desert senna (*Senna covesii*), and various cacti including saguaro (*Carnegiea gigantea*), barrel (*Ferocactus* spp.), cholla (*Cylindropuntia* spp.), and pincushion (*Mammillaria* spp.) cacti. Ironwood trees (*Olneya tesota*) were also observed, but were more prevalent in the PMP versus Granada Park. Buffelgrass (*Pennisetum ciliare*), a state-listed noxious weed species, was observed in Granada Park, but this species is largely absent from the PMP.



|                                                                                                 |                |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                    |
|-------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Yellow-billed cuckoo<br>( <i>Coccyzus americanus</i> )                                          | ESA LT<br>SGCN | Large blocks of riparian woodlands (cottonwood and willow galleries) below 6,500 feet. Recent surveys conducted in southeastern Arizona (south of the Gila River) have also documented yellow-billed cuckoos breeding in more xeric habitats such as along ephemeral and intermittent drainages, and in encinal (oak-dominated) habitats in upland areas.               | No suitable habitat present – there are no riparian woodland or encinal habitats in the project area               |
| Yuma Ridgway's rail<br>( <i>Rallus obsoletus</i><br>[ <i>longirostris</i> ] <i>yumanensis</i> ) | ESA LE<br>SGCN | Wet substrate (mudflat, sandbar) with dense herbaceous or woody vegetation. Fresh-water marshes dominated by cattail or bulrush are preferred habitat. Marshes with little residual vegetation may be preferred as well. Habitat should be in a mosaic of vegetated areas interspersed with shallow (less than 12") open water areas at less than 1,500 feet elevation. | No suitable habitat present – there are no areas of dense wetland vegetation or surface water in the project area. |

Source: US Fish and Wildlife Service Information for Planning and Consultation (IPaC) decision support system, <<http://ecos.fws.gov/ipac/>>, accessed January 17, 2020.

<sup>a</sup> Status definitions: ESA=Endangered Species Act, LE=Listed Endangered, LT=Listed Threatened, SGCN=Species of Greatest Conservation Need (as identified in the AGFD's 2012 State Wildlife Action Plan)

### **Critical Habitat**

There are no critical habitats that have been designated or proposed under the Endangered Species Act (ESA; 16 U.S.C. 1531–1544, as amended) in the project area.

### **Other Special Status Species**

The Arizona Game and Fish Department's (AGFD) On-line Environmental Review Tool was queried to obtain a list of special status species that have been documented in the project vicinity (Attachment D). Species that have been documented within 3 miles of the project area by the AGFD are listed in Table 2. Highlighted species in Table 2 are discussed in further detail below. Justification for excluding the remaining species are also included in Table 2.

**Table 2.** Special status species documented within 3 miles of the project area by the AGFD

| Common Name                            | Scientific Name                 | Status <sup>a</sup> | Exclusion Justification                                                                                                                                                                                                                                                                                                                |
|----------------------------------------|---------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mojave desert tortoise                 | <i>Gopherus agassizii</i>       | ESA LT              | The Mojave desert tortoise is only present in the extreme northwestern portion of Arizona, north and west of the Colorado River. This historic occurrence in the project vicinity is an artifact of the previous nomenclature used for the Sonoran desert tortoise before it was established as a separate species of desert tortoise. |
| Sonoran desert tortoise                | <i>Gopherus morafkai</i>        | CCA<br>SGCN         | See discussion below.                                                                                                                                                                                                                                                                                                                  |
| Bald eagle (Sonoran Desert population) | <i>Haliaeetus leucocephalus</i> | BGA<br>SGCN         | No suitable foraging or nesting habitat due to a lack of nearby perennial surface water.                                                                                                                                                                                                                                               |

|                                 |                                |      |                       |
|---------------------------------|--------------------------------|------|-----------------------|
| Gila monster                    | <i>Heloderma suspectum</i>     | SGCN | See discussion below. |
| Phoenix (Squaw Peak) talussnail | <i>Maricopella allynsmithi</i> | SGCN | See discussion below. |

Source: AGFD On-line Environmental Review Tool, <<https://azhgis2.esri.com/content/home>>, accessed November 22, 2019.

<sup>a</sup>Status definitions: BGA=Bald and Golden Eagle Protection Act, CCA=Candidate Conservation Agreement, ESA=Endangered Species Act, LT=Listed Threatened, SGCN=Species of Greatest Conservation Need (as identified in the AGFD’s 2012 State Wildlife Action Plan)

### Sonoran Desert Tortoise

The Sonoran desert tortoise is protected under a multi-agency Candidate Conservation Agreement (CCA) that identifies commitments and responsibilities for each of the signatory agencies. The Sonoran desert tortoise is also identified as a “Species of Greatest Conservation Need” in Arizona’s State Wildlife Action Plan: 2012–2022 (AGFD 2012).

Sonoran desert tortoises typically inhabit bajadas and rocky slopes associated with Mojave desert scrub, Sonoran desert scrub, semidesert grassland, and chaparral; elevations in these communities range from about 500 feet in Mojave desert scrub to about 5,300 feet in chaparral (AGFD 2010). In Sonoran desert scrub, desert tortoises occur most often in the paloverde-mixed cacti association with boulders and rock outcrops (Arizona Interagency Desert Tortoise Team [AIDTT] 1996). These formations offer shelter sites, an important component and limiting factor of desert tortoise habitat. Most often, tortoises will excavate shallow burrows in deeper soils at the base of boulders and rock outcrops; however, caliche caves and the incised, under-cut banks of washes are also important shelter sites (Grandmaison et al. 2010).

The AGFD has documented occurrences of Sonoran desert tortoises within 3 miles of the project area. Suitable habitat for Sonoran desert tortoises is present throughout the PMP where their preferred habitat (rocky slopes and incised washes with caliche caves) is present, and there is suitable foraging habitat present within the project area. No Sonoran desert tortoises or burrows/shelter sites that could potentially be used by desert tortoises were observed in the project area during the biological survey. Caliche caves that may provide temporary shelter sites for tortoises were observed in washes in the vicinity of the proposed pipeline alignment, though none that were observed were deep enough to be used as permanent shelters and no tortoise sign (e.g., scat, diggings) was observed. Due to the presence of suitable foraging habitat in the project area (within the PMP), tortoises could be encountered by onsite workers during construction of the pipeline.

Several practices will be put in place to minimize the potential impacts to Sonoran desert tortoises during construction of the pipeline within the PMP. Prior to construction activities within the PMP, environmental awareness training will be provided to onsite workers to inform them of appropriate actions to take if a Sonoran desert tortoise is encountered. Each worker will receive the City’s Sonoran Desert Tortoise flyer and will be instructed on how to follow the AGFD’s *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects* (see Attachment E). Work areas will be fenced during construction and a continuous wildlife barrier will be put in place surrounding the work area within the PMP. At least one end of the trench will be ramped so a tortoise will be able to escape in the unlikely event that a tortoise falls into the trench. Lastly, a qualified biologist will be on-call to relocate tortoises should there be an issue on-site. Refer to the Conclusions and Recommendations section below for the full list of mitigation measures.

### Gila Monster

The Gila monster is identified as a “Species of Greatest Conservation Need” in Arizona’s State Wildlife Action Plan: 2012–2022 (AGFD 2012) and it is protected under Arizona Revised Statute Title 17, which makes it unlawful to possess, kill, harass, hunt, or handle, wildlife that is protected by state or federal law without proper permits.

Two subspecies of Gila monsters (*Heloderma suspectum*) occur in Arizona (*H. s. suspectum* and *H. s. cinctum*) both of which occur primarily in the Sonoran Desert at elevations less than 5,000 feet elevation. They are most commonly found in undulating rocky foothills, bajadas, and canyons, and found less frequently on open sandy plains. *H. s. suspectum* are concentrated in the west and southwest half of the state (AGFD 2013b) and *H. s. cinctum* have been documented mainly in northwestern and western Arizona, northwestern Maricopa County, and southwest Yavapai County (AGFD 2013a).

The AGFD has documented occurrences of this species within 3 miles of the project area and suitable habitat is present where the project area intersects the PMP. Since general measures to protect tortoises and other terrestrial wildlife will be implemented during construction, measures to specifically protect the Gila monster are not required. These measures include a preconstruction environmental awareness training which will include the life history of the Gila monster and educate on-site personnel on actions to take if a Gila monster is encountered. If a Gila monster is encountered that does not leave the area on its own, a qualified biologist will be called in to relocate it (if needed). A continuous wildlife barrier will be in place while work is occurring in the PMP and at least one end of the trench will be ramped so that wildlife can escape the trench without human intervention. Refer to the Conclusions and Recommendations section below for the full list of mitigation measures.

### Phoenix (Squaw Peak) Talussnail

The Phoenix talussnail is identified as a “Species of Greatest Conservation Need” in Arizona’s State Wildlife Action Plan: 2012–2022 (AGFD 2012); this invertebrate species does not receive any special protections under federal law or Arizona state law.

The Phoenix talussnail has specific habitat requirements and only occurs in very deep, open, talus piles or rockslides where they can seal their shell apertures to solid rock while being protected from heat and dryness by rock layers and plants above; they cannot survive where decomposing granite, sand, or mud fills the interstitial spaces of rocky slopes (AGFD 2018). The species has been documented within a discontinuous range that includes central and north Phoenix, Scottsdale, Fountain Hills, Glendale, Peoria, Cave Creek, Carefree, New River, and along the western edge of the Tonto National Forest. Nearly 70 localities of Phoenix talussnails have been documented in northeastern Maricopa County.

The AGFD has documented occurrences of this species within 3 miles of the project area and it could be present in the PMP (e.g., in mountainous areas where talus piles are present). There are no deep talus piles or rockslides present in the proposed pipeline alignment; due to a lack of suitable habitat, no project-specific measures are necessary for the protection of Phoenix talussnails.

### ***Migratory Birds***

Most bird species in the United States, with the exception of nonnative species such as the house sparrow (*Passer domesticus*), rock dove, and European starling, are protected under the federal Migratory Bird Treaty Act of 1918 (MBTA; 16 U.S.C. § 703, as amended), which prohibits injury or death to migratory birds and their active nests, eggs, and young. Protected species of migratory birds were detected during the biological survey and are expected to be present as year-round residents within the project area; additional species that were not detected during the survey may also move into the area to breed during

the spring and summer. While the US Department of the Interior (DOI) issued a legal opinion (Memorandum M-370501) has concluded that the MBTA does not prohibit the incidental taking of migratory birds, the City is planning to avoid impacts to nesting birds as part of this project.

Construction activities are anticipated to occur during the breeding season; therefore, a preconstruction and pre-geotechnical investigation nest survey will be completed by a qualified biologist. All inactive nests will be removed, and all active nests will be avoided to the extent possible. If avoidance of a particular nest is not feasible, a qualified biologist holding a Migratory Bird Special Purpose Permit from the US Fish and Wildlife Service will relocate the nest contents (eggs and young birds) and take them to a wildlife rehabilitation center for later release (once they are able to fly and feed on their own). Refer to the Conclusions and Recommendations section below for the full list of mitigation measures.

### ***Protected Native Plants***

Some of Arizona's plant species are protected under the Arizona Native Plant Law (Arizona Revised Statutes, Chapter 7, Article 1:3-915A). Many species of protected native plants were found to occur within the project area, including a variety of desert trees and cacti. Notification to the Arizona Department of Agriculture is required for the destruction or removal of plants protected under the Arizona Native Plant Law. In accordance with the Arizona Native Plant Law, the City will ensure that a Notice of Intent to Clear Land is submitted to the Arizona Department of Agriculture prior to any vegetation clearing activities. Workers completing the geotechnical investigation will be instructed to avoid impacts to protected native plants; however, vegetation removal that will impact protected native plants will be unavoidable during construction of the pipeline. Therefore, notification to the Arizona Department of Agriculture is anticipated to occur prior to the start of pipeline construction. Salvage of healthy native plant material will occur prior to vegetation removal; these salvaged plants will be replanted in the project area as part of the post-construction restoration effort.

## **CONCLUSION AND RECOMMENDATIONS**

██████████ biological survey and literature review indicate that there is no suitable habitat for any federally-listed threatened, endangered, or proposed species in the project area or project vicinity; therefore, the proposed construction activities and development of the project area will have no effect on any federally-listed or proposed species. In addition, there is no critical habitat that has been designated or proposed for any federally-listed species in the project area or project vicinity, so no critical habitats will be affected.

There is suitable habitat for the Sonoran desert tortoise and Gila monster within the PMP, along with potential breeding habitats for migratory bird species. A variety of native plant species that are protected under the Arizona Native Plant Law were also documented in the project area.

The following recommendations are provided as a result of the biological survey and site assessment:

- ▶ A qualified biologist shall be available on an as-needed basis to remove wildlife encountered during construction as needed, and to provide initial and periodic environmental awareness training to personnel prior to work on the project.
  - ▶ The environmental awareness training shall discuss at a minimum general wildlife that may be encountered during construction, including the Sonoran desert tortoise and common nesting birds, reptiles, and small mammals. The training should also educate personnel how to handle reptiles and small mammals that may fall into the open trench, and specify that construction personnel are not permitted to relocate bird or active bird nests.
  - ▶ Clean Water Act considerations (i.e., protection of desert washes) shall also be addressed in the training.

- ▶ The City of Phoenix Sonoran Desert Tortoise flyer and the Arizona Game and Fish Department's *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects* shall be provided to all construction personnel during the environmental awareness training.
- ▶ All construction personnel shall attend an environmental awareness training prior to conducting ground disturbing work.
- ▶ All construction personnel shall follow the City of Phoenix Sonoran Desert Tortoise flyer dated (November 5, 2019) and the Arizona Game and Fish Department's *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects* (dated September 14, 2014) in the event a Sonoran desert tortoise is encountered during construction.
- ▶ While working within the Phoenix Mountain Preserve, the contractor shall require all workers to check under their parked vehicles and equipment prior to driving to make sure there isn't a Sonoran desert tortoise sheltering underneath the vehicle or piece of equipment. If a tortoise is found sheltering underneath a parked vehicle or piece of equipment, the tortoise shall be allowed to move out from under the vehicle on its own or be relocated following the *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects* before the vehicle or equipment can be moved.
- ▶ Prior to the start of each work day, the fenced-in construction site shall be inspected by construction personnel. If wildlife is encountered during the daily inspection, construction personnel may remove and relocate wildlife out of harm's way or notify the qualified biologist if needed. If construction personnel relocate wildlife, they will take record of the relocation and send it to the qualified biologist.
- ▶ When working in the Phoenix Mountain Preserve, the contractor shall extend the privacy fabric on each chain-link panel at least 1-foot along the ground line outward from the bottom of the panel. Gravel bags shall be placed on the extended fabric to create a barrier between the construction site and wildlife in the project vicinity.
- ▶ All gravel bags and extended privacy fabric shall be maintained and relocated with the chain-link panels as construction progresses through the Phoenix Mountain Preserve. If at any point the privacy fabric or gravel bags are damaged or torn, they must be replaced or repaired immediately to maintain a continuous barrier to wildlife.
- ▶ At least one end of the open trench must be ramped to allow wildlife that may have fallen into the trench to safely leave without human intervention.
- ▶ At the end of each work day, access to the construction site shall be fenced off, and all portions of the open trench shall be covered with chain link fence panels.
- ▶ The contractor shall backfill the open trench prior to moving the surrounding construction fencing.
- ▶ Prior to construction activities, a qualified biologist will survey the proposed pipeline alignment to identify any active nests. During the survey, inactive nests will be removed.
- ▶ As construction will occur during the migratory bird breeding season (February 15–August 31), disturbance to active bird nests will be avoided to the greatest practical during vegetation clearing.
- ▶ If avoidance of active nests is not feasible, a wildlife rehabilitator will be contracted to relocate the contents of the nest (i.e., eggs and/or fledglings).
- ▶ Construction impacts shall be confined to the disturbance limits identified in the construction plans.
- ▶ Earth moving equipment required for trenching will be cleaned prior to arriving to the construction site.

- ▶ Upon completion of the work in portions of the project area, disturbance areas will be restored as soon possible. Areas of disturbance will be seeded to stabilize the disturbed soil.
- ▶ Plants salvaged from the project area shall be replanted in the project area once all or portions of the project area become available. All replanted plants will be monitored and replaced if not viable for a one (1) year establishment period.
- ▶ Treatment of invasive species will occur during the one (1) year plant establishment period.
- ▶ Coordination with AGFD will be undertaken as necessary, as determined by the City of Phoenix.

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**Attachment A**

Project Area Maps

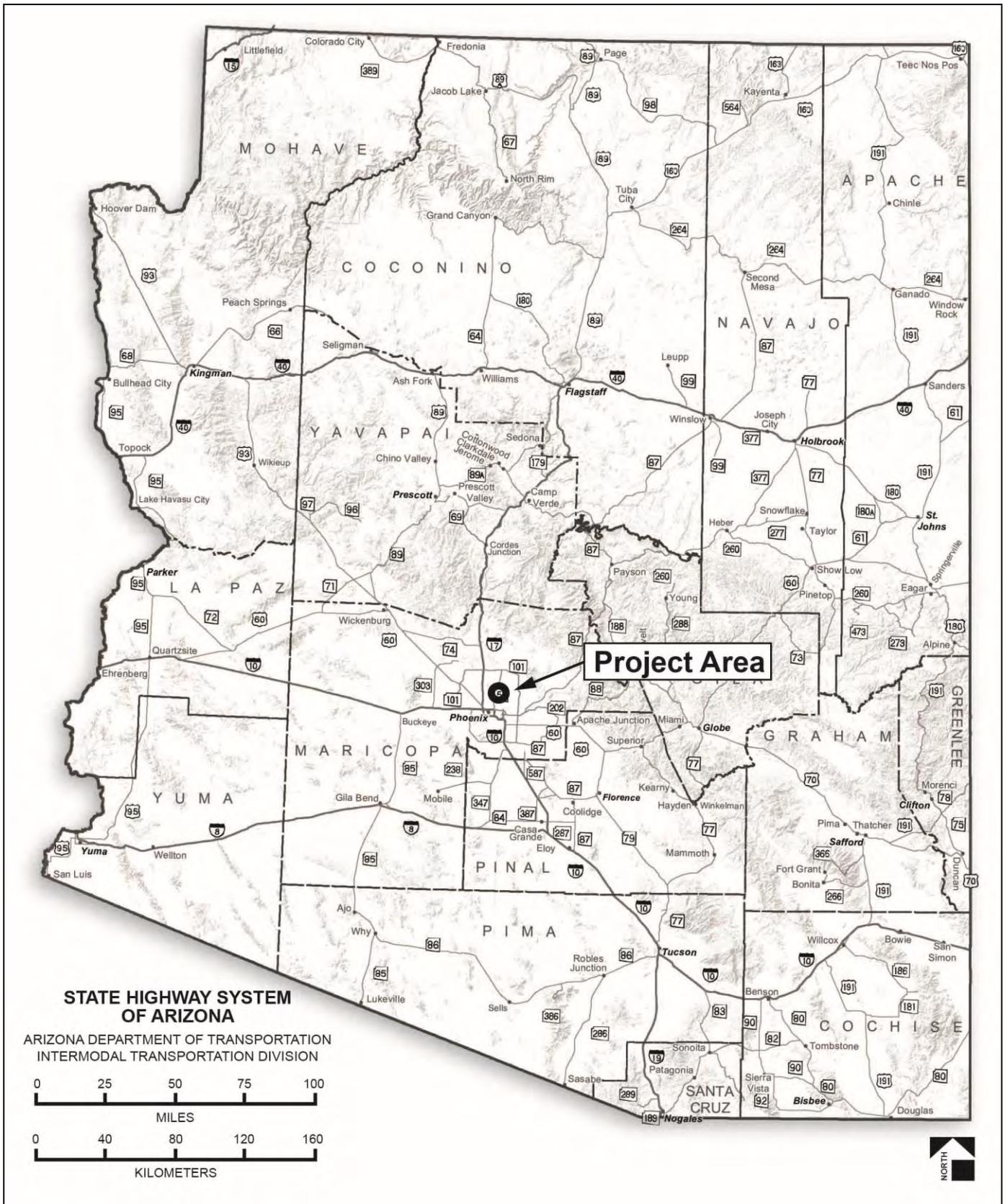


Figure 1. State Location

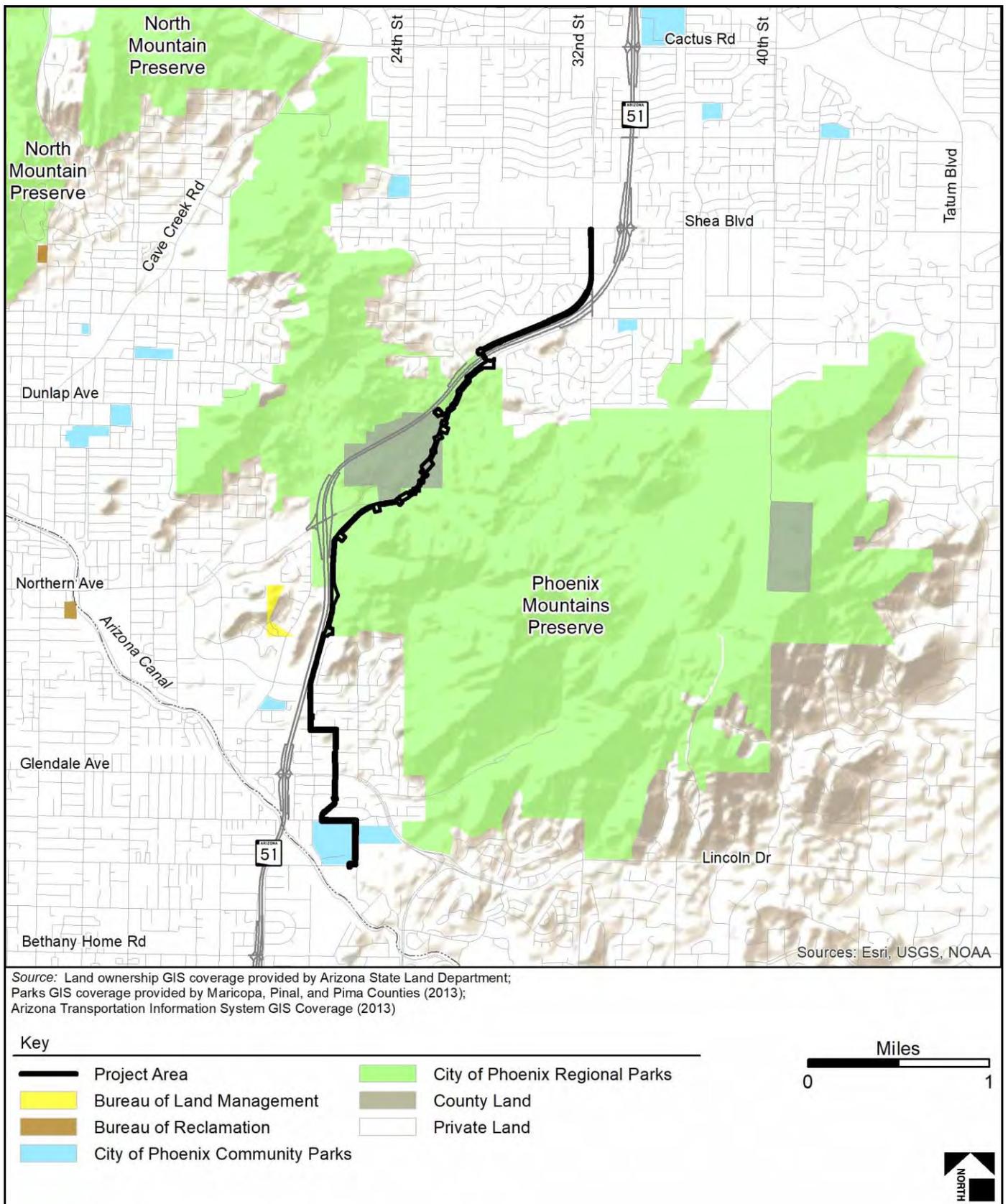
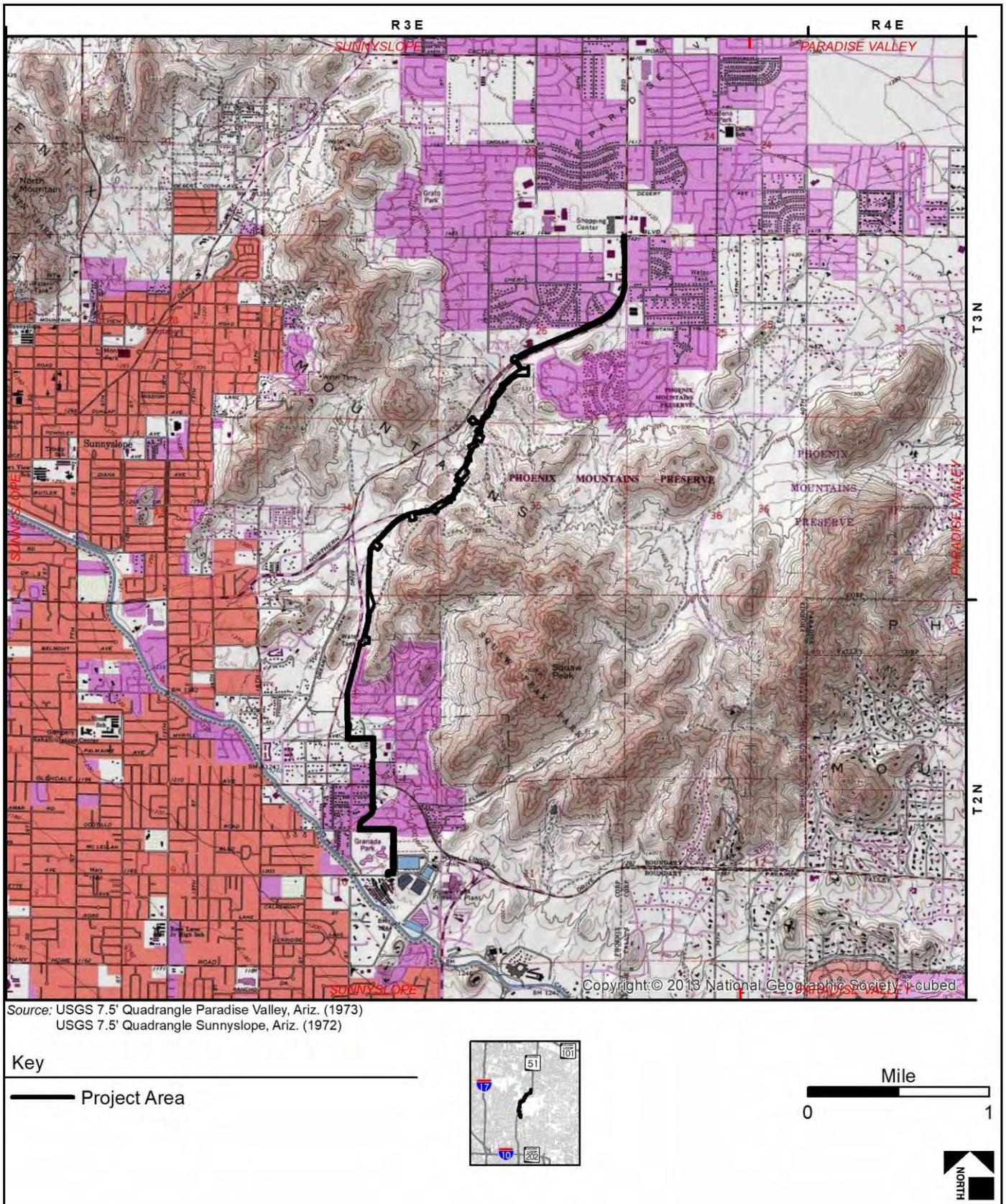
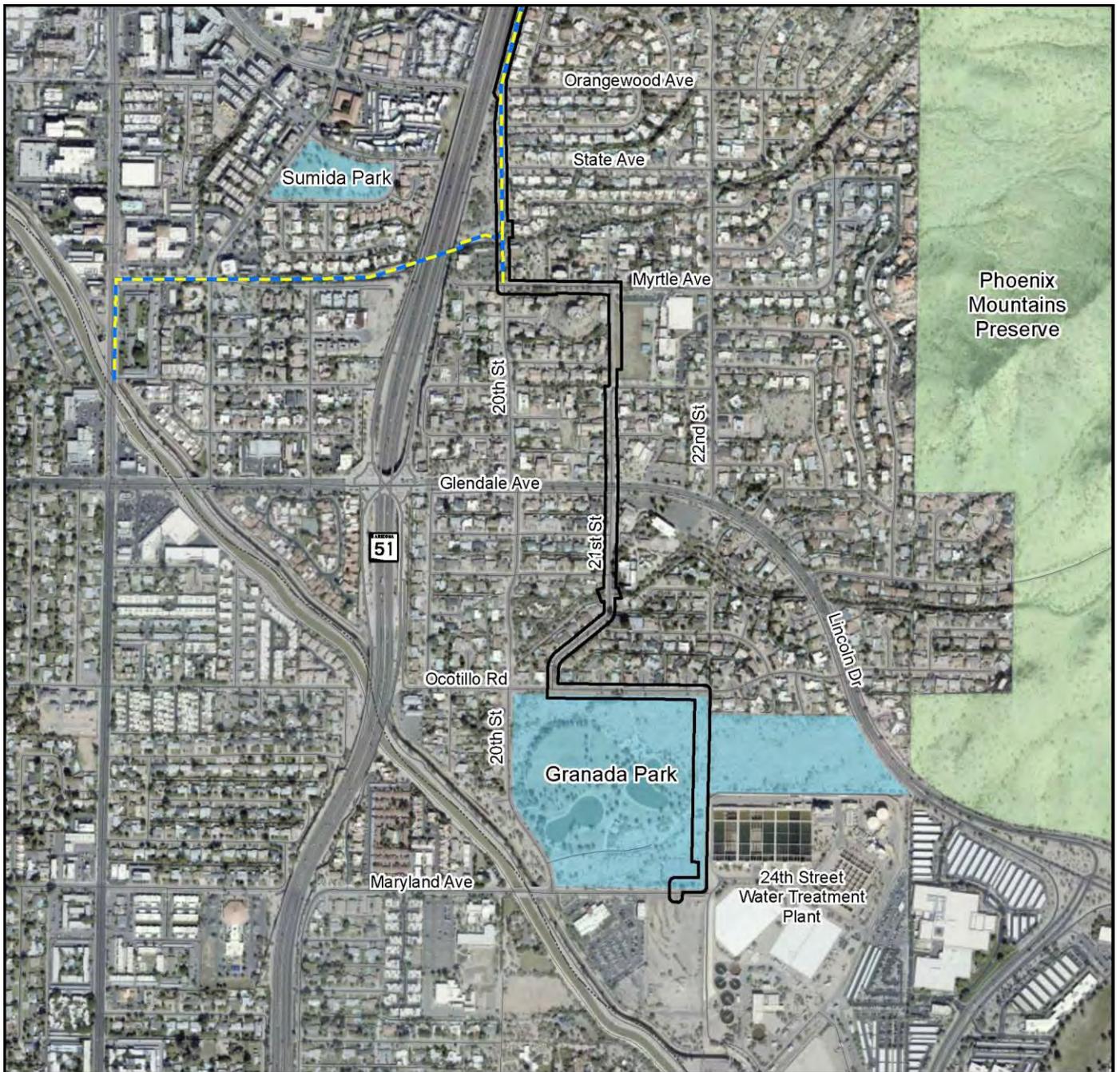


Figure 2. Project Vicinity



**Figure 3.** Project Area – Topographic Map



Source: Aerial Photography Provided By Maricopa County Assessor's Office (2019)  
 Arizona Transportation Information System GIS Coverage (2013)

Key

-  Project Area
-  City of Phoenix Community Parks
-  City of Phoenix Regional Parks
-  Equestrian Trail

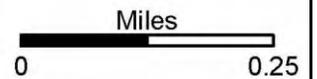
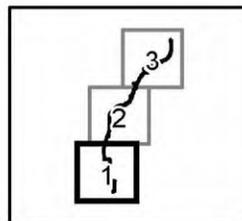
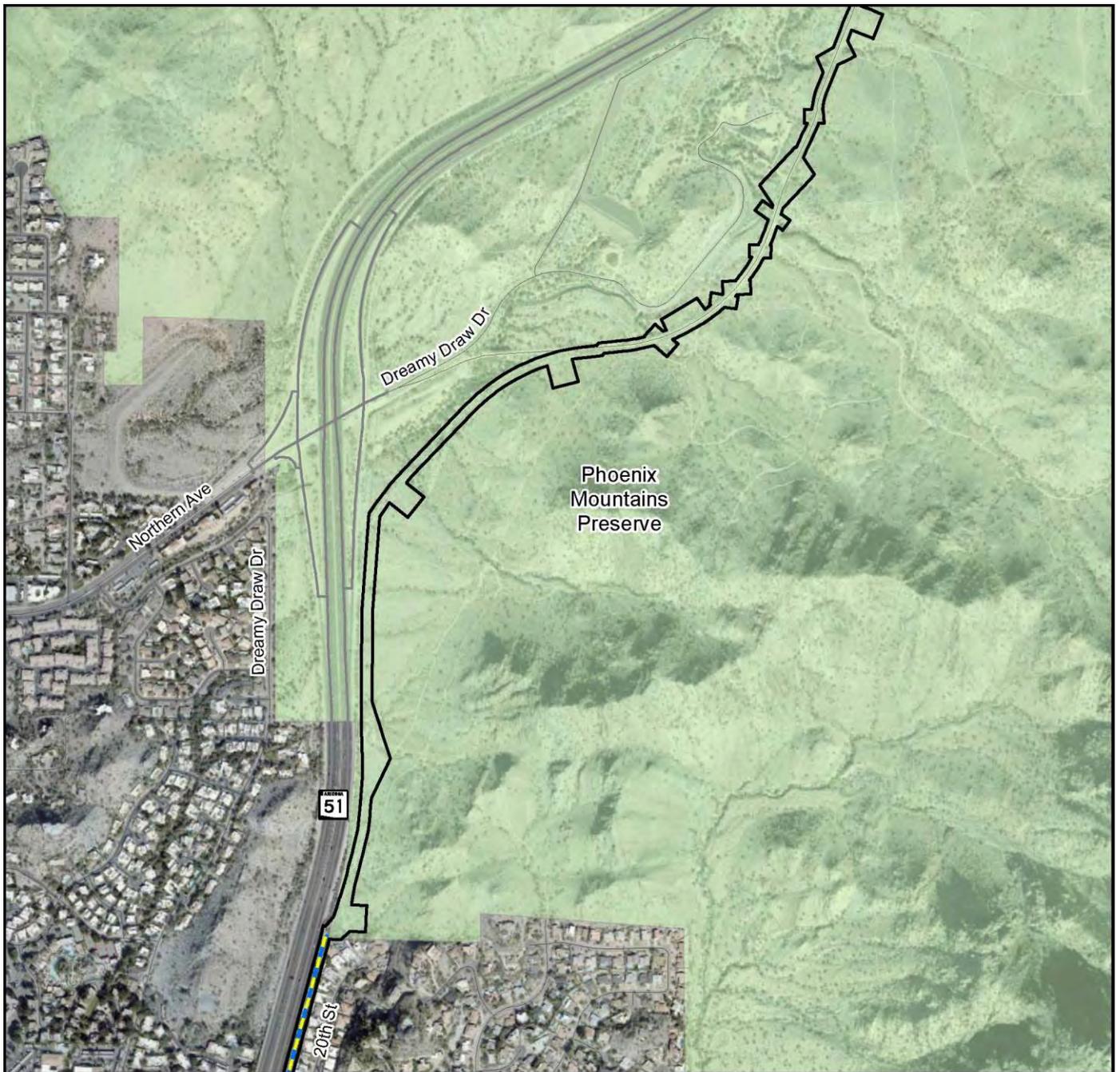


Figure 4.1. Project Area – Aerial Map



Source: Aerial Photography Provided By Maricopa County Assessor's Office (2019)  
 Arizona Transportation Information System GIS Coverage (2013)

Key

-  Project Area
-  City of Phoenix Regional Parks
-  Equestrian Trail

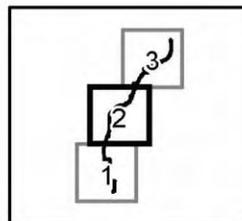
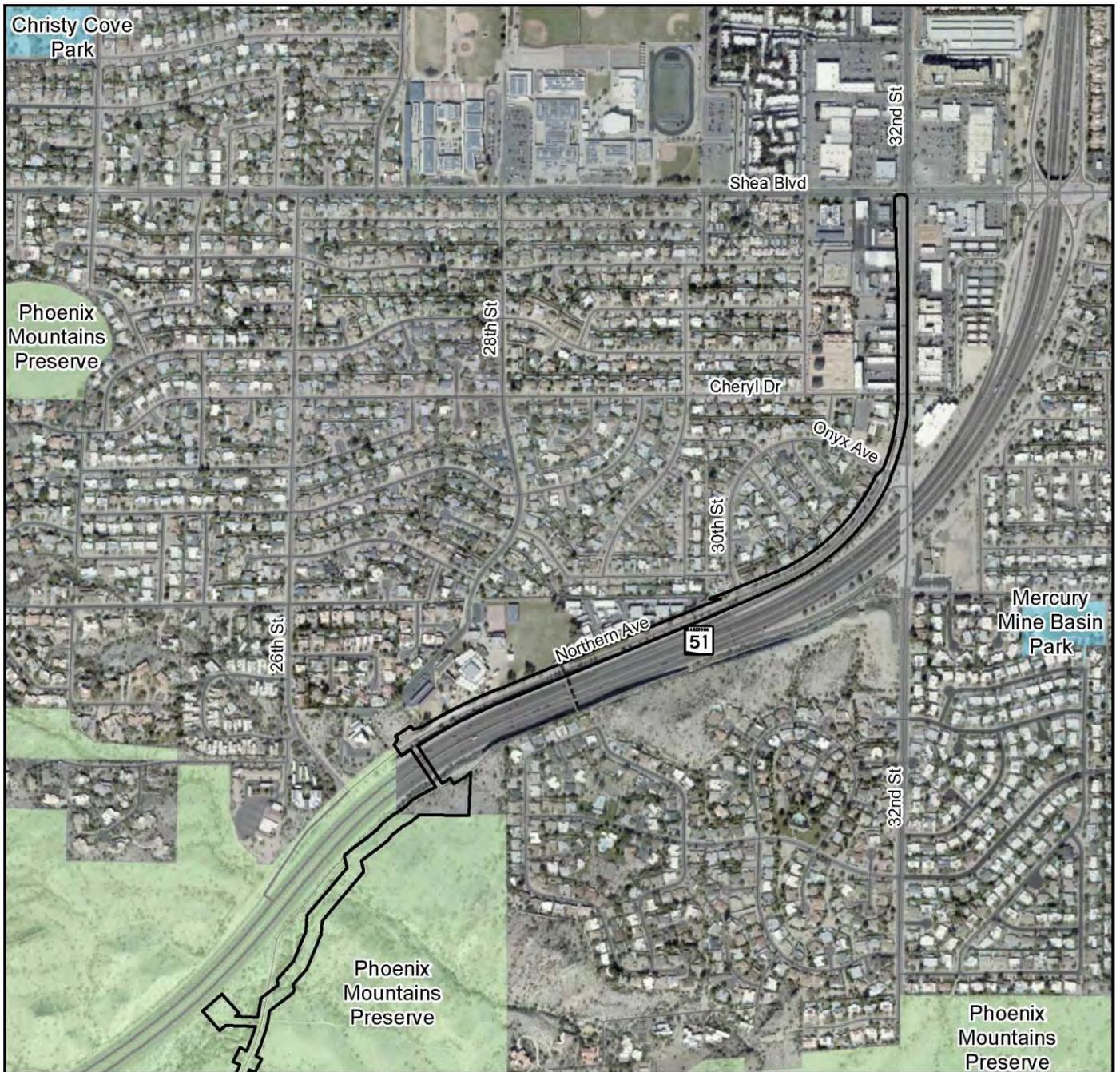


Figure 4.2. Project Area – Aerial Map



Source: Aerial Photography Provided By Maricopa County Assessor's Office (2019)  
 Arizona Transportation Information System GIS Coverage (2013)

Key

-  Project Area
-  City of Phoenix Community Parks
-  City of Phoenix Regional Parks

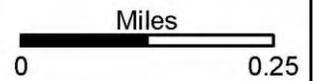
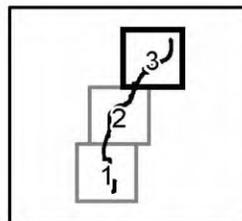


Figure 4.3. Project Area – Aerial Map

**Attachment B**

Project Area Photographs  
(January 20, 2020)

**Project Area Photographs (January 20, 2020)**



Photo 1. View of the pipeline alignment within Granada Park, west of the 24<sup>th</sup> Street Water Treatment Plant, facing south.



Photo 2. View of the pipeline alignment from the northern boundary of Granada Park (i.e. Ocotillo Road), facing south.



Photo 3. View of the pipeline alignment at the beginning of the equestrian trail at Myrtle Avenue, facing north.



Photo 4. The equestrian trail through the community cactus garden, facing north.



Photo 5. View of the pipeline alignment at the southern portion of the PMP, facing north.

**Attachment C**

US Fish and Wildlife Service Species List



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Arizona Ecological Services Field Office

9828 North 31st Ave

#c3

Phoenix, AZ 85051-2517

Phone: (602) 242-0210 Fax: (602) 242-2513

<http://www.fws.gov/southwest/es/arizona/>

[http://www.fws.gov/southwest/es/EndangeredSpecies\\_Main.html](http://www.fws.gov/southwest/es/EndangeredSpecies_Main.html)

In Reply Refer To:

January 17, 2020

Consultation Code: 02EAAZ00-2020-SLI-0331

Event Code: 02EAAZ00-2020-E-00752

Project Name: City of Phoenix Zone 3D and 4A, Segment 1 Water Line

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The Fish and Wildlife Service (Service) is providing this list under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). The list you have generated identifies threatened, endangered, proposed, and candidate species, and designated and proposed critical habitat, that may occur within one or more delineated United States Geological Survey 7.5 minute quadrangles with which your project polygon intersects. Each quadrangle covers, at minimum, 49 square miles. In some cases, a species does not currently occur within a quadrangle but occurs nearby and could be affected by a project. Please refer to the species information links found at:

[http://www.fws.gov/southwest/es/arizona/Docs\\_Species.htm](http://www.fws.gov/southwest/es/arizona/Docs_Species.htm)

<http://www.fws.gov/southwest/es/arizona/Documents/MiscDocs/AZSpeciesReference.pdf> .

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to consult with us if their projects may affect federally listed species and/or designated critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, we recommend preparing a biological evaluation similar to a Biological Assessment to determine whether the project may

affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If the Federal action agency determines that listed species or critical habitat may be affected by a federally funded, permitted or authorized activity, the agency must consult with us pursuant to 50 CFR 402. Note that a "may affect" determination includes effects that may not be adverse and that may be beneficial, insignificant, or discountable. You should request consultation with us even if only one individual or habitat segment may be affected. The effects analysis should include the entire action area, which often extends well outside the project boundary or "footprint." For example, projects that involve streams and river systems should consider downstream effects. If the Federal action agency determines that the action may jeopardize a proposed species or adversely modify proposed critical habitat, the agency must enter into a section 7 conference. The agency may choose to confer with us on an action that may affect proposed species or critical habitat.

Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we recommend considering them in the planning process in the event they become proposed or listed prior to project completion. More information on the regulations (50 CFR 402) and procedures for section 7 consultation, including the role of permit or license applicants, can be found in our Endangered Species Consultation Handbook at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>.

We also advise you to consider species protected under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712) and the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668 et seq.). The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when authorized by the Service. The Eagle Act prohibits anyone, without a permit, from taking (including disturbing) eagles, and their parts, nests, or eggs. Currently 1026 species of birds are protected by the MBTA, including species such as the western burrowing owl (*Athene cunicularia hypugea*). Protected western burrowing owls are often found in urban areas and may use their nest/burrows year-round; destruction of the burrow may result in the unpermitted take of the owl or their eggs.

If a bald eagle (or golden eagle) nest occurs in or near the proposed project area, you should evaluate your project to determine whether it is likely to disturb or harm eagles. The National Bald Eagle Management Guidelines provide recommendations to minimize potential project impacts to bald eagles:

<https://www.fws.gov/migratorybirds/pdf/management/nationalbaldeaglenagementguidelines.pdf>

<https://www.fws.gov/birds/management/managed-species/eagle-management.php>.

The Division of Migratory Birds (505/248-7882) administers and issues permits under the MBTA and Eagle Act, while our office can provide guidance and Technical Assistance. For more information regarding the MBTA, BGEPA, and permitting processes, please visit the following: <https://www.fws.gov/birds/policies-and-regulations/incidental-take.php>. Guidance for minimizing impacts to migratory birds for communication tower projects (e.g. cellular, digital television, radio, and emergency broadcast) can be found at:

<https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds/collisions/communication-towers.php>.

Activities that involve streams (including intermittent streams) and/or wetlands are regulated by the U.S. Army Corps of Engineers (Corps). We recommend that you contact the Corps to determine their interest in proposed projects in these areas. For activities within a National Wildlife Refuge, we recommend that you contact refuge staff for specific information about refuge resources.

If your action is on tribal land or has implications for off-reservation tribal interests, we encourage you to contact the tribe(s) and the Bureau of Indian Affairs (BIA) to discuss potential tribal concerns, and to invite any affected tribe and the BIA to participate in the section 7 consultation. In keeping with our tribal trust responsibility, we will notify tribes that may be affected by proposed actions when section 7 consultation is initiated.

We also recommend you seek additional information and coordinate your project with the Arizona Game and Fish Department. Information on known species detections, special status species, and Arizona species of greatest conservation need, such as the western burrowing owl and the Sonoran desert tortoise (*Gopherus morafkai*) can be found by using their Online Environmental Review Tool, administered through the Heritage Data Management System and Project Evaluation Program <https://www.azgfd.com/Wildlife/HeritageFund/>.

For additional communications regarding this project, please refer to the consultation Tracking Number in the header of this letter. We appreciate your concern for threatened and endangered species. If we may be of further assistance, please contact our following offices for projects in these areas:

Northern Arizona: Flagstaff Office 928/556-2001

Central Arizona: Phoenix office 602/242-0210

Southern Arizona: Tucson Office 520/670-6144

Sincerely,

/s/ Steven L. Spangle Field Supervisor

Attachment

Attachment(s):

- Official Species List
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Arizona Ecological Services Field Office**

9828 North 31st Ave

#c3

Phoenix, AZ 85051-2517

(602) 242-0210

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## Project Summary

Consultation Code: 02EAAZ00-2020-SLI-0331

Event Code: 02EAAZ00-2020-E-00752

Project Name: City of Phoenix Zone 3D and 4A, Segment 1 Water Line

Project Type: WATER SUPPLY / DELIVERY

Project Description: The City of Phoenix is proposing to construct Segment 1 of the Zone 3D and 4A Water Line. Segment 1 is approximately 5.4 miles long originating from the 24th Street Water Treatment Plant, through the Phoenix Mountain Preserve, to the intersection of 32nd Street and Shea Boulevard. The proposed pipe will be constructed using the open trench method to place a 66" diameter concrete pipe.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/33.5566746867545N112.03725829652133W>



Counties: Maricopa, AZ

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## Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Birds

| NAME                                                                                                                                                                                                                                                                                                        | STATUS     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| California Least Tern <i>Sterna antillarum browni</i><br>No critical habitat has been designated for this species.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>                                                                            | Endangered |
| Yellow-billed Cuckoo <i>Coccyzus americanus</i><br>Population: Western U.S. DPS<br>There is <b>proposed</b> critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/3911">https://ecos.fws.gov/ecp/species/3911</a> | Threatened |
| Yuma Clapper Rail <i>Rallus longirostris yumanensis</i><br>No critical habitat has been designated for this species.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/3505">https://ecos.fws.gov/ecp/species/3505</a>                                                                          | Endangered |

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

---

**Attachment D**

Arizona Game and Fish Department  
On-line Environmental Review Tool Report

# Arizona Environmental Online Review Tool Report



## *Arizona Game and Fish Department Mission*

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

**Project Name:**

pipeline

**Project Description:**

expansion of water line

**Project Type:**

Water Use, Transfer, and Channel Activities, Water delivery and supply line or effluent delivery line (operated by municipality or water company), New lines or expansion of existing lines

**Contact Person:**

kelly wolff

**Organization:**

AZGFD

**On Behalf Of:**

CITY

**Project ID:**

HGIS-09974

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

**Disclaimer:**

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

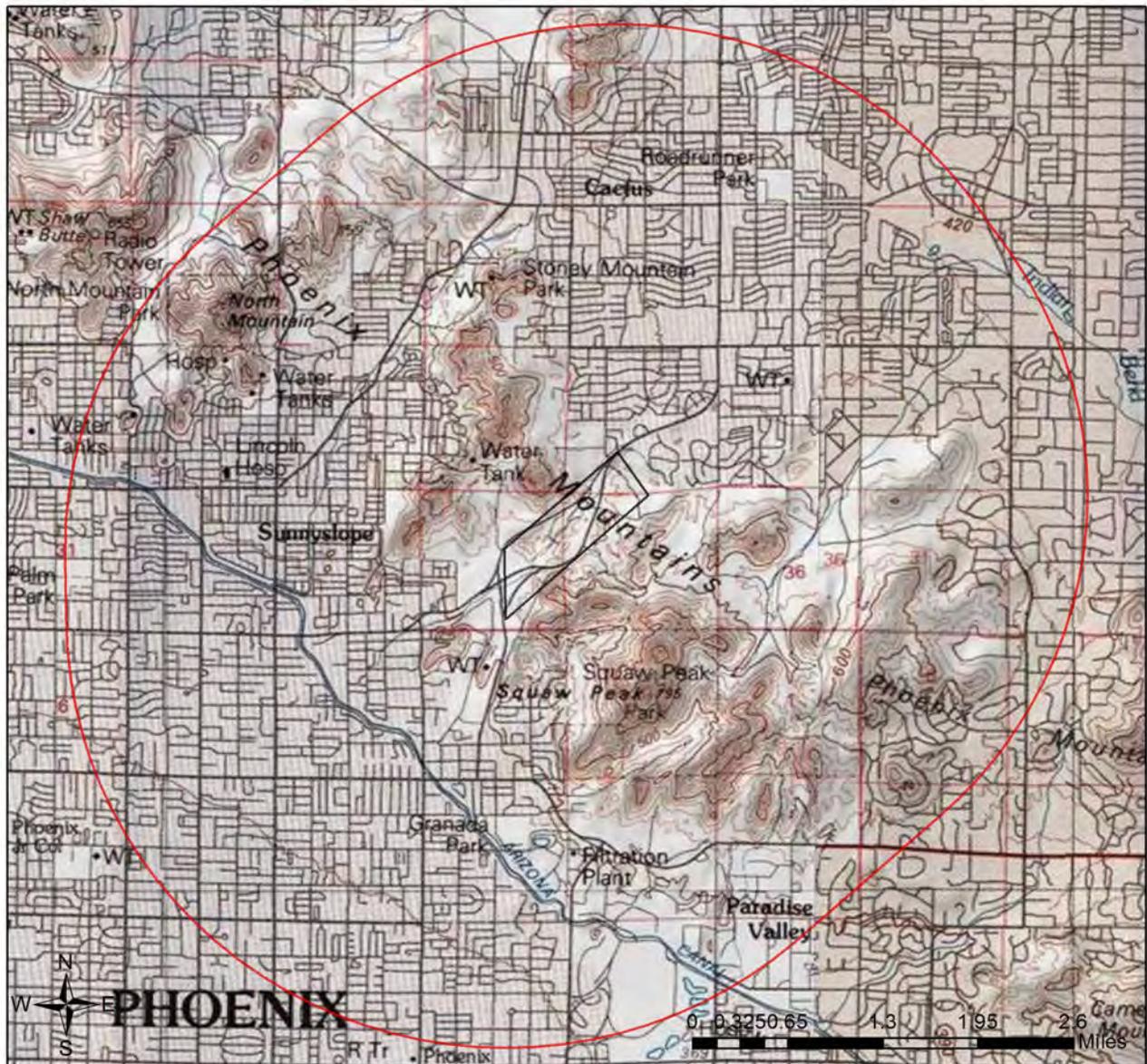
**Locations Accuracy Disclaimer:**

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

**Recommendations Disclaimer:**

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

## pipeline USA Topo Basemap With Locator Map



- Project Boundary
- Buffered Project Boundary

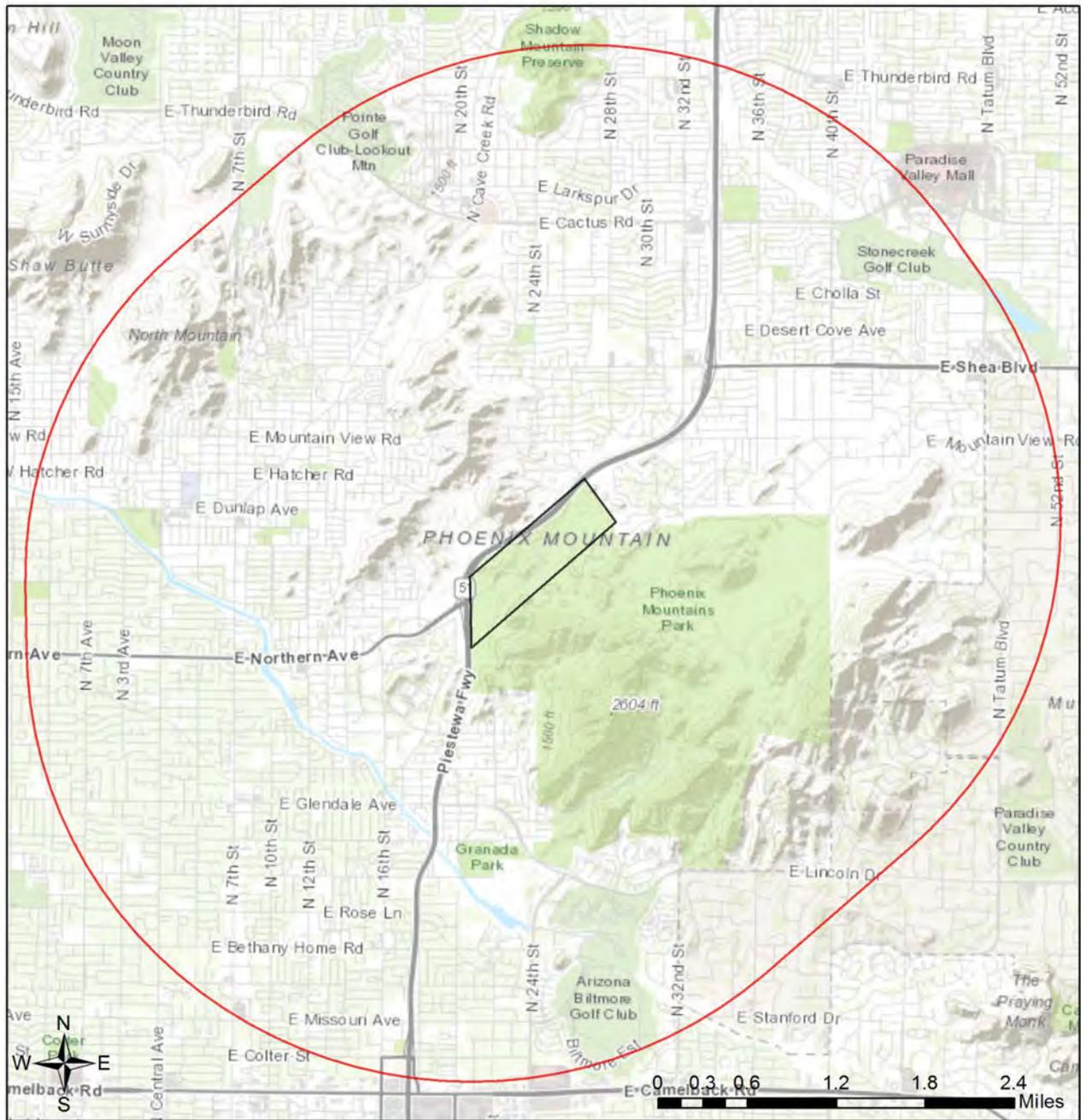
Project Size (acres): 276.64  
 Lat/Long (DD): 33.5631 / -112.0301  
 County(s): Maricopa  
 AGFD Region(s): Mesa  
 Township/Range(s): T3N, R3E  
 USGS Quad(s): SUNNYSLOPE

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap



# pipeline

Web Map As Submitted By User



- Project Boundary
- Buffered Project Boundary

Project Size (acres): 276.64  
Lat/Long (DD): 33.5631 / -112.0301  
County(s): Maricopa  
AGFD Region(s): Mesa  
Township/Range(s): T3N, R3E  
USGS Quad(s): SUNNYSLOPE

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

## pipeline Important Areas

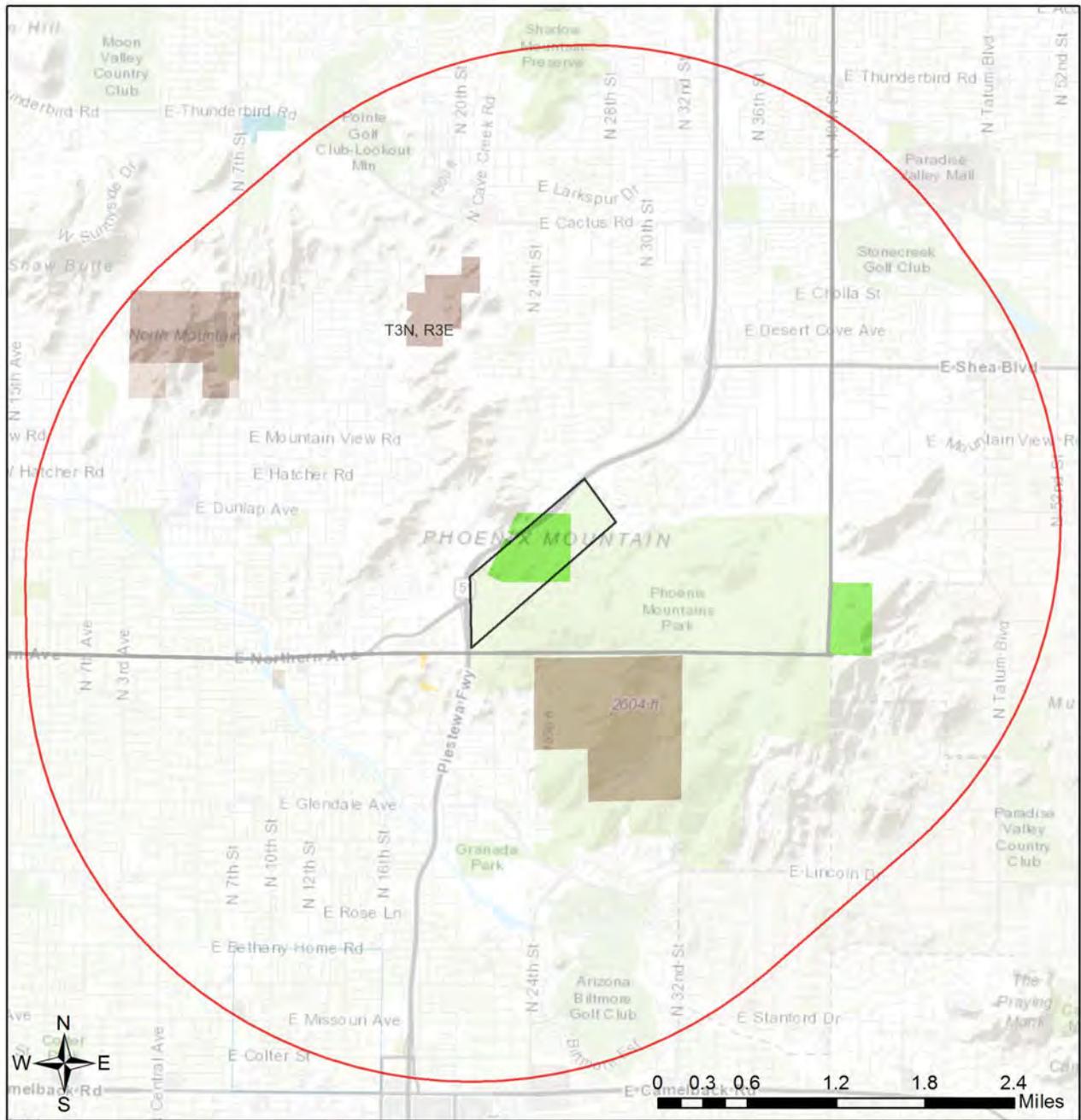


- |                                      |                                        |
|--------------------------------------|----------------------------------------|
| Project Boundary                     | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary            | Wildlife Connectivity                  |
| <b>County Stakeholder Assessment</b> | Important Connectivity Zones           |
| Wildlife Crossing Area               | Pinal County Riparian                  |
| Wildlife Movement Area - Diffuse     | Critical Habitat                       |
| Wildlife Movement Area - Landscape   | Important Bird Areas                   |

Project Size (acres): 276.64  
 Lat/Long (DD): 33.5631 / -112.0301  
 County(s): Maricopa  
 AGFD Region(s): Mesa  
 Township/Range(s): T3N, R3E  
 USGS Quad(s): SUNNYSLOPE

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

## pipeline Township/Ranges and Land Ownership



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

Project Size (acres): 276.64  
 Lat/Long (DD): 33.5631 / -112.0301  
 County(s): Maricopa  
 AGFD Region(s): Mesa  
 Township/Range(s): T3N, R3E  
 USGS Quad(s): SUNNYSLOPE

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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

| Scientific Name                 | Common Name                            | FWS     | USFS | BLM | NPL | SGCN |
|---------------------------------|----------------------------------------|---------|------|-----|-----|------|
| Gopherus agassizii              | Mohave Desert Tortoise                 | LT      |      |     |     | 1A   |
| Gopherus morafkai               | Sonoran Desert Tortoise                | CCA     | S    | S   |     | 1A   |
| Haliaeetus leucocephalus pop. 3 | Bald Eagle - Sonoran Desert Population | SC, BGA | S    | S   |     | 1A   |
| Heloderma suspectum             | Gila Monster                           |         |      |     |     | 1A   |
| Maricopella allynsmithi         | Squaw Peak Talussnail                  | SC      |      |     |     | 1B   |

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

**Special Areas Documented within the Project Vicinity**

| Scientific Name           | Common Name                                        | FWS | USFS | BLM | NPL | SGCN |
|---------------------------|----------------------------------------------------|-----|------|-----|-----|------|
| Phoenix Mtns - Salt River | Maricopa County Wildlife Movement Area - Landscape |     |      |     |     |      |

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

**Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models**

| Scientific Name                    | Common Name                   | FWS     | USFS | BLM | NPL | SGCN |
|------------------------------------|-------------------------------|---------|------|-----|-----|------|
| Aix sponsa                         | Wood Duck                     |         |      |     |     | 1B   |
| Ammospermophilus harrisi           | Harris' Antelope Squirrel     |         |      |     |     | 1B   |
| Aquila chrysaetos                  | Golden Eagle                  | BGA     |      | S   |     | 1B   |
| Athene cunicularia hypugaea        | Western Burrowing Owl         | SC      | S    | S   |     | 1B   |
| Botaurus lentiginosus              | American Bittern              |         |      |     |     | 1B   |
| Calypte costae                     | Costa's Hummingbird           |         |      |     |     | 1C   |
| Castor canadensis                  | American Beaver               |         |      |     |     | 1B   |
| Chilomeniscus stramineus           | Variable Sandsnake            |         |      |     |     | 1B   |
| Chionactis occipitalis klauberi    | Tucson Shovel-nosed Snake     | SC      |      |     |     | 1A   |
| Colaptes chrysoides                | Gilded Flicker                |         |      | S   |     | 1B   |
| Coluber bilineatus                 | Sonoran Whipsnake             |         |      |     |     | 1B   |
| Corynorhinus townsendii pallescens | Pale Townsend's Big-eared Bat | SC      | S    | S   |     | 1B   |
| Crotalus tigris                    | Tiger Rattlesnake             |         |      |     |     | 1B   |
| Euderma maculatum                  | Spotted Bat                   | SC      | S    | S   |     | 1B   |
| Eumops perotis californicus        | Greater Western Bonneted Bat  | SC      |      | S   |     | 1B   |
| Falco peregrinus anatum            | American Peregrine Falcon     | SC      | S    | S   |     | 1A   |
| Gopherus morafkai                  | Sonoran Desert Tortoise       | CCA     | S    | S   |     | 1A   |
| Haliaeetus leucocephalus           | Bald Eagle                    | SC, BGA | S    | S   |     | 1A   |
| Heloderma suspectum                | Gila Monster                  |         |      |     |     | 1A   |
| Incilius alvarius                  | Sonoran Desert Toad           |         |      |     |     | 1B   |

**Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models**

| Scientific Name                   | Common Name               | FWS       | USFS | BLM | NPL | SGCN |
|-----------------------------------|---------------------------|-----------|------|-----|-----|------|
| Kinosternon sonoriense sonoriense | Desert Mud Turtle         |           |      | S   |     | 1B   |
| Lasiurus blossevillii             | Western Red Bat           |           | S    |     |     | 1B   |
| Lasiurus xanthinus                | Western Yellow Bat        |           | S    |     |     | 1B   |
| Leptonycteris yerbabuenae         | Lesser Long-nosed Bat     | SC        |      |     |     | 1A   |
| Lithobates yavapaiensis           | Lowland Leopard Frog      | SC        | S    | S   |     | 1A   |
| Macrotus californicus             | California Leaf-nosed Bat | SC        |      | S   |     | 1B   |
| Maricopella allynsmithi           | Squaw Peak Talussnail     | SC        |      |     |     | 1B   |
| Melanerpes uropygialis            | Gila Woodpecker           |           |      |     |     | 1B   |
| Melospiza lincolni                | Lincoln's Sparrow         |           |      |     |     | 1B   |
| Melospiza aberti                  | Abert's Towhee            |           | S    |     |     | 1B   |
| Micrathene whitneyi               | Elf Owl                   |           |      |     |     | 1C   |
| Micruroides euryxanthus           | Sonoran Coralsnake        |           |      |     |     | 1B   |
| Myiarchus tyrannulus              | Brown-crested Flycatcher  |           |      |     |     | 1C   |
| Myotis velifer                    | Cave Myotis               | SC        |      | S   |     | 1B   |
| Myotis yumanensis                 | Yuma Myotis               | SC        |      |     |     | 1B   |
| Nyctinomops femorosaccus          | Pocketed Free-tailed Bat  |           |      |     |     | 1B   |
| Oreoscoptes montanus              | Sage Thrasher             |           |      |     |     | 1C   |
| Oreothlypis luciae                | Lucy's Warbler            |           |      |     |     | 1C   |
| Panthera onca                     | Jaguar                    | LE        |      |     |     | 1A   |
| Phrynosoma solare                 | Regal Horned Lizard       |           |      |     |     | 1B   |
| Phyllorhynchus browni             | Saddled Leaf-nosed Snake  |           |      |     |     | 1B   |
| Setophaga petechia                | Yellow Warbler            |           |      |     |     | 1B   |
| Sphyrapicus nuchalis              | Red-naped Sapsucker       |           |      |     |     | 1C   |
| Spizella breweri                  | Brewer's Sparrow          |           |      |     |     | 1C   |
| Tadarida brasiliensis             | Brazilian Free-tailed Bat |           |      |     |     | 1B   |
| Toxostoma lecontei                | LeConte's Thrasher        |           |      | S   |     | 1B   |
| Troglodytes pacificus             | Pacific Wren              |           |      |     |     | 1B   |
| Vireo bellii arizonae             | Arizona Bell's Vireo      |           |      |     |     | 1B   |
| Vulpes macrotis                   | Kit Fox                   | No Status |      |     |     | 1B   |

**Species of Economic and Recreation Importance Predicted within the Project Vicinity**

| Scientific Name     | Common Name       | FWS | USFS | BLM | NPL | SGCN |
|---------------------|-------------------|-----|------|-----|-----|------|
| Callipepla gambelii | Gambel's Quail    |     |      |     |     |      |
| Zenaida asiatica    | White-winged Dove |     |      |     |     |      |
| Zenaida macroura    | Mourning Dove     |     |      |     |     |      |

**Project Type: Water Use, Transfer, and Channel Activities, Water delivery and supply line or effluent delivery line (operated by municipality or water company), New lines or expansion of existing lines**

**Project Type Recommendations:**

Minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, animals (exotic snails), and other organisms (e.g., microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g., livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before leaving the site. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants, <https://agriculture.az.gov/>. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control, <http://www.usda.gov/wps/portal/usdahome>. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information <https://www.azgfd.com/hunting/regulations>.

Minimization and mitigation of impacts to wildlife and fish species due to changes in water quality, quantity, chemistry, temperature, and alteration to flow regimes (timing, magnitude, duration, and frequency of floods) should be evaluated. Minimize impacts to springs, in-stream flow, and consider irrigation improvements to decrease water use. If dredging is a project component, consider timing of the project in order to minimize impacts to spawning fish and other aquatic species (include spawning seasons), and to reduce spread of exotic invasive species. We recommend early direct coordination with Project Evaluation Program for projects that could impact water resources, wetlands, streams, springs, and/or riparian habitats.

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

Based on the project type entered, coordination with State Historic Preservation Office may be required (<http://azstateparks.com/SHPO/index.html>).

Trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herptefauna (snakes, lizards, tortoise) from entering ditches.

Based on the project type entered, coordination with Arizona Department of Environmental Quality may be required (<http://www.azdeq.gov/>).

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

**Project Location and/or Species Recommendations:**

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

**Phoenix Main Office**

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

**Tucson Sub-Office**

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

**Flagstaff Sub-Office**

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

HDMS records indicate that **Sonoran Desert Tortoise** have been documented within the vicinity of your project area. Please review the Tortoise Handling Guidelines found at: <https://www.azgfd.com/wildlife/nongamemanagement/tortoise/>

Analysis indicates that your project is located in the vicinity of an identified **wildlife habitat connectivity feature**. The **County-level Stakeholder Assessments** contain five categories of data (Barrier/Development, Wildlife Crossing Area, Wildlife Movement Area- Diffuse, Wildlife movement Area- Landscape, Wildlife Movement Area- Riparian/Washes) that provide a context of select anthropogenic barriers, and potential connectivity. The reports provide recommendations for opportunities to preserve or enhance permeability. Project planning and implementation efforts should focus on maintaining and improving opportunities for wildlife permeability. For information pertaining to the linkage assessment and wildlife species that may be affected, please refer to: <https://www.azgfd.com/wildlife/planning/habitatconnectivity/identifying-corridors/>.

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

**Attachment E**

City of Phoenix Sonoran Desert Tortoise Flyer  
(Updated November 5, 2019)

and

Arizona Game and Fish Department  
Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects  
(Revised September 22, 2014)



Credit: Jeff Humphrey, USFWS



**City of Phoenix**  
OFFICE OF ENVIRONMENTAL PROGRAMS

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## **Sonoran Desert Tortoise**

*(Gopherus morafkai)*

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The purpose of this flyer is to provide City of Phoenix employees and contractors working on City projects with basic knowledge to reduce the risk of impacting Sonoran Desert tortoise.

### **Legal Status:**

The Sonoran Desert tortoise is a Tier 1A Species of Greatest Conservation Need in the State of Arizona, as defined by the Arizona Game and Fish Department (AGFD).

### **Species Description:**

- Length: 8-15 inches
- Bottom shell yellowish and not hinged
- Hind limbs stocky and elephantine
- High-domed, brownish shell with a pattern and prominent growth lines
- Flattened forelimbs for digging, covered with conical scales

### **Where are they found?**

- Rocky, steep slopes and lower mountain slopes
- Native desert scrubland
- Between 904 and 4,198 feet in elevation
- Washes and valley bottoms may be used in dispersal

### **Where are they active?**

- Sonoran Desert tortoise spend the bulk of time in burrows, which provide protection from heat and cold
- Emerge from burrows on rocky slopes, deserts scrub or grassland to feed, bask and breed, mostly during the monsoon season

### **How to avoid impacting Sonoran Desert tortoise:**

- Scan ahead as you work
- ***If Sonoran Desert tortoise observed, STOP WORK, call the contact below and allow the tortoise to leave under its own power***
- Do NOT pick up or handle the Sonoran Desert tortoise unless the tortoise is in imminent danger. If a tortoise must be moved, strictly adhere to the following AGFD guidelines (rev. 9/22/2014):  
<https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/2014%20Tortoise%20handling%20guidelines.pdf>. Improper handling can result in tortoise death
- When working in Sonoran Desert tortoise habitat, check for tortoises under parked vehicles before driving

**Questions? Concerns? Think your project will impact Sonoran Desert tortoise?** Contact the City of Phoenix Office of Environmental Programs, Environmental Programs Coordinator, Tricia Balluff at (602) 534-1775 or [tricia.balluff@phoenix.gov](mailto:tricia.balluff@phoenix.gov).

GUIDELINES FOR HANDLING SONORAN DESERT TORTOISES  
ENCOUNTERED ON DEVELOPMENT PROJECTS

Arizona Game and Fish Department  
Revised September 22, 2014

The Arizona Game and Fish Department (Department) has developed the following guidelines to reduce potential impacts to desert tortoises, and to promote the continued existence of tortoises throughout the state. These guidelines apply to short-term and/or small-scale projects, depending on the number of affected tortoises and specific type of project.

The Sonoran desert tortoise occurs south and east of the Colorado River. Tortoises encountered in the open should be moved out of harm's way to adjacent appropriate habitat. If an occupied burrow is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest appropriate alternate burrow or other appropriate shelter, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. Tortoises should be moved quickly, kept in an upright position parallel to the ground at all times, and placed in the shade. Separate disposable gloves should be worn for each tortoise handled to avoid potential transfer of disease between tortoises. Tortoises must not be moved if the ambient air temperature exceeds 40° Celsius (105° Fahrenheit) unless an alternate burrow is available or the tortoise is in imminent danger.

A tortoise may be moved up to one-half mile, but no further than necessary from its original location. If a release site or alternate burrow is unavailable within this distance, and ambient air temperature exceeds 40° Celsius (105° Fahrenheit), contact the Department for guidance. Tortoises salvaged from projects which result in substantial permanent habitat loss (e.g. housing and highway projects), or those requiring removal during long-term (longer than one week) construction projects, may be placed in the Department's tortoise adoption program. *Managers of projects likely to affect desert tortoises should obtain a [scientific collecting license](#) from the Department to facilitate handling or temporary possession of tortoises.* Likewise, if large numbers of tortoises (>5) are expected to be displaced by a project, the project manager should contact the Department for guidance and/or assistance.

Please keep in mind the following points:

- Use the Department's [Environmental On-Line Review Tool Department](#) during the planning stages of any project that may affect desert tortoise habitat.
- Unless specifically authorized by the Department, or as noted above, project personnel should avoid disturbing any tortoise.
- Take is prohibited by state law.
- These guidelines do not apply to Mojave desert tortoises (north and west of the Colorado River). Mojave desert tortoises are listed as threatened under the Endangered Species Act, administered by the U.S. Fish and Wildlife Service.
- These guidelines are subject to revision at the discretion of the Department.

**From:** [Greta Halle](#)  
**To:** [Tricia Balluff](#)  
**Subject:** FW: WS85500442 reassessment #2  
**Date:** Monday, May 11, 2020 11:44:03 AM

---

**Greta Halle**

Environmental Quality Specialist  
Office of the City Engineer  
Street Transportation Department | City of Phoenix  
200 W. Washington St., 5th floor | Phoenix, AZ 85003  
(P) 602.534.6030 | [greta.halle@phoenix.gov](mailto:greta.halle@phoenix.gov)

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**From:** Jodey Elsner  
**Sent:** Friday, May 1, 2020 1:30 PM  
**To:** Greta Halle <[greta.halle@phoenix.gov](mailto:greta.halle@phoenix.gov)>  
**Subject:** RE: WS85500442 reassessment #2

Greta,

I've reassessed the project, and no historic properties will be affected.

Thank you,



**Jodey Elsner**

Historic Preservation Planner II  
Historic Preservation Office  
City of Phoenix  
200 West Washington Street, 3<sup>rd</sup> flr  
Phoenix, AZ 85003  
602-495-7103  
[Phoenix.gov/PDD/historic-preservation](http://Phoenix.gov/PDD/historic-preservation)

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**From:** Greta Halle  
**Sent:** Tuesday, April 28, 2020 12:40 PM  
**To:** Jodey Elsner <[jodey.elsner@phoenix.gov](mailto:jodey.elsner@phoenix.gov)>  
**Subject:** RE: WS85500442 reassessment #2  
**Importance:** High

Hi Jodey, I believe there is a need for Clean Water Act-related activities, so your assessment is definitely needed....thank you!

**Greta Halle**

Environmental Quality Specialist

Office of the City Engineer  
Street Transportation Department | City of Phoenix  
200 W. Washington St., 5th floor | Phoenix, AZ 85003  
(P) 602.534.6030 | [greta.halle@phoenix.gov](mailto:greta.halle@phoenix.gov)

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**From:** Greta Halle  
**Sent:** Tuesday, April 21, 2020 12:51 PM  
**To:** Jodey Elsner <[jodey.elsner@phoenix.gov](mailto:jodey.elsner@phoenix.gov)>  
**Subject:** FW: WS85500442 reassessment #2

Hi Jodey, hope this e-mail finds you healthy and safe. As soon as you're able, would you please provide a response to this reassessment request? Thank you!

**Greta Halle**

Environmental Quality Specialist  
Office of the City Engineer  
Street Transportation Department | City of Phoenix  
200 W. Washington St., 5th floor | Phoenix, AZ 85003  
(P) 602.534.6030 | [greta.halle@phoenix.gov](mailto:greta.halle@phoenix.gov)

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**From:** Greta Halle  
**Sent:** Thursday, February 27, 2020 12:15 PM  
**To:** Tricia Balluff ([tricia.balluff@phoenix.gov](mailto:tricia.balluff@phoenix.gov)) <[tricia.balluff@phoenix.gov](mailto:tricia.balluff@phoenix.gov)>; Laurene Montero ([laurene.montero@phoenix.gov](mailto:laurene.montero@phoenix.gov)) <[laurene.montero@phoenix.gov](mailto:laurene.montero@phoenix.gov)>; Rebecca Hill <[rebecca.hill@phoenix.gov](mailto:rebecca.hill@phoenix.gov)>; Jodey Elsner <[jodey.elsner@phoenix.gov](mailto:jodey.elsner@phoenix.gov)>  
**Cc:** Andrea Love <[andrea.love@phoenix.gov](mailto:andrea.love@phoenix.gov)>  
**Subject:** WS85500442 reassessment #2

Hi everyone, this project was originally assessed on 2018, reassessed in 2019, and it's coming back to you for another reassessment. Your offices may have been contacted directly and might already have some involvement. Attached is an updated map which displays the 2018, 2019, and 2020 alignments. Additionally, GIS shapefiles or kmz files for each alignment are also attached for your use.

Would you please let me know if your below findings from 2018 and 2019 still stand or if changes are needed? Thank you.

**Clean Water Act Section 404/401/402 and Wildlife Biology**

- If work will occur within washes, a Section 404 permit will be needed. Please coordinate with the 404 Program Coordinator (Tricia Balluff, (602) 534-1775; [tricia.balluff@phoenix.gov](mailto:tricia.balluff@phoenix.gov)) at or before 60% plans to ensure compliance with the Clean Water Act.
- Unique or impaired waters are not located within 0.25-mile of the project area. More than 1 acre of ground-disturbing activities are anticipated during construction; therefore, an Arizona Pollutant Discharge Elimination System construction general permit will be required. The contractor shall prepare a Stormwater Pollution Prevention Plan and submit the Notice of Intent and Notice of Termination to the Arizona Department of Environmental Quality.

- There is scattered desert vegetation, trees and shrubs adjacent to the project area and impacts to vegetation are anticipated. This vegetation can provide habitat for active nests protected under the Migratory Bird Treaty Act. The potential for active nests to be present is increased between February 1 and August 31. Impacts to vegetation should be avoided during this season, if practicable. The following accommodations are required:
- The Migratory Bird Treaty Act flyer will be provided to the contractor prior to the start of work.
- If trees or shrubs would be impacted between February 1 and August 31 of any calendar year, or if an active bird nest is present within 30 feet of the work area, work shall cease within 30 feet and the Street Transportation Department Environmental Quality Specialist (Ed Checkley, 602-534-3366 or Greta Halle, 602-534-6030) shall be notified immediately and allowed time to make appropriate arrangements.
- Potential habitat is present for the Sonoran Desert tortoise and minimally suitable habitat for the Western burrowing owl is present. A survey by a qualified biologist for Sonoran Desert tortoise is needed approximately two (2) weeks prior to construction. The following accommodations are also necessary:
  - The attached Western burrowing owl flyer shall be provided to the contractor at the preconstruction meeting and shall be posted at the construction site.
  - The Sonoran Desert tortoise construction flyer and handling guidelines shall be provided to the contractor at the preconstruction meeting and shall be posted at the construction site.

### **Archaeology**

- The project crosses within 250 feet of two historic mining sites that are not eligible for inclusion in the National Register of Historic Places. The project also crosses the historic Rico Mine which has been determined eligible for inclusion in the National Register of Historic Places; data have been recovered through archaeological and archival investigations.
- No further archaeological work is necessary for this project. However, if any archaeological materials are encountered during ground-disturbing activities, the contractor shall cease all ground-disturbing activities within 10 meters of the discovery and the City of Phoenix Archaeology Office (602-495-0901) shall be notified immediately and allowed time to properly assess the materials.

### **Historic Preservation**

- There are no listed or eligible historic properties or districts within or adjacent to the project area; therefore, it is anticipated that no historic properties or districts will be affected.

### **Greta Halle**

Environmental Quality Specialist  
 Office of the City Engineer  
 Street Transportation Department | City of Phoenix  
 200 W. Washington St., 5th floor | Phoenix, AZ 85003  
 (P) 602.534.6030 | [greta.halle@phoenix.gov](mailto:greta.halle@phoenix.gov)

**From:** [Rebecca Hill](#)  
**To:** [Greta Halle](#)  
**Cc:** [Laurene Montero](#); [Archaeology PKS](#); [Andrea Love](#)  
**Subject:** WS85500442 reassessment #2  
**Date:** Wednesday, March 4, 2020 1:23:06 PM

---

Hi Greta,  
The archaeological assessment is unchanged.

Cheers,  
Becky

Rebecca Hill  
Contract Associate Archaeologist  
City of Phoenix Archaeology Office  
Pueblo Grande Museum  
602.534.2412

**From:** [Greta Halle](#)  
**To:** [Tricia Balluff \(tricia.balluff@phoenix.gov\)](#); [Laurene Montero \(laurene.montero@phoenix.gov\)](#); [Rebecca Hill](#); [Jodey Elsner](#)  
**Cc:** [Andrea Love](#)  
**Subject:** WS85500442 reassessment #2  
**Date:** Thursday, February 27, 2020 12:14:00 PM  
**Attachments:** [2018, 2019, & 2020 alignments\\_WS85500442.pdf](#)  
[2018 shapefiles.zip](#)  
[2019 Current Black & Veatch Alignment 6-28-2019.pdf.kmz](#)  
[2020 Alignment.zip](#)

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Hi everyone, this project was originally assessed on 2018, reassessed in 2019, and it's coming back to you for another reassessment. Your offices may have been contacted directly and might already have some involvement. Attached is an updated map which displays the 2018, 2019, and 2020 alignments. Additionally, GIS shapefiles or kmz files for each alignment are also attached for your use.

Would you please let me know if your below findings from 2018 and 2019 still stand or if changes are needed? Thank you.

#### **Clean Water Act Section 404/401/402 and Wildlife Biology**

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- Unique or impaired waters are not located within 0.25-mile of the project area. More than 1 acre of ground-disturbing activities are anticipated during construction; therefore, an Arizona Pollutant Discharge Elimination System construction general permit will be required. The contractor shall prepare a Stormwater Pollution Prevention Plan and submit the Notice of Intent and Notice of Termination to the Arizona Department of Environmental Quality.
- There is scattered desert vegetation, trees and shrubs adjacent to the project area and impacts to vegetation are anticipated. This vegetation can provide habitat for active nests protected under the Migratory Bird Treaty Act. The potential for active nests to be present is increased between February 1 and August 31. Impacts to vegetation should be avoided during this season, if practicable. The following accommodations are required:
  - The Migratory Bird Treaty Act flyer will be provided to the contractor prior to the start of work.
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- The project crosses within 250 feet of two historic mining sites that are not eligible for inclusion in the National Register of Historic Places. The project also crosses the historic Rico Mine which has been determined eligible for inclusion in the National Register of Historic Places; data have been recovered through archaeological and archival investigations.
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### **Historic Preservation**

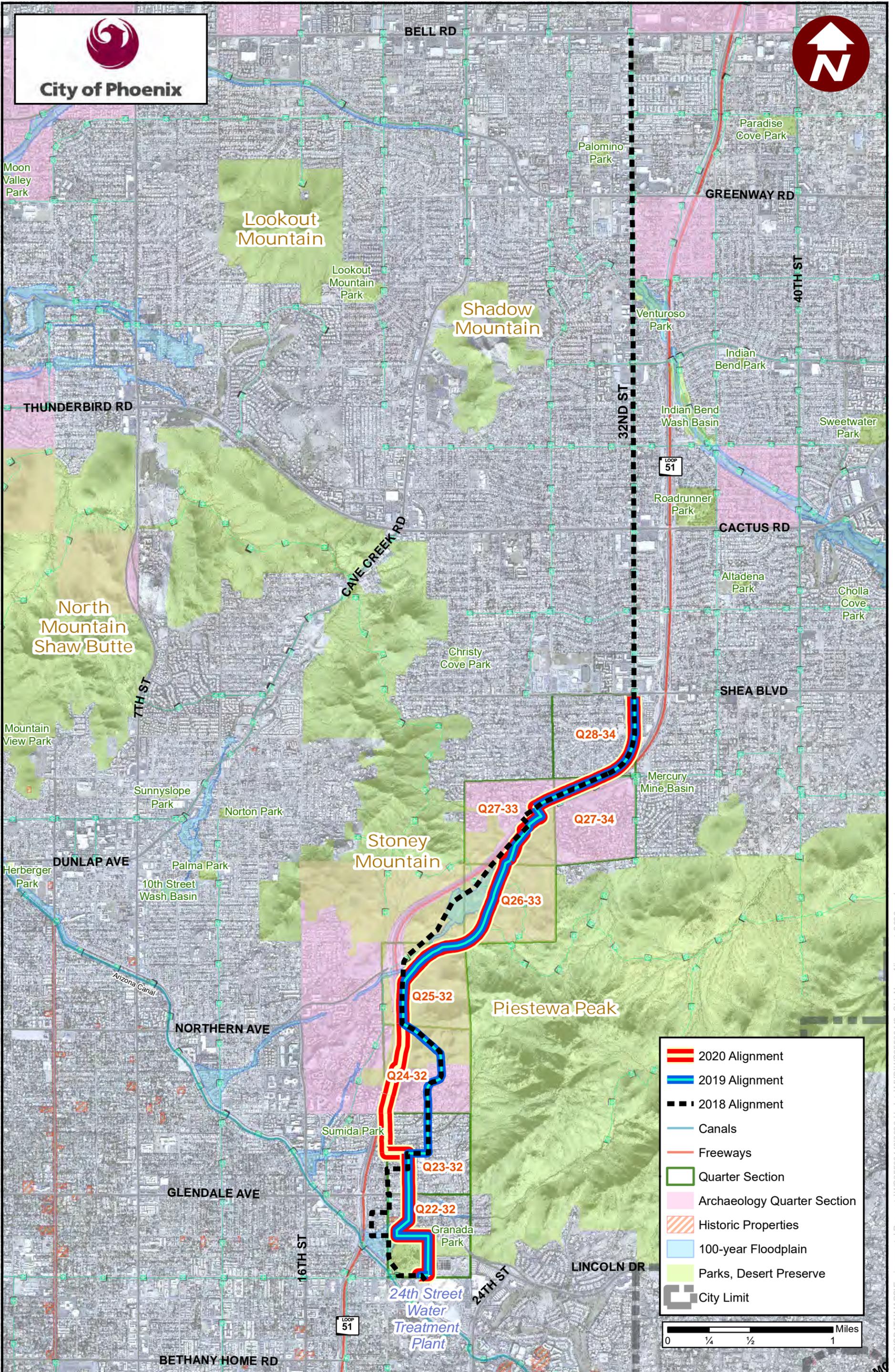
- There are no listed or eligible historic properties or districts within or adjacent to the project area; therefore, it is anticipated that no historic properties or districts will be affected.

### **Greta Halle**

Environmental Quality Specialist  
Office of the City Engineer  
Street Transportation Department | City of Phoenix  
200 W. Washington St., 5th floor | Phoenix, AZ 85003  
(P) 602.534.6030 | greta.halle@phoenix.gov



City of Phoenix



Pipeline Alignment Study - Segment 1 - 24th Street WTP to 32nd Street and Shea Boulevard  
WS85500442

G:\GIS\DATA\MAPS\Environmental Requests\WS85500442\2020 Update\MXD\WS85500442\_Old\_New\_Alignment\_2020.mxd

## Greta Halle

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**From:** Rebecca Hill  
**Sent:** Wednesday, August 28, 2019 2:54 PM  
**To:** Greta Halle; Laurene Montero  
**Cc:** Andrea Love  
**Subject:** RE: WS85500442 reassessment - alignment change

Hi Greta,

The adjustments to the alignment do not change the CAO recommendations for this project. No archaeological work recommended.

Cheers,  
Becky

---

**From:** Greta Halle  
**Sent:** Tuesday, August 27, 2019 4:07 PM  
**To:** Laurene Montero <laurene.montero@phoenix.gov>; Rebecca Hill <rebecca.hill@phoenix.gov>  
**Cc:** Andrea Love <andrea.love@phoenix.gov>  
**Subject:** WS85500442 reassessment - alignment change

Hi Laurene and Becky, in July 2018, the WS85500442 project was assessed by your office. Since then, the alignment has changed, therefore, a reassessment is needed. Instead of attaching that 2018 (20MB!) assessment or the INCRA, I'm sending an updated map which displays the 2018 vs. 2019 alignment, GIS shapefiles for the 2018 alignment, and kmz files for the 2019 alignment. I'm hoping this information/data would be most helpful to you for the reassessment. If possible, the reassessment would be appreciated at your earliest opportunity. Please let me know if any additional information is needed. Thank you!

### Greta Halle

Environmental Quality Specialist  
Office of the City Engineer  
Street Transportation Department | City of Phoenix  
200 W. Washington St., 5th floor | Phoenix, AZ 85003  
(P) 602.534.6030 | [greta.halle@phoenix.gov](mailto:greta.halle@phoenix.gov)

# Archaeology Assessment Result

**Project Name: Zone 3D and 4A Improvements Program**

**WS85500442**

**Project Location: 22<sup>nd</sup> Street and Maryland to 32<sup>nd</sup> Street and Bell Road**

**Project Sponsor: WSD (Darlene Helm [Greta Halle])**

**Review Agencies: City of Phoenix**

**Survey      Monitoring      Testing      Data Recovery**

## **Comments:**

This project crosses within 250 ft of AZ T:8:55(ASM) and within the boundary of AZ T:8:54(ASM); both are historic mining sites that are not eligible for inclusion in the National Register of Historic Places (NRHP). The project also crosses AZ T:8:53(ASM), the historic Rico Mine, which has been determined eligible for inclusion in the NRHP.

Data recovery excavations have previously been conducted within all three sites, and the results are reported in:

Stone, Lyle

1990 *An Archaeological and Historical Evaluation of Mercury Mining and Ore Processing Sites in the Phoenix Mountains of Central Phoenix, Maricopa County, Arizona.*

Archaeological Research Services, Tempe.

The Stone (1990) report recommended that the important data at AZ T:8:53(ASM) had been recovered through archaeological and archival investigations

## **Recommendations:**

No additional archaeological work is necessary for this project. However, if any archaeological materials are encountered during construction, all ground-disturbing activities must cease within 10

*July 17, 2018*

*Page 2*

meters of the discovery and the City of Phoenix Archaeology Office must be notified immediately and allowed time to properly assess the materials.

**Reviewed By:** Erin Davis, M.A. for

Laurene Montero, M.A. *LGM*

**Date:** 7/17/2018