

**ARIZONA GAME AND FISH DEPARTMENT  
HABITAT PARTNERSHIP COMMITTEE  
HABITAT ENHANCEMENT AND WILDLIFE MANAGEMENT PROPOSAL**

Game Branch / HPC Project Number: 15-306

**PROJECT INFORMATION**

**Project Title:** Diamond Bar New Water Mesa Catchment and Drinker Redevelopment

**Region and Game Management Unit:** Region III/GMU 15A

**Local Habitat Partnership Committee (LHPC):**

- Kingman does not have LHPC

**Was the project presented to the LHPC?**

**YES**  **NO**  Regional tour of project/drinker.

**Has this project been submitted in previous years?** **YES**  **NO**

**If Yes, was it funded?** **YES**  **NO**  → **Funded HPC Project #(s):**

**Project Type:** Wildlife/Livestock Catchment and Drinker Redevelopment

**Brief Project Summary:**

The primary purpose of redevelopment is to provide a reliable and permanent source of water for wildlife on the northern end of New Water Mesa. The secondary benefit with providing livestock water in cooperation with this redevelopment is better distribution of cattle throughout the allotment (ultimately benefitting wildlife), and to promote good department relations with the new allotment permittee.

**Big Game Wildlife Species to Benefit (% benefit per species) :** 70% Mule Deer, 20% Pronghorn, 10% Javelina/Mountain Lion

**Implementation Schedule** (Month/Day/Year):

Project Start Date:

(Projected) October 2017

Development Branch is currently booked through April 2016. By the end of this current cycle a projected timeframe would be into 2017.

Project End Date:

(Projected) November 2017

**Environmental Compliance:**

NEPA Completed: Yes  No  N/A

Projected Completion Date: Originally done BLM early 1980's, will need to complete a DNA for current compliance.

State Historic Preservation Office - Archaeological Clearance:  
(Provide Attachment)

Yes  No  N/A

Projected Completion Date: BLM completed in 1980 when original structures were completed; will need to have additional field visit when new BLM Archaeologist gets to BLM Kingman Field Office.

Arizona Game and Fish Department EA Checklist: N/A

To be Completed by: Joseph Currie/Deanna Kephart AZGFD

Projected Completion Date: If funded EAC will be initiated.

**PROJECT FUNDING**

**Special Big Game License Tag Funds Requested:**

\$ 92,032

**Cost Share or Matching Funds:**

\$ 48,700

**Total Project Costs:**

\$ 138,551

**PARTICIPANT INFORMATION**

**Applicant** (please print):

Deanna Kephart, AZGFD  
Trevor Buhr, AZGFD  
Emmitt Sturgill, Diamond Bar Permittee

**Address:**

5325 N. Stockton Hill Rd, Kingman  
  
12375 N. Holstein Dr., Kingman

**E-mail:**

[dkephart@azgfd.gov](mailto:dkephart@azgfd.gov)  
[tbuhr@azgfd.gov](mailto:tbuhr@azgfd.gov)  
www.RafterScattle.com

<b>Telephone:</b> 928-692-7700	<b>Date:</b> August 25, 2015
<b>AGFD Contact and Phone No.</b> (If applicant is not AGFD personnel):	
<b>Project has been coordinated with:</b> AZGFD Region III, Bureau of Land Management/Kingman, Emmett Sturgill and Lori Warring (Diamond Bar allotment permittee).	

**NEED STATEMENT – PROBLEM ANALYSIS:**

The Diamond Bar Ranch borders the Hualapai Indian Reservation to the East, and the Lake Mead National Recreation Area Boundary to the North, and has diverse topography and habitat depending on the elevation of the area. The big game species include elk, deer, antelope, mountain lion and Javelina. The biggest limiting factor for wildlife in the area is water. Precipitation averages 9 inches per year, with dependence on yearly monsoon rains and winter storms. Water availability and water distribution on the Diamond Bar Unit A allotment has been a concern for the Department since 2004. The original New Water Mesa Livestock Catchment and Wildlife Drinker were developed in 1980, with a 40,000 gallon collection tank and 0.8 acre collection apron; sizeable enough to fill such a large storage tank. There is a small enclosure located approximately 400 feet from the storage that has a ground-level wildlife drinker. This drinker is fed by a pipeline from the storage tank. Leaking problems with the large collection apron plagued this catchment from the initial development, being re-coated several times throughout the years with very little success. The circular storage tank is 40,000 gallons in size with a concrete bottom and metal sides. The storage roof has completely collapsed, and would not hold water today. The livestock trough and wildlife drinker are fed from this storage tank, and have become non-functional. The only functional items in this old system are the intact fences that surround the catchment and the wildlife drinker.

Emmitt Sturgill and Lori Warring of Rafter S Cattle Company have recently taken over operation on the Diamond Bar allotment and have come up with a water development plan for the allotment to bring much needed sources of water to the New Water Mesa plateau. They plan on partnering with the Arizona Game and Fish Department, BLM, NRCS and NRCD to develop permanent waters along 12 miles of the allotment, re-drilling defunct wells, placing storage tanks and troughs throughout to improve livestock distribution, running pipelines, and initiating a yearly rest rotation schedule for the cattle operation (see attached Mohave County map). They have requested assistance from the above mentioned organizations to joint venture in this water development plan as a means to assist with cost and labor. The Region III office would like to redevelop the New Water Mesa Livestock Catchment and Wildlife Drinker in correlation with the allotment permittee to assist with water development throughout the Mesa.

Once completed this water development plan would give approximately 29 square miles of wildlife habitat an excellent year-round water supply. The benefit to wildlife comes in more ways than water alone. Since Rafter S Cattle Company is a year-round cattle operation, distribution is very important. With a reliable water system that covers almost the entire portion of this ranch, livestock distribution will improve, reducing overuse and congregation at small dirt tanks. The better livestock distribution and rotational rest will assist with range forage improvements, ultimately benefitting the wildlife species utilizing the New Water Mesa plateau.



**Figure 1:** Picture of the original 40,000 gallon storage tank.



**Figure 2:** Picture of the collapsed 40,000 gallon storage tank cover.



**Figure 3:** Picture of the old collection apron for New Water Mesa livestock catchment and wildlife drinker.



**Figure 4:** Picture of the old ground level wildlife drinker. This drinker is fed by a pipeline from the storage tank.



**Figure 5:** Picture of the fenced off wildlife enclosure, located approximately 400 feet from the storage tank.

**PROJECT OBJECTIVES:**

The Arizona Game and Fish Region III office believes an opportunity exists to rebuild the old wildlife water drinker and livestock catchment on the upper portion of the allotment to benefit both wildlife and livestock. This rain catchment structure could be rebuilt and repaired to hold 20,000 of water, 10,000 initially being available for cattle, topping off with the remaining 10,000 available for wildlife. The department believes this tank would offer a much needed water source to the upper north portion of the allotment, which often dries out by mid-summer. In past years emergency troughs have been set up to provide water to a resident pronghorn population in the area; and depending on yearly precipitation events, livestock dirt tanks hold water intermittently, with New Water Spring flowing very slowly during the hottest parts of the summer. The lack of water on the upper plateau has caused Mule Deer to remain on the lower benches of New Water Mesa, often driving wildlife over to the Hualapai Indian Reservation and onto the Lake Mead Recreational boundaries. Redevelopment of waters throughout this allotment will help redistribute cattle, improve range quality, and will provide distributed available waters for wildlife throughout the area.

## **PROJECT DESCRIPTION AND STRATEGIES:**

(How will you implement project)

We propose to redevelop the New Water Mesa catchment and wildlife drinker by placing new storage tanks, pipelines, walk-in trough and livestock trough in the location indicated on the map attached. The water redevelopment would be assembled as follows.

- 1) Possible minor road repairs would be necessary to transport materials and equipment to project site. The backhoe would be used within the existing road bed to smooth out eroded areas of the road that make transporting equipment difficult or damaging equipment probable.
- 2) Excavate a hole approximately 5' deep X 20' wide X 40' long to place 8 – 2,500 gallon Polyethylene Tanks (20,000 gallon capacity).
- 3) Dig a 3' to 5' deep by 20' to 60' long trench to place a 3" Sch. 80 PVC pipeline between tanks and trough.
- 4) Dig a 4' deep by 5' wide by 8' long hole to accommodate new fiberglass walk-in trough. The trough would have mortar and concrete steps and escape ramp installed after setting to accommodate all wildlife.
- 5) Install a 48' wide by 72' long metal frame and R-panel apron over the tanks and along the ground where the apron existed.
- 6) Install a 200' X 2000' wildlife friendly pipe-rail perimeter fence to exclude livestock from the wildlife drinker.
- 7) Install 2 rainmaker 250 float value troughs for livestock use outside pipe-rail enclosure.
- 8) Install needed plumbing to trough and drinker, 3" Sch80PVC and 2 Brass Ball Values.
- 9) Installs 32 rubber mats for tank & trough support.

## **PROJECT LOCATION**

(Please provide lat/long of project area and datum. If project is larger than one point, please add multiple lat/long points or an existing shapefile of the project area)

1. New Water Mesa Livestock Catchment and wildlife drinker.  
Latitude N. 35° 11.403' Longitude: W. 114° 00.883'  
T29N, R16W, Section 2

## **LAND OWNERSHIP AT THE PROJECT SITE(S):**

(If the project area is private property, please state specifically and provide the landowner's name)

- Project site is located on BLM (Bureau of Land Management) land.

*IF PRIVATE PROPERTY, IS THERE A COOPERATIVE BIG GAME STEWARDSHIP or LANDOWNER AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT?*

YES[] NO[] N/A[]

**HABITAT DESCRIPTION:**

New Water Mesa/Diamond Bar Unit A contain approximately 96,000 acres dominated mainly by mixed grassland, semi-desert shrub steppe and pinyon-juniper woodland. The upper mesa plateau is dominated primarily by shrub grassland with gramas, tridens and threeawn. Major shrubs are blackbrush, Cliffrose, Utah Agave and broom snakeweed. Forbs are not abundant with Sphaeralcea being the main forb component.

Mohave Desert scrub occurs along the western slope of the basin, and consists of a vast and diverse expanse of shrubs, Joshua trees and cactus on desert uplands. The vegetation is dominated by Blackbrush, Creosote Bush, and White Bursage, mixed with shrubs such as Nevada Jointfir, Fremont’s Dalea, and salt bush, Brittlebush, Spiny Menodora, White Burrobush, Box Thorn, Spiny Hopsage, Littleleaf Ratany, Mormon Tea and Rabbitbrush.

The only riparian habitat component is located 3 miles from the project; New Water spring has slow productivity, often drying to a trickle during the hottest parts of the year.

Interior chaparral is predominant to the south and the east, mixed with pinion-juniper and desertscrub vegetation. This vegetation community is composed of closely spaced shrubs, most with small evergreen sclerophyllous leaves and deep root systems. The land form covers plateau’s with hills and interspersed stream terraces, with slopes ranging from 3 to 45 percent.

**ITEMIZED USE OF FUNDS:**

Special Big Game License Tag Funds

20,000 Gallon COOP water catchment:

- 8 Tanks – 2,500 gallon Polyethylene Water Storage = \$ 27,888.00 (\$ 3,486.00 each)
- 1 Apron – 48’ X 72’ Metal Frame and R-panel = \$ 12,226.00
- 1 Trough – Standard Polyethylene = \$ 4,690.00
- 1 Plumbing – 3” Sch80 PVC and 2 Brass Ball Valves= \$ 1,500.00
- Fence – 150’ X 150’ Standard Pipe-rail perimeter Fence = \$ 2,086.00
- 32 – Rubber mats for tank & trough support = \$ 1,792.00
- 2 – Rainmaker 250 Float Valve Troughs = \$ 1,850.00

Total materials = \$ 52,032.00

2 Options:

1. Labor for a contractor has been around \$ 40 – 45,000.00 but access/site difficulty could increase that cost.
2. SSDV Construction Crew for labor.

Total Contractor Labor = \$40,000.00

Special Big Game License Tag Funds

**AZGFD Implementation**

SBG Fund: Material Costs **\$52,032**

SBG Fund: Labor Costs **\$40,000**

**Total Implementation Costs \$92,032 (Approximate depending on chosen labor)**

Cost Share or Matching Funds (for volunteer labor rates please refer to the worksheet below)

Cost Share or Matching Funds

**BLM 8100 Funds**

-Maintenance	<b><u>\$3,000</u></b>
<b>Total to Date</b>	<b><u>\$3,000</u></b>

**Rafter S Cattle Company**

**Diamond Bar Permittee**

-Personnel (1100 man hours/\$17 ph)	<b><u>\$18,700</u></b>
-Equipment (9-10,000 gallon tanks)	<b><u>\$27,000</u></b>
<b>Total Implementation Cost to date.</b>	<b><u>\$45,700</u></b>

**Estimated cost breakdown for the 12 miles of pipeline, storage tanks, troughs and man hours.**

Diamond Bar Water Distribution Project

*PAGE 2*

	F	G	H	I	J	K	L
1							
2							Notes/Completion
3	Amount Items needed	Price	Cost share portion	Balance due	Paid by agency	Paid by Rafter S	
4							
5	12 +/- miles/.53/63,360	\$33,580.80		33,580.80			
6	14 - 1,000 gallon	\$800/\$11,200		11,200			
7	9 - 10,000 gallon	27,000.00		0		27,000.00	
8	For all drinkers and tanks	8,000.00		8,000.00			
9	150 hrs/\$150 ph	\$22,500.00		\$22,500.00			
10	Repair and replace	\$3,000.00		\$3,000.00			
11	14 \$5.00/\$70.00			\$70.00			
12	50 hours/\$100 ph	\$5,000.00		\$5,000.00			
13	1100 man hours/\$17.00 ph	\$18,700.00		\$0.00		\$18,700.00	
14	1 @\$3,500 6 at \$1,500	\$9,500		\$9,500			
15							
16		\$138,551		\$92,850.80		\$45,700.00	
17							
18							

**LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:**

Arizona Game and Fish Department (AGFD) Region III Kingman Office

- Arizona Game and Fish will provide the coordination for the project.
- Arizona Game and Fish will share in the implementation costs for the project.
- Arizona Game and Fish will assist with redevelopment of New Water Mesa Livestock Catchment and Wildlife Drinker.

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Bureau of Land Management (BLM) Kingman Office

- BLM will cost share the planning funds for NEPA review.
- BLM has provided 8100 money for the water project/\$3,000.

Diamond Bar Allotment/Permittee

- Purchased 9-10,000 gallon storage tanks
- Will provide 1100 man hours/\$17.00 per hour toward Diamond Bar water redevelopment
- Installation of water line/livestock drinkers/road grader/backhoe for pipeline installation
- Well maintenance and repairs

**WOULD IMPLEMENTATION OF THIS PROJECT ASSIST IN PROVIDING, MAINTAINING, OR FACILITATING RECREATIONAL ACCESS?**

YES[X] NO[] N/A[]

Region III has worked with Emmitt Sturgill in the past on his ranch (Canyon Ranch), where he has been committed to developing waters, (particularly for pronghorn) throughout the Hualapai Valley, and developing rotation schedules for his cattle operation.

**PROJECT MONITORING PLAN:**

Standard protocol for catchment monitoring will be implemented to determine water levels and collection. AZGFD will maintain the wildlife exclosure and drinker.

**PROJECT MAINTENANCE:**

AZGFD Development Branch and Diamond Bar Allotment Permittee. Once completed very little maintenance is expected.

**PROJECT COMPLETION REPORT TO BE FILED BY:**

Dee Kephart, Habitat Specialist, Region III AZGFD

**WATER DEVELOPMENT PROJECTS (please use the worksheet below):**

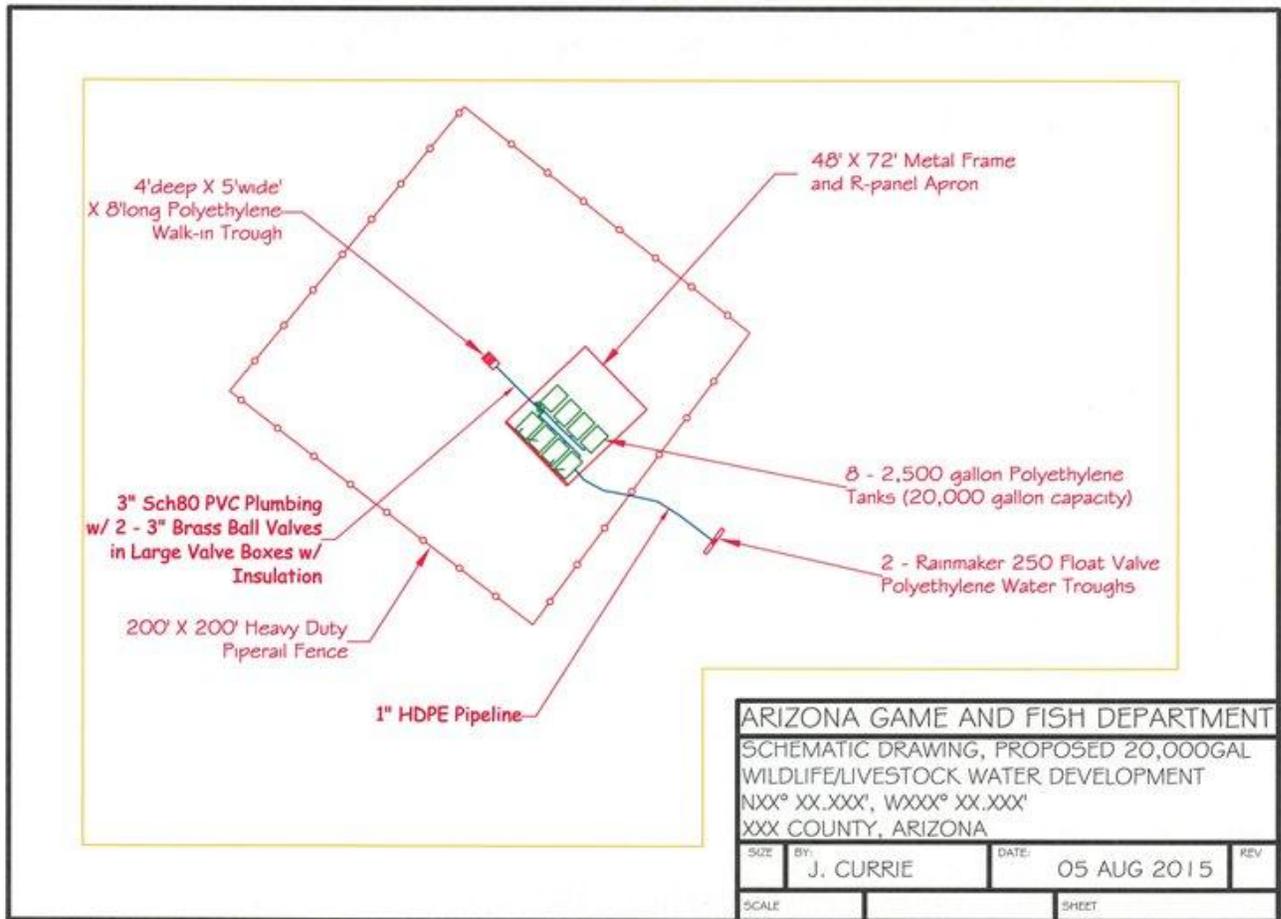
Worksheet Attached

**TREE CLEARING/REMOVAL PROJECTS (please use the worksheet below):**

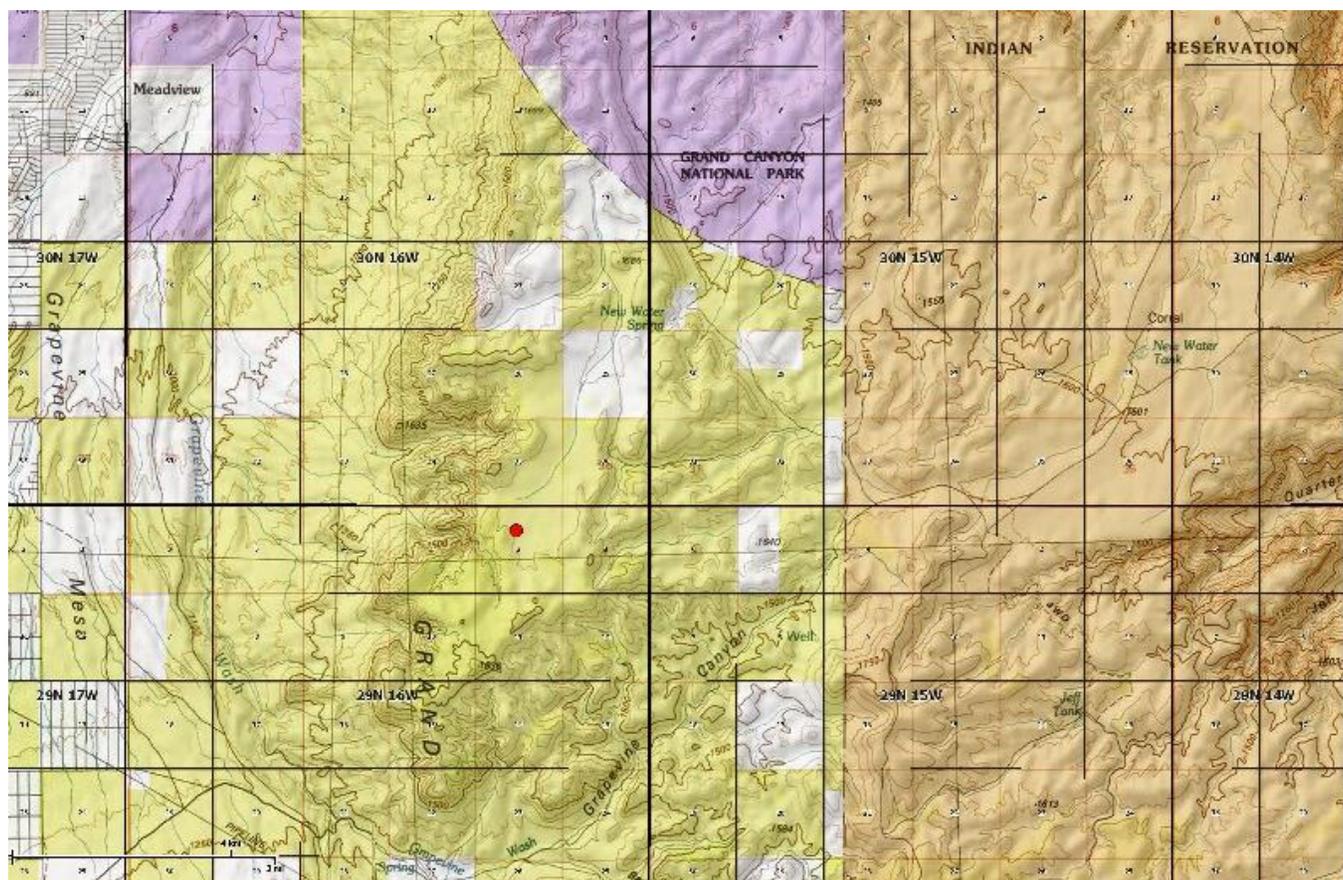
Non-Applicable

**ATTACHMENTS:**

(Please provide cultural clearance documentation from land management agency, e.g., FONSI, Inventory Standards, etc. Also attach any project pictures)

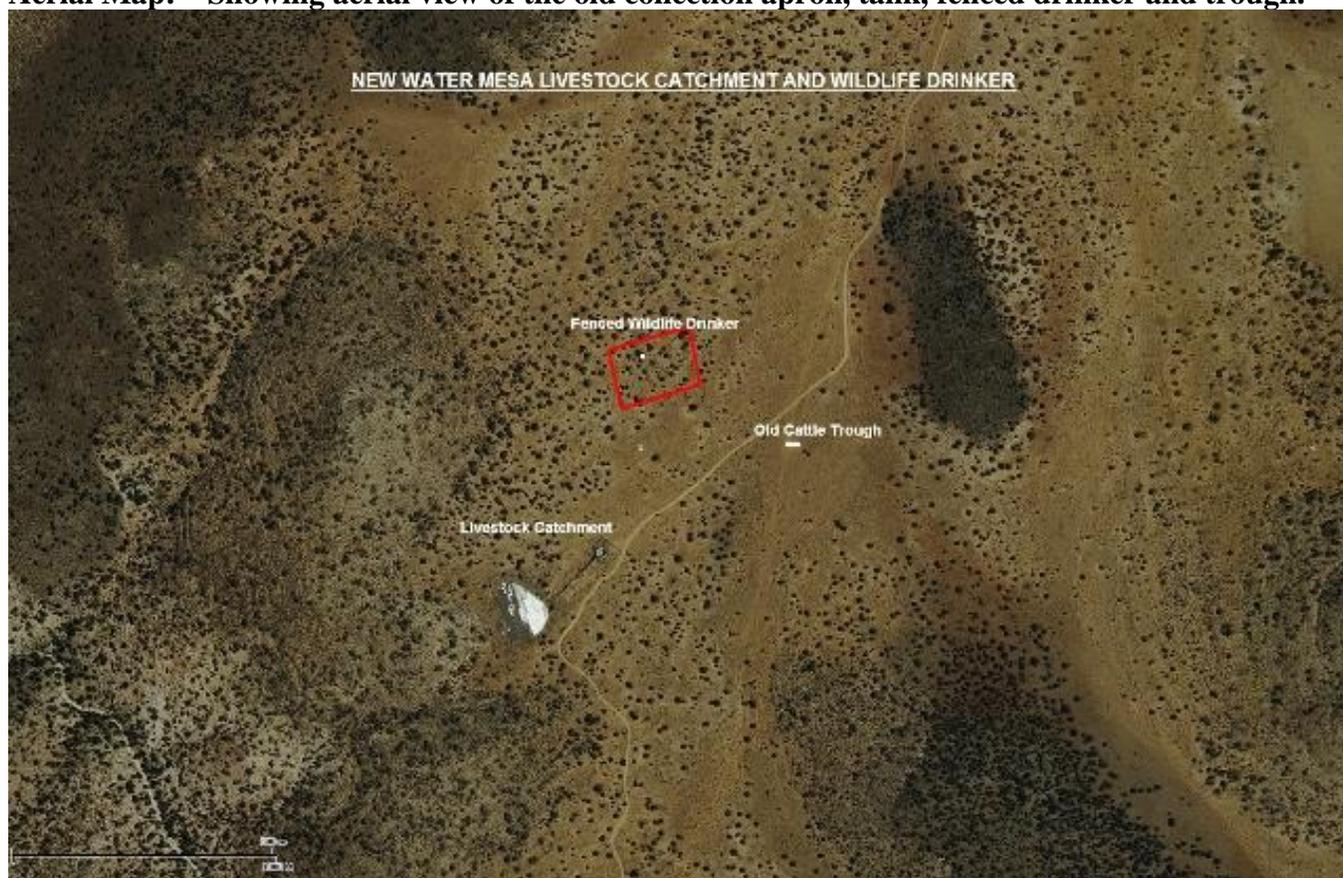


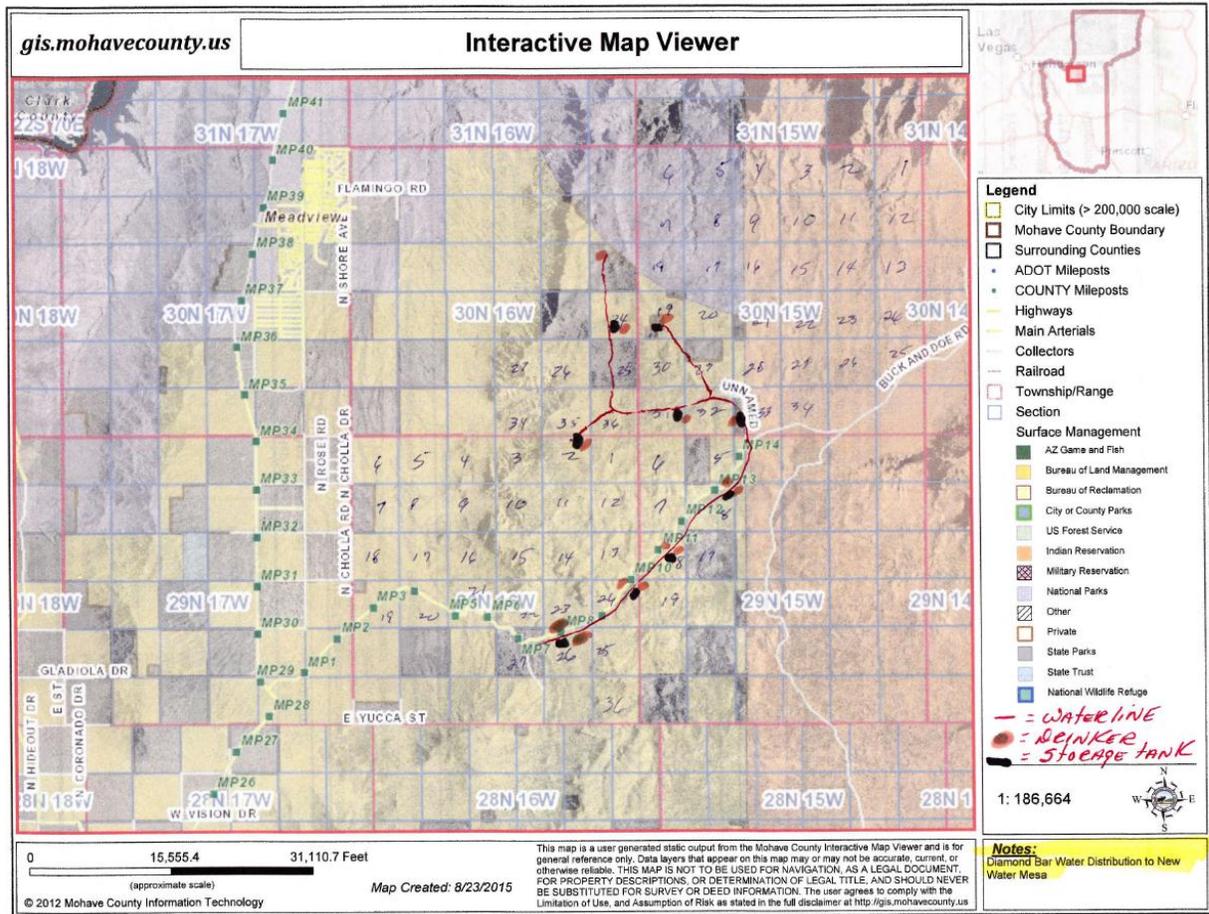
A schematic drawing of the proposed 20,000 gallon COOP Wildlife/Livestock water development.



**Topography Map:** Showing land ownership of project site (shown with red dot).

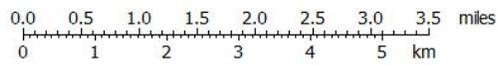
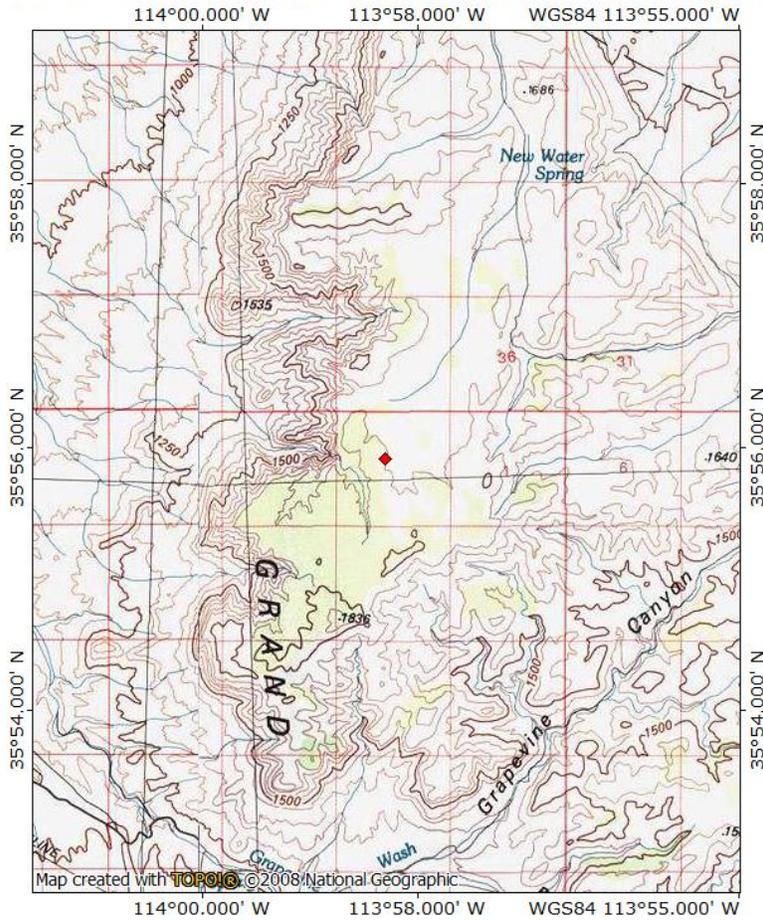
**Aerial Map:** Showing aerial view of the old collection apron, tank, fenced drinker and trough.





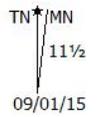
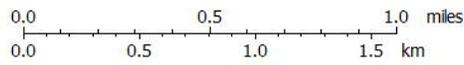
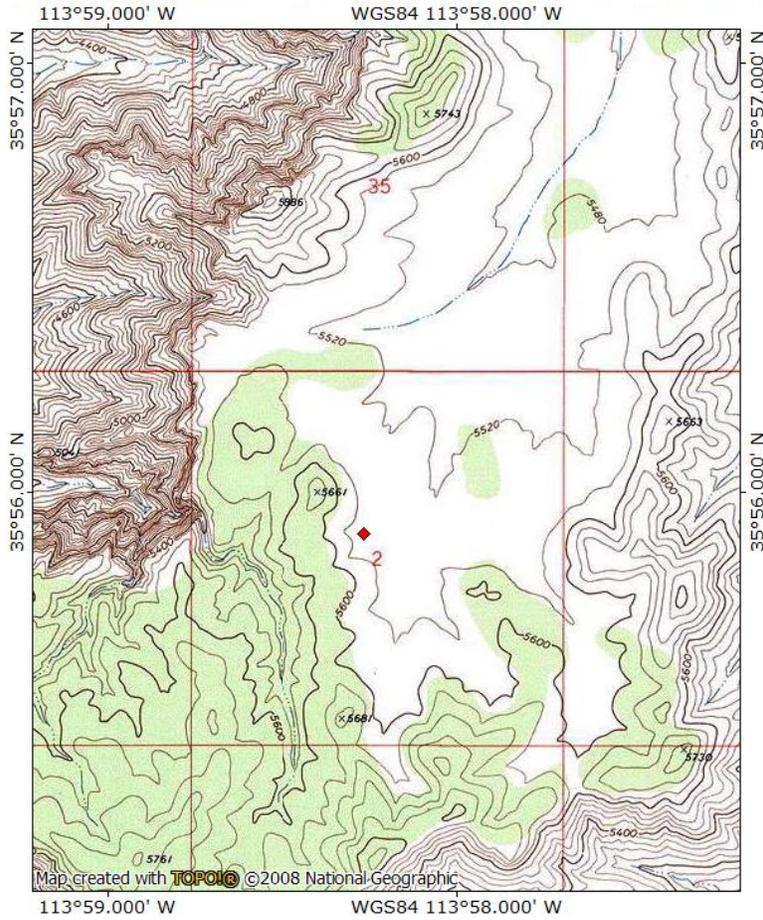
Mohave County Allotment map with marked distribution sites for the proposed Diamond Bar allotment water plan.

Diamond Bar New Water Mesa Wildlife/Livestock Catchment 09/01/15 35°55.893' N, 113°58.290' W WGS84



TN MN  
11½  
09/01/15

Diamond Bar New Water Mesa Wildlife/Livestock Catchment 09/01/15 35°56.074' N, 113°58.203' W WGS84

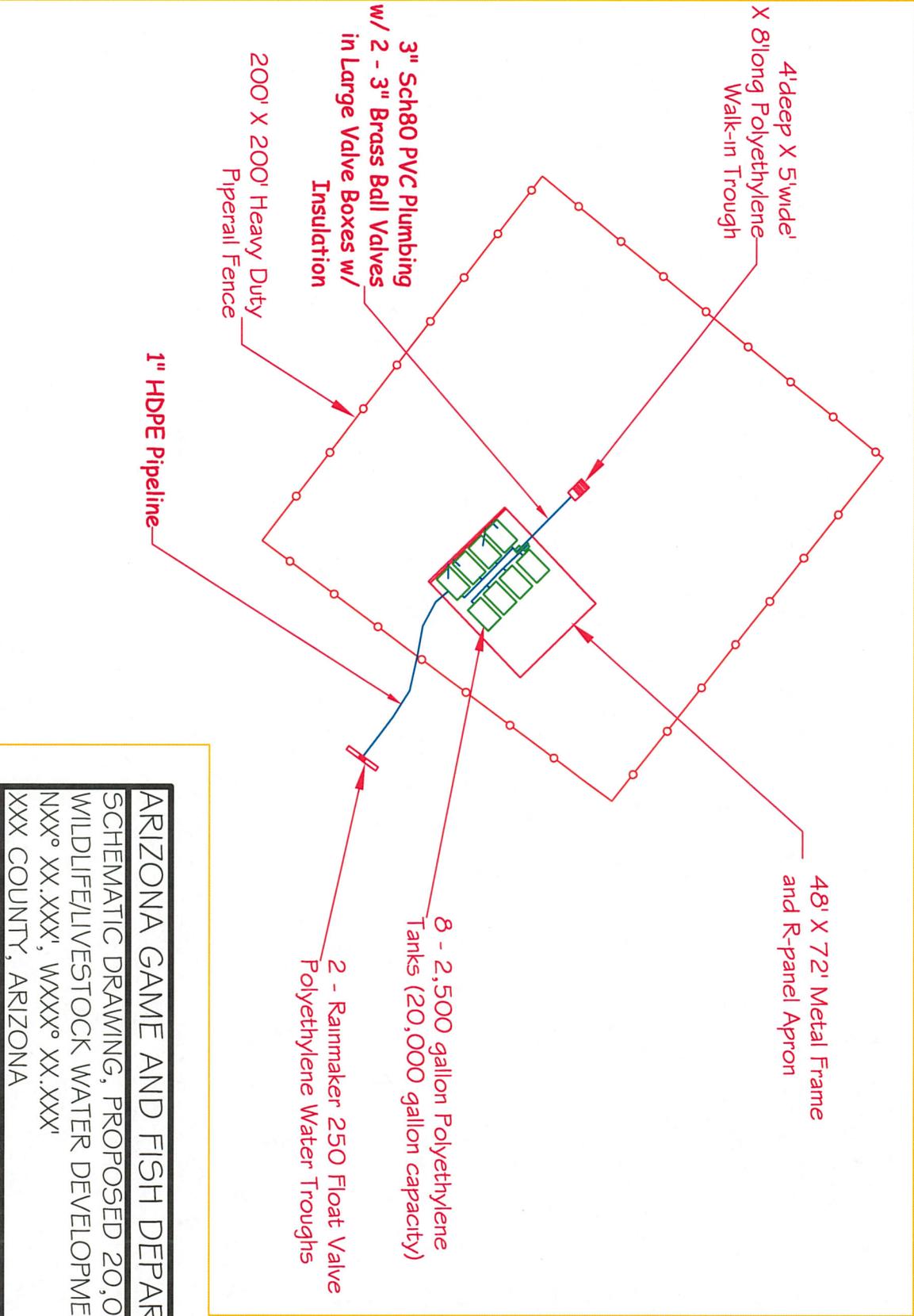


## **ARIZONA GAME AND FISH DEPARTMENT WATER DEVELOPMENT WORKSHEET**

**PROJECT TITLE:** New Water Mesa Livestock Catchment and Wildlife Drinker

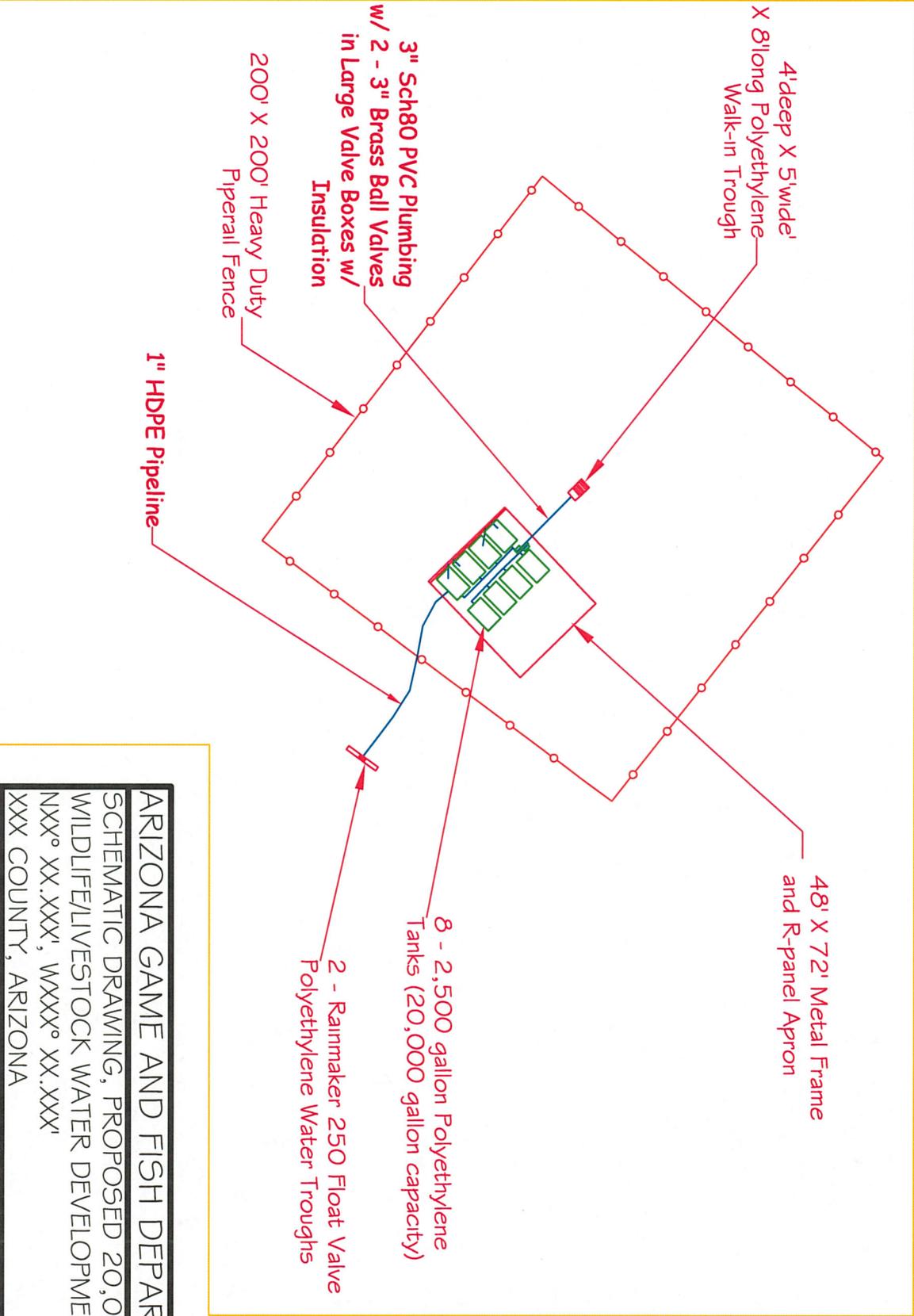
- 1) **Is the water development listed as a priority in the most recent “Wildlife Water Development Annual Implementation Schedule?”**  
Regional priority for Mule Deer and Antelope water on New Water Mesa.
- 2) **Please list the Development Branch personnel and date coordinated with for this project.**  
Joe Currie, AZGFD, SSDV Development Branch/Region III Field Trip 5/12/15
- 3) **What is the estimated annual inches of precipitation for the area? (mark one)**  
2-4   4-6   6-8   8-10   10-12   12-14   14-16    >16
- 4) **Is there a perennial water source available to big game within four miles of this project?**  
YES (please complete #5 below) NO (skip #5 below)
- 5) **For the accessible, perennial water source nearest this project:**  
Name of water source: New Water Spring (low flow) & Music Mountain #6 Wildlife Water  
Type of water source (catchment, spring, dirt tank): Spring & Catchment  
Ownership of water source: Spring is on Private Property & Catchment is on BLM Property  
Distance in miles from project: Spring is approx. 3 miles & Catchment is approx. 1.5 miles
- 6) **Is the target wildlife species a result of transplant efforts?** YES NO
- 7) **Please list any special land management status for the project site (i.e. Wilderness, National Park, National Monument). If private land, list landowner.**  
Land Ownership is BLM.
- 8) **Please provide the following information about access to the proposed site:**  
Type of access (mark one): 2x4 vehicles   4x4 only   foot only\*\*  
4X4 recommended.  
\*\*If foot access only: Distance in miles: \_\_\_\_\_ Approximate hiking time: \_\_\_\_\_  
  
-- Does access to this site require crossing private or tribal lands? YES NO  
Access crosses a small private land section.  
-- Please describe any restrictions to public access:  
There are no restrictions to public access on this project. Land ownership has a sign in box and does not limit access to the public.
- 9) **Please list below (or on a separate sheet) the material type and dimensions of each component proposed to be added, modified, or repaired.**
- 10) **Was a site visit completed?** Yes No  
If Yes, please list personnel that attended and date.

A field visit to the Diamond Bar Allotment was conducted on May 12, 2015 to evaluate potential and existing wildlife and range improvements. BLM representatives: Don McClure, Rebecca Peck, and Jesse Schreiner; AGFD representatives: Brandon Carley, Joe Currie, Tobbie McMillian; Ranch representatives: Emmet Sturgill, Lori Sturgill (Warring), and Huck Sandsness.



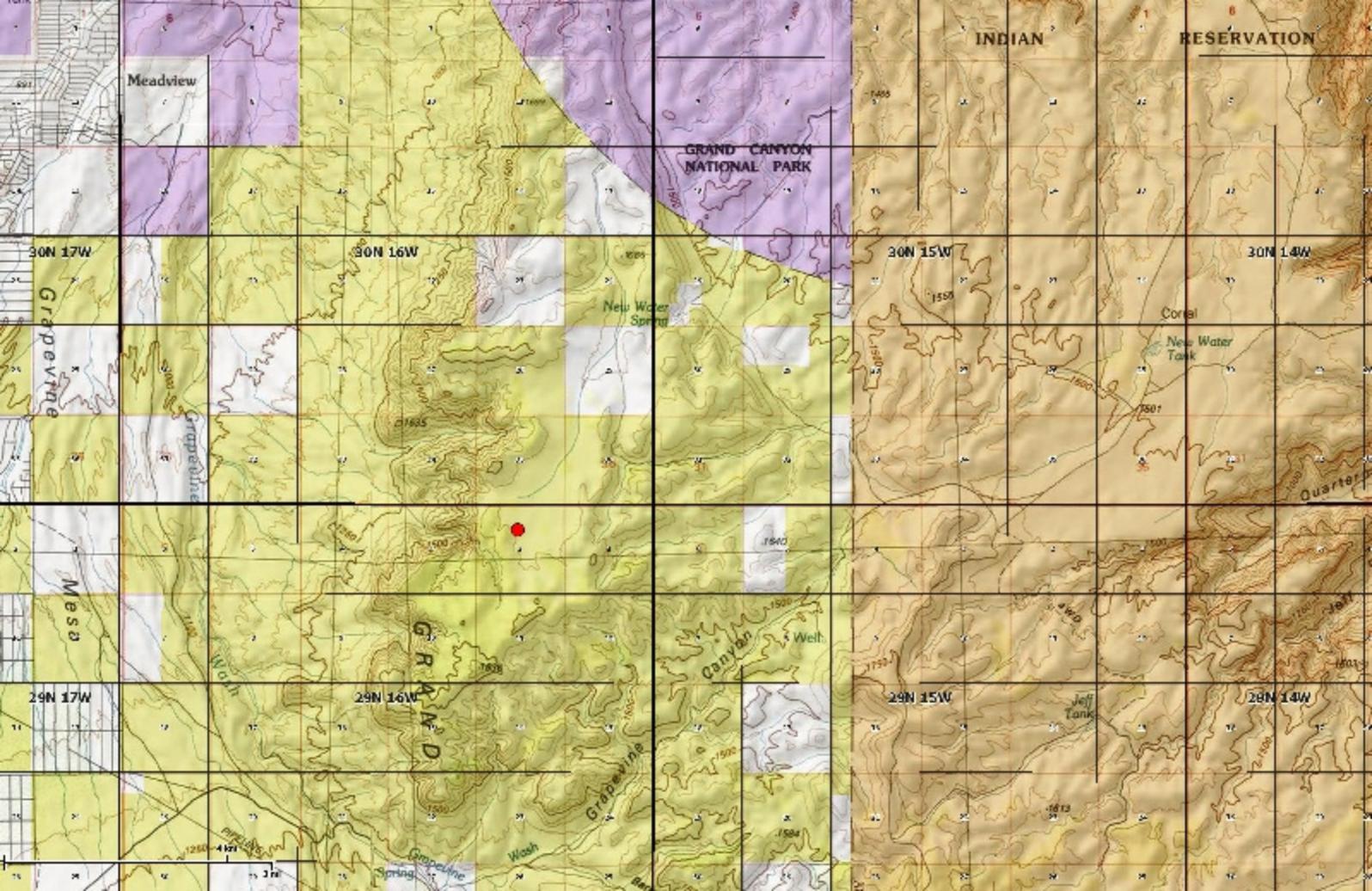
ARIZONA GAME AND FISH DEPARTMENT  
 SCHEMATIC DRAWING, PROPOSED 20,000 GAL  
 WILDLIFE/LIVESTOCK WATER DEVELOPMENT  
 NXX° XX.XXX', WXXX° XX.XXX'  
 XXX COUNTY, ARIZONA

SCALE	BY:	DATE:	REV
	J. CURRIE	05 AUG 2015	
			SHEET



ARIZONA GAME AND FISH DEPARTMENT  
 SCHEMATIC DRAWING, PROPOSED 20,000 GAL  
 WILDLIFE/LIVESTOCK WATER DEVELOPMENT  
 NXX° XX.XXX', WXXX° XX.XXX'  
 XXX COUNTY, ARIZONA

SIZE	BY:	DATE:	REV
	J. CURRIE	05 AUG 2015	
SCALE	SHEET		



INDIAN

RESERVATION

Meadview

GRAND CANYON  
NATIONAL PARK

30N 17W

30N 16W

30N 15W

30N 14W

Grapevine

Grapevine

New Water Springs

Corral

New Water Tank

Quarter

Mesa

GRAND CANYON

Canyon

29N 17W

29N 16W

29N 15W

28N 14W

Grapevine

Well

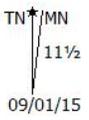
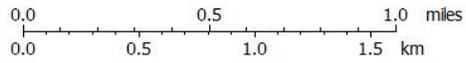
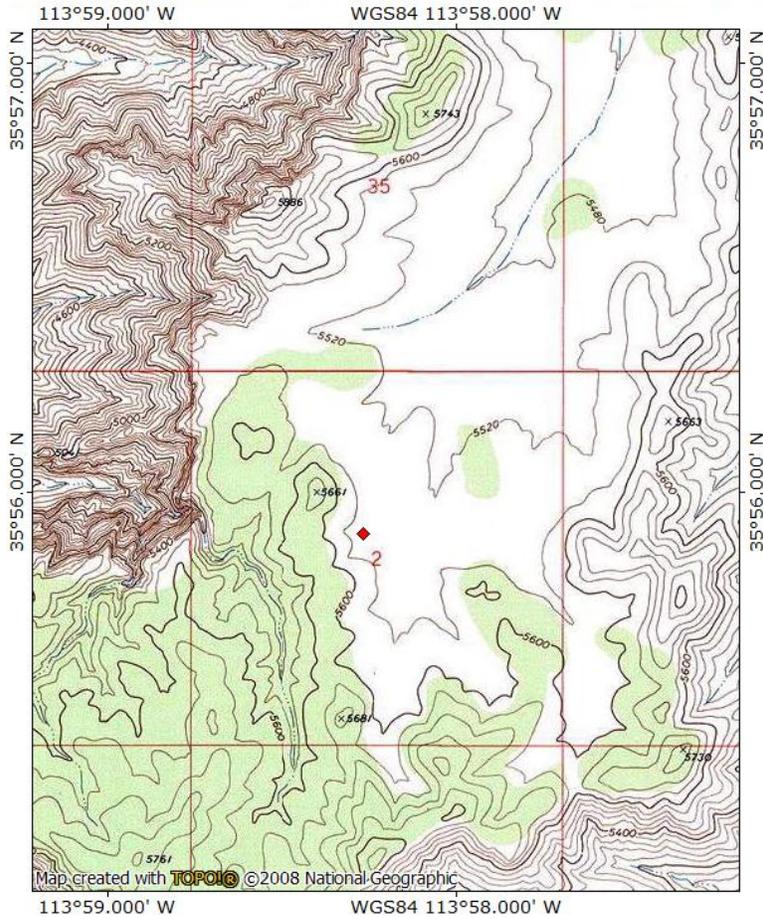
Jeff Tank

Grapevine Spring

Wash

Bar

Diamond Bar New Water Mesa Wildlife/Livestock Catchment 09/01/15 35°56.074' N, 113°58.203' W WGS84



Diamond Bar New Water Mesa Wildlife/Livestock Catchment 09/01/15 35°55.893' N, 113°58.290' W WGS84

