

UPPER VERDE RIVER WATERSHED



PROTECTION COALITION

1503

**Slaughterhouse Gulch
Riparian and Wetland
Improvement Project**

**Application
to the
Arizona Water
Protection Fund
May 15, 2015**

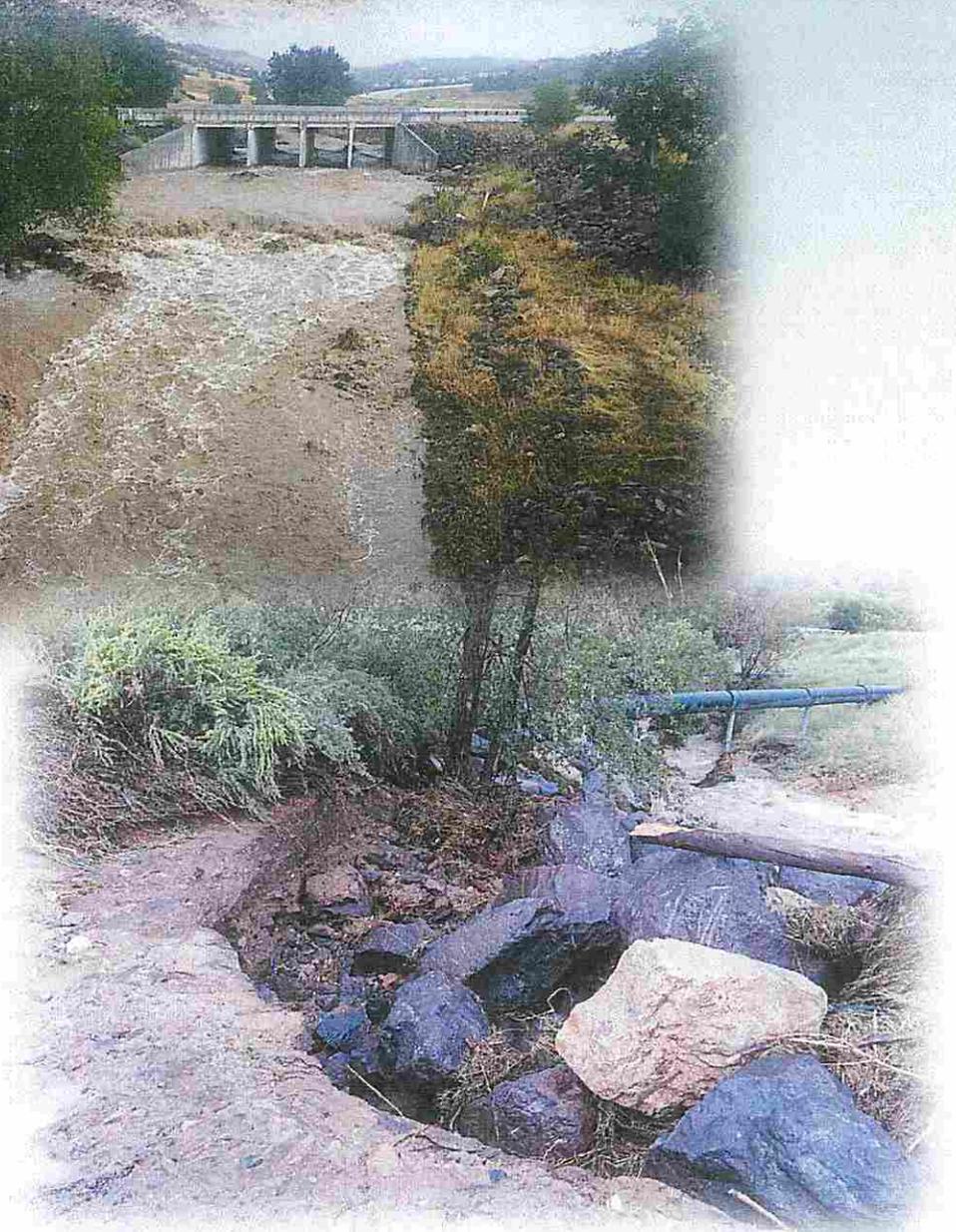
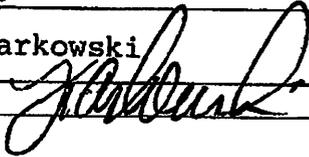


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**Arizona Water Protection Fund
Application Cover Page
FY 2014**

Title of Project:												
Type of Project: <input checked="" type="checkbox"/> Capital or Other <input type="checkbox"/> Water Conservation <input type="checkbox"/> Research	Stream Type: <input type="checkbox"/> Perennial <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral	Your level of commitment to maintenance of project benefits and capital improvements: <input type="checkbox"/> < 5 years <input type="checkbox"/> 5-10 years <input type="checkbox"/> 11-15 years <input checked="" type="checkbox"/> 16-20 years										
Applicant Information: Name/Organization: Upper Verde River Watershed Protection Coalition Address 1: Town of Prescott, fiscal agent Address 2: 7501 E. Civic Circle City: Prescott Valley State: AZ ZIP Code: 86314 Phone: 928-759-3102 Fax: 928-759-3125 Tax ID No.: XXXXXXXXXX		Inside an AMA: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, which AMA: <input type="checkbox"/> Phoenix <input type="checkbox"/> Tucson <input checked="" type="checkbox"/> Prescott <input type="checkbox"/> Pinal <input type="checkbox"/> Santa Cruz										
Contact Person: Name: Peter Bourgois Title: Tribal Planner Phone: 928-515-7457 Fax: 928-778-9445 e-mail: pbourgois@ypit.com		Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation Any Previous AWPFF Grants: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please provide Grant #(s):										
Arizona Water Protection Fund Grant Amount Requested: \$ 435,147 If the application is funded, will the Grantee intend to request an advance: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Matching Funds Obtained and Secured: <table border="1"> <thead> <tr> <th><u>Applicant/Agency/Organization:</u></th> <th><u>Amount (\$):</u></th> </tr> </thead> <tbody> <tr> <td>1. Applicant</td> <td>\$ 64,342</td> </tr> <tr> <td>2.</td> <td></td> </tr> <tr> <td>3.</td> <td></td> </tr> <tr> <td align="right" colspan="2">Total: \$499,489</td> </tr> </tbody> </table>		<u>Applicant/Agency/Organization:</u>	<u>Amount (\$):</u>	1. Applicant	\$ 64,342	2.		3.		Total: \$499,489	
<u>Applicant/Agency/Organization:</u>	<u>Amount (\$):</u>											
1. Applicant	\$ 64,342											
2.												
3.												
Total: \$499,489												
Has your legal counsel or contracting authority reviewed and accepted the Grant Award Contract General Provisions? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A												
Signature of the undersigned certifies understanding and compliance with all terms, conditions and specifications in the attached application. Additionally, signature certifies that all information provided by the applicant is true and accurate. The undersigned acknowledges that intentional presentation of any false or fraudulent information, or knowingly concealing a material fact regarding this application is subject to criminal penalties as provided in A.R.S. Title 13. The Arizona Water Protection Fund Commission may approve Grant Awards with modifications to scope items, methodology, schedule, final products and/or budget.												
Typed Name of Applicant or Applicant's Authorized Representative		Title and Telephone Number										
Larry Tarkowski		Town Manager, Prescott Valley 928-759-3102										
Signature 		Date Signed										

Executive Summary

Implementation of the proposed project, located entirely on land owned by the Yavapai-Prescott Indian Tribe (YPIT), will result in the restoration of riparian areas, and enhancement and protection of an existing wetland. Stream meanders will be re-introduced to form backwater areas, and fencing will be installed to exclude grazing along approximately ½ mile of stream length along Slaughterhouse Gulch and an unnamed tributary.

Slaughterhouse Gulch is located at the west entrance to the City of Prescott along Highway 69 and includes within its watershed two regional shopping malls, car dealerships, a Walmart and several residential areas. Although heavily impacted by urbanization, the watershed contains natural areas along steep hillsides and encompasses a major portion of YPIT reservation lands. Slaughterhouse Gulch is a significant tributary to Granite Creek immediately upstream of the Watson Woods Riparian Preserve. The Arizona Department of Environmental Quality has determined that Granite Creek, along with tributaries like Slaughterhouse Gulch, exceeded Total Maximum Daily Loads for E. Coli.

Due to man-made impacts and grazing, Slaughterhouse Gulch has become straightened and highly channelized through the YPIT Reservation. Former riparian habitat along the stream has been destroyed by past gravel mining and road building activities. Meanders will be re-introduced through an innovative approach that will divert a portion of channel flows into backwater meanders allowing damaging flood flows to pass through the stream channel without negative impact. Successful re-establishment of riparian vegetation along the channel will also be supported by the re-introduction of channel meanders. This effort will protect both the backwater areas and riparian vegetation from harm. Riparian vegetation planted in the backwater areas will be supported by drip irrigation for the first few years through establishment.

An unnamed tributary to Slaughterhouse Gulch immediately upstream of the riparian restoration area contains an existing wetland supported by an unnamed spring. This wetland area has been damaged by cattle grazing. Improvements to the wetland area will include a backwater structure and exclusionary fencing. This backwater structure will inundate a larger footprint than the existing wetland during flood events, allow the wetlands and associated riparian habitat to expand and provide a slower release of water to the downstream riparian area in the main channel

The Upper Verde River Watershed Protection Coalition (UVRWPC), a formal partnership between the City of Prescott, Towns of Prescott Valley and Chino Valley, Yavapai County and the YPIT, is the applicant. Improvements to Slaughterhouse Gulch were identified in the UVRWPC Watershed Restoration and Management plan as essential to advance watershed health. Proposed activities address the negative impacts to Slaughterhouse Gulch and surrounding areas that have resulted from area urbanization.

Project Overview

Degradation of the Slaughterhouse Gulch Watershed due to urbanization, road development, historic gravel mining activities, and grazing has created unique challenges for the YPIT and its neighbors in the City of Prescott.

The proposed two-year project, phase 1 of a four-phase project, is wholly located on tribal land and is designed to enhance and protect existing wetlands, and restore a riparian area (approximately 1.3 acres). Implementation will result in improvements to two-miles of intermittent stream, and benefit the downstream Watson Woods Riparian Preserve that borders tribal land. *(Refer to maps and schematics illustrating the proposed project and future phases.)* It will also address ongoing issues with excessive Maximum Daily Loads for *E. coli* in Granite Creek and its tributaries, including Slaughterhouse Gulch. *(Refer to pertinent pages of the Draft Upper Granite Creek Watershed E. coli TMDL, December 2014, Open File Report 14-08 included in the Appendix.)*

Tribal concerns with Slaughterhouse Gulch came to the forefront during the recent two-year long watershed planning process undertaken by the UVRWPC Watershed Taskforce as part of its investigation into negative impacts resulting from urbanization. The Slaughterhouse Gulch project was selected as the cornerstone effort to best demonstrate how issues with urbanization and other human-caused impacts can be incorporated into watershed planning. *(Refer to pertinent pages of the December 2014 UVRWPC Watershed Restoration and Management Project Plan included in the Appendix.)*

A riparian analysis of Slaughterhouse Gulch was also commissioned by the YPIT in 2013. It included recommendations for channel modification through widening, re-introduction of meanders, construction of gabions and a backwater structure, re-vegetation of the riparian area and installation of exclusionary fencing to eliminate grazing in the area. *(Refer to Slaughterhouse Gulch Analysis and Re-vegetation/Erosion Control Plan included in the Appendix.)* It, along with the watershed planning process, and ongoing flooding issues on tribal land laid the groundwork for development of the proposed project and its subsequent phases. In early 2015, the YPIT hired Civiltec, Inc., to complete the initial project design using a hydraulic modeling process and develop cost estimates.

The overall project goal is to reestablish a historical riparian corridor and associated wetlands which existed prior to human manipulation of Slaughterhouse Gulch while maintaining adequate stream conditions to convey current flow rates produced by upstream development (Slaughterhouse Gulch Analysis and Re-vegetation/Erosion Control Plan, July 2013).

Specific objectives tied to the goal include:

1. **Re-introduce meanders, widen the channel and construct gabions in the riparian area to divert water into the meanders where its velocity will be reduced, allowing for deeper percolation to promote re-establishment of vegetation.** The gabions that divert a portion of channel flows into backwater areas will allow damaging flood flows to pass through the existing stream channel without negative impact.
2. **Conduct pre-construction site analyses to include baseline water quality testing, photographic monitoring, and a vegetation inventory.** Vegetation inventory is currently underway.
3. **Create a backwater structure and install exclusionary fencing in the wetlands. The backwater area will inundate a larger footprint than the existing wetland during flood events, allow the wetlands and associated riparian habitat to expand and provide a slower release of water to the riparian area. Fencing will eliminate further degradation from grazing.**
4. **Conduct an outreach effort to educate the public about the project and the value of addressing impacts due to urbanization in watershed planning.**

The proposed project has specific benefits to the Upper Verde River Watershed including.

1. Slowing the rate of runoff in the Slaughterhouse Gulch Watershed will reduce sediment transport to Granite Creek upstream of Watson Woods and Watson Lake. Granite Creek is a tributary to the Upper Verde River.
2. Water quality will be improved by increasing contact time with biological processes by slowing the runoff rate with the improvements that will be created in Slaughterhouse Gulch. Excessive TMDL of *E. Coli* is a concern in Granite Creek and its tributaries.
3. The proposed restoration of the riparian habitat in Slaughterhouse Gulch will connect directly to the Watson/Willow Ecosystem Important Bird Area, and restore an important cultural heritage area for the YPIT.

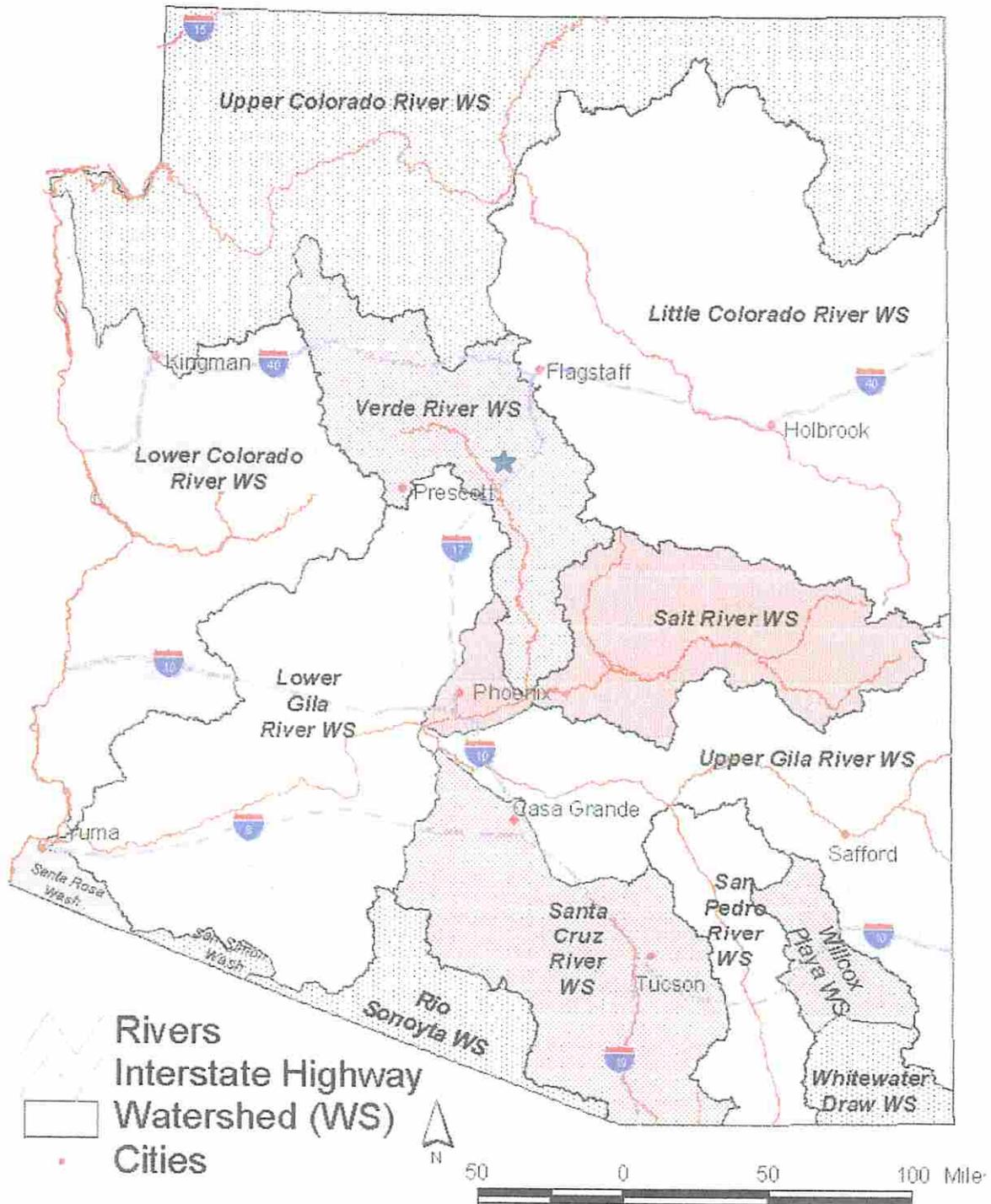
This project is aligned with AWPf priorities to protect/restore native riparian habitat and vegetation; restore proper hydrologic functions; restore proper stream morphology; restore wetlands/backwater areas; improve watershed conditions using near stream restoration treatments that improve water quality; demonstrate direct benefits to intermittent streams; and demonstrate a commitment to continued maintenance of improvements. *(Refer to the YPIT Letter of Support included In the Supplemental Information section of this proposal.)*

**Project Location & Environmental Contaminant Information
FY 2014**

Project Location Information			
1. County: <u>Yavapai</u>	2. Section: <u>26 & 35</u>	3. Township: <u>14N</u>	4. Range: <u>2W</u>
<p>5. Watershed: <u>Verde River</u></p> <p>6. 8 or 10 Digit Hydrologic Unit Code (HUC): <u>150602020102</u></p> <p>7. Name of USGS Topographic Map where project area is located: <u>Prescott</u></p> <p>8. State Legislative District: <u>1</u> (Information available at: http://azredistricting.org/districtlocator/)</p> <p>9. Land ownership of project area: <u>Yavapai-Prescott Indian Tribe</u></p> <p>10. Current land use of project area: <u>Vacant, Partial Use for Grazing</u></p> <p>11. Size of project area (in acres): <u>1.3</u> <u>DIRECT</u></p> <p>12. Stream Name: <u>Slaughterhouse Gulch</u></p> <p>13. Length of stream through project area: <u>1.0</u></p> <p>14. Miles of stream benefited: <u>0.5</u> <u>miles</u></p> <p>15. Acres of riparian habitat: <u>1.3</u> acres will be:</p> <p style="margin-left: 300px;"> <input checked="" type="checkbox"/> Enhanced <input type="checkbox"/> Maintained <input checked="" type="checkbox"/> Restored <input type="checkbox"/> Created </p>			
<p>16. General description and/or delineation for the area of impact of the project within the watershed. Project is located in Slaughterhouse Gulch, a tributary to Granite Creek and Verde River, on the Yavapai-Prescott Indian Tribe near the City of Prescott. The area of impact includes 0.9 acres of riparian restoration and 0.4 acres of wetland enhancement. (See project location map.)</p> <p>17. Provide directions to the project site from the nearest city or town. List any special access requirements: From Hwy 69 & Walker Rd. in Prescott, drive 2 miles west on Hwy 69 to Yavpe Connector, turn right and continue 0.6 miles to project area.</p>			
Environmental Contaminant Location Information			
<p>1. Does your project site contain known environmental contaminants? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants:</p> <p>2. Are there known environmental contaminants in the project vicinity? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants:</p> <p>3. Are you asking for Arizona Water Protection Fund monies to identify whether or not environmental contaminants are present? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p>			

**PROJECT LOCATION MAP(S)
AND SCHEMATICS
SCOPE OF WORK
BUDGET**

ARIZONA WATERSHED MAP - 2014



SLAUGHTERHOUSE GULCH

RIPARIAN & WETLAND

IMPROVEMENT PROJECT

Scope of Work – Two-Year Project Period

Task 1: Finalize Engineering

Task Description: Complete final project design.

Task Purpose: Engineering is required to implement the project and prepare construction documents.

Deliverable Description: Final engineering plans.

Responsible Personnel: Contract civil engineer; YPIT planner; Chair, UVRWPC Technical Advisory Committee

Deliverable Due Date: Within 150 days (5 months) of finalization of grant agreement with the AWPf.

Reimbursable Cost: \$60,000

Task 2: Photographic Monitoring and Re-vegetation Plans

Task Description: Develop plans consistent with AWPf guidelines for photo monitoring and re-vegetation

Task Purpose: To assure monitoring and re-vegetation is conducted according to established practices, project progress is accurately tracked and illustrated, and re-vegetation is appropriate for the site.

Deliverable Description: Photographic Monitoring Plan; Re-vegetation Plan

Responsible Personnel: Contract environmental scientist; YPIT environmental specialist

Deliverable Due Date: Within four (4) months of project start.

Reimbursable Cost: \$4,500 for vegetation plan reimbursable;
\$1,200 for photographic monitoring plan offered as match

Task 3: Acquire Permits, SHPO Clearance

Task Description: Permits and clearances must be obtained prior to construction of riparian and wetland improvements to Slaughterhouse Gulch on YPIT land.

Task Purpose: To comply with all federal and state permitting requirements and environmental regulations.

Deliverable Description: Copies of SHPO Clearance, 401 (if required) and 404 Permits

Responsible Personnel: YPIT environmental specialist; UVRWPC Technical Advisory Committee

Deliverable Due Date: One year from conclusion of final project design; 17 months into project period

Reimbursable Cost: None, \$3,000 of staff support offered as match

Task 4: Photo Monitoring

Task Description: Use photography to illustrate current project area characteristics, and repeat photography over the two-year project period.

Task Purpose: Illustrate and track changes to project area as a result of proposed improvements to riparian and wetland areas.

Deliverable Description: Photos of existing site characteristics. Repeat photography that chronicles changes to the site over project period.

Responsible Personnel: Contract environmental scientist; YPIT environmental specialist; YPIT planner

Deliverable Due Date: Photos of current site characteristics within 90 days of project start. Repeat photography throughout the project period.

Reimbursable Cost: None, \$1,200 over two-year project period offered as match

Task 5: Outreach

Task Description: Write a public outreach plan that will be implemented throughout the two-year project period.

Task Purpose: To inform the public of UVRWPC activities, AWPf involvement, and educate the public about watershed restoration and management.

Deliverable Description: Copy of outreach plan; copies of any promotional materials, press releases, etc.

Responsible Personnel: UVRWPC Technical Advisory Committee

Deliverable Due Date: Outreach plan completed within 90 days from project start; other materials throughout the project period.

Reimbursable Cost: None; \$20,000 over project period offered as match

Task 6: Baseline Water Quality Testing

Task Description: Conduct water quality testing

Task Purpose: To understand water quality prior to construction of improvements. Provide a baseline from which to compare results of future water quality testing to be conducted after improvements are constructed.

Deliverable Description: Copies of baseline water quality testing results. Water quality tests following construction will be conducted after the AWPf grant project period has concluded; however, results will be provided to the grant maker.

Responsible Personnel: Contract environmental scientist

Deliverable Due Date: Baseline test results within six months of project start; tests following construction within one year of project end.

Reimbursable Cost: \$5,000

Task 7: Construction Bid Process

Task Description: Prepare construction documents in preparation for bid process to identify contractor.

Task Purpose: To conduct a public process to identify a contractor to build improvements.

Deliverable Description: Copies of construction bid documents; construction contract

Responsible Personnel: Contract civil engineer; YPIT Planner; Chair, UVRWPC Technical Advisory Committee

Deliverable Due Date: Within three months of conclusion of permit process; 20 months into project period

Reimbursable Cost: \$5,000

Task 8: Construction Area 6 (Wetlands)

Task Description: Construct improvements to Slaughterhouse Gulch wetlands on YPIT land

Task Purpose: To correct degraded conditions caused by urbanization, road building, and gravel mining; improve health of the Slaughterhouse Gulch and Upper Verde River Watersheds; benefit riparian areas immediately downstream (Watson Woods)

Deliverable Description: Construction photos, site tour offered to AWPf Commission and Staff once construction is complete
Responsible Personnel: Construction contractor; civil engineer; tribal planner; chair UVRWPC Technical Advisory Committee

Deliverable Due Date: Area 6 construction will be complete 22 months into project period

Reimbursable Cost: \$87,042

Task 9: Construction Area 7 (Riparian)

Task Description: Construct improvements to Slaughterhouse Gulch riparian areas on YPIT land

Task Purpose: To correct degraded conditions caused by urbanization, road building, and gravel mining; improve health of the Slaughterhouse Gulch and Upper Verde River Watersheds; benefit riparian areas immediately downstream (Watson Woods)

Deliverable Description: Construction photos, site tour offered to AWPFC Commission and Staff once construction is complete
Responsible Personnel: Construction contractor; civil engineer; tribal planner; chair UVRWPC Technical Advisory Committee

Deliverable Due Date: Area 7 construction will be complete 24 months into project period

Reimbursable Cost: \$273,605

Task 10: Project Management

Task Description: Provide project oversight and quality control

Task Purpose: To assure successful completion of all project deliverables

Deliverable Description: Quarterly project updates provided to the UVRWPC Technical Advisory Committee

Responsible Personnel: YPIT Planner; Chair UVRWPC Technical Advisory Committee

Deliverable Due Date: Quarterly throughout the project period

Reimbursable Cost: None, \$15,157 offered as match

Task 11: Final report to the Arizona Water Protection Fund

Task Description: Complete final documentation for the AWPFC grant funded project

Task Purpose: To comply with AWPFC rules and regulations for grant reporting

Deliverable Description: Final report

Responsible Personnel: YPIT Planner; Chair UVRWPC Technical Advisory Committee, UVRWPC Technical Advisory Committee

Deliverable Due Date: Within 45 days of project completion

Reimbursable Cost: None

Note: *All deliverables to be provided throughout the project period will also be included in the final report to the Arizona Water Protection Fund.*



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1	SHEET INDEX
2	AREA 6
3	AREA 7
4	AREA 7



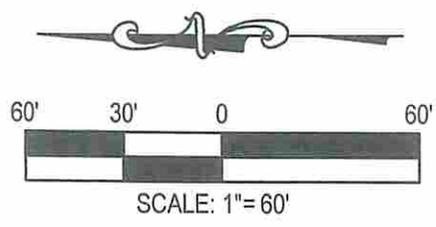
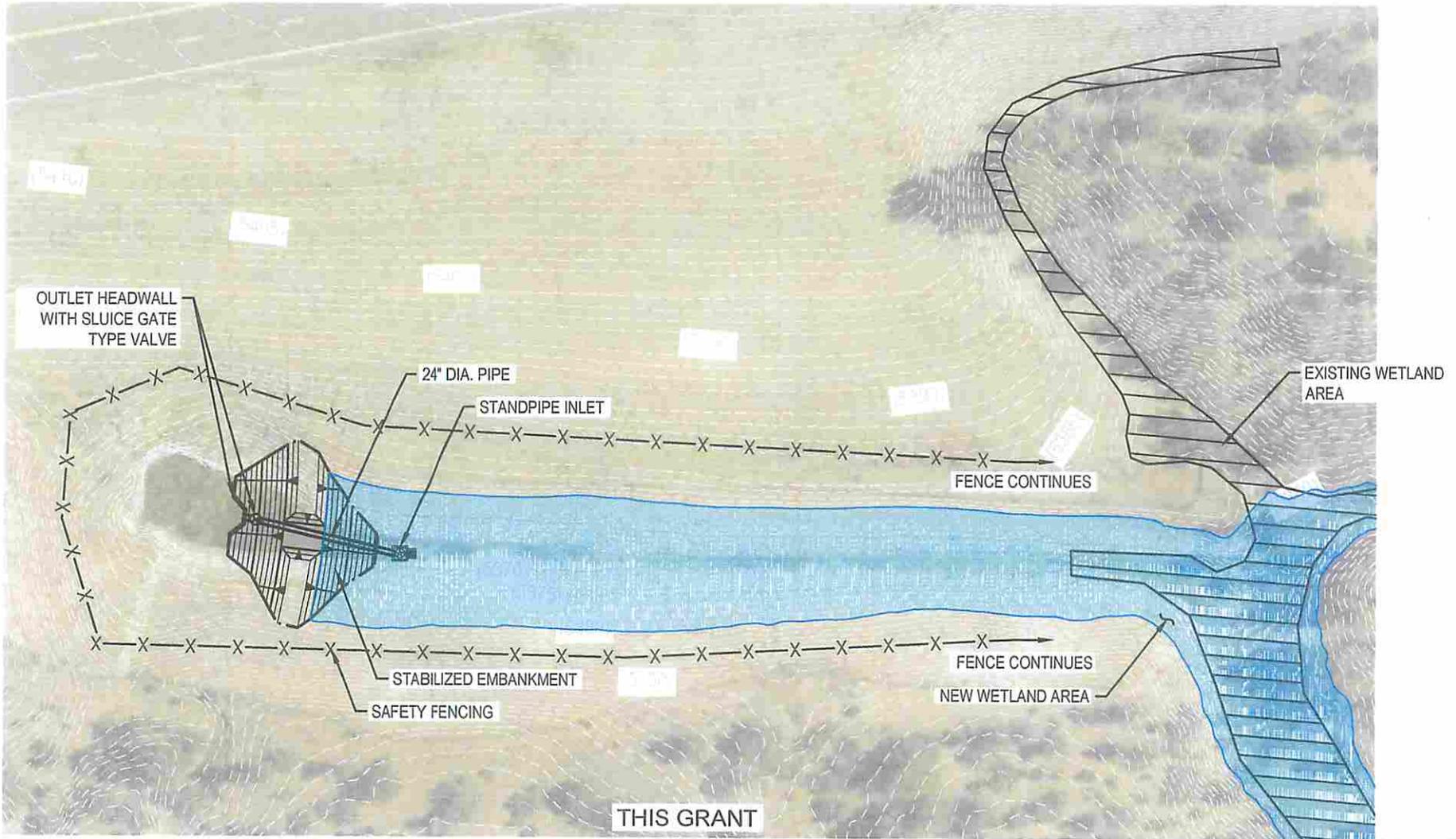
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**YAVAPAI-PRESCOTT INDIAN TRIBE
PROJECT SCHEMATIC
SHEET INDEX**

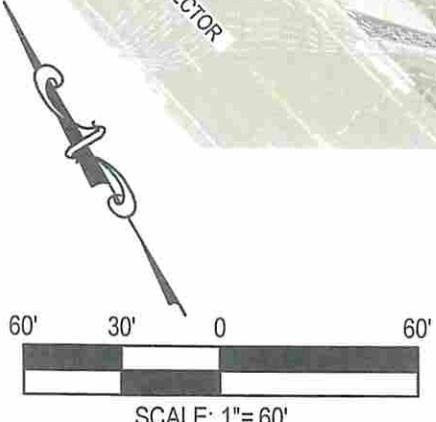
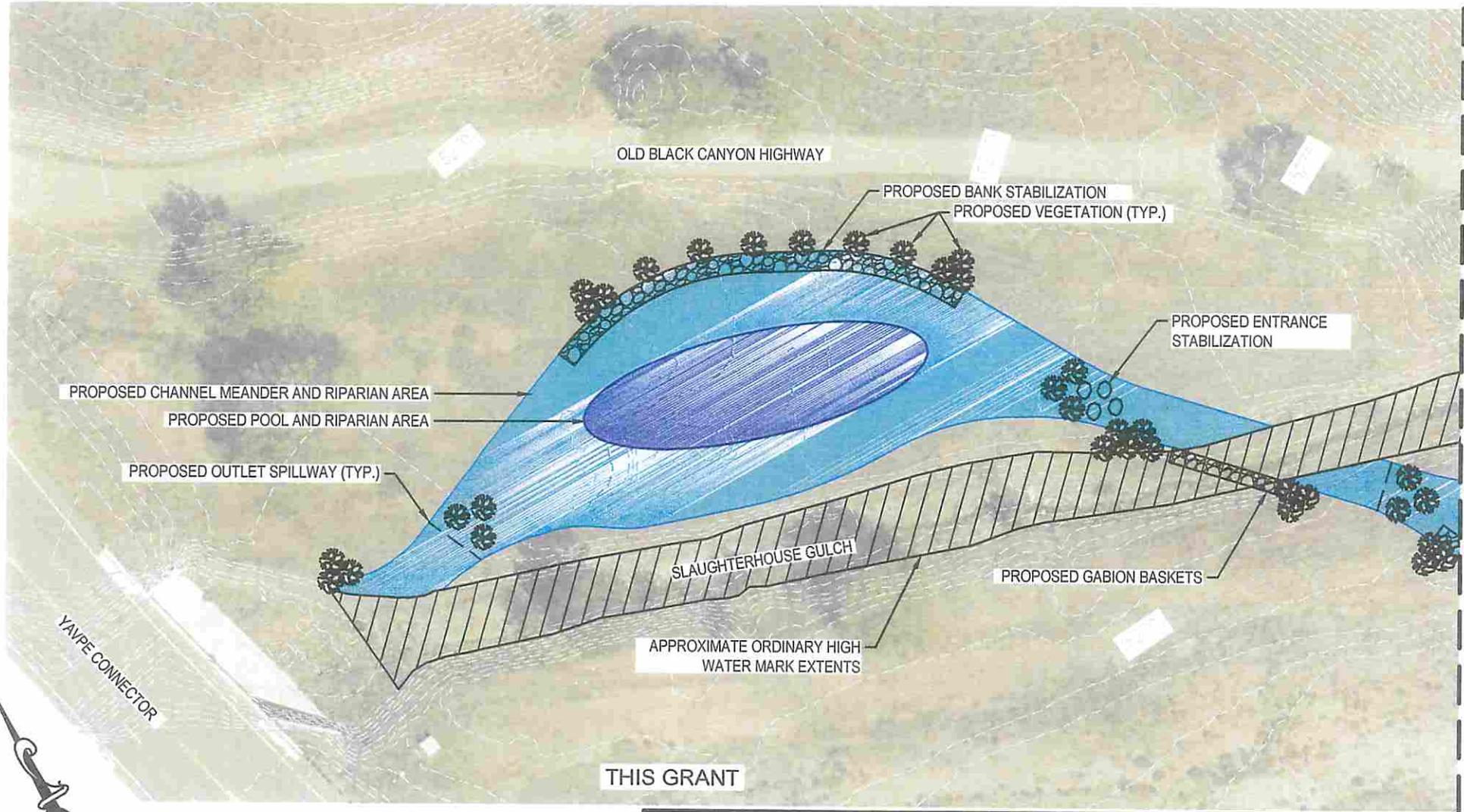
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OLD BLACK CANYON HIGHWAY

PROPOSED BANK STABILIZATION
PROPOSED VEGETATION (TYP.)

PROPOSED ENTRANCE
STABILIZATION

PROPOSED CHANNEL MEANDER AND RIPARIAN AREA
PROPOSED POOL AND RIPARIAN AREA

PROPOSED OUTLET SPILLWAY (TYP.)

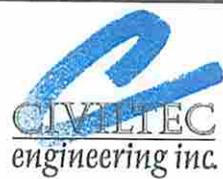
SLAUGHTERHOUSE GULCH

PROPOSED GABION BASKETS

APPROXIMATE ORDINARY HIGH
WATER MARK EXTENTS

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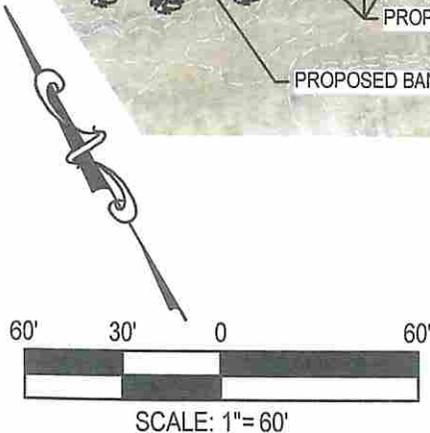
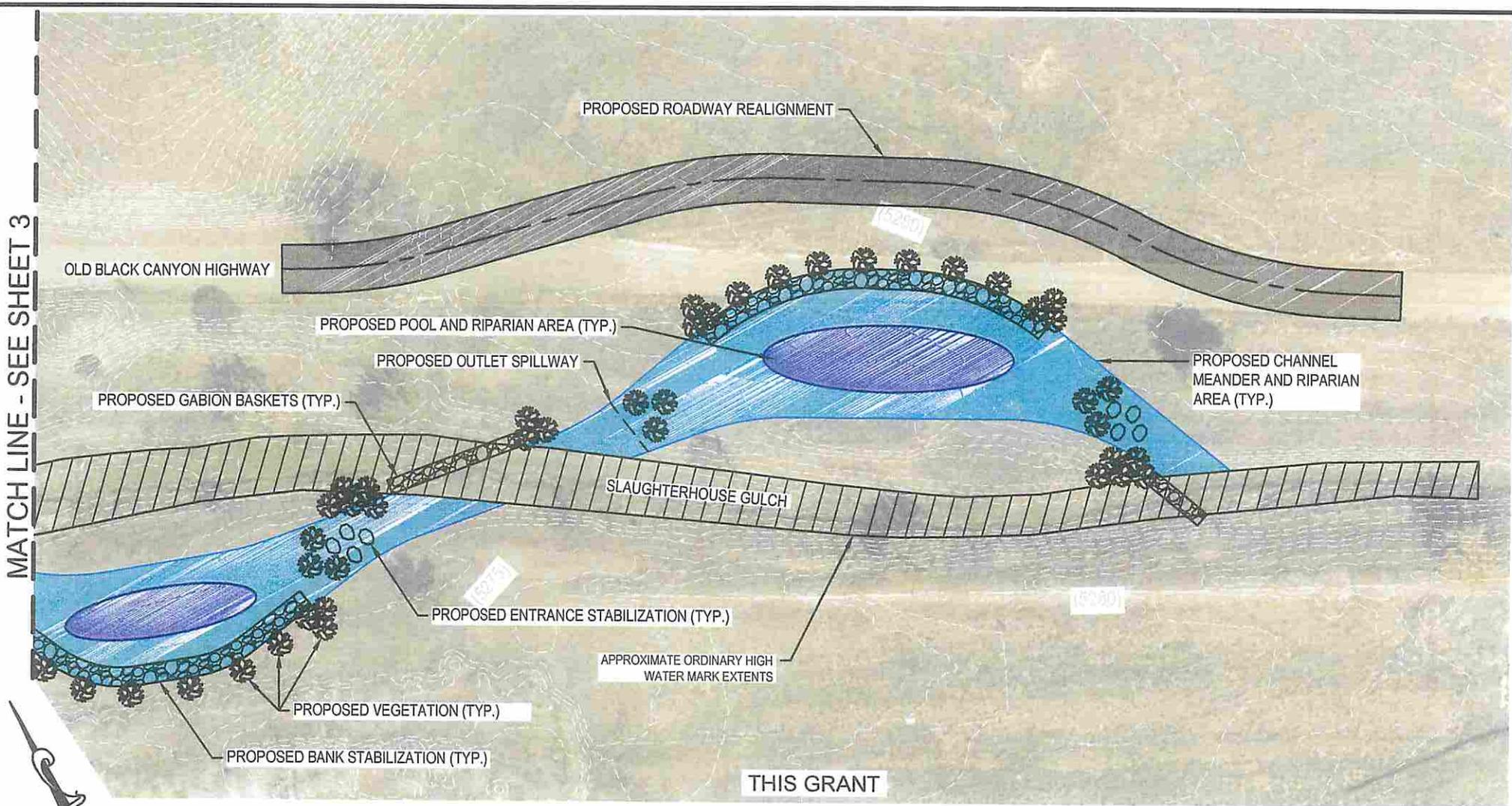


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YAVAPAI-PRESCOTT INDIAN TRIBE
PROJECT SCHEMATIC
AREA 7

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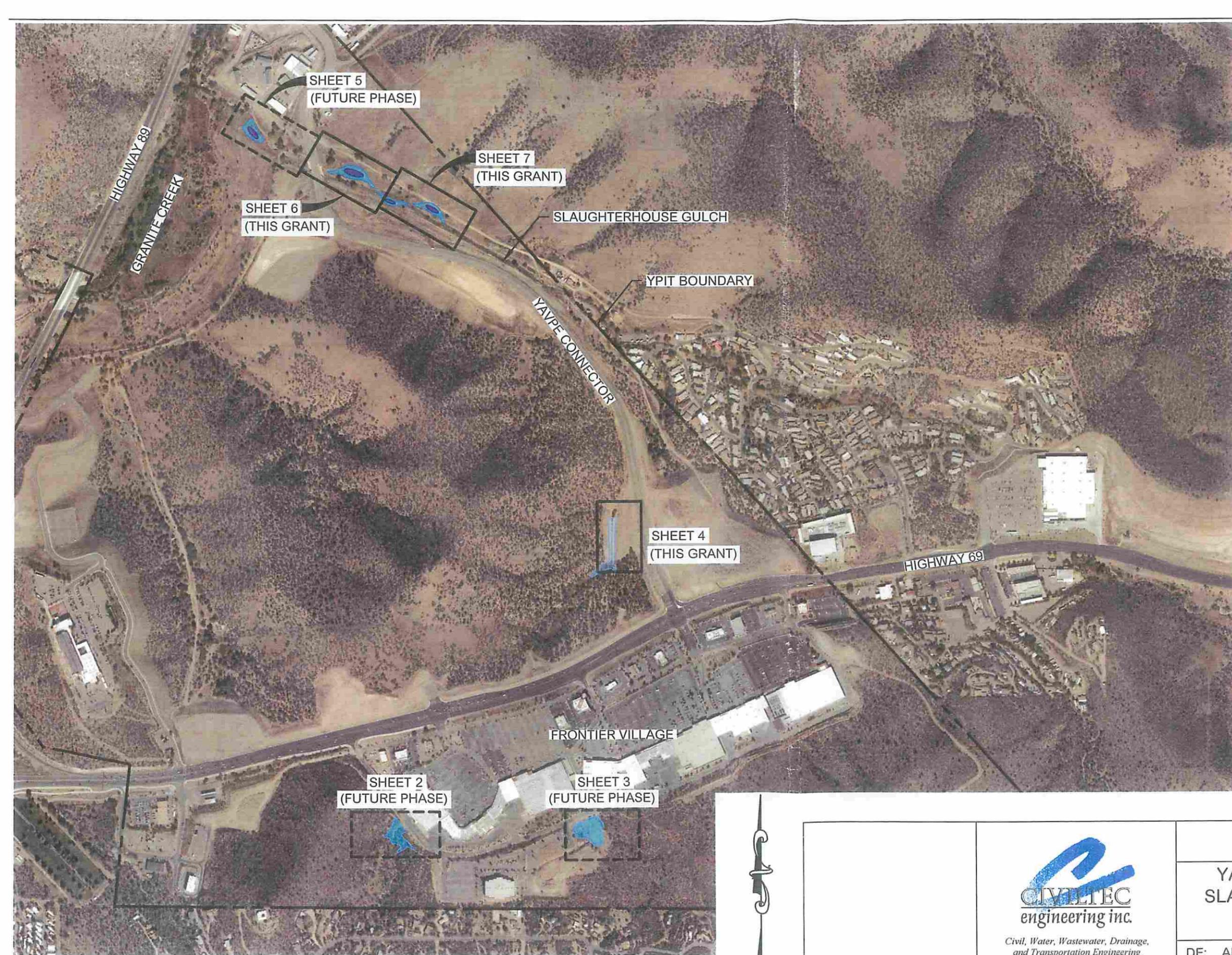
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6	AREA 7
7	AREA 7

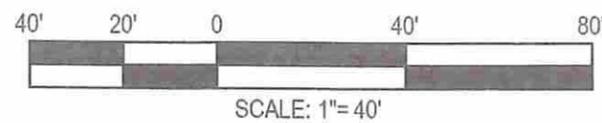
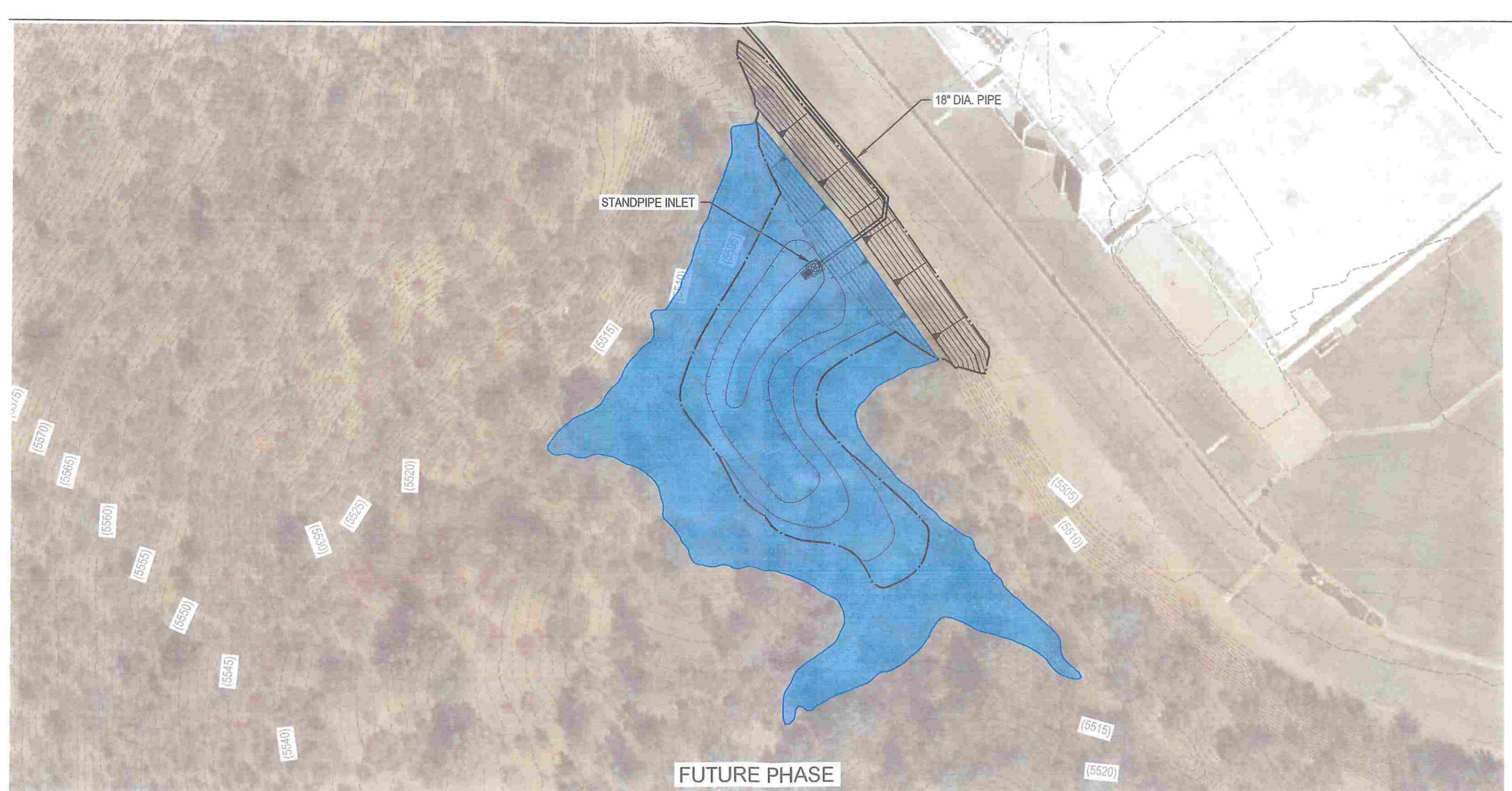
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PRESCOTT, ARIZONA
YAVAPAI-PRESCOTT INDIAN TRIBE
SLAUGHTERHOUSE GULCH EXHIBITS
SHEET INDEX

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PRESCOTT, ARIZONA

**YAVAPAI-PRESCOTT INDIAN TRIBE
SLAUGHTERHOUSE GULCH EXHIBITS
AREA 1**

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SHEET 2 OF 7

INSTALL SLUICE GATE TYPE VALVE ON EXISTING HEADWALL



FUTURE PHASE



SCALE: 1"=40'



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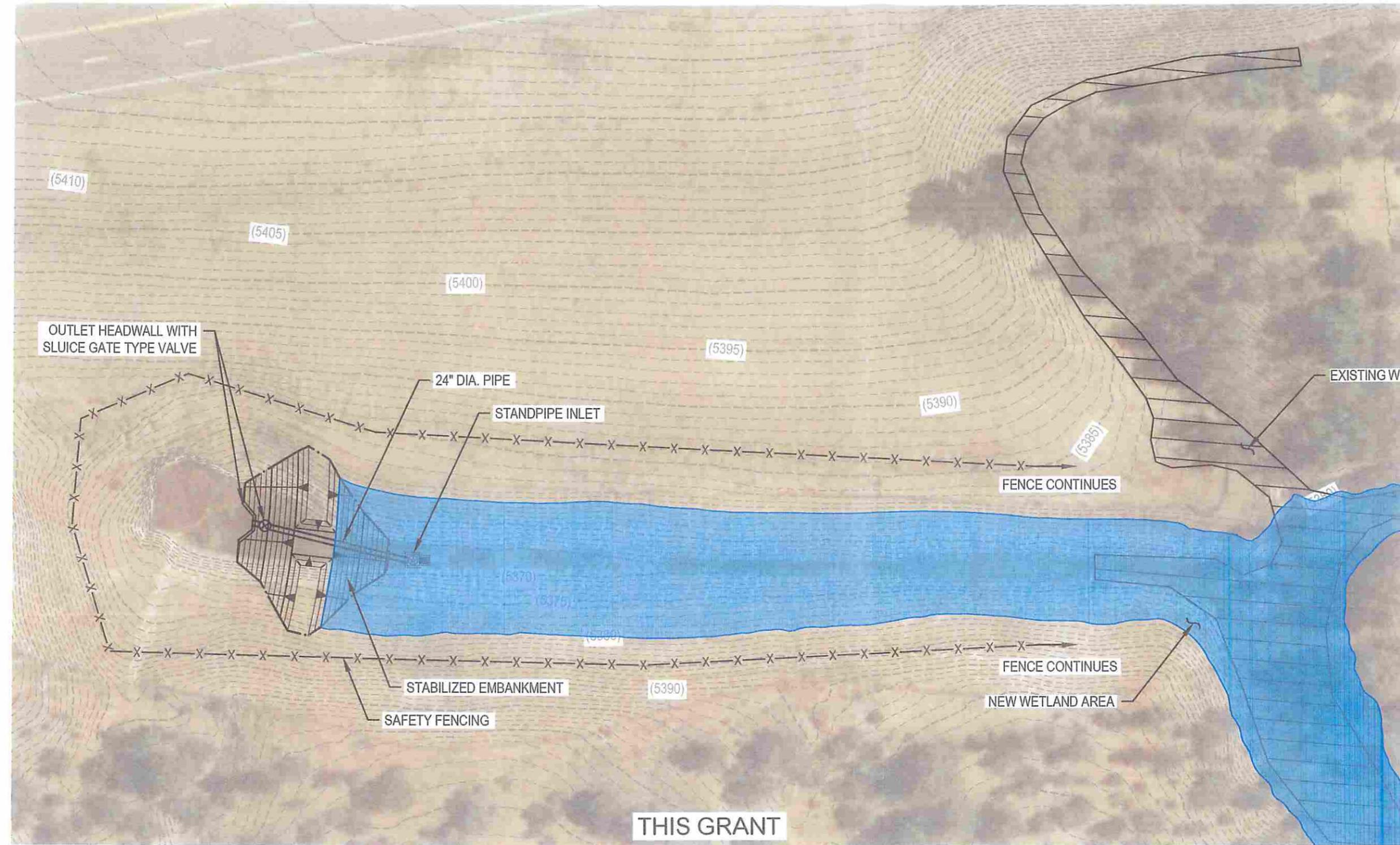
PRESCOTT, ARIZONA

YAVAPAI-PRESCOTT INDIAN TRIBE
SLAUGHTERHOUSE GULCH EXHIBITS
AREA 2

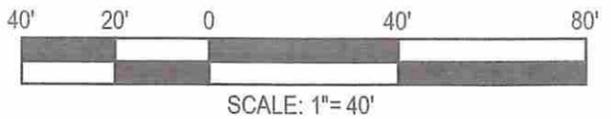
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SHEET 3 OF 7



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Civil, Water, Wastewater, Drainage,
and Transportation Engineering
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California • Arizona

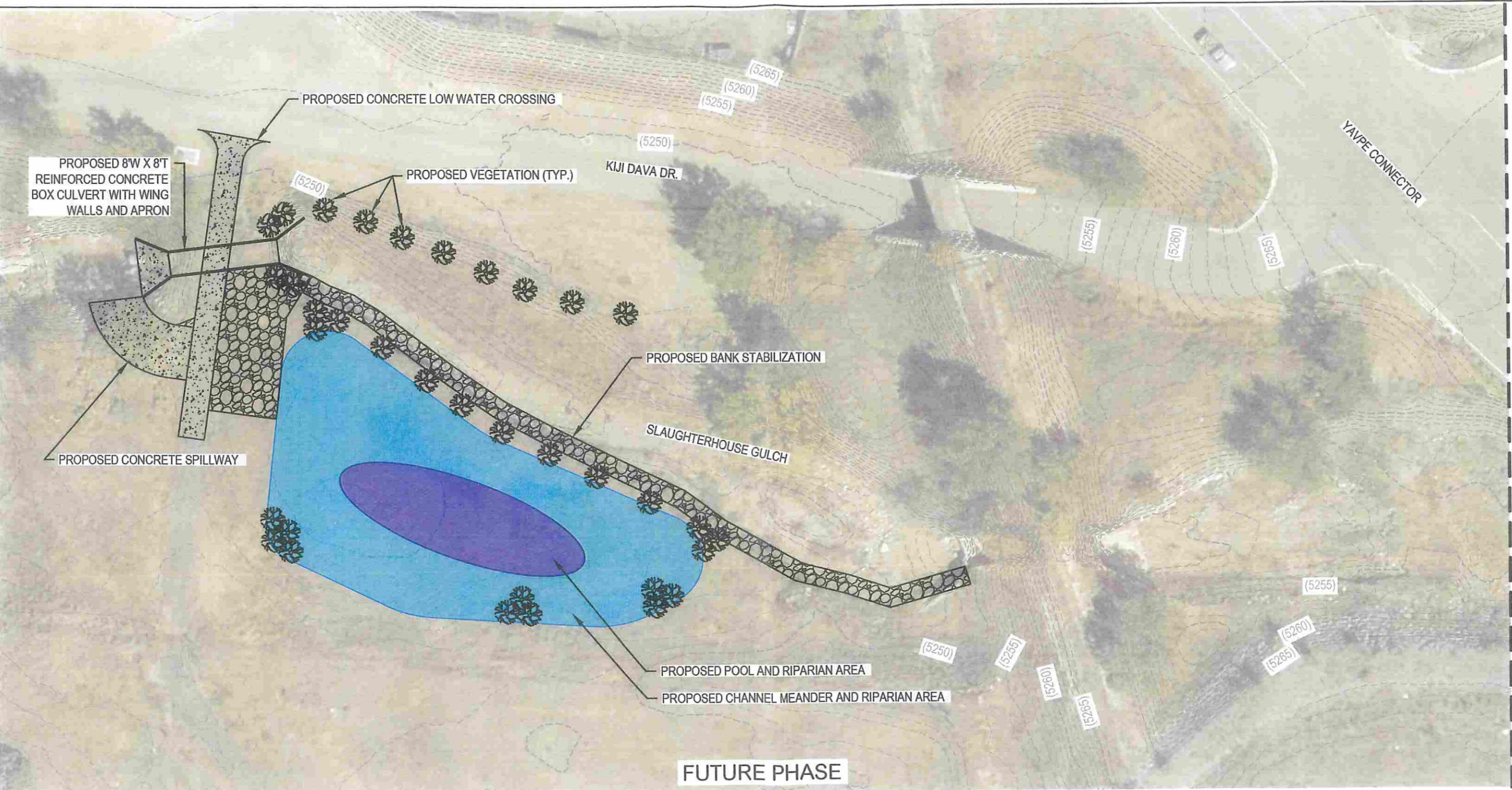
PRESCOTT, ARIZONA

YAVAPAI-PRESCOTT INDIAN TRIBE
SLAUGHTERHOUSE GULCH EXHIBITS
AREA 6

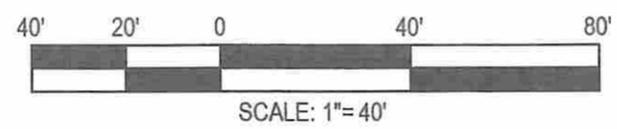
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SHEET 4 OF 7



MATCH LINE - SEE SHEET 6



FUTURE PHASE



Civil, Water, Wastewater, Drainage,
and Transportation Engineering
Construction Management • Surveying
California • Arizona

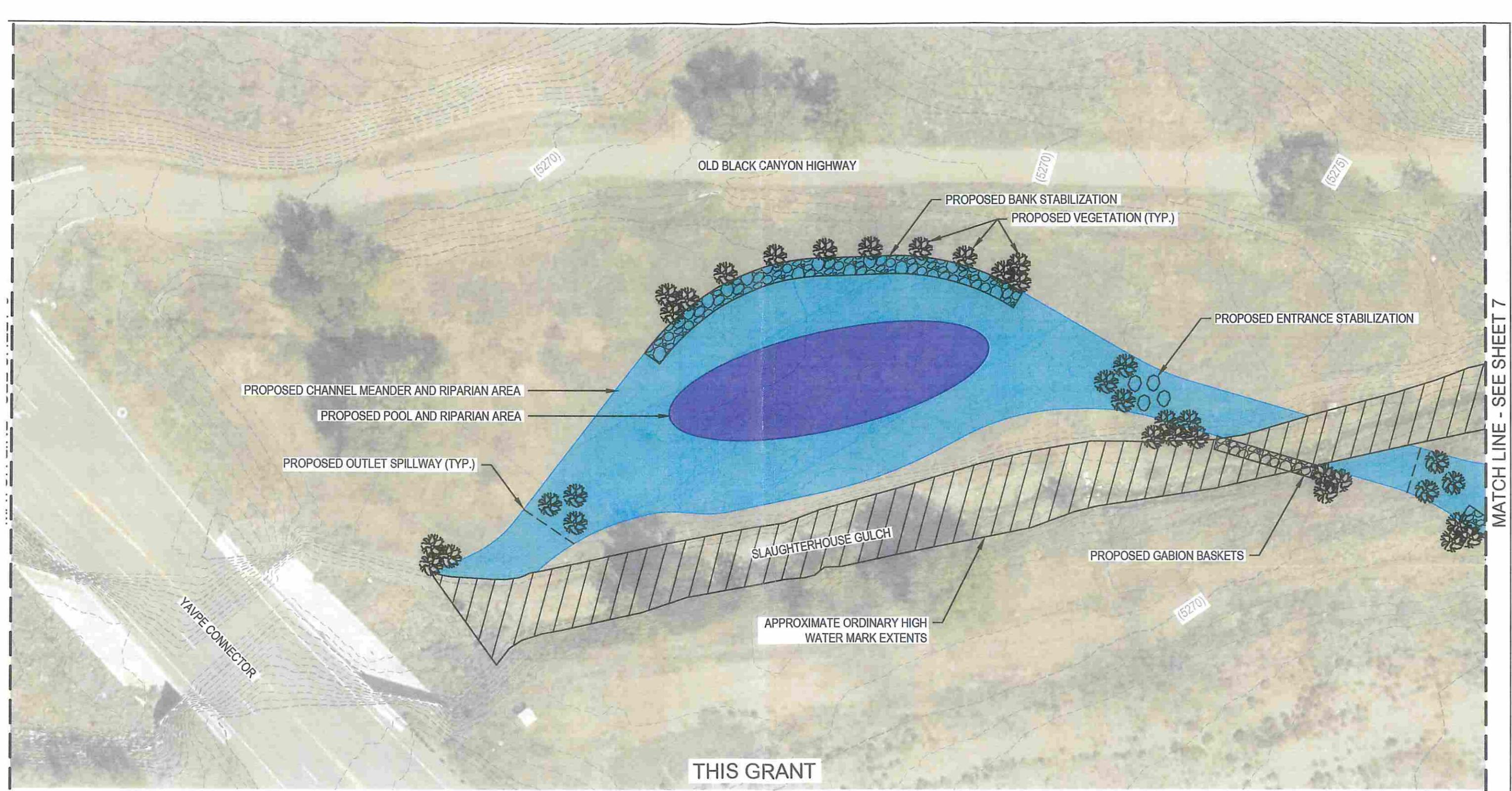
PRESCOTT, ARIZONA

**YAVAPAI-PRESCOTT INDIAN TRIBE
SLAUGHTERHOUSE GULCH EXHIBITS
AREA 7**

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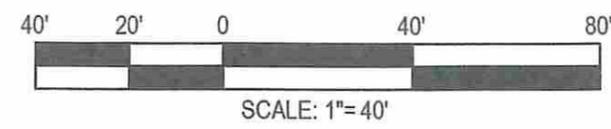
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D: 7 AREA DASH.dwg CA: May 11, 2015

SHEET 5 OF 7



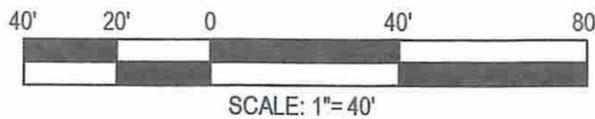
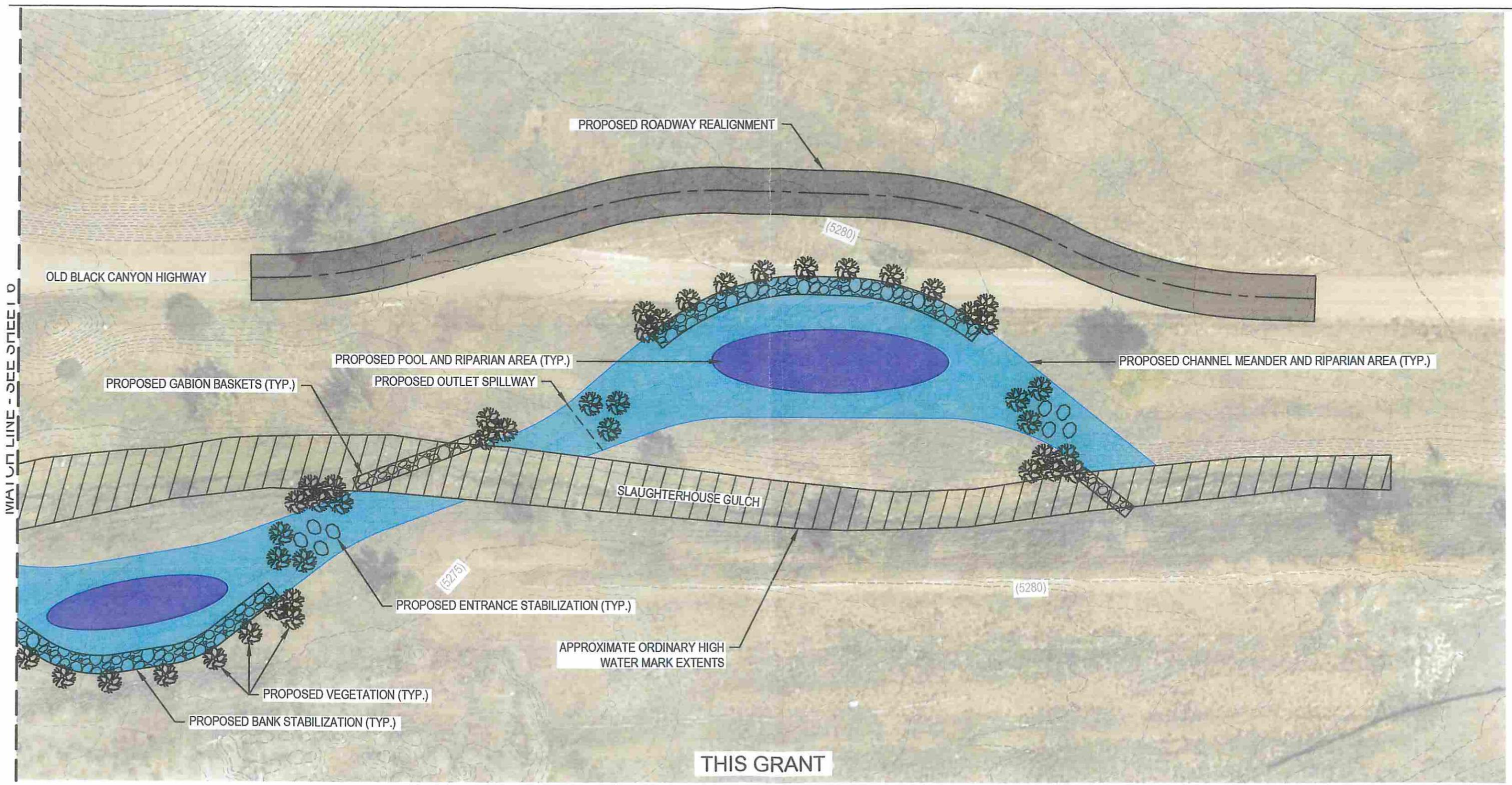
THIS GRANT

MATCH LINE - SEE SHEET 7



 Civil, Water, Wastewater, Drainage, and Transportation Engineering Construction Management • Surveying California • Arizona		PRESCOTT, ARIZONA YAVAPAI-PRESCOTT INDIAN TRIBE SLAUGHTERHOUSE GULCH EXHIBITS AREA 7			
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W/100 LINE - SEE SHEET 6



THIS GRANT

CIVILTEC
engineering inc.

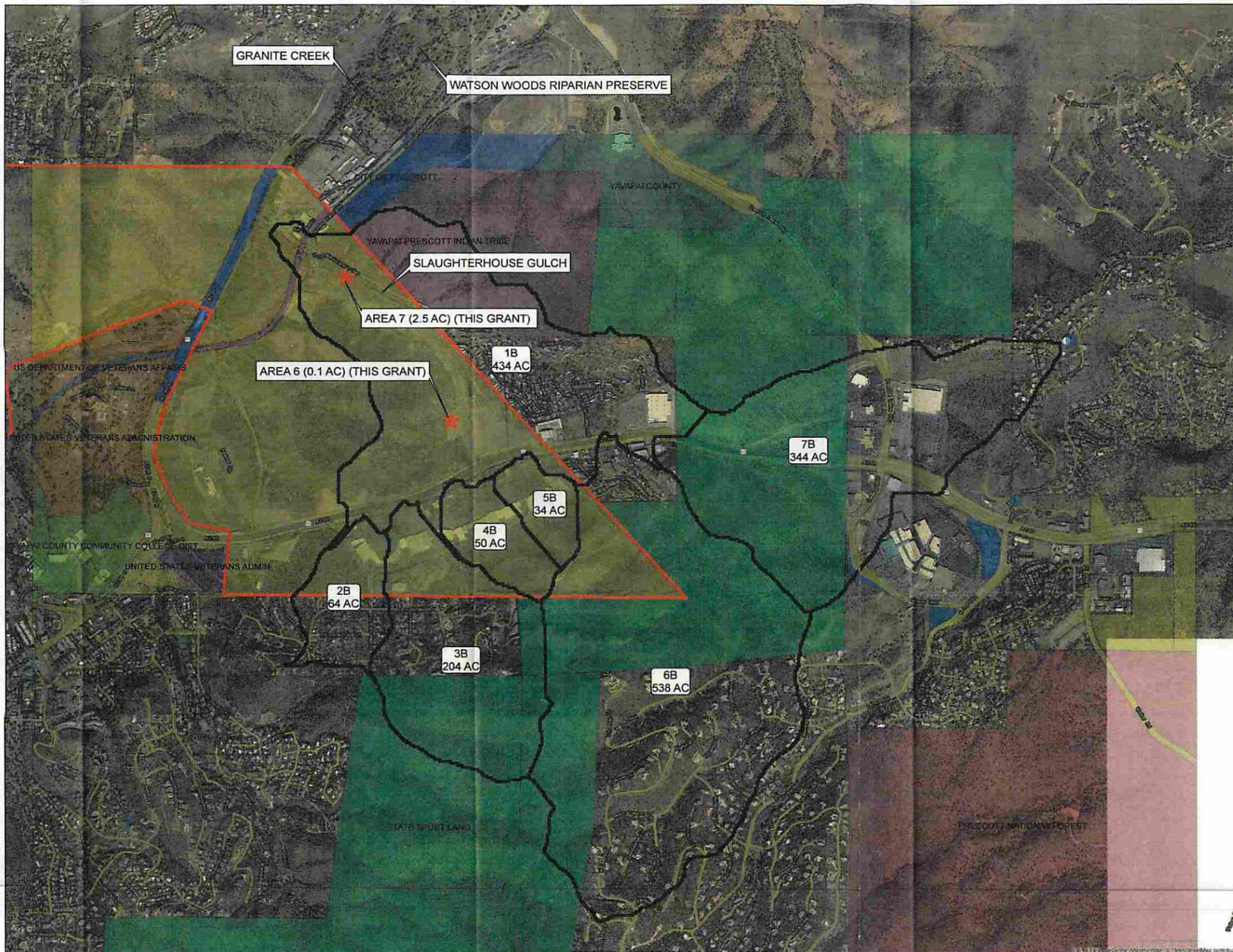
Civil, Water, Wastewater, Drainage,
and Transportation Engineering
Construction Management • Surveying
California • Arizona

PRESCOTT, ARIZONA
YAVAPAI-PRESCOTT INDIAN TRIBE
SLAUGHTERHOUSE GULCH EXHIBITS
AREA 7

DE: ARS	CH: ARS	DR: DT	JOB # 2015706.00
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SHEET 7 OF 7



Legend

- Drainage Basin (Runoff Water Source)
- Yavapai-Prescott Reservation
- Parcels**
- OTHER
- MISC.
- CITY OF PRESCOTT
- PRESCOTT NATIONAL FOREST
- STATE TRUST LAND
- UNITED STATES VETERANS ADMIN
- UNITED STATES VETERANS ADMINISTRATION
- US DEPARTMENT OF VETERANS AFFAIRS
- YAVAPAI COUNTY
- YAVAPAI COUNTY COMMUNITY COLLEGE DIST
- YAVAPAI-PRESCOTT INDIAN TRIBE



2054 N. Willow Creek Rd.
 Prescott, AZ 86301
 Phone: 928.771.2376
 Fax: 928.771.2377
 Web: www.civiltec.com

YAVAPAI COUNTY, AZ			
YPIT SLAUGHTERHOUSE GULCH STUDY PROJECT LOCATION/OWNERSHIP MAP			
DE: ARS	CH: RHS	DR: ARS	JOB# 2015706.00
			SHEET 1 OF 1

Detailed Budget Breakdown (two-year project period)

TASK	Hourly Rate	Hours	Total Cost	Project Year(s)
TASK #1				
Outside Services Final Engineering Design				
Area 6	\$170	118	\$ 20,000.00	1
Area 7	\$170	236	\$ 40,000.00	1
Total Task #1	\$170	354	\$ 60,000.00	
TASK #2				
Outside Services Re-vegetation Plan	\$ 84	54	\$ 4,500.00	1
Total Task #2	\$ 84	54	\$ 4,500.00	
TASK #6				
Outside Services Baseline Water Quality Testing	\$ 84	49	\$ 5,000.00	1
Total Task #6			\$ 5,000.00	
TASK #7				
Outside Services Construction Bid Process	\$170	29	\$ 5,000.00	2
Total Task #7			\$ 5,000.00	
TASK #8				
Outside Services Construction Area 6 – Wetlands (Detailed construction cost estimates included in the Appendix)			\$ 66,680.00	2
Capital Outlay Fencing			1,600 LF @ \$5/LF \$ 6,400.00	2
Project Allowance (15% of construction + engineering)			\$ 13,942.00	2
Total Task #8			\$ 87,042.00	
Task #9				
Outside Services Construction Area 7 – Riparian (Detailed construction cost estimates included in the Appendix)			\$232,700.00	2
Project Allowance (15% of construction + engineering)			\$ 40,905.00	2
Total Task #9			\$273,605.00	
TOTAL AWPf REQUEST			\$435,147.00	

Detailed Matching Funds Breakdown

Description	Hourly Rate	Hours/Amt	Total Cost	Project Year(s)
Outside Services				
Photographic Monitoring Plan	\$84	14.5	\$ 1,200.00	1
Photograph Monitoring	\$84	14.5	\$ 1,200.00	1,2
Total Outside Services	\$84	29	\$ 2,400.00	
Direct Labor Costs				
Permitting (staff time)	\$52	57	\$ 3,000.00	1
Project Management	\$52	291	\$15,157.00	1,2
Total Direct Labor	\$52	348	\$18,157.00	
Other Direct Costs				
Public Outreach			\$20,000.00	1,2
Total Other Direct Costs			\$20,000.00	
Administration			\$23,785.00	1,2
Total Applicant Match			\$64,342.00	

SUPPLEMENTAL INFORMATION

Supplemental Information Narrative

State Historic Preservation Office (SHPO) – The SHPO review form is attached along with tribal information on previously completed cultural surveys and investigations conducted of the project area. YPIT cultural resources personnel have four volumes of documentation on the project site that can be provided, upon request.

Key Personnel – Key personnel include Peter Bourgois, YPIT Tribal Planner; John Munderloh, Town of Prescott Valley Water Resources Manager and Chair of the UVRWPC Technical Advisory Committee; Rich Shroads, civil engineer and principal with ;Civiltec, Inc.; and Dr. Archie Dickey, environmental scientist and president of Bio-Zone, Inc. Their resumes are attached after this narrative.

Project Site Photos – Project site photos are attached after this narrative.

Plans – In the first year of the two-year project period, UVRWPC and outside scientific personnel will complete plans for re-vegetation and photographic monitoring, according to AWPf specifications and guidelines (*AWPF Photopoint Monitoring Guidelines; AWPf Revegetation Guidelines*). Photo monitoring and re-vegetation plans are included as Task #2 in the Scope of Work and Budget, and will be complete within four months of project start. Final engineering plans and construction documents will be completed within 150 days (5 months) and 20 months of project start, consecutively. Final engineering is Task #1 in the Scope of Work and Budget; construction documents are included under Task #7 of the Scope of Work and Budget. A public outreach plan will be completed within 90 days of project start. It is included as Task #5 in the Scope of Work and Matching Budget Detail.

Existing Plans/Reports/Information – Existing plans and reports that serve as justification for the proposed project include: (1) Upper Verde River Watershed Protection Coalition Watershed Restoration and Management Project Plan; (2) ADEQ Draft Upper Granite Creek Watershed *E. coli* TMDL, December 2014, Open File Report 14-08; and (3) Slaughterhouse Gulch Analysis and Revegetation/Erosion Control Plan, prepared by Biozone, Inc., July 2015. Pertinent pages are included in the Appendix of this proposal.

Community Support – A resolution of support from the UVRWPC Executive Board is included, as well as support letters from the YPIT, UVRWPC Watershed Taskforce, and Prescott Creeks Preservation Association. A match guarantee letter from the UVRWPC is also included.

Evidence of Site Control – Land ownership documents from YPIT are attached.

Evidence of Physical and Legal Availability of Water – A letter from the YPIT water attorney is attached, along with pertinent pages from the YPIT Water Settlement Agreement.

STATE HISTORIC PRESERVATION OFFICE Review Form

In accordance with the State Historic Preservation Act (SHPO), A.R.S. 41-861 *et seq.*, effective July 24, 1982, each State agency must consider the potential of activities or projects to impact significant cultural resources. Also, each State agency is required to consult with the State Historic Preservation Officer with regard to those activities or projects that may impact cultural resources. Therefore, it is understood that **recipients of state funds are required to comply with this law** throughout the project period. All projects that affect the ground-surface that are funded by AWPf require SHPO clearance, **including those on private and federal lands.**

The State Historic Preservation Office (SHPO) must review each grant application recommended for funding in order to determine the effect, if any, a proposed project may have on archaeological or cultural resources. To assist the SHPO in this review, the following information **MUST** be submitted with each application for funding assistance:

- A completed copy of this form, and
- A United States Geological Survey (USGS) 7.5 minute map
- A copy of the cultural resources survey report if a survey of the property has been conducted, and
- A copy of any comments of the land managing agency/landowner (i.e., state, federal, county, municipal) on potential impacts of the project on historic properties.
NOTE: If a federal agency is involved, the agency must consult with SHPO pursuant to the National Historic Preservation Act (NHPA); a state agency must consult with SHPO pursuant to the State Historic Preservation Act (SHPA),
OR
- A copy of SHPO comments if the survey report has already been reviewed by SHPO.

Please answer the following questions:

1. Grant Program: Arizona Water Protection Fund
2. Project Title: Slaughterhouse Gulch Riparian & Wetland Improvement Project
3. Applicant Name and Address: Upper Verde River Protection Coalition
Attn: John Munderloh, Town of Prescott Valley, 7501 E. Civic Circle,
4. Current Land Owner/Manager(s): _____ Prescott Valley, AZ 86314
Yavapai-Prescott Indian Tribe
5. Project Location, including Township, Range, Section: T14N, R2W, Sections 26 & 35
6. Total Project Area in Acres (or total miles if trail): 1.3
7. Does the proposed project have the potential to disturb the surface and/or subsurface of the ground? YES NO
8. Please provide a brief description of the proposed project and specifically identify any surface or subsurface impacts that are expected: The project will restore 0.9 acres of riparian habitat along an artificially straightened portion of stream by re-creating natural channel meanders. This work will require surface excavation of channel and bank materials. Another 0.4 acres of existing wetlands will be enhanced by constructing a backwater structure in the channel and by building a fence to exclude cattle grazing.

9. Describe the condition of the current ground surface within the entire project boundary area (for example, is the ground in a natural undisturbed condition, or has it been bladed, paved, graded, etc.). Estimate horizontal and vertical extent of existing disturbance. Also, attach photographs of project area to document condition: _(SEE ATTACHED)

10. Are there any known prehistoric and/or historic archaeological sites in or near the project area? YES NO

11. Has the project area been previously surveyed for cultural resources by a qualified archaeologist? YES NO UNKNOWN

If YES, submit a copy of the survey report. Please attach any comments on the survey report made by the managing agency and/or SHPO

12. Are there any buildings or structures (including mines, bridges, dams, canals, etc.), which are 50-years or older in or adjacent to the project area? YES NO

If YES, complete an Arizona Historic Property Inventory Form for each building or structure, attach it to this form and submit it with your application.

13. Is your project area within or near a historic district? YES NO

If YES, name of the district:

Please sign on the line below certifying all information provided for this application is accurate to the best of your knowledge.

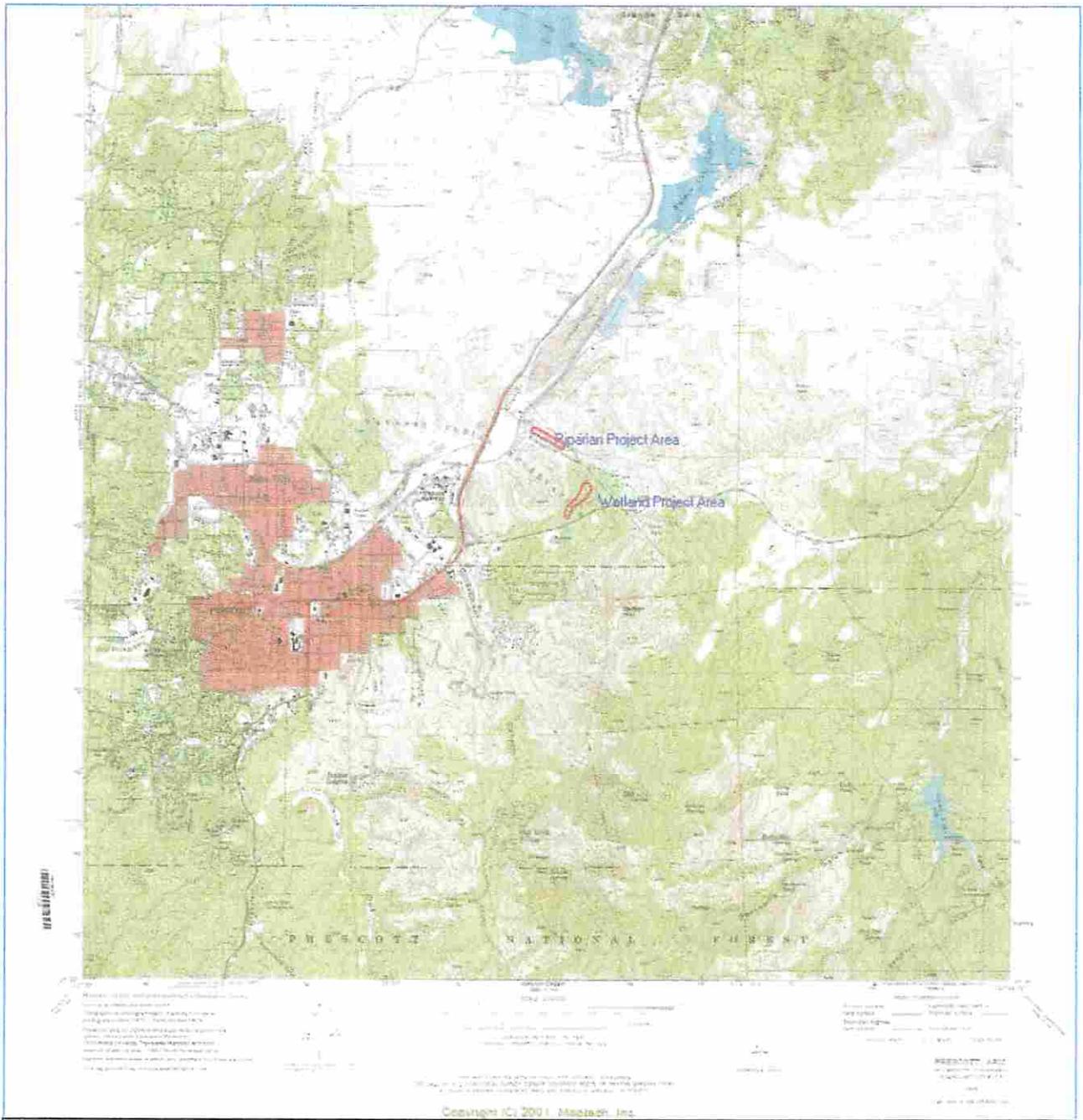
 /Date 15-13-15

PETER BOURGEOIS, TRIBAL PLANNER
Applicant Printed Name

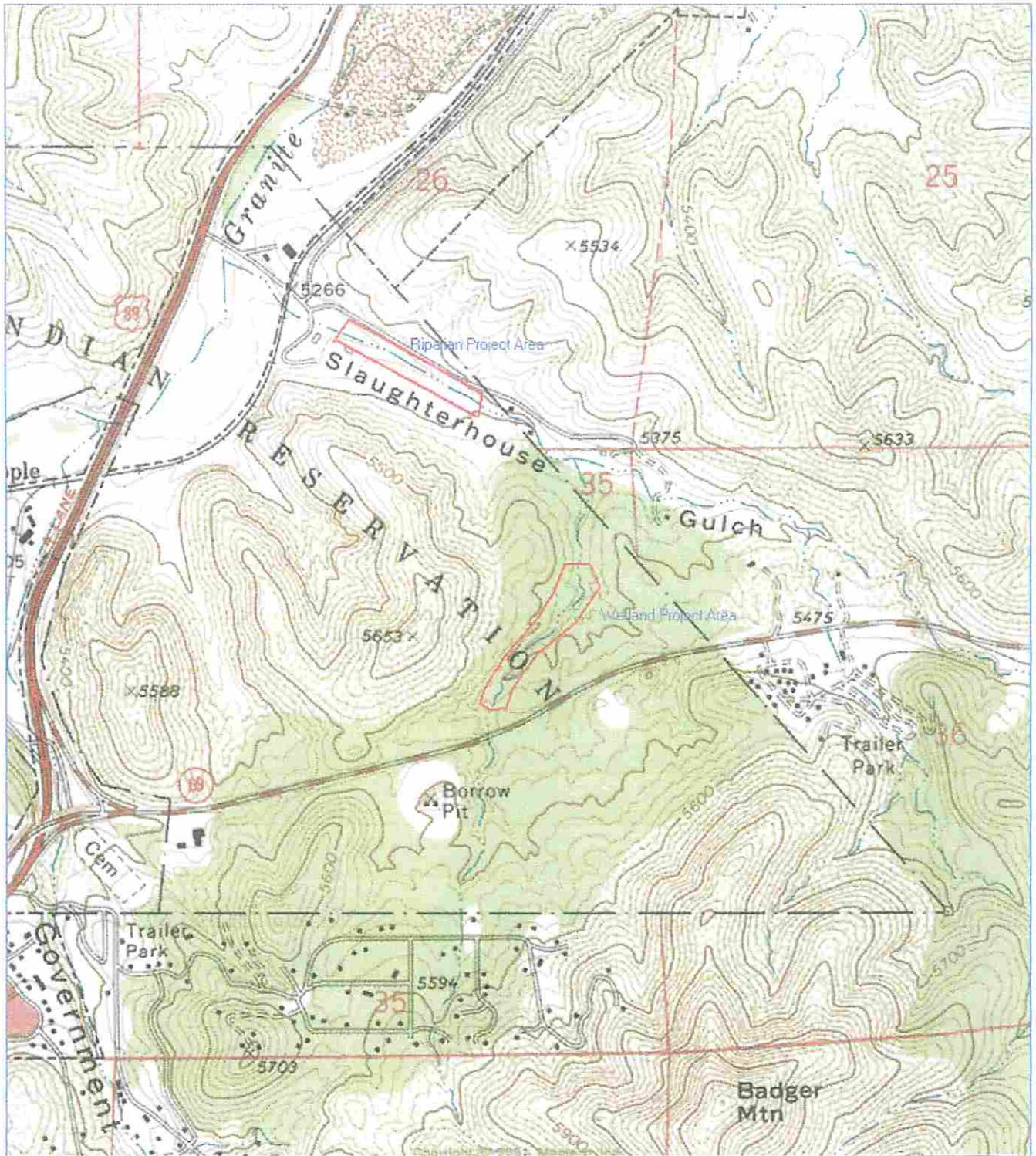
FOR SHPO USE ONLY	
SHPO Finding:	
<input type="checkbox"/> Funding this project will not affect historic properties.	
<input type="checkbox"/> Survey necessary – further GRANTS/SHPO consultation required (<i>grant funds will not be released until consultation has been completed</i>)	
<input type="checkbox"/> Cultural resources present – further GRANTS/SHPO consultation required (<i>grant funds will not be released until consultation has been completed</i>)	
SHPO Comments	
For State Historic Preservation Office:	Date:

SHPO – Answer to Question #9

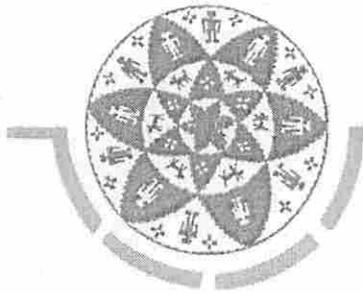
9. The ground surface within the 0.9 acres of riparian restoration area has been previously disturbed by previous gravel mining and/or road construction activity. The backwater structure for the wetland enhancement area will be constructed in a previously disturbed portion of the channel caused by a recent road construction project. Construction of fencing will require driving “T” posts for barbed-wire fencing. Existing disturbance of the riparian restoration area is approximately 2,500 feet along the axis of the channel by approximately 200 feet wide. Existing disturbance near the wetland enhancement area at the location of the backwater structure is approximately 450 along the axis of the channel by approximately 200 feet wide. The area where the fencing will be installed includes the disturbed area for the wetland backwater structure previously described and undisturbed area around the enhanced wetland area. Project photos are enclosed.



From Prescott, AZ 7.5 Minute USGS Topo. (1973) T14N, R2W, S 26 & 35



From Prescott, AZ 7.5 Minute USGS Topo. (1973) T14N, R2W, S 26 & 35



PRESCOTT ♦ INDIAN ♦ TRIBE

May 14, 2015

James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

**RE: SLAUGHTERHOUSE GULCH RIPARIAN & WETLAND IMPROVEMENT
PROJECT (ARIZONA WATER PROTECTION FUND GRANT APPLICATION):
RECOMMENDATION OF NO ADVERSE EFFECT ON HISTORIC PROPERTIES**

Dear Mr. Garrison:

The Archaeology Office of the Yavapai-Prescott Indian Tribe has previously investigated both areas, *i.e.*, the "Wetland Project Area" and the "Riparian Project Area," on the Yavapai-Prescott Indian Reservation related to the above-referenced grant application, which allows us to make the recommendation that no historic properties would be affected by the proposed Slaughterhouse Gulch Riparian & Wetland Improvement Project (see attached map). Specifically:

The Wetlands Project Area is situated entirely within a location that has been subjected to archaeological data recovery investigations. We are enclosing the final report for this project, *Archaeological Investigations at Four Sites, YAV-22, YAV-43, YAV-74, and YAV-75 within the Phase IV, Lease 200 Project Area on the Yavapai-Prescott Indian Tribe Reservation, Prescott, Yavapai County, Arizona*, by Linda Blan (2006), along with State Historic Preservation Office (SHPO) correspondence related to it (letter Matthew H. Bilsbarrow of SHPO to Barry W. Welch of the U.S. Bureau of Indian Affairs [BIA], 6/22/06).

The Riparian Project Area was inspected for the presence of cultural resources during the course of two previous projects: (1) the Connector Road survey; and (2) the Connector Road pads project. We are enclosing copies of the two survey reports: *Connector Road Revised Class III Cultural Resources Survey, Yavapai-Prescott Indian Reservation, Yavapai County, Arizona*, by Scott Kwiatkowski (2005), and *The Connector Road Pads Project: A Class III Cultural Resource Survey for Two Proposed Commercial Lease Properties on the Yavapai-Prescott Indian Reservation, Yavapai County, Arizona*, by Scott Kwiatkowski (2006) and also correspondence from both the agency and the SHPO (letter Gay M. Kinkade of BIA to James Garrison of SHPO, 5/5/05, and letter Matthew H. Bilsbarrow of SHPO to Merle Eugene Zunigha of BIA, 6/3/05, for the Connector Road Survey; and letter Rodney McVey of BIA to James Garrison of SHPO, 3/26/12, with SHPO concurrence, 4/4/12 for the Connector Roads pad project).

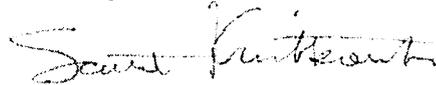
Mr. Garrison
May 14, 2015
Page 2

The Connector Road Pads Project found that an alignment of the Old Black Canyon Road (YAV 84 / AZ T:4:131 [ASM]) defines the northern boundary of the Riparian Project Area. Since this site, which is an in-use road, will not be impacted by the planned riparian wetland and improvement project, there will be no adverse effect to it.

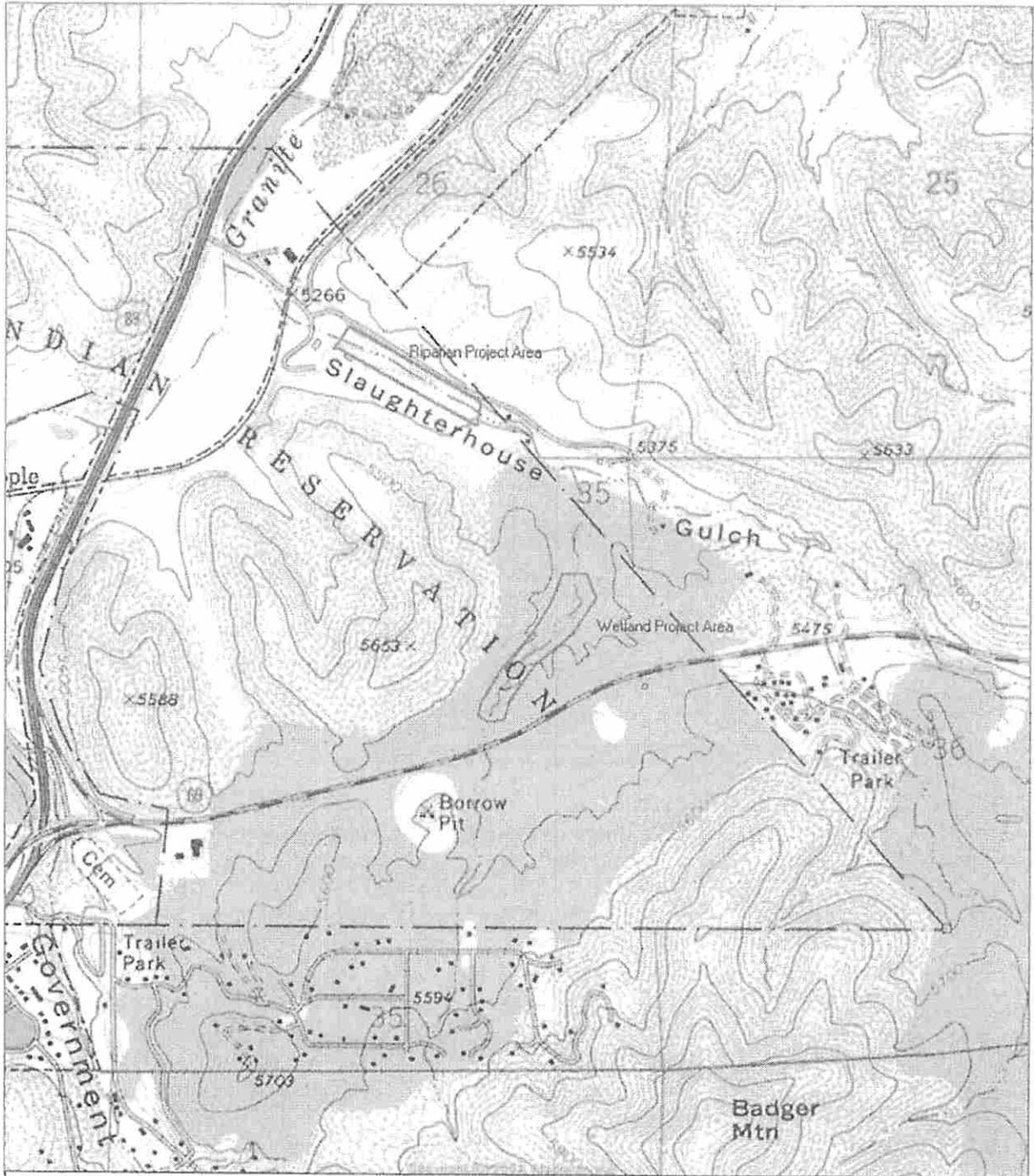
Since the National Register of Historic Places (NRHP) eligibility status of one site identified near the "Riparian Project Area," YAV 34&35, could not be determined at the survey level, archaeological test excavations were undertaken there in 2007, following an approved work plan, and the site was found to be not eligible to the NRHP. We have enclosed the preliminary testing report for this project, *Preliminary Report on Archaeological Test Excavations for the Connector Road, Yavapai-Prescott Indian Reservation, Yavapai County, Arizona*, by Scott Kwiatkowski (2007), along SHPO correspondence (letter David Jacobs of SHPO to Allen J. Anspach of BIA, 12/3/07). Note that the two properties SHPO identified as NRHP-eligible cultural resources in the Connector Road area of potential effect (APE), prehistoric limited habitation site YAV 82 and the historic Granite Creek/Sundog Bridge, both occur well away from the Riparian Project Area's APE. We also note that the final data recovery report that details why YAV 34&35 is not eligible to the NRHP is currently being prepared under the terms of a memorandum of agreement for the Connector Road project and will be submitted for compliance review later in 2015.

Please feel free to contact me at (928) 515-7421 or skwiatkowski@ypit.com with any comments, questions, or concerns related to this undertaking.

Sincerely,



Scott M. Kwiatkowski, M.A., RPA
Archaeologist/Anthropologist



From Prescott, AZ 7.5 Minute USGS Topo. (1973) T14N, R2W, S 26 & 35

Archaeological Investigations at Four Sites, YAV-22, YAV-43, YAV-74, and YAV-75,

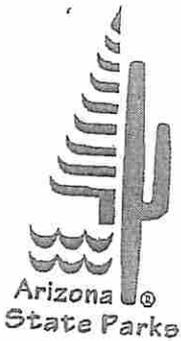
within the Phase IV, Lease 200 Project Area
on the Yavapai-Prescott Indian Tribe Reservation,
Prescott, Yavapai County, Arizona



YAVAPAI
PRESCOTT ♦ INDIAN ♦ TRIBE

Submitted to:
Yavapai-Prescott Indian Tribe Board of Directors
Bureau of Indian Affairs
Arizona State Historic Preservation Office

"Managing and conserving natural, cultural, and recreational resources"



June 22, 2006

Barry W. Welch, Acting Regional Director
U.S. Bureau of Indian Affairs (BIA), Western Regional Office (WRO)
Post Office Box 10
Phoenix, Arizona 85001

In reply, please refer to
SHPO-2000-0125 (29109)
National Historic Preservation Act
general comments

RE: Grace Corporation Development, Yavapai Prescott Indian Reservation, Yavapai
County, Arizona; EQS 97-587 4303.12 YP

Dear Mr. Welch:

Thank you for consulting with this office about the above-referenced federal undertaking that entails approving a commercial lease. I reviewed the documents submitted and offer the following comments pursuant to Section 106 of the National Historic Preservation Act as implemented by 36 C.F.R. 800.

Thank you for the revised data recovery report that addresses the comments raised in my 2/26/2004 letter. It documents one of the most well-rounded expressions of prehistoric material culture in the Prescott region, and represents a major advance in understanding the people who were living in this place.

We appreciate your agency's cooperation with this office in considering the impacts of federal undertakings on important cultural resources situated in Arizona pursuant to the National Historic Preservation Act. If you have any questions, please contact me at (602) 542-7137 or via mbilsbarrow@pr.state.az.us.

Sincerely,

Matthew H. Bilsbarrow, RPA
Planner/ Archaeologist
Arizona State Historic Preservation Office

Janet Napolitano
Governor

State Parks
Board Members

Chair
William C. Porter
Kingman

William Cordasco
Flagstaff

Janice Chilton
Payson

William C. Scalzo
Phoenix

Reese Woodling
Tucson

Elizabeth Stewart
Tempe

Mark Winkleman
State Land
Commissioner

Kenneth E. Travous
Executive Director

Arizona State Parks
1300 W. Washington
Phoenix, AZ 85007

I & TTY: 602.542.4174
www.azstateparks.com

800.285.3703 from
(20 & 928) area codes

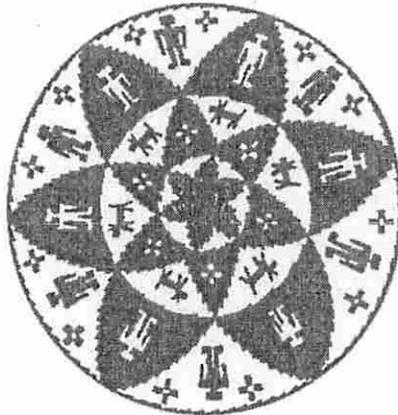
General Fax:
602.542.4180

Director's Office Fax:
602.542.4188

CONNECTOR ROAD
REVISED CLASS III CULTURAL RESOURCES SURVEY
YAVAPAI-PRESCOTT INDIAN RESERVATION
YAVAPAI COUNTY, ARIZONA

by

Scott M. Kwiatkowski, M.A., RPA
Tribal Anthropologist



Submitted to:
U.S. BUREAU OF INDIAN AFFAIRS
ARIZONA STATE HISTORIC PRESERVATION OFFICE

Submitted by:
YAVAPAI-PRESCOTT INDIAN TRIBE
530 East Merritt
Prescott, Arizona 86301

PRIVILEGED INFORMATION - NOT FOR PUBLIC DISCLOSURE

this report contains sensitive archaeological site information for use only in project-specific compliance with Section 106 of the National Historic Preservation Act; all site information provided herein must not be included within any databases except those of the Yavapai-Prescott Indian Tribe

February 14, 2005

YAVAPAI-PRESCOTT INDIAN TRIBE
Archaeological Report No. 2005-1



United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
WESTERN REGIONAL OFFICE
P.O. BOX 10
PHOENIX, ARIZONA 85001



IN REPLY
REFER TO:

Division of Transportation, M.S. 370
(602) 379-6782
FAX (602) 379-3837

MAY 05 2005

Connecticut Survey

Mr. James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

Attention: Matthew Bilsbarrow, Compliance Specialist/Archaeologist

Re: Bureau of Indian Affairs (BIA), Western Regional Office, Branch of Roads, Yavapai-Prescott Indian Reservation, Project YPIR 11 (1) – SR 69 & SR 89 Connector.

Dear Mr. Garrison:

As Agency Official for purposes of Section 106 of the National Historic Preservation Act, as amended, (NHPA) I wish to consult with your office pursuant to 36 CFR 800.4 about the proposed undertaking, YPIR 11 (1), on the Yavapai-Prescott Indian Reservation, Yavapai County, Arizona. To expedite the Section 106 consultation process I have combined the consultation initiation and historic properties identification steps pursuant to 36 CFR 800.3(g).

The Bureau of Indian Affairs (BIA), Western Regional Office, Branch of Roads, is proposing to construct a new bridge over Granite Creek for a road connecting State Route (SR) 69 with SR 89. The road will be financed and constructed by the Yavapai-Prescott Indian Tribe. BIA will acquire a right-of-way (ROW) for the road. The project is a short distance northeast of Prescott, Yavapai County, Arizona, on the eastern edge of the Yavapai-Prescott Indian Reservation. The project area location is shown on the enclosed maps. The road will be approximately 0.94 miles long. Pursuant to 36 CFR 800.4(a)(1), we propose the area of potential effects (APE) to be a 400 foot wide corridor centered on the proposed road alignment for a distance of 0.94 miles (46.5 acres).

I have made a reasonable and good faith effort to carry out appropriate identification efforts as prescribed at 36 CFR 800.4. A Class III intensive field inventory of the APE was completed by the Yavapai-Prescott Indian Tribe. Their report is titled *Connector Road Revised Class III Cultural Resources Survey, Yavapai-Prescott Indian Reservation, Yavapai County, Arizona*, by Scott M. Kwiatkowski, February 14, 2005. A copy of the report is enclosed for your review. Five cultural sites were reported in the

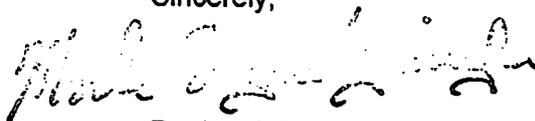
APE. The sites are described in the inventory report. Site eligibility for listing in the National Register of Historic Places, mitigation measures, and BIA's determination of No Adverse Effect are addressed in the enclosed *Determination of No Adverse Effect* report by our Roads Archaeologist, Gay M. Kinkade, dated March 3, 2005. The Yavapai-Prescott Indian Tribe has stated that they have no traditional cultural properties (TCPs) concerns with the project. We are currently consulting with the Salt River Pima-Maricopa Indian Community, the Hopi Tribe, the Hualapai Tribe, and the Pueblo of Zuni.

I conclude that a determination of "No Adverse Affect" pursuant to 36 CFR 800.5(b) is appropriate for the proposed undertaking.

These determinations will be included as part of the National Environmental Policy Act (NEPA) documentation associated with the proposed undertaking, which will be an Environmental Assessment prepared by the Tribe. As part of the NEPA review process, we will employ corresponding Bureau and tribal notification procedures for addressing our responsibilities as defined at 36 CFR 800.2(d).

Pursuant to 36 CFR 800.4(c) and 36 CFR 800.5(c), I am submitting documentation of these findings and await your response within thirty days of receipt. I seek your concurrence with our eligibility and effect determinations and concurrence that the Section 106 consultation process has been successfully completed for the subject undertaking. If there are any questions, please contact Mr. Gay M. Kinkade, Regional Roads Archaeologist, at (602) 379-6782.

Sincerely,



Acting Regional Director

Enclosure(s)

cc: **Scott M. Kwiatkowski, Tribal Anthropologist, Cultural Research Program, Yavapai-Prescott Indian Tribe, 530 E. Merritt, Prescott, Arizona 86301**

Dave Smith, BIA, WRO, Supervisory Highway Engineer

Chip Lewis, BIA, WRO, Roads Environmental Coordinator

Gay Kinkade, BIA, WRO, Roads Archaeologist

**DETERMINATION OF
NO ADVERSE EFFECT**

Project No. YPIR 11 (1) SR 69 and SR 89 Connector

Undertaking: The Bureau of Indian Affairs (BIA), Western Regional Office (WRO), Branch of Roads, proposes to construct the State Route (SR) 69 to SR 89 connector road (IR 11) on the Yavapai-Prescott Indian Reservation, Yavapai County, Arizona. The project begins at SR 89 on the west and runs southeast toward SR 69, ending at the Grace Lease boundary (The road on the Grace Lease will be constructed as a separate and non-BIA project). The project is a short distance northeast of Prescott, Arizona on the reservation near its eastern boundary. The proposed project will consist of constructing the road to grade, providing drainage, and applying pavement. A new bridge crossing Granite Creek will be constructed. The alignment will follow an existing road for a short part of its length. The project is approximately one mile long. Right-of-way (ROW) has not been acquired. The project location is identified on the attached maps. Materials pits, storage areas, and other ancillary facilities needed will be identified by the construction contractor.

Property Delineation

Location

Project length: 0.94 mile
Survey width: 400 feet
Project APE 0.94 mi x 400' = 46.5 acres
Acres surveyed: 46.5

Reservation: Yavapai-Prescott
County: Yavapai
U.S.G.S. Quad:
Prescott, AZ 7.5'
Township: 14 N
Range: 2 W
Section: (26, 35)

Survey Type: Class III
Class III

Date: 8-9-01
11-3 & 4-04

By: Linda Blan
Scott Kwiatkowski

Native American Consultation: Pursuant to 36 CFR 800.4(a)(4) consultations on the preliminary road design were completed by the Yavapai-Prescott Indian Tribe in 2001 with the Salt River Pima-Maricopa Indian Community, the Pueblo of Zuni, and possibly the Hopi Tribe and the Hualapai Tribe, to identify their concerns about historic properties, identify historic properties of traditional religious and cultural importance to the Tribe, and articulate their views on the undertakings effects on such properties. Only the Pueblo of Zuni responded. They stated that they had no comment on any possible historic properties that might be affected by the proposed project.

BIA is currently consulting with the Salt River Pima-Maricopa Indian Community, the Hopi Tribe, the Hualapai Tribe, and the Pueblo of Zuni on the current project design.

Inventory: Pursuant to 36 CFR 800.4(a)(1) the area of potential effects (APE) for the project has been determined to be a 400 feet wide corridor centered on the proposed road alignment for a distance of 0.94 miles (46.5 acres). Any material pits, storage areas, or other ancillary facilities needed will be inventoried for cultural resources prior to use of those areas being authorized.

Pursuant to 36 CFR 800.4(b)(1) a Class III intensive field inventory was completed on the APE on August 9, 2001 by the Yavapai-Prescott Tribal Archaeologist, Linda M. Blan, to identify any cultural resources present. The inventory report by Linda M Blan dated December 2001 is titled *Cultural Resources Survey of a Proposed Yavapai Connector Road, Yavapai-Prescott Indian Reservation, Yavapai County, Arizona*, Archaeological Report No. 01-002, Yavapai-Prescott Indian Tribe. The revised project area was inventoried by the new Tribal Archaeologist, Scott M. Kwiatkowski, on November 3 and 4, 2004. His report is titled *Connector Road Revised Class III Cultural Resources Survey, Yavapai-Prescott Indian Reservation, Yavapai County, Arizona*, Archaeological Report No. 2005-1, February 14, 2005, Yavapai-Prescott Indian Tribe.

A cultural resource inventory will be completed on any ancillary facilities identified by the construction contractor prior to their use being authorized.

Findings: No archaeological sites were reported on the 2001 survey. Five archaeological sites located within the APE were reported on the 2004 survey. Site YAV 34 & 35 (combined on the survey; may be eligible) is a prehistoric sherd and chipped stone scatter with six rock features and a historic artifact scatter. Site YAV 82 (may be eligible) is a prehistoric sherd and chipped stone scatter. Site YAV 83 / AZ N:7:61 (ASM) (non-contributing) is a segment of the Prescott-Jerome Highway with two bridges. Site YAV 84 / AZ T:4:131 (ASM) (non-contributing) is a segment of the Black Canyon Road. Site YAV 85 / AZ N:3:32 (ASM) (non-contributing) is a segment of the railroad alignment for the Santa Fe, Prescott and Phoenix Railway / Atchison, Topeka and Santa Fe Railway. The site also contains a railroad overpass which will be preserved in place during construction of the connector road.

Determination: Pursuant to 36 CFR 800.4(c)(1) BIA agrees with the Yavapai-Prescott Indian Tribe's recommendations on the project area sites' eligibility for listing in the National Register of Historic Places. BIA agrees that sites YAV 34/35 and YAV 82 should be test excavated to determine their National Register eligibility and to determine the need for and nature of data recovery. BIA agrees that the segments of Sites YAV 83, YAV 84 and YAV 85 are non-contributing elements to the National Register eligibility status of the sites.

Pursuant to 36CFR 800.4(d)(2) BIA has determined that the proposed road construction project will have a No Adverse Effect on the historic properties located within the APE, providing the following stipulations are implemented. Clearance is recommended for the undertaking with the provision that the following stipulations are implemented.

Stipulations: YPIR 11 (1)

1. Archaeological test excavations shall be completed at Sites YAV 34/35 and YAV 82. The Contractor shall prepare a test excavation plan and submit it to BIA for approval. The Contractor shall implement the approved test excavation plan and submit a report on the excavations to BIA for approval. The Contractor shall prepare a data recovery plan, as required by BIA, and submit it to BIA for approval. The Contractor shall implement the data recovery plan and submit a report on the data recovery to BIA for approval.

2. The construction contractor shall inform all personnel of the construction limits boundaries and the requirement to not conduct any travel or work outside the construction limits boundaries and the requirement to not collect or disturb any archaeological artifacts or cultural remains.
3. Any archaeological or historical artifacts or remains discovered during construction shall be left intact and undisturbed, all work in the area shall stop immediately, and the BIA Western Region Roads Archaeologist shall be notified immediately [(602) 379-6782]. The Roads Archaeologist will notify the responsible Indian tribal official and the State Historic Preservation Officer of the discovery, per 36 CFR 800.13. Commencement of operations shall be allowed upon clearance by the Western Regional Office Branch of Roads.
4. If during construction operations any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; Stat. 3048; 25 U.S.C. 3001) are discovered, the Operator shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the BIA Western Region Roads Archaeologist of the discovery by telephone [(602) 379-6782] with written confirmation. The Roads Archaeologist shall immediately notify the responsible Indian tribal official of the discovery, per 43 CFR 10.4. The Operator shall continue to protect the immediate area of the discovery until notified by the BIA Western Regional Office Branch of Roads that operations may resume.

Gay M. Kenbade
BIA Western Region Roads Archaeologist

3-3-05
Date

370P



In reply, please refer to
SHPO-2005-1075 (24078)
National Historic Preservation Act
general comments

RECEIVED

June 3, 2005 2005 JUN -9 A 1:05

Merle Eugene Zuniga, Acting Regional Director
U.S. Bureau of Indian Affairs, Western Regional Office, Branch of Roads
Post Office Box 10
Phoenix, Arizona 85001

SHPO
Comments

Attn: Gay M. Kinkade; M.S. 460

Janet Napolitano
Governor
State Parks
Board Members

~~RE: BIA-WRO-POP-Yavapai-Prescott Indian Reservation Project YPIR 11(1)-SR-69
& 89 Connector, Yavapai County, Arizona~~

Chair
Elizabeth Stewart
Tempe

Dear Mr. Zuniga:

William C. Porter
Kingman

Thank you for initiating consultation with this office about the above-referenced federal undertaking that entails constructing a new road. Historian William Collins and I reviewed the documents submitted and offer the following comments on the Arizona portion pursuant to Section 106 of the National Historic Preservation Act as implemented by 36 C.F.R. 800.

William Cordasco
Flagstaff

Janice Chilton
Payson

According to the cultural resources survey report, three historic-period structures (Prescott-Jerome Highway, Black Canyon Road, Santa Fe, Prescott & Phoenix Railway), two archaeological sites (YAV 34/35 and YAV 82), and a historic-period site (Southwest Forest Industries Complex YAV 36). The report is well-researched, amply illustrated, well-organized, and professionally prepared.

William C. Scalzo
Phoenix

John U. Hays
Yarnell

We agree that the Prescott-Jerome Highway, Black Canyon Road, Santa Fe Prescott & Phoenix Railway are eligible for inclusion in the National Register of Historic Places. The eligibility status of the Granite Creek Bridge/Sun Dog Bridge (ADOT Bridge 8549) is unclear at this time, because ADOT has updated its historic bridge inventory; we suggest contacting ADOT for the latest information instead of relying on the 1987 study. We agree that Sites YAV 34/35 and YAV 82 require archaeological testing to determine their eligibility status. We agree that Site YAV 36 is ineligible, because it has been destroyed.

Mark Winkelman
State Land
Commissioner

Kenneth E. Travous
Executive Director

Arizona State Parks
1300 W. Washington
Phoenix, AZ 85007

Tel & TTY: 602.542.4174
www.azstateparks.com

800.285.3703 from
(520 & 920) area codes

General Fax
602.542.4180

Director's Office Fax:
602.542.4188

Based on the above, a finding of effect is premature at this time, because the eligibility status of two sites has not yet been determined. We agree with the proposed treatments for the historic-period structures, with the exception of the Granite Creek Bridge for reasons mentioned above. We agree that archaeological testing is appropriate at YAV34/35 and YAV 82. We agree that no further treatment is needed at Site YAV 36.

RECEIVED-BIA-
2005 JUN -8 P 2
AREA DIRECTOR

Letter to BIA-Roads, 6/3/2005, Page 2
BIA-WRO BOR Yavapai-Prescott Indian Reservation Project YPIR 11(1)- SR 69 & 89 Connector,
Yavapai County, Arizona

We look forward to receiving a archaeological testing plan and further consideration of the Granite Creek Bridge's eligibility status. We appreciate your agency's cooperation with this office in considering the impacts of federal undertakings on important cultural resources situated in Arizona. If you have any questions, please contact me at (602) 542-7137 or via mbilsbarrow@pr.state.az.us.

Sincerely,



Matthew F. L. Bilsbarrow, RPA
Planner/ Archaeologist
Arizona State Historic Preservation Office

cc. Bill Collins SHPO

**THE CONNECTOR ROAD PADS PROJECT:
A CLASS III CULTURAL RESOURCE SURVEY FOR
TWO PROPOSED COMMERCIAL LEASE
PROPERTIES ON THE YAVAPAI-PRESCOTT
INDIAN RESERVATION
YAVAPAI COUNTY, ARIZONA**

by

Scott M. Kwiatkowski, M.A., RPA
Anthropologist/Archaeologist



Submitted to:
Western Regional Office
U.S. BUREAU OF INDIAN AFFAIRS
and the
ARIZONA STATE HISTORIC PRESERVATION OFFICE

Submitted by:
Tribal Board of Directors
YAVAPAI-PRESCOTT INDIAN TRIBE
530 East Merritt
Prescott, Arizona 86301-2038

PRIVILEGED INFORMATION - NOT FOR PUBLIC DISCLOSURE

this report contains sensitive archaeological site and historical information for use only in project-specific compliance with Section 106 of the National Historic Preservation Act; all site information provided herein must not be included within any databases except those of the Yavapai-Prescott Indian Tribe

January 13, 2012

YAVAPAI-PRESCOTT INDIAN TRIBE
Archaeological Report No. 2011-2

SIHPO-2012-0302-(100414)



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
WESTERN REGIONAL OFFICE
2600 North Central Avenue
Phoenix, Arizona 85004-3008



IN REPLY REFER TO:
Environmental Quality Services

MAR 26 2012

Connector Pads Survey
Agency 451HPO

RECEIVED
MAR 23 2012
WESTERN REGIONAL DIRECTOR
2012 APR -9 P 3:17

Mr. James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

Dear Mr. Garrison:

As Agency Official for purposes of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), we wish to consult with you pursuant to 36 CFR 800.3(g) about the proposed undertakings, approval of leases for two commercial properties (Project No. 2012-148), on the Yavapai-Prescott Indian Reservation.

In consultation with the Yavapai-Prescott Indian Tribe (YPIT) as identified at 36 CFR 800.3(d), we have made a reasonable and good faith effort to carry out appropriate identification efforts as prescribed at 36 CFR 800.4 and have gathered sufficient information to evaluate the eligibility of the identified properties for the National Register of Historic Places (NRHP). Documentation of this finding is provided in the enclosed report:

The Connector Road Pads Project: A Class III Cultural Resource Survey for Two Proposed Commercial Lease Properties on the Yavapai-Prescott Indian Reservation, Yavapai County, Arizona (Kwiatkowski, January 2012).

The properties are not identified for the purposes of Section 110(a)(2) of the NHPA, as this agency neither owns nor controls the properties.

It is our opinion that application of the National Register criteria has the following result:

Site Designation	Eligible	Criteria	Adverse Effect
YAV 83/AZ N:7:61(ASM)	Yes	A	No
YAV 84/AZ T:4:131(ASM)	Yes	A	No
YAV 85/AZ N:3:32(ASM)	Yes	A	No
YAV 89	Undetermined	A-D	No

We conclude that a determination of "No Adverse Effect" pursuant to 36 CFR 800.5(b) is appropriate for the undertakings as YAV 83 will be monitored by an archeologist, YAV 89 will be avoided by project design and implementation, and the undertaking will not diminish the characteristics that qualify YAV 84 and YAV 85 for the NRHP.

This determination will be included as part of the National Environmental Policy Act (NEPA) documentation associated with the proposed undertakings, which is anticipated to be an Environmental Assessment. As part of the NEPA review process, we will employ corresponding Bureau and tribal notification procedures for addressing our responsibilities as defined at 36 CFR 800.2(d).

As required at 36 CFR 800.5(c), we are submitting documentation of this finding and await your response within thirty days of receipt. We trust you will agree with this finding and seek your concurrence that the Section 106 consultation process has been successfully completed for the subject undertakings. If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256.

Sincerely,



Deputy Regional Director - Trust Services

Enclosure

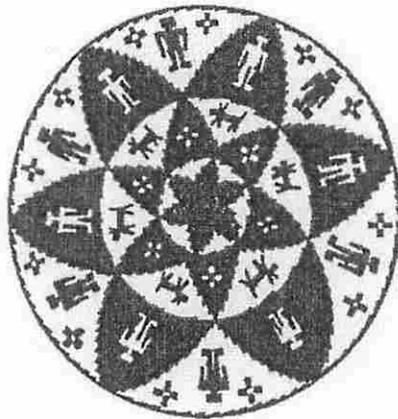
cc: Superintendent, Truxton Canon Agency
Attn: Environmental Coordinator
President, Yavapai-Prescott Indian Tribe
Director, Cultural Research, YPIT

CONCUR
[Handwritten signature] 9/11/14
Arizona State Historic Preservation Office

PRELIMINARY REPORT
ON ARCHAEOLOGICAL TEST EXCAVATIONS FOR THE
CONNECTOR ROAD
YAVAPAI-PRESCOTT INDIAN RESERVATION
YAVAPAI COUNTY, ARIZONA

by

Scott M. Kwiatkowski, M.A., RPA
Anthropologist/Archaeologist



Submitted to:
U.S. BUREAU OF INDIAN AFFAIRS
ARIZONA STATE HISTORIC PRESERVATION OFFICE

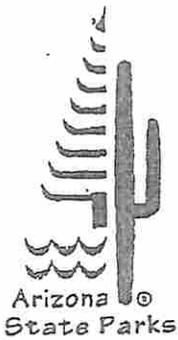
Submitted by:
YAVAPAI-PRESCOTT INDIAN TRIBE
530 East Merritt
Prescott, Arizona 86301

PRIVILEGED INFORMATION - NOT FOR PUBLIC DISCLOSURE

this report contains sensitive archaeological site information for use only in project-specific compliance with Section 106 of the National Historic Preservation Act; all site information provided herein must not be included within any databases except those of the Yavapai-Prescott Indian Tribe

October 22, 2007

YAVAPAI-PRESCOTT INDIAN TRIBE
Archaeological Report No. 2007-2



December 3, 2007

Allen J. Anspach, Regional Director
Bureau of Indian Affairs, Western Regional Office
US Department of Interior
Two Arizona Center, 12th Floor
400 North 5th Street
Phoenix, AZ 85004

Connect SHPO Testing

RE: SR 69 and 89 Connector Road in Yavapai-Prescott Indian Reservation
Section 106 Consultation
SHPO-2007-1853 (34763)

Janet Napolitano
Governor

Mr. Anspach:

State Parks
Board Members

Chair
William C. Cordasco
Flagstaff

Arlan Colton
Tucson

William C. Scalzo
Phoenix

Reese Woodling
Tucson

Tracey Westerhausen
Phoenix

William C. Porter
Kingman

Mark Winkleman
State Land
Commissioner

Kenneth E. Travous
Executive Director

Arizona State Parks
1300 W. Washington
Phoenix, AZ 85007

Tel & TTY: 602.542.4174
www.azstateparks.com

800.285.3703 from
(520 & 928) area codes

General Fax:
602.542.4180

Director's Office Fax:
602.542.4188

Thank you for consulting with the Arizona State Historic Preservation Office about the proposed improvements to the SR 69 and 89 connector road in the Yavapai-Prescott Indian Reservation pursuant to Section 106 of the National Historic Preservation Act, and submitting materials for the proposed undertaking. We have reviewed the submitted materials and offer the following comments.

We concur with the eligibility determinations for the sites recorded in the project area, and additionally with the finding of "adverse effect" for the proposed undertaking on prehistoric artifact scatter [YAV 82] and the Granite Creek/Sundog Bridge. The fieldwork for the archaeological site YAV 82 should be conducted prior to the abandonment of the historic Granite Creek/Sundog Bridge, and the Memorandum of Agreement (MOA) to resolve the adverse effects should also address the status/use of the bridge after its abandonment. In addition to documentation, the most recent communications between our offices indicate the bridge's desk is to be removed after abandonment. The final MOA should address these issues.

We appreciate your cooperation with the Arizona State Historic Preservation Office in considering the potential impacts of federal projects on cultural resources situated in Arizona. If you have any questions or require further information, please contact me at 602-542-7140 or via e-mail at djacobs@azstateparks.gov.

Sincerely,

David Jacobs
Compliance Specialist, Archaeologist
Arizona State Historic Preservation Office

CC: Anna Rago, BIA/WRO

*ATTN: ANNA
602-379-3837*

Peter D. Bourgois, Tribal Planner

Yavapai-Prescott Indian Tribe

Planner & Registered Landscape Architect. LEED AP

CURRENT RESPONSIBILITIES AS TRIBAL PLANNER

Tribal Planner for the Yavapai-Prescott Indian Tribe responsible for oversight of all planning activities for the Tribe including the preparation and oversight of Economic Development Planning, Community Development Planning, Housing, Infrastructure Planning, Environmental Protection, Water Resources Management, and Construction Implementation. Tribal projects include:

- Master planning for Tribal commercial/industrial development and resource management
- Project management of infrastructure projects including sewer, water, power, gas, fiber-optics
- Project management for new 45,000 square foot Yavapai Indian Cultural Center & Museum
- Project management Geographic Information Systems Needs Analysis
- Interaction with BIA on numerous 638 Contracts – Long Range Transportation Plan, Fiber-Optics Feasibility, and Land Planning Contracts

SUMMARY OF EXPERIENCE

- 32 years experience in Planning and Landscape Architecture – Community Development, Economic Development, Master Planning, Project Implementation
- Work with tribes, government agencies, private corporations, non-profits, contractors and subcontractors administering all aspects of development and construction
- US Green Building Council LEED Accredited Professional; LEED = Leadership in Energy and Environmental Design
- Experience in both public and private sectors
- Experience with diverse groups of stakeholders
- Owned and managed multi-disciplinary consulting firms; supervising and managing the personnel and financial operations
- Skilled in oral, written and graphic communications
- Skilled in facilitating public participation and creative problem solving
- Supervision and listening skills necessary to manage a diverse range of interests and individuals in a fast-paced work environment
- Experience with planning, designing, establishing project budgets, schedules, and construction methods, materials and specifications for a wide variety of project types including infrastructure, buildings, site development, and site restoration

EXAMPLE PROJECTS

Salt River Pima-Maricopa Community Plan

Master Plan for 640 acres of Pima-Maricopa Indian Community including housing, schools, commercial development, tribal center, open space, “sacred views”, and community gathering spaces. Plan was prepared as part of a 2 day charrette sponsored by Arizona State University and the National Trust for Historic Preservation.

Gila River Community Commercial Center, Mercado and Cultural Center

Master Plan for 40 acre community center with commercial opportunities, cultural center, mercado and gardens for traditional agricultural products and medicinals. Plan was prepared as part of a 2 day charrette sponsored by Arizona State University and the National Trust for Historic Preservation.

US AID and USDA Forest Service Institute for Tropical Forestry - Laguna Bavarro Visitors' Center and Kayak Trail Network, Punta Cana, Dominican Republic

Concept development, interpretive features and implementation strategies for a visitors' center, nature trails and kayak trails. Goal of the project is to stimulate local economy through eco-tourism development by providing eco-tourism business opportunities to indigenous residents

Badger Mountain Preserve Master Plan, Prescott, Arizona

Prepared a coordination and master plan for the Badger "P" Mountain and 1600 acres within the preserve. Worked with the Open Space Alliance of Yavapai County, City of Prescott, State of Arizona Department of Lands and Arizona Game and Fish.

Moscow Downtown Enhancement & Revitalization Plan, Moscow, Idaho

Revitalization plan for downtown Moscow, Idaho including market analysis, business opportunities, niche market development, streetscape enhancements, residential development and linkages to University of Idaho.

Pioneer Park Water Quality and Park Improvements, Prescott, Arizona

Design and construction administration of water quality and park improvements that incorporated new sustainable technologies including bio-filtration of parking lot runoff, phyto-remediation of hydro-carbons, previous pavement, and treatment basins for parking lot run-off. Work was part of overall park improvements including picnic areas, restrooms, ramadas, and amphitheaters.

US AID and USDA Forest Service Institute for Tropical Forestry - Padre Nuestro Trail Development and Cultural Resources Interpretation, Bayahibe, Dominican Republic

Concept development, interpretive features and implementation strategies for eco-tourism trail system in the Dominican Republic. Goal of the project is to stimulate local economy through eco-tourism development and protect local groundwater resources from over-use of forest resources.

FORMER EMPLOYMENT EXPERIENCE

Employer: BMA Architects, Planners & Landscape Architects, LLC
1876 Peaceful Mesa Dr., Prescott, AZ 86305

Job Title: Principal in Charge of Landscape Architecture and Planning

Duties and Accomplishments:

- Principal in charge of all landscape architecture and planning projects from design through construction
- Responsible for all aspects of project management and supervision of design and construction team including Architects, Landscape Architects, Civil Engineers, Structural Engineers, MEP, Soils Engineers, and project specialists
- Broad range of project types including: Parks, Infrastructure, Government Services, Commercial, Mixed-Use, Residential, Master Plans, Environmental Enhancement and Remediation, Open Space Preservation Plans, and Planning for Tribal Communities, Sustainable Practices and Visual Resource Management
- Broad range of project sizes from \$100,000 to \$2,000,000+
- Responsible for facilitating public participation and stakeholder involvement for a wide range of groups and interests

Employer: Dufresne-Henry, Inc (Purchased by Stantec in 2009))
Prescott, Arizona and North Springfield, VT

Job Title: Regional Office Manager

Duties and Accomplishments:

- Principal in charge of management and operations of the regional office in Prescott, Arizona for a multi-disciplinary consulting company
- Responsible for all aspects of project management and supervision of design team
- Broad range of project types including: Parks, Infrastructure, Government Services, Commercial, Mixed-Use, Residential, Master Plans, Environmental Enhancement and

Remediation, Open Space Preservation Plans, and Planning for Tribal Communities, Sustainable Practices and Visual Resource Management

- Responsible for facilitating public participation and stakeholder involvement for a wide range of groups and interests

Employer: **The Cavendish Partnership**
Cavendish, Vermont

Job Title: Principal, Co-Founder

Duties and Accomplishments:

- Co-Founder of a 30 person Architectural, Landscape Architectural, Planning and Graphic Design firm
- Responsible for all aspects of company management and supervision of the management team
- Managed a broad group of project specialists and consultants including Architects, LA's, Engineers, Wildlife Biologists, Archaeologists, Market Analysts and others on a broad range of project types and locations
- Broad range of project types including: Resort Development, Commercial, Mixed-Use, Residential, Master Plans, Parks, Waterfront Parks, Open Space Preservation Plans, Resource Analysis and Visual Resource Management
- Projects locations included New England, Eastern Seaboard, Midwest, Alaska, Arizona, U.S. Virgin Islands and New Zealand
- Responsible for facilitating public participation and stakeholder involvement for a wide range of groups and interests
- United States Small Business Administration - Small Business of Vermont 1987

Employer: **Dufrense-Henry, Inc.**
North Springfield, Vermont

Job Title: Project Landscape Architect

Duties and Accomplishments:

- Project Landscape Architect for a wide variety of projects in and around New England including resort development, downtown revitalization, and parks
- Worked with inter-disciplinary project teams of architects, landscape architects, and engineers

Employer: **USDA Forest Service – Boise National Forest**
Boise, Idaho

Job Title: Landscape Architect

Duties and Accomplishments:

- Landscape Architect for a wide variety forest management activities on the 2 million acre Boise National Forest
- Provided Visual Resource Management input as part of inter-disciplinary teams for timber sales, range management, wildlife and fisheries habitat improvement projects, road construction, and mining
- Prepared plans for recreation areas including campgrounds, picnic areas, trailheads, boat ramps, and whitewater portages
- Participated in administration of Special Use Permit for downhill ski area located on the forest
- Compiled and illustrated field manuals for Visual Resource Management and Cross Country Ski Trail Design

EDUCATION

Bachelor's of Landscape Architecture

University of Idaho
Moscow, Idaho
1977 – Cum Laude GPA 3.72
Sigma Lambda Alpha – National Honor Society

Associates of Applied Science in Forest Technology

New York State University College of Environmental Science and Forestry
New York State Ranger School
Wanakena, New York 1972

Coursework

Washington State University
Vermont Law School – Land Use Law
Harvard Graduate School of Design
NYS University College of Environmental Science and Forestry

High School Diploma

T.C. Williams High School
Alexandria, Virginia
1971

PROFESSIONAL LICENSES AND REGISTRATIONS

Licensed Landscape Architect

Arizona/California/Idaho/Massachusetts/New Mexico/Wyoming

LEED AP (Accredited Professional)

US Green Building Council 2009

Uniform National Exam (UNE) 1979

LECTURING & PUBLICATIONS

Arizona Chapter of the American Planning Association – Community Planning
American Planning Association – National Convention – Downtown Revitalization
Conference on Wind-Powered Electric Generation – Visual Impact Assessment
University of Vermont – Natural Resources and Recreation Management
Antioch College – Public Administration and Management
University of Idaho – Professional Practice
University of Idaho – Plant Identification and Planting Design
New York State Ranger School – Dendrology
National Trust for Historic Preservation - Our Town – Planning Native American Communities
New Urbanism, Peter Katz
Design for Mountain Communities, Sherry Dorward
National Main Street Center – Main Street News
Trust for Public Lands - Land and People
Metro Magazine – Wind-Powered Electric Generation
US Office of Energy Efficiency and Renewable Energy – Communities of the Future
US Federal Reserve Bank – Regional Review

*Peter D. Bourgois, Tribal Planner
Planner & Registered Landscape Architect*

John M. Munderloh

EXPERIENCE:

Water Resources Manager

3/05 to Present

Town of Prescott Valley (Town)

- Developed Town's reclaimed water into a useable drinking water supply
- Developed 1st ever effluent auction – received world-wide attention and “Water Deal of the Year” award on international stage
- Carries out directives of Town Council related to securing long-term water supplies
- Manages Water Conservation Programs
- Meets regulatory requirements for Town groundwater and effluent resources
- Manages Town's effluent recharge operations
- Developed recharge facilities
- Represents the Town on Big Chino Water Ranch importation project in concert with the City of Prescott
- Responsible for developing effluent recovery sites
- Participates on numerous local, regional and state water resource boards, commissions and committees

Coordinator, Yavapai County Water Advisory Committee

9/00 to 3/05

Yavapai County

- As sole staff person, carried out directives of 14-member water committee, several subcommittees, and Board of Supervisors.
- Acted as water resource advisor to County Supervisors
- Prepared technical analysis of several water-related issues in the Yavapai County region, including water impact, water budget and water right analysis
- Acted as project manager on joint contract between Yavapai County and U.S. Geologic Survey for hydrologic analysis of Verde River watershed, with a specific focus on the Big Chino Sub basin
- Developed comprehensive relational database on water resources and water rights in Yavapai County
- Provided updates and analysis of federal and state legislative bills regarding water resources
- Presented water related information in written and oral form to professionals and public

Engineering Project Manager

Town of Chino Valley

11/99 to 8/00

- Created first alternative water supply portfolio for Town of Chino Valley
- Established right for Town to provide utility services through a public referendum
- Participated in negotiations for water service between Town and Yavapai College and Town and City of Prescott
- Completed design and construction management of first portion of Town municipal water system
- Completed design and construction management of public baseball field irrigation system
- Assisted in community planning committees
- Participated in regional and Yavapai County water management committees

Associate Engineer

Bookman-Edmonston Engineering

4/97 to 10/99

- Conducted Beardsley Canal Capacity analysis and analyzed wheeling arrangements for conveyance of CAP water to WestCAPS cities
- Determined development potential of unused CAP allocations in New Mexico
- Developed a recovery plan for banked CAP water in Pinal County, Arizona

WORK EXPERIENCE (continued):

- Completed a water development plan for private development in the City of Tolleson, AZ
- Assisted in design and permitting of a groundwater recharge project
- Conducted well impact analysis for permitting large irrigation wells

Program Manager – Adjudications Section

Arizona Department of Water Resources

6/96 to 4/97

- Acted as technical advisor to Maricopa County and Apache County Superior Court regarding the Arizona General Stream Adjudication
- Advised Chief Legal Counsel on water rights impact related to the Yavapai-Prescott and City of Prescott settlement agreement
- Supervised 11 to 18 professional and technical staff
- Prepared technical reports on water rights and made determinations of water use and water supply
- Analyzed relevant issues regarding adjudication policy procedures, case history and legal issues as they may impact technical determinations
- Consulted with Judges, Special Master, legal and technical consultants and claimants over issues regarding water rights
- Coordinated policy changes for the Arizona Department of water resources adjudication proceedings and Indian water right settlement proceedings
- Managed budget of special adjudications accounts
- Completed Gila River Indian Community Hydrographic Survey Report
- Oversaw maintenance of large water rights database, managed reporting and notification requirements for the adjudication process

Water Resources Supervisor – Investigations Unit

Arizona Department of Water Resources

11/91 to 6/96

- Supervised professional and technical staff for water use and rights studies in the Upper Verde River watershed and other Arizona watersheds
- Completed Preliminary Upper Salt River Hydrographic Survey Report
- Completed Technical Assessment of Interlocutory Appeal Issue No. 2
- Completed significant portions of the Little Colorado River System Inventory of Uses
- Completed unpublished internal documents such as Technical Principles of Water Rights Adjudication and the Adjudications Section Investigations Manual

Water Resources Specialist I/II/III – Water Resources and Investigations Units

Arizona Department of Water Resources

3/89 to 11/91

- Developed a procedure for quantifying water uses and created hydrologic impact models
- Developed a comprehensive method to quantify irrigation water uses for the adjudication process
- Investigated and compiled reports on water rights and water claims
- Conducted field investigations of surface water diversions and conveyance systems
- Compiled portions of the San Pedro River Hydrographic Survey Report

Agricultural Energy Specialist – Engineering Division

Sulphur Springs Valley Electrical Co-op

5/87 to 11/88

- Conducted pump and well tests to determine pumping plant inefficiencies
- Established a criteria for pumping plant repairs
- Completed technical reports to the Arizona Energy Office
- Prepared Irrigation Power Requirements report for the Rural Electrification Association
- Predicted monthly power requirements for an electric load shaving program

EDUCATION: B.S.-Agricultural Engineering – University of Arizona, Tucson

CURRENT COMMITTEE ASSIGNMENTS:

- Statewide Water Advisory Committee - Member
- Arizona Water Protection Fund - Commissioner
- Northern Arizona University Watershed Research and Education Program – Board Member
- Yavapai County Water Advisory Committee – Technical Committee Member
- Northern Arizona Municipal Water Users Association – Technical Committee Chair
- Upper Verde River Watershed Protection Coalition – Technical Committee Member, Safe Yield Subcommittee Member

SELECTED PUBLICATIONS:

- Historic and Current Water Uses and Water Use Projections for the Big Chino Subbasin, 2003
- Verde Valley Water Budget Analysis, 2002
- Recovery Assessment of Banked Water – Central Arizona and Maricopa Stanfield Irrigation and Drainage Districts, 1997
- Beardsley Canal Hydraulic Capacity Analysis, 1999, Phases I and II.
- Review of Wheeling Arrangements and Policies by Selected Agencies, 1999
- Hydrographic Survey Report for the Gila River Indian Reservation, Preliminary, 1997
- Technical Principles of Water Rights Adjudications in Arizona, 1995
- Briefing Report, Joint Select Committee on Arizona General Stream Adjudications, 1994
- Little Colorado River System Inventory of Water Uses, 1994
- Technical Assessment of the Arizona Supreme Court Interlocutory Appeal Issue No. 2 Opinion, 1993
- Hydrographic Survey Report for the Upper Salt River Watershed, Preliminary, 1993
- Hydrographic Survey Report for the San Pedro River Watershed, Final, 1991
- Technical Assessment of Interlocutory Appeal Issue No. 2, 1993
- Irrigation Power Requirements Study, U.S. Department of Agriculture, Rural Electrification Association, Sulphur Springs Valley Electrical Cooperative, 1988

BIOZONE INC.
P. O. Box 13027
Prescott, AZ 86304-3027
928-541-1266
928-541-1134 fax

Resume

Archie M. Dickey, Ph.D.
President, Plant Ecologist

Education:

A.A., Biology, Otero Jr. College, La Junta, CO.

B.A. Biology/Earth Science, Adams State College, Alamosa, CO.

M.S. Botany- Palynology/Paleoecology, Northern Arizona University, Flagstaff, AZ.

Thesis: Palynology of Hay Hollow Valley.

Ph.D. Botany- Plant Ecology, Arizona State University, Tempe, AZ.

Dissertation: Vegetational Dynamics and the Role of Fire in a Chaparral- Ponderosa Pine Transition Zone.

Professional Experience:

Jan. 1992 - present President of Biozone, Inc. Ecological and Environmental Consulting company specializing in biological surveys, BA, EA, and federal and state clearance work.

June 1999 - present Professor Environmental Science, Director of Aviation Environmental Science Program, and Principle Investigator for FAA Grant on the establishment and maintenance of Wildlife Strike database and website, Embry-Riddle Aeronautical University, Prescott, AZ.

Courses Taught: Wildlife and Airports, Environmental Consulting, Environmental Management, Plant Identification, Riparian Ecology, and Natural History of Arizona.

Team member: Workshop on Wildlife and Airports for biologists and airport operators to obtain certification of completion as required by the FAA.

Aug. 1971 –
June 1998

Biology Professor, Yavapai College, Prescott, AZ.

Courses Taught: Botany, Zoology, Biological Principles, Ecology, Concepts in Ecology, Identification of Arizona Plants, Natural History of the SW, Environmental Biology, Animal Biology, Desert Biology, Ethnoflora, and Field/Museum Techniques and Methods.

Other Work Accomplishments: Established and maintained herbarium (YCH) of over 6000 plants; established biology field modules with field trips.

REPRESENTATIVE STUDIES

Biological Assessments and Inventories

- 2007 Native Plant Survey of Right-of-way for Glassford Hill Trail for Dava & Associates Inc. Prescott, AZ.
- 2007 Cultural Survey and Vegetation Survey of State Lease land associated with new Tower Project Glassford Hill for Dava & Associates Inc. Prescott, AZ.
- 2007 Vegetation Survey for State Easement- State Lands found in Sections 28 and 29 of T 14 N R4W, Skull Valley, AZ for Cloudstone Properties LLC Prescott, AZ
- 2006-7 Resource Utilization by Large Mammal Study within Yavapai-Prescott Indian Reservation for Yavapai-Prescott Indian Tribe, Prescott, AZ.
- 2005 Biological Survey for Page Springsnail (*Pyrgulopsis morrisoni*) for Himes Consulting LLC, Chandler, AZ.
- 2005 Biological Assessment of property associated with development, Williams Mountain Village located in Williams, AZ to assess for possible Spotted Owl Habitat for Lyon Engineering and Development, Inc., Prescott, AZ.
- 2004 Habitat analysis for Cactus Pygmy-owl within proposed material operations, Sections 15 and 22, T2S, R9E for Malpais Consulting, Quemado, New Mexico.
- 2005 Biological and Archeological survey for Gila County Turn Lane Project for Tetra Tech Inc., Payson, AZ.
- 2004 Biological review for Mill Ave. and Southern Ave. Sidewalk Improvements, City of Tempe for Tetra Tech, Inc., Phoenix, AZ.
- 2004 Laboratory analysis of Rhus trilobata for Yavapai Prescott Indian Tribe, Prescott, AZ.
- 2004 Biological Assessment of crossing of Big Chino Wash for Yavapai Flood Control District, Prescott, AZ.
- 2002 Weed and Noxious Weed Survey of Brimhall Material pits for National Park permitting, for Macro-Z-Technology, Tempe, AZ.
- 2002 Noxious Weed Survey and Plan for Yavapai-Prescott Indian Tribe, Prescott, AZ.
- 2002 Vegetational Analysis and Biological Survey of Access Road into CDC Wickenburg Ranch, for J. McArthur, Wickenburg, AZ.
- 2001 Vegetational Analysis associated with Kirkland Creek Watershed Study, for David Smith, ADWQ Grant, Prescott, AZ.
- 2001 Cactus Ferruginous Pygmy Owl Survey and Clearance work for United Metro Materials. Inc., Phoenix, AZ.
- 2000 Survey for Noxious Weeds and Forest Service Sensitive Plant Species for Coconino County, Flagstaff AZ.
- 2000 Mesquite Inventory and Management Plan for Fort McDowell Yavapai Nation, Fountain Hills, AZ.
- 2000 Riparian Inventory and Analysis Kirkland Creek Watershed for Triangle Water Consortium, Prescott, AZ.
- 1999-2000 Biological Impact Analysis of Areas Impacted by CAP Proposed Allocations, Pima, Pinal, Maricopa Counties, for Navigant Consulting and Bureau of Reclamation, Phoenix, AZ.
- 1999 Management Plan for Salt Cedar Removal, for Havasupai Tribe, Supai, AZ.



PROFESSIONAL REGISTRATION

Professional Engineer
Arizona, No. 24601
Professional Engineer
California, No. 35447
Professional Surveyor
Arizona, No. 26405
Professional Surveyor
California, No. 5640

EDUCATION

B.S. Civil Engineering,
Cal Poly Pomona

PROFESSIONAL AFFILIATIONS

American Society of
Civil Engineers
American Consulting Engineers
Council
American Public Works
Association
Arizona Association of
County Engineers
Arizona Professional Land
Surveyors Association
California Land Surveyors
Association
Arizona Floodplain
Management Association

EXPERTISE

- Civil Engineering
- Water Engineering
- Drainage Engineering
- Transportation Engineering
- Wastewater Engineering
- Survey
- Construction Management

SUMMARY

Mr. Shroads is a Professional Engineer and Professional Land Surveyor practicing in Arizona and California. Mr. Shroads has been involved in the civil engineering arena since 1976. In 1986, Mr. Shroads founded *Civiltec Engineering* and served as Corporate President for 28 years. Mr. Shroads has 39 years of experience in the project management and design of roadways, water supply and distribution systems, sewer systems, hydrology and drainage systems, airport specialty design, and site development plans. He has performed and prepared boundary analysis and establishment surveys, geodetic surveys, cadastral surveys, A.L.T.A surveys, topographic surveys, aerial control surveys, mapping, platting, title research and analysis, land title discrepancy resolution, legal assistance, and hundreds of construction survey projects.

Recently, Mr. Shroads has served as interim County Engineer for Coconino County. He has been instrumental in preparation and implementation of in-house engineering procedures for delivering capital improvement projects associated with pavement reconstruction and preservation projects as well as flood control projects county wide. He has also managed flood and debris mitigation projects associated with the aftermath of the Schultz fire and Slide fire disasters.

PROJECT EXPERIENCE

Project Principal – Iron Springs Road Reconstruction Project

Civiltec has recently completed design plans, specifications, estimates and construction administration for 5.4 miles of Iron Springs Road in Yavapai County. The project consists of full roadway reconstruction and widening, superelevation, drainage, signage and striping, and barrier design. Seismic testing for additional slope stability analysis was needed due to steep ascending slopes on the project. Mr. Shroads managed all aspects of the project design and assisted County Staff in Construction Management.

Project Principal – Koch Field Road Pavement Preservation Project

This project encompassed the design, surveying, easement acquisition and construction management of a 1.2 mile long segment of Koch Field Road in Coconino County from Townsend Winona Road to Silver Saddle Road. The project initially began as a mill and overlay project, however, with insight from Civiltec engineers, it was modified to be a more financially efficient pavement preservation project utilizing a rubberized chip-fiber micro seal project. The cost savings associated with this pavement preservation approach made a significant amount of project funding available for drainage improvements along the entire roadway corridor including flood control channels and installation of over 50 roadway and driveway culverts. Fiberglass fiber was added to the micro-seal surfacing for additional tensile strength and pavement life enhancement.

PROJECT EXPERIENCE (CONTINUED)

Project Principal – District Engineering for Inscription Canyon Ranch Water User’s Association

This project includes continued on-call services for the Inscription Canyon Ranch Water User’s Association in Prescott. Engineering tasks provided include hydraulic modeling, system supply analysis, system distribution analysis and recommendations, pump station design, as well as providing plan review services for water system plans submitted by outside engineering firms. We also provide inspection services for all new construction in the Associations area of CCN.

Project Principal – Center Street, Road 4 South, Peavine Trail Improvements

This project included 30% level design plans for the extension of Road 4 South from the Sun Edison Plant to Peavine Trail (approximately 5,900 LF) through State Land, 30% design level plans for a new road in the existing Peavine Trail ROW from Road 4 South to Center Street (approximately 12,000 LF), and 30%, 60%, 90%, 100% plan, specification, and cost estimate preparation for the reconstruction of Center Street from Road 1 East to the Peavine Trail (6,300 LF). Civiltec’s scope of services included design survey, boundary establishment, document preparation for State Land acquisition, drainage studies, hydraulic calculations for drainage structures, utility coordination, and plan, specification, and cost estimate development. The project also included the preparation of a CLOMR at Santa Cruz Wash for channelization and a new 6 barrel 10’ x 8’ box culvert structure at Center Street. The CLOMR was approved after addressing 2 minor comments from FEMA on the original CLOMR submittal.

Project Principal – I-10 Deck Park Tunnel Drainage Improvements

This project is located in the City of Phoenix on I-10 between 3rd Avenue and 3rd Street. The project improvement area includes the I-10 Deck Park Tunnel, Japanese Friendship Garden and the Margret T. Hance Park located above the Deck Park Tunnel. The project work included re-design of the subsurface drainage improvements including drainage board, perforated pipe underdrain systems on the bridge deck edges, mitigating leaking tunnel deck joints all which were severely leaking and affecting the traveling public during tunnel use.

Project Principal – Ernest A. Love Airport Runway 3R-21L RSA Improvements

This project included the construction of a 400-ft runway shift for a federally-funded runway safety project which essentially moved runway 3R-21L away from a busy traffic corridor (resulting in safer operations for the airfield and the travelling public). It also entailed the widening of parallel taxiways, pavement replacement, detention basin construction, and over 8,000 linear feet of new 36" to 78" diameter storm drain pipe and associated inlets. *Civiltec* provided all of the survey control and design survey for the lengthening of the runway. The survey included approximately 49,000 field observations in addition to ground control services for both high and low-altitude aerial imagery. *Civiltec* also provided airspace analysis data per FAA guidelines, base map preparation for the project, and AGIS processing.

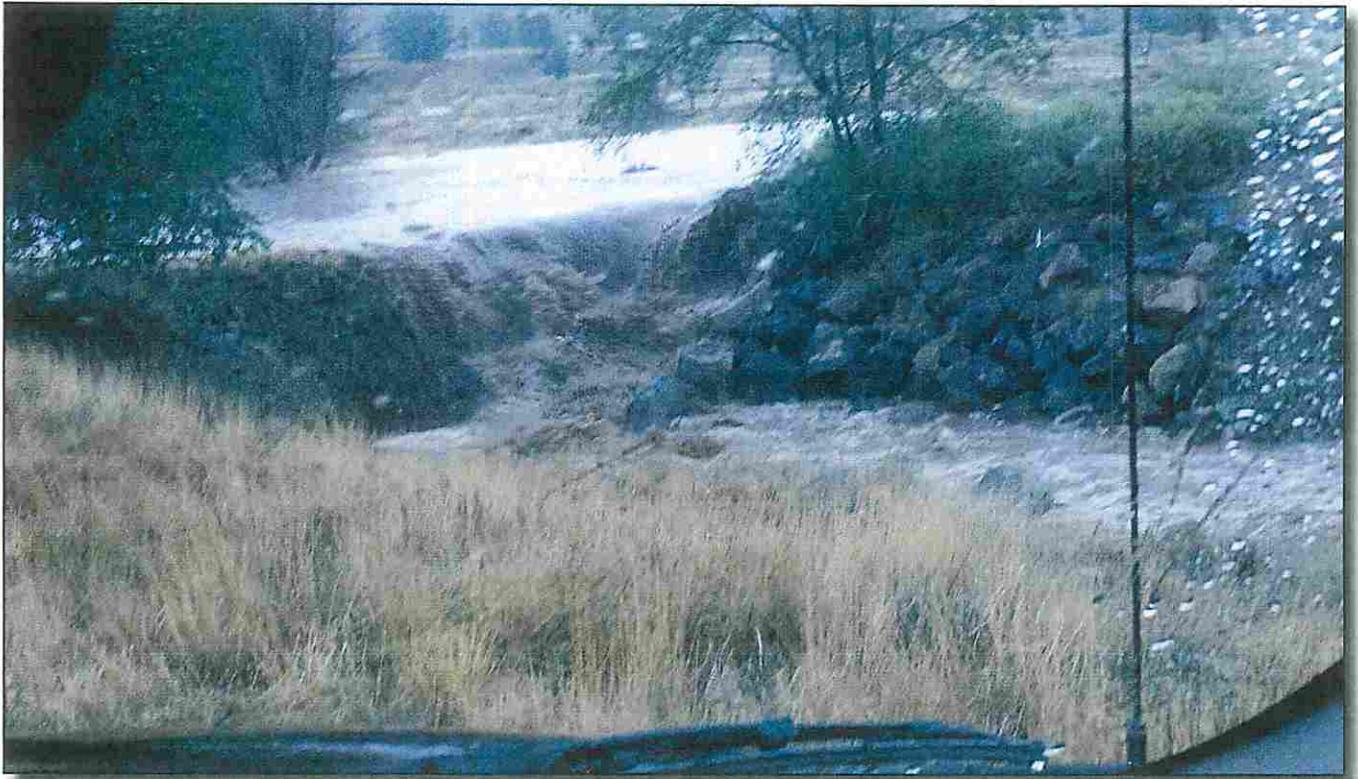
Project Principal – 360° Tactical Police Shooting Range

Civiltec was responsible for design and construction management of this tactical pistol range utilized by law enforcement agencies throughout the state. The facility was designed for tactical practice maneuvers accommodating firing patterns from any direction within the range. The design of this project included the development of plans, specifications, and a construction cost estimate for the outdoor shooting range on an approximate three-acre site. Civiltec also provided construction administration services and construction staking for this project.

Slaughterhouse Gulch Improvement Project



Slaughterhouse Gulch Improvement Project



Slaughterhouse Gulch Improvement Project

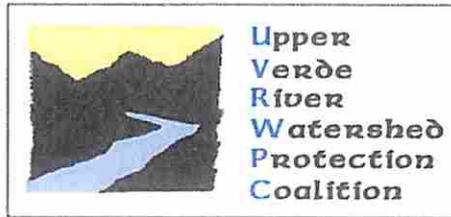


Slaughterhouse Gulch Improvement Project



Slaughterhouse Gulch Improvement Project





**Upper Verde River Watershed Protection Coalition
a formal partnership between Yavapai County, City of Prescott,
Towns of Prescott Valley and Chino Valley and Yavapai-Prescott Indian Tribe**

**Executive Board Resolution Supporting Submission of a Grant Application
to the Arizona Water Protection Fund for Fiscal Year 2015**

A resolution of the EXECUTIVE BOARD OF THE UPPER VERDE RIVER WATERSHED PROTECTION COALITION "Coalition" authorizing submittal of a grant application to the Arizona Water Protection Fund requesting funding to accomplish essential tasks associated with implementation of the Coalition Watershed Management and Restoration Plan and the Slaughterhouse Gulch project.

WHEREAS, THE UPPER VERDE RIVER WATERSHED PROTECTION COALITION, hereinafter known as "The Coalition," is desirous of partnering with the Arizona Water Protection Fund;

WHEREAS, The Coalition is desirous of seeking outside funding sources to support its goals and planned activities;

WHEREAS, The Coalition has the professional expertise and financial ability to successfully implement the grant, including adherence to deadlines and reporting requirements;

WHEREAS, The Coalition understands its financial responsibility and has the resources, as included in the Project Budget, to implement the project.

NOW, THEREFORE, BE IT RESOLVED THAT the EXECUTIVE BOARD OF THE UPPER VERDE RIVER WATERSHED PROTECTION COALITION approves application to the Arizona Water Protection Fund and authorizes Project Director John Munderloh, Chair of the Coalition Technical Advisory Committee, to take all necessary steps to complete and submit said application.

Passed and adopted by the EXECUTIVE BOARD OF THE UPPER VERDE RIVER WATERSHED PROTECTION COALITION this 28TH day of January 2015.

By: 
Lora Lee Nye
Executive Board Chair
Upper Verde River Watershed Protection
Coalition

May 13, 2015

Arizona Water Protection Fund Commission
3550 North Central Avenue, Suite 200
Phoenix, Arizona 85012

Dear Commission Members:

The Upper Verde River Watershed Protection Coalition (UVRWPC), fiscal agent Town of Prescott Valley, guarantees the availability of match funding in the amount of \$64,342.00 to support its application to the Arizona Water Protection Fund (AWPF) for the Slaughterhouse Gulch Riparian and Wetland Improvement Project.

Total cost of the capital project is \$435,147.00 to be spent over a two-year period. It addresses priorities defined in statute by directly benefiting an intermittent stream, and with the Yavapai-Prescott Indian Tribe guarantee (see tribal support letter included with this proposal) to maintain enhancements funded by the AWPF. Project implementation will not only benefit the Slaughterhouse Gulch riparian and wetland areas, but also riparian areas downstream, such as Watson Woods.

If you have additional questions or need additional information, I can be reached at 928-759-3105 or e-mail jmunderloh@pvaz.net.

Sincerely,



John Munderloh
Town of Prescott Valley Water Resources Manager
Chair, UVRWPC Technical Advisory Committee



PRESCOTT • INDIAN • TRIBE

Arizona Water Protection Fund Commission
3550 North Central Avenue, Suite 200
Phoenix, Arizona 85012

May 6, 2015

Dear Commission Members:

The Yavapai-Prescott Indian Tribe (YPIT) has been a member of the Upper Verde River Watershed Protection Coalition (UVRWPC) since its inception in 2006. Tribal technical and scientific personnel have led the project planning process, and the YPIT has dedicated significant resources to its development. The YPIT is supportive of the UVRWPC application to the Arizona Water Protection Fund and urge commission members to award the request.

YPIT has invested approximately \$25,000 in contracts and \$10,000 in staff time, to date. Implementation of the proposed project is a tribal priority and the Tribe will continue to provide support with technical assistance throughout project implementation. The project is on tribal lands and improvements funded by the Arizona Water Protection Fund will be maintained by the Tribe. The Tribe is prepared to commit additional staff time to assist in the management of this project.

The UVRWPC project addresses impacts to Slaughterhouse Gulch that are the result of area urbanization and area growth. Implementation will result in the enhancement, restoration and development of riparian areas that is of utmost importance to YPIT.

We want to thank you this opportunity. If you need further information please do not hesitate to contact Peter Bourgois, Tribal Planner at 928-515-7457 or Amber Tyson, Environmental Protection Specialist at 928-515-7453.

Sincerely,

Ernest Jones, Sr., President
Yavapai-Prescott Indian Tribe

cc: Peter Bourgois, YPIT Tribal Planner
Amber Tyson, YPIT Environmental Protection Specialist
Melody Reifsnnyder, UVRWPC Grant Writer



PRESCOTT CREEKS

PRESCOTT CREEKS

PO Box 3004 • Prescott, AZ 86302

Info@PrescottCreeks.org • www.PrescottCreeks.org

Phone (928) 445-5669

14 April 2015

Arizona Water Protection Fund Commission
3550 North Central Avenue, Suite 200
Phoenix, Arizona 85012

Dear Commission Members:

Prescott Creeks Preservation Association is supportive of the Upper Verde River Watershed Protection Coalition (URVWPC) grant request to the Arizona Water Protection Fund. The proposed Slaughterhouse Gulch project area is just upstream from Watson Woods Riparian Preserve where the Commission has invested approximately \$1.1 million in restoration efforts since 1995.

Proposed capital funding from the Arizona Water Protection Fund will benefit riparian habitats both in the project area and downstream in Watson Woods Riparian Preserve. In 1996, the Prescott Creeks developed the Watson Woods Riparian Preserve Comprehensive Plan (AWPF Grant #95-012WPF) and subsequently implemented a highly successful restoration project between 2009 and 2013 (AWPF Grant #08-158WPF).

The UVRWPC project addresses impacts to Slaughterhouse Gulch that are the result of area urbanization. Like Watson Woods, the issues with oversight plaguing Slaughterhouse Gulch can be resolved and the area restored to balance.

This opportunity brings great possibilities and I encourage you to fund the UVRWPC request. Project implementation will positively impact riparian areas and provide benefits to the communities located in the Prescott Active Management Area.

Sincerely,

Michael Byrd
Executive Director
Prescott Creeks Preservation Association

Board of Directors: *Board President:* Doug Bunch; *Directors:* Ed Lutz, Paula Cooperrider, Matthew Einsohn, Russell Fosha, Suzette Russi, Suzanne Morse, Brent Roberts

Executive Staff: *Executive Director:* Michael Byrd

**Upper Verde River Watershed Protection Coalition
Watershed Taskforce
7501 East Civic Circle
Prescott Valley, AZ 86314**

Arizona Water Protection Fund Commission
3550 North Central Avenue, Suite 200
Phoenix, Arizona 85012

April 24, 2015

Dear Commission Members:

The Watershed Taskforce, a subcommittee of the Upper Verde River Watershed Protection Coalition (UVRWPC) is supportive of a grant application to the Arizona Water Protection Fund for implementation of the Slaughterhouse Gulch project.

Committee members developed the project as part of its comprehensive watershed restoration and planning effort completed in September 2014. The proposed effort addresses impacts to Slaughterhouse Gulch that are the result of area urbanization.

Capital funding from the Watershed Protection Fund will benefit riparian areas in the project area and downstream, and we urge you to approve funding that will allow us to address this critical issue.

Taskforce members agreed to support the project at their public meeting on April 23, 2015 and authorized me, as chair of the UVRWPC Technical Advisory Committee, to sign a letter of support. If you have additional questions or need additional information, I can be reached at 928-759-3105 or e-mail jmunderloh@pvaz.net.

Sincerely,



John Munderloh
Town of Prescott Valley Water Resources Manager
Chair, Technical Advisory Committee and member of the Watershed Taskforce

Calendar No. 412

76th CONGRESS }
1st Session }

S. 1469

[Report No. 397]

A BILL

To transfer certain lands from the Veterans' Administration to the Department of the Interior for the benefit of Yavapai Indians, Arizona.

By Mr. HAYDEN

JANUARY 21 (calendar day, JANUARY 28), 1935
Read twice and referred to the Committee on Military
Affairs

MARCH 13 (calendar day, APRIL 1), 1935
Reported without amendment

74TH CONGRESS
1ST SESSION

S. 1469

[Report No. 397]

IN THE SENATE OF THE UNITED STATES

JANUARY 21 (calendar day, JANUARY 28), 1935

Mr. HAYDEN introduced the following bill; which was read twice and referred to the Committee on Military Affairs

MARCH 13 (calendar day, APRIL 1), 1935

Reported by Mr. SHEPPARD, without amendment

A BILL

To transfer certain lands from the Veterans' Administration to the Department of the Interior for the benefit of Yavapai Indians, Arizona.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That jurisdiction over that tract of land, identified under
4 a more or less lands description beginning at the intersection
5 of the west boundary line of the former Whipple Barracks
6 Military Reserve and the south line of section 28 in town-
7 ship 14 north, range 2 west, Gila and Salt Lake meridian,
8 Arizona, thence northwesterly along said west boundary
9 line eight hundred and eighty feet; thence northeasterly at
10 right angles one thousand seven hundred and sixty feet;

1 thence southeasterly parallel with the said west boundary
 2 line one thousand seven hundred and sixty feet; thence south-
 3 westerly at right angles one thousand seven hundred and
 4 sixty feet; thence northwesterly along said west boundary
 5 line eight hundred and eighty feet to point of beginning,
 6 containing approximately seventy-five acres, is hereby trans-
 7 ferred from the Veterans' Administration to the Department
 8 of the Interior, and the title to said described lands shall
 9 remain in the United States in trust for the Yavapai Indians.

[Public No. 117—74TH CONGRESS]
 [S. 1469]
 AN ACT

49 Stat
 332

To transfer certain lands from the Veterans' Administration to the Department of the Interior for the benefit of Yavapai Indians, Arizona.

As reported by the Senate and House of Representatives of the United States of America in Congress assembled, That jurisdiction over that tract of land, identified under a metes-and-bounds description beginning at the intersection of the west boundary line of the former Whipple Barracks Military Reserve and the south line of section 26 in township 14 north, range 2 west, Gila and Salt Lake meridian, Arizona, thence northwesterly along said west boundary line eight hundred and eighty feet; thence northeasterly at right angles one thousand seven hundred and sixty feet; thence southeasterly parallel with the said west boundary line one thousand seven hundred and sixty feet; thence southwesterly at right angles one thousand seven hundred and sixty feet; thence northwesterly along said west boundary line eight hundred and eighty feet to point of beginning, containing approximately seventy-five acres, is hereby transferred from the Veterans' Administration to the Department of the Interior, and the title to said described lands shall remain in the United States in trust for the Yavapai Indians.

Approved, June 7, 1935.

(49 Stat. 332.)

THE STOREY LAWYERS, PLC
6515 N. 12TH STREET, SUITE C
PHOENIX, ARIZONA 85014
PHONE: (602) 803-8811
WWW.STOREYLAWYERS.COM

May 14, 2015

Arizona Water Protection Fund Commission
3550 North Central Avenue, Suite 200
Phoenix, Arizona 85012

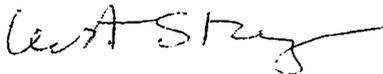
Dear Commission Members:

The Yavapai-Prescott Indian Tribe (YPIT) has been a member of the Upper Verde River Watershed Protection Coalition (URWPC) since its inception in 2006. YPIT is partnering with the UVRWPC to submit a capital request to the Arizona Water Protection Fund to support a project on tribal land.

In 1994, Congress approved the Yavapai-Prescott Indian Tribe Water Settlement Act, P.L.103-434, 108 Stat. 4526 (1994). Among other things, this Act confirms YPIT's entitlement to water rights on the reservation, and that YPIT has legal and physical access to its water resources.

If you have further questions related to YPIT's water rights, I can be reached at (602) 803-8811.

Best regards.



Lee A. Storey

UNITED STATES CODE SERVICE
ADVANCE LEGISLATIVE SERVICE
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PUBLIC LAW 103-434

103rd Congress -- 2nd Session

S. 1146

103 P.L. 434; 108 Stat. 4526
1994 Enacted S. 1146; 103 Enacted S. 1146

BILL TRACKING REPORT: <=1> 103 Bill Tracking S. 1146
FULL TEXT VERSION(S) OF BILL: <=2> 103 S. 1146

DATE: OCT. 31, 1994 -- PUBLIC LAW 103-434

SYNOPSIS: An Act

To provide for the settlement of the water rights claims of the Yavapai-Prescott Indian Tribe in Yavapai County, Arizona, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

TITLE I--YAVAPAI-PRESCOTT INDIAN TRIBE WATER RIGHTS SETTLEMENT

[*101] SEC. 101.--SHORT TITLE.

This title may be cited as the "Yavapai-Prescott Indian Tribe Water Rights Settlement Act of 1994".

[*102] SEC. 102. CONGRESSIONAL FINDINGS AND DECLARATIONS.

(a) Findings.--The Congress finds that--

- (1) it is the policy of the United States, in fulfillment of its trust responsibility to the Indian tribes, to promote Indian self-determination and economic self-sufficiency, and to settle, wherever possible, the water rights claims of Indian tribes without lengthy and costly litigation;
- (2) meaningful Indian self-determination and economic self-sufficiency depend on the development of viable Indian reservation economies;
- (3) quantification of rights to water and development of facilities needed to utilize tribal water supplies effectively is essential to the development of viable Indian reservation economies, particularly in arid western States;
- (4) on June 7, 1935, and by actions subsequent thereto, the United States established a reservation for the Yavapai-Prescott Indian Tribe in Arizona adjacent to the city of Prescott;

(5) proceedings to determine the full extent of Yavapai-Prescott Tribe's water rights are currently pending before the Superior Court of the State of Arizona in and for Maricopa County, as part of the general adjudication of the Gila River system and source;

(6) recognizing that final resolution of the general adjudication will take many years and entail great expense to all parties, prolong uncertainty as to the full extent of the Yavapai-Prescott Tribe's entitlement to water and the availability of water supplies to fulfill that entitlement, and impair orderly planning and development by the Tribe and the city of Prescott; the Tribe, the city of Prescott, the Chino Valley Irrigation District, the State of Arizona and the United States have sought to settle all claims to water between and among them;

(7) representatives of the Yavapai-Prescott Tribe, the city of Prescott, the Chino Valley Irrigation District, the State of Arizona and the United States have negotiated a Settlement Agreement to resolve all water rights claims between and among them, and to provide the Tribe with long term, reliable water supplies for the orderly development and maintenance of the Tribe's reservation;

(8) pursuant to the Settlement Agreement and the Water Service Agreement, the quantity of water made available to the Yavapai-Prescott Tribe by the city of Prescott and the Chino Valley Irrigation District will be secured, such Agreements will be continued in perpetuity, and the Tribe's continued on-reservation use of water for municipal and industrial, recreational and cultural purposes will be provided for;

(9) to advance the goals of Federal Indian policy and to fulfill the trust responsibility of the United States to the Tribe, it is appropriate that the United States participate in the implementation of the Settlement Agreement and assist in firming up the long-term water supplies of the city of Prescott and the Yavapai-Prescott Tribe so as to enable the Tribe to utilize fully its water entitlements in developing a diverse, efficient reservation economy; and

(10) the assignment of the CAP contract of the Yavapai-Prescott Tribe and the CAP subcontract of the city of Prescott is a cost-effective means to ensure reliable, long-term water supplies for the Yavapai-Prescott Tribe and to promote efficient, environmentally sound use of available water supplies in the Verde River basin.

(b) Declaration of Purposes.--The Congress declares that the purposes of this title are--

(1) to approve, ratify and confirm the Settlement Agreement among the Yavapai-Prescott Tribe, the city of Prescott, the Chino Valley Irrigation District, the State of Arizona and the United States;

(2) to authorize and direct the Secretary of the Interior to execute and perform the Settlement Agreement;

(3) to authorize the actions and appropriations necessary for the United States to fulfill its legal and trust obligations to the Yavapai-Prescott Tribe provided in the Settlement Agreement and this title;

(4) to require that expenditures of funds obtained through the assignment of CAP contract entitlements by the Yavapai-Prescott Tribe and Prescott for the acquisition or development of replacement water supplies in the Verde River basin shall not be inconsistent with the goals of the Prescott Active Management Area, preservation of riparian habitat, flows and biota of the Verde River and its tributaries; and

(5) to repeal section 406(k) of Public Law 101-628 which authorizes \$ 30,000,000 in appropriations for the acquisition of land and water resources in the Verde River basin and for the development thereof as an alternative source of water for the Fort McDowell Indian Community.

[*103] SEC. 103. DEFINITIONS.

For purposes of this title:

(1) The term "CAP" means the Central Arizona Project, a reclamation project authorized under title III of the Colorado River Basin Project Act of 1968 (43 U.S.C. 1521 et seq.).

(2) The term "CAWCD" means the Central Arizona Water Conservation District, organized under the laws of the State of Arizona, which is the contractor under a contract with the United States, dated December 1, 1988, for the delivery of water and repayment of costs of the Central Arizona Project.

(3) The term "CVID" means the Chino Valley Irrigation District, an irrigation district organized under the laws of the State of Arizona.

(4) The term "Prescott AMA" means the Active Management Area, established pursuant to Arizona law and encompassing the Prescott ground water basin, wherein the primary goal is to achieve balance between annual ground water withdrawals and natural and artificial recharge by the year 2025.

(5) The term "Prescott" means the city of Prescott, an Arizona municipal corporation.

(6) The term "Reservation" means the reservation established by the Act of June 7, 1935 (49 Stat. 332) and the Act of May 18, 1956 (70 Stat. 157) for the Yavapai-Prescott Tribe of Indians.

(7) The term "Secretary" means the Secretary of the United States Department of the Interior.

(8) The term "Settlement Agreement" means that agreement entered into by the city of Prescott, the Chino Valley Irrigation District, the Yavapai-Prescott Indian Tribe, the State of Arizona, and the United States, providing for the settlement of all water claims between and among them.

(9) The term "Tribe" means the Yavapai-Prescott Indian Tribe, a tribe of Yavapai Indians duly recognized by the Secretary.

(10) The term "Water Service Agreement" means that agreement between the Yavapai-Prescott Indian Tribe and the city of Prescott, as approved by the Secretary, providing for water, sewer, and effluent service from the city of Prescott to the Yavapai-Prescott Tribe.

[*104] SEC. 104. RATIFICATION OF SETTLEMENT AGREEMENT.

(a) Approval of Settlement Agreement.--To the extent the Settlement Agreement does not conflict with the provisions of this title, such Agreement is approved, ratified and confirmed. The Secretary shall execute and perform such Agreement and shall execute any amendments to the Agreement and perform any action required by any amendments to the Agreement which may be mutually agreed upon by the parties.

(b) Perpetuity.--The Settlement Agreement and Water Service Agreement shall include provisions which will ensure that the benefits to the Tribe thereunder shall be secure in perpetuity. Notwithstanding the provisions of section 2103 of the Revised Statutes of the United States (25 U.S.C. 81) relating to the term of the Agreement, the Secretary is authorized and directed to approve the Water Service Agreement with a perpetual term.

[*105] SEC. 105. ASSIGNMENT OF CAP WATER.

The Secretary is authorized and directed to arrange for the assignment of, or to purchase, the CAP contract of the Tribe and the CAP subcontract of the city of Prescott to provide funds for deposit into the Verde River Basin Water Fund established pursuant to section 106.

[*106] SEC. 106. REPLACEMENT WATER FUND; CONTRACTS.

(a) Fund.--The Secretary shall establish a fund to be known as the "Verde River Basin Water Fund" (hereinafter called the "Fund") to provide replacement water for the CAP water relinquished by the Tribe and by Prescott. Moneys in the Fund shall be available without fiscal year limitations.

(b) Content of Fund.--The Fund shall consist of moneys obtained through the assignment or purchase of the contract and subcontract referenced in section 105, appropriations as authorized in section 109, and any moneys returned to the Fund pursuant to subsection (d) of this section.

(c) Payments From Fund.--The Secretary shall, subsequent to the publication of a statement of findings as provided in section 112(a), promptly cause to be paid from the Fund to the Tribe the amounts deposited to the Fund from the assignment or purchase of the Tribe's CAP contract, and, to the city of Prescott, the amounts deposited to the Fund from the assignment or purchase of the city's CAP subcontract.

(d) Contracts.--The Secretary shall require, as a condition precedent to the payment of any moneys pursuant to subsection (c), that the Tribe and Prescott agree, by contract with the Secretary, to establish trust accounts into which the payments would be deposited and administered, to use such moneys consistent with the purpose and intent of section 107, to provide for audits of such accounts, and for the repayment to the Fund, with interest, any amount determined by the Secretary not to have been used within the purpose and intent of section 107.

[*107] SEC. 107. EXPENDITURES OF FUNDS.

(a) By the City.--All moneys paid to Prescott for relinquishing its CAP subcontract and deposited into a trust account pursuant to section 106(d),

h. be used for the purposes of defraying expenses associated with the investigation, acquisition or development of alternative sources of water to replace the CAP water relinquished under this title. Alternative sources shall be understood to include, but not be limited to, retirement of agricultural lands and acquisition of associated water rights, development of ground water resources outside the Prescott Active Management Area established pursuant to the laws of the State of Arizona, and artificial recharge; except that none of the moneys paid to Prescott may be used for construction or renovation of the city's existing waterworks or water delivery system.

(b) By the Tribe --All funds paid to the Tribe for relinquishing its CAP contract and deposited into a trust account pursuant to section 106(d), shall be used to defray its water service costs under the Water Service Agreement or to develop and maintain facilities for on-reservation water or effluent use.

(c) No Per Capita Payments.--No amount of the Tribe's portion of the Fund may be used to make per capita payments to any member of the Tribe, nor may any amount of any payment made pursuant to section 106(c) be distributed as a dividend or per capita payment to any constituent, member, shareholder, director or employee of Prescott.

(d) Disclaimer.--Effective with the payment of funds pursuant to section 106(c), the United States shall not be liable for any claim or cause of action arising from the use of such funds by the Tribe or by Prescott.

[*108] SEC. 108. ENVIRONMENTAL COMPLIANCE.

The Secretary, the Tribe and Prescott shall comply with all applicable Federal environmental and State environmental and water laws in developing alternative water sources pursuant to section 107(a). Development of such alternative water sources shall not be inconsistent with the goals of the Prescott Active Management Area, preservation of the riparian habitat, flows and biota of the Verde River and its tributaries.

[*109] SEC. 109. APPROPRIATIONS AUTHORIZATION AND REPEAL.

(a) Authorization.--There are authorized to be appropriated to the Fund established pursuant to section 106(a):

(1) Such sums as may be necessary, but not to exceed \$ 200,000, to the Secretary for the Tribe's costs associated with judicial confirmation of the settlement.

(2) Such sums as may be necessary to establish, maintain and operate the gauging station required under section 111(e).

(b) State Contribution.--The State of Arizona shall contribute \$ 200,000 to the trust account established by the Tribe pursuant to the Settlement Agreement and section 106(d) for uses consistent with section 107(b).

(c) Repeal.--Subsection 406(k) of the Act of November 28, 1990 (Public Law 101-628; 104 Stat. 4487) is repealed.

[*110] SEC. 110. SATISFACTION OF CLAIMS.

(a) Waiver.--The benefits realized by the Tribe or any of its members under the Settlement Agreement and this title shall constitute full and complete satisfaction of all claims by the Tribe and all members' claims for water rights or injuries to water rights under Federal and State laws (including claims for water rights in ground water, surface water and effluent) from time immemorial to the effective date of this title, and for any and all future claims of water rights (including claims for water rights in ground water, surface water, and effluent) from and after the effective date of this title. Nothing in this title shall be deemed to recognize or establish any right of a member of the Tribe to water on the Tribe's reservation.

(b) Waiver and Release.--The Tribe, on behalf of itself and its members, and the Secretary on behalf of the United States, are authorized and required, as a condition to the implementation of this title, to execute a waiver and release, except as provided in subsection (d) and the Settlement Agreement, of all claims of water rights or injuries to water rights (including water rights in ground water, surface water and effluent), from and after the effective date of this title, which the Tribe and its members may have, against the United States, the state of Arizona or any agency or political subdivision thereof, or any other person, corporation, or municipal corporation, arising under the laws of the United States or the State of Arizona.

(c) Waiver by United States.--Except as provided in subsection (d) and the Settlement Agreement, the United States, in its own right or on behalf of the Tribe, shall not assert any claim against the State of Arizona or any political subdivision thereof, or against any other person, corporation, or municipal corporation, arising under the laws of the United States or the State of Arizona, based upon water rights or injuries to water rights of the Tribe and its members, or based upon water rights or injuries to water rights held by the United States on behalf of the Tribe and its members.

(d) Rights Retained.--In the event the waivers of claims authorized in subsection (b) of this section do not become effective pursuant to section 112(a), the Tribe, and the United States on behalf of the Tribe, shall retain the right to assert past and future water rights claims as to all reservation lands.

(e) Jurisdiction.--The United States District Court for the District of Arizona shall have original jurisdiction of all actions arising under this title, the Settlement Agreement and the Water Service Agreement, including review pursuant to title 9, United States Code, of any arbitration and award under the Water Service Agreement.

(f) Claims.--Nothing in this title shall be deemed to prohibit the Tribe, or the United States on behalf of the Tribe, from asserting or maintaining any claims for the breach or enforcement of the Settlement Agreement or the Water Service Agreement.

(g) Disclaimer.--Nothing in this title shall affect the water rights or claims related to any trust allotment located outside the exterior boundaries of the reservation of any member of the Tribe.

(h) Full Satisfaction of Claims.--Payments made to Prescott under this title shall be in full satisfaction for any claim that Prescott might have against the Secretary or the United States related to the allocation, reallocation,

4. relinquishment or delivery of CAP water.

[*111] SEC. 111. MISCELLANEOUS PROVISIONS.

(a) Joining of Parties.--In the event any party to the Settlement Agreement should file a lawsuit in any United States district court relating only and directly to the interpretation or enforcement of the Settlement Agreement or this title, naming the United States of America or the Tribe as parties, authorization is hereby granted to join the United States of America or the Tribe, or both, in any such litigation, and any claim by the United States of America or the Tribe to sovereign immunity from such suit is hereby waived. In the event Prescott submits a dispute under the Water Service Agreement to arbitration or seeks review by the United States District Court for the District of Arizona of an arbitration award under the Water Service Agreement, any claim by the Tribe to sovereign immunity from such arbitration or review is hereby waived.

(b) No Reimbursement.--The United States of America shall make no claims for reimbursement of costs arising out of the implementation of the Settlement Agreement or this title against any lands within the Yavapai-Prescott Indian Reservation, and no assessment shall be made with regard to such costs against such lands.

(c) Water Management.--The Tribe shall establish a ground water management plan for the Reservation which, except to be consistent with the Water Service Agreement, the Settlement Agreement and this title, will be compatible with the ground water management plan in effect for the Prescott Active Management Area and will include an annual information exchange with the Arizona Department of Water Resources. In establishing a ground water management plan pursuant to this section, the Tribe may enter into a Memorandum of Understanding with the Arizona Department of Water Resources for consultation. Notwithstanding any other law, the Tribe may establish a tribal water code, consistent with the above-describe water management plan, under which the Tribe will manage, regulate, and control the water resources granted it in the Settlement Act, the Settlement Agreement, and the Water Service Agreement, except that such management, regulation and control shall not authorize any action inconsistent with the trust ownership of the Tribe's water resources.

(d) Gauging Station.--The Secretary, acting through the Geological Survey, shall establish, maintain and operate a gauging station at the State Highway 89 bridge across Granite Creek adjacent to the reservation to assist the Tribe and the CVID in allocating the surface flows from Granite Creek as provided in the Settlement Agreement.

[*112] SEC. 112. EFFECTIVE DATE.

(a) Waivers and Releases.--The waivers and releases required by section 110(b) of this title shall become effective as of the date the Secretary causes to be published in the Federal Register a statement of findings that--

(1) (A) the Secretary has determined that an acceptable party, or parties, have executed contracts for the assignments of the Tribe's CAP contract and the title of Prescott's CAP subcontract, and the proceeds from the assignments have been deposited into the Fund as provided in section 106(d); or

APPENDIX

**Upper Verde River Watershed
Protection Coalition
Watershed Taskforce**

**Watershed Restoration
and Management
Project Plan**

Prepared for:



Prepared by:

**Upper Verde River Watershed Protection Coalition
Watershed Taskforce**

December 2014

I 1.4. Capitalization on Urbanization

Capitalization on Urbanization projects may include a combination of various treatments and techniques to improve recharge or meet other water resource or water quality goals. Objectives include design of project(s) that are replicable, improve recharge, and lead to better land management. They may also address flood control problems, improve aesthetics, enhance and or re-establish riparian areas, promote water reuse, improve channel morphology and downstream conditions, and promote installation of permeable pavement for improved localized recharge.

Slaughterhouse Gulch in Prescott, within the Slaughterhouse Gulch sub-watershed on land owned by the Yavapai-Prescott Indian Tribe (YPIT), emerged as the broadest reaching capitalization on urbanization project. Several issues were created with the large, high visibility hillside cut on ASLD lands that made way for construction of a Lowe's Home Warehouse. Full-scale project implementation will address existing issues and provide multiple stakeholder benefits. Goals include improving downstream conditions, optimization of local recharge, reduction in runoff velocities and improving water quality in a tributary to Watson Woods Riparian Preserve along Granite Creek above Watson Lake. A partnered approach that includes developing a riparian area along Slaughterhouse Gulch downstream has also been integrated, which is expected to improve water quality at Watson Lake. Slaughterhouse Gulch joins Granite Creek upstream from Watson Woods and Watson Lake.

This project is replicable. Other potential improvement sites that can incorporate similar concepts include:

- Walmart
- Costco
- Home Depot
- Sam's Club
- Car dealership
- Other large 'box' stores and commercial development
- Fain Lake in Prescott Valley where development has resulted in significant sediment loading

I 1.4.1. Slaughterhouse Gulch Watershed

I 1.4.1.1. Project Concept

To reduce intensity of storm runoff, create a riparian environment on Yavapai-Prescott Indian Tribe (YPIT) land, optimize localized recharge, improve water quality downstream, promote water conservation and address tribal flood control issues.

I 1.4.1.2. Background Information

The Slaughterhouse Gulch sub-watershed is a tributary to Granite Creek, joining Granite Creek within the Yavapai-Prescott Indian Tribe upstream of the City of Prescott Watson Woods Preserve. It originates at an elevation of about 6,400 feet on the east side of Badger Mountain ('P' Hill) within the Ranch at Prescott subdivision. Urban runoff into the main channel also originates from the Gateway Mall, Lowe's Home Improvement, SR 69 and a variety of businesses and private residences. Slaughterhouse Gulch is joined by an unnamed tributary from the west side of Badger Mountain at a location 0.4 miles north of the Yavapai Connector and SR 69 intersection on the Yavapai-Prescott Indian Tribe. This unnamed wash incorporates runoff from private residences in Government Canyon and the majority of runoff from Frontier Village Mall. A spring is located in this channel just north of SR 69 that seems to support about 0.1 stream miles of grasses, aquatic plants and a variety of phreatophytes.

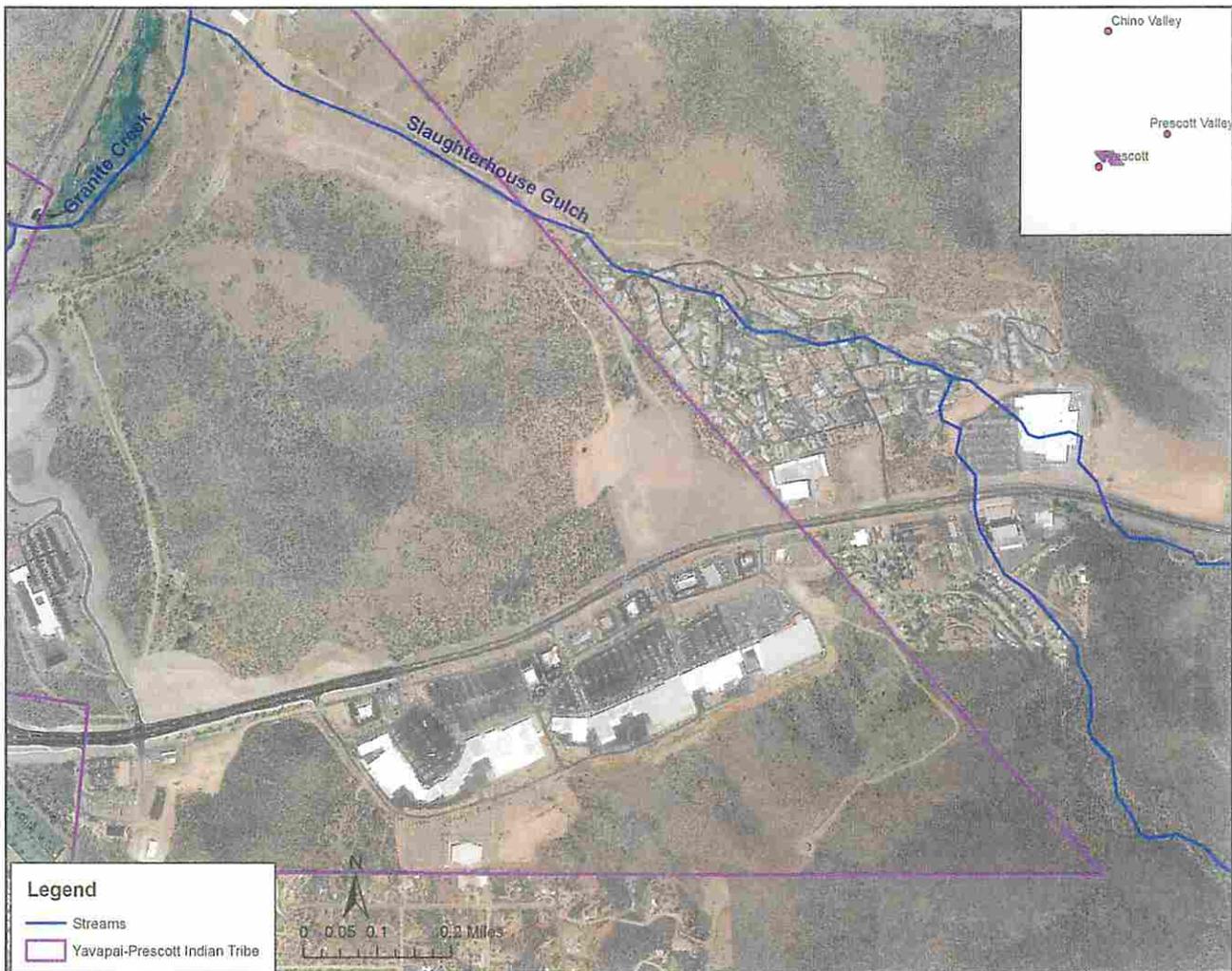


Figure 2: Aerial view of the highly urbanized portion of Slaughterhouse Gulch.

11.4.1.3. Project Description

The main focus is to slow down flow velocity during storm events so that the water remains in place longer to both support a planned riparian environment and natural improvements to water quality. Other opportunities incorporated into the project concept include:

1. Construct detention basins within the terraces on Lowe's Hill to support native vegetation and slow runoff
2. Improve at least one large detention basin that does not appear to be detaining storm water. Other basins throughout the watershed are likely to need improvements or repairs.
3. Install energy dissipating structures in some channels, specifically the rip-rap lined channel in the unnamed wash north of SR 69.
4. Consider installing pervious pavement at the planned new casino on tribal land to improve recharge and reduce runoff. The casino is planned for the intersection of SR 69 and Yavpe Connector. Water that infiltrates here will slowly make its way to Slaughterhouse Gulch downstream.
5. Slaughterhouse Gulch will require changes to its morphology to capture sediments and slow down storm water flows. The channel through tribal land is very straight and narrow, possibly influenced by past gravel mining activities. Changes to the channel may include reducing slope with energy dissipating structures and creating backwater pools.

11.4.1.4. Project Cost

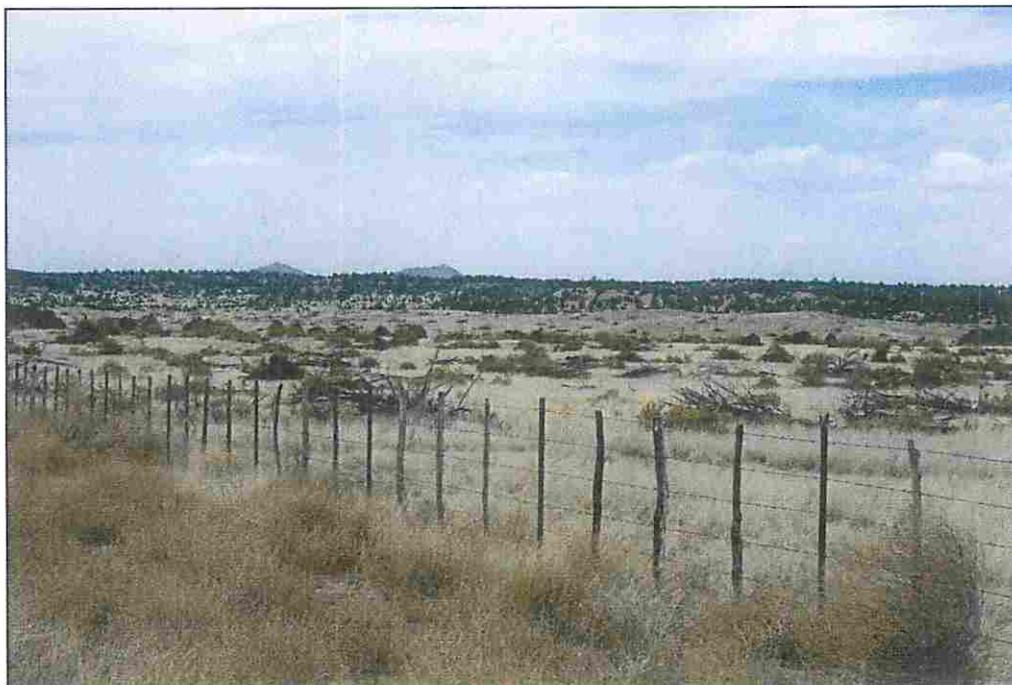
The next step in this process is a full complete a site assessment and feasibility study of the Slaughterhouse Gulch watershed. A concept design for the Slaughterhouse Gulch Channel has been conducted by YPIT.

11.5. Land Use Management, Conservation and Aquifer Protection

Land Use Management/Conservation projects focus on resource management. Priorities include public education and outreach, policy development and recommendations to support watershed health, water conservation, and aquifer protection.

Potential projects/strategies include:

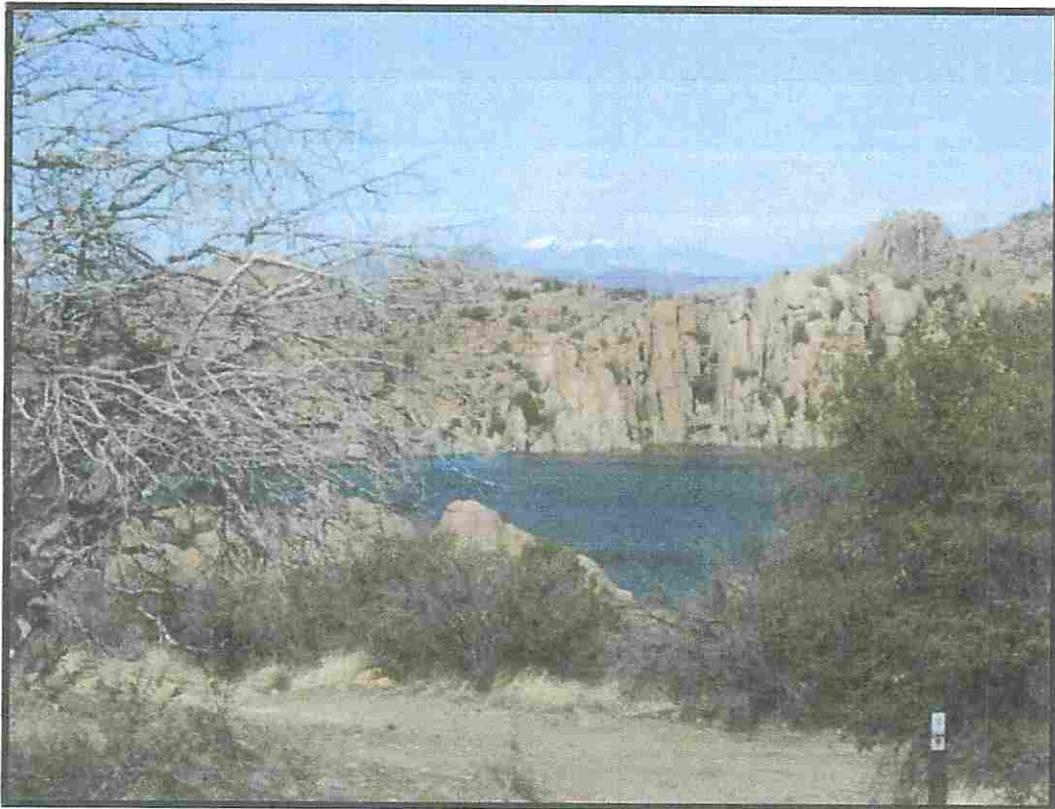
- Land/Resource Management Policy Changes:
 - Range management
 - Timing and stocking of cattle on forest service lands for wet year grass consumption. There may be no long term hydrological benefit, but there could be benefits associated with fire management.
 - ASLD adjust cattle grazing allowance based on rainfall.
 - Forest Service and ASLD - changes to woodcutting and harvesting regulations that will favor invasive species removal.
 - Fire Management Plan



Dead and down trees lying on ASLD land



Janice K. Brewer, Governor
Henry R. Darwin, Director



Draft Upper Granite Creek Watershed *E. coli* TMDL

December 2014

Open File Report 14-08

TOTAL MAXIMUM DAILY LOAD

*Escherichia coli*Granite Creek Watershed - Headwaters to Watson Lake
Yavapai County, Arizona

Table ES-1. TMDL SUMMARY	
Waterbody Name/Segment Number	1) Granite Creek from Headwaters to Watson Lake HUC/Reach No. 15060202-059A (minus reach that runs through the Yavapai-Prescott Indian Tribe) 2) Miller Creek from Headwaters to Granite Creek HUC/Reach No. 15060202-767 3) Butte Creek from Headwaters to Granite Creek HUC/Reach No. 15060202-768 4) Manzanita Creek from Headwaters to Granite Creek HUC/Reach No. 15060202-772
Pollutant of Concern	<i>Escherichia coli</i> (<i>E. coli</i>)
Waterbody Designated Uses	Aquatic & Wildlife-cold, Full Body Contact, Fish Consumption, Agriculture-irrigation, Agriculture-livestock watering
Water Quality Target	Attainment of <i>E. coli</i> water quality standard of 235 cfu/100ml throughout watershed; Attainment of the corresponding load target at upper and lower USGS gauges on Granite Creek
TMDL Goal	Protection of public health and recreational uses

I. EXECUTIVE SUMMARY

Granite Creek is the major tributary to Watson Lake near the City of Prescott, Yavapai County, AZ. Granite Creek was listed on the state's 2006 303(d) list of water quality impaired waterbodies for *Escherichia coli* (*E. coli*). Miller Creek, one of several tributaries to Granite Creek, was subsequently listed for *E. coli* on the 2010 303(d) list. Butte Creek and Manzanita Creek have been added in the 2012/14 303(d) list. The Upper Granite Creek Watershed (above Watson Lake) includes a portion of the Prescott National Forest and the City of Prescott, Private and State Trust Lands, Yavapai County Lands, Tribal Lands, and Military (Fort Whipple, now Veteran's Hospital) (Figure ES-1).

E. coli is an indicator of the possible presence of pathogenic organisms that may cause illness in those who come in contact with or ingest contaminated waters. The identified creeks periodically exceed the full body contact single sample maximum (SSM) standard of 235 cfu/100ml.

Sources of *E. coli* include humans, wildlife, and domestic animals. During storm events and winter snowmelt, significant contributions of *E. coli* are routed to the creeks, as stormwater collection is not separate from the natural hydrography in many places. Sanitary sewer overflows and septic seepage, cross connections, wildlife, and pets are all known sources of *E. coli* and expected contributors to impaired reaches.

E. coli levels are measured as a density-based unit, i.e. a number of bacteria colony forming units (cfu) per 100 milliliters (ml) of water. The density-based targets for this TMDL are based upon the applicable SSM water quality standard of 235 cfu/100ml.

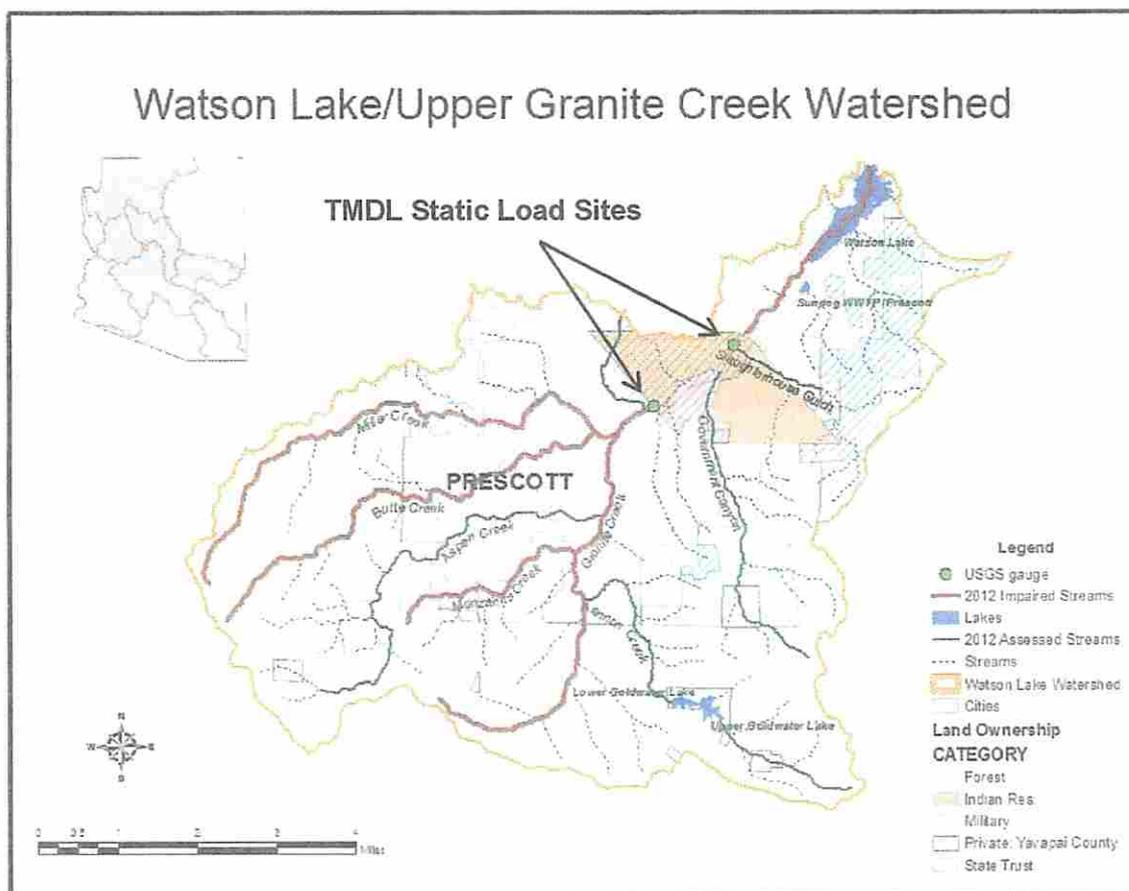


Figure ES-1. Watershed Location, Land Ownership, and Static TMDL Loading Sites

A small percentage of land (less than five percent) in the Watson Lake TMDL Watershed is owned by the Yavapai-Prescott Indian Tribe (YPIT). The location of the Yavapai-Prescott Indian Tribe land is depicted on Figure ES-1 as "Indian Reservation." ADEQ must consider federal tribal trust responsibilities in the Watson Lake Watershed since TMDLs are subject to the approval of the U.S. Environmental Protection Agency (EPA). The United States has a trust responsibility to protect and maintain rights reserved by, or granted to, federally recognized Tribes and individual Indians, by treaties, statutes, and executive orders. The trust responsibility requires that federal agencies take all actions reasonably necessary to protect trust assets, including the fishery resources of the Indian tribes in the Watson Lake Watershed. ADEQ will assist EPA in fulfilling tribal trust responsibilities by adopting a TMDL that restores and maintains pollutant levels that are protective of fish and other beneficial uses related to the Yavapai-Prescott Indian Tribe to the degree that natural conditions allow.

In determination of TMDL loads, the Arizona Department of Environmental Quality (ADEQ) utilized flow duration equations from two USGS gauges on Granite Creek and GIS modeling analysis of relative source contributions by sub-watershed (ADEQ, 2013). Section V of this report shows that non-stormflow events are meeting the SSM criteria. Therefore, the TMDL load reduction and allocations are set for stormflow events at the two USGS gauges (Figure ES-

1). Reductions are based on the target load (90th percentile in G-cfu/day) calculated as the product of SSM (235 cfu/100 ml), 0.75 upper confidence level (UCL) median storm flow, and a conversion factor (Table ES-2).

Table ES-2 Load Targets, Natural Background Allocation, and Load Allocation (G-cfu/day)¹

TMDL Static Load Sites	Target Flow (cfs)	TMDL Target Load	Existing Load	Percent Reduction	Natural Background	Total Allocation	LA 50%	WLA 50%
Lower USGS Gauge #09503000	53	304.52	4,200.30	92.8	18.98	295.54	144.77	144.77
Upper USGS Gauge #09502960	18.3	105.15	2,070.57	94.9	18.98	86.17	43.085	43.085

¹G-cfu/day = 1 billion cfu/day = *E. coli* concentration (#cfu/100ml) * cfs (discharge) * conversion factor of 0.02446

II. INTRODUCTION

Section 303(d) of the federal Clean Water Act (CWA) requires states to periodically submit to the EPA a list of water bodies that are water quality impaired. Water quality impaired streams and lakes are those that, for one or more assigned designated use, the applicable water quality standard is not fully achieved. This list of water bodies is referred to as the "303(d) List."

In Arizona, the agency responsible for developing the 303(d) List is ADEQ. The list is approved by EPA Region 9, which has the ultimate authority to accept, reject, or add to the list. This TMDL was assigned a high priority by ADEQ due to the documented non-attainment of a human health based water quality standard. Completion of this TMDL is consistent with the priority assigned by ADEQ.

Granite Creek, Miller Creek, Butte Creek, and Manzanita Creek are located in Yavapai County, within the Upper Granite Creek Watershed of the Verde River Watershed. Approximately 12.2 stream miles of Granite Creek are impaired for *E. coli*, draining a 36.3 square mile watershed that includes a large portion of the City of Prescott. When the other three creeks are included, the total impaired stream miles are 29.7.

III. WATER QUALITY STANDARDS and MOS

EPA published the current national water quality criteria for bacteria in surface water in 1986 (EPA, 1986). The criteria are based upon "currently accepted illness rates," which are "an estimated eight illnesses per 1,000 swimmers at fresh water beaches." That rate of illness was calculated using the fecal coliform indicator group at the maximum geometric mean of 200 cfu/100 ml of water. In the 1986 criteria document, EPA made a transition from fecal coliform to *E. coli* at the same illness rate, which is a maximum geometric mean of 126 cfu/100 ml of water.

Arizona's *E. coli* standard is used as an indicator of bacterial contamination and is designed to protect human health in the case of recreational use of waters with some possibility of small ingestion rates. Arizona's 2009 water quality standard for *E. coli* reads:

The following water quality standards for *Escherichia coli* (*E. coli*) are expressed in colony forming units per 100 milliliters (cfu/100 ml) or as a Most Probable Number (MPN):

	<i>E. coli</i>	FBC	PBC
Geometric mean (minimum of 4 samples in 30 days)		126	126
Single Sample Maximum		235	575

Granite Creek is considered intermittent; hence, it carries the Full Body Contact (FBC) designated use with a SSM of 235 cfu/100 ml. This numeric concentration value remains unchanged in the establishment of loading targets for the Granite Creek watershed. However, an implicit margin of safety is built into the analysis by requiring a greater percentage of samples to meet the concentration target than the origins of the *E. coli* standard presume. This is warranted for two reasons: many samples collected in the course of the project exceeded the upper limit of quantification when analyzed (loading is known to be higher than the upper limit of quantification, but the magnitude of the exceedance was not established at the time of sample analysis), and the exceedance rate applied is broadly consistent with how ADEQ evaluates *E. coli* and other parameters for human health and agricultural designated uses in water quality assessments (ADEQ, 2013). The 90th percentile value was selected in recognition of the fact that single sample maximums are not intended to be construed as values never to be exceeded (EPA, 2006), but rather represent an implied percentile or confidence level of a frequency distribution. Adopting the 90th percentile value for attainment evaluations adds an implicit margin of safety over the 75th percentile level the single sample maximum value was originally drawn from and obviates the need to include an additional explicit margin of safety. Critical benchmarks for comparison between EPA criteria and ADEQ's TMDL development can be found in the *E. coli* Technical Analysis Report (ADEQ, 2013).

Recreational use along Granite Creek and its tributaries includes walking, hiking, biking, wading and camping. There is a golf course located between two of the tributaries and several parks.

IV. PROBLEM IDENTIFICATION

Monitoring for *E. coli* is included in the protocol of the ambient surface water monitoring program at ADEQ (March, 2009). Initial samples were collected from 2002-2004, but the 305(b) assessment was inconclusive. In 2007, when the Watson Lake Nutrient TMDL was initiated, ADEQ began intensive monitoring of Granite Creek and its tributaries, including *E. coli*, for source assessment (Figure 1). Additionally, the Prescott Creeks Preservation Association (Prescott Creeks), a 501(c)(3) nonprofit organization with the mission "to achieve healthy watersheds and clean waters in central Arizona for the benefit of people and wildlife through protection, restoration, education and advocacy," received a Clean Water Act (CWA) Section 319 (nonpoint source) grant to conduct sampling in the upper watershed. Data collected by ADEQ and PCA resulted in the determination that *E. coli* was indeed a water quality issue.

Samples were collected to characterize summer monsoon runoff, winter stormflow, and runoff from spring snowmelt. Although there are expected spatial and temporal inconsistencies, in general, the *E. coli* results show a ubiquitous distribution across the developed subwatersheds, and statistically higher values in a few locations.

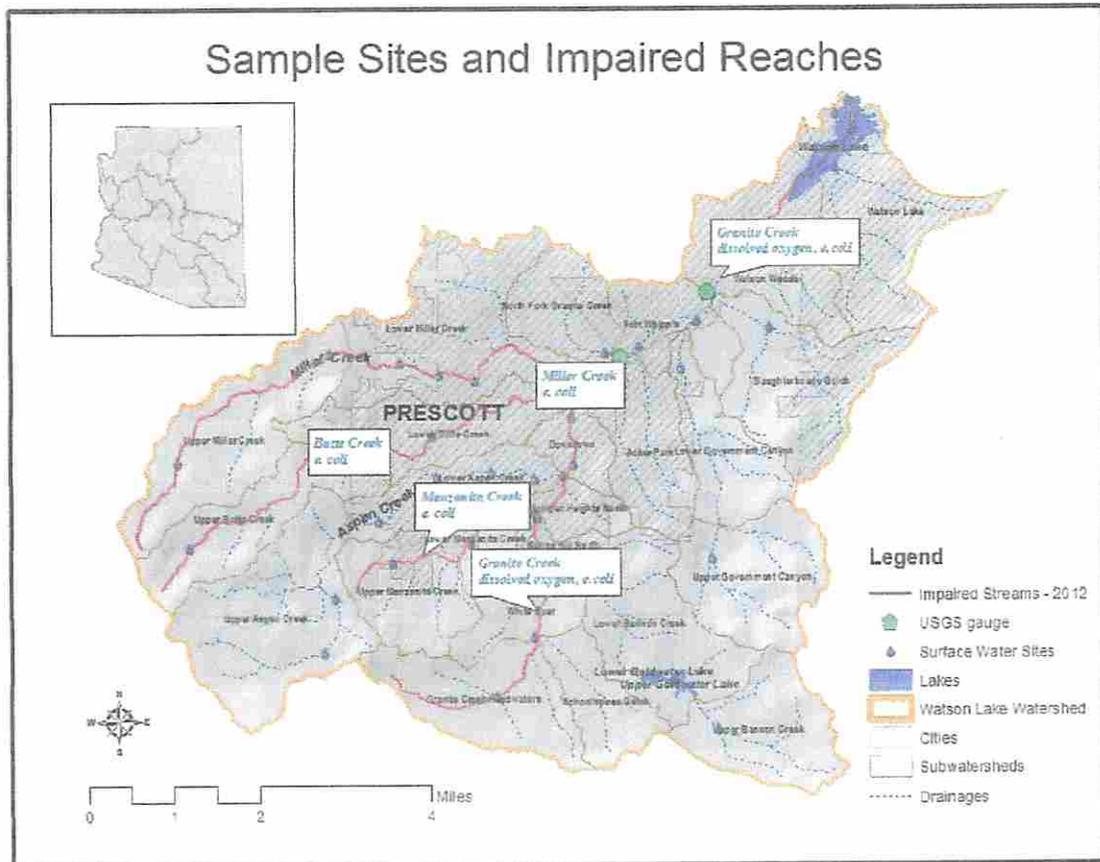


Figure 1. Location of Sample Sites for *E. coli* TMDL

V. TMDL TARGET DEVELOPMENT

Loading data from the Granite Creek basin as a whole was statistically tested for fit with a two-parameter lognormal distribution and found to be generally consistent with the distribution at a *p* value of 0.05. Three data points out of 187 comprised outliers at the tails of the distribution. However, since the water quality standard presupposes a lognormal distribution for *E. coli* concentrations as outlined in Table 1 and Appendix C of the Granite Creek Modeling Report (ADEQ, 2013), the distribution is taken as a given when determining target loads for the project.

To complete the load target calculation, the 75th upper confidence level (UCL) median flow from the dataset is multiplied by the target concentration and a conversion factor of 0.02445 to yield target bacterial loads in units of Giga-organisms per day (G-orgs/day). The conversion factor of 0.02445 serves to convert the product of *E. coli* densities and flows into daily loads and is derived as follows:

$$1 \text{ cfu}/100\text{ml} \times 1000\text{ml}/1\text{L} \times 28.3\text{L}/1 \text{ ft}^3 \times 86,400 \text{ sec}/1 \text{ day} \times 1 \text{ G-org}/1 \times 10^9 \text{ cfu} = 0.02445 \text{ G-org}/\text{day}$$

The 0.75 UCL median flow value was chosen due to uncertainties in the median value associated with limited sampling events to evaluate at most sites. It also allows for an implicit margin of safety in the target load value that is reasonable when assessed in comparison with other *E. coli* TMDLs

V-1 Baseflow-Stormflow Analysis

Analysis was conducted on the entire dataset for the lowest three sites on the Granite Creek main-stem. These three sites were used as controls to assess the attainment status of each flow class for the entire project watershed. The lowest site of the project area, VRGRA027.35 (located in the Watson Woods subwatershed near Sundog Road), was associated with the USGS gauge 09503000 (Granite Creek near Prescott, Ariz.). The other two sites, VRGRA029.64 and VRGRA029.97 (located in the Fort Whipple subwatershed just above the Yavapai Indian Reservation) were associated with USGS Gauge 09502960 (Granite Creek at Prescott, Ariz.). Both USGS gauge locations were analyzed with cumulative loading and discharge data from the project sampling dates by flow class. The 90th percentile *E. coli* values were compared to target values for each class. Results are summarized in Table 1 (ADEQ, 2013). Target loads presented for each category in Table 2 are the product of the concentration target and the 0.75 UCL category median flow with the conversion factor applied.

Inspection of these results indicates clearly that impairment is due to the influence of stormflow and consequently, the critical conditions necessary to address for the improvement of bacteriological water quality on Granite Creek are stormflow conditions. Subsequent analysis focused exclusively on stormflow conditions.

Table 1. Baseflow/Stormflow Cumulative Assessment

90th percentile load Cumulative Watershed Assessment Loads in G-orgs/day		
	Fort Whipple	Watson Woods
<u>Base/Stable flow</u>		
Number of Samples:	3	7
Existing 90th P-tile Load:	9.46	65.60
0.75 UCL Category Median Flow:	3.8 ^a cfs	26 cfs
Target Concentration:	235 cfu/100 ml	235 cfu/100 ml
Target Load:	21.70	149.39
Percent Reduction:	Meets*	Meets
<u>Stormflow</u>		
Number of Samples:	11	16
Existing 90th P-tile Load:	2,070.57	4,200.30
0.75 UCL Category Median Flow:	18.3 cfs	53 cfs
Target Concentration:	235 cfu/100 ml	235 cfu/100 ml
Target Load:	105.15	304.52
Percent Reduction:	94.9%	92.8%
* - Category and location assessed as provisionally meeting load target. Minimum set size of four necessary for unqualified assessment.		
= - Median flow: used due to minimal flow samples for establishment of 0.75 UCL flow.		

V-2 Natural Background

Natural background was evaluated for stormflow conditions using nine samples collected in headwater subwatersheds of upper Miller, upper Granite Creek, and upper Aspen Creek.

Slaughterhouse Gulch Analysis and Revegetation/Erosion Control Plan

**Prepared for:
Yavapai-Prescott Indian Tribe
Prescott, AZ**

**Prepared by:
Biozone, Inc.
Prescott, AZ**

July 2013

Slaughterhouse Gulch Analysis and Revegetation/Erosion Control Plan

I. Site Description

Biozone Inc. staff conducted a riparian analysis of Slaughterhouse Gulch from the Tribal property boundary to its confluence with Granite Creek. This included a vegetation and channel analysis.

Slaughterhouse Gulch is an ephemeral wash which enters Yavapai-Prescott Tribal land along the eastern border near the subdivision Prescott Canyon Estates and continues to its confluence with Granite Creek approximately 0.6 miles downstream. This comprises a total stream channel area of about 0.85 acres, subject to verification by a complete stream delineation.

The wash is surrounded by Plains Grassland with scattered Interior Chaparral species included (Brown, 1982). Riparian vegetation is rare along the reach with the exception of a few species near the upstream end where there appears to be more consistent moisture from a nearby spring, and at the downstream end near the confluence with Granite Creek. (See photos in Appendix)

Table 1 includes the existing woody species found along the wash. There are a few riparian perennial species which also occur in the area and could be used for transplanting into revegetation areas or allowed to reseed.

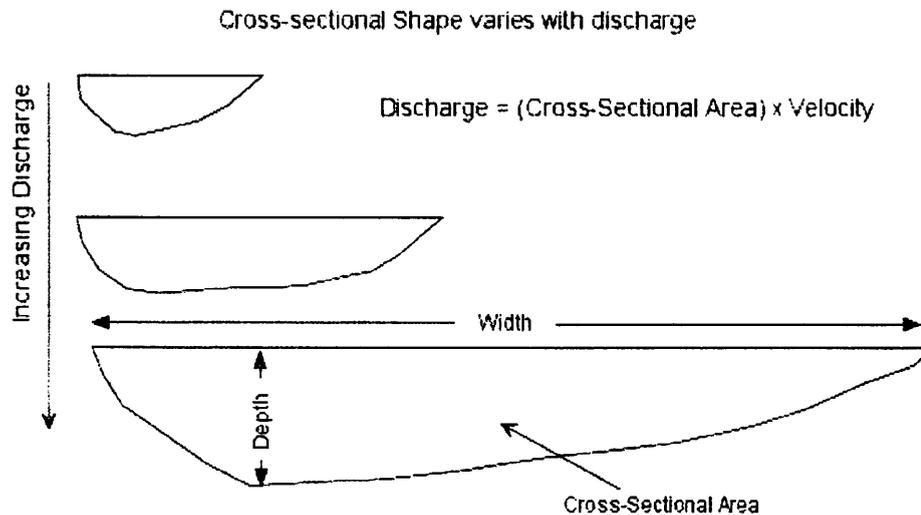
Table 1. Slaughterhouse Gulch Vegetation

PLANT SPECIES	NUMBER
Siberian Elm	44
Arizona Walnut	43
Willow species	15
Apache Plume	6 clumps/2 singles
Scrub Oak	3
Fremont Cottonwood	2
Wolfberry	2 clumps
Alligator Juniper	1
Western Hackberry	1
Three-leaf Sumac	1
Rabbit brush	1

The stream is a well-incised U-shaped channel which averages approximately eleven feet in width between ordinary high water marks. The channel or thalweg appears to retain flood waters during storm events as there are no obvious washouts or signs of erosion outside the banks. The channel is comparatively straight, indicating historic rechannelization. (See attached aerial photo showing the existing channel in blue) The banks are composed of the surrounding Balon gravelly sandy clay loam soils and the channel bottom contains a mix of boulders, cobbles, gravels, and sand typical of

waterways in the area. The area below the box culvert to Granite Creek is comprised of Sandy and Gravelly alluvial land (USDA, 2013).

The drawing below illustrates the relationship between stream channel shape and discharge rate. As discharge increases, the cross-sectional area required to carry the water increases. Any alterations which widen the stream channel will not only slow the velocity of the flow, but also increase the carrying capacity of the stream.



There are four areas along the reach which contain unalterable features: a box culvert associated with the 4-lane connector road, a railroad culvert (concrete), a corrugated metal pipe culvert under an access road, and a concrete area associated with the exposed sewer line crossing. The box culvert and the railroad culvert both have upstream and downstream aprons which extend the area which cannot be modified.

II. Future Design and Enhancement

A. History

Originally, the composition of the Slaughterhouse Gulch riparian corridor was likely similar to nearby Granite Creek. The vegetation profile probably changed in response to elevation upstream giving way to more arid riparian species, (i.e., cottonwood/willow to walnut/hackberry).

Construction of the old Black Canyon Highway, begun in the 1870s, was first a stage coach route from Phoenix to Ft. Whipple and later became a gravel road for automobile access in the 1930s. This resulted in the rechannelization of Slaughterhouse Gulch to prevent erosion of the new highway.

The purpose of this design and enhancement project is to work toward a reestablishment of the historical riparian corridor which existed prior to human manipulation of Slaughterhouse Gulch while still maintaining adequate stream conditions to convey current flow rates produced by upstream development.

B. Suggested Channel Modifications

The stream channel is relatively straight and lacks the natural sinuosity which is common in other streams and washes in the area. This increases water velocity during storm events reducing natural deposition within the channel thereby inhibiting establishment of riparian vegetation. High velocity events also cause undue erosion and limit percolation into the substrate materials thereby reducing saturation of the surrounding soils and groundwater recharge. The following illustrations demonstrate the way in which an increase in sinuosity creates more significant pools areas which retain water longer to increase percolation as well as gravel bars which provide material favorable to the establishment of riparian vegetation.

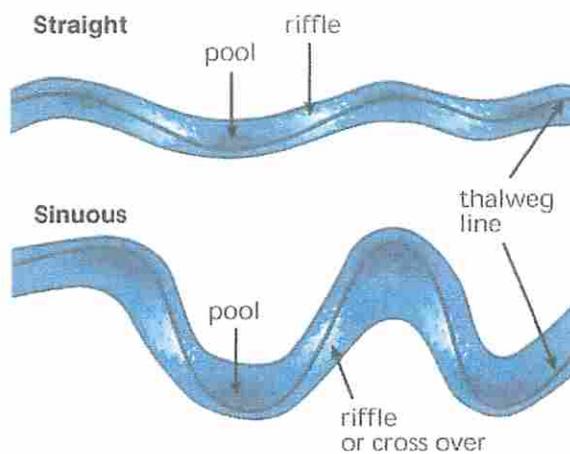
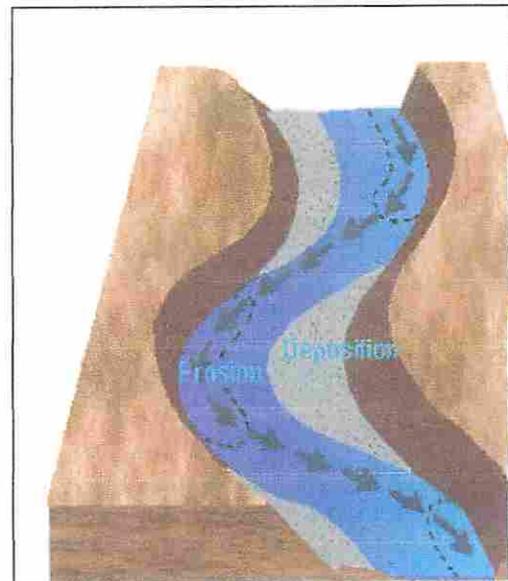
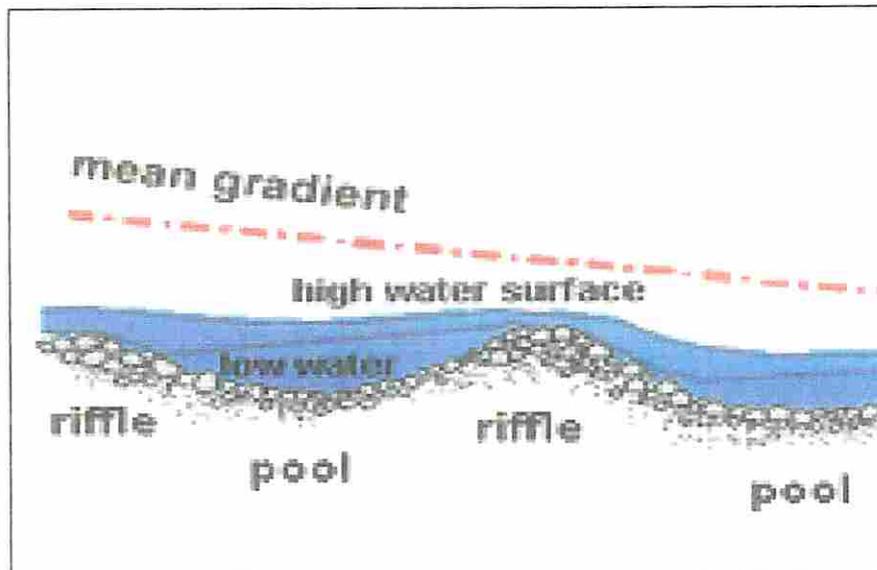


Fig. 1.32—Sequence of pools and riffles in (a) straight and (b) sinuous streams. In Stream Corridor Restoration: Principles, Processes, and Practices (10/98). Interagency Stream Restoration Working Group (15 federal agencies)(FISRWG).



The methodology for reducing stream velocity involves any one or combination of three elements: increase sinuosity (curvature), widen the channel, or increase friction producing substrates on the bottom of the channel. It is suggested in this case all three elements be incorporated into the final restoration plan following appropriate engineering. Sinuosity and widening of the channel can be accomplished by alternately widening one side of the channel and the other in areas which do not contain natural vegetation now. This will create a mild alternating curvature in the streambed which can

then be enhanced with the use of rock gabions or large boulder rip rap to stabilize the excavated areas and strategically placed boulders to increase friction on the bottom of the channel. Incorporation of these methods should create areas in which water will be retained for longer periods facilitating greater percolation into the substrate materials and enhancing riparian vegetation survival. (See attached aerial photo with suggested rechannelization highlighted in pink and bank stabilization in orange) No stream alterations or modifications can be made without proper engineering and final design which could include minor modifications upstream of the proposed enhancement project to reduce stream velocity during storm events. The following illustration shows flow in a low gradient condition such as exists in Slaughterhouse Gulch. During periods of low flow, water pools in the areas between large boulders or gabions. During high flow, water will travel over the top of the features, but be slowed by the friction created by those features.



C. Suggested Revegetation Plan

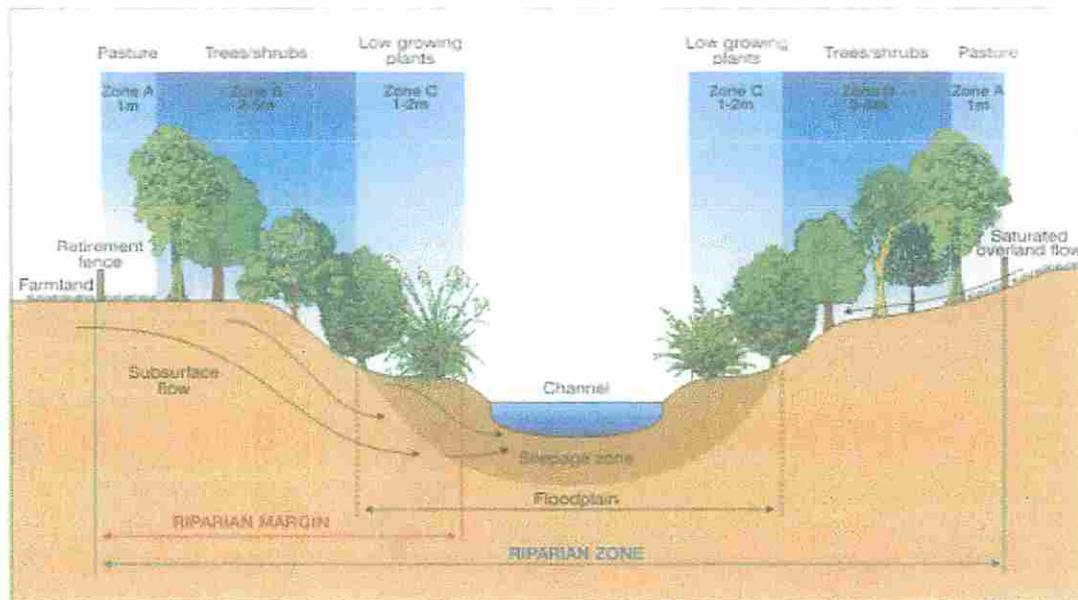
After the streambed modifications are completed, native vegetation will be introduced to further reinforce these modifications and improve the appearance and functionality of the riparian corridor. The streambed modifications will increase deposition in some areas and create basins which will retain water after storm events providing additional soil saturation for establishment of riparian vegetation. Once this vegetation becomes established, evaporation rates could potentially be reduced and more vegetation will survive. Irrigation will be required to establish new vegetation along the wash for the first several years.

Typical riparian vegetation density in the area is 160 woody plants per acre. This translates to approximately 136 woody plants for the stream channel portion of this

project. However, for a more complete and attractive riparian corridor, the project area should extend beyond the banks of Slaughterhouse Gulch by a minimum of 20 feet on each side, increasing the size of the project to approximately 3.5-4.0 acres. This will not only increase the attractiveness of the proposed riparian corridor (indicated by the short dashed line on the attached aerial), but more importantly, it increases the functionality of the riparian ecosystem and improves bank stability. Additionally, the project should extend a little further and include a buffer of upland native species to create a **green belt** (indicated by a long dashed line on the attached aerial). This green belt serves the purpose of reducing erosion and siltation into the stream from the areas above the banks, breaking the wind to help reduce evaporation within the riparian corridor, and creating attractive wildlife habitat. All these factors will increase the perceived value of the adjacent properties.

The existing riparian species which are typically available as potted nursery plants include willows and cottonwoods. However, many of the existing upland species occurring in the area are also available such as, Apache Plume, Scrub Oak, Rabbitbrush, Three-leaf Sumac, and Juniper. The suggested areas for planting riparian species are identified on the attached aerial photo as teal colored clouds. Other available native plants such as New Mexico Olive and Saltbush could be added as the project expands beyond the stream channel into the upland area to create a green belt. These plant species provide habitat and food sources to make the riparian corridor more attractive to a variety of wildlife species.

The following illustration shows a cross-section of a healthy riparian corridor/green belt. The characteristics of the vegetation changes in relation to the ground saturation and elevation above the channel. See the photos in the appendix demonstrating a healthy riparian corridor in nearby Granite and Willow Creeks.



Revegetation should be conducted in two phases. The first phase should occur immediately following the stream modifications and include potted native woody plant species similar or identical to those found in the surrounding area. This will establish vegetation to reinforce the streambed modifications and reduce potential erosion. The second phase should occur approximately two years later, or as soon as storm events have created identifiable catchments which show potential to support perennial riparian vegetation. This phase would include the introduction of pole cuttings of riparian species such as willows and cottonwoods and transplants (potted or divisions) of sedges, rushes, etc. This would complete the reconstruction of Slaughterhouse Gulch, giving it a more natural, appealing appearance.

NOTE: Design suggestions are made without watershed analysis, flow-rates, and hydrology, which must be conducted by a licensed civil engineer prior to final design. A Section 404 permit must be obtained from the U.S. Army Corps of Engineers before initiating any work on the project which would affect potential Waters of the U.S. This will require a complete stream delineation prior to application.

References

Brown, D.E. (Ed.). (1982). Biotic communities of the American South – United States and Mexico. (Vol. 4, No. 1-4). Superior, AZ: Boyce Thompson Southwestern Arboretum.

McDougall, W.B. (1973). Seed plants of Northern Arizona. Flagstaff, AZ: Museum of Northern Arizona Press.

USDA Natural Resources Conservation Service. (2013). Web Soil Survey. Available: <http://websoilsurvey.nrcs.usda.gov/app/>

**AREA 6 (Wetlands)
ENGINEERING and CONSTRUCTION
BUDGET DETAIL**

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
Engineering Services	LS	1	\$ 40,000.00	\$ 40,000.00
Construction				
- Mobilization	LS	1	\$ 4,500.00	\$ 4,500.00
- Gabion Baskets	CY	90	\$ 130.00	\$ 11,700.00
- Bank Stabilization	CY	275	\$ 100.00	\$ 27,500.00
- Earthwork	LS	1	\$ 150,000.00	\$ 150,000.00
- ABC Roadway (T=4")	CY	120	\$ 75.00	\$ 9,000.00
- Irrigation	LS	1	\$ 10,000.00	\$ 10,000.00
- Vegetation	LS	1	\$ 20,000.00	\$ 20,000.00
- Construction Subtotal				\$ 232,700.00
Engineering + Construction				\$ 272,700.00
Project Allowance (15% of \$272,700)				\$ 40,905.00
AREA 6 TOTAL				\$ 313,605.00

**AREA 7 (Riparian)
ENGINEERING and CONSTRUCTION
BUDGET DETAIL**

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
Engineering Services	LS	1	\$ 20,000.00	\$ 20,000.00
Construction				
- Mobilization	LS	1	\$ 4,500.00	\$ 4,500.00
- Drainage Embankment	CY	90	\$ 130.00	\$ 11,700.00
- 24" CMP	LF	275	\$ 100.00	\$ 27,500.00
- Concrete Slope Stabilization (T=12")	CY	1	\$ 150,000.00	\$ 150,000.00
- Standpipe Inlet	EA	120	\$ 75.00	\$ 9,000.00
- Concrete Headwall	EA	1	\$ 10,000.00	\$ 10,000.00
- Sluice Gate Valve	EA	1	\$ 20,000.00	\$ 20,000.00
- Fencing	LF			
- Construction Subtotal				\$ 73,080.00
Engineering + Construction				\$ 93,080.00
Project Allowance (15% of \$93,080)				\$ 13,962.00
AREA 6 TOTAL				\$ 107,042.00