



**BOARD OF SUPERVISORS AGENDA ITEM REPORT**

**Requested Board Meeting Date:** September 5, 2017

**Title:** Approval of a Riparian Habitat Mitigation In-Lieu Fee Proposal Located at 13990 North Lago Del Oro Parkway within Important Riparian Area with Underlying Xeroriparian Class B Habitat (District 1)

**Introduction/Background:**

Chapter 16.30 of the Pima County Floodplain Management Ordinance No. 2010-FC5 (Ordinance) requires mitigation when cumulative disturbance of more than 1/3 acre of mapped riparian habitat occurs. If a project site contains suitable area(s) for mitigation, restoration, or enhancement, then on-site mitigation is required in accordance with the adopted Regulated Riparian Habitat Mitigation Standards and Implementation Guidelines. The Ordinance contains a provision for mitigation banking when on-site mitigation is not feasible. All off-site mitigation proposals require Flood Control District Board of Directors (Board) review and approval.

**Discussion:**

Pima Pistol Club (PPC) is a member only commercial establishment that is applying for a floodplain use permit to construct an archery range within a FEMA Flood Hazard Zone (Zone AE) located at 13990 North Lado Del Oro Parkway. The property and the proposed archery range are located within Regulated Riparian Habitat (RRH) classified as Important Riparian Area with Underlying Xeroriparian Class B Habitat. PPC hired Greg Shinn, with GRS Landscape Architects, LLC, to prepare a Riparian Habitat Mitigation Plan. PPC is proposing to contribute a fee of \$4,180.72 in-lieu of on-site mitigation.

**Conclusion:**

Acceptance of mitigation banking funds in-lieu of on-site mitigation is allowed under the Ordinance. Contributions to the mitigation bank for disturbance of this habitat will provide funds to be used toward purchase of high value resources or towards restoration of degraded riparian habitat within Pima County.

**Recommendation:**

The ILF proposal presented conforms with the Ordinance and, as such, the District recommends approval.

**Fiscal Impact:**

\$4,180.72

**Board of Supervisor District:**

1       2       3       4       5       All

Department: Regional Flood Control District Telephone: 724-4600

Contact: Suzanne Shields, P.E. Telephone: 724-4600

Department Director Signature/Date:  8/10/17

Deputy County Administrator Signature/Date:  8/11/17

County Administrator Signature/Date:  8/11/17

**DATE:** August 8, 2017

**TO:** Flood Control District Board of Directors

**FROM:** Suzanne Shields, P.E.  
Director



**SUBJECT: Approval of a Riparian Habitat Mitigation In-Lieu Fee Proposal Located at 13990 North Lago Del Oro Parkway within Important Riparian Area with Underlying Xeroriparian Class B Habitat (District 1)**

### **Background**

Chapter 16.30 of the Pima County Floodplain Management Ordinance No. 2010-FC5 (Ordinance) requires mitigation for mapped riparian habitat disturbances greater than 1/3 acre. If a project site contains suitable area(s) for riparian restoration, enhancement, or establishment, onsite mitigation occurs in accordance with the adopted *Regulated Riparian Habitat Mitigation Standards and Implementation Guidelines*. The Ordinance contains a provision for mitigation banking, when on-site mitigation is not feasible. All offsite mitigation proposals require Flood Control District Board of Directors (Board) review and approval.

### **Report**

Pima Pistol Club (PPC) is a member only commercial establishment that is applying for a floodplain use permit to construct an archery range within a FEMA Flood Hazard Zone (Zone AE) located at 13990 North Lago Del Oro Parkway (Exhibit A). The property and the proposed archery range are located within Regulated Riparian Habitat (RRH) classified as Important Riparian Area with Underlying Xeroriparian Class B Habitat (Exhibit B). PPC has made numerous improvements to the property over the past few years and has exceeded the RRH disturbance threshold that requires a submittal of a Riparian Habitat Mitigation Plan (RHMP). Previous mitigation was met through on-site planting.

PPC hired Greg Shinn, with GRS Landscape Architects, LLC, to prepare a RHMP (Exhibit C). As a result of the improvements on the property PPC is running out of space to provide on-site mitigation. Therefore PPC is proposing to contribute a fee, in-lieu of on-site mitigation. Mr. Shinn used previously approved plant quantities from an RHMP to calculate the in-lieu fee. PPC is proposing to contribute a fee of \$4,180.72, based on the cost estimate prepared by Mr. Shinn.

### **Recommendation**

Acceptance of mitigation banking funds in-lieu of onsite mitigation is allowed under the Ordinance. Contributions to the mitigation bank for disturbance of this habitat will provide funds to be used toward purchase of high value resources or towards restoration of degraded riparian habitat within Pima County

### **Attachments:**

Exhibit A – Project Location

Exhibit B – Project Site – Riparian Classification Map

Exhibit C – Mitigation Banking In-lieu Fee Proposal

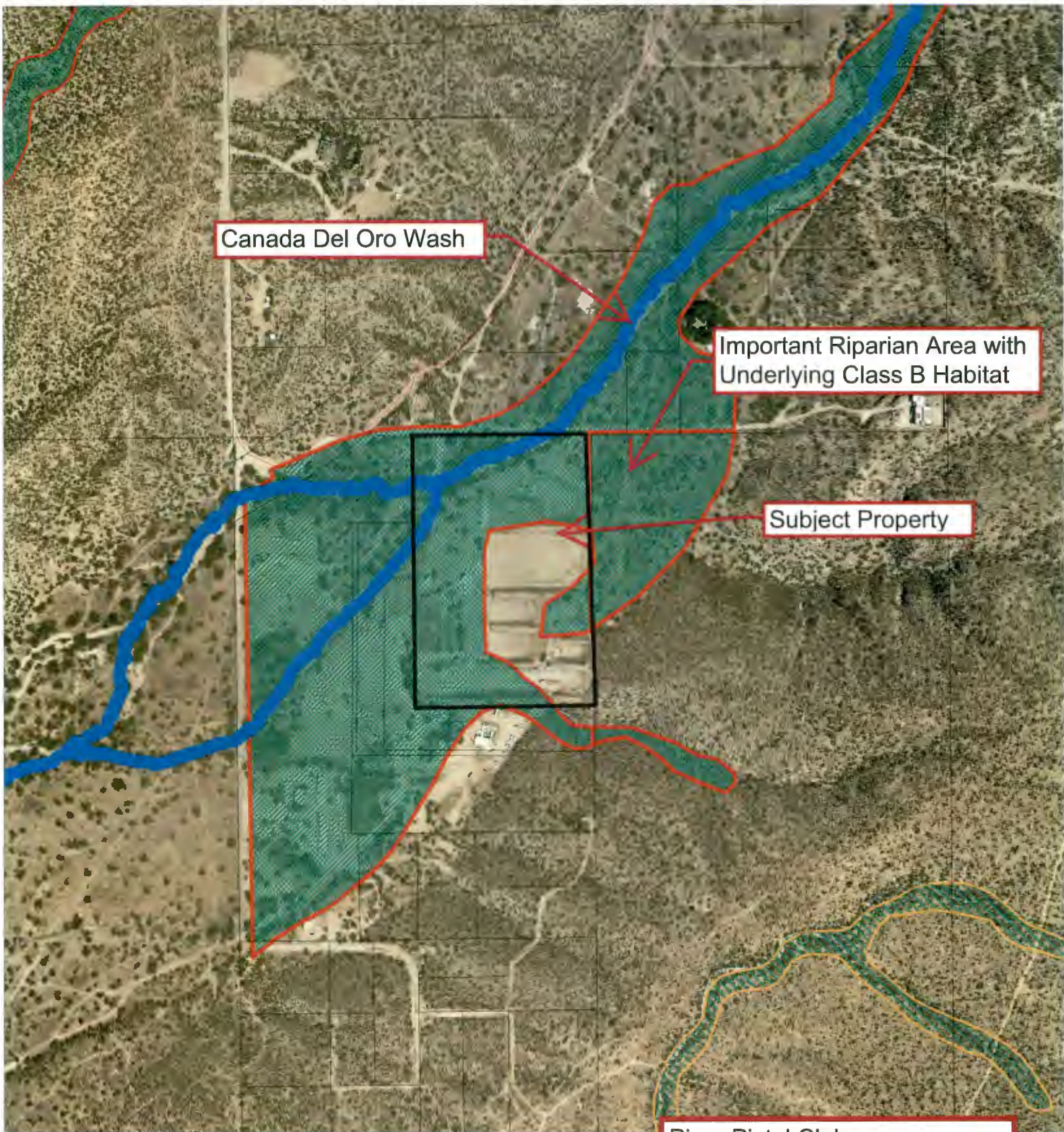
# Exhibit A



Subject Property

Pima Pistol Club  
13990 N. Lago Del Oro PW  
BOS Meeting 9.05.2017

# Exhibit B



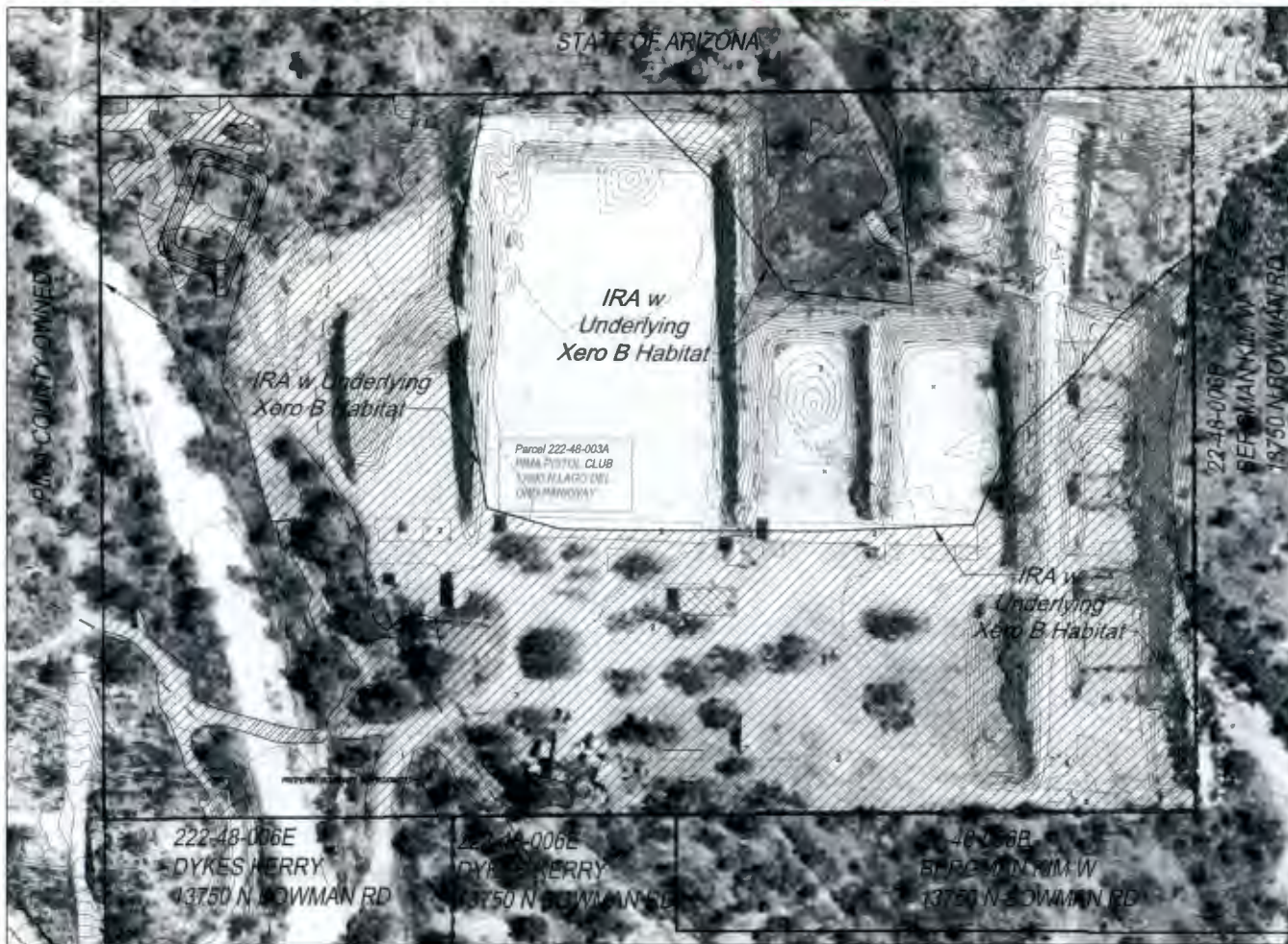
Canada Del Oro Wash

Important Riparian Area with Underlying Class B Habitat

Subject Property

Pima Pistol Club  
13990 N. Lago Del Oro PW  
BOS Meeting 9.05.2017

Exhibit C

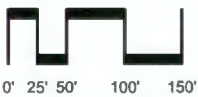


PRE-ORDINANCE DISTURBANCE BASED ON 2000 AERIAL

RIPIARIAN LEGEND

	Important Riparian Area with Underlying Class "B" Xero Riparian Habitat
	Prior Disturbance
	Current Disturbance
	Riparian Mitigation Area

Scale: 1" = 50'



11047 N. Cloud View Place  
Tucson, AZ 85737  
(520) 877-8037

Date: 8/04/17  
Drawn by: LMW  
Checked by: GRS

- Design Review
- Construction Documents
- Agency Submittal
- Construction Set
- Not for Construction

**CALCULATIONS:**

The site contains Important Riparian Area with underlying Xero Riparian Class "B" Habitat	
Total Riparian Mitigation Area Provided on Site	452,750 sf (10.26 acres)
Total Area of Disturbed Riparian Habitat	374,331 sf (8.58 ac)
Prior Ordinance Disturbance	302,053 sf (6.93 ac)
Post-Ordinance Disturbance	72,278 sf (1.66 ac)
Min. Mitigation Area Required = 1.5 x 1.66 x 0.7 =	75,892 sf (1.74 ac)
Total # of Trees Required = 1.5 x 18 x 1.66 =	45 Trees (See Note 1)
Total # of Shrubs Required = 1.5 x 44 x 1.66 =	110 Shrubs (See Note 1)

Total Riparian Mitigation Area Required	75,892 sf (1.74 ac)
Total Riparian Mitigation Area Provided on Site	42,596 sf (0.98 ac)
Total Riparian Mitigation Area Provided by in lieu fee	33,296 sf (0.76 ac)
Total # of Trees Required = 1.5 x 18 x 1.66 =	45 Trees
Total Trees Provided on Site	49 Trees
Total Trees Provided by in lieu fee	0 Trees
Total # of Shrubs Required = 1.5 x 44 x 1.66 =	110 Shrubs
Total Shrubs Provided on Site	60 Shrubs
Total Shrubs Required by in lieu fee	60 Shrubs
Total Hydroseeded Required =	75,892 sf (1.74 ac)
Total Hydroseeded Provided on Site	42,596 sf (0.98 ac)
Total Hydroseeded Provided by in lieu fee	33,296 sf (0.76 ac)

Note 1 - Quantities of trees and shrubs per acre is based on approved quantities from the previously-approved mitigation plan.

PIMA PISTOL CLUB  
CALCULATION OF IN-LIEU FEE

Missing Plant Material

- 30 - 5 gal. Shrubs
- 30 - 1 gal. Shrubs
- 33,296 - SF Native Seed

Cost Calculation

30 - 5 gal. Shrubs - \$ 35.00 <sup>1</sup>	1050.00
30 - 1 gal. Shrubs - \$ 10.00 <sup>1</sup>	300.00
33,296 - SF Native Seed - \$ 0.07	2,330.72

Maintenance Cost	500.00
Irrigation Cost - \$ 0.00 <sup>2</sup>	0.00
Water Cost <sup>3</sup>	0.00

**TOTAL IN-LIEU FEE \$ 4,180.72**

Notes

- 1 - These are "wet" costs that include the cost of spaghetti tubing and emitters.
- 2 - Irrigation structure (meter, backflow, irrigation controller, mainline, poly line, valve and pressure regulator) are not affected by the addition of this plant material. No Mainline extension or additional valves are required to irrigate additional plant material. Cost of irrigation is included in "wet" costs of # 1 above.
- 3 - Property is served by a well and does not pay commodity charges for water.

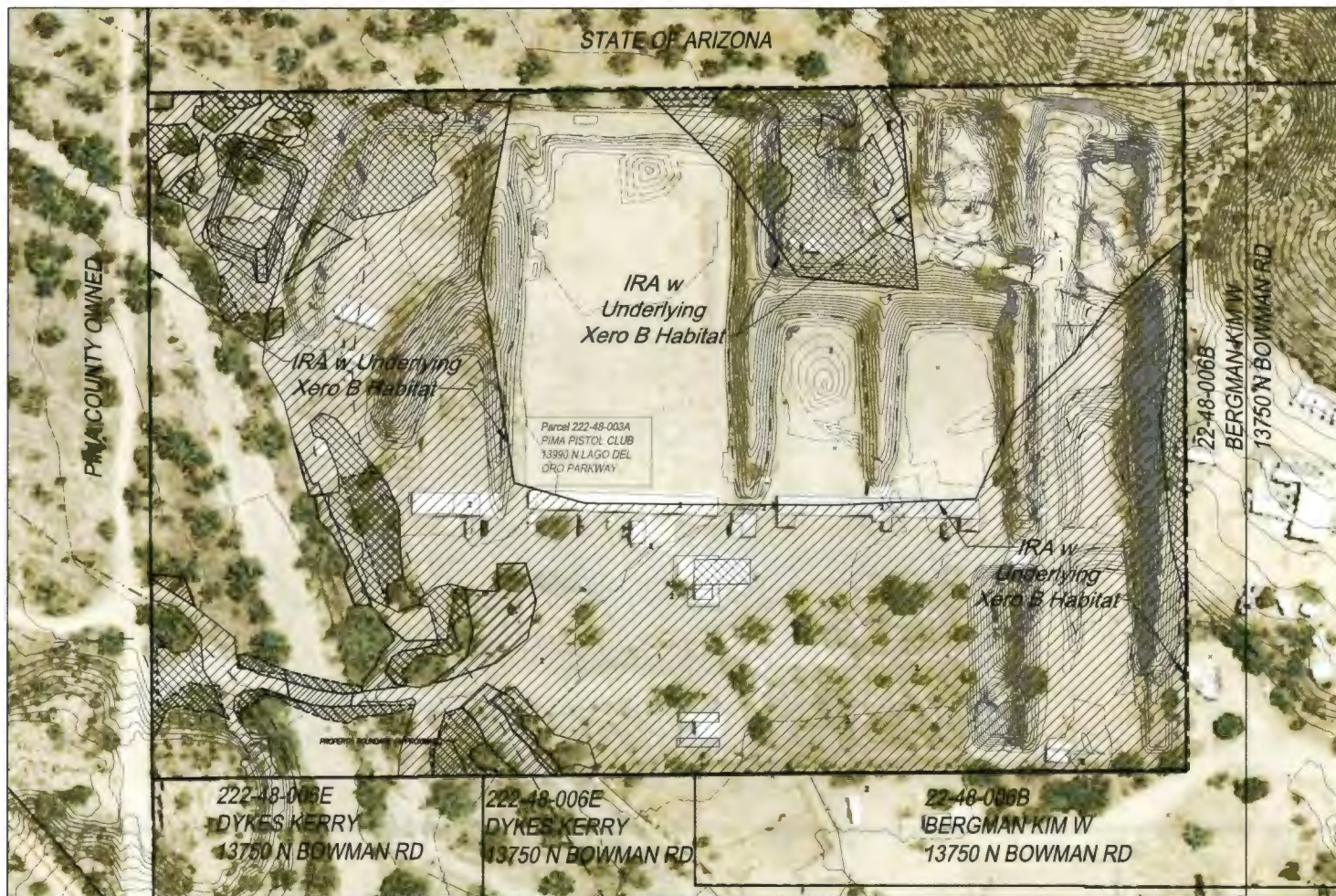
METHODOLOGY

1. This Riparian Habitat Mitigation Plan (RHMP) is meant to resolve all required mitigation on the property, including mitigation shown on previous plans.
2. Pre-Ordinance Disturbance has been mapped and quantified using the 2000 aerial photo.
3. Post Ordinance Disturbance, including areas disturbed after 2000 and areas anticipated to be disturbed as part of the new construction, have been calculated.
4. The required mitigation for the disturbance is calculated using the previously approved mitigation ratios. These were based on field mapping and approved as part of the 2012 RHMP. Because this is an Important Riparian Area, all mitigation requirements were increased by 50%.
5. Two areas are being kept as Mitigation Areas, all remaining mitigation areas shown on the 2012 RHMP are being deleted. These two mitigation areas have significant planted native vegetation in good condition.
5. An Inventory of mitigation currently growing within these two mitigation areas has been included with the submittal.
6. Deficiencies in mitigation (total required mitigation - provided mitigation) are proposed to be satisfied with an In Lieu Fee.
7. The In Lieu Fee has been calculated and provided on this RHMP.
8. The previously approved RHMP prepared by Arroyo Engineering is shown on the last page of this set for reference. This RHMP supersedes the previous RHMP.

**PIMA PISTOL CLUB**  
13990 N DEL LAGO PARKWAY, TUCSON, AZ 85739  
A Portion of the Northwest Quarter of the Southwest Quarter of Section 22, T-11-S, R-14-E, G&SRM, Pima County, AZ

**RIPIARIAN HABITAT MITIGATION PLAN**  
Floodplain Use Permit number: 17-210ERP





sheet 1 of 3



- RIPARIAN MITIGATION NOTES**
1. The Property Owner shall be responsible for maintenance of the required landscape and irrigation system in perpetuity.
  2. Required mitigation as shown on these plans has been installed and is established. No further mitigation reports are required.
  3. The Project Owner, and/or the Owner's successors, agree to preserve and protect the Mitigation Areas in perpetuity.
  4. Mitigation area(s) to be left in a natural state. No disturbance shall occur within the mitigation area(s) without RFCO review and approval. Such disturbance includes but is not limited to secondary impacts such as the presence of livestock, fencing, intensive landscaping, outdoor play areas, etc.
  5. Materials within the sight visibility triangles shall be placed so as not to interfere with a visibility plane described by two horizontal lines located 30 inches and 72 inches above finished grade of the roadway surface.

POST-ORDINANCE DISTURBANCE BASED ON 2016 AERIAL

**RIPARIAN LEGEND**

-  Important Riparian Area with Underlying Class "B" Xeroriparian Habitat
-  Prior Disturbance
-  Current Disturbance
-  Riparian Mitigation Area

Scale: 1" = 50'

0' 25' 50' 100' 150'

North



**GRS**  
LANDSCAPE ARCHITECTS, LLC  
11047 N. Cloud View Place  
Tucson, AZ 85737  
(520) 877-8037

Date: 8/04/17  
 Drawn by: LMW  
 Checked by: GRS  
 Design Review  
 Construction Documents  
 Agency Submittal  
 Construction Set  
 Not for Construction

**PIMA PISTOL CLUB**  
 13950 N DEL LAGO PARKWAY, TUCSON, AZ 85739  
 A Portion of the Northwest Quarter of the Southwest Quarter of Section 22, T-11-S, R-14-E, G&SRM, Pima County, AZ  
**RIPARIAN HABITAT MITIGATION PLAN**  
 Floodplain Use Permit number: 17-210ERP  
 sheet 2 of 3



PHOTO #1







PHOTO #2



PHOTO #3

**RIPARIAN LEGEND**

-  Important Riparian Area with Underlying Class "B" Xerophilous Habitat
-  Prior Disturbance
-  Current Disturbance
-  Riparian Mitigation Area



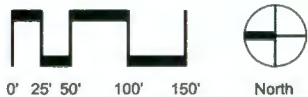
**PLANT INVENTORY**

ID NO.	DESCRIPTION		
2	Prosopis velutina - Native Mesquite	66	Rhus crata - Sugar Bush
3	Cercidium microphyllum - Palo Verde	67	Cercidium floridum - Blue Palo Verde
4	Cercidium microphyllum - Palo Verde	68	Atriplex canescens - Saltbush
5	Cercidium floridum - Blue Palo Verde	70	Prosopis velutina - Native Mesquite
6	Cercidium microphyllum - Palo Verde	71	Cercidium floridum - Blue Palo Verde
7	Prosopis velutina - Native Mesquite	72	Encarnenia lanifolia - Turpentine Bush
8	Cercidium microphyllum - Palo Verde	73	Non-Native Species
9	Prosopis velutina - Native Mesquite	74	Encelia farinosa - Brittle Bush
10	Prosopis velutina - Native Mesquite	75	Encelia farinosa - Brittle Bush
11	Cercidium microphyllum - Palo Verde	76	Encarnenia lanifolia - Turpentine Bush
12	Cercidium microphyllum - Palo Verde	77	Prosopis velutina - Native Mesquite
13	Prosopis velutina - Native Mesquite	78	Encelia farinosa - Brittle Bush
14	Cercidium microphyllum - Palo Verde	79	Encelia farinosa - Brittle Bush
15	Cercidium microphyllum - Palo Verde	80	Encelia farinosa - Brittle Bush
16	Cercidium microphyllum - Palo Verde	81	Cercidium microphyllum - Palo Verde
17	Prosopis velutina - Native Mesquite	82	Atriplex canescens - Saltbush
18	Prosopis velutina - Native Mesquite	83	Rhus crata - Sugar Bush
19	Chilopsis linearis - Desert Willow	84	Prosopis velutina - Native Mesquite
20	Chilopsis linearis - Desert Willow	85	Cercidium microphyllum - Palo Verde
21	Chilopsis linearis - Desert Willow	86	Encelia farinosa - Brittle Bush
22	Ziziphus obtusifolia - Greynom	87	Encelia farinosa - Brittle Bush
23	Prosopis velutina - Native Mesquite	88	Encelia farinosa - Brittle Bush
24	Prosopis velutina - Native Mesquite	89	Atriplex canescens - Saltbush
25	Ziziphus obtusifolia - Greynom	90	Encelia farinosa - Brittle Bush
26	Cercidium microphyllum - Palo Verde	91	Encelia farinosa - Brittle Bush
27	Cercidium microphyllum - Palo Verde	92	Encelia farinosa - Brittle Bush
28	Prosopis velutina - Native Mesquite	93	Encelia farinosa - Brittle Bush
29	Cercidium floridum - Blue Palo Verde	94	Prosopis velutina - Native Mesquite
30	Cercidium microphyllum - Palo Verde	95	Prosopis velutina - Native Mesquite
31	Prosopis velutina - Native Mesquite	96	Prosopis velutina - Native Mesquite
32	Non-Native Species	97	Non-Native Species
33	Encarnenia lanifolia - Turpentine Bush	98	Encelia farinosa - Brittle Bush
34	Encarnenia lanifolia - Turpentine Bush	99	Encelia farinosa - Brittle Bush
35	Encarnenia lanifolia - Turpentine Bush	100	Encelia farinosa - Brittle Bush
36	Encarnenia lanifolia - Turpentine Bush	101	Prosopis velutina - Native Mesquite
37	Encarnenia lanifolia - Turpentine Bush	102	Prosopis velutina - Native Mesquite
38	Baccharis sarothroides - Desert Broom	103	Non-Native Species
39	Baccharis sarothroides - Desert Broom	104	Ononis hemis - Ironwood
40	Baccharis sarothroides - Desert Broom	105	Prosopis velutina - Native Mesquite
41	Baccharis sarothroides - Desert Broom	106	Celtis pallida - Hackberry
42	Baccharis sarothroides - Desert Broom	107	Encelia farinosa - Brittle Bush
43	Baccharis sarothroides - Desert Broom	108	Prosopis velutina - Native Mesquite
44	Baccharis sarothroides - Desert Broom	109	Encelia farinosa - Brittle Bush
45	Baccharis sarothroides - Desert Broom	110	Celtis pallida - Hackberry
46	Ziziphus obtusifolia - Greynom		
47	Prosopis velutina - Native Mesquite		
48	Baccharis sarothroides - Desert Broom		
49	Lynxium thornberi - Feather Bush		
50	Non-Native Species		
51	Prosopis velutina - Native Mesquite		
52	Prosopis velutina - Native Mesquite		
53	Baccharis sarothroides - Desert Broom		
54	Baccharis sarothroides - Desert Broom		
55	Non-Native Species		
56	Non-Native Species		
57	Cercidium microphyllum - Palo Verde		
58	Non-Native Species		
59	Non-Native Species		
60	Baccharis sarothroides - Desert Broom		
61	Non-Native Species		
62	Encarnenia lanifolia - Turpentine Bush		
63	Rhus crata - Sugar Bush		
64	Cercidium microphyllum - Palo Verde		
65	Prosopis velutina - Native Mesquite		

**MITIGATION AREAS**

THE PREVIOUSLY APPROVED RHMP PREPARED BY ARROYO ENGINEERING IS SHOWN ON THE NEXT PAGE FOR REFERENCE. THIS RHMP SUPERSEDES THE PREVIOUS RHMP.

Scale: 1" = 50'



11047 N. Cloud View Place  
Tucson, AZ 85737  
(520) 877-8037

Date: 8/04/17  
Drawn by: LMW  
Checked by: GRS

- Design Review
- Construction Documents
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**PIMA PISTOL CLUB**  
1399N N DEL LAGO PARKWAY, TUCSON, AZ 85739  
A Portion of the Northwest Quarter of the Southwest Quarter of Section 22, T-11-S, R-14-E, G&SRM, Pima County, AZ  
**RIPARIAN HABITAT MITIGATION PLAN**  
Floodplain Use Permit number: 17-210ERP

**LEGEND**

EXISTING CONTOURS (INTERVAL = 10 FT)  
 PROPERTY BOUNDARY (APPROXIMATE)  
 100 YEAR FLOODPLAIN (FEMA WORKMAP)  
 LIMITS OF GRADING  
 PHOTO MONITORING LOCATION, DIRECTION AND NUMBER  
 RIPARIAN LIMITS  
 IMPORTANT RIPARIAN AREA WITH UNDERLYING XERORIPARIAN CLASS B HABITAT (RA/2B)  
 DISTURBANCE OCCURRING PRIOR TO THE RCN EFFECTIVE DATE (AUG. 1988)  
 DISTURBANCE OCCURRING AFTER THE RCN EFFECTIVE DATE (INCLUDING PROPOSED)  
 MITIGATION AREAS  
 RCN = RIPARIAN CLASSIFICATION MAP



A portion of this project has been approved by the Maricopa County Department of Environmental Services under the approval of the following: *[Signature]*

**CALCULATIONS:**

THIS SITE CONTAINS RA/2B HABITAT  
 TOTAL REGULATED RIPARIAN HABITAT (RH) ONEY = 10.4 ACRES  
 AREA OF RH DISTURBED PRIOR TO ADOPTION OF THE RIPARIAN CLASSIFICATION MAPS (RD) = 5.3 ACRES  
 AREA OF RH RESTORED AFTER ADOPTION OF THE RCN = 1.8 ACRES  
 PERCENT OF TOTAL HARBOR RH RESTORED = 25%  
 AREA OF MITIGATION = 1.8 ACRES X 1.5 = 2.7 ACRES  
 MINIMUM MITIGATION AREA REQUIRED = 2.4 ACRES X 0.7 = 1.7 ACRES  
 ACTUAL MITIGATION AREA (PROVIDE BY DIFFERENCE FROM ADOPTED MITIGATION AREA) = 1.7 ACRES  
 \*TOTAL # OF TREES REQUIRED = 20 TREES REMOVED X 1.3 = 44 TREES  
 \*TOTAL # OF SHRUBS REQUIRED = 44 SHRUBS/ACRE X 2.4 ACRES = 106 SHRUBS  
 QUANTITY OF TREES AND SHRUBS DETERMINED BY AN ON-SITE PLANT SURVEY

MITIGATION AREAS:  
 AREA 1 = 0.36 ACRES = 8 TREES, 22 SHRUBS  
 AREA 2 = 1.32 ACRES = 34 TREES, 82 SHRUBS  
 AREA 3 = 0.12 ACRES = 1 TREE, 2 SHRUBS

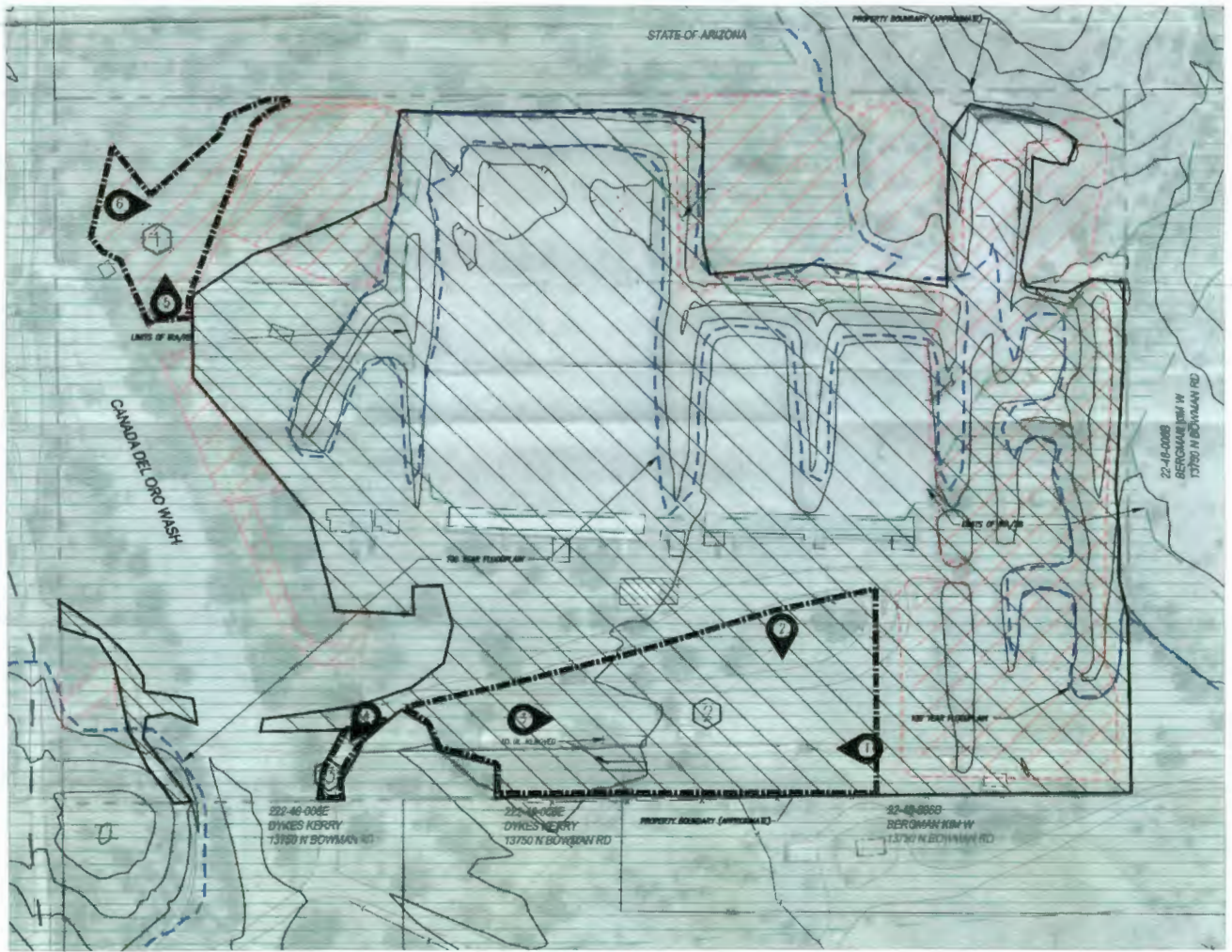
ALL MITIGATION AREAS SHALL BE SEEDED WITH APPROVED SEED MIX. CORRECT SEEDING RATE (LBS./ACRE) SHALL BE DETERMINED WHEN SEED IS PURCHASED FROM VENDOR AND INCLUDED IN 1ST ANNUAL MONITORING REPORT. APPROVED SEED MIX:  
 ZIZIPHUS WINGED/GRASS/STRAW  
 ERIOCHLOA FASCICULATA/FLAT-TOP BUCKWHEAT  
 ISODIA TORRESCENTIA/SHRUBS  
 STERNA HIRVOLA YAC. GLABRATA/SLIPPOD SONIA  
 PROSOPIA PARVIFLORA/ACIN.  
 SPARGANZA CALICATA/SLICE MALLOW  
 SALINA COLUMBICATA  
 CLEMATIS DRUMMONDI/FRUIT BOWEN  
 LEPTOCLEA SUBULATA/FRUIT/LEAF  
 HALIMOLOBOS PORTERIANA/WEED  
 SETARIA MACROSTACHYA/PLAINS BROTHCRASS  
 SPOROBOLUS CRISTATUS/SHAD BROOMFIELD

**GENERAL NOTES:**

1. MITIGATION AREA(S) TO BE LEFT IN A NATURAL STATE. NO DISTURBANCE SHALL OCCUR WITHIN THE MITIGATION AREA(S) WITHOUT FIELD REVIEW AND APPROVAL. SUCH DISTURBANCE INCLUDES BUT IS NOT LIMITED TO SECONDARY IMPACTS SUCH AS THE PRESENCE OF LIME/STOCK, FENCING, INTERFERE, LANDSCAPING, OUTDOOR PLAY AREAS, ETC.
2. MITIGATED AREA WILL BE HAND-BROADCAST SEEDED WITH A MINIMUM OF 12 SPECIES FROM THE APPROVED XERORIPARIAN PLANT LIST FOUND IN APPENDIX B OF THE REGULATED RIPARIAN HABITAT MITIGATION AND IMPLEMENTATION GUIDELINES. IF PLANT SPECIES LISTED ON THE MITIGATION PLAN ARE UNAVAILABLE, REPLACEMENT SPECIES FROM THE APPROVED PLANT LIST MAY BE SELECTED BASED UPON AVAILABILITY OF THE 12 SPECIES. 4 SHALL BE SHRUBS, 4 SHALL BE ANNUALS/PERENNIALS/PALMS, AND 4 SHALL BE GRASSES.
3. MITIGATION PLANTINGS WILL BE MIXED USING DRIP IRRIGATION.
4. ONCE PLANTS HAVE ESTABLISHED, SUPPLEMENTAL IRRIGATION WILL BE DECREASED IN ACCORDANCE WITH APPENDIX C OF THE GUIDELINES.
5. RIPARIAN HABITAT MITIGATION PLAN IMPLEMENTATION SHALL BE COMPLETED BY THE FIRST GROWING SEASON FOLLOWING COMPLETION OF CONSTRUCTION. WHEN IS PRACTICED TO BE MARCH-MAY. 20% OF ACRES CONSTRUCTION IS COMPLETED.
6. A MONITORING PLAN IN ACCORDANCE WITH THE GUIDELINES, WILL BE SUBMITTED ANNUALLY FOR A PERIOD OF FIVE YEARS FOLLOWING IMPLEMENTATION OF THE RIPARIAN HABITAT MITIGATION PLAN (RAMP). ANY CHANGES FROM THE APPROVED RAMP SHALL BE NOTICED ON THE MONITORING PLAN SUBMITTAL. LABEL SUBMITTALS REPORT FOR FRAP NO. 11-66RP (PLACEMENT OF FILL). SEND THE FIVE (5) ANNUAL SUBMITTALS TO THE FOLLOWING ADDRESS:  
 PIMA COUNTY REGIONAL FLOOD CONTROL DISTRICT  
 ATTN: WILSON RESOURCES DIVISION STAFF  
 67 E. COMMERCE STREET, 3RD FLOOR  
 TUCSON, AZ 85701
7. THE PROJECT OWNER AND/OR THE OWNER'S SUCCESSORS, AGREE TO PRESERVE AND PROTECT THE MITIGATION AREA FOR THE DURATION OF THE PROJECT. FURTHER, THE PROJECT OWNER AND/OR THEIR SUCCESSORS AGREE TO ACTIVELY MAINTAIN THE MITIGATED AREA FOR A PERIOD OF NOT LESS THAN FIVE YEARS. MAINTENANCE ACTIVITIES SHALL INCLUDE, BUT NOT BE LIMITED TO, THE REGULAR OPERATION OF THE IRRIGATION SYSTEM, THE REPLACEMENT OF DEAD TREES AND SHRUBS, AND THE REMOVAL OF WEEDS AND/OR INVASIVE PLANT SPECIES.
8. 6 INCH DEEP WATER HARVESTING BASINS WILL BE CONSTRUCTED WITHIN THE MITIGATION AREAS AND SHALL BE SEED TO AVOID EXISTING BARE VEGETATION.

**MITIGATION SCHEDULE:**

TREES				
Species	Quantity	Exhibit	Size	
Chilopsis linearis/Desert Willow	10	2	60 % 18 gal./60 % 5 gal.	
Prosopis juliflora/Vineless Mesquite	15	5	50 % 15 gal./50 % 5 gal.	
Parthenocissus bicolor/purple heart	15	15	50 % 15 gal./50 % 5 gal.	
Agave schottlandii/black agave	2	2	50 % 15 gal./50 % 5 gal.	
Callis hololepis/Pinkleaf hackberry	1	1	50 % 15 gal./50 % 5 gal.	
Lycium verticillatum/Purshoe	1	1	50 % 15 gal./50 % 5 gal.	
<b>Total = 44</b>				
SHRUBS				
Species	Quantity	Exhibit	Size	
Ziziphus obtusiloba/Graybar	20		50 % 5 gal./50 % 1 gal.	
Lycium andersonii/Wildberry	20		50 % 5 gal./50 % 1 gal.	
Callis pallidiflorus/hackberry	34	1	50 % 5 gal./50 % 1 gal.	
Sarcococca berlandieri/Burrobrush	20		50 % 5 gal./50 % 1 gal.	
Tidestromia californica	20		50 % 5 gal./50 % 1 gal.	
Ficus ovalis/Cigar cactus	1	1	50 % 5 gal./50 % 1 gal.	
Yucca filifera/California cholla	1	1	50 % 5 gal./50 % 1 gal.	
<b>Total = 100</b>				



PARCEL TAX CODE NO. 222-40-008A  
 OWNER: PIMA PISTOL CLUB  
 PROPERTY ADDRESS: 13850 N LAGO DEL ORO PKW  
 FRAP NO. 11-66RP (PLACEMENT OF FILL)  
 PRIVATE GRADING PLAN NO. P212-300  
 P212/10000

DATE: 10-25-12  
 DESIGNED BY: J.T.  
 DRAWN BY: AD  
 CHECKED BY: J.T.  
 SCALE: 1"=1'-00"  
 C.I. = 10"  
 SHEET NO. 1

APPROVED: [Signature]  
 REVISION: [Signature]  
 NO. [Signature]

ARROYO ENGINEERING, LLC  
 2470 N. GARDEN BLVD. SUITE 200, TUCSON, ARIZONA 85704  
 P. (520) 882-0006, F. (520) 882-8074

RIAPARIAN HABITAT MITIGATION PLAN FOR  
**PIMA PISTOL CLUB**  
 13850 N. LAGO DEL ORO PARKWAY