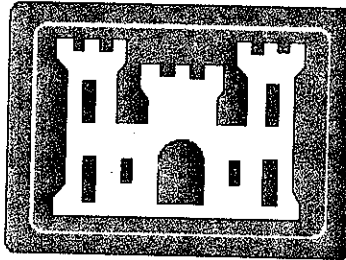


ALBUQUERQUE, NEW MEXICO
HYDROLOGY AND HYDRAULICS REPORT
FUTURE CONDITIONS
WITH PROJECT

SOUTHWEST VALLEY
FLOOD DAMAGE
REDUCTION STUDY
VOLUME III

Prepared For:



U.S. Army Corps of Engineers
Albuquerque District
4101 Jefferson Plaza, NE
Albuquerque, NM 87109-3435

Prepared By:



5501 Jefferson Blvd. NE, Suite 200
Albuquerque, NM 87109
(505) 243-7300
Fax: (505) 243-7400 / e-mail: rti@nm.net

February 2004

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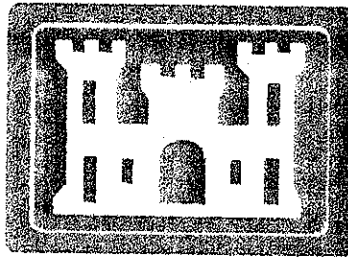
13. UNDER SEPARATE COVER AS:

**“RE-EVALUATION OF
WEST MESA HYDROLOGY
ARENAL CANAL OVERFLOWS
AND ISLETA DRAIN FLOWS”,
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ALBUQUERQUE, NEW MEXICO

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Prepared For:



U.S. Army Corps of Engineers
Albuquerque District
4101 Jefferson Plaza, NE
Albuquerque, NM 87109-3435

Prepared By:



5501 Jefferson Blvd. NE, Suite 200
Albuquerque, NM 87109
(505) 243-7300
Fax: (505) 243-7400 / e-mail: rti@nm.net

June 2002

INTRODUCTION

This study is a continuation of hydrologic and hydraulic analyses of flood problem areas and potential solutions for the Southwest Valley of Albuquerque. The conditions investigated in the current study were developed during discussions with USACE Headquarters. In effect, the Isleta Drain was to be considered as a drainage system with tributary inputs from local areas as well as runoff from the West Mesa.

Also, in order to evaluate where along the Isleta Drain the 10-year flow exceeds 800 cfs and the 100-year flow exceeds 1800 cfs, the peak flow retarding effects of road crossings could be ignored. Therefore, flow accumulations along the drain could be compiled with the assumption that all culvert restrictions were removed.

Because the flow conditions (800/1800cfs) accumulated along Isleta Drain are met near the Bridge Blvd. crossing, the study area only extended to Rio Bravo Blvd. The area south of Rio Bravo was not studied.

In order to accomplish the two analyses described above, the following assumptions were made.

ASSUMPTIONS

1. To determine the locations where the 800/1800 cfs condition is met, all flow restrictions in the Isleta Drain will be removed.
2. As directed by Bernalillo County, future development density on the West Mesa was modeled as 8 d.u./ac.; and 3 d.u./ac. in the valley, unless a plat was already filed, in which case the platted density was assumed for future development in the plat area.
3. Existing drainage improvements on the West Mesa were assumed to be operational but no proposed facilities were included.
4. The area north of I-40 on either side of 98th St. is intended to be diverted east along the north side of I-40. However, the cost of this diversion appears to be prohibitive and the existing condition, where this area drains under I-40 and forms part of the study area was assumed for this study.
5. Overland flow routing on the mesa was not performed; but Muskingum-Cunge routing was performed for flows out of the Arenal Canal to Isleta Drain.
6. Some flows that reach the west side of Arenal Canal are initially confined to small retention ponds against the canal embankment. These retention losses, which do not affect peak flow and only slightly reduce flow volume, were not considered in this analysis.

7. The Arenal Canal flow gage at Central Ave. shows that normal flows in the canal range from 110 cfs to 150 cfs, which is the design flow rate. Therefore, 150 cfs was assumed to be the flow rate when a canal failure would occur.
8. Because the Arenal Canal is a very long canal with its heading at Algodones Canal, approximately 25 miles upstream, efficient wasteways would be required in case of an emergency. Consequently, it was assumed that after a canal failure, agricultural flow would drain from the canal at 150 cfs for 12 hours before it could be safely wasted elsewhere.
9. Because the Arenal Canal does not have adequate reinforcing in its lining and no erosion protection from overflows is provided, it was assumed to fail anyplace an overflow occurred. In most cases this occurs at a culvert crossing because the culvert capacity is 144 cfs (the design flow is 150 cfs), but the canal has freeboard and the capacity to carry more flow without overtopping.
10. The first canal breach occurs at a culvert near Hooper Road north of Bridge Blvd. At this point all agricultural flows are assumed to be lost from the canal. Downstream from this point stormwater inflows enter the canal at various locations; these were accumulated and routed down the canal, using AHYMO with Muskingum-Cunge routing, to a point where the culvert or canal capacity was exceeded. At that point the canal would again fail and the overflow (all of the flow accumulation) would be routed to Isleta Drain.
11. Because AMAFCA has to release all stored stormwater within 96 hours to comply with the Rio Grande Compact requirements as enforced by the N.M. Interstate Streams Commission, the outlet gate on Amole Dam was left open so that controlled releases to the Arenal Canal would occur throughout the modeling period.

WEST MESA HYDROLOGY

Most of the study area on the West Mesa was modeled by Leedshill-Herkenhoff Inc. in 1998 and 1999. This area was divided into 13 modeling basins that all drain to the Amole del Norte Channel system. For prior Southwest Valley analyses, these models had been used as-is, as directed by AMAFCA. The I-40 Diversion area was originally modeled by Bohannon-Huston Inc. This model was adapted by Wilson & Co. and was incorporated by RTI into the L-H models for the mesa area south of I-40.

The 13 sub-basin models on the West Mesa are delineated on Figure 1. They include:

1. Powerline Basin
2. 98th Street Basin
3. Unser Basin
4. Atrisco Business Park Basin
5. Tierra Bayita Basin

6. Snow Vista Basin
7. Sunset Estates Basin
8. Amole del Norte Basin
9. Sacate Blanco Basin
10. Rio Bravo Basin
11. Borrega Basin
12. Westgate Basin
13. Amole Arroyo and Hubbel Lake System

Land treatment percentages for future conditions were assumed at 8 d.u./ac. in undeveloped areas. An impervious land treatment of 72% was utilized within the currently undeveloped area for all of the basins under future conditions.

Based on the Development Process Manual Sec. 22.2, Hydrology, land treatment type for roads and totally commercial areas changed from 80% D to 90%D. An impervious land treatment of 50% was utilized for school areas in all sub-basins.

Where sites are already fully developed, existing condition land treatments are the same as future conditions.

The Atrisco Business Park and Unser Basins were expanded to include the I-40 diversion sub-basins. These sub-basins are located north of I-40 and drain through culverts passing under I-40; they include developed residential and highway right-of-way lands, as well as currently undeveloped properties. Basins numbered 524, 525, 607, 610 and 611, all located along or north of I-40 (see Figure 1), were combined after appropriate routings with the northern sub-basins of the Atrisco Business Park Model.

The Unser Ponds are modeled as detention ponds in this study, but they were modeled as retention ponds in the L-H study; therefore, sub-basins discharging to these ponds are considered as contributing areas in this study. Basins numbered 603, 604 and 605 (see Figure 1) were routed and then combined with the northwest sub-basin of the Unser Basin Model. Land treatment values for the additional areas north of I-40 were modified to 8 dwelling units per acre as the expected future condition for undeveloped areas.

Appendix A and Figure 1, the sub-basin map, show the details of the expansion areas. Also, in Appendix A, the Tierra Bayita and Sunset Estates basins show the two different numbering systems of sub-basins between the L-H AHYMO models and the corresponding map in the L-H report. After some initial confusion these two numbering systems were sorted out and are cross referenced in Appendix A.

The results of AHYMO modeling for the 10-, 25-, 100-, and 500-yr. frequencies are summarized in Tables 1.A and 1.B, for existing and future conditions, and the detailed output is included in Appendix B.

Flows from the Atrisco Business Park Model for the Existing Condition 100-yr. and 500-yr., and all Future Condition storm events were found to exceed the design capacity of the storm

drain pipe in Coors Blvd. that drains into the North-South Coors Pond, at the intersection of Bridge Blvd. and Coors Blvd. Flows in excess of pipe capacity drain southeast across Coors Blvd. to the Arenal Canal and do not reach the pond.

Flows from the North-South Coors Pond for the Existing Condition 500-yr. and all Future Condition storm events were found to exceed the capacity of the outlet pipe to the Amole del Norte Channel. Excess water goes over the emergency spillway to Coors Blvd. and eastward towards the Arenal Canal.

The Amole del Norte channel will overflow at the southern end with 100-yr. and 500-yr. Future Condition flows. These overflows also drain east to the Arenal Canal.

Table 1.C lists these storm drain, spillway and channel overflows.

EDGE OF MESA HYDROLOGY

The edge of mesa area, called the Newly Modeled Mesa Area in previous reports, included the 700 series of sub-basins in the AHYMO models. The area extends from the Amole del Norte channel to the Arenal Main Canal as shown on Figure 2. Land treatments for the 700 series model were modified to 8 dwelling units per acre as the expected future condition for undeveloped areas.

Based on an intensive site inspection, the original sub-basins were further divided into smaller tracts because they would drain to different inflow points along the Arenal Canal. These divisions are also shown on Figure 2. Otherwise, the original sub-basins with updated future condition land use types were used in this study. The newly modeled area results are summarized in Table 2 and the detailed AHYMO output is included in Appendix C.

During the field investigations, all flow paths and contributing drainage areas between Unser Blvd. and Arenal Canal were also identified; and all locations where runoff reaches the canal were identified. Mesa runoff hydrographs were added to local runoff hydrographs with due regard to time distribution of runoff, and time lag due to routing.

FLOW PATHS FOR CANAL OVERFLOWS

The capacity of the Arenal Canal (including freeboard) is 411 cfs within the banks of the channel and 144 cfs at the culvert crossings at the cross roads. When these capacities were exceeded, the culvert headwater depth would rise and if the freeboard depth was exceeded, the canal was assumed to fail. After failure locations along Arenal Canal were identified, as previously described in this report, the potential overland flow paths to the Isleta Drain were field determined and verified on the topographic maps.

Routing across the area between the Arenal Canal and the Isleta Drain is assumed to originate from failure points along the canal and progress in a wide path with shallow depth

on slopes of 0.2 percent or less. Using this approach, all the canal failure flows were routed, using the Muskingum-Cunge method in AHYMO, to the Isleta Drain. The designated flow paths are also shown on Figure 2 together with the corresponding flow rates for each frequency and watershed development condition.

These routed hydrographs were input to the appropriate routing segment in the K-ROUTE model for Isleta Drain, and in some cases, had to be split into two different drain segments because the spread limits of the overland flow extended both upstream and downstream of the street crossing (both sides of the street) which formed the boundary between two drain segments.

ISLETA DRAIN MODELING RESULTS

The AHYMO modeling results from the Arenal Canal overflows and the local valley sub-basins adjacent to Isleta Drain were then accumulated and the hydrographs added, with respect to time, for each segment of the drain.

This operation was first conducted using Program K-ADD without routing (no detention storage behind road crossings of the Isleta Drain because all culvert flow restrictions were removed). The peak values of the accumulated flows as determined in K-ADD were then compared to the flow criteria (800/1800 cfs). Flow accumulations along Isleta Drain without detention ponding are listed in Tables 3.A and 3.B, for Existing and Future Conditions, respectively.

Based on this analysis the locations where flow criteria for federal project initiation are met are as follows:

10-yr., Existing watershed development conditions – 815 cfs at IS-10, Arenal Road.

100-yr., Existing watershed development conditions – 1825 cfs at IS-11, Pajarito Lateral.

10-yr., Future watershed development conditions – 1376 cfs at IS-7, Rosendo Garcia St.

100-yr., Future watershed development conditions – 3750 cfs at IS-7, Rosendo Garcia St.

Away from Isleta Drain, the 100-year, future watershed development condition peak flow is 2160 cfs at the North-South Coors pond spillway at Coors and Bridge Blvd. Other flow rates away from Isleta Drain are listed on Table 1.C.

The Isleta Drain modeling effort was then repeated with storage routing behind culvert crossings along Isleta Drain using Program K-ROUTE as applied in previous analyses. The results for both existing and future conditions are listed in Tables 4.A and 4.B.

AMOLE DEL NORTE CHANNEL RISK AND UNCERTAINTY ANALYSIS

In order to evaluate risk and uncertainty in the Amole del Norte Channel, all modeling parameters were investigated to determine their potential for error introduction. This concrete lined channel has at least 3 feet of freeboard and consequently catastrophic failure was eliminated as a risk to valley areas. The significant variables were Manning's coefficient and the sediment bulking factor.

The original model used a Manning's n value of 0.14 and a 7% bulking factor. Assuming a 25% increase in Manning's coefficient, and a 40% increase in bulking; an n value of 0.0175 and a bulking factor of 10% were investigated separately and in combination. The results are presented in Table 5 for the 100-yr. Future Condition flow rates.

FLOODPLAIN SENSITIVITY ANALYSIS

After consultation with USACE the Rosendo Garcia crossing of Isleta Drain (Drain Segments IS7 and IS8) was selected to be the test area for the sensitivity analysis. The ponded area floodplains were plotted using the elevations computed in the K-ROUTE modeling, Tables 4.A and 4.B.

The floodplains resulting from the Arenal Canal overflows were determined by use of Manning's Equation for a typical cross section of the flow path and the prevailing ground slope. The computed flow depth was plotted as the corresponding floodplain.

The resulting floodplains are presented in Figures 3.A and 3.B for Existing and Future Conditions, respectively. The corresponding areas for each floodplain extent are listed in Table 6.

14. EXISTING CONDITIONS HYDROLOGY

14.01 Previous Analyses

A detailed description of the study area sub-basins, the AHYMO models, flow path determination (particularly in the valley), on-site ponding, etc. is provided in Sections 2 through 5 in Volume I. Only pertinent items that were changed or need to be emphasized are included in this section.

The AHYMO models for watersheds west of Amole del Norte Channel and all AMAFCA dams on the mesa had been developed by others and were incorporated into this study as is. AHYMO models for the remaining areas from east of these mesa watersheds to the Rio Grande were developed at the start of this project and are discussed in Volume I.

The sub-basin areas used in this project are depicted in Exhibit 18 which is a summary version of Exhibits 3.A, 3.B and 3.C.

14.02 Year 2000 Existing Conditions

Existing condition modeling was based on Year 2000 conditions in each sub-basin with 1999 aerial photography and field reconnaissance as the basis for land treatment factor determinations.

Under existing conditions the areas west of Arenal Main Canal and north of Rio Bravo Blvd. would drain into the canal, flow south in the canal, and overflow at a downstream road crossing where the culvert capacity was exceeded. The existing condition modeling procedure simulated these conditions.

Also, in the valley area sub-basins, locally ponded water would sometimes overflow into 2 or 3 different sub-basins simultaneously. These flow distributions were estimated by inspection of the aerial photograph and topographic contours, and are also documented in Volume 1.

All flows reaching the MRGCD drains, which are the natural outfalls after localized ponding volumes are exceeded, were modeled using the K-ROUTE program which is also described in Volume I. This program models drain segment overflows into several different directions at the same time which is the observed overflow process.

The resulting drain pond (ponding in each drain segment) storage volumes are presented in Tables 6.B.1, 6.B.2 and 6.B.3, which are repeated in this volume for ease of reference. The corresponding sub-basin ponding volumes (on-site ponding) were presented in Tables 6.D.1 through 6.D.4, which are also repeated in this volume. The flow rates at select locations along the drains are include in Tables 5.E.1 and 5.E.2, which are also repeated in this volume.

15. FUTURE CONDITIONS HYDROLOGY

15.01 Previous Analyses

A preliminary assessment of future development based on the now outdated Southwest Area Plan was attempted in Volume I, Section 7. Those data are no longer applicable and were revised as described in Volume II, Section 13 and in this section of the report.

15.02 Interim Land Use Development

The potential Section 104 structures described in Volume II, Section 10 are listed as follows:

- A. Osage-La Media and Gonzales Pond Projects
- B. Adobe Acres Drainage Improvements
- C. Valley Gardens Drainage Improvements
- D. Borrega Dam
- E. West I-40 Diversion Channel and Guac Dam
- F. Isleta Blvd. Phase I Drainage Improvements
- G. Amole Dam Outfall to the Rio Grande
- H. McCoy Dam Diversion Channels
- I. Five Points Storm Drain System

Out of these nine projects, which are no longer being considered for Section 104 credit, four (A through D) have been completed, two (E and F) are under design or construction, two (G and H) have not been started, and one (I) has been revised and incorporated into the Isleta Blvd. Phase I(F) service area.

For purposes of the current analysis for future conditions, all of these projects, including the revised Five Points (I) project, but not to the Amole Dam outfall (G), are assumed to be in place.

15.03 Future Development Densities and Study Criteria

Based on discussions with the Bernalillo County Planning Department staff, the entire mesa areas are expected to develop at a density of 8 D.U./ac; and the valley areas would develop at 8 D.U./ac north of Rio Bravo Blvd.; and 3 D.U./ac south of Rio Bravo.

The mesa and valley areas north of Rio Bravo were modeled for future conditions as described in Volume II, Section 13. The areas south of Rio Bravo were similarly modeled under the current effort. The corresponding land treatments input to the AHYMO models previously described are as follows:

Mesa areas:	A - 3%, B - 10%, C - 15%, D - 72%
Valley, north of Rio Bravo:	A - 3%, B - 10%, C - 15%, D - 72%
Valley, south of Rio Bravo:	A - 0%, B - 55%, C - 10 %, D - 35%

All other analytical methods, such as flow paths and time of concentration determinations remain the same. The resulting future conditions flow rates and volumes for each sub-basin, as computed using these AHYMO models are summarized in Tables 15.A.1 through 15.A.4. The detailed AHYMO input and output data are presented electronically as Appendix T on the CD included in the pocket at the end of this volume. As directed by the USACE, only the 100-year future condition flows were analyzed.

15.04 Hydrologic Data Applications

The peak flow and volume data for each sub-basin were used to size individual storm drain systems which will serve that sub-basin. The storm drain system outfall locations were then used to accumulate hydrographs within each drain segment, using the K-ROUTE program and widen out drain segments, as described in the following report sections.

16. PROPOSED STORM DRAIN SYSTEMS.

16.01 General

16.01.1 Assumptions:

For design of each storm drain system, volume of runoff was not as significant as peak flow rates. Each sub-basin was analyzed separately and in many cases an upstream sub-basin had a storm drain running through a downstream sub-basin, with additional inflows, on its way to the drain outfall.

A major problem throughout the valley is that only minimal gradients are available. Although the preferred minimum cover over a storm drain was 1.5 feet, in some cases only 1.0 foot was used because that was all that would be available. Maximum available fall was computed as the difference between the pipe invert at the upstream end and the groundwater (dry weather flow) elevation in the outfall MRGCD drain segment. Because this may cause the storm drain to be below the water table during high groundwater periods, e.g. in the summer, only RCP was assumed as the pipe material.

16.01.2 Street Flow Capacities:

To determine where the first drain inlet would be required, several assumptions and corresponding computations were adopted as follows:

- All streets will have modified median curbs and gutters, see Table 16.A.
- Street gradients would be 0.1 percent or 0.001 ft./ft.
- The computed street flow capacity at a depth of 6 inches would be 13.1 cfs, see Table 16.A.

Each sub-basin peak flow was then divided by 13 cfs to determine the number of sub-areas within each sub-basin which will be contributing surface flows to the storm drain system. Runoff from each sub-area would then be directed to the nearest manhole where the appropriate number of inlets would be located.

16.01.3 Inlet Number and Capacities:

The assumptions and procedure for computing individual inlet capacities for inlets in series as well as the simplifying assumptions are also included in Table 16.A.

16.01.4 Manhole Locations:

Manholes were spaced at a maximum distance of 450 feet, at storm drainpipe junctions, and at all significant bends which will be. An energy loss of $0.05 V^2/2g$ was assumed for each manhole.

16.01.5 Box Culvert Storm Drains:

In many instances the available gradient and pipe cover requirements precluded the use of large diameter pipes. In these cases a box culvert size was selected where the height could be limited and the width was increased to provide the required flow area. In one case two parallel pipes were used because a crossing of Coors Blvd. was included and it was assumed that two pipes jacked under the road would be preferable to a cut and cover with cast-in-place concrete construction.

16.01.6 Outfall Structures:

These structures are currently being refined by AMAFCA. An energy loss of $0.25 V^2/2g$ was assumed for this type of structure.

16.02 Hydraulic Grade Computations

A computational spreadsheet and procedure developed for the NMSHTD Drainage Manual in Volume II, Hydraulics and Sedimentation, was used for these computations.

Outfall elevations were selected as the bottom of the receiving drain segment ponding volume (the dry weather flow elevation in the drain). Under normal operating conditions the storm drain will discharge at full capacity as long as the drain segment is not ponding any water. Where ponding increases (as it is designed to do when the outflow pipe capacity is surcharged) the storm drain discharge capacity will be reduced, but this should not be significant because the peak storage time of occurrence in the drain segment will be lagged by several hours, depending on its location along the drain. By that time the storm drain should have peaked and should be on the receding side of the hydrograph, when maximum pipe capacity is not needed.

Manhole rim elevations were selected by interpolation from the 1999 topographic mapping. In all cases the hydraulic grade line was designed to be near the top of the pipe and several feet below the manhole rim elevation. This allows for some adjustment of the hydraulic grade with final design.

Of course the street could be raised to provide more hydraulic grade but a Type D inlet may then be necessary outside the roadway section and it's location may have to be moved downstream to allow for local drainage. These issues will have to be resolved under final design.

The detailed hydraulic grade computations for each storm drain system are included in Appendix U on the CD at the end of this report. Exhibits 19.A and 19.B depict the proposed storm drain systems throughout the valley; and more detailed delineations are shown on the zone atlas page layouts included at the end of this report.

17. PROPOSED IMPROVEMENTS TO MRGCD DRAINS.

17.01 General

All of the MRGCD drains were divided into segments, which were defined by existing crossings. Most of the crossings are roads but a few canal crossings also exist. Pedestrian crossings were ignored. These drain segments were defined and described in detail in Volume I, Section 5.

For the current analysis, the proposed storm drain systems contributing flow to each drain segment were identified. Also, all adjacent sub-basins which would surface drain directly into each drain segment were also identified. The AHYMO computed hydrographs for each sub-basin were divided by percentage of sub-basin area contributing to each storm drain system.

The subdivided hydrographs for all storm drains and surface draining sub-basins contributing to each drain segment were accumulated and routed through each drain segment using the K-ROUTE program. In most cases the percentage area of any single sub-basin contributing to the storm drain system for that drain segment had to be visually estimated. These estimates for each drain segment are listed in Table 17.A.

Because the MRGCD drains are located at the lowest local elevation in the valley, the primary drainage management concept adopted for this project is to widen the MRGCD drains to allow for detention storage of runoff and to use the existing culverts as outflow controls. This approach would allow control of runoff as close to the source as possible, other than on-site ponding.

Also, being the lowest elevation in the valley, the additional hydraulic gradient would make the storm drains more efficient and less expensive.

In some cases the drains cannot be sufficiently widened to store the 100-year runoff volumes. In such cases, supplemental off-channel ponding would be required. These ponds are identified according to the sub-basin number that they are located in, and are described in the next report section, Section 18.

Additionally, there are several locations on the western valley boundary where uncontrolled runoff from mesa areas cannot be conveniently directed into the Isleta Drain. Detention ponds to provide controlled releases to the Isleta Drain were provided at these locations, as described in Section 19 of this report.

17.02 Right-Of-Way

The right-of-way widths for each MRGCD drain are not uniform and may only be easements in some reaches. In this study the predominant width of the "apparent" right-of-way was scaled from the orthophoto. In a few reaches this width may not be available and additional

right-of-way may have to be acquired. These real estate acquisitions and their related costs will have to be addressed in the next phase of this project.

17.03 Dry Weather Flow

A general depiction of the widening of each drain segment is shown in Figures 17.A and 17.B. Within the segment itself the existing dry weather channel would remain so that the dry weather flow regime would be undisturbed. The drain widening would extend to a foot above the dry weather water surface. The resulting level benches on both sides of the dry weather channel would serve as maintenance roads if needed during dry weather. They would be flooded whenever runoff entered that drain segment, and would remain impassable until the bench dried.

Additionally, permanent maintenance roads (and a future recreational trail on one side) will be constructed on both sides of each drain. The proposed excavation side slope will be 2H:1V.

17.04 Roadway Crossings

Most roadway crossings will have to be rebuilt because they will be lowered to serve as spillways for runoff overflowing the upstream drain segment when its storage capacity is exceeded. They will also be widened to accommodate future traffic per current Bernalillo County standards. Maximum depth of overflow will be 0.5 foot as a traffic protective measure. Guardrails will also be installed on both sides of the crossing.

In order to confine overflows and direct them into the downstream drain segment, one foot high berms will be constructed on both sides of the drain, thus providing a nominal 0.5 ft. of freeboard. Additional approach street lengths will have to be reconstructed to accommodate the vertical curve and ramping required for the new road profile.

17.05 Existing Culverts

In most cases the existing culverts between drain segments will remain, with extensions added to accommodate the widened roadway. In a few instances the culverts will be capped on the upstream side with an orifice plate to reduce the outflow rate and increase storage volumes in that drain segment.

17.06 Specific Drain Details

Table 17.B provides the assumed right-of-way width, corresponding spillway top width, the table number where the summary of results from the KROUTE runs, the appendix which includes the detailed run results, the segments where orifice plates are proposed, and the orifice diameter.

Tables 17.C.1 and 17.C.2 list the summary volumes and corresponding existing condition storage elevations for each drain segment. These tables also list the elevation and length of low spots along the adjacent banks. It was assumed that these low spots could be raised by one foot and the elevation of the maximum storage volume could be raised by 0.5 feet; thus providing a 0.5 foot of freeboard. Therefore, the maximum storage volumes input to K-ROUTE are also listed on these tables. The detailed computations for the drain segment volumes are included in Appendix V on the CD at the end of this report.

The summary K-ROUTE modeling results are presented on Tables 17.D.1 through 17.D.3 and the detailed input and output are included in Appendix W on the CD at the end of this report.

18. PROPOSED OFF-LINE PONDS

18.01 Basis for Selection

Whenever total inflows into any drain segment exceeded the widened drain storage volume, the excess flows would overflow the spillway/road crossing into the next downstream segment. If this segment could not contain the flows, the spills would continue downstream; or, the maximum ponding elevation in that drain segment may significantly exceed the adjacent low bank elevation. Under these conditions an off-line pond would be necessary.

These ponds were identified by the AHYMO sub-basin number in which they would be located or by the current name, if an existing pond was enlarged. Two exceptions to this general rule are a pond south of Rio Grande High School off Isleta Drain Segment 9. Overflow from this segment are restricted by the Pajarito Lateral crossing, and an overflow spillway over the canal would be impractical. Consequently, this is one location where flows in excess of the culvert under the canal would be diverted to Pond 187.

The second exception is at the end of the project at the IH-25 crossing. Because Isleta Pueblo has refused to accept storm runoff in Isleta Drain where it enters the reservation on the south side of the IH-25 crossing, all stormwater reaching this point on both Isleta and Los Padillas Drains will have to be pumped from the existing Black Mesa pumping station. All groundwater flows will continue onto the reservation. Three surge ponds (Ponds 217, 212, and 214) will be required to hold runoff until the pumps can evacuate the water.

In addition, some runoff from the uncontrolled mesa areas will also have to be controlled in ponds at the edge of the mesa. Two of these are existing ponds (Gun Club and Pajarito) and three new ponds labeled Ponds 730, G12 and 214, will be needed.

All of the proposed ponds are shown on Exhibits 19.A and 19.B.

18.02 General Criteria

The real estate "take" line for each pond was based on visual inspection of the plats and ortho-photos and selecting sites that were undeveloped, vacant, or fields on the ortho-photos. The proposed area was maximized to allow as much storage volume as possible.

A 25-foot fencing trail or landscaping perimeter strip was provided for each site. Excavation inside this perimeter area would provide the runoff detention area. Because the depth to groundwater was unknown, a 6-foot depth of excavation was assumed. The side slopes were limited to 3H:1V. The ponds were sized to contain the 100-year runoff volumes so that the MRGCD drain system or existing pump stations could be used to drain them after the storm had ended.

The 25-foot perimeter strip can also be used to provide the requisite freeboard around each pond. In all cases the ponds will act as stormwater quality treatment ponds where sediment, dissolved compounds, and floatable debris will accumulate. Consequently, regular

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maintenance to remove debris and to prevent septic conditions from developing will be required.

18.03 Inlet Structures

Where the pond would be adjacent to a MRGCD drain, a side channel overflow spillway would control maximum water surface elevations in the drain. This spillway would be sized for a 100-year developed condition peak flow in the drain. If the pond is a distance from the drain, a side channel overflow spillway into a surface channel or swale will be used to transfer drain overflow to the pond. These channels or swales can also be used as multi-purpose recreational facilities.

In the case of Pond 187 the Arenal Ditch will cross the inflow swale in an aqueduct supported on piers. This open channel will be easier to maintain than a siphon and could be an educational opportunity for Rio Grande High School students. For those ponds that collect local runoff and overflows from MRGCD drains, inflows will reach the pond through storm drains/box culverts and rundowns into the pond.

18.04 Outlet Structures

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Because the NM State Engineer Office will not require outlets for these ponds some of these ponds could be constructed as retention ponds, e.g. Pond 44 which does not have a convenient outfall facility, unless the affected regulatory agencies agree to a discharge to the Atrisco Riverside Drain near where the winter trout stocking occurs.

Most of the ponds will have an outlet pipe riser with the reverse slope (floatable exclusionary) orifices. The outlet pipe would drain out either to an MRGCD drain or a nearby storm drain. Flap gates on the outlet pipes may be required to prevent backflow when the ponding elevation in the pond is lower than that in the outfall drain segment.

18.05 Modeling Results

The pond volume computations are listed on Tables 18.A.1 through 18.A.3. The K-ROUTE modeling of these ponds was included in the drain segment modeling; therefore, the results are included in Tables 17.D.1 through 17.D.3 and in Appendix W. More detailed depictions of each new pond are presented in Exhibits 20.1 through 20.15.

19. MESA RUNOFF ISSUES

19.01 Existing AMAFCA/COA/Bernalillo County Facilities

Several large reservoirs and smaller ponds control the mesa runoff; these include many ponds on the mesa away from the mesa edge, which indirectly affect runoff into the valley. The detention facilities along the mesa edge, or west of Arenal Main Canal; and the corresponding outfall facility include:

AMAFCA:	Amole Dam to Arenal Main Canal Hubbell Dam to Arenal Main Canal Borrega Dam to Hubbell Dam Don Felipe Dam to Isleta Drain Raymac Dam to Isleta Drain McCoy Dam to Gun Club Lateral West I-40 Diversion Channel Amole – Hubbell Channel North and South McCoy Channels
Bernalillo Co.:	Bridge Blvd Pond to Arenal Main Canal Gun Club Pond – no outlet Pajarito Pond – no outlet
City of Albuquerque:	Gonzales Pond to Osage – LaMedia System North/South Coors Ponds to Amole del Norte Channel Amole del Norte Channel to Amole Dam

All of the structures listed above are shown on Exhibits 19.A and 19.B. They will effectively intercept and control all upstream flows up to the 100-year developed condition flows and often the 500-year flows because of the available freeboard. Consequently all drainage areas upstream from these structures are assumed to be non-contributing to the valley during the design storm. However, all of these volumes will eventually have to be drained or pumped to the Rio Grande.

19.02 Proposed Mesa Area Runoff Controls

All of the drainage areas east of the structures listed above will drain directly to the valley unless the additional diversions and ponding areas shown on Exhibits 19.A and 19.B are constructed. Specifically, two existing ponds will be enlarged (Gun Club Pond and Pajarito Pond) and three new ponds (Pond 730, Pond 214 and Pond G12) will be constructed.

The existing pond at the NE corner of the Gun Club Road and Padilla Road will be expanded north and deepened to form a larger pond as shown on Exhibit 20.8. Inflows will consist of surface drains for local runoff and more extensive storm drain networks to collect runoff from drainage areas west of the Gun Club Lateral. The controlled outlet will discharge to Hubbell Dam through an outlet pipeline along the Gun Club Lateral right-of-way. This dry

weather flow release will pass through Hubbell Dam and into the outfall to the Rio Grande near Metzgar Road.

The existing pond at the NW corner of Coors and Parajito Roads will also be expanded to the north and deepened. Inflows will be local surface runoff and extensive storm drain systems west of Coors Blvd. The controlled outlet will discharge to the nearby Isleta Drain. Exhibit 20.9 shows more details for the new Pajarito Pond.

Pond G12 will collect runoff from a natural arroyo that drains into the Gun Club Lateral and sometimes causes the Gun Club Lateral bank to fail and flood properties between the Gun Club Lateral and Coors Road. This pond will have an extensive network of inflow storm drains with a controlled release outflow to an adjacent storm drain that discharges to the Isleta Drain. Exhibit 20.11 shows the layout for this pond.

Pond 214 is a new pond to be constructed below (east of) the mesa escarpment and the Gun Club Lateral (GCL). All inflows into the pond will be new storm drains whose lower alignments will be in the GCL right-of-way. In order to accommodate all of the inflows, the pond area had to be maximized and as much of the undeveloped areas as available was utilized. This proposed pond will have a controlled outlet draining to the Isleta Drain. Exhibit 20.12 shows the layout for this pond.

19.03 Controlled Releases from AMAFCA Dams

The provision of a new outfall to the Rio Grande near Metzgar Road allows for an innovative approach to discharge controlled releases from the Amole, Hubbell and Don Felipe Dams. The two AMAFCA dams on the top of the Mesa will have outlet pipes which eventually drain into Hubbell Reservoir. An optional bypass to the Arenal Main Canal or Gun Club Lateral – in case MRGCD would like to use that water can be provided, if desired.

As currently operated, when the Isleta Drain returns to a dry weather flow condition after a storm, the outlet gates on Raymac and McCoy dams will be manually opened. MRGCD may direct the outflows into their canals, if so desired, or the normal operation would be to the Isleta Drain, and eventually to the Black Mesa pumping station near I-25, which will provide the outfall to the Rio Grande.

The new outfall pipe alignments are shown on Exhibits 19.A and 19.B.

20. COST ESTIMATES FOR INDIVIDUAL IMPROVEMENTS

20.01 Storm Drain Systems

Appendix X is provided on Excel spreadsheets on the CD in the pocket at the end of this report. This appendix includes a detailed cost breakdown of each proposed storm drain system, as identified on Exhibits 19.A and 19.B and on the individual zone atlas pages, included at the end of this report.

A generic outlet structure from each storm drain system into the widened drain segment is being designed by AMAFCA and a lump sum cost of \$ 16,000 was assigned by AMAFCA. The cost of new easements for storm drains was assigned a cost of \$5,000 per acre.

The total cost of each storm drain system is listed on Tables 20.A.1 and 20.A.2. These tables also identify those systems that fall within the CAP benefited area and those along Barcelona Blvd. that would be included in any reconstruction of that roadway, as proposed by Bernalillo County.

20.02 MRGCD Drain Widening

Appendix Y on the CD at the end of this report includes the detailed cost estimates for drain segment widening. Each drain segment is estimated separately; and, in general, the two major cost categories are excavation of the ponding area itself and rebuilding the road crossing to function as an overflow spillway as well.

Right-of-way issues have not been determined for the MRGCD drains, but MRGCD owns most of the right-of-way with only easements in some reaches, and the right-of-way width may be less than assumed in some reaches. Therefore an average unit cost of \$3,000 per acre for the entire drain right-of-way was assumed. The resulting computations are shown in Table 20.B.

The cost summary for MRGCD drain widening and new road crossings is presented on Table 20.C.

20.03 Off-Line Ponds

A detailed cost itemization for these ponds is provided in Table 20.D. Costs for security and multi-purpose use of the ponding areas were not included; therefore, the primary cost areas are excavation, inlets and outlet, and right-of-way acquisition. Because all of the tracts to be acquired are privately owned, the unit cost of right-of-way was assumed as \$9,000 per acre for undeveloped land. All off-line ponds were located on undeveloped tracts. The assumed cost basis for specific pond elements are included in Table 20.E.

20.04 AMAFCA Dam Outfalls

These outfalls are intended to be steel pressure pipe with regulating valves and inspection ports at regular intervals. Existing public right-of-way will be used to the maximum extent possible. If private right-of-way is required, the acquisition cost was estimated at \$5,000 per acre. The resulting cost estimate are listed on Table 20.F.

20.05 Pump Stations

Only two pump stations, one under-construction and one existing, are proposed for this project. The Sanchez Pond pump station, which is under construction as part of Isleta Blvd. Phase I improvements is proposed as an off-peak relief pumping station for stormwater detained in Pond 38 and the upper reaches of Atrisco Riverside Drain. Changes to this pump station to accommodate the additional pumping are estimated to cost \$150,000.00.

The existing Black Mesa pumping station at IH-25 and Isleta Drain will also have to be renovated and expanded. This pumping station will also be utilized off-peak – all runoff will be detained in Ponds 212, 216, and 217, as well as all runoff detained in Isleta Drain south of the Gun Club Pond (Isleta Drain segments 18-30) and in Los Padillas Drain south of the outfall to the Rio Grande near Metzgar Road (Los Padillas Drain segments 4 through 15). Also, all off-line ponds draining to these drain segments (Pond 139, Pajarito Pond, and Ponds G12, 214, and 278), and Raymac and McCoy dam outflows will be pumped out of the valley after local storm flows have been evacuated. The Black Mesa pumping station renovations are expected to cost \$400,000.00.

Both of the costs listed above are very preliminary because the pump station improvements are beyond the scope of this project. Those cost estimates will have to be refined as soon as possible.

21.0 PROJECT PHASING

The federal CAP project is only a part of the total project presented in this report. To allow cost/benefit comparisons for the Federal Project, all proposed improvements in the Federal Project benefited area were separated out and are listed in Table 21.A.

The MRGCD drain segment improvements, including Ponds 187, 79 and 194, and the outfall to the Rio Grande near Metzgar Road are estimated at \$ 3.4 Million; and the storm drains discharging to these detention areas are estimated at \$ 17.5 Million.

Similarly, all storm drains along or across Barcelona Road were compiled as a separate project phase, because Bernalillo County is planning a major reconstruction of this roadway. The structures involved are all storm drains as listed in Table 21.B; but it must be recognized that for these systems to function as designed, the lower reaches of Armijo Drain (segments 6 through 9) must also be improved and the outfall to the Rio Grande must be constructed. Both of these improvements are part of the Federal Project.

22. PRE-PROJECT HYDRAULIC CONDITIONS

22.01 Background

The sensitivity analysis described in "Re-evaluation of West Mesa Hydrology, Arenal Canal Overflows and Isleta Drain Flows", June, 2002, (the Re-evaluation Report), which replaces Section 13, Volume III, of "Southwest Valley Flood Damage Reduction Study" was expanded in this phase of the study. The sub-basin hydrologic data for existing and future conditions, as developed in the Re-evaluation Report, was also used in this analysis. However, the existing drain condition storage effects were taken into account in the K-ROUTE models, and the existing failure locations along the Arenal Main Canal were also included. Flow contributions from all controlled areas of the West Mesa ie. west of Amole del Norte Channel and all City and AMAFCA detention basin watersheds were also excluded.

22.02 Pre-project Floodplain Results

The results of K-ROUTE modeling for the 10-, 25-, 100-, and 500-yr. floods for the area north of Rio Bravo (Isleta Drain Segments 2-15), are presented in Tables 22.A through 22.H for both existing and future development hydrology. No project improvements were considered in this analysis.

The resulting floodplain elevations were mapped as shown on Exhibits 22.1 and 22.2.

The floodplain extent for Arenal Main Canal overflows were determined by taking one or more representative cross sections across the potential flow paths and outside the limits of the Isleta Drain floodplain. A flow depth was estimated using the selected cross section and Manning's Equation and that flow depth was then used to map the flood plain extent. This procedure was used for the Arenal overflows only; the Isleta and Armijo Drain floodplains were based on elevations from the K-ROUTE modeling.

These "without project" floodplains can be compared to the "with project" floodplains, described in later sections of this report, to determine the extent of improvements and damage reduction that may be expected from the proposed project.

23. POST PROJECT FLOODPLAINS

23.01 Basis for Iterations

In determining the final version of the Federal project, a number of iterations were performed to investigate various project configurations in order to determine the NED Plan. After the completion of each iteration, the TAC evaluated the results and proposed changes for the next iteration. Table 23.A is a comprehensive comparison of the differences between iterations.

In addition, improvements to the Isleta Drain changed the flow path of some sub-basins. Usually the changes involved either improvements that allowed natural water ponding adjacent to the drain to flow into the drain, or the sub-basins were rerouted to a drain segment downstream due to improvements such as the raising of drain segment embankments. These changes were applied to all five of the iterations.

Within the iterations, refinements were made based upon interim results and stated design criteria and assumptions. Design criteria included limiting the depth of flow over proposed roadway dip sections to 0.5 feet, limiting the top-of-road elevation increase to the proposed service roads (additional fill required) to approximately 1 foot, and minimizing the flood plain extent.

The design criterion requiring the most extensive and expensive changes was limiting the flow over the roadway dip sections. Changes to the models based on this criterion were therefore limited to the adopted designs. The adopted iterations were Iteration 2, Iteration 4, Iteration 5, and Iteration 6.

23.02 Iteration 1

Iteration 1, a 100-year design, included widening of the drains within the Federal project limits (Armijo Segments 1-8, Isleta Segments 2-17, and Los Padillas Segments 1-4), improvements to the culverts under Rio Bravo, the construction of the Los Padillas Extension Drain and outfall channel to the Rio Grande, diversions to Pond 187 from Isleta and Armijo drains, and two structures limiting flow downstream. The two flow limiting structures were an 18" orifice plate at the downstream end of Los Padillas Segment 4; and an overflow weir on the Isleta Drains (to the Los Padillas Extension Drain) including a reduced sized culvert in Isleta Segment 17. In addition, five storm drains were incorporated into Iteration 1; These are identified as follow systems P11F, M11A, N11G, N11A, and P12H. A description of the storm drain orientation as follows:

- P11F: Line in Barboa Road and Joe Sanchez Road from Blake Road to the Armijo Drain (crosses Barcelona Road)
- M11A: Line in Foothill Road, Telsfor Drive, and Procopio Place from Granada Road to the Isleta Drain
- N11G: Line in Foothill Road and Blake Road from Vergita Road to the Isleta Drain

- N11A: Line in Barcelona Road from Silvia Road to the Isleta Drain
- P12H: Adobe Acres Pump Line from Pond 48 to Adobe Acres Pond to Rio Grande

Although originally envisioned as a shallow conveyance channel, the Los Padillas Drain Extension was enlarged and modeled as a detention pond (just as all the drain segments were modeled) to evaluate the benefits of additional storage. The invert elevation and storage elevation data were based upon the Los Padillas Segment 1 data; however, the storage values were multiplied by a factor of nine to account for the longer length of the extension.

Although upstream flow reaching this location had increased because of the enlarged Rio Bravo culverts, storage in the extension reduced the required size of the Los Padillas Outfall to the river.

The Iteration 1 flood plain map is presented on Exhibit 23.1. The summary results for Iteration 1 are located in the following tables: Table 23.B.1 lists the contributing sub-basins to each drain segment; Tables 23.B.2, 23.B.3, 23.B.4 and 23.B.5 contain the K-Route modeling results for the 10-, 25-, 100-, and 500-year storms, respectively; Table 23.B.6 contains the water surface elevation and low bank elevation summary; and Table 23.B.7 itemizes and summarizes the volume of fill needed to raise the low bank up approximately 1 foot where necessary to contain the 100-year storm with 0.5 ft. freeboard.

Financial assumptions of potential Federal interest benefits were compared to a preliminary projected cost to determine the amount of improvements that could be included and still maintain a B/C ratio of approximately 1.15. These projected costs balanced with potential flood plains indicated that several additional improvements were feasible. These changes are modeled in Iteration 2. In addition, another consideration not included in Iteration 1 was evaluated in Iteration 2: the potential failure of the Arenal Canal.

23.03 Iteration 2

Iteration 2, also a 100-year design, included all the same improvements as Iteration 1, with the following exceptions: storm drain L11B was added, storm drain M11A was excluded and storm drain N11A was extended to capture additional flooding; the invert elevations of Armijo Segment 8, and Isleta Segments 10, and 15 were lowered two feet and the invert of Los Padillas Segment 4 was lowered 4 feet; also, a number of culverts were increased in size to either increase flow downstream or to limit the flow over the proposed roadway dip sections to 0.5 feet. A complete comparison of proposed structures can be found in Table 23.A.

The orientation of the additional storm drains and the extension is as follows:

- L11B: Trunk line in Sage Road and drainage easement (between Rosendo Garcia Road and San Ygnacio Road) to the Isleta Drain
- N11A: Line in Silvia Road and in Barcelona Road from Silvia Road to the Isleta Drain.

Overland flow that is not intercepted by AMAFCA drainage structures on the Mesa enters the Valley and some of this flow reaches the Arenal Main Canal. This increase flow in the canal will lead to overflows, erosion of the banks, and eventual failures. The most likely locations have been identified, and Iteration 2 contains plans for improvements at most of these locations. Several failures will allow runoff into fields and since those damages are minimal, these failures will not be prevented. All other locations will have a failure section to control the exact locations of the overflows. The proposed storm drains L11B and the N11A extension intercept flow from two of these locations. Another location, north of Arenal Road, will utilize a channel to convey flows to the Isleta Drain.

Similar to Iteration 1, the Iteration 2 flood plains are presented on Exhibit 23.2 and the summary results for Iteration 2 are located in the following tables: Table 23.C.1 lists the contributing sub-basins to each drain segment; Tables 23.C.2, 23.C.3, 23.C.4 and 23.C.5 contain the K-Route modeling results for the 10-, 25-, 100-, and 500-year storms, respectively; Table 23.C.6 contains the water surface elevation and low bank elevation summary; and Table 23.C.7 itemizes and summarizes the volume of fill needed to raise the low bank up approximately 1 foot when necessary to contain the 100-year storm with 0.5 ft of freeboard.

23.04 Iteration 3

Iteration 3 was similar to Iteration 2 with the exceptions that there were no drain improvements to Armijo Segments 1 through 5 and Isleta Segments 2 through 5; and no diversion to Pond 187 from Armijo Drain (the diversion from Isleta Drain was still included). In addition, the 10-year and 25-year storms required the same level of detailed analysis that was performed for the 100-year storm for these first three iterations.

The Iteration 3 flood plain map is presented on Exhibit 23.3 and the summary results for Iteration 3 are located in the following tables: Table 23.D.1 lists the contributing sub-basins to each drain segment; Tables 23.D.2, 23.D.3, 23.D.4 and 23.D.5 contain the K-Route modeling results for the 10-, 25-, 100-, and 500-year storms, respectively; Table 23.D.6 contains the water surface elevation and low bank elevation summary; and Table 23.D.7, 23.D.8, and 23.D.9 itemizes and summarizes the volume of fill needed to raise the low bank up approximately 1 foot when necessary for the 10-, 25-, and 100-year storms, respectively.

23.05 Iteration 4

Iteration 4 was performed to determine the benefits and costs for both the 10-year and the 25-year designs. Iteration 2, the 100-year design, was the base model for Iteration 4.

For Iteration 4, 10-year design, the following changes were made: storm drains P11F and N11G were removed; improvements were not made to Armijo Segments 1 through 5 and Isleta Segments 2 through 3; and the diversion to Pond 187 from Armijo Drain was excluded. For Iteration 4, 25-year design, the same changes as the 10-year design were made, but improvements to Isleta Segment 3 were included.

The final version of Iteration 4 for the 10-year and 25-year designs included increased culverts to increase flows downstream or reduce flows over the roadway dip sections to 0.5 feet. The listing of proposed structures is included on Table 23.A for all iterations.

The Iteration 4 flood plain maps are located on Exhibit 23.4 (10-year design) and Exhibit 23.5 (25-year design). The summary results for Iteration 4 are located in the following tables: Table 23.E.1 lists the contributing sub-basins to each drain segment; Tables 23.E.2, 23.E.3, 23.E.4 and 23.E.5 contain the 10-year design K-Route modeling results for the 10-, 25-, 100-, and 500-year storms, respectively; Table 23.E.6 contains the water surface elevation and low bank elevation summary; Table 23.E.7 itemizes and summarizes the volume of fill needed to raise the low bank up approximately 1 foot when necessary for the 10-year design; Tables 23.E.8, 23.E.9, 23.E.10 and 23.E.11 contain the 25-year design K-Route modeling results for the 10-, 25-, 100-, and 500-year storms, respectively; Table 23.E.12 contains the 25-year design water surface elevation and low bank elevation summary; and Table 23.E.13 itemizes and summarizes the volume of fill needed to raise the low bank up approximately 1 foot when necessary for the 25-year design.

23.06 Iteration 5

Although nearly identical to the future conditions pre-project analysis, there were minor differences in the hydrologic modeling for the post project analysis. Future external changes were incorporated into Iterations 1 through 4 that prevented several failures of the Arenal Main Canal that occurred in the pre-project analysis. These changes included detention facilities or storm water conveyance facilities that are proposed or have started construction since the beginning of the project.

To be consistent between pre-project and post-project analyses for the NED Plan, it was determined that either the cost of the improvements needed to be included or the failures needed to occur. It was determined that all the failures of the Arenal Main Canal would be included in the NED plan: the 10-Year Design 10-Year Storm.

This analysis, Iteration 5, required a road crossing of the Arenal Main Canal be further improved to accommodate the increased flow. For a complete list of the required improvements, see Table 23.A. With the additional improvements in Iteration 5, the flood plains remained the same as the Iteration 4 10-Year Design 10-Year Storm and these are shown in Exhibit 23.4.

23.07 Iteration 6

Iteration 6 was performed to determine the benefits and costs for a 5-year design. In addition, iteration 6 actually consisted of two distinct iterations: an Evaluation Iteration and a Design Iteration.

The evaluation iteration was necessary because the 5-year storm had not been considered in any previous iteration. For economic purposes, the evaluation of a design for a more frequent storm event than the 10-year storm needed to be performed, and the 5-year storm was selected.

The Evaluation Iteration was performed to determine the impact of a 5-year storm, primarily bank and roadway overflows, in a model using the existing channel geometry, including existing culverts down to Rio Bravo Blvd. Once the overflow locations were determined, the Design Iteration (5-Year Design 5-Year Storm) was performed to determine the necessary culvert improvements to eliminate flooding over banks and roadway dip sections in excess of 0.5 feet.

The proposed improvements and a comparison to other iterations are included in Table 23.A, and the summary results for Iteration 6 are located in the following tables: Table 23.G.1 contains the K-Route modeling results for the 5-Year Storm Evaluation; Table 23.G.2 contains the K-Route modeling results for the 5-Year Storm Design; and Table 23.G.3 contains the 5-Year Design water surface elevation and low bank elevation summary including the depth over the roadways.

TABLE 6.B.
AGRICULTURAL DRAIN STORAGE VOLUME SUMMARY - EXISTING CONDITIONS

STORAGE VALUE INDICATED IS MAX. VOLUME STORED IN DRAIN SEGMENT AND NOT TOTAL VOLUME PASSING THROUGH SEGMENT

DRAINS ISLETA	POND	TILE	10 YR			25 YR			100 YR			500 YR		
			SPILL EL.	STOR AC. FT.	W.S. EL.	STOR AC. FT.	W.S. EL.	STOR AC. FT.	W.S. EL.	STOR AC. FT.	W.S. EL.	STOR AC. FT.	W.S. EL.	STOR AC. FT.
	IS2	K33	4948.4	4.6	4949.0	4.6	4949.0	4.6	4949.0	4.6	4949.0	4.7	4949.1	4.7
	IS3	L32	4943.4	5.1	4944.3	5.3	4944.4	5.3	4944.4	5.3	4944.4	5.4	4944.5	5.4
	IS4	L32	4943.4	8.4	4943.9	8.4	4943.9	8.4	4943.9	8.4	4943.9	8.6	4944.0	8.6
	IS5	L32-M32	4942.4	5.4	4942.8	5.4	4942.8	5.4	4942.8	5.4	4942.8	5.6	4942.9	5.6
	IS6	M32	4941.4	13.5	4942.0	13.8	4942.1	13.8	4942.1	13.8	4942.1	14.1	4942.2	14.1
	IS7	M32	4939.4	5.3	4940.0	5.5	4940.1	5.5	4940.1	5.5	4940.1	5.8	4940.3	5.8
	IS8	M32	4937.4	2.7	4938.0	2.8	4938.1	2.8	4938.1	2.9	4938.3	3.4	4938.7	3.4
	POND 61	M32	4936.4	16.4	4937.8	17.0	4937.9	17.0	4937.9	19.0	4938.1	21.0	4938.3	21.0
	IS9	M32	4937.4	17.4	4937.8	18.6	4937.9	18.6	4937.9	20.7	4938.1	21.2	4938.3	21.2
	POND 65	M32	4935.4	4.8	4936.4	5.4	4936.5	5.4	4936.5	6.1	4936.6	7.9	4936.8	7.9
	IS10	M32	4934.4	4.0	4935.1	4.6	4935.5	4.6	4935.5	4.6	4935.5	4.7	4935.6	4.7
	IS11	N32	N/A	39.4	4935.4	51.7	4935.7	87.3	4936.2	87.3	4936.2	133.0	4936.6	133.0
	IS12	N31-32	N/A	40.7	4935.4	51.3	4935.6	56.0	4935.7	56.0	4935.7	56.0	4935.7	56.0
	IS13	N31-O31	4931.4	2.3	4926.2	2.3	4926.2	2.6	4926.2	2.6	4926.3	3.0	4926.4	3.0
	IS14	O31	4929.4	2.9	4927.1	5.8	4929.7	6.1	4929.9	6.1	4929.9	6.5	4930.1	6.5
	IS15	O31	4929.4	10.7	4928.5	20.5	4928.6	24.5	4929.6	24.5	4929.6	27.4	4930.3	27.4
	POND 85	O32-33	4929.4	1.5	4928.5	2.1	4928.7	7.7	4929.5	7.7	4929.5	28.0	4930.9	28.0
	IS16	O31-P31	4928.4	6.5	4926.4	9.8	4928.7	10.0	4928.8	10.0	4928.8	10.0	4928.8	10.0
	IS17	P31	4921.4	4.3	4918.0	4.4	4918.1	4.4	4918.1	4.4	4918.1	11.0	4921.9	11.0
	POND 137A	Q30-31	4917.4	0.7	4917.4	0.9	4917.5	0.9	4917.5	0.9	4917.5	1.8	4917.8	1.8
	IS18	Q30-31	4916.4	3.8	4912.4	6.9	4914.1	16.3	4917.7	16.3	4918.2	41.8	4918.6	41.8
	POND 139	Q31-R31	4918.4	2.8	4916.1	4.4	4916.5	32.1	4917.7	32.1	4918.2	11.0	4916.7	11.0
	POND 150	R30-31	4916.4	0.9	4915.4	1.4	4915.5	2.2	4915.6	2.2	4915.6	10.6	4915.1	10.6
	IS19	Q30-R30	4914.1	4.3	4911.9	8.0	4913.8	9.5	4914.4	9.5	4914.4	6.2	4915.3	6.2
	IS20	R31	4913.4	2.6	4911.7	3.9	4913.5	4.9	4914.1	4.9	4914.1	6.3	4914.7	6.3
	IS21	R31	4913.4	3.4	4911.5	4.2	4912.5	5.5	4914.1	5.5	4914.1	7.1	4911.4	7.1
	IS22	R31-S31	4910.4	2.6	4907.4	4.5	4909.2	6.4	4910.9	6.4	4910.9	10.8	4910.4	10.8
	IS23	S31	4909.4	8.3	4909.5	8.7	4909.7	9.5	4910.0	9.5	4910.0	14.6	4910.0	14.6
	IS24	S31	4908.4	1.5	4903.9	3.1	4906.3	10.4	4909.6	10.4	4909.6	7.8	4906.8	7.8
	IS25	T31	4905.4	2.2	4901.8	4.0	4903.6	6.7	4906.1	6.7	4906.1	7.2	4905.4	7.2
	IS26	T31	4904.4	3.7	4902.5	6.0	4904.8	6.8	4905.2	6.8	4905.2	11.6	4905.4	11.6
	IS27	T31	4903.4	3.6	4900.4	7.9	4903.7	9.9	4904.7	9.9	4904.7	7.5	4904.6	7.5
	IS28	U31	4903.4	6.2	4904.0	6.2	4904.0	7.0	4904.4	7.0	4904.4	8.9	4902.6	8.9
	IS29	U31	4900.4	6.6	4901.7	6.8	4901.8	7.7	4902.1	7.7	4902.1	3.5	4901.5	3.5
	POND 210	U31	4901.4	1.7	4901.0	2.8	4901.4	2.8	4901.4	2.8	4901.4	219.0	4902.6	219.0
	IS30	U31	4890.6	25.5	4899.3	37.5	4900.2	84.4	4901.5	84.4	4901.5	5.6	4896.9	5.6
	IS31	U31-V31	4896.4	5.5	4896.8	5.5	4896.8	5.6	4896.9	5.6	4896.9	11.4	4895.4	11.4
	IS32	V31	4894.4	10.9	4895.2	10.9	4895.2	11.2	4895.3	11.2	4895.3	584.3	4895.0	584.3
	IS34	W31	4895.1	81.2	4892.3	155.5	4892.9	325.7	4893.9	325.7	4893.9	20.8	4892.6	20.8
	IS35	W31	4892.4	18.6	4891.8	20.3	4892.5	20.8	4892.6	20.8	4892.6	20.8	4892.6	20.8

TABLE 6.B.2
AGRICULTURAL DRAIN STORAGE VOLUME SUMMARY - EXISTING CONDITIONS

STORAGE VALUE INDICATED IS MAX. VOLUME STORED IN DRAIN SEGMENT AND NOT TOTAL VOLUME PASSING THROUGH SEGMENT

DRAINS	POND	TILE	10 YR			25 YR			100 YR			500 YR		
			SPILL	EL	STORAC. FT.	W. S. EL	STORAC. FT.	EL W. S. EL	STORAC. FT.	EL W. S. EL	STORAC. FT.	EL W. S. EL	STORAC. FT.	EL W. S. EL
ISLETA	IS36	W31-X31	4887.4		6.7	4888.1	6.7	4888.1	7.1	4888.2	7.4	4888.3		
	IS37	X32	N/A		181.9	4890.2	203.5	4890.4	225.0	4890.6	246.6	4890.8		
	IS38	X32	4885.4		3.7	4886.1	3.8	4886.2	3.8	4886.2	3.8	4886.2		
	IS39	X32	N/A		72.1	4887.6	77.0	4887.7	81.9	4887.8	91.7	4888.0		
	IS40	Y32	4881.4		9.5	4878.7	9.5	4878.7	9.5	4878.7	10.3	4878.8		
	IS41	Y31	N/A		20.3	4877.8	21.3	4877.9	21.3	4877.9	21.3	4877.9		

ARMILJO

ARM1	N32	4938.4	0.9	4938.5	0.9	4938.5	1.1	4938.8	1.1	4938.9				
ARM2	N32	4937.4	6.8	4937.4	6.8	4937.4	7.1	4937.6	7.3	4937.7				
ARM3	N32	4934.4	7.4	4934.6	8.2	4935.1	9.0	4935.6	9.4	4935.8				
ARM4	N32	4933.4	3.5	4933.3	4.0	4933.8	4.3	4934.2	4.5	4934.4				
POND197	O32	4932.4	5.5	4931.7	13.3	4932.4	22.4	4932.7	31.6	4933.0				
ARM5	O33	4923.8	4.8	4931.9	5.6	4932.5	18.4	4933.2	37.0	4933.5				
ARM6	O33	4929.4	4.9	4928.9	5.3	4929.5	5.5	4929.6	5.5	4929.6				
POND82	O32	4929.4	1.8	4929.5	2.3	4929.6	3.1	4929.7	4.0	4929.8				
ARM7	O32	4930.4	1.6	4928.5	1.7	4928.6	1.7	4928.7	1.8	4928.9				
POND196	O32	4929.4	9.9	4929.6	9.9	4929.6	11.9	4929.7	16.0	4929.9				
ARM8	O32	4921.6	1.8	4924.9	1.8	4924.9	1.8	4924.9	1.8	4925.0				
POND84	O32	N/A	0.7	4928.1	1.1	4928.1	1.8	4928.2	2.7	4928.2				

LOS PADILLAS

LP1	P32-33	4923.4	2.9	4921.2	2.9	4921.2	2.9	4921.2	2.9	4921.2				
LP2	P32	4923.4	2.8	4921.5	2.8	4921.5	2.8	4921.5	2.8	4921.5				
LP3	Q32	N/A	4.6	4920.3	4.6	4920.3	4.6	4920.3	4.6	4920.3				
LP4	Q32	4921.4	2.9	4916.6	2.9	4916.6	2.9	4916.6	2.9	4916.6				
LP5	Q31	4919.4	1.5	4911.5	1.7	4911.8	2.1	4912.3	2.6	4912.8				
LP6	R31	4914.4	0.2	4907.1	0.3	4907.4	0.6	4908.0	0.8	4908.7				
LP7	R31	4913.4	0.3	4906.5	0.5	4906.9	0.7	4907.4	1.0	4908.0				
LP8	R31	4911.4	0.4	4906.5	0.5	4906.8	0.8	4907.4	1.0	4908.0				
LP9	R31	4912.4	1.6	4904.8	2.1	4905.2	3.0	4905.8	3.9	4906.4				
LP10	S31	4908.2	0.6	4903.7	0.8	4904.1	1.1	4904.7	1.6	4905.5				
LP11	S31	4908.4	1.1	4900.2	1.5	4900.6	2.0	4901.1	2.8	4901.8				
LP12	T31	4906.4	0.9	4897.6	1.1	4897.9	1.5	4898.4	2.1	4899.1				
LP13	T32	4902.4	0.8	4896.2	1.0	4896.5	1.3	4897.0	1.8	4897.7				
LP14	U31	4899.9	0.8	4894.6	1.1	4894.9	1.5	4895.4	2.0	4896.0				

TABLE 1
AGRICULTURAL DRAIN STORAGE VOLUME SUMMARY - EXISTING CONDITIONS

STORAGE VALUE INDICATED IS MAX. VOLUME STORED IN DRAIN SEGMENT AND NOT TOTAL VOLUME PASSING THROUGH SEGMENT

DRAINS	POND	TILE	SPILL EL	10 YR		25 YR		100 YR		500 YR	
				STOR AC. FT.	W. S. EL	STOR AC. FT.	W. S. EL	STOR AC. FT.	W. S. EL	STOR AC. FT.	W. S. EL
ISLETA INDIAN	INDIAN1	V32	4893.4	0.7	4889.1	0.8	4889.2	0.9	4889.5	1.2	4889.9
	INDIAN2	V32	4890.7	0.7	4886.3	0.8	4886.5	1.1	4887.0	1.3	4887.5
	INDIAN3	W32	4891.1	3.5	4886.5	3.9	4886.8	4.7	4887.3	5.9	4888.0
ATRISCO RIVERSIDE	ATR1	K33	N/A	1.8	4945.4	2.2	4946.0	2.7	4946.8	3.6	4947.5
	ATR2	K33	4946.4	4.1	4939.5	4.8	4939.9	6.1	4940.6	7.6	4941.4
	ATR3	M33	N/A	19.9	4927.0	24.8	4927.9	33.1	4929.5	45.1	4930.8
	ATR4	O32	4922.4	6.2	4917.4	7.3	4918.0	8.8	4918.7	9.9	4919.2
	ATR5	O32	4899.7	43.6	4896.1	47.1	4896.3	52.5	4896.6	60.4	4897.0
ISLETA RIVERSIDE	IR1	W33-X32	N/A	9.2	4885.5	9.2	4885.5	9.2	4885.5	9.2	4885.5

Table 6.D.1
Sub Basin Pond Summary – Existing Conditions

Basin/Pond	10 yr		25 yr		100 yr		500 yr	
	Storage	W.S. Elev	Storage	W.S. Elev	Storage	W.S. Elev	Storage	W.S. Elev
1.00	0.3	4952.5	0.4	4952.6	0.6	4952.7	0.7	4952.8
2.00	1.2	4948.4	1.6	4948.5	2.3	4948.7	3.1	4948.8
4.10	0.6	4942.6	0.8	4942.7	1.1	4943.0	1.6	4943.3
4.20	0.6	4940.3	0.8	4940.4	1.1	4940.5	1.6	4940.6
8.00	0.6	4937.1	0.7	4937.2	1.0	4937.3	1.4	4937.4
10.00	1.2	4939.0	2.0	4939.1	3.2	4939.2	5.0	4939.4
11.00	2.0	4935.6	2.9	4935.7	4.1	4935.8	5.9	4936.1
13.00	4.4	4945.4	5.7	4945.5	7.7	4945.7	10.1	4945.8
16.00	3.3	4942.3	4.4	4942.4	6.3	4942.5	8.7	4942.7
16.10	1.4	4943.1	1.9	4943.3	2.7	4943.8	3.7	4944.3
16.20	0.5	4941.1	0.6	4941.2	0.9	4941.2	1.2	4941.4
16.30	1.4	4945.3	1.9	4945.4	2.7	4945.5	3.7	4945.7
16.40	2.8	4944.1	3.8	4944.2	5.4	4944.4	7.4	4944.5
18.00	3.6	4948.3	4.8	4948.4	6.8	4948.5	9.3	4948.6
20.00	1.5	4953.6	2.0	4953.8	2.8	4954.0	3.7	4954.2
21.00	10.8	4944.4	11.5	4944.4	13.5	4944.5	16.2	4944.6
23.00	1.1	4950.8	1.8	4950.9	2.7	4951.0	4.1	4951.2
25.00	1.6	4945.3	2.2	4945.3	3.3	4945.3	4.7	4945.4
26.00	2.9	4942.4	3.4	4942.5	4.3	4942.7	4.9	4942.7
28.10	0.1	4945.3	0.1	4945.3	0.2	4945.4	0.3	4945.4
28.20	2.9	4943.5	4.0	4943.6	5.1	4943.7	6.1	4943.8
29.00	2.8	4940.7	3.7	4940.8	4.5	4940.9	4.5	4940.9
31.00	2.8	4939.5	3.9	4939.6	5.6	4939.9	7.7	4940.1
33.00	1.2	4938.4	1.7	4938.5	2.4	4938.6	3.4	4938.8
33.10	1.2	4936.6	1.7	4936.7	2.4	4937.0	3.4	4937.4
33.20	0.7	4937.1	1.0	4937.5	1.5	4937.8	2.0	4938.2
33.40	1.2	4937.2	1.7	4937.4	2.4	4937.5	3.4	4937.6
34.00	4.5	4942.7	6.1	4943.2	8.6	4943.3	11.9	4943.4
35.00	1.5	4937.3	2.0	4937.4	2.8	4937.5	3.8	4937.6
35.10	1.1	4937.7	1.5	4937.8	2.0	4938.1	2.7	4938.3
38.00	11.0	4934.8	14.5	4935.0	19.7	4935.3	26.4	4935.4
39.00	15.8	4931.7	15.8	4931.7	21.5	4931.9	24.3	4932.0
41.00	16.3	4931.1	23.3	4931.5	29.4	4931.7	32.5	4931.8
42.10	1.0	4937.0	1.2	4937.4	1.7	4937.6	2.2	4938.0
42.20	0.4	4931.5	0.5	4931.5	0.7	4931.5	0.9	4931.6
43.00	2.5	4933.5	2.5	4933.5	3.5	4933.6	4.4	4933.7
45.00	0.1	4929.0	0.1	4929.1	0.1	4929.2	0.2	4929.3
46.00	2.0	4930.8	4.9	4931.5	7.2	4931.8	8.8	4932.0
48.10	7.3	4923.7	9.2	4923.8	12.3	4924.1	16.1	4924.5
48.20	1.2	4925.4	1.5	4925.4	2.1	4925.5	2.7	4925.5
49.00	5.6	4926.8	8.0	4927.1	11.4	4927.5	14.5	4927.7
58.00	1.2	4942.2	1.7	4942.4	2.5	4942.4	3.6	4942.5
60.00	1.2	4934.6	1.5	4934.7	2.0	4934.8	2.6	4935.0
62.00	1.6	4937.0	2.3	4937.1	3.4	4937.1	5.0	4937.2
63.00	0.8	4941.5	1.2	4941.6	1.7	4941.7	2.4	4941.9
67.10	2.8	4940.9	3.8	4941.0	5.3	4941.2	7.3	4941.3
67.20	2.8	4942.1	5.3	4942.1	5.3	4942.3	7.3	4942.4
68.00	1.8	4941.8	2.5	4942.0	3.7	4942.3	5.3	4942.4

Table 6.D.2
Sub Basin Pond Summary – Existing Conditions

Basin/Pond	10 yr		25 yr		100 yr		500 yr	
	Storage	W.S. Elev	Storage	W.S. Elev	Storage	W.S. Elev	Storage	W.S. Elev
69.00	2.6	4935.2	3.7	4935.3	5.4	4935.5	7.7	4935.7
70.00	2.3	4936.2	3.4	4936.4	5.2	4936.6	7.6	4936.8
71.10	1.7	4935.1	2.2	4935.4	3.1	4935.5	4.3	4935.6
71.20	1.5	4932.6	2.0	4932.9	2.8	4933.4	3.8	4933.9
72.00	0.7	4934.3	0.9	4934.4	1.3	4934.5	1.7	4934.6
73.00	0.8	4934.6	1.2	4934.7	2.0	4934.9	3.0	4935.3
74.00	2.7	4931.4	4.6	4931.5	4.6	4931.5	6.4	4931.6
77.00	0.8	4932.3	1.2	4932.4	1.9	4932.5	2.9	4932.8
79.00	0.4	4929.0	0.5	4929.0	0.7	4929.1	1.0	4929.1
80.00	0.7	4929.1	1.3	4929.2	2.3	4929.2	3.6	4929.3
81.00	2.3	4929.1	3.1	4929.1	4.4	4929.2	6.1	4929.3
83.00	2.7	4929.0	3.7	4929.1	5.5	4929.2	7.7	4929.3
86.10	0.7	4925.2	1.6	4925.4	3.3	4925.5	5.7	4925.7
86.20	0.0	4926.9	0.1	4927.0	0.2	4927.0	0.4	4927.2
87.00	0.8	4927.5	1.3	4927.5	2.1	4927.6	3.1	4927.8
89.00	0.7	4924.0	1.1	4924.0	1.6	4924.1	2.4	4924.2
90.00	1.7	4923.0	2.4	4923.1	3.7	4923.2	5.4	4923.3
92.00	0.1	4922.9	0.2	4923.0	0.4	4923.1	0.7	4923.2
93.00	1.3	4922.3	1.9	4922.5	2.9	4922.5	4.3	4922.6
94.00	7.0	4921.8	10.1	4922.1	15.2	4922.4	22.0	4922.5
97.00	2.3	4919.5	3.4	4919.6	5.3	4919.8	7.8	4920.1
100.00	0.7	4918.4	1.3	4918.4	2.3	4919.1	22.0	4920.1
102.00	4.3	4914.3	6.2	4914.5	9.4	4914.6	13.6	4914.7
104.00	2.1	4918.0	3.1	4918.4	4.7	4918.5	7.0	4918.7
107.00	1.6	4911.6	2.6	4911.8	4.3	4912.1	6.6	4912.5
111.00	0.6	4912.3	1.0	4912.4	1.8	4912.5	3.0	4912.7
113.10	1.3	4912.5	2.0	4912.6	3.2	4912.9	4.9	4913.3
113.20	0.1	4910.5	0.1	4910.6	0.2	4910.7	0.4	4910.9
116.00	0.6	4913.1	1.0	4913.3	1.6	4913.4	2.5	4913.5
120.00	1.0	4909.4	1.6	4909.4	2.4	4909.5	3.5	4909.7
121.00	2.4	4909.6	3.6	4909.7	5.6	4909.9	8.3	4910.2
122.00	0.2	4910.0	0.3	4910.1	0.5	4910.2	0.7	4910.4
123.00	2.4	4906.2	3.4	4906.2	5.1	4906.3	7.3	4906.4
128.10	7.7	4907.3	11.1	4907.4	16.8	4907.6	24.2	4907.8
128.20	1.4	4907.3	2.0	4907.4	3.0	4907.5	4.3	4907.7
130.00	2.2	4912.5	2.7	4912.6	3.6	4912.7	4.5	4912.9
133.00	2.0	4914.4	3.2	4914.5	5.2	4914.6	8.0	4914.8
134.00	0.7	4904.2	1.1	4904.4	2.0	4904.8	3.3	4905.4
135.00	4.6	4908.5	6.7	4908.7	10.5	4909.0	15.5	4909.4
137.10	9.3	4922.5	13.4	4922.9	14.3	4923.0	14.3	4923.0
137.20	9.3	4922.5	13.4	4922.9	14.3	4923.0	14.3	4923.0
138.00	11.6	4920.2	15.3	4920.4	21.0	4920.5	30.4	4920.8
143.00	2.6	4910.5	4.1	4910.6	6.5	4910.7	9.9	4910.9
147.00	5.1	4920.4	7.5	4920.5	11.6	4920.7	17.0	4920.9
151.00	0.2	4914.4	0.3	4914.5	0.6	4914.9	0.9	4915.3
154.00	0.6	4911.7	0.9	4911.8	1.2	4912.0	1.6	4912.2
156.00	2.4	4913.5	2.4	4913.9	2.6	4914.1	2.8	4914.3
157.00	4.1	4908.7	5.7	4908.9	8.2	4909.1	11.4	4909.5

Table 6.D.3
Sub Basin Pond Summary -- Existing Conditions

Basin/Pond	10 yr		25 yr		100 yr		500 yr	
	Storage	W.S. Elev	Storage	W.S. Elev	Storage	W.S. Elev	Storage	W.S. Elev
160.10	0.3	4911.1	0.4	4911.2	0.6	4911.3	0.8	4911.4
160.30	5.4	4910.5	7.3	4910.6	10.4	4910.8	14.4	4911.1
161.00	1.6	4909.9	2.2	4910.1	3.2	4910.4	4.7	4910.5
163.00	0.8	4908.3	1.2	4908.4	1.9	4908.5	2.9	4908.5
171.00	0.7	4935.0	1.1	4935.3	1.7	4935.3	2.5	4935.4
173.00	Storm drain pond for Pajarito Road							
174A	1.3	4916.2	1.9	4916.5	2.5	4916.8	19.9	4921.5
174B	1.3	4921.0	1.6	4921.4	1.8	4921.5	2.5	4921.9
183.00	2.6	4931.1	3.6	4931.4	5.2	4931.6	6.8	4931.8
184.00	1.1	4930.3	1.5	4930.4	2.1	4930.6	2.9	4930.9
187.00	3.0	4932.9	4.6	4933.2	7.5	4933.5	11.4	4933.6
188.00	0.6	4935.1	0.9	4935.2	1.5	4935.4	2.4	4935.7
190.00	0.4	4931.1	0.6	4931.1	1.0	4931.2	1.5	4931.3
193.00	1.6	4929.3	2.3	4929.4	3.5	4929.6	5.0	4929.9
194.00	0.9	4927.4	1.3	4927.6	1.9	4928.0	2.6	4928.5
195.00	4.4	4927.7	5.7	4927.9	7.9	4928.1	10.5	4928.3
201.00	12.3	4929.0	15.5	4929.9	20.2	4931.3	25.9	4933.0
205.00	3.3	4920.5	5.0	4920.6	7.9	4920.9	11.7	4921.2
206.10	0.3	4903.0	0.5	4903.1	0.8	4903.2	1.1	4903.3
206.20	0.2	4903.0	0.4	4903.1	0.6	4903.3	1.0	4903.4
206.30	0.4	4903.2	0.7	4903.4	1.1	4903.5	1.7	4903.6
207.00	1.7	4901.7	2.8	4902.1	4.6	4902.5	6.9	4902.8
209.10	0.3	4902.1	0.5	4902.3	0.9	4902.4	1.5	4902.5
209.20	0.3	4902.4	0.5	4902.5	0.9	4902.6	1.5	4902.8
211.10	0.1	4901.9	0.1	4902.0	0.2	4902.0	0.3	4902.1
213.00	7.4	4905.6	7.4	4905.6	11.1	4906.1	11.8	4906.2
213.20	0.7	4902.6	1.1	4902.8	1.8	4903.0	2.7	4903.4
214.00	1.0	4904.1	1.5	4904.6	5.7	4905.7	6.6	4905.9
215.20	0.2	4901.1	0.2	4901.2	0.3	4901.4	0.5	4901.6
216.00	0.1	4900.9	0.2	4901.0	0.3	4901.1	0.5	4901.2
217.00	2.4	4900.5	3.0	4900.7	3.3	4900.8	3.6	4900.9
218.00	3.4	4900.4	4.4	4900.5	4.4	4900.5	5.4	4900.6
219.00	7.9	4901.1	10.2	4901.4	10.2	4901.4	11.5	4901.5
220.00	4.3	4903.4	6.4	4903.6	9.9	4904.0	14.7	4904.5
221.00	0.1	4900.9	0.1	4901.0	0.2	4901.0	0.2	4901.1
223.10	0.5	4905.6	0.7	4905.8	1.0	4906.0	1.4	4906.3
223.20	0.5	4905.1	0.7	4905.2	1.0	4905.3	1.4	4905.4
225.00	10.8	4952.6	15.4	4952.8	22.9	4953.1	32.6	4953.4
226.00	0.9	4954.5	1.1	4954.5	1.5	4954.6	2.0	4954.7
252.00	1.5	4925.1	1.9	4925.3	2.4	4925.7	3.1	4926.1
254.10							Same as 255.00	
255.00	0.0	4920.2	0.0	4920.3	0.0	4920.4	14.6	4926.2
274.00	0.3	4905.4	0.5	4905.6	0.7	4905.7	1.0	4906.0
275.00	1.9	4905.6	2.8	4905.7	4.3	4906.0	6.2	4906.2
276.00	1.0	4904.8	1.4	4905.0	2.2	4905.3	3.2	4905.7

Table 6.D.4
Sub Basin Pond Summary -- Existing Conditions

Basin/Pond	10 yr		25 yr		100 yr		500 yr	
	Storage	W.S. Elev	Storage	W.S. Elev	Storage	W.S. Elev	Storage	W.S. Elev
277.00	1.0	4903.4	1.6	4903.4	2.8	4903.6	4.4	4903.8
278.00	0.7	4904.2	1.4	4904.4	2.6	4904.6	4.3	4905.0
301.00	1.7	4898.6	2.8	4898.9	4.8	4899.3	7.4	4899.9
301.10	0.5	4899.9	0.8	4900.0	1.4	4900.0	2.1	4900.1
301.20	0.2	4899.1	0.4	4899.3	0.7	4899.7	1.1	4900.2
303.00	1.2	4900.1	1.6	4900.1	2.4	4900.3	3.3	4900.4
304.00	1.1	4899.7	1.9	4900.1	3.4	4899.6	5.4	4900.6
306.00	1.2	4895.7	2.1	4895.9	3.7	4896.3	6.0	4896.5
307.10	0.5	4895.4	0.8	4895.5	1.5	4895.8	2.3	4896.2
310.10	0.1	4899.3	0.1	4899.3	0.2	4899.4	0.3	4899.4
310.20	1.4	4898.6	2.2	4898.8	3.6	4899.1	5.4	4899.5
311.00	0.5	4891.9	0.9	4892.0	1.5	4892.1	2.5	4892.2
312.00	0.6	4891.4	1.0	4891.5	1.6	4891.7	2.4	4892.0
313.00	0.8	4895.0	1.5	4895.2	2.6	4895.4	4.2	4895.7
314.00	1.0	4893.4	1.8	4893.6	3.2	4893.8	5.2	4894.2
317.00	0.2	4891.9	0.4	4892.0	0.6	4892.0	1.0	4892.1
320.00	0.2	4894.2	0.4	4894.3	0.7	4894.4	1.1	4894.5
320.10	0.0	4891.9	0.1	4891.9	0.1	4892.0	0.2	4892.1
321.00	0.2	4896.9	0.4	4897.0	0.7	4897.0	1.2	4897.2
330.00	0.3	4893.9	0.6	4893.9	1.2	4893.9	2.1	4894.0
401.00	0.7	4889.4	1.6	4889.6	3.4	4889.9	5.8	4890.3
402.00	0.4	4890.9	0.6	4891.0	1.1	4891.1	1.8	4891.2
403.10	1.0	4892.1	1.8	4892.3	3.3	4892.7	5.4	4893.3
403.20	0.7	4889.2	1.2	4889.4	2.2	4889.6	3.6	4889.8
403.30	0.6	4890.2	1.0	4890.4	1.9	4890.5	3.0	4890.7
407.00	0.1	4890.9	0.3	4891.0	0.5	4891.1	0.8	4891.2
408.00	0.1	4889.4	0.2	4889.4	0.4	4889.5	0.6	4889.6
409.00	0.3	4886.9	0.5	4887.0	0.9	4887.1	1.5	4887.3
411.00	0.3	4893.6	0.5	4893.7	0.9	4894.0	1.4	4894.3
412.00	0.3	4895.2	0.6	4895.3	1.1	4895.3	1.8	4895.4
502.00	2.1	4888.1	3.8	4888.2	6.5	4888.4	10.2	4888.5
504.10	0.2	4888.5	0.4	4888.6	0.7	4888.8	1.0	4889.0
504.20	0.7	4887.8	1.1	4888.2	2.0	4888.2	3.0	4888.5
506.00	0.1	4889.9	0.1	4890.0	0.2	4890.1	0.4	4890.2
509.00	1.2	4890.0	2.2	4890.1	3.9	4890.3	6.3	4890.5
516.00	0.4	4899.0	0.6	4899.1	0.7	4899.3	1.0	4899.4
518.00	1.0	4989.4	1.4	4989.5	2.0	4989.7	2.8	4989.9
519.00	0.0	4884.1	0.1	4884.4	0.1	4884.5	0.2	4884.7
520.00	0.3	4883.3	0.8	4883.5	1.7	4883.8	2.8	4884.1
521.00	0.5	4884.3	0.9	4884.5	1.6	4884.7	2.6	4885.1
601.10	0.1	4886.4	0.2	4886.4	0.3	4886.4	0.5	4886.4
601.20	0.1	4887.4	0.1	4887.4	0.2	4887.4	0.4	4887.5
601.30	0.1	4885.4	0.2	4885.4	0.3	4885.4	0.5	4885.5
602.00	0.2	4886.1	0.5	4886.5	0.8	4886.9	1.4	4887.7
603.00	0.1	4877.0	0.3	4877.2	0.6	4877.4	1.1	4877.5
603.10	0.1	4876.9	0.2	4876.9	0.3	4876.9	0.5	4877.0
604.00	N/A	4877.7	N/A	4878.2	N/A	4879.0	N/A	4879.7
625.00	4.6	4887.2	6.3	4888.4	9.2	4890.4	12.8	4892.9

Table 15.A.1
Sub-basin AHYMO Modeling Results

		FROM	TO	AREA	PEAK	RUNOFF	TIME TO		CFS	PAGE =
HYDROGRAPH		ID	ID		DISCHARGE	VOLUME	PEAK		PER	
COMMAND	IDENTIFICATION	NO.	NO.	(SQ MI)	(CFS)	(AC-FT)	(INCHES)	(HOURS)	ACRE	NOTATION
*S100 YEAR 24HR STORM FUTURE CONDITION										
RAINFALL TYPE= 2										RAIN24= 2.660
START										TIME= .00
COMPUTE NM HYD	1.00	-	2	.06182	98.31	5.595	1.69684	1.600	2.485 PER IMP=	60.00
COMPUTE NM HYD	2.00	-	2	.22088	84.11	17.506	1.48607	2.850	.595 PER IMP=	45.00
COMPUTE NM HYD	4.00	-	2	.34088	155.24	29.708	1.63408	2.700	.712 PER IMP=	55.00
COMPUTE NM HYD	8.00	-	2	.13245	112.66	10.829	1.53294	1.950	1.329 PER IMP=	45.00
COMPUTE NM HYD	10.00	-	2	.08860	38.23	7.786	1.64762	2.850	.674 PER IMP=	55.00
COMPUTE NM HYD	11.00	-	2	.09707	98.51	8.078	1.56043	1.800	1.586 PER IMP=	50.00
COMPUTE NM HYD	13.00	-	2	.08690	146.90	7.924	1.70976	1.600	2.641 PER IMP=	55.00
COMPUTE NM HYD	16.00	-	2	.27020	158.65	25.455	1.76643	2.500	.917 PER IMP=	60.00
COMPUTE NM HYD	18.00	-	2	.10180	68.06	9.112	1.67822	2.250	1.045 PER IMP=	55.00
COMPUTE NM HYD	19.00	-	2	.01240	12.08	.925	1.39873	1.800	1.522 PER IMP=	40.00
COMPUTE NM HYD	20.00	-	2	.11970	68.52	10.250	1.60555	2.400	.894 PER IMP=	50.00
COMPUTE NM HYD	21.00	-	2	.24158	62.58	20.623	1.60062	3.800	.405 PER IMP=	50.00
COMPUTE NM HYD	23.00	-	2	.08930	66.35	7.993	1.67827	2.150	1.161 PER IMP=	55.00
COMPUTE NM HYD	24.00	-	2	.11730	62.42	9.761	1.56023	2.450	.831 PER IMP=	50.00
COMPUTE NM HYD	25.00	-	2	.24294	127.44	21.740	1.67787	2.550	.820 PER IMP=	55.00
COMPUTE NM HYD	26.00	-	2	.10382	58.29	8.152	1.47230	2.300	.877 PER IMP=	45.00
COMPUTE NM HYD	27.00	-	2	.03482	42.85	2.898	1.56043	1.700	1.923 PER IMP=	50.00
COMPUTE NM HYD	28.00	-	2	.08289	68.01	6.898	1.56043	1.950	1.282 PER IMP=	50.00
COMPUTE NM HYD	29.00	-	2	.26462	126.74	20.776	1.47210	2.500	.748 PER IMP=	45.00
COMPUTE NM HYD	31.00	-	2	.08646	86.20	7.195	1.56043	1.800	1.558 PER IMP=	50.00
COMPUTE NM HYD	33.00	-	2	.16465	141.47	12.929	1.47238	1.900	1.343 PER IMP=	45.00
COMPUTE NM HYD	34.00	-	2	.45253	160.34	37.621	1.55877	3.050	.554 PER IMP=	50.00
COMPUTE NM HYD	35.00	-	2	.10868	124.80	9.045	1.56043	1.750	1.794 PER IMP=	50.00
COMPUTE NM HYD	37.00	-	2	.09975	80.73	8.301	1.56043	2.000	1.265 PER IMP=	50.00
COMPUTE NM HYD	38.00	-	2	.20516	67.37	17.051	1.55835	3.200	.513 PER IMP=	50.00
COMPUTE NM HYD	39.00	-	2	.21280	137.31	18.708	1.64838	2.300	1.008 PER IMP=	55.00
COMPUTE NM HYD	41.00	-	2	.07608	64.96	7.047	1.73662	2.050	1.334 PER IMP=	60.00
COMPUTE NM HYD	42.00	-	2	.26277	96.63	24.303	1.73412	3.200	.575 PER IMP=	60.00
COMPUTE NM HYD	43.00	-	2	.04406	37.79	3.874	1.64848	2.000	1.340 PER IMP=	55.00
COMPUTE NM HYD	44.00	-	2	.11203	137.78	9.242	1.54680	1.700	1.922 PER IMP=	50.00
COMPUTE NM HYD	45.00	-	2	.04204	58.43	3.136	1.39873	1.600	2.172 PER IMP=	40.00
COMPUTE NM HYD	46.00	-	2	.04231	39.96	4.151	1.83971	2.000	1.476 PER IMP=	65.00
COMPUTE NM HYD	47.00	-	2	.04269	59.95	4.023	1.76678	1.700	2.194 PER IMP=	60.00
COMPUTE NM HYD	48.00	-	2	.21986	110.20	18.294	1.56011	2.550	.783 PER IMP=	50.00
COMPUTE NM HYD	49.00	-	2	.14067	87.75	13.027	1.73644	2.400	.975 PER IMP=	60.00
COMPUTE NM HYD	56.00	-	2	.05693	62.21	5.005	1.64848	1.800	1.707 PER IMP=	55.00
COMPUTE NM HYD	57.00	-	2	.06648	50.75	5.533	1.56043	2.050	1.193 PER IMP=	50.00
COMPUTE NM HYD	58.00	-	2	.09287	52.34	7.728	1.56030	2.400	.881 PER IMP=	50.00
COMPUTE NM HYD	59.00	-	2	.02666	32.07	2.219	1.56043	1.700	1.880 PER IMP=	50.00
COMPUTE NM HYD	60.00	-	2	.05593	68.21	4.962	1.66330	1.750	1.906 PER IMP=	55.00
COMPUTE NM HYD	61.00	-	2	.13351	123.92	11.738	1.64848	1.900	1.450 PER IMP=	55.00
COMPUTE NM HYD	62.00	-	2	.11295	31.93	8.855	1.46992	3.400	.442 PER IMP=	45.00
COMPUTE NM HYD	63.00	-	2	.03000	29.62	2.356	1.47238	1.800	1.542 PER IMP=	45.00
COMPUTE NM HYD	64.00	-	2	.01053	19.17	.876	1.56043	1.550	2.845 PER IMP=	50.00
COMPUTE NM HYD	65.00	-	2	.13596	28.42	10.004	1.37962	3.950	.327 PER IMP=	40.00
COMPUTE NM HYD	66.00	-	2	.11432	99.75	10.051	1.64848	1.950	1.363 PER IMP=	55.00

Table 15.A.2
Sub-basin AHYMO Modeling Results

		FROM	TO	AREA	PEAK	RUNOFF		TIME TO	CFS	PAGE = 2	
COMMAND	HYDROGRAPH IDENTIFICATION	ID NO.	ID NO.	(SQ MI)	DISCHARGE (CFS)	VOLUME (AC-FT)	RUNOFF (INCHES)	PEAK (HOURS)	PER ACRE	NOTATION	
COMPUTE NM HYD	67.00	-	2	.07746	58.21	6.810	1.64847	2.100	1.174	PER IMP=	55.00
COMPUTE NM HYD	68.00	-	2	.06827	42.34	5.681	1.56037	2.250	.969	PER IMP=	50.00
COMPUTE NM HYD	69.00	-	2	.10470	49.84	7.729	1.38419	2.450	.744	PER IMP=	40.00
COMPUTE NM HYD	70.00	-	2	.10449	67.68	8.696	1.56038	2.200	1.012	PER IMP=	50.00
COMPUTE NM HYD	71.00	-	2	.10240	42.99	8.039	1.47192	2.700	.656	PER IMP=	45.00
COMPUTE NM HYD	72.00	-	2	.07974	96.89	6.636	1.56043	1.700	1.898	PER IMP=	50.00
COMPUTE NM HYD	73.00	-	2	.04732	26.38	3.271	1.29627	2.200	.871	PER IMP=	35.00
COMPUTE NM HYD	74.00	-	2	.18645	51.41	13.746	1.38234	3.300	.431	PER IMP=	40.00
COMPUTE NM HYD	75.00	-	2	.04122	21.96	2.881	1.31053	2.250	.832	PER IMP=	35.00
COMPUTE NM HYD	77.00	-	2	.04487	21.78	3.136	1.31049	2.350	.758	PER IMP=	35.00
COMPUTE NM HYD	78.00	-	2	.06043	91.25	5.029	1.56043	1.600	2.359	PER IMP=	50.00
COMPUTE NM HYD	79.00	-	2	.02338	34.28	2.165	1.73663	1.650	2.291	PER IMP=	60.00
COMPUTE NM HYD	80.00	-	2	.08824	21.16	6.157	1.30835	3.500	.375	PER IMP=	35.00
COMPUTE NM HYD	81.00	-	2	.07043	65.19	6.248	1.66330	1.950	1.446	PER IMP=	55.00
COMPUTE NM HYD	82.00	-	2	.05523	85.97	4.596	1.56043	1.600	2.432	PER IMP=	50.00
COMPUTE NM HYD	83.00	-	2	.09136	113.95	7.603	1.56043	1.700	1.949	PER IMP=	50.00
COMPUTE NM HYD	84.00	-	2	.04513	41.48	3.756	1.56043	1.900	1.436	PER IMP=	50.00
COMPUTE NM HYD	85.00	-	2	.04747	29.07	4.173	1.64838	2.350	.957	PER IMP=	55.00
COMPUTE NM HYD	86.00	-	2	.17061	16.47	11.705	1.28641	6.900	.151	PER IMP=	35.00
COMPUTE NM HYD	87.00	-	2	.06496	13.62	4.529	1.30724	3.800	.328	PER IMP=	35.00
COMPUTE NM HYD	88.00	-	2	.05895	35.99	4.120	1.31054	2.100	.954	PER IMP=	35.00
COMPUTE NM HYD	89.00	-	2	.05941	27.89	4.152	1.31047	2.400	.734	PER IMP=	35.00
COMPUTE NM HYD	90.00	-	2	.07983	44.86	5.580	1.31053	2.200	.878	PER IMP=	35.00
COMPUTE NM HYD	92.00	-	2	.25951	95.67	18.133	1.31010	2.700	.576	PER IMP=	35.00
COMPUTE NM HYD	93.00	-	2	.06625	46.06	4.631	1.31055	2.000	1.086	PER IMP=	35.00
COMPUTE NM HYD	94.00	-	2	.31382	25.26	21.358	1.27612	8.150	.126	PER IMP=	35.00
COMPUTE NM HYD	97.00	-	2	.11457	23.28	7.985	1.30674	3.850	.317	PER IMP=	35.00
COMPUTE NM HYD	99.00	-	2	.06546	18.39	5.183	1.48445	3.450	.439	PER IMP=	45.00
COMPUTE NM HYD	100.00	-	2	.07223	43.09	5.049	1.31054	2.100	.932	PER IMP=	35.00
COMPUTE NM HYD	101.00	-	2	.10612	32.30	7.413	1.30971	3.000	.476	PER IMP=	35.00
COMPUTE NM HYD	102.00	-	2	.13921	64.67	9.729	1.31044	2.400	.726	PER IMP=	35.00
COMPUTE NM HYD	104.00	-	2	.10565	72.61	7.384	1.31054	2.000	1.074	PER IMP=	35.00
COMPUTE NM HYD	105.00	-	2	.05103	170.99	3.567	1.31055	1.400	5.236	PER IMP=	35.00
COMPUTE NM HYD	107.00	-	2	.16203	136.41	11.325	1.31055	1.850	1.315	PER IMP=	35.00
COMPUTE NM HYD	111.00	-	2	.24724	44.75	17.205	1.30476	4.150	.283	PER IMP=	35.00
COMPUTE NM HYD	112.00	-	2	.06663	18.60	4.653	1.30947	3.150	.436	PER IMP=	35.00
COMPUTE NM HYD	113.00	-	2	.11365	46.09	7.942	1.31032	2.550	.634	PER IMP=	35.00
COMPUTE NM HYD	114.00	-	2	.04139	11.34	2.891	1.30947	3.200	.428	PER IMP=	35.00
COMPUTE NM HYD	115.00	-	2	.06250	15.42	4.362	1.30862	3.400	.386	PER IMP=	35.00
COMPUTE NM HYD	116.00	-	2	.04473	17.72	3.126	1.31034	2.600	.619	PER IMP=	35.00
COMPUTE NM HYD	117.00	-	2	.03639	11.56	2.542	1.30996	2.950	.496	PER IMP=	35.00
COMPUTE NM HYD	120.00	-	2	.09307	14.94	6.469	1.30332	4.550	.251	PER IMP=	35.00
COMPUTE NM HYD	121.00	-	2	.13128	34.12	9.164	1.30882	3.300	.406	PER IMP=	35.00
COMPUTE NM HYD	122.00	-	2	.13565	53.17	9.479	1.31026	2.600	.612	PER IMP=	35.00
COMPUTE NM HYD	123.00	-	2	.10142	27.53	7.081	1.30911	3.200	.424	PER IMP=	35.00
COMPUTE NM HYD	127.00	-	2	.03219	17.25	2.275	1.32541	2.250	.837	PER IMP=	35.00
COMPUTE NM HYD	128.00	-	2	.23179	64.29	16.183	1.30910	3.150	.433	PER IMP=	35.00
COMPUTE NM HYD	130.00	-	2	.03855	20.09	3.570	1.73619	2.650	.814	PER IMP=	60.00
COMPUTE NM HYD	133.00	-	2	.13421	40.35	9.374	1.30964	3.050	.470	PER IMP=	35.00
COMPUTE NM HYD	134.00	-	2	.10928	44.18	7.637	1.31032	2.600	.632	PER IMP=	35.00
COMPUTE NM HYD	135.00	-	2	.12108	19.07	8.411	1.30251	4.600	.246	PER IMP=	35.00
COMPUTE NM HYD	137.00	-	2	.16296	104.95	11.390	1.31054	2.050	1.006	PER IMP=	35.00

Table 15.A.3
Sub-basin AHYMO Modeling Results

HYDROGRAPH		FROM	TO	AREA	PEAK	RUNOFF		TIME TO	CFS	PAGE =
COMMAND	IDENTIFICATION	ID	ID	(SQ MI)	DISCHARGE	VOLUME	RUNOFF	PEAK	PER	NOTATION
		NO.	NO.		(CFS)	(AC-FT)	(INCHES)	(HOURS)	ACRE	
COMPUTE NM HYD	138.00	-	2	.25228	80.34	19.982	1.48511	3.150	.498	PER IMP= 45.00
COMPUTE NM HYD	139.00	-	2	.20643	32.33	14.337	1.30221	4.650	.245	PER IMP= 35.00
COMPUTE NM HYD	141.00	-	2	.12185	65.59	8.613	1.32539	2.250	.841	PER IMP= 35.00
COMPUTE NM HYD	143.00	-	2	.21141	47.14	14.743	1.30755	3.650	.348	PER IMP= 35.00
COMPUTE NM HYD	146.00	-	2	.01738	6.85	1.215	1.31040	2.600	.616	PER IMP= 35.00
COMPUTE NM HYD	147.00	-	2	.25115	62.92	17.526	1.30846	3.350	.391	PER IMP= 35.00
COMPUTE NM HYD	148.00	-	2	.01538	6.18	1.075	1.31043	2.600	.628	PER IMP= 35.00
COMPUTE NM HYD	150.00	-	2	.07290	30.08	5.095	1.31036	2.550	.645	PER IMP= 35.00
COMPUTE NM HYD	151.00	-	2	.03269	26.42	2.285	1.31055	1.850	1.263	PER IMP= 35.00
COMPUTE NM HYD	152.00	-	2	.01914	11.43	1.338	1.31055	2.100	.933	PER IMP= 35.00
COMPUTE NM HYD	153.00	-	2	.05179	10.90	3.611	1.30736	3.800	.329	PER IMP= 35.00
COMPUTE NM HYD	154.00	-	2	.11050	38.40	7.988	1.35543	2.850	.543	PER IMP= 35.00
COMPUTE NM HYD	156.00	-	2	.10714	127.63	7.489	1.31055	1.650	1.861	PER IMP= 35.00
COMPUTE NM HYD	157.00	-	2	.15383	55.30	10.748	1.31011	2.750	.562	PER IMP= 35.00
COMPUTE NM HYD	159.00	-	2	.10643	52.45	7.439	1.31048	2.350	.770	PER IMP= 35.00
COMPUTE NM HYD	160.00	-	2	.18011	37.18	12.553	1.30680	3.800	.323	PER IMP= 35.00
COMPUTE NM HYD	161.00	-	2	.06091	28.92	4.257	1.31048	2.350	.742	PER IMP= 35.00
COMPUTE NM HYD	162.00	-	2	.24105	77.48	16.838	1.30977	2.900	.502	PER IMP= 35.00
COMPUTE NM HYD	163.00	-	2	.04651	19.16	3.250	1.31038	2.550	.644	PER IMP= 35.00
COMPUTE NM HYD	165.00	-	2	.04852	53.83	3.391	1.31055	1.700	1.733	PER IMP= 35.00
COMPUTE NM HYD	166.00	-	2	.06164	45.57	4.697	1.42865	2.000	1.155	PER IMP= 40.00
COMPUTE NM HYD	167.00	-	2	.05120	15.00	3.576	1.30968	3.100	.458	PER IMP= 35.00
COMPUTE NM HYD	171.00	-	2	.07336	25.69	5.126	1.31011	2.800	.547	PER IMP= 35.00
COMPUTE NM HYD	173.00	-	2	.08472	119.43	5.922	1.31055	1.600	2.203	PER IMP= 35.00
COMPUTE NM HYD	174.00	-	2	.07606	84.69	5.316	1.31055	1.700	1.740	PER IMP= 35.00
COMPUTE NM HYD	183.00	-	2	.08158	73.52	7.687	1.76677	2.000	1.408	PER IMP= 60.0
COMPUTE NM HYD	184.00	-	2	.03574	28.19	2.498	1.31055	1.900	1.233	PER IMP= 35.0
COMPUTE NM HYD	185.00	-	2	.09912	48.55	7.394	1.39860	2.400	.765	PER IMP= 40.0
COMPUTE NM HYD	187.00	-	2	.13030	62.32	9.719	1.39857	2.450	.747	PER IMP= 40.00
COMPUTE NM HYD	188.00	-	2	.03976	10.97	2.963	1.39717	3.350	.431	PER IMP= 40.00
COMPUTE NM HYD	190.00	-	2	.04443	51.86	3.314	1.39873	1.700	1.824	PER IMP= 40.00
COMPUTE NM HYD	191.00	-	2	.04521	27.75	4.223	1.75132	2.450	.959	PER IMP= 60.00
COMPUTE NM HYD	192.00	-	2	.06580	11.24	4.578	1.30460	4.350	.267	PER IMP= 35.00
COMPUTE NM HYD	193.00	-	2	.13346	49.13	9.952	1.39812	2.800	.575	PER IMP= 40.00
COMPUTE NM HYD	194.00	-	2	.03079	57.07	2.587	1.57510	1.550	2.896	PER IMP= 50.00
COMPUTE NM HYD	195.00	-	2	.09997	44.12	8.005	1.50144	2.650	.690	PER IMP= 45.00
COMPUTE NM HYD	196.00	-	2	.37491	123.99	31.748	1.58777	3.200	.517	PER IMP= 50.00
COMPUTE NM HYD	197.00	-	2	.16538	73.98	12.335	1.39848	2.550	.699	PER IMP= 40.00
COMPUTE NM HYD	200.00	-	2	.07752	16.29	5.764	1.39412	4.000	.328	PER IMP= 40.00
COMPUTE NM HYD	201.00	-	2	.18789	99.86	14.165	1.41353	2.350	.830	PER IMP= 40.00
COMPUTE NM HYD	202.00	-	2	.19619	27.61	17.979	1.71825	6.500	.220	PER IMP= 60.00
COMPUTE NM HYD	203.00	-	2	.10460	109.52	8.787	1.57510	1.800	1.636	PER IMP= 50.00
COMPUTE NM HYD	205.00	-	2	.17817	39.72	12.425	1.30759	3.650	.348	PER IMP= 35.00
COMPUTE NM HYD	206.00	-	2	.06588	16.48	4.598	1.30870	3.400	.391	PER IMP= 35.00
COMPUTE NM HYD	207.00	-	2	.12816	22.06	8.916	1.30442	4.350	.269	PER IMP= 35.00
COMPUTE NM HYD	208.00	-	2	.11794	31.39	8.234	1.30898	3.250	.416	PER IMP= 35.00
COMPUTE NM HYD	209.00	-	2	.11175	42.00	7.809	1.31021	2.700	.587	PER IMP= 35.00
COMPUTE NM HYD	210.00	-	2	.07805	21.58	5.451	1.30941	3.200	.432	PER IMP= 35.00
COMPUTE NM HYD	210.A	-	1	.03843	41.55	2.686	1.31055	1.700	1.689	PER IMP= 35.00
COMPUTE NM HYD	211A	-	2	.01366	16.81	.955	1.31055	1.650	1.923	PER IMP= 35.00
COMPUTE NM HYD	211.00	-	2	.05328	15.50	3.722	1.30966	3.100	.455	PER IMP= 35.00
COMPUTE NM HYD	212.00	-	2	.05058	13.55	3.532	1.30935	3.250	.419	PER IMP= 35.00

TABLE 16.A

STREET FLOW AND INLET DESIGN ASSUMPTIONS

STREET CAPACITY:

Curbs and gutters will be COA median curb and gutter with the gutter modified to slope towards the curb.

Maximum depth of flow = 6 inches.

Street slope = 0.001 ft/ft.

Manning's' $n = 0.017$.

The street flow capacity = 13.1 cfs.

INLET CAPACITY:

Inlet capacities were developed from PLATE 22.3 D-5 in the COA DPM for a Type A, C, or D inlet.

Weir flow was calculated from OPEN-CHANNEL HYDRAULICS by Ven Te Chow, PhD.

The first inlet is calculated to have inflow capacity of 5.8 cfs.

Subtracting from 13.1 cfs (street capacity) leaves 7.3 cfs in the street.

The capacity of a second inlet would then be 3.7 cfs, leaving 3.6 cfs in the gutter.

A third inlet will pick up 2.3 cfs, leaving 1.3 cfs to bypass the three inlets.

SIMPLIFYING ASSUMPTIONS:

12 cfs of the 13 cfs for the initial (most upstream) sub-basin will be picked up by a storm drain via 3 inlets.

There will be a 1 cfs bypass.

BASIS FOR SELECTING NUMBER OF INLETS AT EACH MANHOLE:

9 to 12 cfs will be picked up by 3 inlets

4 to 9 cfs will be picked up by 2 inlets

less than 4 cfs will be picked up by 1 inlet

TABLE

SOUTHWEST VALLEY CONTRIBUTING SUB-BASINS TO DRAINS

ISLETA DRAIN		ARMILJO DRAIN		ATRISCO RIVERSIDE DRAIN	
IS2	56, 57(20%)	ARM1	29(50%)	ATR1	1(90%)
IS3	57(70%), 28(30%), 24(60%), 27	ARM2	82(15%), 33(60%), 35(60%)	ATR2A	1(10%), 18(40%), 2(40%)
IS4	57(10%), 59, 28(70%), 58(10%)	ARM3	52(85%), 33(40%), 35(40%), 188, 185(20%)	ATR2B	18(60%), 2(60%)
IS5	19, 58(90%), 712(20%), 68(40%)	ARM4	185(20%), 42(60%), 197(20%)	ATR3A	4(30%)
IS6	68(60%), 64, 63(40%), 67(20%)	ARM5	197(60%), 39(20%), 42(40%), 196(10%)	ATR3B	4(60%)
IS7	63(60%), 66(5%), 67(60%), 718, 722, 724, 166(30%)	ARM6	35(80%), 187(20%), 82(70%)	ATR3C	4(10%), 8, 11(20%)
IS8	26, 66(80%), 166(70%), 65(10%)	ARM7	83, 82(30%), 84(40%)	ATR3D	11(80%)
IS9	61(30%), 65(50%), 66(15%), 730(70%), 728, 726	ARM8	196(60%)	ATR3E	NO INFLOW
IS10	65(40%), 61(70%), 730(10%)	ARM9	196(30%), 84(60%), 85	TROUT STOCKING REACH	
IS11	69, 60, 70, 730(20%), 732, 738(10%), 736(40%)	LOS PADILLAS DRAIN		ATR4A	46, 45
IS12	78, 72, 74(30%), 73(50%), 736(60%), 738(90%), 740(20%)	LP1		ATR4B	92(70%)
IS13	77, 75, 73(50%), 190(50%)	LP2	86, 93, 94(50%)	ATR4C	99(80%), 147(30%), 92(5%)
IS14	740(80%), 742, 190(50%), 184, 193(50%), 74(70%)	LP3	97(50%), 94(50%), 101(30%)	ATR4D	116(70%), 133, 114, 99(20%), 104, 115, 117(20%)
IS15	183, 193(50%), 79(50%)	LP4	97(50%), 101(30%)	ATR5A	117(80%), 116(30%), 127, 121, 120, 220(20%)
IS16	191, 202(50%)	LP5	147(70%), 101(40%), 100, 112(20%)	ATR5B	220(80%), 224, 221
IS17	251, 205(60%), 202(50%)	LP6	102(80%), 112(30%)		
IS18	205(40%), 203, 137, 174, G19(50%), 20, 17	LP7	112(50%), 102(20%), 107(20%)		
IS19	173, 141, 150, 151	LP8	107(60%)		
IS20	156(70%), 148, 146	LP9	111, 107(20%), 143(50%), 113(40%)		
IS21	156(30%), G17, 153, 154(30%)	LP10	113(60%), 143(50%), 130, 135(60%), 122(20%)		
IS22	154(70%), G16, 159	LP11	134, 135(40%), 122(80%), 128(90%)		
IS23	160, 152	LP12	128(10%), 123, 278(30%)		
IS24	167, 157(60%), 161, 163	LP13	278(70%), 277(50%), 218(40%), 208(60%)		
IS25	157(40%), 162(40%), 2(25%), 275(60%)	LP14	218(60%), 208(40%), 219(30%)		
IS26	162(60%), 3(30%), 23(30%), 22(50%), 276(80%), 274, 273, 275(40%)				
IS27	165, 223, 207(50%), 276(40%), 277(50%)				
IS28	215, 207(50%), 206(80%), 215A(50%), 214(40%), 209(20%)				
IS29	215A(50%), 211A, 215B(70%)				
IS30	215B(30%), 213, 210A, 212A, 216, 213A, 78, 80				

TABLE 17.B**DRAIN SEGMENT MODELING SUMMARY**

DRAIN	ASSUMED R.O.W. WIDTH (ft.)	OVERFLOW ROADWAY SPILLWAY WIDTH (ft.)	K-ROUTE Run Results	
			Summary Table	Detailed Results Appendix
ISLETA	100	68	17.D.1	W
ARMIJO	80	48	17.D.2	W
LOS PADILLAS	85	53	17.D.2	W
ATRISCO RIVERSIDE	62	3	17.D.3	W

**TABLE 17.C.1
DRAIN SEGMENT VOLUME COMPUTATIONS**

Drain and Segment ID	Depth (ft)	Max. Pond Elevation (ft)	Cross Sectional Area (ft) ²	Length (ft)	Cumulative Volume (ac-ft)	Low Bank Elev.	Length (ft)	Width Right (ft)	Width Left (ft)	Fill Volume (cu-yd)
ISLETA DRAIN										
IS2	5	4948	278	982	6.27	4948	123	20	12	
IS3	5	4945	278	1691	10.79	4945	167	20	12	
IS4	5	4942	278	1841	11.75	4942	203	20		
IS5	6	4942	324	1165	8.67	4942	36	20		
IS6	7	4941	366	1104	9.28	4941	143	20	12	
IS7	6	4939	324	1178	8.76	4939	101	20		75
IS8	4	4937	228	854	4.47	4937	76		12	34
IS9	6	4937	324	1085	8.07	4937	110	20		81
IS10	4	4934	228	1373	7.19	4934	195	20		144
IS11	6	4934	324	2349	17.47	4934	divert to pond 187			
IS12	7	4934	366	1768	14.86	4934	671	20		497
IS13	6	4931	324	1912	14.22					
IS14	5	4929	278	1967	12.55	4929	26	20		19
IS15	5	4929	278	933	5.95	4929	80	20		59
IS16	8	4928	404	2059	19.10					
IS17	5	4921	278	3678	23.47	4921	103		12	46
IS18	4	4916	228	4802	25.13	4916	254		12	
IS19	5	4915	278	2950	18.83	4915	452	20		335
IS20	5	4914	278	1210	7.72	4914	49	20		36
IS21	6	4913	324	1054	7.87	4913				
IS22	7	4911	366	1972	16.57	4911				
IS23	6	4909	324	1568	11.66	4909	66		12	29
IS24	7	4909	366	1106	9.29	4909				
IS25	4	4906	228	2101	11.00	4906	154	20		114
IS26	4	4904	228	1744	9.13	4904	99	20		73
IS27	4	4903	228	1823	9.54	4903				
IS28	6	4902	324	1169	8.70	4902	84	20		62
IS29	6	4901	324	1399	10.41	4901	556	20		412
IS30	7	4900	366	5475	46.00	4900	287		12	128

TABLE 17.C.2
DRAIN SEGMENT VOLUME COMPUTATIONS

[illegible]

TABLE 17.2.1
K-ROUTE MODELING RESULTS SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac. ft.)	Outflow Vol (ac. ft.)	Vol at end (ac. ft.)	Q1 Pipe Outflow (cfs)	Q2 Road Overflow (cfs)	Q3 Back Overflow (cfs)
ISLETA DRAIN											
IS2	71.5644	1.75	15.6	2.65	4946.3	11	10.2	0.742	15.6	0	0
IS3	119.348	2	50.1	3.05	4944.6	30.6	27.4	3.12	37.8	12.2	
IS4	85.4362	1.9	31.7	5	4941.4	43.2	38	5.25	31.7	0	
IS5	114.011	2.2	61.7	3	4941.1	57.7	54.6	3.1	61.7	0	
IS6	83.9482	2.65	68.2	3.4	4939.4	66.1	62.5	3.6	68.2	0	
IS7	94.0235	2	84.7	3.55	4938.7	96	91.3	4.67	54.8	29.9	
IS8	186.781	2.15	185	2.2	4937	136	134	2.64	108	77.6	
IS9	227.605	2.15	203	2.4	4937	149	143	5.87	112	91.2	
IS10	249.199	2.35	232	2.5	4934.3	167	161	6.2	73	159	
IS11	363.995	2.5	301	2.75	4934.4	232	216	15.8	121	180	
Pond-187	349.979	2.6	0	0	0	104	0	104	0	0	
IS12	198.552	1.6	125	3.25	4933.9	189	176	13.5	64.3	61.2	
IS13	145.82	3.15	129	3.85	4928.9	193	187	6.06	129	0	
IS14	262.725	3.5	263	3.55	4929.4	416	403	12.8	75.7	187	
IS15-ARM9	334.346	3.3	315	3.75	4932.7	437	422	15	315		
IS16	327.233	3.75	326	3.9	4928.4	442	424	17.9	137	190	
IS17A	334.36	3.95	325	4.45	4920.9	441	435	5.98	325		
IS17B	104.124	1.45	13.4	5.4	4919.1	19.1	16.7	2.48	13.4	0	
IS18	360.106	4.3	278	6.05	6519.9	492	465	27.8	86.2	192	
Pond-139	219.07	5.6	0	0	0	362	0	362	0	0	
IS19	149.085	1.55	95.3	6.2	4914.8	154	137	16.6	41.3	54	
IS20	98.7439	6.2	98.7	6.3	4913.9	149	143	6.78	41.7	57	
IS21	105.361	5.95	105	6	4912.7	156	150	5.89	75.4	30	
IS22	113.474	5.7	113	5.85	4911.1	170	155	15.5	17.2	96.2	
IS23	132.434	5.45	131	5.7	4908.8	173	164	9.64	85.8	45.4	
IS24	141.451	5.65	141	5.75	4909.1	186	178	8.57	33.7	107	
IS25	153.535	5.75	145	6.45	4905.6	204	199	5.43	129	16.6	
IS26	155.482	6.4	154	6.6	4903.8	227	220	6.97	99.6	54.7	
IS27	184.067	3.3	182	3.45	4903.2	244	235	8.77	28.9	153	
IS28	213.586	3.45	212	3.55	4902.1	252	245	7.78	113	99.7	
IS29	214.479	3.55	180	4.5	4900.5	249	244	4.97	180	0	
IS30	205.522	4.35	179	7.6	4900	276	232	43.3	0	179	
Pond-212*	180.984	7.6	0	0	0	237	0	237	0	0	

* Includes Pond 216

TABLE 17.D.2
K-ROUTE MODELING RESULTS SUMMARY

Drain Segment/ Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac. ft.)	Outflow Vol (ac. ft.)	Vol at end (ac. ft.)	Q1 Pipe Outflow (cfs)	Q2 Road Overflow (cfs)	Q3 Bank Overflow (cfs)
ARMJO DRAIN											
ARM1	64.3675	2.45	49		4934.7	12.9	12.8	0.0594	21.3	27.7	0
ARM2	156.804	1.75	64.3		4936	29.8	29.4	0.417	64.3	0	
ARM3	127.298	1.9	83.4		4934.2	52.6	47.9	4.73	0	83.4	
ARM4	147.224	3.3	145		4931.8	68.9	68.7	0.13	0	145	
Pond-187	146.865	3.5	0		0	73.6	0	73.6	0	0	
ARM5	103.372	2.6	77.6		4932.7	26.5	26.4	0.135	42.8	34.9	
ARM6	158.804	2.4	113		4929.6	49.5	49.3	0.214	95	17.7	
ARM7	162.1	1.65	114		4930.2	59.8	59.7	0.116	114	0	
ARM8	187.811	3.1	152		4930.3	78.7	78.5	0.15	0	152	
LOS PADILLAS DRAIN											
LP1	318.894	3.7	319		4924.4	333	333	0.229	107	211	
LP2	328.075	2.45	328		4923.4	353	351	2.44	128	200	
LP3	348.778	3.8	341		4922.8	370	368	2.22	0	178	163
LP4	19.7381	3.35	14.3		4915.2	7.7	7.66	0.0433	14.3	0	
LP5	76.7574	3.15	64.2		4917	31.6	31	0.557	64.2	0	
LP6	80.9151	3.55	80.4		4910.5	45.2	45	0.129	80.4	0	
LP7	94.1115	3.45	93.5		4910.7	54	53	1	93.5	0	
LP8	98.8362	3.5	98.8		4910.6	61.3	60.8	0.417	83.3	15.5	
LP9	173.298	3.65	145		4909.8	95.8	90.4	5.41	145	0	
LP10	182.896	4.3	183		4909	115	112	3.42	94.7	88.1	
LP11	252.566	3.65	246		4908	148	141	6.32	154	92.1	
LP12	275.126	3.9	273		4905.5	154	144	10.6	32.9	240	
Pond-278	252.705	4	0		0	99.6	0	99.6	0	0	
LP13	59.5885	3.9	49.1		4901.1	73	66.9	6.1	49.1	0	
LP14	78.2654	5.55	78.2		4901.6	86.4	75.4	11	78.2	0	
Pond-217	100.836	5.2	0		0	90.9	0	90.9	0	0	

**TABLE 17.D.3
K-ROUTE MODELING RESULTS SUMMARY**

Drain Segment/ Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac. ft.)	Outflow Vol (ac. ft.)	Vol at end (ac. ft.)	Q1 Pipe Outflow (cfs)	Q2 Road Overflow (cfs)	Q3 Bank Overflow (cfs)
ATRISCO RIVERSIDE DRAIN											
ATR1	91.4799	1.55	14.8	2.25	4949.2	11.5	11.2	0.256	14.8	0	
ATR2A	71.0146	2.45	67.9	2.7	4943.8	29.9	29.7	0.142	67.9		
ATR2B	155.743	2.6	143	2.9	4944.7	70.4	68.4	2.05	109	34.8	
ATR3A	190.049	2.9	185	3	4939.5	84.7	84.3	0.358	185		
ATR3B	288.202	2.95	274	3.15	4935.9	152	150	1.49	274		
ATR3C	320.243	3.1	312	3.25	4933.8	215	213	1.82	312		
ATR3D	336.792	3.25	326	3.5	4930.2	269	266	3.24	326		
ATR4A	75.364	1.6	52.7	2.1	4921.5	13.7	13.6	0.0261	52.7		
ATR4B	109.663	2.45	104	2.65	4932.5	33.1	33	0.0623	104		
ATR4C	153.768	2.8	148	3	4912.3	89.5	89.3	0.176	148		
ATR4D	244.876	2.95	227	3.35	4912.4	124	122	2.1	227		
ATR5A	306.146	3.3	294	3.65	4906.6	196	193	2.15	294		
ATR5B	350.496	3.65	269	3.2	4904	266	264	2.17	269		
DETENTION PONDS											
730											
79	207	2.1	0	0		31.7	0	31.7	0	0	
194	63	1.5	0	0		14.2	0	14.2	0	0	
Gun Club	197	2.3	0	0		39.4	0	39.4	0	0	
Pajarito	426	1.5	0	0		25.9	0	25.9	0	0	
G12	379	1.5	0	0		27.5	0	27.5	0	0	
214	140	2.5	0	0		44.7	0	44.7	0	0	
38	127	1.9	0	0		33.5	0	33.5	0	0	
44	182	1.7	0	0		21.2	0	21.2	0	0	
48	229	2.5	0	0		42.6	0	42.6	0	0	

TABLE 18.A.1
POND VOLUME COMPUTATIONS

Pond 187	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	931957.0	943966.0	956040.0	968177.0	980378.0	992642.0	1004970.0
	Volume (cu. ft.)		937955.1	949996.6	962102.1	974271.1	986503.6	998799.7
	Cum. Vol. (cu. ft.)	5809628.3	4871673.2	3921676.6	2959574.4	1985303.3	998799.7	0.0
	Cum. Vol. (ac-ft.)	133.4	111.8	90.0	67.9	45.6	22.9	0.0

Pond 38	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	218111.0	224205.0	230375.0	236622.0	242944.0	249342.0	255817.0
	Volume (cu. ft.)		221151.0	227283.0	233491.5	239776.1	246136.1	252572.6
	Cum. Vol. (cu. ft.)	1420410.3	1199259.3	971976.2	738484.7	498708.7	252572.6	0.0
	Cum. Vol. (ac-ft.)	32.6	27.5	22.3	17.0	11.4	5.8	0.0

Pond 44	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	91323.0	95336.0	99427.0	103610.0	107884.0	112249.0	116706.0
	Volume (cu. ft.)		93322.3	97374.3	101511.3	105739.8	110059.3	114470.3
	Cum. Vol. (cu. ft.)	622477.3	529155.0	431780.7	330269.4	224529.6	114470.3	0.0
	Cum. Vol. (ac-ft.)	14.3	12.1	9.9	7.6	5.2	2.6	0.0

Pond 194	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	109663.0	115085.0	120637.0	126321.0	132135.0	138081.0	144157.0
	Volume (cu. ft.)		112363.1	117850.1	123468.1	129217.1	135097.1	141108.1
	Cum. Vol. (cu. ft.)	759103.6	646740.5	528890.4	405422.3	276205.2	141108.1	0.0
	Cum. Vol. (ac-ft.)	17.4	14.8	12.1	9.3	6.3	3.2	0.0

Pond 48	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	178794.6	185979.3	193238.8	200573.3	207982.5	215466.6	223025.5
	Volume (cu. ft.)		182375.1	189597.5	196894.7	204266.7	211713.6	219235.2
	Cum. Vol. (cu. ft.)	1310879.5	1128504.4	938906.9	742012.2	537745.5	326032.0	0.0
	Cum. Vol. (ac-ft.)	30.1	25.9	21.6	17.0	12.3	7.5	0.0

TABLE 18.A.2
POND VOLUME COMPUTATIONS

Pond 217	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	800234.0	812259.0	824373.0	836579.0	848876.0	861269.0	873761.0
	Volume (cu. ft.)		806239.0	818308.5	830468.5	842720.0	855065.0	867507.5
	Cum. Vol. (cu. ft.)	5020308.6	4214069.6	3395761.1	2565292.5	1722572.5	867507.5	0.0
	Cum. Vol. (ac-ft.)	115.3	96.7	78.0	58.9	39.5	19.9	0.0

Pond Gunl	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
Road	Area (sq. ft.)	84855.0	88611.0	92439.0	96339.0	100311.0	104355.0	108471.0
	Volume (cu. ft.)		86726.2	90518.3	94382.3	98318.3	102326.3	106406.4
Above #19	Cum. Vol. (cu. ft.)	578677.8	491951.6	401433.3	307051.0	208732.7	106406.4	0.0
	Cum. Vol. (ac-ft.)	13.3	11.3	9.2	7.0	4.8	2.4	0.0

Pond 139	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	846049.0	858421.0	870866.0	883384.0	895974.0	908637.0	921373.0
	Volume (cu. ft.)		852227.5	864636.0	877117.6	889671.6	902298.1	914997.6
	Cum. Vol. (cu. ft.)	5300948.4	4448720.9	3584084.8	2706967.3	1817295.7	914997.6	0.0
	Cum. Vol. (ac-ft.)	121.7	102.1	82.3	62.1	41.7	21.0	0.0

Pond 173	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
Pajarito	Area (sq. ft.)	305457.0	312508.0	319636.0	326840.0	334122.0	341481.0	348919.0
Pond	Volume (cu. ft.)		308975.8	316065.3	323231.3	330474.3	337794.8	345193.3
	Cum. Vol. (cu. ft.)	1961734.9	1652759.1	1336693.8	1013462.5	682988.1	345193.3	0.0
	Cum. Vol. (ac-ft.)	45.0	37.9	30.7	23.3	15.7	7.9	0.0

Pond 214	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	331149.0	340589.0	350136.0	369790.0	369553.0	379432.0	389432.0
	Volume (cu. ft.)		335857.9	345351.5	354952.1	364660.6	374481.6	384421.2
	Cum. Vol. (cu. ft.)	2159724.9	1823867.0	1478515.5	1123563.4	758902.8	384421.2	0.0
	Cum. Vol. (ac-ft.)	49.6	41.9	33.9	25.8	17.4	8.8	0.0

TABLE 18.A.3
POND VOLUME COMPUTATIONS

Pond 212	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	453414.3	469943.1	480547.8	494228.2	507984.4	521816.4	535724.2
	Volume (cu. ft.)		460162.2	473729.2	487372.0	501090.5	514884.9	528755.1
	Cum. Vol. (cu. ft.)	2965993.8	2505831.7	2032102.5	1544730.5	1043640.0	528755.1	0.0
	Cum. Vol. (ac-ft.)	68.1	57.5	46.7	35.5	24.0	12.1	0.0

Pond 216	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	432403.3	441230.0	450134.5	459117.1	468177.7	477316.2	486532.8
	Volume (cu. ft.)		436809.2	445674.8	454618.4	463640.0	472739.6	481917.1
	Cum. Vol. (cu. ft.)	2755399.1	2318589.9	1872915.1	1418296.7	954656.7	481917.1	0.0
	Cum. Vol. (ac-ft.)	63.3	53.2	43.0	32.6	21.9	11.1	0.0

Pond 79	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	80856.0	87377.0	93975.0	100650.0	107401.0	114229.0	121133.0
	Volume (cu. ft.)		84095.4	90656.0	97293.4	104007.2	110797.5	117664.1
	Cum. Vol. (cu. ft.)	604513.7	520418.2	429762.2	332468.8	228461.6	117664.1	0.0
	Cum. Vol. (ac-ft.)	13.9	11.9	9.9	7.6	5.2	2.7	0.0

Pond G12	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	69721.0	73030.0	76407.0	79851.0	83363.0	86943.0	90590.0
	Volume (cu. ft.)		71369.1	74712.1	78122.7	81600.7	85146.7	88760.3
	Cum. Vol. (cu. ft.)	479711.6	408342.5	333630.4	255507.7	173907.0	88760.3	0
	Cum. Vol. (ac-ft.)	11.0	9.4	7.7	5.9	4.0	2.0	0.0

Pond 278	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	464274.5	472474.3	480744.3	489084.5	497494.8	505975.4	514526.0
	Volume (cu. ft.)		468368.4	476603.4	484908.4	493283.7	501729.1	510244.7
	Cum. Vol. (cu. ft.)	2935137.8	2466769.3	1990166.0	1505257.5	1011973.8	510244.7	0.0
	Cum. Vol. (ac-ft.)	67.4	56.6	45.7	34.6	23.2	11.7	0.0

Pond 730	Elev. Above Btm (ft.)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Area (sq. ft.)	82039.0	88654.0	95415.0	102324.0	109382.0	116587.0	123940.0
	Volume (cu. ft.)		85325.1	92013.8	98849.4	105833.4	112965.4	120244.8
	Cum. Vol. (cu. ft.)	615231.8	529906.7	437892.9	339043.5	233210.1	120244.8	0.0
	Cum. Vol. (ac-ft.)	14.1	12.2	10.1	7.8	5.4	2.8	0.0

TABLE 5.E.2
FLOW VOLUMES (AT SELECT ROAD CROSSINGS) - EXISTING CONDITIONS

DRAIN	ID	PEAK VOLUME 2 Year		PEAK VOLUME 5 Year		PEAK VOLUME 10 Year		PEAK VOLUME 25 Year		PEAK VOLUME 100 Year		PEAK VOLUME 500 Year		Station
		INFLOW (cfs.)	OUTFLOW (cfs.)	INFLOW (cfs.)	OUTFLOW (cfs.)	INFLOW (cfs.)	OUTFLOW (cfs.)	INFLOW (cfs.)	OUTFLOW (cfs.)	INFLOW (cfs.)	OUTFLOW (cfs.)			
ISLETA														
Bridge	ISS	41.2	40.0	56.3	58.3	68.2	68.1	84.7	84.8	110.8	110.6	147.4	147.4	813+50
Arenal Rd	IS10	64.1	62.5	84.1	82.5	101.1	98.4	128.6	127.9	178.6	178.8	255.0	255.0	763+50
Palmito Lateral	IS11	71.3	61.8	92.2	74.4	109.7	85.5	139.3	104.8	186.9	138.2	269.2	188.4	728+50
Blake Road	IS13	60.8	58.6	65.4	63.1	68.8	68.3	83.2	78.1	155.3	101.3	157.5	148.7	680+50
Arenal Main Canal	IS15	104.6	95.5	112.3	101.4	107.7	101.6	148.2	125.7	201.8	177.7	245.7	221.6	681+50
Gun Club Rd	IS17	27.0	27.0	115.2	115.2	118.9	118.9	128.3	128.3	131.6	127.4	173.9	173.8	600+00
Don Felipe Rd	IS18	43.3	42.1	86.5	85.3	84.3	83.1	122.8	121.6	202.8	197.1	255.2	257.0	551+50
Palmito Rd	IS19	54.2	54.2	98.9	98.9	88.8	98.8	139.4	139.4	202.8	198.5	323.2	323.1	521+00
Reynosa Ave	IS22	64.2	64.2	108.5	108.5	110.7	110.7	155.6	155.6	221.6	218.7	354.8	354.8	478+50
Los Padillas Rd	IS27	95.8	95.7	141.4	141.3	153.4	153.3	211.3	211.2	302.4	289.8	472.1	472.0	390+10
Los Padillas Drain (425)	IS28	141.0	141.0	198.0	198.0	220.9	220.9	288.4	288.4	387.3	385.2	604.3	604.2	363+40
Coors Road North Crossing	IS30	189.7	179.4	240.2	238.9	271.5	270.2	349.0	341.7	488.5	480.6	715.6	714.4	324+47
Coors Road South Crossing	IS32	181.8	178.9	223.2	216.8	249.6	243.9	312.2	305.4	418.1	410.9	644.5	634.5	279+50
Coors Road South Crossing	IS34	182.9	167.4	231.0	193.8	278.8	228.6	381.7	260.8	591.1	294.0	898.6	328.7	213+00
Trials Rd. 40	IS39	118.2	114.7	128.0	122.4	138.2	135.5	145.6	142.0	185.8	152.0	199.2	192.5	151+55
Segment Upstream of River Outfall	IS41	133.8	113.6	135.8	115.4	138.7	118.0	140.0	119.3	142.6	121.8	145.2	124.1	10+00
ARMILLO														
Arenal Rd	ARM1	20.6	20.6	22.1	22.1	23.4	23.4	31.8	31.8	43.9	43.8	59.8	59.7	171+50
Blake Rd	ARM4	26.0	26.1	29.7	26.9	33.4	33.3	42.7	42.5	58.8	56.7	76.2	75.0	105+50
Segment Upstream Of Isleta Drain	ARM6	35.4	35.4	38.8	38.8	38.1	38.1	44.8	44.9	55.8	55.8	58.7	56.7	10+00
LOS PADILLAS														
Gun Club Rd	LP5	3.5	2.4	4.0	2.8	4.6	3.5	5.6	4.5	7.8	6.1	9.4	8.3	263+70
Don Felipe Rd	LP6	7.3	7.3	8.0	8.0	8.9	8.9	10.3	10.3	12.7	12.7	15.9	15.9	180+50
Palmito Rd	LP8	12.1	12.1	13.0	13.0	14.2	14.2	16.2	16.2	19.6	19.8	24.3	24.2	170+00
Reynosa Rd	LP9	17.1	16.9	18.4	18.2	20.1	18.9	23.0	22.8	27.8	27.8	34.2	34.5	132+50
Arenal Main Canal	LP11	20.7	20.7	22.4	22.4	24.6	24.6	28.3	28.3	34.5	34.5	43.0	43.0	88+50
Los Padillas Rd	LP13	24.5	24.5	26.7	26.7	29.4	29.4	34.1	34.0	41.9	41.9	52.7	52.7	47+50
Mejias Rd	LP14	28.4	28.4	28.5	28.5	31.3	31.3	35.9	35.9	43.8	43.8	54.6	54.6	26+00
Isleta Drain	SEE ISLETA 30													
ISLETA INDIAN														
Tibial Road 86	IID2	29.6	28.6	30.1	30.1	30.9	30.8	32.2	32.1	34.4	34.4	37.5	37.5	74+00
Isleta Blvd. / HWY 147	IID3	63.8	63.9	64.4	64.3	65.3	65.2	68.8	66.7	69.6	69.5	73.3	73.2	36+00
Isleta Drain	SEE ISLETA 37													
ATRISCO RIVERSIDE														
Bridge Blvd	ATR2	36.1	36.0	38.7	38.6	40.9	40.8	44.1	44.0	49.0	48.9	55.2	55.2	551+80
Rio Bravo	ATR3	88.5	40.1	104.5	104.4	112.1	112.0	122.9	122.8	140.0	139.9	161.6	161.6	388+40
Segment Upstream of River Outfall	ATR5	184.1	170.5	185.4	181.8	204.8	181.2	218.4	204.8	240.0	226.4	287.5	253.9	10+00
ISLETA RIVERSIDE														
Highway 147	IR1	74.6	74.4	74.6	74.4	74.6	74.4	74.6	74.4	74.6	74.4	74.6	74.4	65+45

TABLE 3.1

[illegible]

**TABLE 20.A.1
INDIVIDUAL STORM DRAIN SYSTEM COSTS**

DRAIN ID:	PROJECT	COST SUMMARY
K-12-A		\$255,000.00
K-12-B		\$214,000.00
K-12-C		\$199,000.00
K-12-D		\$150,000.00
K-13-A		\$333,000.00
K-13-B		\$867,000.00
L-11-A	CAP	\$351,000.00
L-11-B	CAP	\$909,000.00
L-12-A	CAP	\$527,000.00
L-12-D		\$1,236,000.00
L-13-A		\$938,000.00
L-13-B		\$362,000.00
L-13-C		\$180,000.00
M-11-A	CAP	\$426,000.00
M-11-B	CAP	\$586,000.00
M-11-C	CAP	\$165,000.00
M-11-D	CAP	\$1,959,000.00
M-11-E	CAP	\$329,000.00
M-11-F	CAP	\$311,000.00
M-11-G	CAP	\$562,000.00
M-11-H	CAP	\$237,000.00
M-11-J	CAP	\$333,000.00
M-11-K	CAP	\$67,000.00
M-11-L	CAP	\$1,047,000.00
M-11-M	CAP	\$1,157,000.00
M-12-A		\$349,000.00
M-12-B	CAP	\$229,000.00
M-12-C	CAP	\$450,000.00
M-13-A		\$179,000.00
M-13-B		\$614,000.00
N-11-A	BARCELONA	\$436,000.00
N-11-B	CAP	\$88,000.00
N-11-C	CAP	\$88,000.00
N-11-D	BARCELONA	\$273,000.00
N-11-E	CAP	\$206,000.00
N-11-F	CAP	\$598,000.00
N-11-G	CAP	\$733,000.00
N-11-H	CAP	\$53,000.00
N-11-K	CAP	\$192,000.00
N-11-L	CAP	\$544,000.00
N-11-M	CAP	\$627,000.00
N-11-N	CAP	\$120,000.00

DRAIN ID:	PROJECT	COST SUMMARY
N-12-A	CAP	\$229,000.00
N-12-B	CAP	\$480,000.00
N-12-C	CAP	\$547,000.00
N-12-D	CAP	\$705,000.00
N-12-E	CAP	\$284,000.00
N-12-F		\$1,066,000.00
N-12-G	BARCELONA	\$1,385,000.00
N-12-H	CAP	\$78,000.00
N-12-J	CAP	\$635,000.00
N-12-K	BARCELONA	\$452,000.00
N-12-L	BARCELONA	\$156,000.00
N-12-M		\$1,908,000.00
N-12-N		\$215,000.00
N-12-P.1	AMOLE DAM	\$2,937,000.00
N-13-A		\$145,000.00
P-10-A		\$374,000.00
P-10-B	BARCELONA	\$1,348,000.00
P-10-C		\$194,000.00
P-10-D		\$123,000.00
P-11-A	CAP	\$189,000.00
P-11-B		\$129,000.00
P-11-C		\$194,000.00
P-11-D		\$123,000.00
P-11-E	BARCELONA	\$1,348,000.00
P-11-F	BARCELONA	\$932,000.00
P-11-G	CAP	\$92,000.00
P-11-H		\$206,000.00
P-11-J		\$507,000.00
P-11-K		\$81,000.00
P-12-A	CAP	\$635,000.00
P-12-B	BARCELONA	\$195,000.00
P-12-C	CAP	\$373,000.00
P-12-D		\$1,272,000.00
P-12-E		\$443,000.00
P-12-F		\$374,000.00
P-12-G		\$422,000.00
P-12-H		\$607,000.00
Q-10-A		\$404,000.00
Q-10-B		\$232,000.00
Q-10-C		\$181,000.00
Q-10-D		\$191,000.00
Q-10-E		\$197,000.00
Q-10-G		\$694,000.00
Q-10-H		\$588,000.00
Q-10-J		\$400,000.00
Q-10-K		\$307,000.00
Q-10-L		\$1,023,000.00

INDIVIDUAL STORM DRAIN SYSTEM COSTS

DRAIN ID:	PROJECT	COST SUMMARY
Q-11-A		\$440,000.00
Q-11-B		\$328,000.00
Q-11-C		\$159,000.00
Q-11-D		\$191,000.00
Q-12-A		\$181,000.00
Q-12-B		\$49,000.00
R-10-A		\$181,000.00
R-10-B		\$143,000.00
R-10-C		\$49,000.00
R-10-D		\$723,000.00
R-10-E		\$230,000.00
R-10-F		\$586,000.00
R-10-G		\$594,000.00
R-10-H		\$264,000.00
R-10-J		\$528,000.00
R-10-K		\$112,000.00
R-10-L		\$146,000.00
R-10-M		\$782,000.00
R-10-N		\$102,000.00
R-11-A		\$137,000.00
R-11-B		\$143,000.00
R-11-C		\$247,000.00
R-11-D		\$181,000.00
R-11-E		\$225,000.00
R-11-F		\$122,000.00
R-11-G		\$340,000.00
R-12-A		\$612,000.00
R-12-B		\$3,415,000.00
S-10-A		\$180,000.00
S-10-B		\$239,000.00
S-10-C		\$282,000.00
S-10-D		\$361,000.00
S-10-E		\$56,000.00
S-10-F		\$48,000.00
S-10-G		\$56,000.00
S-10-H		\$223,000.00
S-10-J		\$209,000.00
S-10-K		\$49,000.00
S-10-M		\$371,000.00
S-11-A		\$60,000.00
S-11-B		\$238,000.00
S-11-C		\$151,000.00
S-11-D		\$101,000.00
S-11-E		\$308,000.00

DRAIN ID:	PROJECT	COST SUMMARY
S-12-A		\$594,000.00
S-12-B		\$102,000.00
T-10-A		\$322,000.00
T-10-B		\$489,000.00
T-10-C		\$82,000.00
T-10-D		\$82,000.00
T-10-E		\$82,000.00
T-10-F		\$69,000.00
T-10-G		\$215,000.00
T-10-H	BARCELONA	\$337,000.00
T-10-J		\$793,000.00
T-10-K		\$512,000.00
T-10-L		\$59,000.00
T-10-M		\$324,000.00
T-11-A		\$141,000.00
T-11-B		\$48,000.00
T-11-C		\$292,000.00
T-11-D		\$103,000.00
T-11-E		\$89,000.00
T-11-F		\$89,000.00
T-11-G		\$179,000.00
U-10-A		\$564,000.00
U-10-B		\$167,000.00
U-10-C		\$537,000.00
U-10-D		\$204,000.00
U-11-A		\$45,000.00
U-11-B	POND 217	\$182,000.00
U-11-C		\$71,000.00
U-11-D		\$282,000.00
U-11-E		\$509,000.00
U-11-F		\$65,000.00
U-11-G	POND 212	\$65,000.00
U-11-H		\$125,000.00
U-11-J	POND 217	\$174,000.00

TOTAL FOR ALL STORM DRAINS \$68,016,000.00

TABLE 20.B.1
MRGCD DRAIN RIGHT-OF-WAY COSTS

Drain Segment	R-O-W Width (ft.)	Segment Length (ft.)	Segment Area (ac.)	Row Costs * (\$)
ISLETA DRAIN				
IS2	100	982	2.25	6,750
IS3	100	1691	3.88	11,640
IS4	100	1841	4.23	12,690
IS5	100	1165	2.67	8,010
IS6	100	1104	2.53	7,590
IS7	100	1178	2.70	8,100
IS8	100	854	1.96	5,880
IS9	100	1085	2.49	7,470
IS10	100	1373	3.15	9,450
IS11	100	2349	5.39	16,170
IS12	100	1768	4.06	12,180
IS13	100	1912	4.39	13,170
IS14	100	1967	4.52	13,560
IS15	100	933	2.14	6,420
IS16	100	2059	4.73	14,190
IS17	100	3678	8.44	25,320
IS18	100	4802	11.02	33,060
IS19	100	2950	6.77	20,310
IS20	100	1210	2.78	8,340
IS21	100	1054	2.42	7,260
IS22	100	1972	4.53	13,590
IS23	100	1568	3.60	10,800
IS24	100	1106	2.54	7,620
IS25	100	2101	4.82	14,460
IS26	100	1744	4.00	12,000
IS27	100	1823	4.19	12,570
IS28	100	1169	2.68	8,040
IS29	100	1399	3.21	9,630
IS30	100	5475	12.57	37,710
ARMIJO DRAIN				
ARM 1	80	1317	2.42	7,260
ARM 2	80	2020	3.71	11,130
ARM 3	80	2775	5.10	15,300
ARM 4	80	1546	2.84	8,520
ARM 5	80	1372	2.52	7,560
ARM 6	80	2136	3.92	11,760
ARM 7	80	790	1.45	4,350

* Estimated as \$ 3000.00 per acre.

** Estimated as \$ 9000.00 per acre

TABLE 20.B.2
MRGCD DRAIN RIGHT-OF-WAY COSTS

Drain Segment	R-O-W Width (ft.)	Segment Length (ft.)	Segment Area (ac.)	Row Costs * (\$)
ARM 8	80	1754	3.22	9,660
ARM 9	80	3121	5.73	17,190

LOS PADILLAS DRAIN				
LP EXT**	85	4353	8.49	76,410
LP1	85	2170	4.23	12,690
LP2	85	1570	3.06	9,180
LP3	85	1486	2.90	8,700
RG.OUT	85	4510	8.80	79,200
LP 4	85	1043	2.04	6,120
LP 5	85	2256	4.40	13,200
LP 6	85	1173	2.29	6,870
LP 7	85	991	1.93	5,790
LP 8	85	845	1.65	4,950
LP 9	85	3660	7.14	21,420
LP10	85	1468	2.86	8,580
LP11	85	2620	5.11	15,330
LP12	85	2041	3.98	11,940
LP13	85	1939	3.78	11,340
LP14	85	2022	3.95	11,850

ATRISCO RIVERSIDE DRAIN				
ATR1	62	2809	4.00	12,000
ATR2A	62	2630	3.74	11,220
ATR2B	62	3143	4.47	13,410
ATR3A	62	1931	2.75	8,250
ATR3B	62	3785	5.39	16,170
ATR3C	62	3647	5.19	15,570
ATR3D	62	3384	4.82	14,460
ATR3E	62	1658	2.36	7,080
Trout Stock F	62	1917	2.73	8,190
ATR4A	62	4479	6.38	19,140
ATR4B	62	3220	4.58	13,740
ATR4C	62	3594	5.12	15,360
ATR4D	62	4366	6.21	18,630
ATR5A	62	6255	8.90	26,700
ATR5B	62	6377	9.08	27,240

* Estimated as \$ 3000.00 per acre.

** Estimated as \$ 9000.00 per acre

TABLE 20.C.1
MRGCD DRAIN SEGMENT COST SUMMARY

Drain Segment	Construction Costs (\$)	General Costs 16.5% (\$)	E&C Cost 25% (\$)	R.O.W. COSTS (\$)	Total Cost (\$)
ISLETA DRAIN					
IS2	64,000	10,560	16,000	6,750	74,560
IS3	98,000	16,170	24,500	11,640	114,170
IS4	120,000	19,800	30,000	12,690	139,800
IS5	133,000	21,945	33,250	8,010	154,945
IS6	85,000	14,025	21,250	7,590	99,025
IS7	82,000	13,530	20,500	8,100	95,530
IS8	57,000	9,405	14,250	5,880	66,405
IS9	77,000	12,705	19,250	7,470	89,705
IS10	94,000	15,510	23,500	9,450	109,510
IS11	111,000	18,315	27,750	16,170	129,315
IS12	139,000	22,935	34,750	12,180	161,935
IS13	137,000	22,605	34,250	13,170	159,605
IS14	126,000	20,790	31,500	13,560	146,790
IS15	122,000	20,130	30,500	6,420	142,130
IS16	92,000	15,180	23,000	14,190	107,180
IS17	177,000	29,205	44,250	25,320	206,205
IS18	199,000	32,835	49,750	33,060	231,835
IS19	157,000	25,905	39,250	20,310	182,905
IS20	76,000	12,540	19,000	8,340	88,540
IS21	73,000	12,045	18,250	7,260	85,045
IS22	131,000	21,615	32,750	13,590	152,615
IS23	94,000	15,510	23,500	10,800	109,510
IS24	111,000	18,315	27,750	7,620	129,315
IS25	97,000	16,005	24,250	14,460	113,005
IS26	79,000	13,035	19,750	12,000	92,035
IS27	96,000	15,840	24,000	12,570	111,840
IS28	84,000	13,860	21,000	8,040	97,860
IS29	93,000	15,345	23,250	9,630	108,345
IS30	503,000	82,995	125,750	37,710	585,995
TOTAL	3,507,000	578,655	876,750	373,980	4,085,655

\$1288 000

TABLE 20.C.2
MRGCD DRAIN SEGMENT COST SUMMARY

Drain Segment	Construction Costs (\$)	General Costs 16.5% (\$)	E&C Cost 25% (\$)	R.O.W. COSTS (\$)	Total Cost (\$)
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ARMIJO DRAIN					
ARM1	26,000	4,290	6,500	7,360	30,290
ARM2	75,000	12,375	18,750	11,130	87,375
ARM3	90,000	14,850	22,500	15,300	104,850
ARM4	74,000	12,210	18,500	8,520	86,210
ARM5	27,000	4,455	6,750	7,560	31,455
ARM6	87,000	14,355	21,750	11,760	101,355
ARM7	21,000	3,465	5,250	4,350	24,465
ARM8	59,000	9,735	14,750	9,660	68,735
ARM9	74,000	12,210	18,500	17,190	86,210
TOTAL:	533,000	87,945	133,250	92,830	620,945

ATRISCO RIVERSIDE DRAIN					
ATR1	29,000	4,785	7,250	12,000	33,785
ATR2A	42,000	6,930	10,500	11,220	48,930
ATR2B	78,000	12,870	19,500	13,410	90,870
ATR3A	39,000	6,435	9,750	8,250	45,435
ATR3B	47,000	7,755	11,750	16,170	54,755
ATR3C	47,000	7,755	11,750	14,460	54,755
ATR3D	51,000	8,415	12,750	8,190	59,415
ATR3E	44,000	7,260	11,000	19,140	51,260
Trout Stoc	73,000	12,045	18,250	13,740	85,045
ATR4A	44,000	7,260	11,000	15,360	51,260
ATR4B	45,000	7,425	11,250	18,630	52,425
ATR4C	52,000	8,580	13,000	26,700	60,580
ATR4D	50,000	8,250	12,500	27,240	58,250
ATR5A	58,000	9,570	14,500	15,570	67,570
ATR5B	58,000	9,570	14,500	7,080	67,570
TOTAL:	757,000	124,905	189,250	227,160	881,905

TABLE 20.C.3
MRGCD DRAIN SEGMENT COST SUMMARY

Drain Segment	Construction Costs (\$)	General Costs 16.5% (\$)	E&C Cost 25% (\$)	R.O.W. COSTS (\$)	Total Cost (\$)
LOS PADILLAS DRAIN					
LP EXT	251,000	41,415	62,750	76,410	431,575
LP1	87,000	14,355	21,750	12,690	101,355
LP2	48,000	7,920	12,000	9,180	55,920
LP3	63,000	10,395	15,750	8,700	73,395
RG.OUT	1,577,000	260,205	394,250	79,200	2,310,655
LP4	56,000	9,240	14,000	6,120	65,240
LP5	54,000	8,910	13,500	13,200	62,910
LP6	63,000	10,395	15,750	6,870	73,395
LP7	61,000	10,065	15,250	5,790	71,065
LP8	67,000	11,055	16,750	4,950	78,055
LP9	159,000	26,235	39,750	21,420	185,235
LP10	69,000	11,385	17,250	8,580	80,385
LP11	86,000	14,190	21,500	15,330	100,190
LP12	87,000	14,355	21,750	11,940	101,355
LP13	103,000	16,995	25,750	11,340	119,995
LP14	92,000	15,180	23,000	11,850	107,180
TOTAL:	2,672,000	440,880	668,000	227,160	3,586,330

TABLE 20.D
OFF-LINE POND COSTS

Pond No.	R.O.W. Required (ac)	Excavation Volume (1) (cu.yd.)	No. of Inlets (2)	Outlet Pipe Length (3) (ft.)	Excavation Costs (4) (\$)	Inlet Structure Costs (5) (\$)	Outlet Structure Cost (6) (\$)	General Cost 16.5% (\$)	E&C Cost 25% (\$)	R-O-W Cost (7) (\$)	Total Cost (\$)
187	36	215000.00	5	200	\$1,075,000	\$12,690	\$65,260	\$190,237	\$335,797	\$324,000	\$2,002,983
38	6	53000.00	4	150	\$265,000	\$12,690	\$54,260	\$54,772	\$96,680	\$54,000	\$537,402
44	3	23000.00	4	700	\$115,000	\$12,690	\$175,260	\$49,987	\$88,234	\$27,000	\$468,171
194	3	28000.00	3	800	\$140,000	\$12,690	\$197,260	\$57,742	\$101,923	\$27,000	\$536,615
48	7	49000.00	5	150	\$245,000	\$12,690	\$54,260	\$51,472	\$90,855	\$63,000	\$517,277
217	23	186000.00	4	150	\$930,000	\$12,690	\$54,260	\$164,497	\$290,362	\$207,000	\$1,658,808
GUN CLUB	3	21000.00	4	200	\$105,000	\$12,690	\$65,260	\$30,187	\$53,284	\$27,000	\$293,421
139	22	196000.00	3	150	\$980,000	\$12,690	\$54,260	\$172,747	\$304,924	\$198,000	\$1,722,621
PAJARITO	9	73000.00	4	200	\$365,000	\$12,690	\$65,260	\$73,087	\$129,009	\$81,000	\$726,046
214	11	80000.00	5	150	\$400,000	\$12,690	\$54,260	\$77,047	\$135,999	\$99,000	\$778,996
212	15	110000.00	2	150	\$550,000	\$12,690	\$54,260	\$101,797	\$179,687	\$135,000	\$1,033,433
216	13	102000.00	4	150	\$510,000	\$12,690	\$54,260	\$95,197	\$168,037	\$117,000	\$957,183
79	4	22000.00	3	500	\$110,000	\$12,690	\$131,260	\$41,902	\$73,963	\$36,000	\$405,815
G12	3	18000.00	5	200	\$90,000	\$12,690	\$65,260	\$27,712	\$48,915	\$27,000	\$271,577
278	12	109000.00	2	150	\$545,000	\$12,690	\$54,260	\$100,972	\$178,230	\$108,000	\$999,152
730	5	23000.00	3	150	\$115,000	\$12,690	\$54,260	\$30,022	\$52,993	\$45,000	\$309,965
TOTAL					\$6,540,000	\$203,040	\$1,253,160	\$1,319,373	\$2,328,893	\$1,575,000	\$13,219,466

1. See Tables 18.A.1 through 18.A.3
2. Includes two (2) surface rundowns.
3. Most outlets are costed out as storm drain systems, only upstream extension is included here.
4. Unit Cost - \$ 5.00/cu.yd.
5. Storm drain outfall - included with storm drain cost; Two (2) surface rundowns - see Table 20.E
6. Estimated as \$ 20,000.00 each for the riser, and pipeline costs as \$220.00 per foot; emergency spillway - see Table 20.E
7. Estimated as \$ 9,000.00 per acre.

TABLE 20.E

COST BASIS FOR OFF-LINE POND STRUCTURES

SURFACE DRAINAGE RUNDOWNS

Reinforced concrete = 8 in. thick

Width = 15 ft.

Depth = 2 ft.

Length = 30 ft.

Concrete volume = $(15 + 2 + 2) 30 \times 0.67 = 382 \text{ cu. ft.} = 14.1 \text{ cu. yd.}$

Cost = $14.1 \text{ cu. yd.} \times \$ 450.00/\text{cu. yd.} = \$ 6,345.00$

Assume 2 rundowns per pond = $28.2 \text{ cu. yd.} = \$12,690.00$

EMERGENCY SPILLWAY

Dumped concrete weir – excavate trench and fill with concrete, the top of weir at grade

Length = 100 ft.

Depth = 3 ft.

Thickness = 14 in.

Concrete volume = $100 \times 3 \times 1.2 = 360 \text{ cu. ft.} = 14 \text{ cu. yd.}$

Cost = $14 \text{ cu. yd.} \times \$ 90.00/\text{cu. yd.} = \$ 1,260.00$

AMAFCA DAM OUTFALL COSTS

DAM	OUTLET PIPE LENGTH *1 (ft)	OUTLET PIPE COST *2 (\$)	OUTLET RISER COST *3 (\$)	TOTAL OUTFALL STRUCTURE (\$)	E & C AT 25% (\$)	TOTAL COST (\$)
AMOLE	350	\$77,000.00	\$20,000.00	\$97,000.00	\$24,250.00	\$121,250.00
HUBBELL	1110	\$244,200.00	EXISTING	\$244,200.00	\$61,050.00	\$305,250.00
DON FELIPE	6330	\$1,392,600.00	\$20,000.00	\$1,412,600.00	\$353,150.00	\$1,765,750.00
RAYMAC	400	\$88,000.00	EXISTING	\$88,000.00	\$22,000.00	\$110,000.00
McCOY	180	\$39,600.00	EXISTING	\$39,600.00	\$9,900.00	\$49,500.00

GRAND TOTAL \$2,351,750.00

*1

ESTIMATED FROM MAP.

*2

BASED ON \$220/ft, FOR PIPE

*3

ESTIMATED @ \$20,000.00 EACH

TABLE 21.A.1

FEDERAL CAP COST SUMMARY FOR MRGCD DRAIN IMPROVEMENTS

DRAIN SEGMENT	DRAIN SEGMENT IMPROVEMENT	COST	STORM DRAIN ID	COST	TOTAL COST
ISLETA DRAIN					
IS2	FELICITAS ROAD	\$74,560.00	K-12-A	\$255,000.00	\$329,560.00
IS3	HOOPER ROAD	\$114,170.00	K-12-B	\$214,000.00	\$328,170.00
IS4	ATRISCO DRIVE	\$139,800.00	K-12-C	\$199,000.00	\$338,800.00
IS5	BRIDGE BLVD.	\$154,945.00	L-12-D	\$1,236,000.00	\$1,390,945.00
IS6	YGNANCIO ROAD	\$99,025.00	L-12-A	\$527,000.00	\$626,025.00
IS7	ROSENDO GARCIA	\$95,530.00	L-11-B	\$909,000.00	\$1,520,530.00
			L-11-A	\$351,000.00	
			M-11-C	\$165,000.00	
IS8	KELLY AVE	\$66,405.00	M-11-B	\$586,000.00	\$652,405.00
IS9	MARES ROAD	\$89,705.00	M-11-E	\$329,000.00	\$1,465,705.00
			M-11-L	\$1,047,000.00	
IS10	ARENAL ROAD	\$109,510.00	M-11-F	\$311,000.00	\$982,510.00
			M-11-G	\$562,000.00	
IS11	PAJARITO LATERAL WEIR	\$129,315.00	M-11-D		\$1,959,000.00
			M-11-H		
			M-11-A		
				\$1,959,000.00	
				\$237,000.00	
				\$426,000.00	\$2,751,315.00
	POND 187	\$1,127,700.00			\$1,127,700.00
IS12	ROCKING MULE	\$161,935.00	N-11-K	\$192,000.00	\$1,701,935.00
			N-11-E	\$206,000.00	
			N-11-L	\$544,000.00	
			N-11-F	\$598,000.00	
IS13	BLAKE ROAD	\$159,605.00	N-11-H	\$53,000.00	\$332,605.00
			N-11-N	\$120,000.00	
IS14	BARCELONA ROAD	\$146,790.00	N-11M	\$627,000.00	\$1,682,790.00
			N-11-G	\$733,000.00	
			N-11-B	\$88,000.00	
			N-11-C	\$88,000.00	
IS15	RIO BRAVO BLVD	\$142,130.00	P-11-A	\$189,000.00	\$331,130.00
TOTAL		\$2,940,440.00	TOTAL	\$12,751,000.00	

FEDERAL CAP COST SUMMARY FOR MRGCD DRAIN IMPROVEMENTS

DRAIN SEGMENT	DRAIN SEGMENT IMPROVEMENT	COST	STORM DRAIN ID	COST	TOTAL COST
ARMIJO DRAIN					
ARM1	ARENAL ROAD	\$30,290.00			\$30,290.00
ARM2	SANFORD WEIR TO POND 187	\$87,375.00	M-12-A	\$349,000.00	\$436,375.00
ARM3	VALLEY	\$104,850.00	M-12-B	\$229,000.00	\$1,012,850.00
			M-12-C	\$450,000.00	
			N-12-A	\$229,000.00	
ARM4	BLAKE	\$86,210.00			\$86,210.00
ARM5	PARARITO LATERA	\$31,455.00	N-12-D	\$705,000.00	\$2,280,455.00
			N-12-C	\$547,000.00	
			N-12-H	\$78,000.00	
			N-12-J	\$635,000.00	
			N-12-E	\$284,000.00	
ARM6	DEL RIO	\$101,355.00	P-12-A	\$635,000.00	\$736,355.00
ARM7	PAJARITO LATERAL	\$24,465.00	P-12-B	\$195,000.00	\$592,465.00
			P-12-C	\$373,000.00	
ARM8	LA JUNTA	\$68,735.00			\$68,735.00
ARM9	WEIR TO POND 85	\$86,210.00	P-11-G	\$92,000.00	
TOTAL		\$620,945.00	TOTAL	\$4,801,000.00	
GRAND TOTAL					\$20,805,860.00

TABLE 21.B.1

BARCELONA COST SUMMARY FOR MRGCD DRAIN IMPROVEMENTS

DRAIN SEGMENT	STORM DRAIN ID	COST	TOTAL COST
POND 44	N-12-G	\$1,385,000.00	\$1,385,000.00
ISLETA DRAIN			
IS14	N-11-A	\$436,000.00	
	N-11-D	\$273,000.00	\$709,000.00
ARMIJO DRAIN			
ARM6	P-10-B	\$1,348,000.00	
	P-12-B	\$195,000.00	
	N-12-K	\$452,000.00	
	N-12-L	\$156,000.00	\$2,151,000.00
ARM8	P-11E	\$1,348,000.00	
	P-11-F	\$932,000.00	\$932,000.00
ISLETA DRAIN IS15		\$122,000.00	\$122,000.00
GRAND TOTAL		\$6,647,000.00	

TABLE 23.A: ITERATION COMPARISON OF K-ROUTE MODELS

TABLE 23.A: ITERATION COMPARISON OF K-ROUTE MODELS												
	Iteration 1		Iteration 2		Iteration 3		Iteration 4		Iteration 5		Iteration 6	
	100-Yr Design		100-Yr Design		100-Yr Design		10-Yr Design W/O Arenal Breaks		25-Yr. Design W/ Arenal Breaks		10-Yr Design W/ Arenal Breaks	
Storm Drains Included												
P11F	X		X		X							
M11A	X											
N11G	X		X		X							
N11A	X		X (Extended)		X (Extended)		X (Extended)		X (Extended)		X (Extended)	X (Extended)
P12H	X		X		X		X		X		X	X
L11B			X		X		X		X		X	X
M11D			X				Replaced with Open Channel					
Construct Failure Section in Arenal Drain												
New Channel (Arenal Rd. to Isleta Drain Segment 10)			X		X		X		X		X	X
To L11B - at Sage Rd.			X		X		X		X		X	X
Lowered Invert Elevation												
ARM8 (4924' to 4922')			X		X		X		X		X	
IS8 (4933' to 4932.5')												X
IS10 (4930' to 4929')			X		X		X		X		X (to 4928.5')	
IS15-ARM9 (4925' to 4923')			X		X		X		X		X	X
LP3 (4916' to 4913')			X		X		X		X		X	
LP4 (4916' to 4912')			X		X		X		X		X	
Other Changes												
IS 11: Weir Spill Lowered to 4932' from 4933', B = 80	No Change		X		X		X		X		X	X
Arenal Crossing Improvement			X		X		X		X		X	X
Diversion to Pond 187 from Armijo Drain	X		X								(3) 6' RCPs carry 89% of L11B to IS 10	(3) 6' RCPs carry 89% of L11B to IS 10
Improvement to Arenal to Divert Arenal Break at IS 7 to IS 10											X	X
LP4: Weir spilling to Rio Grande, Base widened from 20' to 37'												
Raise Weir Spill: Roadway Elevation												
ARM 5: Weir Spill @ 4932.5'					Raise to 4933.5'							
IS 8: Weir Spill @ 4936.5'					Raise to 4938'							
IS 9: Weir Spill @ 4936.5					Raise to 4938'							
IS 10 : Weir Spill @ 4933.5'					Raise to 4935.5'							
IS 16: Weir Spill @ 4927.5'					Raise to 4928'							Raise to 4928'
LP2: Weir Spill @ 4922.5'					Raise to 4923'							
Channel Improvements												
ARM1		X		X								
ARM2		X		X								
ARM3		X		X								
ARM4		X		X								
ARM5		X		X								
ARM6		X		X		X	X		X		X	
ARM7		X		X		X	X		X		X	
ARM8		X		X		X	X		X		X	
IS2		X		X								
IS3		X		X					X		X	

TABLE 23.A: ITERATION COMPARISON OF K-ROUTE MODELS

TABLE 23.A: ITERATION COMPARISON OF K-ROUTE MODELS											
	Iteration 1	Iteration 2	Iteration 3		Iteration 4		Iteration 5	Iteration 6			
	100-Yr Design	100-Yr Design	100-Yr Design	10-Yr Design	25-Yr. Design	10-Yr Design	10-Yr Design	5-Yr Design			
						W/O Arenal Breaks	W/ Arenal Breaks				
IS4	X	X		X		X	X				
IS5	X	X		X		X	X				
IS6	X	X		X		X	X				
IS7	X	X		X		X	X				
IS8	X	X		X		X	X				
IS9	X	X		X		X	X				
IS10	X	X		X		X	X				
IS11	X	X		X		X	X				
IS12	X	X		X		X	X				
IS13	X	X		X		X	X				
IS14	X	X		X		X	X				
IS15-ARM9	X	X		X		X	X	X			
IS16	X	X		X		X	X	X			
IS17A	X	X		X		X	X	X			
IS17B	X	X		X		X	X	X			
LPEXT	X	X		X		X	X	X			
LP1	X	X		X		X	X	X			
LP2	X	X		X		X	X	X			
LP3	X	X		X		X	X	X			
LP4	X	X		X		X	X	X			
Structure Comparison - Drain Segment (Existing Culvert)											
ARM1 (3' CMP)											
ARM 2 (4' CMP)											
ARM 3 (3' CMP)											
ARM 4 (5' CMP)								6' RCP			
ARM 5 (3' CMP)			6' RCP					5' RCP			
ARM 6 (3'x3' wood box)			(2) 5' RCPs				(2) 5' RCP	5' RCP			
ARM 7 (3'x3' box)			(2) 5' RCPs					(2) 4' RCP			
ARM 8 (4' CMP)			(2) 5'x5' Box	(2) 5'x5' Box	(2) 5'x5' Box	(2) 5'x5' Box	(2) 5'x5' Box				
IS 2 (4' CMP)								4' RCP			
IS 3 (4' CMP)								4' RCP			
IS 4 (4' CMP)											
IS 5 (5' RCP)											
IS6 (5' CMP)								6' RCP			
IS 7 (3' CMP)		(2) 5.5' RCPs		2x 5.5' RCP	2x 5.5' RCP	2x 5.5' RCP	2x 5.5' RCP	(2) 4' RCP			
IS 8 (6' CMP)		(2) 6' RCPs						(2) 4' RCP			
IS 9 (5' CMP)		(2) 6'x10' Box						(3) 4' RCP			
IS 10 (4' CMP)		(2) 5.5' RCPs	(2) 5.5' RCPs	(2) 5.5' RCPs	(2) 5.5' RCPs	(2) 5'x15' Box					
IS 11 (5' CMP)								(2) 3' RCP			
IS 12 (2' CMP)											
IS 13 (6' RCP)											
IS 14 (4' CMP)		(2) 5' RCP			5' RCP	5' RCP	5' RCP	(2) 4' RCP			
IS 15-ARM 9 (4' RCP)	(2) 7'x7' Boxes	(2) 6'x10' Box	(2) 6'x10' Box	(2) 6'x10' Box	(2) 6'x10' Box	(2) 6'x10' Box	(2) 6'x10' Box	(2) 6'x10'			
IS 16 (4' CMP)		(2) 7' RCPs		4' RCP	6' RCP	6' RCP	6' RCP	(2) 5' RCP			
IS 17A (3' CMP)											
IS 17B (4' CMP)											
LPEXT (6' CMP)											

TABLE 23.A: ITERATION COMPARISON OF K-ROUTE MODELS

	Iteration 1		Iteration 2		Iteration 3		Iteration 4		Iteration 5		Iteration 6	
	100-Yr Design		100-Yr Design		100-Yr Design		25-Yr Design		10-Yr Design		5-Yr Design	
							W/O Arenal Breaks	W/Arenal Breaks				
LP1 (3' CMP)			(2) 5' RCPs				5' RCP	(2) 5' RCP	(2) 5' RCP	(2) 5' RCP	(2) 5' RCP	(2) 5' RCP
LP2 (5' CMP)			(2) 5' RCPs				5' RCP	(2) 5' RCP	(2) 5' RCP	(2) 5' RCP	(2) 5' RCP	(2) 5' RCP
LP3 (4' CMP)			(2) 5' RCPs				5' RCP	(2) 5' RCP	(2) 5' RCP	(3) 4' RCP	(3) 4' RCP	(3) 4' RCP
LP4 (4' CMP)			18" Orifice Plate	18" Orifice Plate	18" Orifice Plate	18" Orifice Plate	18" Orifice Plate	18" Orifice Plate	18" Orifice Plate	18" Orifice Plate	18" Orifice Plate	18" Orifice Plate
Increase Low Bank Elevation												
ARM1												
ARM2												
ARM3												
ARM4												
ARM5			X									
ARM6			X				X	X	X	X	X	X
ARM7			X				X	X	X	X	X	X
ARM8			X				X	X	X	X	X	X
IS2												
IS3			X				X	X	X	X	X	X
IS4			X				X	X	X	X	X	X
IS5			X									
IS6												
IS7			X				X	X	X	X	X	X
IS8			X				X	X	X	X	X	X
IS9			X				X	X	X	X	X	X
IS10			X				X	X	X	X	X	X
IS11			X				X	X	X	X	X	X
IS12			X				X	X	X	X	X	X
IS13												
IS14			X				X	X	X	X	X	X
IS15-ARM9			X				X	X	X	X	X	X
IS16			X				X	X	X	X	X	X
IS17A												
IS17B												
LP1			X				X	X	X	X	X	X
LP2			X				X	X	X	X	X	X
LP3			X				X	X	X	X	X	X
LP4			X				X	X	X	X	X	X
Fill Required to Raise Low Bank 1' Above Water Surface Elev.	26,146 cu. yd.		11,913 cu.yd.		12,069 cu. yd.		6,691 cu. yd.		6,450 cu. yd.		6,450 cu. yd.	

TABLE 23.B.1
ITERATION 1 CONTRIBUTING SUB-BASINS

	Isleta Drain		Armijo Drain	
			ARM1	29(50%)
IS2	56, 57(20%)		ARM2	35(60%)
IS3	57(70%), 28(30%), 24, 27		ARM3	35(40%), 188
IS4	57(10%), 59, 28(70%)		ARM4	185(40%)
IS5	19, 58(25%)		ARM5	197, 39(50%), 42(90%), 43(85%)
IS6	64		ARM6	39(50%), 82(30%), 83(50%)
IS7	63, 66(50%), 67(5%), 166(75%), 26(85%)		ARM7	82(70%), 83(50%)
IS8	26(15%), 66(50%), 166(25%)		ARM8	196(80%), 84
IS9	61, 65(50%)			
IS10	65(50%), 69			
IS11	60, 70, 171(50%), 71(15%)			
IS12	78, 72(80%)		LPEXT	
IS13	77, 75, 73, 190(50%)		LP1	90(20%)
IS14	193(50%), 74(70%), 190(50%)		LP2	88, 89(50%), 90(60%), 93
IS15-ARM9	183, 193(50%), 79(50%), 85, 196(20%), 184		LP3	97(10%), 101(25%)
IS16	194, 202(50%)		LP4	97(10%), 101(25%)
IS17A	202(50%)			
IS17B	251, 252, 205			



TABLE 23.B.2

ITERATION 1 100-YEAR DESIGN I

10-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at end (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	42.3168	1.75	15.4	2.4	4944.7	8.33	8.18	0.142	15.4	0
IS3	83.5966	2.15	29.7	3.35	4943.3	23.7	22.9	0.889	29.7	0
IS4	55.0138	1.95	26	5.5	4939.9	34.6	32.8	1.81	26	0
IS5	28.484	5.35	27.9	6.45	4937.7	39.3	38.8	0.554	27.9	0
IS6	29.989	6.45	29.1	7.8	4936.4	44.2	43.4	0.76	29.1	0
IS7	101.343	2	41.1	7.65	4938.5	78.4	74.1	4.34	33.1	8
IS8	70.7584	2.2	51.9	7.65	4936.6	103	100	2.86	42.7	9.2
IS9	95.208	1.9	58.4	4.75	4935.9	115	111	3.35	58.4	0
IS10	81.282	2.6	75.1	3.55	4933.8	131	124	6.22	34	41.1
IS11	109.321	3.3	94.3	5.1	4933.6	184	169	15.1	69.8*	24.5*
Pond-187	51.554	2.4	0.0313	29.9	4931.1	30.5	0.0503	30.5	0.0313	0
IS12	116.672	1.6	79.9	6.15	4933.8	181	167	14.1	35.5	44.3
IS13	84.335	5.95	82.1	12	4929.3	180	172	8.5	82.1	0
IS14	168.763	11.2	169	11.3	4929.1	391	378	12.9	60.2	109
IS15-ARM9	270.989	4.05	260	4.65	4929.4	480	473	7.04	260	
IS16	268.7	4.7	268	4.8	4928.4	487	468	19.1	66.8	202
IS17A	277.051	4.9	276	5.05	4921.8	480	468	12.3	33.6	243**
IS17B	106.287	1.5	38.2	12.2	4920.4	92.5	83.4	9.08	38.2	0
Arnujo Drain										
ARM1	34.139	2.45	26.8	2.9	4932.8	8.29	8.26	0.0286	10.7	16.1
ARM2	46.3852	1.7	26.8	3.3	4932.5	13.8	13.7	0.105	26.8	0
ARM3	40.4428	1.7	23.4	4.5	4930.5	19.9	19.7	0.194	23.4	0
ARM4	25.4914	4.4	25.4	4.5	4930.1	23.8	23.8	0.0329	25.4*	0*
Pond-187	53.9193	2.7	0.0358	29.9	4931.6	34.6	0.0572	34.6	0.0358	0
ARM5	136.632	2.5	127	2.85	4933	53.2	52.9	0.273	36.1	90.9
ARM6	151.612	2.8	114	3.4	4929.9	63.7	63.1	0.634	43.9	70.1
ARM7	115.109	3.4	100	3.8	4930	67.1	67	0.131	100	0
ARM8	145.831	3.65	110	4.4	4930.7	83.6	83.3	0.344	110	0
Los Padillas Drain										
LPEXT	245.775	5.05	160	24.9	4924.8	401	272	129	160	
LP1	213.615	24.6	214	24.7	4924.1	404	392	11.9	100	113
LP2	214.915	24.2	215	24.3	4923.1	402	393	8.29	100	115
LP3	215.827	24.3	216	25	4922.3	396	388	8.51	62.5	153
LP4	216.259	24.9	216	25	4922	390	380	10.8	28	188

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.B.3

ITERATION 1, 100-YEAR DESIGN I

25-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at end (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	53.7216	1.75	19.1	2.4	4945.1	9.37	9.21	0.162	19.1	0
IS3	107.266	2.15	36.6	3.4	4944.1	27.9	27	0.913	36.6	0
IS4	70.3396	1.95	31.5	5.55	4940.5	40	38.2	1.86	31.5	0
IS5	34.1322	5.4	33.5	6.5	4938.1	45.2	44.6	0.565	33.5	0
IS6	35.557	6.45	34.5	7.9	4936.9	50.2	49.4	0.784	34.5	0
IS7	127.802	2	71.7	2.7	4938.7	87.5	83.1	4.39	33.5	38.2
IS8	99.0144	2.65	95.6	2.75	4936.8	113	110	2.92	45.7	49.9
IS9	120.455	2.7	108	2.95	4936.7	128	124	3.46	78.1	30.3
IS10	142.683	2.95	136	3.1	4934.1	146	139	6.23	36.4	99.4
IS11	184.256	3.05	143	3.7	4933.7	202	186	15.4	77.6	64.9*
Pond-187	82.4796	3.65	0.0441	29.9	4932.4	46.4	0.0776	46.3	0.0441	0
IS12	144.794	1.6	83.6	4.8	4933.8	187	173	14.1	35.6	48
IS13	89.867	4.7	84.3	10.4	4929.4	188	180	8.59	84.3	0
IS14	176.406	3.05	176	3.1	4929.1	402	389	12.9	60.2	116
IS15-ARM9	429.071	3.45	390	3.85	4931.3	515	508	7.12	390	
IS16	396.434	3.85	391	3.95	4928.7	524	505	19.1	67.5	323
IS17A	397.911	3.95	386	4.2	4922.3	519	506	12.3	34.6	351**
IS17B	133.334	1.5	46.2	5.9	4920.5	96.8	87.6	9.17	40.5	5.72
Armijo Drain										
ARM1	45.689	2.45	34.4	2.95	4933.3	10.1	10.1	0.0286	13.8	20.7
ARM2	59.87	1.7	34.5	3.35	4932.9	16.5	16.4	0.106	34.5	0
ARM3	50.755	1.7	30.2	4.55	4931.1	23.7	23.5	0.194	30.2	0
ARM4	33.0776	4	32.9	4.2	4930.7	28.1	28.1	0.0485	32.9*	0*
Pond-187	69.1539	2.7	0.0412	29.9	4932.1	40.8	0.0694	40.8	0.0412	0
ARM5	178.075	2.5	174	2.65	4933.2	65.3	65.1	0.261	36.4	138
ARM6	216.055	2.6	186	2.95	4930.2	78.3	77.6	0.709	44.4	142
ARM7	189.652	2.95	179	3.15	4931	82.8	82.6	0.142	102	77
ARM8	251.473	3.15	218	3.5	4931.7	104	104	0.369	159	58.7
Los Padillas Drain										
LPEXT	354.44	4.2	172	20.9	4925	439	307	132	172	
LP01	225.31	20.8	225	21	4924.1	439	427	11.9	100	125
LP02	226.852	20.9	227	21	4923.2	439	431	8.32	100	127
LP03	227.819	21	228	22.2	4922.9	434	425	9.07	63.7	164
LP04	228.318	22.2	228	22.2	4922	428	418	9.85	28.1	200

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.B.4

ITERATION 1 100-YEAR DESIGN I

100-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at end (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	71.5644	1.75	24.2	2.4	4945.7	11	10.8	0.184	24.2	0
IS3	143.429	2.1	84.4	2.85	4944.7	34.3	33.4	0.939	48.4	36.1
IS4	100.536	2.85	44.6	4.15	4941.5	48.4	46.5	1.9	40.1	4.43
IS5	48.4595	4.1	44.1	5.05	4938.7	54.3	53.7	0.578	44.1	0
IS6	46.203	5.05	43.3	7.25	4937.6	59.5	58.7	0.813	43.3	0
IS7	169.639	2	136	2.4	4939.1	102	97.1	4.47	34.1	102
IS8	187.416	2.4	179	2.45	4937.2	129	126	3.03	49.9	129
IS9	234.346	2.4	217	2.5	4937.1	148	144	3.67	100	116
IS10	274.971	2.5	255	2.65	4934.5	169	163	6.25	38.7	217
IS11	344.098	2.65	278	2.95	4934	230	214	15.6	99.7	178*
Pond-187	239.489	2.9	0	29.9	4933.8	72.6	0	72.5	0	0
IS12	188.246	1.6	98.9	3.6	4933.9	196	182	14.1	35.8	63.1
IS13	115.279	3.45	91.1	6	4929.7	200	191	8.66	91.1	0
IS14	208.495	3.5	208	3.55	4929.2	418	405	12.9	60.5	148
IS15-ARM9	654.478	2.95	625	3.2	4932.3	569	562	7.2	625	
IS16	630.373	3.2	612	3.35	4929.6	581	562	19.1	69.3	543
IS17A	617.792	3.35	582	3.65	4923.1	578	565	12.4	36.3	546**
IS17B	174.278	1.5	70.6	4.4	4920.7	103	94.1	9.27	45.5	25.1
Armijo Drain										
ARM 1	64.3675	2.45	46.9	2.95	4934.1	12.9	12.8	0.0286	19.1	27.8
ARM 2	80.9962	1.7	47.3	3.3	4933.5	20.7	20.6	0.106	47.3	0
ARM 3	66.9768	1.7	32.8	4.95	4932.4	29.7	29.5	0.195	32.8	0
ARM 4	42.6022	2.7	40.3	3.15	4931.4	34.9	34.9	0.0656	40.3*	0*
Pond-187	91.4206	2.7	0	29.8	4932.6	50.5	0	50.4	0	0
ARM 5	241.913	2.5	240	2.55	4933.4	84.2	83.9	0.256	36.8	204
ARM 6	306.69	2.5	288	2.7	4930.5	101	100	0.814	45.1	243
ARM 7	295.3	2.7	294	2.75	4931.4	107	107	0.189	103	192
ARM 8	386.87	2.75	372	3	4932.3	136	136	0.368	177	195
Los Padillas Drain										
LPEXT	548.852	3.65	177	21.9	4925.5	497	347	151	177	
LP1	229.92	21.7	230	21.8	4924.2	479	467	12	100	130
LP2	231.64	20.2	232	20.3	4923.2	483	475	8.38	100	131
LP3	232.663	19.7	233	20.5	4923.1	479	469	9.98	64.1	169
LP4	233.48	19.8	233	19.8	4922	473	464	8.74	28.1	205

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.B.5

ITERATION 1 100-YEAR DESIGN I

500-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at end (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	92.5822	1.75	30.5	2.45	4946.4	12.9	12.7	0.203	30.5	0
IS3	188.14	2.1	150	2.6	4945	42.3	41.3	0.963	60.1	90.1
IS4	182.901	2.6	132	3	4942	58.8	56.9	1.95	58.2	74.2
IS5	145.464	2.95	83.1	3.7	4941.1	65.6	65	0.592	83.1	0
IS6	85.292	3.7	68.7	4.85	4939.2	71.1	70.3	0.845	68.7	0
IS7	219.963	2	213	2.15	4939.3	119	115	4.57	34.7	178
IS8	301.912	2.15	282	2.25	4937.5	149	146	3.17	54	228
IS9	393.438	2.2	362	2.35	4937.6	173	169	3.88	101	260
IS10	437.859	2.35	414	2.45	4934.8	199	192	6.26	53.4	361
IS11	548.209	2.4	421	2.75	4935.6	265	249	15.7	103	318*
Pond-187	422.335	2.7	0.0761	29.9	4935.6	107	0.148	107	0.0761	0
IS12	238.88	1.6	126	2.95	4934	204	190	14.1	36.1	89.9
IS13	172.359	2.95	125	3.8	4930.6	212	204	8.7	108	17.4
IS14	270.71	3.65	270	3.7	4929.4	436	423	12.9	60.9	210
IS15-ARM9	881.237	2.75	868	2.95	4932.9	635	627	7.29	868	
IS16	874.28	2.95	856	3.1	4930.9	650	631	19.2	71.8	784
IS17A	861.093	3.1	821	3.4	4924.2	649	637	12.4	38.4	783**
IS17B	222.141	1.5	95.6	3.85	4920.8	112	102	9.37	50.6	44.9
Armijo Drain										
ARM1	88.122	2.45	64.7	2.9	4934.9	16.4	16.3	0.0287	29.3	35.5
ARM2	105.976	1.7	60.5	3.4	4934.2	26	25.9	0.106	60.5	0
ARM3	88.9596	1.75	61.9	4.3	4933.3	37.1	36.9	0.196	34.7	27.3
ARM4	66.2232	4.25	60.5	4.7	4933	43.4	43.3	0.0828	60.5*	0*
Pond-187	116.737	2.7	0.0526	29.8	4933.3	62.6	0.0985	62.5	0.0526	0
ARM5	318.068	2.5	318	2.55	4933.6	108	107	0.261	37.3	280
ARM6	411.64	2.4	402	2.55	4930.8	129	128	0.94	45.7	356
ARM7	414.529	2.55	413	2.6	4931.7	137	137	0.245	103	310
ARM8	528.657	2.65	525	2.75	4932.8	176	175	0.373	178	347
Los Padillas Drain										
LPEXT	785.842	3.4	180	23.2	4927.6	568	374	194	180	
LPI	232.874	23.1	233	23.2	4924.2	506	494	12	100	133
LP2	234.769	20.4	235	20.5	4923.2	515	507	8.39	100	134
LP3	235.856	19	236	19.9	4923.2	512	502	10.2	64.4	172
LP4	236.837	12.6	237	12.6	4922.1	507	497	9.52	28.1	209

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.B.6
ITERATION 1_100 DESIGN I
WATER SURFACE ELEVATION SUMMARY

POND NAME	10-YR ELEV (FT)	25-YR ELEV (FT)	100-YR ELEV (FT)	500-YR ELEV (FT)	LOW BANK ELEV (FT)
ARM1	4932.8	4933.3	4934.1	4934.9	4938.0
ARM2	4932.5	4932.9	4933.5	4934.2	4937.0
ARM3	4930.5	4931.1	4932.4	4933.3	4934.0
ARM4	4930.1	4930.7	4931.4	4933.0	4934.0
ARM5	4933.0	4933.2	4933.4	4933.6	4933.0
ARM6	4929.9	4930.2	4930.5	4930.8	4930.0
ARM7	4930.0	4931.0	4931.4	4931.7	4931.0
ARM8	4930.7	4931.7	4932.3	4932.8	4929.0

IS2	4944.7	4945.1	4945.7	4946.4	4948.0
IS3	4943.3	4944.1	4944.7	4945.0	4945.0
IS4	4939.9	4940.5	4941.5	4942.0	4942.0
IS5	4937.7	4938.1	4938.7	4941.1	4942.0
IS6	4936.4	4936.9	4937.6	4939.2	4941.0
IS7	4938.5	4938.7	4939.1	4939.3	4939.0
IS8	4936.6	4936.8	4937.2	4937.5	4937.0
IS9	4935.9	4936.7	4937.1	4937.6	4937.0
IS10	4933.8	4934.1	4934.5	4934.8	4934.0
IS11	4933.6	4933.7	4934.0	4935.6	4934.0
IS12	4933.8	4933.8	4933.9	4934.0	4934.0
IS13	4929.3	4929.4	4929.7	4930.6	4931.0
IS14	4929.1	4929.1	4929.2	4929.4	4929.0
IS15-ARM9	4929.4	4931.3	4932.3	4932.9	4929.0
IS16	4928.4	4928.7	4929.6	4930.9	4929.0
IS17A	4921.8	4922.3	4923.1	4924.2	4925.0
IS17B	4920.4	4920.5	4920.7	4920.8	4922.0

LPEXT	4924.8	4925.0	4925.5	4927.6	4925.0
LP1	4924.1	4924.1	4924.2	4924.2	4924.0
LP2	4923.1	4923.2	4923.2	4923.2	4923.0
LP3	4922.3	4922.9	4923.1	4923.2	4922.0
LP4	4922.0	4922.0	4922.0	4922.1	4921.0

TABLE 23.B.7

Grand	
Total	26,146

TABLE 23.C.1
ITERATION 2 CONTRIBUTING SUB-BASINS

Isleta Drain		Armijo Drain	
IS2	56, 57(20%)	ARM1	29(50%)
IS3	57(70%), 28(30%), 24, 27	ARM2	35(60%)
IS4	57(10%), 59, 28(70%)	ARM3	35(40%), 188
IS5	19, 58(25%)	ARM4	185(40%)
IS6	64	ARM5	197, 39(50%), 42(90%), 43(85%)
IS7	63, 66(80%), 67, 166(75%), 26(85%)	ARM6	39(50%), 82(30%), 83(50%)
IS8	26(15%), 66(20%), 166(25%)	ARM7	82(70%), 83(50%)
IS9	61, 65(50%)	ARM8	196(80%), 84
IS10	65(50%)		
IS11	60, 70, 171(50%), 71(15%), 69	Los Padillas Drain	
IS12	78, 72(80%)	LPEXT	
IS13	77, 75, 73, 190(50%)	LP1	90(20%)
IS14	193(50%), 74(70%), 190(50%)	LP2	88, 89(50%), 90(60%), 93
IS15-ARM9	183, 193(50%), 79(50%), 85, 196(20%), 184	LP3	97(10%), 101(25%)
IS16	194, 202(50%)	LP4	97(10%), 101(25%)
IS17A	202(50%)		
IS17B	251, 252, 205		

TABLE 23.C.2

ITERATION 2_100-YEAR DESIGN II

10-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at end (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	71.5644	1.75	24.2	2.4	4945.7	11	10.8	0.184	24.2	0
IS3	143.429	2.1	84.4	2.85	4944.7	34.3	33.4	0.939	48.4	36.1
IS4	100.536	2.85	44.6	4.15	4941.5	48.4	46.5	1.9	40.1	4.43
IS5	48.4595	4.1	44.1	5.05	4938.7	54.3	53.7	0.578	44.1	0
IS6	46.203	5.05	43.3	7.25	4937.6	59.5	58.7	0.813	43.3	0
IS7	169.639	2	136	2.4	4939.1	102	97.1	4.47	34.1	102
IS8	187.416	2.4	179	2.45	4937.2	129	126	3.03	49.9	129
IS9	234.346	2.4	217	2.5	4937.1	148	144	3.67	100	116
IS10	274.971	2.5	255	2.65	4934.5	169	163	6.25	38.7	217
IS11	344.098	2.65	278	2.95	4934	230	214	15.6	99.7	178*
Pond-187	239.489	2.9	0.0579	29.9	4933.8	72.6	0.109	72.5	0.0579	0
IS12	188.246	1.6	98.9	3.6	4933.9	196	182	14.1	35.8	63.1
IS13	115.279	3.45	91.1	6	4929.7	200	191	8.66	91.1	0
IS14	208.495	3.5	208	3.55	4929.2	418	405	12.9	60.5	148
IS15-ARM9	654.478	2.95	625	3.2	4932.3	569	562	7.2	625	
IS16	630.373	3.2	612	3.35	4929.6	581	562	19.1	69.3	543
IS17A	617.792	3.35	582	3.65	4923.1	578	565	12.4	36.3	546**
IS17B	174.278	1.5	70.6	4.4	4920.7	103	94.1	9.27	45.5	25.1
Arnujo Drain										
ARM1	34.139	2.45	26.8	2.9	4932.8	8.29	8.26	0.0286	10.7	16.1
ARM2	46.3852	1.7	26.8	3.3	4932.5	13.8	13.7	0.105	26.8	0
ARM3	40.4428	1.7	23.4	4.5	4930.5	19.9	19.7	0.194	23.4	0
ARM4	25.4914	4.4	25.4	4.5	4930.1	23.8	23.8	0.0329	25.4	0
Pond-187	53.9193	2.7	0.0358	29.9	4931.6	34.6	0.0572	34.6	0.0358	0
ARM5	136.632	2.5	108	3.2	4931.6	53.2	53.1	0.102	108	0
ARM6	127.824	2.7	115	3.5	4927.5	63.9	63.8	0.107	115	0
ARM7	115.951	3.45	115	3.7	4927.5	67.8	67.7	0.124	115	0
ARM8	165.511	3.35	159	3.8	4927	84.3	84.2	0.158	159	0
Los Padillas Drain										
LPEXI	548.852	3.65	177	21.9	4925.5	497	347	151	177	
LP1	229.92	21.7	230	21.8	4924.2	479	467	12	100	130
LP2	231.64	20.2	232	20.3	4923.2	483	475	8.38	100	131
LP3	232.663	19.7	233	20.5	4923.1	479	469	9.98	64.1	169
LP4	233.48	19.8	233	19.8	4922	473	464	8.74	28.1	205

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXI.dat)

TABLE 23.C.3

ITERATION 2 100-YEAR DESIGN II

25-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at end (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	53.7216	1.75	19.1	2.4	4945.1	9.37	9.21	0.162	19.1	0
IS3	107.266	2.15	36.6	3.4	4944.1	27.9	27	0.913	36.6	0
IS4	70.3396	1.95	31.5	5.55	4940.5	40	38.2	1.86	31.5	0
IS5	34.1322	5.4	33.5	6.5	4938.1	45.2	44.6	0.565	33.5	0
IS6	35.557	6.45	34.5	7.9	4936.9	50.2	49.4	0.784	34.5	0
IS7	269.827	2	234	2.35	4938.7	293	289	3.85	205	29.5
IS8	264.725	2.3	215	2.75	4938	317	314	2.78	215	0
IS9	254.339	2.1	231	3.05	4937	331	328	3.26	231	0
IS10	519.654	2.45	516	2.55	4935.2	394	392	1.95	498	18.4
IS11	587.455	2.5	581	2.6	4933.5	453	441	12	67.4	513*
Pond-187	576.118	2.6	0	29.9	4931.3	326	0	325	0	0
IS12	163.158	1.6	71.6	3.9	4933.7	163	149	13.9	35.4	36.2
IS13	89.513	2.15	71.9	7.6	4928.7	164	157	7.16	71.9	0
IS14	178.218	3.05	175	3.85	4928.7	379	367	11.4	150	24.6
IS15-ARM9	409.427	3.65	397	4.05	4927.4	501	497	3.61	397	0
IS16	405.044	4.05	403	4.25	4927.7	513	506	6.86	403	0
IS17A	411.672	4.3	410	4.5	4922.4	520	508	12.2	34.8	375**
IS17B	143.336	1.5	57.9	4.55	4920.6	99.8	90.7	9.12	42.9	15
Armijo Drain										
ARM1	45.689	2.45	34.4	2.95	4933.3	10.1	10.1	0.0286	13.8	20.7
ARM2	59.87	1.7	34.5	3.35	4932.9	16.5	16.4	0.106	34.5	0
ARM3	50.755	1.7	30.2	4.55	4931.1	23.7	23.5	0.194	30.2	0
ARM4	33.0776	4	32.9	4.2	4930.7	28.1	28.1	0.0485	32.9*	0*
Pond-187	69.1539	2.7	0	29.9	4932.1	40.8	0	40.8	0	0
ARM5	149.5	2.45	115	3.15	4932	37.3	37.2	0.0709	115	0
ARM6	144.672	2.55	127	3.35	4927.9	50.4	50.3	0.0953	127	0
ARM7	129.131	3.3	128	3.55	4927.9	55.5	55.4	0.102	128	0
ARM8	198.173	3.3	188	3.7	4927.7	76.9	76.8	0.151	188	0
Los Padillas Drain										
LPEXT	378.115	4.5	160	20.9	4924.7	438	310	127	160	19
LP1	213.153	20.8	213	21	4923.6	443	432	10.6	194	0
LP2	214.698	20.8	215	20.9	4922.8	444	436	7.59	215	0
LP3	215.665	20.9	216	21.1	4918.6	440	434	5.6	173	42.3
LP4	216.43	21	216	21.1	4922	437	424	13.4	28	188

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT.dat)

TABLE 23.C.4

ITERATION 2_100 DESIGN II
100-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at end (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	71.5644	1.75	24.2	2.4	4945.7	11	10.8	0.184	24.2	0
IS3	143.429	2.1	84.4	2.85	4944.7	34.3	33.4	0.939	48.4	36.1
IS4	100.536	2.85	44.6	4.15	4941.5	48.4	46.5	1.9	40.1	4.43
IS5	48.4595	4.1	44.1	5.05	4938.7	54.3	53.7	0.578	44.1	0
IS6	46.203	5.05	43.3	7.25	4937.6	59.5	58.7	0.813	43.3	0
IS7	333.156	2	316	2.15	4939	309	305	3.87	223	93.2
IS8	360.695	2.15	325	2.4	4938.3	334	331	2.79	270	54.8
IS9	391.636	2.35	350	2.55	4938	333	330	3.27	350	0
IS10	734.468	2.45	720	2.5	4935.9	434	432	1.96	650	70.6
IS11	810.947	2.5	802	2.55	4933.9	497	485	12	93.1	709*
Pond-187	798.503	2.55	0.0371	29.9	4931.7	371	0.0553	371	0.0371	0
IS12	206.569	1.6	98.4	2.9	4933.9	168	154	13.9	35.8	62.6
IS13	139.788	2.75	86.1	3.9	4929.5	172	165	7.17	86.1	0
IS14	223.945	3.2	221	3.5	4928.9	392	380	11.4	159	61.4
IS15-ARM9	557.343	3.4	550	3.6	4928.4	546	542	3.61	550	66
IS16	557.064	3.65	548	3.9	4928.4	561	554	6.87	482	66
IS17A	555.762	3.9	552	4.05	4923	570	558	12.2	36	516**
IS17B	184.343	1.5	77.8	3.95	4920.7	106	96.8	9.21	47	30.8
Armijo Drain										
ARM1	64.3675	2.45	46.9	2.95	4934.1	12.9	12.8	0.0286	19.1	27.8
ARM2	80.9962	1.7	47.3	3.3	4933.5	20.7	20.6	0.106	47.3	0
ARM3	66.9768	1.7	32.8	4.95	4932.4	29.7	29.5	0.195	32.8	0
ARM4	42.6022	2.7	40.3	3.15	4931.4	34.9	34.9	0.0656	40.3*	0*
Pond-187	91.4206	2.7	0.0463	29.8	4932.6	50.5	0.084	50.4	0.0463	0
ARM5	205.269	2.45	175	2.95	4933.1	49.3	49.2	0.0974	175	0
ARM6	223.171	2.75	179	3.3	4929.5	66.2	66.1	0.126	179	0
ARM7	182.304	3.3	174	3.65	4929.6	73.1	72.9	0.136	174	0
ARM8	271.841	3.3	267	3.55	4928.7	102	102	0.197	267	0
Los Padillas Drain										
LPEXT	518.883	4.05	176	14.3	4925.2	487	356	131	176	28.1
LP1	228.897	14	229	14.3	4923.7	488	478	10.7	201	28.1
LP2	231.073	10.6	231	10.8	4922.9	493	486	7.69	231	0
LP3	232.465	10.2	232	10.7	4918.8	490	484	5.72	176	56.1
LP4	233.622	10.5	234	10.6	4922.1	488	476	11.7	28.2	205

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT.dat)

TABLE 23.C.5

ITERATION 2_100-YEAR DESIGN II

500-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at end (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	92.5822	1.75	30.5	2.45	4946.4	12.9	12.7	0.203	30.5	0
IS3	188.14	2.1	150	2.6	4945	42.3	41.3	0.963	60.1	90.1
IS4	182.901	2.6	132	3	4942	58.8	56.9	1.95	58.2	74.2
IS5	145.464	2.95	83.1	3.7	4941.1	65.6	65	0.592	83.1	0
IS6	85.292	3.7	68.7	4.85	4939.2	71.1	70.3	0.845	68.7	0
IS7	409.378	2	436	2	4939.3	330	326	3.88	265	171
IS8	496.157	2	430	2.25	4938.7	356	353	2.8	296	133
IS9	544.322	2.2	527	2.3	4938.8	380	377	3.29	351	176
IS10	1070.85	2.25	1040	2.35	4936.8	483	481	1.96	683	358
IS11	1169.56	2.35	1170	2.35	4934.5	551	539	12	101	1070*
Pond-187	1193.66	2.35	0	29.9	4932.3	427	0	427	0	0
IS12	257.135	1.6	146	2.4	4934.1	174	160	13.9	36.2	110
IS13	239.804	2.4	137	3.2	4930.7	182	175	7.18	109	27.7
IS14	300.007	3.15	300	3.2	4929.2	407	396	11.4	169	130
IS15-ARM9	796.858	3.3	683	3.75	4930.5	601	597	3.61	683	
IS16	693.883	4.45	694	4.45	4928.9	620	613	6.88	484	210
IS17A	707.147	4.45	706	4.45	4923.7	631	619	12.2	37.4	668**
IS17B	232.282	1.5	96	3.75	4920.8	114	104	9.3	50.7	45.2
Armijo Drain										
ARM 1	88.122	2.45	64.7	2.9	4934.9	16.4	16.3	0.0287	29.3	35.5
ARM 2	105.976	1.7	60.5	3.4	4934.2	26	25.9	0.106	60.5	0
ARM 3	88.9596	1.75	61.9	4.3	4933.3	37.1	36.9	0.196	34.7	27.3
ARM 4	66.2232	4.25	60.5	4.7	4933	43.4	43.3	0.0828	60.5*	0*
Pond-187	116.737	2.7	0	29.8	4933.3	62.6	0	62.5	0	0
ARM 5	274.774	2.45	260	2.75	4934	64.3	64.1	0.126	177	83.4
ARM 6	329.642	2.65	315	2.8	4930	85.7	85.5	0.171	238	77.7
ARM 7	323.765	2.8	319	2.9	4931	94.8	94.6	0.181	242	77.1
ARM 8	454.952	2.9	400	3.3	4932	133	133	0.262	306	93.8
Los Padillas Drain										
LPEXT	671.406	4.45	179	15.5	4926.8	548	378	170	179	
LP1	232.136	15.1	232	15.1	4923.7	511	500	10.8	202	30
LP2	234.776	8.9	235	9.2	4923	521	513	7.89	235	0
LP3	236.706	7.5	237	8.2	4918.8	518	512	5.96	177	59.5
LP4	238.507	7.9	238	8	4922.1	517	508	8.72	28.3	210

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT.dat)

TABLE 23.C.6
ITERATION 2_100-YEAR DESIGN II
WATER SURFACE ELEVATION SUMMARY

POND NAME	10-YR ELEV (FT)	25-YR ELEV (FT)	100-YR ELEV (FT)	500-YR ELEV (FT)	LOW BANK ELEV (FT)
ARM1	4932.8	4933.3	4934.1	4934.9	4938
ARM2	4932.5	4932.9	4933.5	4934.2	4937.0
ARM3	4930.5	4931.1	4932.4	4933.3	4934.0
ARM4	4930.1	4931.7	4931.4	4933.0	4934.0
ARM5	4930.7	4933.0	4933.1	4934.0	4933.0
ARM6	4927.1	4928.9	4929.5	4930.0	4930.0
ARM7	4927.1	4928.9	4929.8	4931.0	4931.0
ARM8	4926.7	4928.7	4928.7	4932.0	4929.0
IS2	4944.7	4945.1	4945.7	4946.4	4948.0
IS3	4943.3	4944.1	4944.7	4945.0	4945.0
IS4	4939.9	4940.5	4941.5	4942.0	4942.0
IS5	4937.7	4938.1	4938.7	4941.1	4942.0
IS6	4936.4	4936.9	4937.6	4939.2	4941.0
IS7	4938.2	4938.7	4939.0	4939.3	4939.0
IS8	4937.3	4938.0	4938.3	4938.7	4937.0
IS9	4936.3	4937.0	4938.0	4938.8	4937.0
IS10	4935.0	4935.2	4935.9	4936.8	4934.0
IS11	4933.3	4933.5	4933.9	4934.5	4934.0
IS12	4933.7	4933.7	4933.9	4934.1	4934.0
IS13	4928.6	4928.7	4929.5	4930.7	4931.0
IS14	4928.6	4928.7	4928.9	4929.2	4929.0
IS15-ARM9	4926.4	4927.4	4928.5	4930.5	4929.0
IS16	4927.0	4927.7	4928.4	4928.9	4929.0
IS17A	4922.0	4922.4	4923.0	4923.7	4925.0
IS17B	4920.5	4920.6	4920.7	4920.8	4922.0
LPEXT	4924.6	4924.7	4925.2	4926.8	4925.0
LP1	4923.6	4923.6	4923.7	4923.7	4924.0
LP2	4922.7	4922.8	4922.9	4923.0	4923.0
LP3	4918.5	4918.6	4918.8	4918.8	4922.0
LP4	4918.5	4922.0	4922.1	4922.1	4921.0

TABLE 23.C.7

ITERATION 2 100-YEAR DESIGN II
100-YEAR BANK MODIFICATION SUMMARY

Drain Segment ID	Max. Pond Elev. (ft)	Invert Elev (ft)	Req. Bank Elevation (ft)	Low Bank Elevation (ft)	Req Depth (ft)	Proposed Weir Elev. (ft)	Length of Fill (ft)		Assumed Width of Fill (ft)		Average Height of Fill (ft)		Fill Volume (cu-yd)	Avail Free-Board (ft)	Depth of Water over the Road (ft)
							Right	Left	Right	Left	Right	Left			
Armijo Drain															
ARM1	4934.1	4931	4935.1	4938	7	4937.50							-	3.9	-
ARM2	4933.5	4930	4934.5	4937	7	4936.5							-	3.5	-
ARM3	4932.4	4927	4933.4	4934	7	4933.0							-	1.6	-
ARM4	4931.4	4928	4932.4	4934	6	4934.5							-	2.6	-
ARM5	4933.1	4926	4934.1	4933	8.1	4933.5	430	432	20	12	0.3	0.3	153	1	-
ARM6	4929.5	4924	4930.5	4930	6.5	4929.5	1495	858	20	12	0.7	0.4	894	1	-
ARM7	4929.8	4924	4930.8	4931	7	4930.5	386	252	20	12	1.0	0.5	322	1.2	-
ARM8	4928.7	4923	4929.7	4929	6.7	4931.0	92	470	20	12	0.9	0.9	249	1	-
												TOTAL	1,619		
Isleta Drain															
IS2	4945.7	4943	4946.7	4948	5	4947.5							-	2.3	-
IS3	4944.7	4940	4945.7	4945	5.7	4944.5	190	191	20	12	1.2	0.7	228	1	0.20
IS4	4941.5	4937	4942.5	4942	5.5	4941.5	152		20		0.5		56	1	-
IS5	4938.7	4936	4939.7	4942	6	4945.0							-	3.3	-
IS6	4937.6	4934	4938.6	4941	7	4940.5							-	3.4	-
IS7	4939.0	4933	4940	4939	7	4938.5	301	362	20	12	1.5	1.6	581	1	0.50
IS8	4938.3	4933	4939.3	4937	6.3	4938.0	193	505	20	12	1.2	1.5	508	1	0.30
IS9	4938.0	4931	4939	4937	8	4938.0	650	868	20	12	1.4	1.4	1,214	1	-
IS10	4935.9	4929	4936.9	4934	7.9	4935.5	973	1016	20	12	2.0	1.5	2,104	1	0.40
IS11	4933.9	4928	4934.9	4934	6.9	4942.0	1494	1096	20	12	1.0	1.4	1,760	1	-
IS12	4933.9	4927	4934.9	4934	7.9	4933.5	571	254	20	12	1.5	1.1	759	1	0.40
IS13	4929.5	4925	4930.5	4931	6	4930.5							-	1.5	-
IS14	4928.9	4924	4929.9	4929	5.9	4928.5	257	35	20	12	1	1	206	1	0.40
IS15-ARM9	4928.5	4922	4929.5	4929	7.5	4937.4	118	302	20	12	0.6	0.6	133	1	-
IS16	4928.4	4920	4929.4	4929	9.4	4928.0	1683	1368	20	12	1.4	0.3	1,928	1	0.40
IS17A	4923.0	4916	4924	4925	9	No Road							-	2	-
IS17B	4920.7	4916	4921.7	4922	6	4920.5							-	1.3	0.20
												TOTAL	9,477		
Los Padillas Drain															
LPEXT	4925.2	4918	4926.2	4925	8.2								-		0.20
LP1	4923.7	4918	4924.7	4924	6.7	4923.5	331	855	20	12	0.2	1.9	771	1	0.40
LP2	4922.9	4917	4923.9	4923	6.9	4922.5	881	312	20	12	0.2	2.2	436	1	0.40
LP3	4918.8	4916	4919.8	4922	6	4919.0							-	3.2	-
LP4	4922.1	4912	4923.1	4921	11.1	4922.0	871	420	20	12	1.1	1.1	915	1	0.10
												TOTAL	2,121		
												GRAND TOTAL	13,217		

TABLE 23.D.1
ITERATION 3 CONTRIBUTING SUB-BASINS

Isleta Drain		Armijo Drain	
IS2	56, 57(20%)	ARM1	not in model
IS3	57(70%), 28(30%), 24, 27	ARM2	35(60%)
IS4	57(10%), 59, 28(70%)	ARM3	35(40%), 188
IS5	19, 58(25%)	ARM4	185(40%)
IS6	64	ARM5	197, 39(50%), 42(90%), 43(85%)
IS7	63, 66(80%), 67, 166(75%), 26(85%)	ARM6	39(50%), 82(30%), 83(50%)
IS8	26(15%), 66(20%), 166(25%)	ARM7	82(70%), 83(50%)
IS9	61, 65(50%)	ARM8	196(80%), 84
IS10	65(50%), 69		
IS11	60, 70, 171(50%), 71(15%)	Los Padillas Drain	
IS12	78, 72(80%)	LPEXT	
IS13	77, 75, 73, 190(50%)	LP1	90(20%)
IS14	193(50%), 74(70%), 190(50%)	LP2	88, 89(50%), 90(60%), 93
IS15-ARM9	183, 193(50%), 79(50%), 85, 196(20%), 184	LP3	97(10%), 101(25%)
IS16	194, 202(50%)	LP4	97(10%), 101(25%)
IS17A	202(50%)		
IS17B	251, 252, 205		

TABLE 23.D.2

ITERATION 3 100-YEAR DESIGN III

10-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	42.3168	1.75	29.5	2.1	4945.6	8.33	8.31	0.0155	29.5	0
IS3	99.2387	2.1	63.7	2.7	4943.1	23.7	23.7	0.0432	63.7	0
IS4	100.758	2.05	63.3	3.4	4943.1	35.4	35.2	0.158	63.3	0
IS5	72.9495	2.3	67.8	3.35	4941.3	41.8	41.6	0.169	67.8	0
IS6	69.898	3.35	59.1	4.7	4938.9	47	46.4	0.666	59.1	0
IS7	236.592	2.05	237	2.05	4939.4	285	276	8.96	34.8	202
IS8	267.604	2.05	267	2.1	4937.4	303	299	4.22	53.4	213
IS9	331.362	2	315	2.2	4937.5	313	306	7.42	101	214
IS10	567.233	2.15	555	2.3	4934.7	361	356	4.83	248	307
IS11	623.676	2.3	578	2.5	4933.5	414	402	11.9	67.1	511
Pond-187	561.649	2.5	0	29.9	4930.9	287	0	287	0	0
IS12	119.085	1.6	67.1	5.1	4933.7	158	144	13.9	35.4	31.7
IS13	72.2725	2.3	69.1	10	4928.6	157	150	7.15	69.1	0
IS14	159.227	3.1	159	3.1	4929.1	369	357	12.8	60.1	99.1
IS15-ARM9	303.731	3	294	3.5	4926	481	477	3.6	294	
IS16	299.601	3.55	299	3.65	4928.5	491	472	19.1	67	232
IS17A	304.584	3.7	302	4.05	4921.9	484	472	12.2	33.8	268
IS17B	107.605	1.5	38.6	10.5	4920.4	93.5	84.4	9.05	38.6	0
Armijo Drain										
ARM2	43.0252	1.7	25.5	2	4932.9	5.34	5.33	0.00977	25.5	0
ARM3	50.0904	1.75	22.6	2.65	4932.8	11.3	11.3	0.0216	22.6	0
ARM4	33.8734	2.45	31.2	2.8	4930.9	15.4	15	0.0298	31.2	0
Pond-187	30.3179	2.65	0	29.9	4929.1	10.4	0	10.3	0	0
ARM5	143.758	2.5	62.2	4.15	4933.3	44.7	40.9	3.83	62.2	0
ARM6	99.7305	2.35	68.5	3.85	4929.7	51.8	51.7	0.101	43.3	25.2
ARM7	71.846	1.6	66.5	4.8	4929.2	55.7	55.5	0.109	66.5	0
ARM8	97.7186	3.7	96.7	3.9	4925.4	72.2	72	0.14	96.7	0
Los Padillas Drain										
LPEXT	270.931	4.05	156	25.6	4924.7	405	279	126	156	
LP1	209.529	25.6	210	25.7	4924.1	411	399	11.8	100	109
LP2	210.592	24.4	211	24.4	4923.1	408	400	8.26	100	110
LP3	211.502	24.4	211	24.9	4919.6	403	396	7.16	121	90.2
LP4	212.076	24.9	212	25	4921.9	398	389	9.32	27.9	184

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension

TABLE 23.D.3

ITERATION 3 100-YEAR DESIGN III

25-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)	Q3: Bank Overflow (cfs)
Isleta Drain											
IS2	53,721.6	1.75	36.2	2.1	4946.3	9.37	9.36	0.0155	36.2	0	
IS3	125,894	2.1	97.8	2.55	4943.9	28	27.9	0.0549	65.4	32.4	
IS4	122,012	2.45	67.1	3.65	4944.9	40.9	40.7	0.197	67.1	0	
IS5	77,286.5	2.35	72.6	3.3	4941.6	47.7	47.5	0.188	72.6	0	
IS6	74,705	3.25	69.4	5	4939.2	53.1	52.4	0.681	69.4	0	
IS7	277,095	2.05	276	2.1	4939.5	296	287	8.96	35.1	241	
IS8	312,566	2.05	311	2.15	4937.6	314	310	4.22	54.8	256	
IS9	391.08	2	381	2.15	4937.6	327	320	7.42	101	280	
IS10	709,452	2.1	693	2.25	4935	386	382	4.83	289	404	
IS11	779,858	2.2	735	2.4	4933.8	442	431	11.9	85.3	650*	
Pond-187	717,129	2.4	0	29.9	4931.2	316	0	316	0	0	
IS12	147,196	1.6	70.1	4.1	4933.7	161	148	13.9	35.4	34.7	
IS13	88,382	2.15	71.2	7.75	4928.7	163	156	7.16	71.2	0	
IS14	177,225	3.05	177	3.1	4929.1	378	365	12.8	60.2	117	
IS15-ARM9	361,596	3.15	359	3.35	4926.8	512	508	3.6	359		
IS16	363,969	3.35	364	3.5	4928.7	524	505	19.1	67.3	296	
IS17A	369,107	3.6	367	3.9	4922.2	519	507	12.2	34.4	333**	
IS17B	134,653	1.5	49.8	5.3	4920.6	97.7	88.6	9.13	41.2	8.6	
Armijo Drain											
ARM2	55,822	1.7	31.6	2	4933.5	6.26	6.25	0.0123	31.6	0	
ARM3	62,441.6	1.75	26.5	2.8	4933.4	13.3	13.3	0.0259	26.5	0	
ARM4	40,543.8	2.45	37.4	2.85	4931.5	17.9	17.9	0.0312	37.4	0	
Pond-187	39,053.8	2.65	0	29.9	4929.3	12.2	0	12.2	0	0	
ARM5	184,085	2.5	62.6	4.5	4933.5	55.1	51.2	3.87	62.6	0	
ARM6	120,05	2.2	80	3.2	4929.7	64.5	64.3	0.127	43.5	36.5	
ARM7	92,044.1	1.6	75.3	3.65	4929.4	69.5	69.4	0.137	75.3	0	
ARM8	141,821	3.45	133	3.8	4926.3	90.9	90.7	0.175	133	0	
Los Padillas Drain											
LPEXT	335,781	3.9	168	18.2	4924.9	439	310	129	168		
LP1	220,954	18.2	221	18.3	4924.1	443	431	11.9	100	121	
LP2	222,572	18.2	223	18.3	4923.1	442	434	8.29	100	122	
LP3	223,567	18.3	223	19	4919.9	438	430	7.42	122	102	
LP4	224,259	18.9	224	19.1	4922	433	424	9.06	28.1	196	

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension

TABLE 23.D.4

ITERATION 3 100-YEAR DESIGN III

100-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	71.5644	1.75	47.4	2.1	4947.1	11	10.9	0.0213	47.4	0
IS3	168.743	2.1	163	2.25	4944.2	34.4	34.4	0.0628	65.9	96.6
IS4	213.81	2.2	165	2.55	4946	49.3	49.1	0.239	69.1	96
IS5	181.012	2.55	120	2.95	4944	56.9	56.7	0.202	120	0
IS6	122.457	2.95	98.1	3.75	4940	62.5	61.8	0.69	98.1	0
IS7	341.597	2	339	2.1	4939.7	312	303	8.96	35.4	304
IS8	385.601	2.05	383	2.15	4937.8	332	328	4.22	57	326
IS9	487.573	2.05	481	2.15	4937.9	350	342	7.42	102	379
IS10	922.645	2.05	901	2.15	4935.5	426	422	4.84	297	604
IS11	1014.79	2.15	1,05E+03	2.2	4934.3	486	475	11.9	100	947*
Pond-187	1034.2	2.2	0	29.9	4931.6	362	0	362	0	0
IS12	190.636	1.6	93.7	2.9	4933.9	167	153	13.9	35.7	58
IS13	132.697	2.8	84	4.1	4929.4	171	164	7.16	84	0
IS14	220.803	3.25	221	3.25	4929.3	390	378	12.8	60.5	160
IS15-ARM9	608.332	3	594	3.4	4928.6	575	571	3.61	594	
IS16	600.062	3.4	600	3.5	4929.3	590	571	19.1	68.6	531
IS17A	605.781	3.5	600	3.75	4923.2	587	575	12.2	36.4	564**
IS17B	175.596	1.5	74.3	4.2	4920.7	104	95	9.23	46.3	28
Armijo Drain										
ARM1	64.3675	2.45	46.9	2.95	4934.1	12.9	12.8	0.0286	19.1	27.8
ARM2	80.9962	1.7	52.2	3.05	4935	20.7	20.7	0.0614	52.2	0
ARM3	84.9408	1.8	48.3	4.1	4937.3	29.7	29.5	0.249	38.6	9.72
ARM4	53.7126	2.45	49.9	4.4	4932.5	34.9	34.8	0.0772	49.9	0
Pond-187	53.098	2.65	0	29.9	4929.6	15.2	0	15.1	0	0
ARM5	249.831	2.5	209	3.1	4933.2	84.1	80.9	3.26	62	147
ARM6	259.685	2.3	250	2.75	4930.4	97.9	97.7	0.191	44.8	205
ARM7	256.604	2.7	257	2.75	4931.2	105	105	0.208	102	154
ARM8	352.211	2.9	302	3.7	4930	134	133	0.258	302	0
Los Padillas Drain										
LPEXT	566.902	3.75	177	18.3	4925.6	506	359	146	177	
LP1	230.017	18.1	230	18.2	4924.2	492	480	12	100	130
LP2	231.87	16.4	232	16.5	4923.2	496	487	8.37	100	132
LP3	232.983	15.1	233	16	4920.3	492	483	8.35	123	110
LP4	233.892	15	234	15.2	4922.1	487	479	8.13	28.2	206

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension

TABLE 23.D.5

ITERATION 3 100-YEAR DESIGN III

500-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)	Q3: Bank Overflow (cfs)
Isleta Drain											
IS2	92,582	1.75	61.1	2.1	4948.2	12.9	12.9	0.0213	61.1	0	
IS3	221,681	2.1	220	2.15	4944.3	42.4	42.4	0.0803	66.2	154	
IS4	302,012	2.1	280	2.25	4946.1	59.8	59.5	0.271	69.4	210	
IS5	304,998	2.25	275	2.45	4944.8	68.3	68.1	0.209	123	151	
IS6	277,874	2.45	172	2.9	4940.9	74.2	73.5	0.695	102	70.5	
IS7	419,173	2	415	2.1	4939.9	333	324	8.96	35.8	380	
IS8	474,126	2.05	470	2.15	4938	354	350	4.22	59.7	411	
IS9	608,041	2.05	603	2.1	4938.2	377	370	7.42	102	501	
IS10	1,185,27	2.05	1,170	2.15	4936.3	475	470	4.85	299	870	
IS11	1,313,04	2.15	1,310	2.15	4934.7	541	529	11.9	101	1210*	
Pond-187	1,323,48	2.2	0	29.9	4932.2	418	0	418	0	0	
IS12	241,262	1.6	131	2.55	4934	173	159	13.9	36.1	95.3	
IS13	211,58	2.55	131	3.35	4930.6	181	174	7.17	108	22.1	
IS14	290,687	3.3	290	3.35	4929.5	406	393	12.8	61	229	
IS15-ARM9	826,612	3.25	686	3.9	4932	622	618	3.61	686		
IS16	697,673	4.35	698	4.4	4929.6	640	621	19.1	69.2	628	
IS17A	713,483	4.9	713	4.9	4923.7	640	628	12.2	37.4	675**	
IS17B	223,457	1.5	95.5	3.8	4920.8	112	103	9.31	50.6	44.9	
Armijo Drain											
ARM2	99,5314	1.7	55.2	2.05	4935.2	9.45	9.43	0.0177	55.2	0	
ARM3	107,997	1.8	36.4	3.2	4936.2	20.5	20.5	0.0389	36.4	0	
ARM4	61,9652	2.4	55.1	2.85	4932.8	26.8	26.8	0.0493	55.1	0	
Pond-187	70,1851	2.65	0	29.9	4930	18.8	0	18.8	0	0	
ARM5	324,93	2.5	256	3.2	4933.4	91	88	3.28	62	194	
ARM6	306,927	2.5	306	2.65	4930.6	109	109	0.216	45.2	260	
ARM7	317,085	2.6	317	2.6	4931.4	118	118	0.228	103	214	
ARM8	445,601	2.95	436	3.25	4932.1	157	156	0.295	306	129	
Los Padillas Drain											
LPEXT	678,268	4.9	179	18.1	4927.3	558	378	180	179		
LP1	232,567	18	233	18.1	4924.2	511	499	12	100	132	
LP2	234,753	13.6	235	13.6	4923.2	520	511	8.39	100	134	
LP3	237,042	6.55	236	10.2	4920.4	516	508	8.53	123	114	
LP4	237,783	9.55	238	9.65	4922.1	513	503	9.29	28.2	210	

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension

TABLE 23.D.6
ITERATION 3_100-YEAR DESIGN III
WATER SURFACE ELEVATION SUMMARY

POND NAME	10-YR ELEV (FT)	25-YR ELEV (FT)	100-YR ELEV (FT)	500-YR ELEV (FT)	LOW BANK ELEV (FT)
ARM2	4932.9	4933.5	4935.0	4935.2	4937.0
ARM3	4932.8	4933.4	4937.3	4936.2	4934.0
ARM4	4930.9	4931.5	4932.5	4932.8	4934.0
ARM5	4933.3	4933.5	4933.2	4933.4	4933.0
ARM6	4929.7	4929.7	4930.4	4930.6	4930.0
ARM7	4929.2	4929.4	4931.2	4931.4	4931.0
ARM8	4925.4	4926.3	4930.0	4932.1	4929.0

IS2	4945.6	4946.3	4947.1	4948.2	4948.0
IS3	4943.1	4943.9	4944.2	4944.3	4945.0
IS4	4943.1	4944.9	4946.0	4946.1	4942.0
IS5	4941.3	4941.6	4944.0	4944.8	4942.0
IS6	4938.9	4939.2	4940.0	4940.9	4941.0
IS7	4939.4	4939.5	4939.7	4939.9	4939.0
IS8	4937.4	4937.6	4937.8	4938.0	4937.0
IS9	4937.5	4937.6	4937.9	4938.2	4937.0
IS10	4934.7	4935.0	4935.5	4936.3	4934.0
IS11	4933.5	4933.8	4934.3	4934.7	4934.0
IS12	4933.7	4933.7	4933.9	4934.0	4934.0
IS13	4928.6	4928.7	4929.4	4930.6	4931.0
IS14	4929.1	4929.1	4929.3	4929.5	4929.0
IS15-ARM9	4926.0	4926.9	4928.6	4932.0	4929.0
IS16	4928.5	4928.7	4929.3	4929.6	4929.0
IS17A	4921.9	4922.2	4923.2	4923.7	4925.0
IS17B	4920.4	4920.6	4920.7	4920.8	4922.0

LPEXT	4924.7	4924.9	4925.6	4927.3	4925.0
LP1	4924.1	4924.1	4924.2	4924.2	4924.0
LP2	4923.1	4923.1	4923.2	4923.2	4923.0
LP3	4919.6	4919.9	4920.3	4920.4	4922.0
LP4	4921.9	4922.0	4922.1	4922.1	4921.0

TABLE 23.D.7

ITERATION 3, 100-YEAR DESIGN III

10-YEAR BANK MODIFICATION SUMMARY

Drain and Segment ID	Max. Pond Elevation (ft)	Invert Elev. (ft)	Required Bank Elev. (ft)	Low Bank Elev. (ft)	Depth of Culvert (ft)	Proposed Weir Invert Elev. (ft)	Length of Fill (ft)		Width of Fill (ft)		Avg. Height of Fill (ft)		Fill Volume (cu-yd)	Available Free-Board (ft)	Depth of Water over the Road (ft)	
							Right	Left	Right	Left	Right	Left				
Armijo Drain																
ARM2	4,932.9	4,930.0	4,933.9	4,937.0	7.0	4,940.0							-	4.1	-	
ARM3	4,932.8	4,929.0	4,933.8	4,934.0	5.0	4,937.0							-	1.2	-	
ARM4	4,930.9	4,928.2	4,931.9	4,934.0	5.8	4,936.0							-	3.1	-	
ARM5	4,933.3	4,925.1	4,934.3	4,933.0	9.2	4,932.5							-	1.0	0.8	
ARM6	4,929.7	4,924.0	4,930.7	4,930.0	6.7	4,929.5	535	627	20	12	0.7	0.7	472	1.0	0.2	
ARM7	4,929.2	4,924.0	4,930.2	4,931.0	7.0	4,930.5							-	1.8	-	
ARM8	4,925.4	4,925.0	4,926.4	4,929.0	4.0	4,931.0							-	3.6	-	
												Total	472			
Idaleja Drain																
IS1	4,945.6	4,939.6	4,946.6	4,948.0	8.4	4,951.0							-	2.4	-	
IS3	4,943.1	4,938.7	4,944.1	4,945.0	6.3	4,946.0							-	1.9	-	
IS4	4,943.1	4,936.8	4,944.1	4,942.0	7.3	4,946.0							-	1.0	-	
IS5	4,941.3	4,937.6	4,942.3	4,942.0	4.7	4,945.0							-	1.0	-	
IS6	4,938.9	4,934.0	4,939.9	4,941.0	7.0	4,940.5							-	2.1	-	
IS7	4,939.4	4,933.0	4,940.4	4,939.0	7.4	4,938.5	234	332	20	12	1.3	1.3	401	1.0	0.9	
IS8	4,937.4	4,933.0	4,938.4	4,937.0	5.4	4,936.5	150	499	20	12	0.5	0.5	166	1.0	0.9	
IS9	4,937.5	4,931.0	4,938.5	4,937.0	7.5	4,936.5	534	883	20	12	0.7	0.7	630	1.0	1.0	
IS10	4,934.7	4,930.0	4,935.7	4,934.0	5.7	4,933.5	575	635	20	12	1.2	1.2	934	1.0	1.2	
IS11	4,933.5	4,928.0	4,934.5	4,934.0	6.5	4,932.0	628		20		0.5	0.5	233	1.0	1.5	
IS12	4,933.7	4,927.0	4,934.7	4,934.0	7.7	4,933.5	571	254	20	12	1.4	1.4	705	1.0	0.2	
IS13	4,928.6	4,925.0	4,929.6	4,931.0	6.0	4,930.5							-	2.4	-	
IS14	4,929.1	4,924.0	4,930.1	4,929.0	6.1	4,928.5	266	16	20	12	0.8	0.8	163	1.0	0.6	
IS15-ARM9	4,926.0	4,924.0	4,927.0	4,929.0	5.0								-	3.0	-	
IS16	4,928.5	4,920.0	4,929.5	4,929.0	9.5	4,927.5	1,543		20		1.4	1.4	1,600	1.0	1.0	
IS17A	4,921.9	4,916.0	4,922.9	4,925.0	9.0	4,920.0							-	3.1	1.9	
IS17B	4,920.4	4,916.0	4,921.4	4,922.0	6.0	4,920.5							-	1.6	-	
												Total	4,833			
Los Padillas Drain																
LP EXT	4,924.70	4,918.00	4,925.70	4,925.00	7.7								-	1.0	-	
LP1	4,924.10	4,918.00	4,925.10	4,924.00	7.1	4,923.5	331	855	20	12	0.1	0.1	709	1.0	0.6	
LP2	4,923.10	4,917.00	4,924.10	4,923.00	7.1	4,922.5	881	312	20	12	0.1	0.1	356	1.0	0.6	
LP3	4,919.60	4,916.00	4,920.60	4,922.00	6.0	4,918.0							-	2.4	1.6	
LP4	4,921.90	4,912.00	4,922.90	4,921.00	10.9	4,920.0	757	365	20	12	0.9	0.9	651	1.0	1.9	
												Total	1,716			
												Grand Total	7,021			

TABLE 23.D.8

ITERATION 3 100-YEAR DESIGN III

25-YEAR BANK MODIFICATION SUMMARY

Drain and Segment ID	Max. Pond Elevation (ft)	Invert Elev. (ft)	Required Bank Elev. (ft)	Low Bank Elev. (ft)	Depth of Culvert (ft)	Proposed Weir Invert Elev. (ft)	Length of Fill (ft)		Width of Fill (ft)		Avg. Height of Fill (ft)		Fill Volume (cu-yd)	Available Free-Board (ft)	Depth of Water over the Road (ft)	
							Right	Left	Right	Left	Right	Left				
Armijo Drain																
ARM2	4933.5	4930	4934.5	4937	7	4940.0							-	3.5	-	
ARM3	4933.4	4929	4934.4	4934	5.4	4937.0							-	1	-	
ARM4	4931.5	4928.2	4932.5	4934	5.8	4936.0							-	2.5	-	
ARM5	4933.5	4925.1	4934.5	4933	9.4	4932.5							-	1	1.00	
ARM6	4929.7	4924	4930.7	4930	6.7	4929.5	535	627	20	12	0.7	0.7	472	1	0.20	
ARM7	4929.4	4924	4930.4	4931	7	4930.5							-	1.6	-	
ARM8	4926.3	4925	4927.3	4929	4	4931.0							-	2.7	-	
												Total	472			
Isleta Drain																
IS1	4946.30	4939.6	4947.3	4948	8.4	4951.0							-	1.7	-	
IS3	4943.90	4938.69	4944.9	4945	6.31	4946.0							-	1.1	-	
IS4	4944.90	4936.76	4945.9	4942	9.14	4946.0							-	1	-	
IS5	4941.60	4937.6	4942.6	4942	5	4945.0							-	1	-	
IS6	4939.20	4934	4940.2	4941	7	4940.5							-	1.8	-	
IS7	4939.50	4933	4940.5	4939	7.5	4938.5	234	332	20	12	1.25	1.25	401	1	1.00	
IS8	4937.60	4933	4938.6	4937	5.6	4936.5	193	505	20	12	1	1.3	435	1	1.10	
IS9	4937.60	4931	4936.6	4937	7.6	4936.5	650	868	20	12	1.1	1.1	954	1	1.10	
IS10	4935.00	4930	4936	4934	6	4933.5	575	635	20	12	1.5	1.75	1,133	1	1.50	
IS11	4933.80	4928	4934.8	4934	6.8	4932.0	652	254	20	12	0.8	0.8	386	1	1.80	
IS12	4933.70	4927	4934.7	4934	7.7	4933.5	571	254	20	12	1.4	1.4	705	1	0.20	
IS13	4928.70	4925	4929.7	4931	6	4930.5							-	2.3	-	
IS14	4929.10	4924	4930.1	4929	6.1	4930.5	266	16	20	12	1.2	1.1	244	1	-	
IS15-ARM9	4926.80	4924	4927.8	4929	5								-	2.2	-	
IS16	4928.70	4920	4929.7	4929	9.7	4927.5	1570		20		1.6		1,861	1	1.20	
IS17A	4922.20	4916	4923.2	4925	9	4920.0							-	2.8	2.20	
IS17B	4920.60	4916	4921.6	4922	6	4920.5							-	1.4	0.10	
												Total	6,119			
Los Padillas Drain																
LPXT	4924.9	4918	4925.9	4925	7.9								-	1	-	
LP1	4924.1	4918	4925.1	4924	7.1	4923.5	331	855	20	12	0.1	0.1	709	1	0.60	
LP2	4923.1	4917	4924.1	4923	7.1	4922.5	881	312	20	12	0.1	0.1	356	1	0.60	
LP3	4919.9	4916	4920.9	4922	6	4918.0							-	2.1	1.90	
LP4	4922	4912	4923	4921	11	4920.0	757	365	20	12	1	1	723	1	2.00	
												Total	1,788			
												Grand Total	8,379			

TABLE 23.D.9

ITERATION 3 100-YEAR DESIGN III

100-YEAR BANK MODIFICATION SUMMARY

Drain and Segment ID	Max. Pond Elevation (ft)	Invert Elev. (ft)	Required Bank Elev. (ft)	Low Bank Elev. (ft)	Depth of Culvert (ft)	Proposed Weir Invert Elev. (ft)	Length of Fill (ft)		Width of Fill (ft)		Avg. Height of Fill (ft)		Fill Volume (cu-yd)	Available Free-Board (ft)	Depth of Water over the Road (ft)
							Right	Left	Right	Left	Right	Left			
Armijo Drain															
ARM2	4935.0	4930	4936	4937	7	4940.0							-	2	-
ARM3	4937.3	4927	4938.3	4934	11.3	4937.0							-	1	0.33
ARM4	4932.5	4928	4933.5	4934	6	4936.0							-	1.5	-
ARM5	4929.6	4926	4930.6	4933	7	4932.5							-	3.4	-
ARM6	4933.2	4924	4934.2	4930	10.2	4929.5	1495	858	20	12	0.7	0.4	894	1	3.70
ARM7	4930.4	4924	4931.4	4931	7.4	4930.5	386	252	20	12	1.0	0.5	322	1	-
ARM8	4930.0	4923	4931	4929	8	4931.0	92	470	20	12	0.9	0.9	249	1	-
												TOTAL	1,466		-
Isleta Drain															
IS2	4945.7	4943	4946.7	4948	5	4951.0							-	2.3	-
IS3	4944.7	4940	4945.7	4945	5.7	4946.0							-	1	-
IS4	4941.5	4937	4942.5	4942	5.5	4946.0							-	1	-
IS5	4938.7	4926	4939.7	4942	6	4945.0							-	3.3	-
IS6	4937.6	4934	4938.6	4941	7	4940.5							-	3.4	-
IS7	4939.7	4933	4940.7	4939	7.7	4938.5	301	362	20	12	1.5	1.6	592	1	1.20
IS8	4937.7	4933	4938.7	4937	5.7	4936.5	193	505	20	12	1.2	1.5	508	1	1.20
IS9	4937.9	4931	4938.9	4937	7.9	4936.5	650	868	20	12	1.4	1.4	1,214	1	1.40
IS10	4935.5	4929	4936.5	4934	7.5	4933.5	973	1016	20	12	1.0	1.4	1,353	1	2.00
IS11	4934.3	4928	4935.3	4934	7.3	4932.0	1494	1096	20	12	1.0	1.4	1,789	1	2.30
IS12	4933.8	4927	4934.8	4934	7.8	4933.5	571	254	20	12	1.5	1.1	759	1	0.30
IS13	4929.3	4925	4930.3	4931	6	4930.5							-	1.7	-
IS14	4929.3	4924	4930.3	4929	6.3	4928.5	257	35	20	12	1	1	206	1	0.80
IS15-ARM9	4928.6	4922	4929.6	4929	7.6	4928.5	118	302	20	12	0.6	0.6	133	1	-
IS16	4929.3	4920	4930.3	4929	10.3	4927.5	1683	1368	20	12	1.4	0.3	1,928	1	1.80
IS17A	4923.1	4916	4924.1	4925	9	4920.0							-	1.9	3.10
IS17B	4920.7	4916	4921.7	4922	6	4920.5							-	1.3	0.30
												TOTAL	8,481		-
Los Padillas Drain															
LPEXT	4925.1	4918	4926.1		8.1								-		-
LP1	4924.2	4918	4925.2	4924	7.2	4923.5	331	855	20	12	0.2	1.9	771	1	0.70
LP2	4923.2	4917	4924.2	4923	7.2	4922.5	881	312	20	12	0.2	2.2	436	1	0.70
LP3	4920.2	4916	4921.2	4922	6	4918.0							-	1.8	2.20
LP4	4922.1	4912	4923.1	4921	11.1	4920.0	871	420	20	12	1.1	1.1	915	1	2.10
												TOTAL	2,122		-
												GRAND TOTAL	13,069		-

TABLE 23.E.1
ITERATION 4 CONTRIBUTING SUB-BASINS

Isleta Drain		Armijo Drain	
IS2	56, 57(20%)	ARM1	not in model
IS3	57(70%), 28(30%), 24, 27	ARM2	35(60%)
IS4	57(10%), 59, 28(70%)	ARM3	35(40%), 188
IS5	19, 58(25%)	ARM4	185(40%)
IS6	64	ARM5	197, 39(50%), 42(90%), 43(85%)
IS7	63, 66(80%), 67, 166(75%), 26(85%)	ARM6	39(50%), 82(30%), 83(50%)
IS8	26(15%), 66(20%), 166(25%)	ARM7	82(70%), 83(50%)
IS9	61, 65(50%)	ARM8	196(25%), 84
IS10	65(50%), 69		
IS11	60, 70, 171(50%), 71(15%)	Los Padillas Drain	
IS12	78, 72(80%)	LPEXT	
IS13	77, 75, 73, 190(50%)	LP1	90(20%)
IS14	193(50%), 190(50%)	LP2	88, 89(50%), 90(60%), 93
IS15-ARM9	183, 193(50%), 79(50%), 85, 196(20%), 184	LP3	97(10%), 101(25%)
IS16	194, 202(50%)	LP4	97(10%), 101(25%)
IS17A	202(50%)		
IS17B	251, 252, 205		

TABLE 23.E.2

ITERATION 4 10-YEAR DESIGN

10-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	42.3168	1.75	29.5	2.1	4945.6	8.33	8.31	0.0155	29.5	0
IS3	99.2387	2.1	63.7	2.7	4943.1	23.7	23.7	0.0432	63.7	0
IS4	100.758	2.05	37.5	4	4941.2	35.4	33.9	1.49	37.5	0
IS5	40.9065	3.5	37.7	4.85	4938.3	40.4	39.9	0.516	37.7	0
IS6	39.766	4.85	36.5	6.2	4937	45.3	44.6	0.722	36.5	0
IS7	230.332	2	187	2.45	4938.2	283	279	3.83	187	0
IS8	211.007	2.35	211	2.4	4937.3	306	302	4.22	51.2	160
IS9	255.862	2.15	254	2.25	4937.2	316	309	7.42	100	154
IS10	506.669	2.1	502	2.3	4934.6	364	359	4.87	233	269
IS11	570.033	2.3	545	2.55	4933.5	417	405	11.9	64.7	481*
Pond-187	530.746	2.5	0.029	29.9	4930.9	290	0.04	290	0.029	0
IS12	121.565	1.6	66.4	4.95	4933.7	159	145	13.9	35.4	31
IS13	73.4365	2.25	69.4	10.4	4928.6	158	151	7.16	69.4	0
IS14	155.039	10	155	10.1	4929	365	352	12.8	60.1	94.9
IS15-ARM9	294.795	3.75	284	4.1	4925.8	477	473	3.79	284	
IS16	290.519	4.15	290	4.3	4928.5	487	468	19.1	67	223
IS17A	297.226	4.35	296	4.6	4921.9	480	468	12.3	33.8	263**
IS17B	107.61	1.5	38.5	10.6	4920.4	93.4	84.3	9.08	38.5	0
Armijo Drain										
ARM 1	34.139	2.45	26.8	2.9	4932.8	8.29	8.26	0.0286	10.7	16.1
ARM 2	46.3852	1.7	31.4	2.35	4933.5	13.8	13.8	0.0614	31.4	0
ARM 3	51.1794	1.75	30.2	4	4934.1	19.9	19.7	0.248	30.2	0
ARM 4	35.715	2.55	34	3.1	4931.2	23.8	23.7	0.0767	34*	0*
Pond-187	30.3179	2.65	0.0108	29.9	4929.1	10.4	0.0188	10.3	0.0108	0
ARM 5	144.819	2.5	142	2.7	4933.1	53.1	52.6	0.523	33.7	108
ARM 6	172.87	2.65	135	3.25	4930	63.4	62.7	0.713	44.1	90.7
ARM 7	136.354	3.2	118	3.6	4930.6	66.7	66.6	0.109	101	17.2
ARM 8	134.258	3.6	121	3.85	4926	73.3	73.1	0.174	121	0
Los Padillas Drain										
LPEXT	268.557	4.5	155	26.2	4924.7	398	272	126	155	
LP1	207.887	26.2	208	26.3	4924	404	392	11.7	120	87.8
LP2	208.771	24.4	209	24.5	4923	401	393	8.13	120	88.7
LP3	209.68	24.5	210	26.3	4919.5	396	389	7.14	121	88.6
LP4	210.247	25.2	210	25.3	4921.9	392	383	9.06	27.9	182

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.E.3

ITERATION 4 10-YEAR DESIGN

25-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	53.7216	1.75	36.2	2.1	4946.3	9.37	9.36	0.0155	36.2	0
IS3	125.894	2.1	97.8	2.55	4943.9	28	27.9	0.0549	65.4	32.4
IS4	122.012	2.45	69.3	3.45	4941.6	40.9	39.3	1.57	45.2	24.1
IS5	74.224	3.4	54.4	4.05	4939.3	46.3	45.8	0.529	54.4	0
IS6	56.504	4	46.1	5.6	4937.8	51.4	50.6	0.735	46.1	0
IS7	270.499	2	235	2.35	4938.7	294	290	3.83	205	30.4
IS8	265.937	2.3	264	2.35	4937.4	318	314	4.22	53.3	211
IS9	315.756	2.3	312	2.4	4937.4	331	323	7.43	101	211
IS10	622.995	2.1	619	2.4	4934.8	390	385	4.89	267	352
IS11	701.014	2.2	689	2.45	4933.7	446	434	11.9	80	609*
Pond-187	676.3	2.45	0.0	29.9	4931.2	319	0.0	319	0.0	0
IS12	149.676	1.6	70.1	4	4933.7	162	148	13.9	35.4	34.7
IS13	88.578	2.15	71	8.2	4928.7	163	156	7.16	71	0
IS14	157.209	7.7	157	7.8	4929.1	371	358	12.8	60.1	97.1
IS15-ARM9	384.892	3.35	376	3.7	4927.1	502	499	3.6	376	-
IS16	381.93	3.75	381	3.85	4928.7	514	495	19.1	67.4	314
IS17A	388.034	3.85	386	4.05	4922.3	509	497	12.2	34.6	352**
IS17B	134.653	1.5	49.7	5.35	4920.6	97.5	88.4	9.13	41.2	8.49
Armijo Drain										
ARM 1	45.689	2.45	34.4	2.95	4933.3	10.1	10.1	0.0286	13.8	20.7
ARM 2	59.87	1.7	39.3	2.9	4934.1	16.5	16.5	0.0614	39.3	0
ARM 3	63.6866	1.75	34.7	4.15	4935.4	23.8	23.5	0.248	34.7	0
ARM 4	42.9998	2.55	40.9	3.15	4931.8	28.1	28	0.0769	40.9	0
Pond-187	39.0538	2.65	0.0	29.9	4929.3	12.2	0.0	12.2	0.0	0
ARM 5	185.331	2.5	176	2.85	4933.1	65.3	61.1	4.21	61.8	114
ARM 6	223.824	2.5	203	2.9	4930.3	74.4	74.2	0.143	44.5	159
ARM 7	206.819	2.9	206	3	4931.1	79.4	79.2	0.154	102	104
ARM 8	230.354	3	181	3.55	4927.5	87.9	87.7	0.165	181	0
Los Padillas Drain										
LPEXT	354.705	4.05	163	21	4924.8	429	301	128	163	
LP1	216.172	21	216	21.1	4924.1	433	422	11.7	120	96.1
LP2	217.713	20.9	218	21.1	4923.1	433	425	8.15	120	97.6
LP3	218.68	21	219	21.7	4919.8	429	421	7.37	122	97.1
LP4	219.396	21.6	219	21.7	4922	424	416	8.34	28	191

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.E.4

ITERATION 4 10-YEAR DESIGN

100-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	71.5644	1.75	47.4	2.1	4947.1	11	10.9	0.0213	47.4	0
IS3	168.743	2.1	163	2.25	4944.2	34.4	34.4	0.0628	65.9	96.6
IS4	213.81	2.2	133	2.7	4942	49.3	47.7	1.66	58.3	74.4
IS5	146.411	2.7	81.3	3.55	4941	55.5	54.9	0.54	81.3	0
IS6	83.475	3.55	69.2	4.7	4939.2	60.7	60	0.752	69.2	0
IS7	333.65	2	318	2.15	4939	310	307	3.84	224	94.9
IS8	363.313	2.15	351	2.25	4937.7	336	331	4.22	56.1	295
IS9	437.286	2.2	429	2.25	4937.8	353	345	7.43	102	327
IS10	846.493	2.25	840	2.3	4935.4	430	425	4.91	297	543
IS11	945.205	2.3	945	2.3	4934.1	490	478	12	100	845*
Pond-187	936.953	2.3	0	29.9	4931.6	365	0	364	0	0
IS12	193.113	1.6	94.9	2.9	4933.9	167	153	13.9	35.7	59.2
IS13	135.402	2.8	84.4	4	4929.4	171	164	7.17	84.4	0
IS14	185.741	3.2	186	3.25	4929.1	381	368	12.8	60.3	125
IS15-ARM9	528.797	3.25	516	3.5	4928.3	548	544	3.61	516	
IS16	522.397	3.5	521	3.6	4929.1	563	544	19.1	68.2	453
IS17A	528.078	3.6	521	3.8	4922.9	560	548	12.2	35.7	485**
IS17B	175.596	1.5	73.3	4.2	4920.7	104	94.8	9.22	46.1	27.2
Arnijo Drain										
ARM1	64.3675	2.45	46.9	2.95	4934.1	12.9	12.8	0.0286	19.1	27.8
ARM2	80.9962	1.7	52.2	3.05	4935	20.7	20.7	0.0614	52.2	0
ARM3	84.9408	1.8	48.3	4.1	4937.3	29.7	29.5	0.249	38.6	9.72
ARM4	53.7126	2.45	49.9	4.4	4932.5	34.9	34.8	0.0772	49.9	0
Pond-187	53.098	2.65	0	29.9	4929.6	15.2	0	15.1	0	0
ARM5	249.831	2.5	209	3.1	4933.2	84.1	80.9	3.26	62	147
ARM6	259.685	2.3	250	2.75	4930.4	97.9	97.7	0.191	44.8	205
ARM7	256.604	2.7	257	2.75	4931.2	105	105	0.208	102	154
ARM8	290.355	2.75	265	3.35	4928.7	116	116	0.224	265	0
Los Padillas Drain										
LPEXT	488.381	3.8	176	17.8	4925.2	479	346	134	176	
LP1	228.84	17.7	229	17.8	4924.1	478	466	11.8	120	109
LP2	230.721	15.5	231	15.6	4923.1	482	474	8.2	120	111
LP3	231.855	13.9	232	16.4	4920.2	478	470	7.9	122	109
LP4	232.712	15.9	233	16	4922.1	474	465	8.77	28.2	205

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.E.5

ITERATION 4 10-YEAR DESIGN

500-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	92.5822	1.75	61.1	2.1	4948.2	12.9	12.9	0.0213	61.1	0
IS3	221.681	2.1	220	2.15	4944.3	42.4	42.4	0.0803	66.2	154
IS4	302.012	2.1	268	2.35	4942.4	59.8	58.1	1.72	60.9	208
IS5	292.461	2.35	179	2.8	4941.9	66.8	66.3	0.549	114	65.2
IS6	181.932	2.8	101	3.6	4940.4	72.4	71.6	0.771	101	0
IS7	409.88	2	436	2	4939.3	331	327	3.85	265	171
IS8	495.955	2	456	2.15	4937.9	358	353	4.22	59.2	397
IS9	588.224	2.1	579	2.15	4938.1	380	373	7.43	102	476
IS10	1146.16	2.15	1130	2.2	4936.2	479	474	4.93	298	832
IS11	1271.81	2.2	1270	2.2	4934.6	544	532	12	101	1170*
Pond-187	1287.32	2.25	0	29.9	4932.2	421	0	421	0	0
IS12	243.727	1.6	133	2.55	4934.1	173	159	13.9	36.1	96.7
IS13	212.933	2.55	126	3.3	4930.6	181	174	7.18	108	18.2
IS14	238.55	3.25	238	3.3	4929.3	393	380	12.8	60.7	177
IS15-ARM9	651.497	2.75	641	3.3	4928.8	603	599	3.61	641	
IS16	647.532	3.3	647	3.35	4929.5	621	602	19.1	68.9	578
IS17A	653.539	3.4	649	3.55	4923.4	621	609	12.2	36.9	612**
IS17B	223.457	1.5	95.1	3.8	4920.8	112	103	9.32	50.5	44.5
Armijo Drain										
ARM 1	88.122	2.45	64.7	2.9	4934.9	16.4	16.3	0.0287	29.3	35.5
ARM 2	105.976	1.7	63.3	3.3	4936.7	26	25.9	0.0615	63.3	0
ARM 3	110.879	1.8	80.5	3.55	4937.7	37.2	36.9	0.251	39.4	41.1
ARM 4	89.4064	3.4	84.5	3.85	4934.2	43.4	43.3	0.0776	84.5	0
Pond-187	70.1851	2.65	0	29.9	4930	18.8	0	18.8	0	0
ARM 5	325.358	2.5	260	3.35	4933.4	108	105	2.63	62.3	198
ARM 6	307.142	2.5	306	2.65	4930.6	127	126	0.248	45.2	261
ARM 7	317.326	2.6	317	2.6	4931.5	136	135	0.259	103	214
ARM 8	362.319	2.65	310	3.8	4931.1	151	151	0.288	304	5.48
Los Padillas Drain										
LPEXT	614.875	3.55	178	19.1	4926.4	540	372	168	178	
LP1	231.693	18.9	232	18.9	4924.1	504	493	11.8	120	111
LP2	233.817	14.2	234	14.3	4923.1	513	505	8.25	120	114
LP3	235.306	7.5	235	13.6	4920.4	510	502	8.47	123	112
LP4	236.277	11.8	236	12	4922.1	507	497	10	28.2	208

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.E.6
ITERATION 4_10-YEAR DESIGN
WATER SURFACE ELEVATION SUMMARY

POND NAME	10-YR ELEV (FT)	25-YR ELEV (FT)	100-YR ELEV (FT)	500-YR ELEV (FT)	LOW BANK ELEV (FT)
ARM1	4932.8	4933.3	4934.1	4934.9	4938
ARM2	4933.5	4934.1	4935.0	4936.7	4937.0
ARM3	4934.1	4935.4	4937.3	4937.7	4934.0
ARM4	4931.2	4931.8	4932.5	4934.2	4934.0
ARM5	4933.1	4933.1	4933.2	4933.4	4933.0
ARM6	4930.0	4930.3	4930.4	4930.6	4930.0
ARM7	4930.6	4931.1	4931.2	4931.5	4931.0
ARM8	4926.1	4927.5	4928.7	4931.1	4929.0
IS2	4945.6	4946.3	4947.1	4948.2	4948.0
IS3	4943.1	4943.9	4944.2	4944.3	4945.0
IS4	4941.2	4941.6	4942.0	4942.4	4942.0
IS5	4938.3	4939.3	4941.0	4941.9	4942.0
IS6	4937.0	4937.8	4939.2	4940.4	4941.0
IS7	4938.2	4938.7	4939.0	4939.3	4939.0
IS8	4937.3	4937.4	4937.7	4937.9	4937.0
IS9	4937.2	4937.4	4937.8	4938.1	4937.0
IS10	4934.6	4934.8	4935.4	4936.2	4934.0
IS11	4933.5	4933.7	4934.1	4934.6	4934.0
IS12	4933.7	4933.7	4933.9	4934.1	4934.0
IS13	4928.6	4928.7	4929.4	4930.6	4931.0
IS14	4929.0	4929.1	4929.1	4929.3	4929.0
IS15-ARM9	4925.8	4927.1	4928.3	4928.8	4929.0
IS16	4928.5	4928.7	4929.1	4929.5	4929.0
IS17A	4921.9	4922.3	4922.9	4923.4	4925.0
IS17B	4920.4	4920.6	4920.7	4920.8	4922.0
LPEXT	4924.7	4924.8	4925.2	4926.4	4925.0
LP1	4924.0	4924.1	4924.1	4924.1	4924.0
LP2	4923.0	4923.1	4923.1	4923.1	4923.0
LP3	4919.5	4919.8	4920.2	4920.4	4922.0
LP4	4921.9	4922.0	4922.1	4922.1	4921.0

TABLE 23.E.7

ITERATION 4 10-YEAR DESIGN
10-YEAR BANK MODIFICATION SUMMARY

Drain Segment ID	Max. Pond Elev. (ft)	Invert Elev (ft)	Req. Bank Elevation (ft)	Low Bank Elevation (ft)	Req Depth (ft)	Proposed Weir Elev. (ft)	Length of Fill (ft)				Assumed Width of Fill (ft)				Average Height of Fill (ft)		Fill Volume (cu-yd)	Avail Free-Board (ft)	Depth of Water over the Road (ft)
							Right		Left		Right		Left		Right	Left			
							Right	Left	Right	Left	Right	Left	Right	Left					
Arriño Drain																			
ARM1	4932.8	4931	4933.8	4938	7	4937.50											-	5.2	-
ARM2	4933.5	4930	4934.5	4937	7	4936.5											-	3.5	-
ARM3	4934.1	4927	4935.1	4934	8.1	4933.0											-	1	1.10
ARM4	4931.2	4928	4932.2	4934	6	4934.5											-	2.8	-
ARM5	4932.8	4926	4933.8	4933	7.8	4933.5											-	1	-
ARM6	4930.0	4924	4931	4930	7	4929.5	535	627		20	12	1.0	1	1	1	675	1	0.50	
ARM7	4930.6	4924	4931.6	4931	7.6	4930.5	364	96		20	12	0.9	0.6	0.6	0.6	268	1	0.10	
ARM8	4926.0	4923	4927	4929	6	4931.0											-	3	-
																TOTAL	943		
Isleta Drain																			
IS2	4945.6	4943	4946.6	4948	5	4947.5											-	2.4	-
IS3	4943.1	4940	4944.1	4945	5	4944.5											-	1.9	-
IS4	4941.2	4937	4942.2	4942	5.2	4941.5	152			20		0.2				23	1	-	-
IS5	4938.3	4936	4939.3	4942	6	4945.0											-	3.7	-
IS6	4937.0	4934	4938	4941	7	4940.5											-	4	-
IS7	4938.2	4933	4939.2	4939	6.2	4938.5	144	254		20	12	0.2	0.2	0.2	0.2	44	1	-	-
IS8	4937.3	4933	4938.3	4937	5.3	4938.0	150	499		20	12	0.3	0.3	0.3	0.3	100	1	-	-
IS9	4937.2	4931	4938.2	4937	7.2	4938.0	534	883		20	12	0.7	0.9	0.9	0.9	630	1	-	-
IS10	4934.6	4929	4935.6	4934	6.6	4935.5	575	635		20	12	1.1	1.35	1.35	1.35	850	1	-	-
IS11	4933.5	4928	4934.5	4934	6.5	4942.0	628			20		0.5				233	1	-	-
IS12	4933.7	4927	4934.7	4934	7.7	4933.5	571	254		20	12	1.4	1.0	1.0	1.0	705	1	0.20	-
IS13	4928.6	4925	4929.6	4931	6	4930.5										-	2.4	-	-
IS14	4929.0	4924	4930	4929	6	4928.5	242	26		20	12	1	1	1	1	191	1	0.50	-
IS15-ARM9	4925.8	4922	4926.8	4929	7	4937.4										-	3.2	-	-
IS16	4928.5	4920	4929.5	4929	9.5	4928.0	1543			20		1.4				1,600	1	0.50	-
IS17A	4921.9	4916	4922.9	4925	9	No Road										-	3.1	-	-
IS17B	4920.4	4916	4921.4	4922	6	4920.5										-	1.6	-	-
																TOTAL	4,374		
Los Padillas Drain																			
LPEXT	4924.7	4918	4925.7	4925	7.7												-		
LP1	4924.0	4918	4925	4924	7	4923.5	205	863		20	12	1	1	1	1	535	1	0.50	-
LP2	4923.0	4917	4924	4923	7	4922.5	81	286		20	12	1	1	1	1	187	1	0.50	-
LP3	4919.5	4916	4920.5	4922	6	4919.0										-	2.5	-	-
LP4	4921.9	4912	4922.9	4921	10.9	4922.0	757	365		20	12	0.9	0.9	0.9	0.9	651	1	-	-
																TOTAL	1,373		
																GRAND TOTAL	6,691		

TABLE 23.E.8

ITERATION 4 25-YEAR DESIGN

10-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	42.3168	1.75	29.5	2.1	4945.6	8.33	8.31	0.0155	29.5	0
IS3	99.2387	2.1	32.7	3.15	4943.6	23.7	23.1	0.682	32.7	0
IS4	58.1896	2	27.1	5.2	4940	34.8	33	1.77	27.1	0
IS5	29.635	5.05	28.9	6.15	4937.8	39.6	39	0.549	28.9	0
IS6	30.994	6.15	30	7.55	4936.5	44.5	43.7	0.755	30	0
IS7	229.772	2	186	2.45	4938.2	282	278	3.84	186	0
IS8	210.5	2.35	210	2.4	4937.3	305	301	4.22	51.2	159
IS9	255.538	2.15	254	2.25	4937.2	315	308	7.43	100	154
IS10	506.397	2.1	501	2.3	4934.6	363	358	4.89	233	269
IS11	569.666	2.3	545	2.55	4933.5	416	404	11.9	64.7	480*
Pond-187	530.29	2.5	0	29.9	4930.9	289	0	289	0	0
IS12	121.564	1.6	66.3	4.95	4933.7	159	145	13.9	35.4	30.9
IS13	73.4355	2.25	69.2	10.8	4928.6	158	151	7.16	69.2	0
IS14	159.492	3.1	158	3.35	4929	370	357	12.6	81.5	76.6
IS15-ARM9	330.921	3.5	328	3.75	4926.4	479	475	3.6	328	0
IS16	333.245	3.75	332	3.9	4928.2	489	473	16	177	154
IS17A	337.97	3.95	335	4.15	4922.1	486	473	12.3	34.1	301**
IS17B	110.653	1.5	39.7	8.15	4920.5	94.5	85.5	9.06	39.1	0.523
Armijo Drain										
ARM1	34.139	2.45	26.8	2.9	4932.8	8.29	8.26	0.0286	10.7	16.1
ARM2	46.3852	1.7	31.4	2.35	4933.5	13.8	13.8	0.0614	31.4	0
ARM3	51.1794	1.75	30.2	4	4934.1	19.9	19.7	0.248	30.2	0
ARM4	35.715	2.55	34	3.1	4931.2	23.8	23.7	0.0767	34	0
Pond-187	30.3179	2.65	0	29.9	4929.1	10.4	0	10.3	0	0
ARM5	144.819	2.5	139	2.8	4932.8	53.1	48.6	4.56	61.3	78.2
ARM6	167.514	2.75	126	3.35	4927.9	59.4	59.3	0.118	126	0
ARM7	127.57	3.3	127	3.4	4930.7	63.3	63.2	0.124	101	25.8
ARM8	144.34	3.4	134	3.8	4926.4	69.8	69.7	0.128	134	0
Los Padillas Drain										
LPEXT	304.167	4.15	155	26.3	4924.7	405	279	126	155	16
LP1	207.887	26.3	208	26.4	4923.6	411	400	10.6	192	16.5
LP2	208.722	26.4	209	26.4	4922.6	409	402	7.33	192	22.2
LP3	209.571	26.3	210	26.4	4918.3	405	400	5.26	187	182
LP4	210.263	24.6	210	24.8	4921.9	402	390	11.7	27.9	182

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.E.9

ITERATION 4 25-YEAR DESIGN
25-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	53.7216	1.75	36.2	2.1	4946.3	9.37	9.36	0.0155	36.2	0
IS3	125.894	2.1	39	3.2	4944.5	28	27.2	0.744	39	0
IS4	73.7016	1.95	32.7	5.35	4940.6	40.2	38.4	1.82	32.7	0
IS5	35.3218	5.2	34.5	6.3	4938.1	45.5	44.9	0.561	34.5	0
IS6	36.608	6.3	35.4	7.7	4937	50.5	49.7	0.778	35.4	0
IS7	269.889	2	234	2.35	4938.7	293	289	3.85	205	29.6
IS8	264.838	2.3	263	2.35	4937.4	317	313	4.22	53.2	210
IS9	314.522	2.3	311	2.4	4937.4	330	322	7.43	101	210
IS10	622.731	2.1	618	2.4	4934.8	389	384	4.91	267	351
IS11	700.661	2.2	688	2.45	4933.7	445	433	12	79.9	608*
Pond-187	675.434	2.45	0	29.9	4931.2	318	0	318	0	0
IS12	149.675	1.6	70	4	4933.7	162	148	13.9	35.4	34.6
IS13	88.578	2.15	70.7	8.35	4928.7	163	156	7.17	70.7	0
IS14	177.375	3.05	177	3.1	4929	378	365	12.6	82.7	94.6
IS15-ARM9	402.009	3.35	394	3.85	4927.3	509	506	3.61	394	
IS16	400.492	3.9	400	4	4928.5	522	506	16.1	178	222
IS17A	407.261	4.05	406	4.2	4922.4	519	507	12.3	34.8	372**
IS17B	137.708	1.5	53.7	4.95	4920.6	98.6	89.5	9.13	42	11.7
Arnajo Drain										
ARM1	45.689	2.45	34.4	2.95	4933.3	10.1	10.1	0.0286	13.8	20.7
ARM2	59.87	1.7	39.3	2.9	4934.1	16.5	16.5	0.0614	39.3	0
ARM3	63.6866	1.75	34.7	4.15	4935.4	23.8	23.5	0.248	34.7	0
ARM4	42.9998	2.55	40.9	3.15	4931.8	28.1	28	0.0769	40.9	0
Pond-187	39.0538	2.65	0	29.9	4929.3	12.2	0	12.2	0	0
ARM5	185.331	2.5	201	2.55	4933.9	65.3	64.7	0.579	35.3	166
ARM6	248.114	2.55	161	3.3	4928.9	78	77.8	0.15	161	0
ARM7	163.443	3.25	163	3.35	4930.9	83	82.8	0.158	102	61.4
ARM8	187.027	3.3	172	3.8	4927.3	91.5	91.3	0.158	172	0
Los Padillas Drain										
LPEXT	374.56	4.2	163	20.4	4924.8	438	310	128	163	
LP1	215.919	20.3	216	20.5	4923.6	442	431	10.6	195	20.6
LP2	217.476	20.3	217	20.4	4922.6	443	436	7.36	196	21.5
LP3	218.448	20.4	218	20.5	4918.4	439	434	5.3	192	26.6
LP4	219.22	20.5	219	20.6	4922	437	424	12.6	28	191

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.E.11

ITERATION 4 25-YEAR DESIGN

500-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	92.5822	1.75	61.1	2.1	4948.2	12.9	12.9	0.0213	61.1	0
IS3	221.681	2.1	209	2.35	4945.2	42.4	41.6	0.858	60.5	148
IS4	263.57	2.35	179	2.7	4942.1	59.1	57.1	1.93	60.3	119
IS5	197.027	2.7	111	3.4	4941.6	65.9	65.3	0.586	95.6	15.1
IS6	112.872	3.4	77.8	4.4	4939.4	71.4	70.5	0.836	77.8	0
IS7	409.423	2	436	2	4939.3	330	326	3.88	265	171
IS8	496.134	2	455	2.15	4937.9	356	352	4.23	59.2	396
IS9	587.63	2.1	578	2.15	4938.1	379	372	7.43	102	476
IS10	1145.53	2.15	1130	2.2	4936.2	477	472	4.96	298	831
IS11	1271.14	2.2	1270	2.2	4934.6	543	531	12	101	1170*
Pond-187	1286.65	2.25	0	29.9	4932.2	420	0	420	0	0
IS12	243.727	1.6	133	2.55	4934.1	173	159	13.9	36.1	96.7
IS13	212.943	2.55	125	3.3	4930.6	181	174	7.18	108	16.9
IS14	286.413	3.25	286	3.3	4929.4	406	393	12.6	88.3	198
IS15-ARM9	691.696	3.2	680	3.4	4929.1	616	612	3.61	680	
IS16	688.071	3.55	688	3.55	4929.3	635	618	16.3	180	508
IS17A	695.327	3.55	693	3.65	4923.6	637	625	12.3	37.2	655**
IS17B	226.543	1.5	95.8	3.75	4920.8	113	103	9.32	50.7	45.1
Armijo Drain										
ARM1	88.122	2.45	64.7	2.9	4934.9	16.4	16.3	0.0287	29.3	35.5
ARM2	105.976	1.7	63.3	3.3	4936.7	26	25.9	0.0615	63.3	0
ARM3	110.879	1.8	80.5	3.55	4937.7	37.2	36.9	0.251	39.4	41.1
ARM4	89.4064	3.4	84.5	3.85	4934.2	43.4	43.3	0.0776	84.5	0
Pond-187	70.1851	2.65	0	29.9	4930	18.8	0	18.8	0	0
ARM5	325.358	2.5	260	3.35	4933.4	108	105	2.63	62.3	198
ARM6	307.142	2.5	302	2.8	4929.9	127	126	0.251	232	70.1
ARM7	310.49	2.8	310	2.8	4931.4	136	135	0.264	103	208
ARM8	357.408	2.85	305	3.85	4931	151	150	0.267	304	1.13
Los Padillas Drain										
LPEXT	658.469	3.65	179	16.8	4927.1	555	376	179	179	
LP1	232.452	15.9	232	16.4	4923.7	509	498	10.8	202	30.1
LP2	234.713	13.6	235	13.9	4922.7	519	511	7.49	203	31.4
LP3	236.382	7.2	236	7.6	4918.5	517	511	5.49	201	35.3
LP4	238.375	7.4	238	7.55	4922.1	516	507	9.31	28.3	210

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.E.12
ITERATION 4 25-YEAR DESIGN
WATER SURFACE ELEVATION SUMMARY

POND NAME	10-YR ELEV (FT)	25-YR ELEV (FT)	100-YR ELEV (FT)	500-YR ELEV (FT)	LOW BANK ELEV (FT)
ARM1	4932.8	4933.3	4934.1	4934.9	4938
ARM2	4933.5	4934.1	4935.0	4936.7	4937.0
ARM3	4934.1	4935.4	4937.3	4937.7	4934.0
ARM4	4931.2	4931.8	4932.5	4934.2	4934.0
ARM5	4932.8	4933.1	4933.2	4933.4	4933.0
ARM6	4927.9	4928.9	4929.7	4930.6	4930.0
ARM7	4930.7	4930.9	4931.2	4931.5	4931.0
ARM8	4926.4	4927.3	4928.6	4931.0	4929.0
IS2	4945.6	4946.3	4947.1	4948.2	4948.0
IS3	4943.6	4944.5	4944.9	4945.2	4945.0
IS4	4940.0	4940.6	4941.7	4942.1	4942.0
IS5	4937.8	4938.1	4939.1	4941.6	4942.0
IS6	4936.5	4937.0	4937.8	4939.4	4941.0
IS7	4938.2	4938.7	4939.0	4939.3	4939.0
IS8	4937.3	4937.4	4937.7	4937.9	4937.0
IS9	4937.2	4937.4	4937.8	4938.1	4937.0
IS10	4934.6	4934.8	4935.4	4936.2	4934.0
IS11	4933.5	4933.7	4934.1	4934.6	4934.0
IS12	4933.7	4933.7	4933.9	4934.1	4934.0
IS13	4928.6	4928.7	4929.4	4930.6	4931.0
IS14	4929.0	4929.0	4929.2	4929.4	4929.0
IS15-ARM9	4926.4	4927.3	4928.4	4929.1	4929.0
IS16	4928.2	4928.5	4928.9	4929.3	4929.0
IS17A	4922.1	4922.4	4923.0	4923.6	4925.0
IS17B	4920.5	4920.6	4920.7	4920.8	4922.0
LPEXT	4924.7	4924.8	4925.3	4927.1	4925.0
LP1	4923.6	4923.6	4923.7	4923.7	4924.0
LP2	4922.6	4922.6	4922.7	4922.7	4923.0
LP3	4918.3	4918.4	4918.5	4918.5	4922.0
LP4	4921.9	4922.0	4922.1	4922.1	4921.0

TABLE 23.E.13

ITERATION 4 25-YEAR DESIGN

25-YEAR BANK MODIFICATION SUMMARY

Drain Segment ID	Max. Pond Elev. (ft)	Invert Elev (ft)	Req. Bank Elevation (ft)	Low Bank Elevation (ft)	Req Depth (ft)	Proposed Weir Elev. (ft)	Length of Fill (ft)		Assumed Width of Fill (ft)		Average Height of Fill (ft)		Fill Volume (cu-yd)	Avail Free-Board (ft)	Depth of Water over the Road (ft)	
							Right	Left	Right	Left	Right	Left				
Armijo Drain																
ARM1	4933.3	4931	4934.3	4938	7	4937.5							-	4.7	-	
ARM2	4934.1	4930	4935.1	4937	7	4936.5							-	2.9	-	
ARM3	4935.4	4927	4936.4	4934	9.4	4933.0							-	0	2.40	
ARM4	4931.8	4928	4932.8	4934	6	4934.5							-	2.2	-	
ARM5	4933.1	4926	4934.1	4933	8.1	4933.5							-	0	-	
ARM6	4929.1	4924	4930.1	4930	6.1	4929.5	551	623	20	12	0.1	0.1	69	1	-	
ARM7	4930.9	4924	4931.9	4931	7.9	4930.5	364	96	20	12	1.4	0.9	416	1	0.40	
ARM8	4927.5	4923	4928.5	4929	6	4931.0							-	1.5	-	
												TOTAL	484			
Isleta Drain																
IS2	4946.3	4943	4947.3	4948	5	4947.5							-	1.7	-	
IS3	4944.5	4940	4945.5	4945	5.5	4944.5	188	204	20	12	0.5	1.1	169	1	-	
IS4	4940.6	4937	4941.6	4942	5	4941.5							-	1.4	-	
IS5	4938.1	4936	4939.1	4942	6	4945.0							-	3.9	-	
IS6	4937.0	4934	4938	4941	7	4940.5							-	4	-	
IS7	4938.7	4933	4939.7	4939	6.7	4938.5	136		20		0.7		70	1	0.20	
IS8	4937.4	4933	4938.4	4937	5.4	4938.0	150	499	20	12	0.4	0.4	133	1	-	
IS9	4937.4	4931	4938.4	4937	7.4	4938.0	534	883	20	12	0.75	0.8	611	1	-	
IS10	4934.8	4929	4935.8	4934	6.8	4935.5	575	635	20	12	1.3	1.55	991	1	-	
IS11	4933.7	4928	4934.7	4934	6.7	4942.0	652		20		0.7		338	1	-	
IS12	4933.7	4927	4934.7	4934	7.7	4933.5	571	254	20	12	1.4	1.0	705	1	0.20	
IS13	4928.7	4925	4929.7	4931	6	4930.5							-	2.3	-	
IS14	4929.0	4924	4930	4929	6	4928.5	242	26	20	12	1	1	191	1	0.50	
IS15-ARM9	4927.3	4922	4928.3	4929	7	4937.4							-	1.7	-	
IS16	4928.5	4920	4929.5	4929	9.5	4928.0	1543		20		1.4		1,600	1	0.50	
IS17A	4922.4	4916	4923.4	4925	9	No Road							-	2.6	-	
IS17B	4920.6	4916	4921.6	4922	6	4920.5							-	1.4	0.10	
												TOTAL	4,809			
Los Padillas Drain																
LPEXT	4924.8	4918	4925.8	4925	7.8	4923.5	205	863	20	12	0.6	0.6	321	1	0.10	
LP1	4923.6	4918	4924.6	4924	6.6	4924.6	81	286	20	12	0.6	0.6	112	1	0.10	
LP2	4922.6	4917	4923.6	4923	6.6	4922.5							-	3.6	-	
LP3	4918.4	4916	4919.4	4922	6	4919.0							-	1	-	
LP4	4922.0	4912	4923	4921	11	4922.0	757	365	20	12	1	1	723	1	-	
												TOTAL	1,156			
												GRAND TOTAL	6,450			

TABLE 23.F.1

ITERATION 5 10-YEAR DESIGN

10-YEAR STORM K-ROUTE MODELING SUMMARY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	42.32	1.75	29.50	2.10	4945.60	8.33	8.31	0.02	29.50	0.00
IS3	99.24	2.10	63.70	2.70	4943.10	23.70	23.70	0.04	63.70	0.00
IS4	290.65	1.55	229.00	2.75	4941.00	191.00	190.00	0.36	229.00	0.00
IS5	238.07	2.60	235.00	2.95	4938.90	197.00	196.00	0.36	235.00	0.00
IS6	237.56	2.95	236.00	3.20	4936.90	202.00	201.00	0.37	236.00	0.00
IS7	380.02	2.50	386.00	2.45	4939.20	248.00	247.00	0.43	247.00	139.00
IS8	409.44	2.45	393.00	2.60	4937.80	273.00	273.00	0.84	57.30	336.00
IS9	419.89	2.55	411.00	2.65	4937.70	287.00	285.00	2.44	101.00	310.00
IS10	1270.69	2.50	1240.00	2.60	4934.80	396.00	395.00	0.73	901.00	339.00
IS11	1295.07	2.60	1300.00	2.60	4934.70	453.00	443.00	10.40	101.00	1200*
Pond-187	1247.49	2.60	0.03	29.90	4931.30	327.00	0.06	327.00	0.03	0.00
IS12	119.90	1.60	73.80	3.90	4933.70	159.00	145.00	13.90	35.50	38.40
IS13	81.27	3.80	72.10	8.60	4928.80	158.00	151.00	6.61	72.10	0.00
IS14	160.95	4.05	161.00	4.10	4929.10	371.00	358.00	12.80	60.10	101.00
IS15-ARM9	753.04	2.25	681.00	2.60	4929.30	899.00	891.00	8.40	681.00	
IS16	685.03	2.35	685.00	2.75	4929.60	904.00	884.00	20.30	69.10	616.00
IS17A	688.24	2.75	668.00	3.00	4923.50	896.00	882.00	14.30	37.00	631**
IS17B	107.61	1.50	44.00	6.25	4920.50	98.40	88.60	9.75	40.00	3.97
Armijo Drain										
ARM1	34.14	2.45	26.8	2.9	4932.8	8.29	8.26	0.0286	10.7	16.1
ARM2	46.39	1.7	31.4	2.35	4933.5	13.8	13.8	0.0614	31.4	0
ARM3	51.18	1.75	30.2	4	4934.1	19.9	19.7	0.248	30.2	0
ARM4	35.72	2.55	34	3.1	4931.2	23.8	23.7	0.0767	34*	0*
Pond-187	30.32	2.65	0	29.9	4929.1	10.4	0	10.3	0	0
ARM5	144.82	2.5	142	2.7	4933.1	53.1	52.6	0.523	33.7	108
ARM6	172.87	2.65	135	3.25	4930	63.4	62.7	0.713	44.1	90.7
ARM7	136.35	3.2	118	3.6	4930.6	66.7	66.6	0.109	101	17.2
ARM8	134.26	3.6	121	3.85	4926	73.3	73.1	0.174	121	0
Los Padillas Drain										
LPEXT	634.43	3	363	10.4	4925.3	809	666	144	176	187
LP1	416.16	10.4	416	10.6	4924.7	798	785	12.7	121	295
LP2	417.87	10.6	418	10.6	4923.7	794	785	8.84	121	297
LP3	418.98	10.6	415	11.9	4921.8	788	781	7.25	272	144
LP4	416.25	11.9	416	11.9	4922.1	783	773	9.51	28.3	388

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.G.1

ITERATION 6 5-YEAR EVALUATION

5-YEAR STORM K-ROUTE MODELING SUMMARY - EXISTING GEOMETRY

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	34.06	1.75	24.50	2.05	4945.70	7.59	7.58	0.01	24.50	0.00
IS3	79.96	2.10	80.00	2.10	4943.20	20.80	20.80	0.04	29.00	51.00
IS4	112.68	2.00	63.30	2.70	4943.60	32.50	32.30	0.19	63.30	0.00
IS5	71.96	2.35	67.90	3.05	4940.20	38.50	38.30	0.29	67.90	0.00
IS6	69.94	3.05	61.90	3.70	4939.10	43.60	43.20	0.43	61.90	0.00
IS7	131.40	2.05	131.00	2.10	4939.40	80.30	78.70	1.62	34.80	96.20
IS8	157.16	2.10	161.00	2.10	4941.10	105.00	102.00	3.20	38.20	123.00
IS9	209.20	2.10	105.00	3.60	4939.00	115.00	114.00	0.78	104.00	0.51
IS10	130.61	2.50	136.00	2.50	4936.00	132.00	130.00	2.06	62.00	74.30
IS11	187.81	2.50	137.00	4.85	4932.30	186.00	182.00	4.11	51.10	85.70
Pond-187	91.48	3.20	0.01	29.90	4929.00	105.00	0.01	105.00	0.01	0.00
IS12	106.84	1.60	34.50	29.80	4937.30	117.00	77.60	39.80	34.50	0.00
IS13	58.85	2.20	48.40	2.80	4927.50	89.40	87.80	1.63	48.40	0.00
IS14	156.79	2.90	157.00	3.00	4931.50	305.00	299.00	5.91	64.90	91.60
IS15-ARM9	268.85	2.75	268.00	2.90	4925.60	409.00	409.00	0.38	268.00	
IS16	271.48	2.90	270.00	3.10	4928.40	421.00	403.00	18.90	66.80	203.00
IS17A	273.72	3.10	267.00	3.55	4921.70	414.00	402.00	11.80	33.50	233.00
IS17B	89.93	1.50	37.40	12.20	4920.20	91.20	82.30	8.87	37.40	0.00
Armijo Drain										
ARM2	36.67	1.70	26.70	2.30	4933.00	11.90	11.90	0.07	26.70	0.00
ARM3	40.60	1.80	24.70	3.85	4933.10	17.20	17.00	0.26	24.70	0.00
ARM4	28.64	2.65	27.80	3.20	4930.30	20.70	20.60	0.08	27.80	0.00
Pond-187	24.08	2.65	0.01	29.90	4928.90	9.05	0.02	9.03	0.01	0.00
ARM5	114.00	2.55	40.10	5.05	4935.00	44.50	44.30	0.24	40.10	0.00
ARM6	73.60	2.15	59.90	2.80	4929.60	53.40	53.10	0.33	59.90	0.00
ARM7	62.45	2.75	54.30	3.20	4929.20	56.20	56.10	0.10	54.30	0.00
ARM8	73.03	1.90	64.30	3.75	4930.40	61.40	61.10	0.35	60.40	3.92
Los Padillas Drain										
LPEXT	236.46	3.55	127.00	25.30	4924.10	335.00	228.00	107.00	120.00	7.09
LP1	180.55	25.20	181.00	25.40	4923.90	360.00	348.00	11.40	114.00	66.10
LP2	181.57	24.40	182.00	24.50	4922.90	356.00	348.00	7.96	115.00	66.80
LP3	182.46	24.50	182.00	24.70	4917.10	350.00	347.00	3.43	182.00	0.00
LP4	183.13	24.70	151.00	11.30	4921.00	349.00	307.00	42.20	26.00	125.00

* Q2 represents outflow to Pond 187

** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.G.2

ITERATION 6 5-YEAR DESIGN

5-YEAR STORM K-ROUTE MODELING SUMMARY - CULVERT IMPROVEMENTS

Drain Segment/Pond	Peak Inflow (cfs)	Time (hrs)	Peak Outflow (cfs)	Time (hrs)	Max W.S. Elev (ft)	Inflow Vol (ac.ft.)	Outflow Vol (ac.ft.)	Vol at End (ac.ft.)	Q1: Pipe Outflow (cfs)	Q2: Road Overflow (cfs)
Isleta Drain										
IS2	34.06	1.75	24.50	2.05	4945.70	7.59	7.58	0.01	24.50	0.00
IS3	79.96	2.10	80.00	2.10	4943.10	20.80	20.80	0.04	45.70	34.30
IS4	112.83	2.00	81.20	2.50	4942.50	32.50	32.40	0.06	81.20	0.00
IS5	89.99	2.45	79.90	2.85	4940.90	38.60	38.40	0.23	79.90	0.00
IS6	81.99	2.85	65.80	3.65	4939.30	43.70	43.30	0.41	65.80	0.00
IS7	135.63	2.15	133.00	2.30	4939.10	80.50	80.00	0.49	119.00	14.20
IS8	156.76	2.25	156.00	2.30	4936.40	107.00	106.00	1.11	156.00	0.00
IS9	191.37	2.30	165.00	2.55	4937.20	118.00	118.00	0.41	165.00	0.00
IS10	192.51	2.55	187.00	2.70	4934.30	135.00	135.00	0.27	187.00	0.00
IS11	232.76	2.65	149.00	3.95	4932.50	192.00	178.00	13.20	54.00	95.00
Pond-187	124.27	2.80	0.01	29.90	4929.00	102.00	0.01	102.00	0.01	0.00
IS12	109.57	1.60	58.50	4.00	4933.20	117.00	112.00	4.92	58.50	0.00
IS13	83.87	2.25	66.30	3.20	4928.50	124.00	122.00	1.98	66.30	0.00
IS14	175.03	3.05	174.00	3.25	4929.00	339.00	336.00	2.70	174.00	0.00
IS15-ARM9	342.93	3.25	340.00	3.40	4926.60	447.00	446.00	0.40	340.00	
IS16	344.83	3.40	328.00	3.90	4928.50	459.00	450.00	9.40	247.00	80.90
IS17A	333.31	3.90	330.00	4.10	4922.00	461.00	449.00	11.90	34.10	296.00
IS17B	101.89	1.50	38.30	9.00	4920.40	93.80	84.90	8.92	38.30	0.00
Armijo Drain										
ARM2	36.67	1.70	26.70	2.30	4933.00	11.90	11.90	0.07	26.70	0.00
ARM3	40.60	1.80	24.70	3.85	4933.10	17.20	17.00	0.26	24.70	0.00
ARM4	28.64	2.65	27.80	3.20	4930.30	20.70	20.60	0.08	27.80	0.00
Pond-187	24.08	2.65	0.01	29.90	4928.90	9.05	0.02	9.03	0.01	0.00
ARM5	114.00	2.55	107.00	2.90	4931.30	44.50	44.40	0.07	107.00	0.00
ARM6	128.37	2.70	125.00	2.90	4930.10	53.60	53.40	0.15	101.00	24.80
ARM7	127.54	2.85	119.00	3.15	4930.80	56.60	56.50	0.09	119.00	0.00
ARM8	132.33	3.15	128.00	3.35	4929.20	61.80	61.70	0.10	128.00	0.00
Los Padillas Drain										
LPEXT	298.62	4.10	141.00	18.20	4924.20	379.00	270.00	109.00	126.00	15.00
LP1	194.42	18.10	194.00	18.30	4924.00	402.00	390.00	11.50	118.00	76.20
LP2	195.79	18.10	196.00	18.30	4923.00	397.00	389.00	8.02	119.00	77.20
LP3	196.72	18.30	197.00	18.40	4917.30	392.00	389.00	3.58	197.00	0.00
LP4	197.45	18.40	151.00	8.05	4921.00	391.00	316.00	74.70	26.00	125.00

* Q2 represents outflow to Pond 187

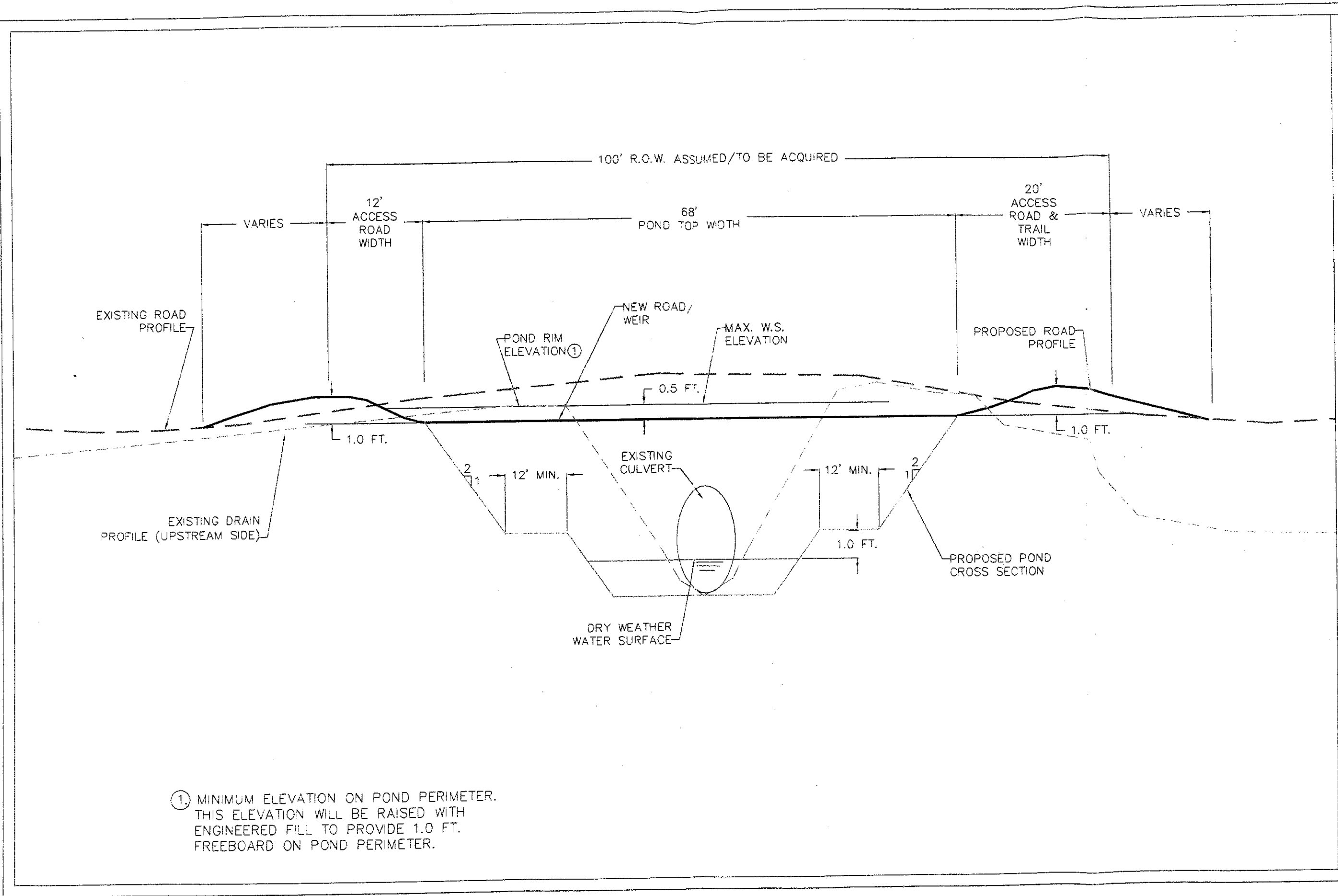
** Q2 represents outflow to Los Padillas Extension (LPEXT)

TABLE 23.G.3

ITERATION 6 5-YEAR DESIGN

5-YEAR DESIGN DEPTH OF WATER OVER THE ROAD - CULVERT IMPROVEMENTS

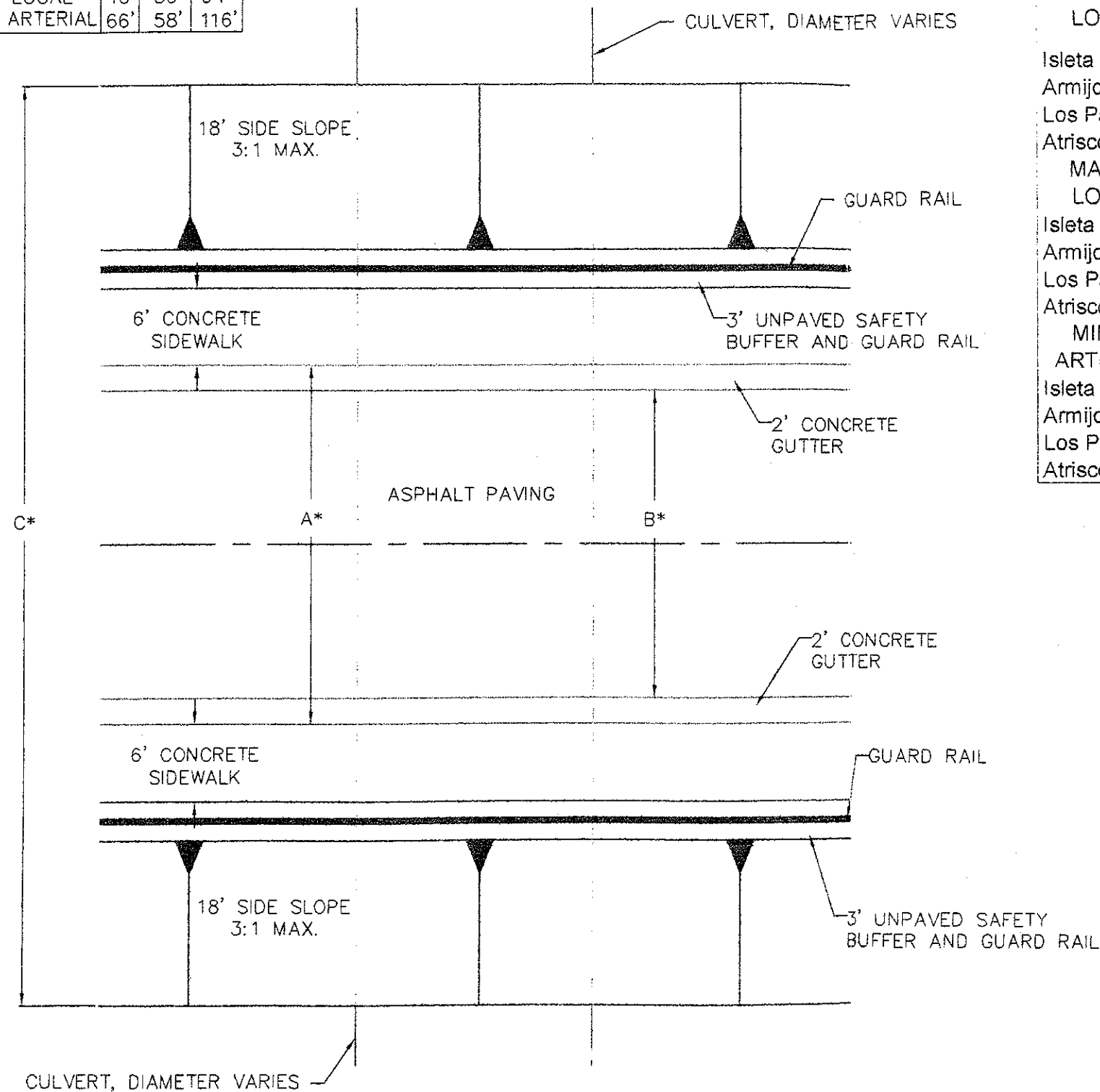
Drain Segment ID	Max. Pond Elev. (ft)	Invert Elev (ft)	Req. Bank Elevation (ft)	Low Bank Elevation (ft)	Req Depth (ft)	Road Elevation (ft)	Avail Free-Board (ft)	Depth of Water over the Road (ft)
Armijo Drain								
ARM2	4933	4930	4934	4937	7	4938.0	4	-
ARM3	4933.1	4929	4934.1	4934	5.1	4935.0	1	-
ARM4	4930.3	4928	4931.3	4934	6	4935.0	3.7	-
ARM5	4931.3	4926	4932.3	4933	7	4937.0	1.7	-
ARM6	4930.1	4924	4931.1	4930	7.1	4930.0	1	0.10
ARM7	4930.8	4924	4931.8	4931	7.8	4935.0	1	-
ARM8	4929.2	4925	4930.2	4929	5.2	4931.0	1	-
Isleta Drain								
IS2	4945.7	4943	4946.7	4948	5	4948.0	2.3	-
IS3	4943.1	4940	4944.1	4945	5	4943.0	1.9	0.10
IS4	4942.5	4937	4943.5	4942	6.5	4944.0	1	-
IS5	4940.9	4936	4941.9	4942	6	4943.0	1.1	-
IS6	4939.3	4934	4940.3	4941	7	4942.0	1.7	-
IS7	4939.1	4933	4940.1	4939	7.1	4939.0	1	0.10
IS8	4936.4	4932.5	4937.4	4937	4.9	4938.0	1	-
IS9	4937.2	4931	4938.2	4937	7.2	4938.0	1	-
IS10	4934.3	4930	4935.3	4934	5.3	4935.0	1	-
IS11	4932.5	4928	4933.5	4934	6	4943.0	1.5	-
IS12	4933.2	4927	4934.2	4934	7.2	4936.0	1	-
IS13	4928.5	4925	4929.5	4931	6	4932.0	2.5	-
IS14	4929	4924	4930	4929	6	4929.0	1	-
IS15-ARM9	4926.6	4922	4927.6	4929	7	4929.0	2.4	-
IS16	4928.5	4920	4929.5	4929	9.5	4928.0	1	0.50
IS17A	4922	4916	4923	4925	9	No Road	3	-
IS17B	4920.4	4916	4921.4	4922	6	4920.5	1.6	-
Los Padillas Drain								
LPEXT	4924.2	4918	4925.2	4924.2	7.2			
LP1	4924	4918	4925	4924	7	4923.5	1	0.50
LP2	4923	4917	4924	4923	7	4922.5	1	0.50
LP3	4917.3	4916	4918.3	4917.2	2.3	4919.0	1	-
LP4	4921	4912	4922	4921	10	4922.0	1	-



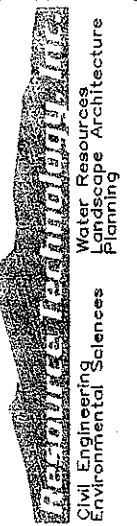
TYPICAL DRAIN SEGMENT
WIDENING & ROAD CROSSING
IMPROVEMENT - PROFILE

* PAVING WIDTHS

TYPE	A	B	C
LOCAL	28'	24'	82'
MAJOR LOCAL	40'	36'	94'
MINOR ARTERIAL	66'	58'	116'



DRAINS	ASSUMED R.O.W. FT.	LENGTH OF WEIR	LENGTH OF HUMP X 2 FT.	TOTAL LENGTH STREET CHANGES FT.
LOCAL				
Isleta	100	68	80	148
Armijo	80	48	80	128
Los Padillas	85	53	80	133
Atrisco	62	30	80	110
MAJOR LOCAL				
Isleta	100	68	100	168
Armijo	80	48	100	148
Los Padillas	85	53	100	153
Atrisco	62	30	100	130
MINOR ARTERIAL				
Isleta	100	68	200	268
Armijo	80	48	200	248
Los Padillas	85	53	200	253
Atrisco	62	30	200	230



TYPICAL DRAIN SEGMENT
WIDENING & ROAD CROSSING
IMPROVEMENT- PLAN VIEW

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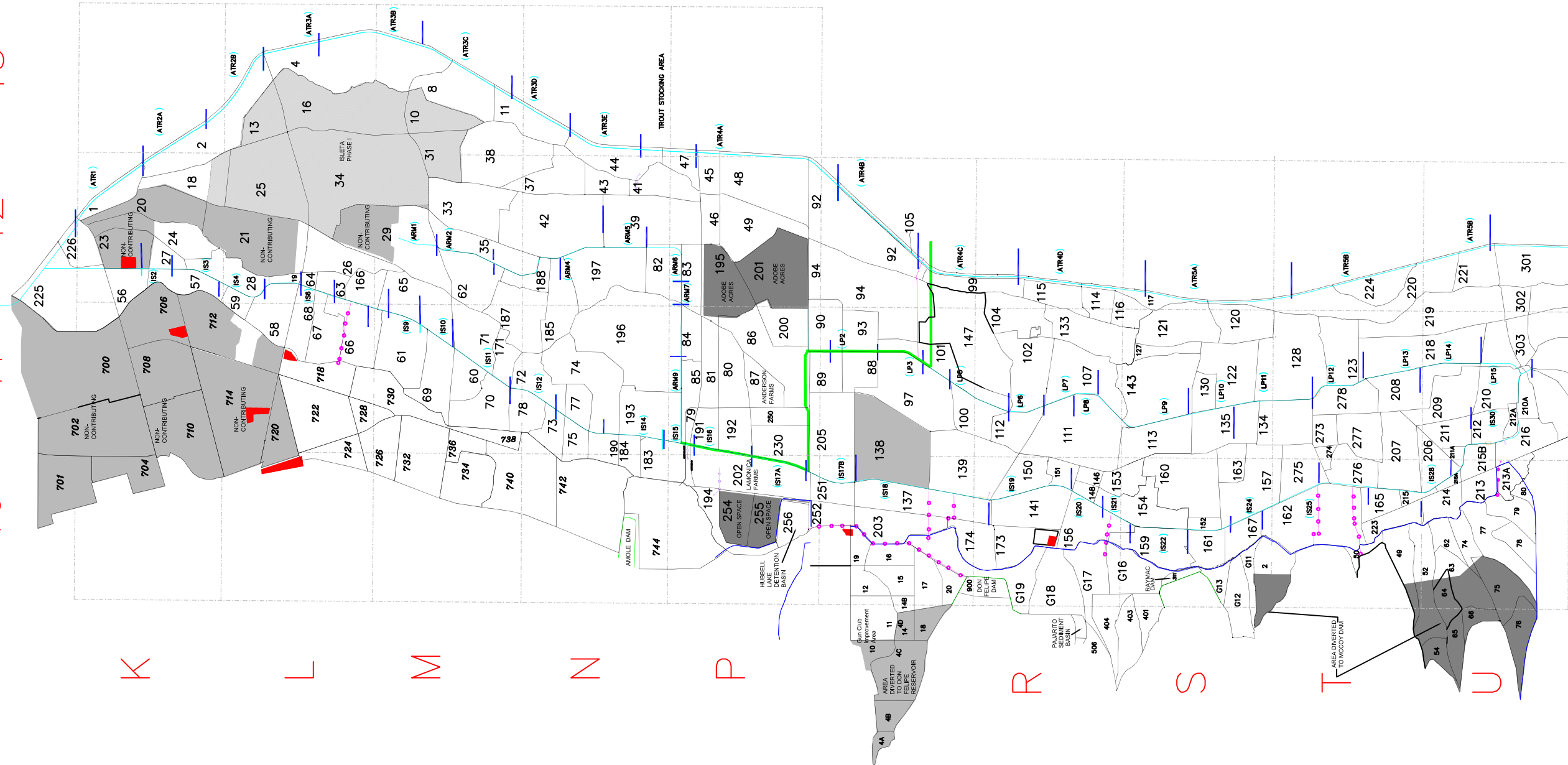
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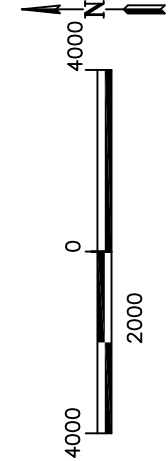
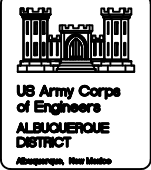
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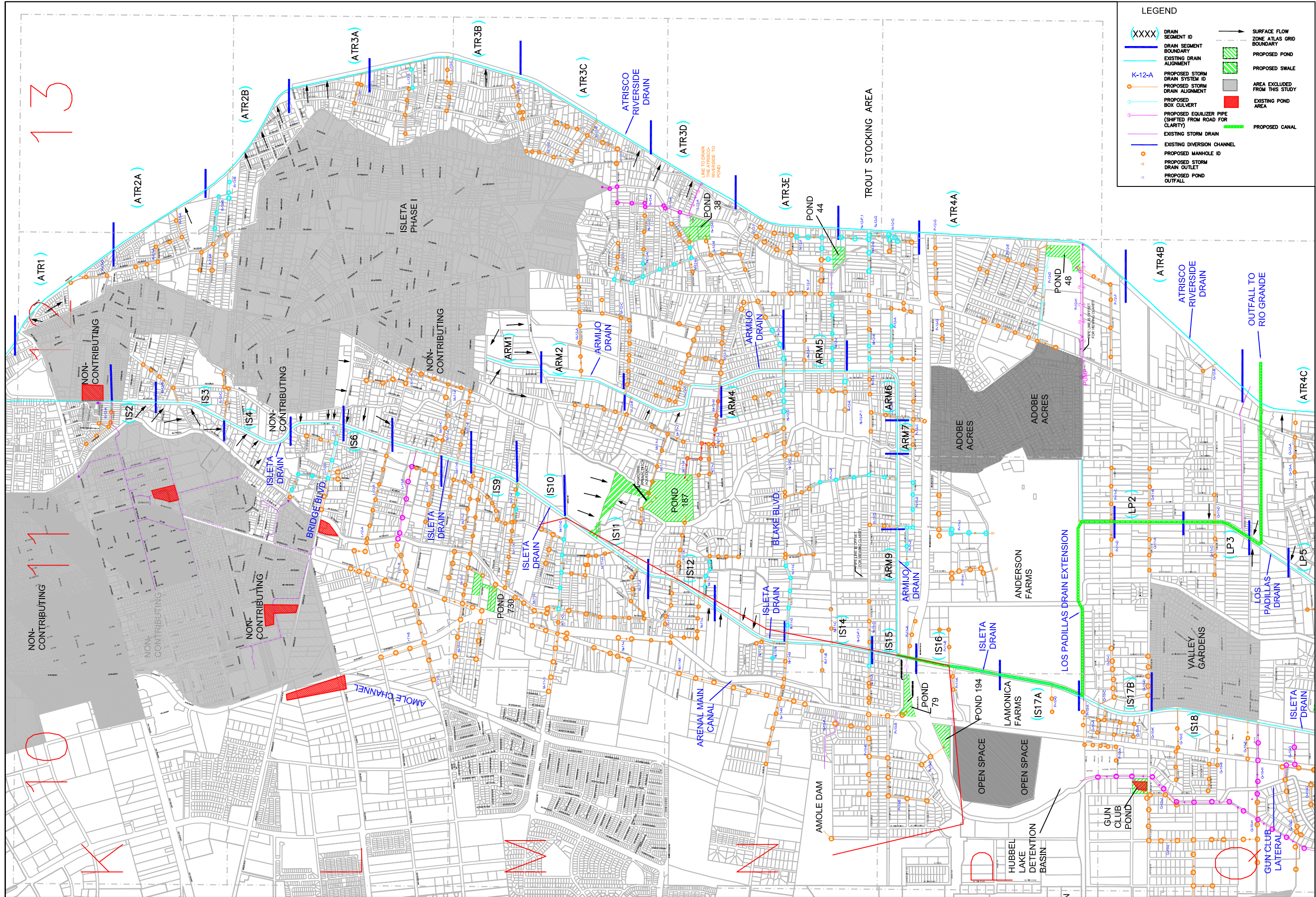


LEGEND

- 8 MODELING SUB-BASIN ID
- MODELING SUB-BASIN BOUNDARY
- AGRICULTURAL DRAIN SEGMENT AND ID
- EXISTING POND AREA
- NON-CONTRIBUTING AREAS
- AREAS CONTRIBUTING TO SANCHEZ FARM POND

MODELING SUB-BASINS
SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN





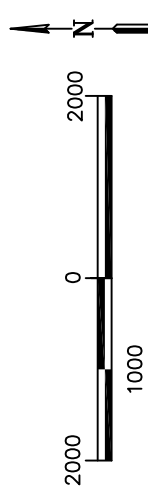
LEGEND

XXXX	DRAIN SEGMENT ID	→	SURFACE FLOW
—	DRAIN SEGMENT BOUNDARY	—	ZONE ATLAS GRID BOUNDARY
—	EXISTING DRAIN ALIGNMENT	▨	PROPOSED POND
K-12-A	PROPOSED STORM DRAIN SYSTEM ID	▨	PROPOSED SWALE
—	PROPOSED STORM DRAIN ALIGNMENT	▨	AREA EXCLUDED FROM THIS STUDY
—	PROPOSED BOX CULVERT	▨	EXISTING POND AREA
—	PROPOSED EQUALIZER PIPE (SHIFTED FROM ROAD FOR CLARITY)	—	PROPOSED CANAL
—	EXISTING STORM DRAIN		
—	EXISTING DIVERSION CHANNEL		
—	PROPOSED MANHOLE ID		
—	PROPOSED STORM DRAIN OUTLET		
—	PROPOSED POND OUTFALL		

US Army Corps of Engineers
ALBUQUERQUE DISTRICT

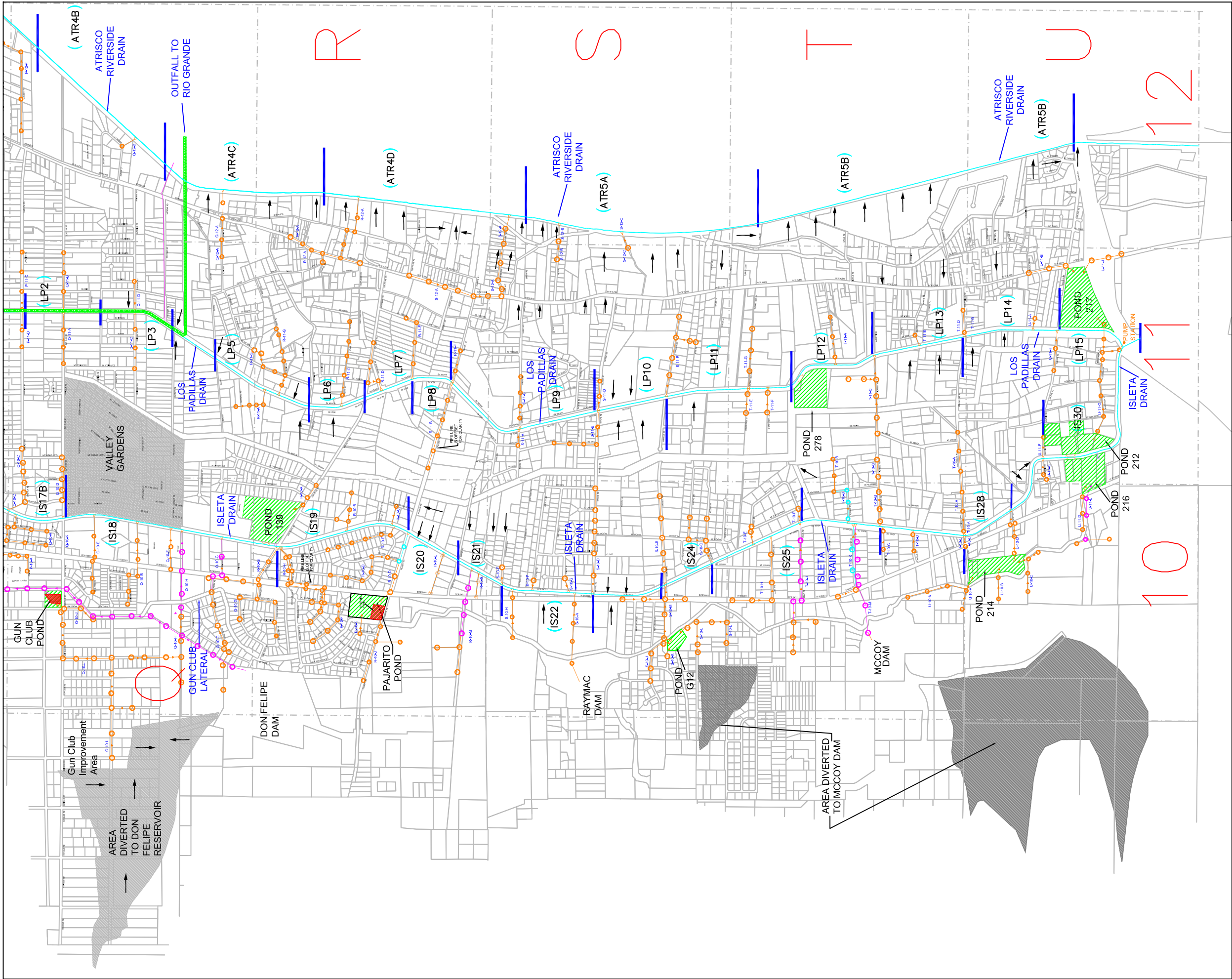
Resource Technology, Inc.
Civil Engineering
Environmental Sciences

Water Resources
Landscape Architecture
Planning



PROPOSED IMPROVEMENTS
SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

19.A

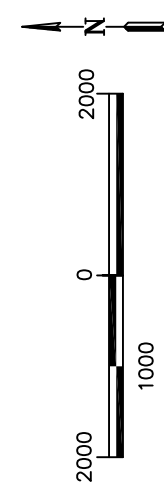


LEGEND

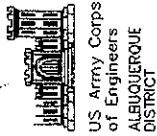
XXXX	DRAIN SEGMENT ID	→	SURFACE FLOW
—	DRAIN SEGMENT BOUNDARY	→	ZONE ATLAS GRID BOUNDARY
—	EXISTING DRAIN ALIGNMENT	▨	PROPOSED POND
K-12-A	PROPOSED STORM DRAIN SYSTEM ID	▨	PROPOSED SWALE
—	PROPOSED STORM DRAIN ALIGNMENT	▨	AREA EXCLUDED FROM THIS STUDY
—	PROPOSED BOX CULVERT	▨	EXISTING POND AREA
—	PROPOSED EQUILIZER PIPE (SHIFTED FROM ROAD FOR CLARITY)	▨	PROPOSED CANAL
—	EXISTING STORM DRAIN		
—	EXISTING DIVERSION CHANNEL		
—	PROPOSED MANHOLE ID		
—	PROPOSED STORM DRAIN OUTLET		
—	PROPOSED POND OUTFALL		

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ALBUQUERQUE DISTRICT
Albuquerque, New Mexico

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Environmental Sciences
Water Resources
Landscape Architecture
Planning



PROPOSED IMPROVEMENTS
SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

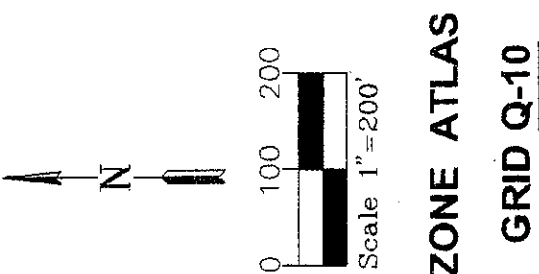


Civil Engineering - Environmental Sciences - Water Resources
Landscape Architecture - Planning



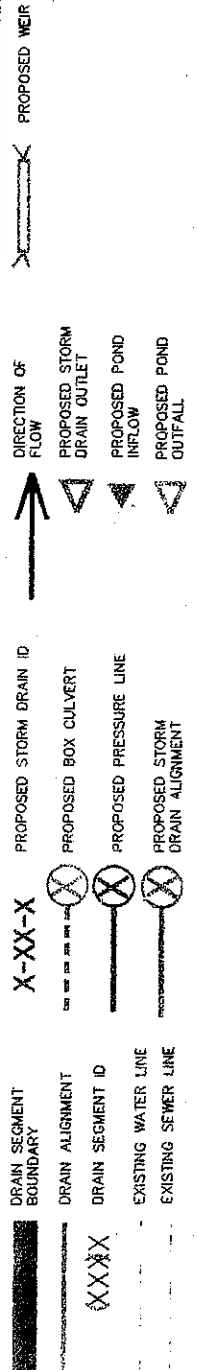
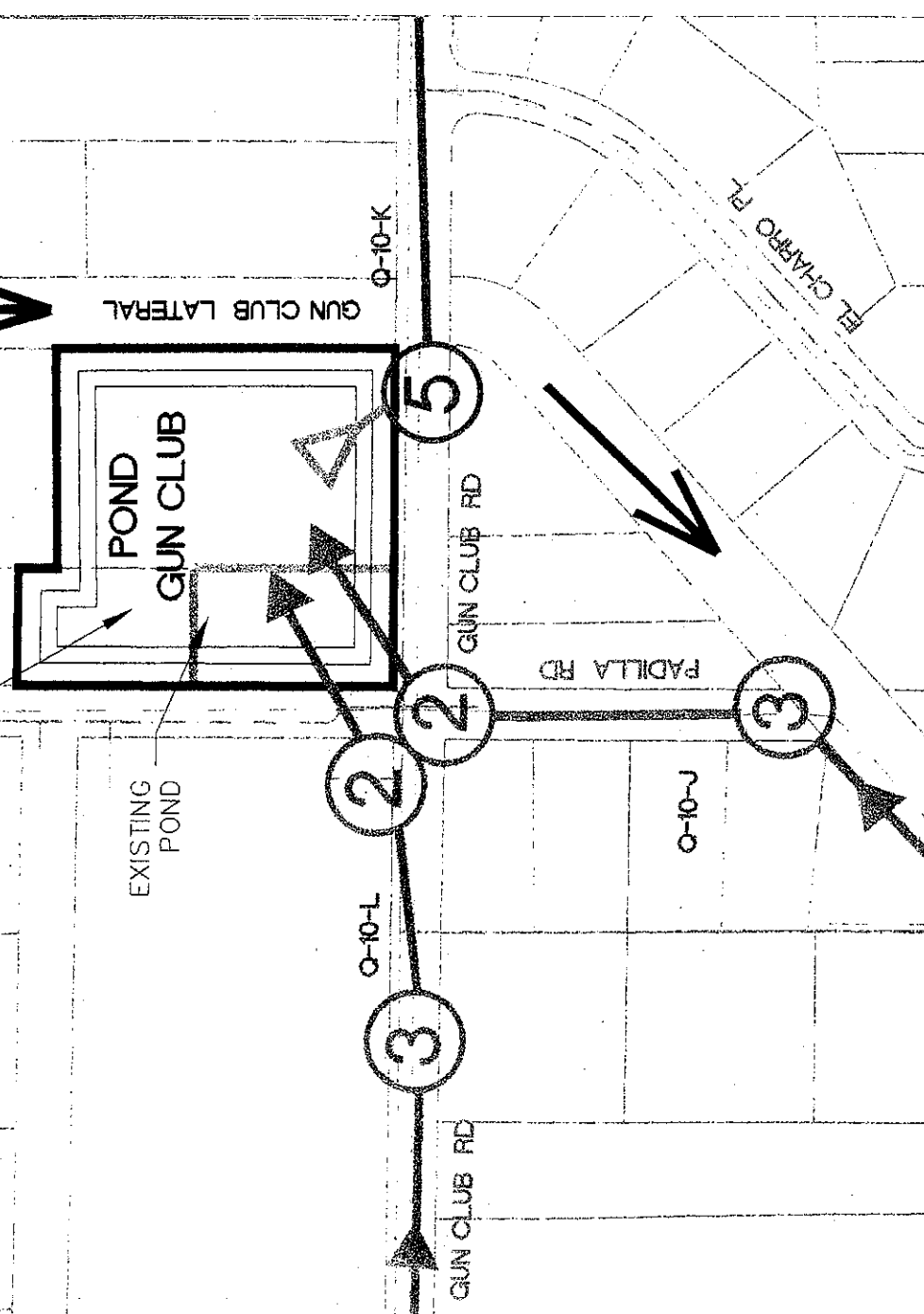
SOUTHWEST VALLEY LOCALLY PREFERRED PLAN POND GUN CLUB

EXHIBIT



ZONE ATLAS GRID Q-10

MIN. TOP OF POND ELEV. 4932.0'
BOT OF POND ELEV. 4926.0'
STOR. VOL. 13.3 ac-ft



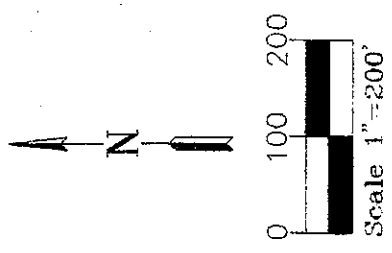


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of Engineers
ALBUQUERQUE
DISTRICT

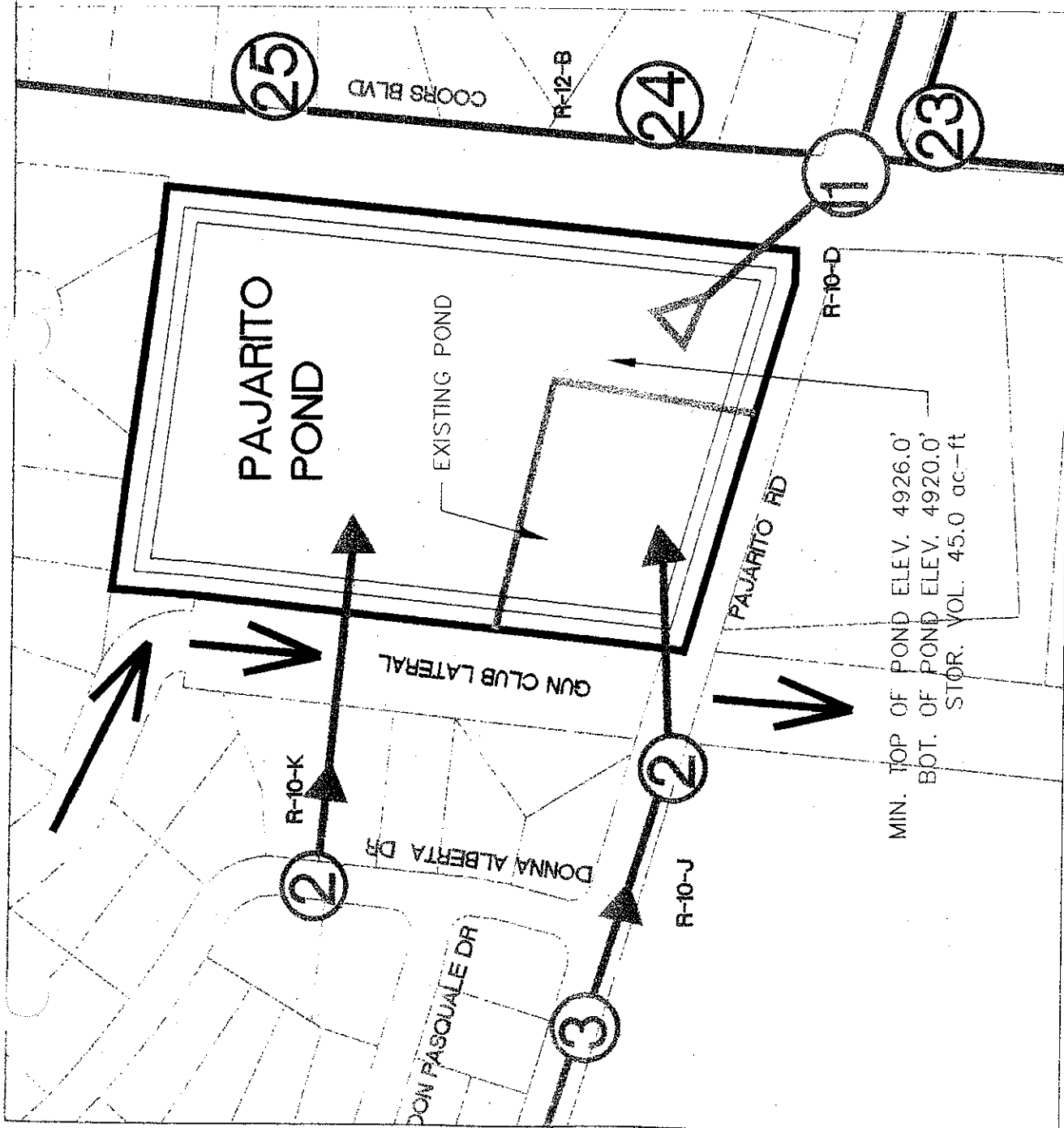
Resource Technology, Inc.
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Landscape Architecture - Planning

PAJARITO POND LOCALLY PREFERRED PLAN SOUTHWEST VALLEY

EXHIBIT

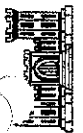


ZONE ATLAS
GRID R-10



MIN. TOP OF POND ELEV. 4926.0'
BOT. OF POND ELEV. 4920.0'
STOR. VOL. 45.0 ac-ft

- | | | | | | | | | |
|--|------------------------|--|--------------------------------|-------------------------|--|-----------------------------|--|---------------|
| | DRAIN SEGMENT BOUNDARY | | X-XX-X | PROPOSED STORM DRAIN ID | | DIRECTION OF FLOW | | PROPOSED WEIR |
| | DRAIN ALIGNMENT | | PROPOSED BOX CULVERT | | | PROPOSED STORM DRAIN OUTLET | | |
| | DRAIN SEGMENT ID | | PROPOSED PRESSURE LINE | | | PROPOSED POND INFLOW | | |
| | EXISTING WATER LINE | | PROPOSED STORM DRAIN ALIGNMENT | | | PROPOSED POND OUTFALL | | |

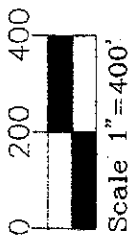


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ALBUQUERQUE
DISTRICT

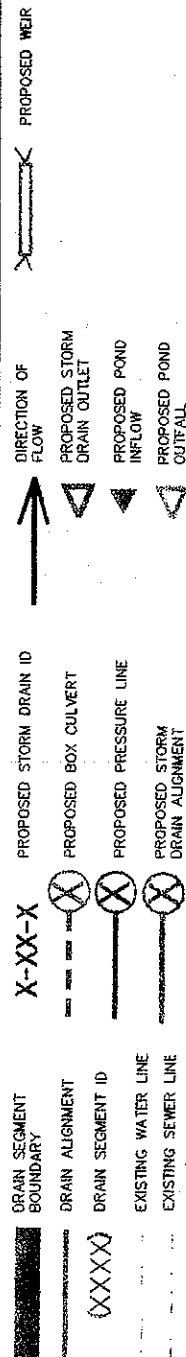
Resource Technology, Inc.
Civil Engineering - Environmental Sciences - Water Resources
Landscape Architecture - Planning

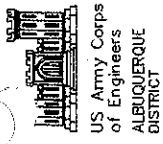
SOUTHWEST VALLEY
LOCALLY PREFERRED PLAN
POND 139

EXHIBIT



ZONE ATLAS
GRID R-10,Q-10



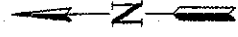


US Army Corps
of Engineers
ALBUQUERQUE
DISTRICT

Civil Engineering - Environmental Sciences - Planning
Landscape Architecture - Planning
Hydrology & Water Resources

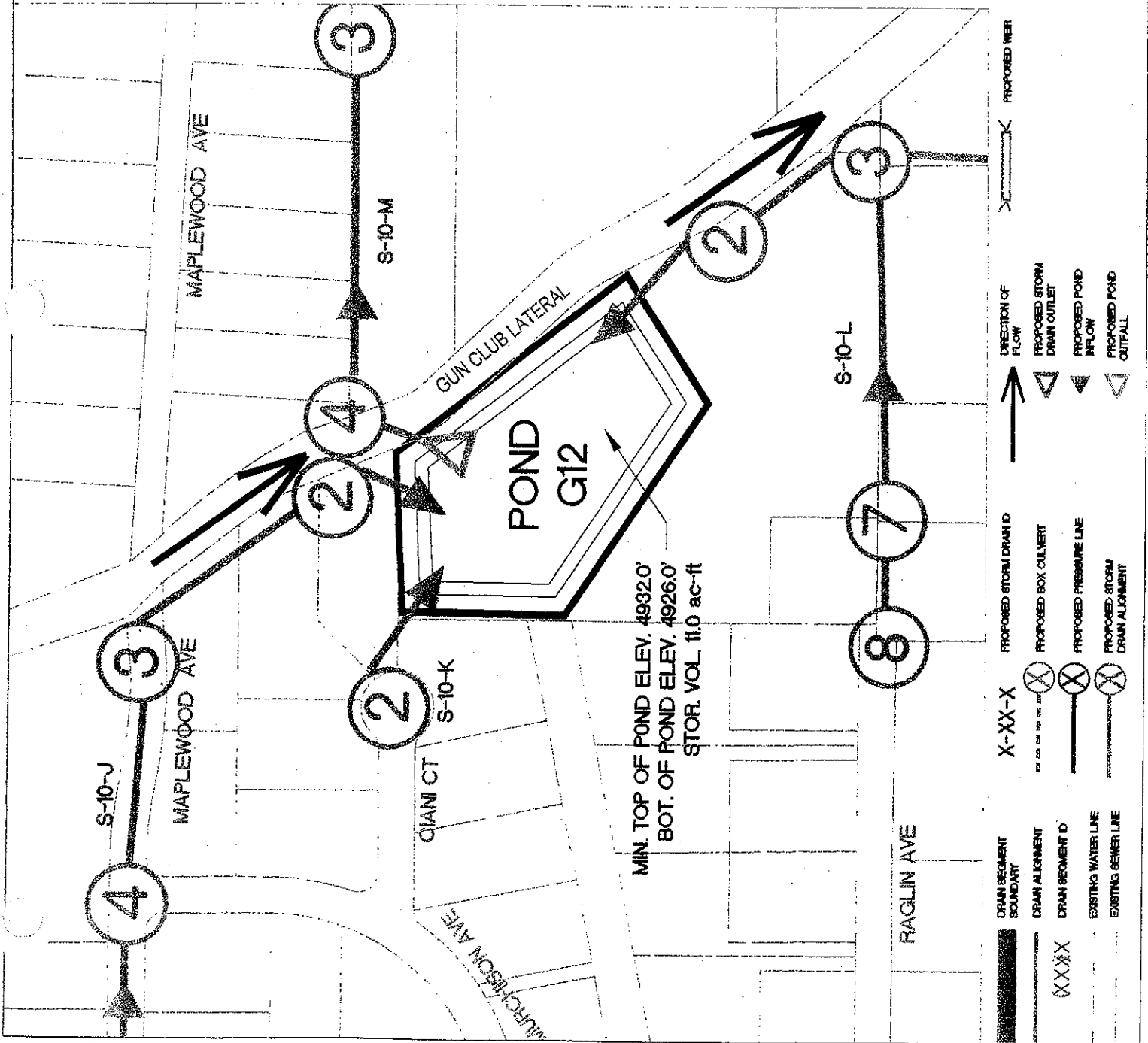
SOUTHWEST VALLEY
LOCALLY PREFERRED PLAN
POND G12

EXHIBIT



0 100 200
Scale 1"=200'

ZONE ATLAS
GRID S-10

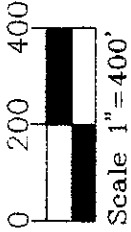
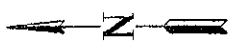




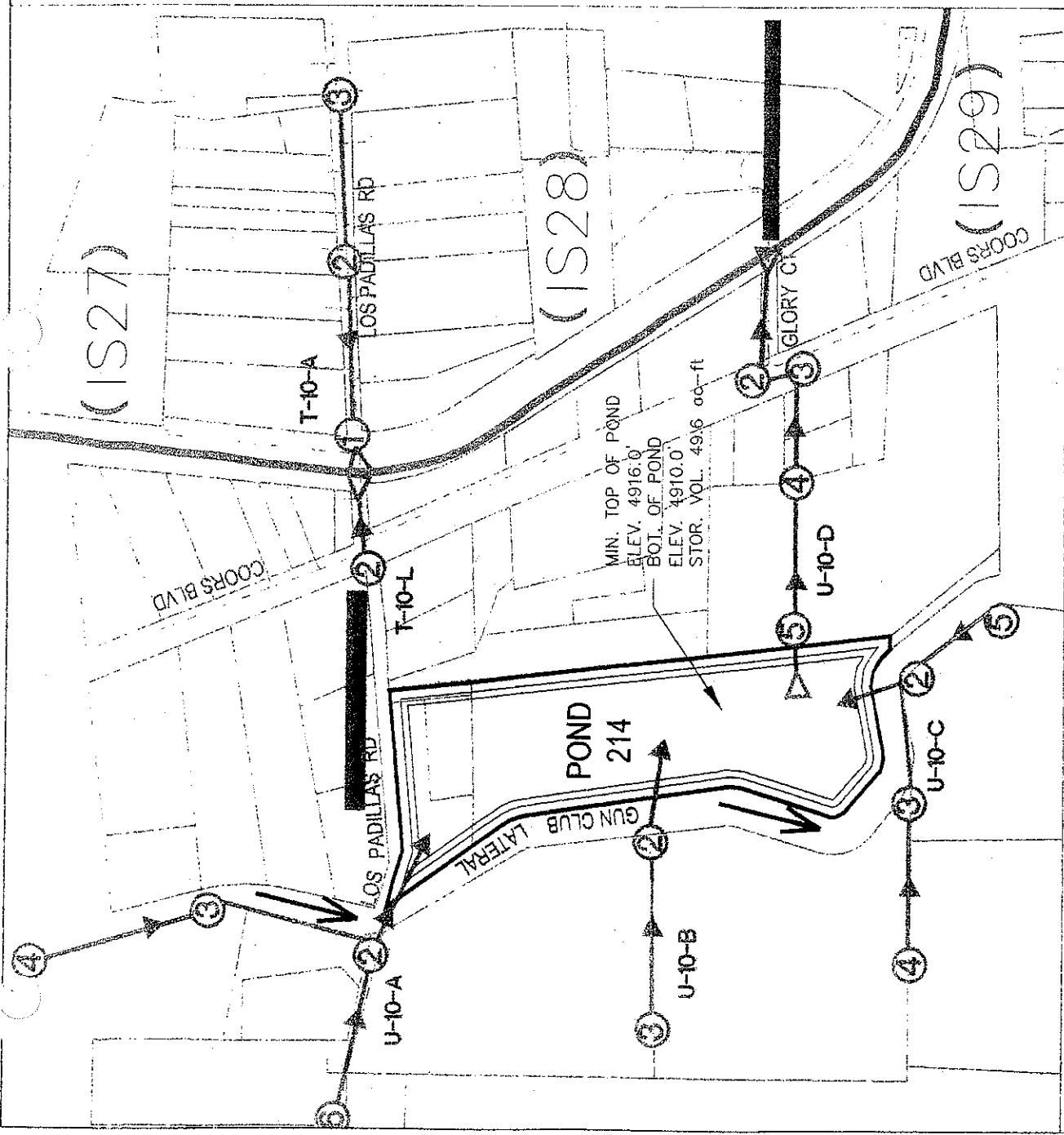
Civil Engineering - Environmental Sciences - Planning
 Landscape Architecture - Planning
 Water Resources

SOUTHWEST VALLEY
 LOCALLY PREFERRED PLAN
 POND 214

EXHIBIT



ZONE ATLAS
 GRID T-10,U-10



MIN. TOP OF POND
 ELEV. 4916.0'
 BOT. OF POND
 ELEV. 4910.0'
 STOR. VOL. 49.6 ac-ft

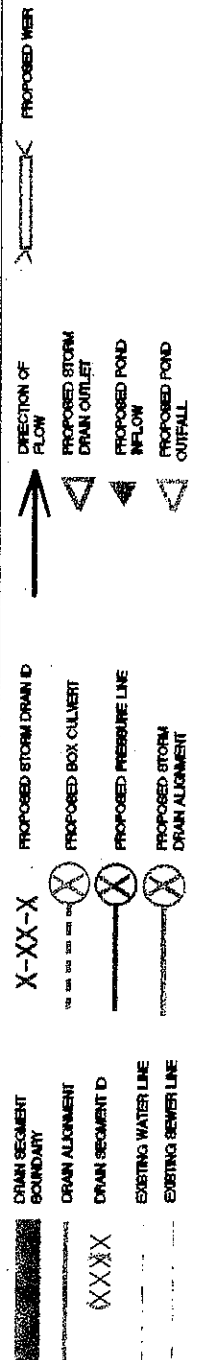
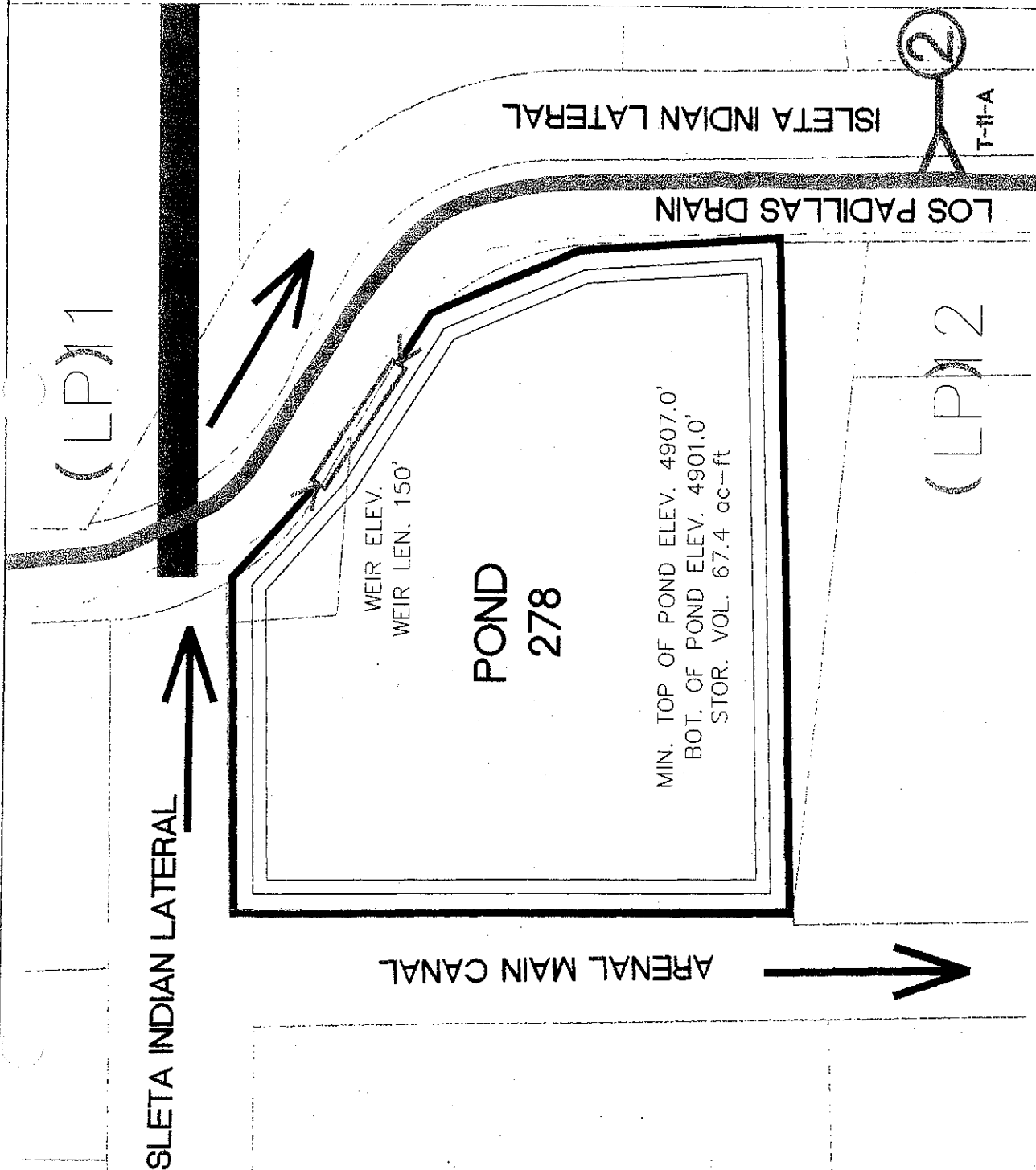
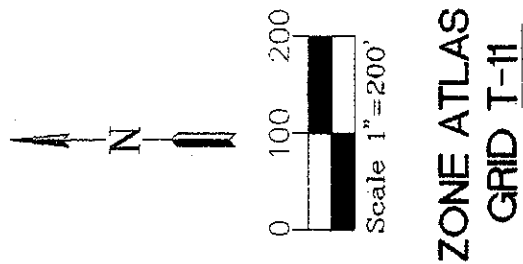
DRAIN SEGMENT BOUNDARY DRAIN ALIGNMENT DRAIN SEGMENT ID EXISTING WATER LINE EXISTING SEWER LINE	X-XX-X PROPOSED BOX CULVERT PROPOSED PRESSURE LINE PROPOSED STORM DRAIN ALIGNMENT	DIRECTION OF FLOW PROPOSED STORM DRAIN OUTLET PROPOSED POND INFLOW PROPOSED POND OUTFALL	PROPOSED WEIR
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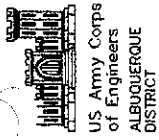


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Landscape Architecture - Planning

SOUTHWEST VALLEY
LOCALLY PREFERRED PLAN
POND 278

EXHIBIT

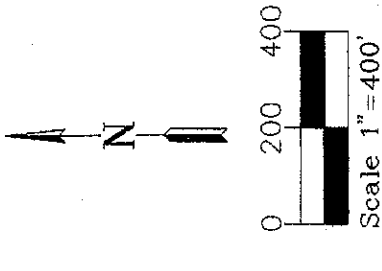




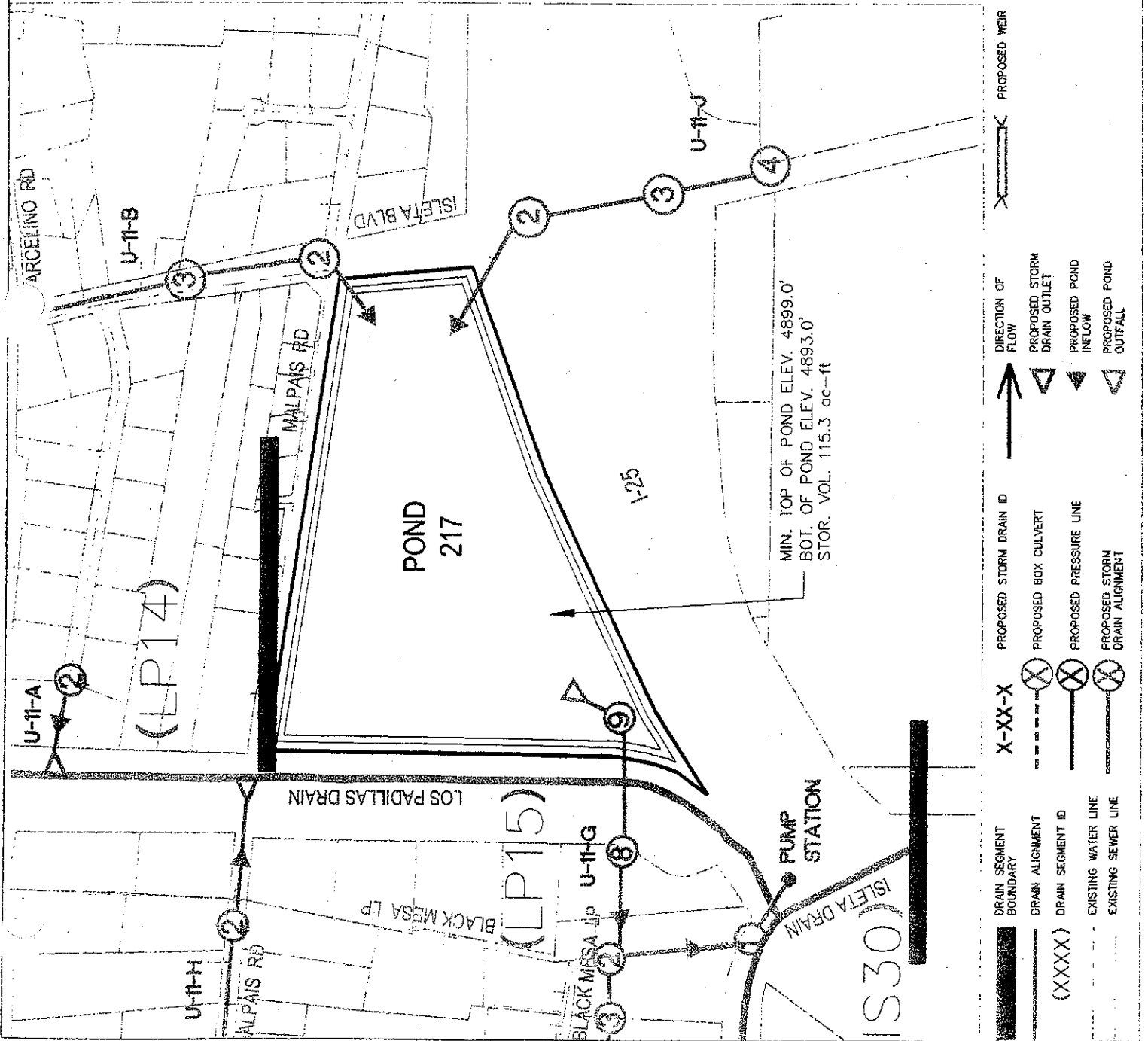
Resource Technology, Inc.
Civil Engineering - Environmental Sciences - Water Resources
Landscape Architecture - Planning

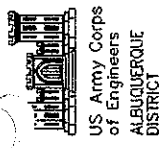
SOUTHWEST VALLEY
LOCALLY PREFERRED PLAN
POND 217

EXHIBIT



ZONE ATLAS
GRID U-11



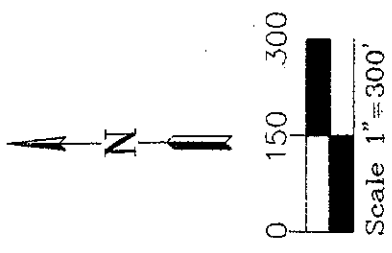


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ALBUQUERQUE
DISTRICT

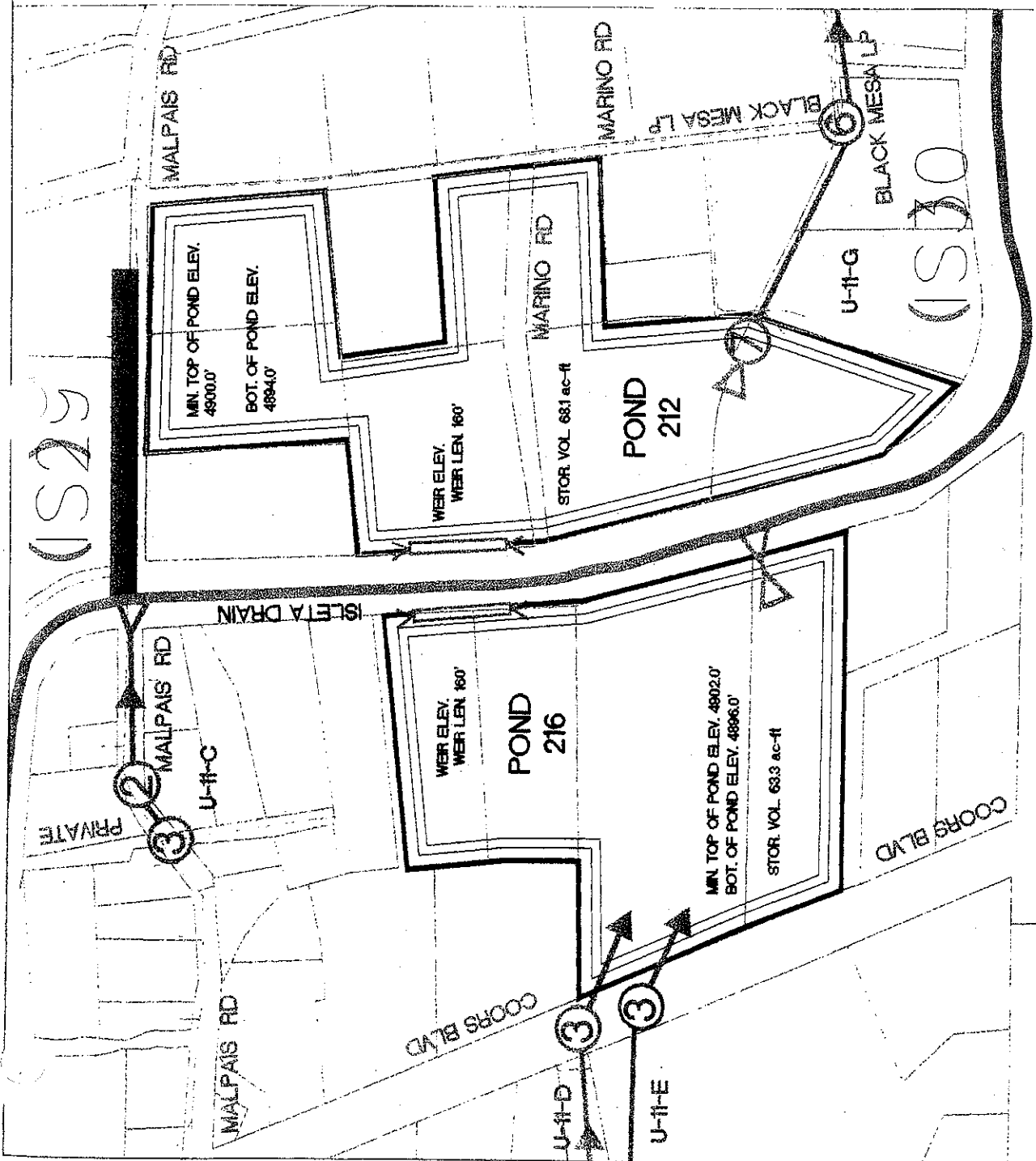
Civil Engineering - Environmental Sciences - Water Resources
Landscape Architecture - Planning

SOUTHWEST VALLEY LOCALLY PREFERRED PLAN POND 212 + 216 LAYOUT

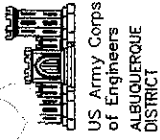
EXHIBIT



ZONE ATLAS GRID U-11



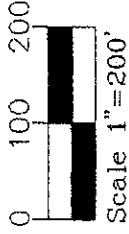
	DRAIN SEGMENT BOUNDARY		DRAIN SEGMENT DRAIN ID		DIRECTION OF FLOW
	DRAIN ALIGNMENT		PROPOSED STORM DRAIN ID		PROPOSED STORM DRAIN OUTLET
	DRAIN SEGMENT D		PROPOSED BOX CULVERT		PROPOSED POND INFLOW
	EXISTING WATER LINE		PROPOSED PRESSURE LINE		PROPOSED POND OUTFALL
	EXISTING SEWER LINE		PROPOSED STORM DRAIN ALIGNMENT		



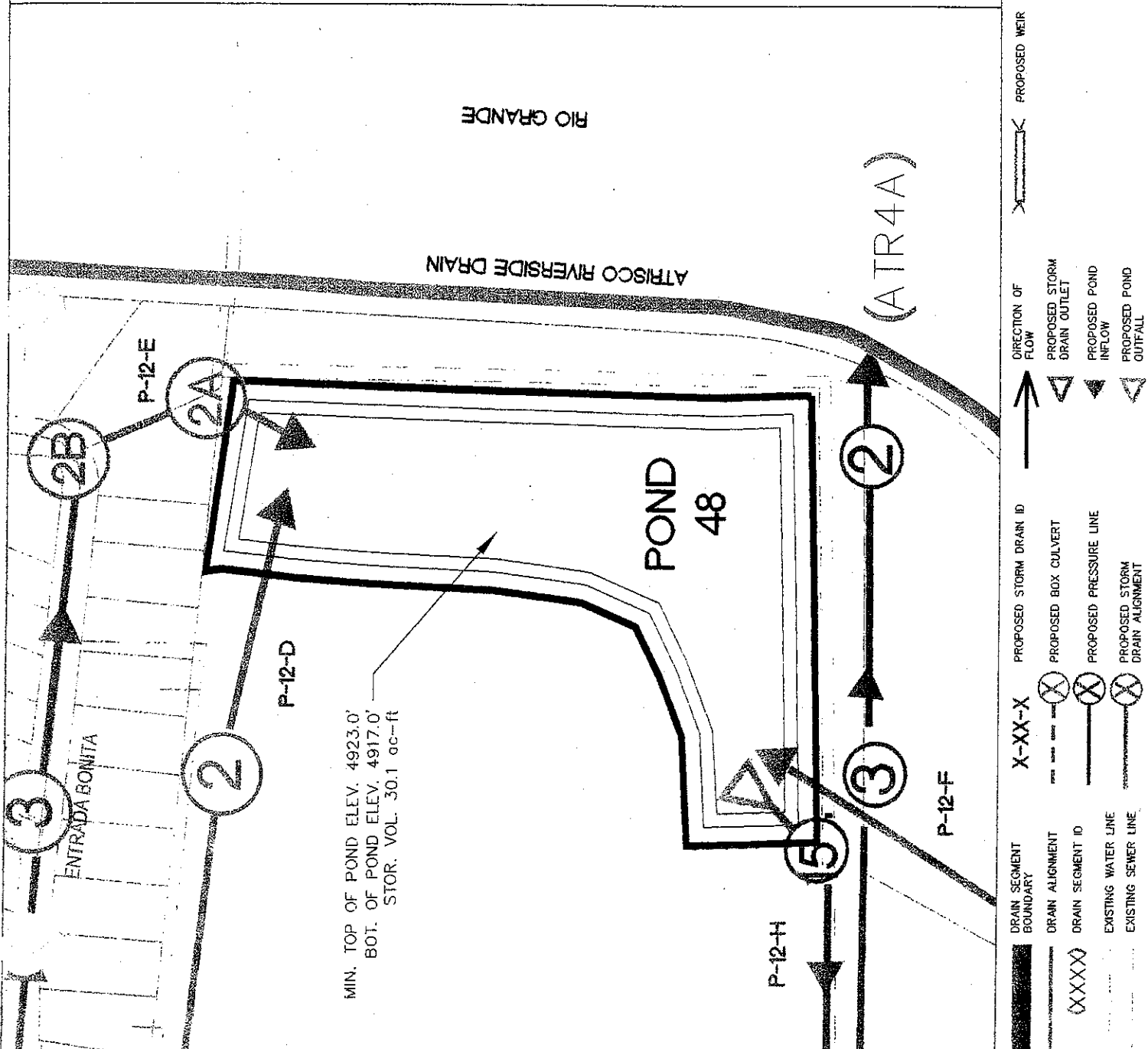
Civil Engineering - Environmental Sciences - Water Resources
Landscape Architecture - Planning

**SOUTHWEST VALLEY
LOCALLY PREFERRED PLAN
POND 48**

EXHIBIT



**ZONE ATLAS
GRID P-12**



	DRAIN SEGMENT BOUNDARY		PROPOSED STORM DRAIN ID		DIRECTION OF FLOW		PROPOSED WEIR
	DRAIN ALIGNMENT		PROPOSED BOX CULVERT		PROPOSED STORM DRAIN OUTLET		PROPOSED POND INFLOW
	DRAIN SEGMENT ID		PROPOSED PRESSURE LINE		PROPOSED POND INFALL		PROPOSED POND OUTFALL
	EXISTING WATER LINE		PROPOSED STORM DRAIN ALIGNMENT				
	EXISTING SEWER LINE						

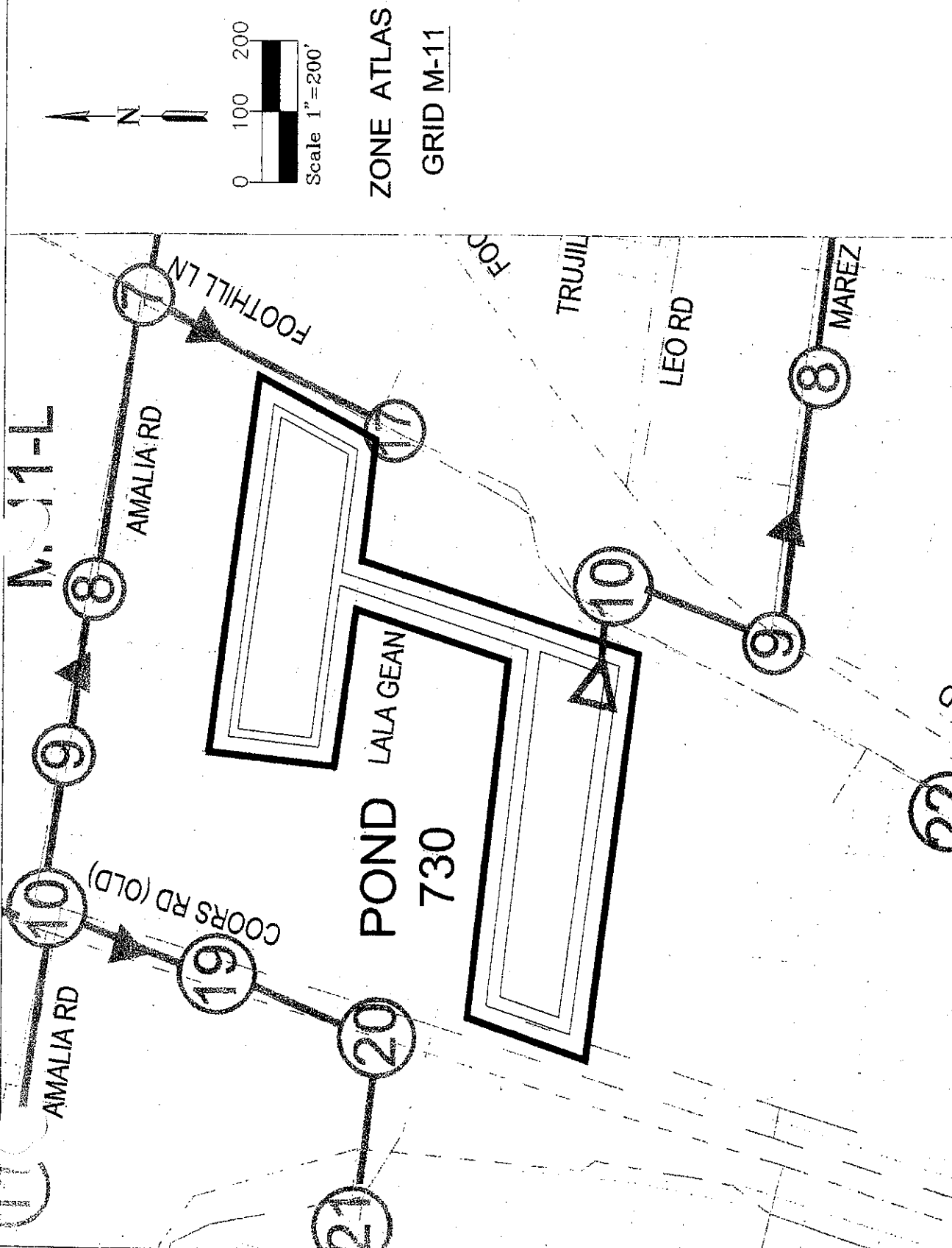


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Landscape Architecture - Planning

SOUTHWEST VALLEY
LOCALLY PREFERRED PLAN
POND 730

EXHIBIT

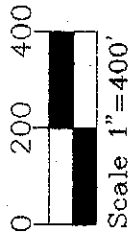


ZONE ATLAS
GRID M-11

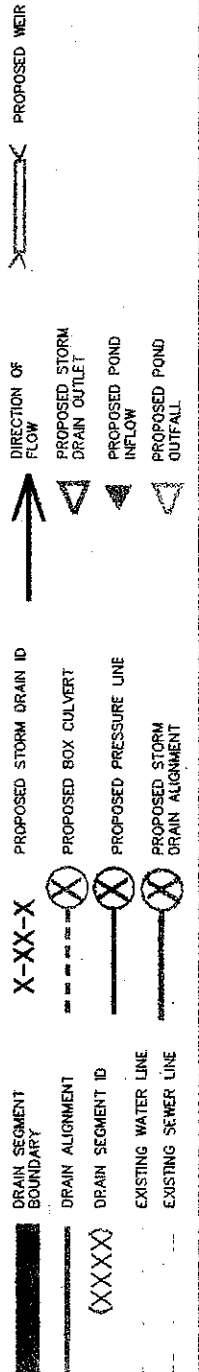
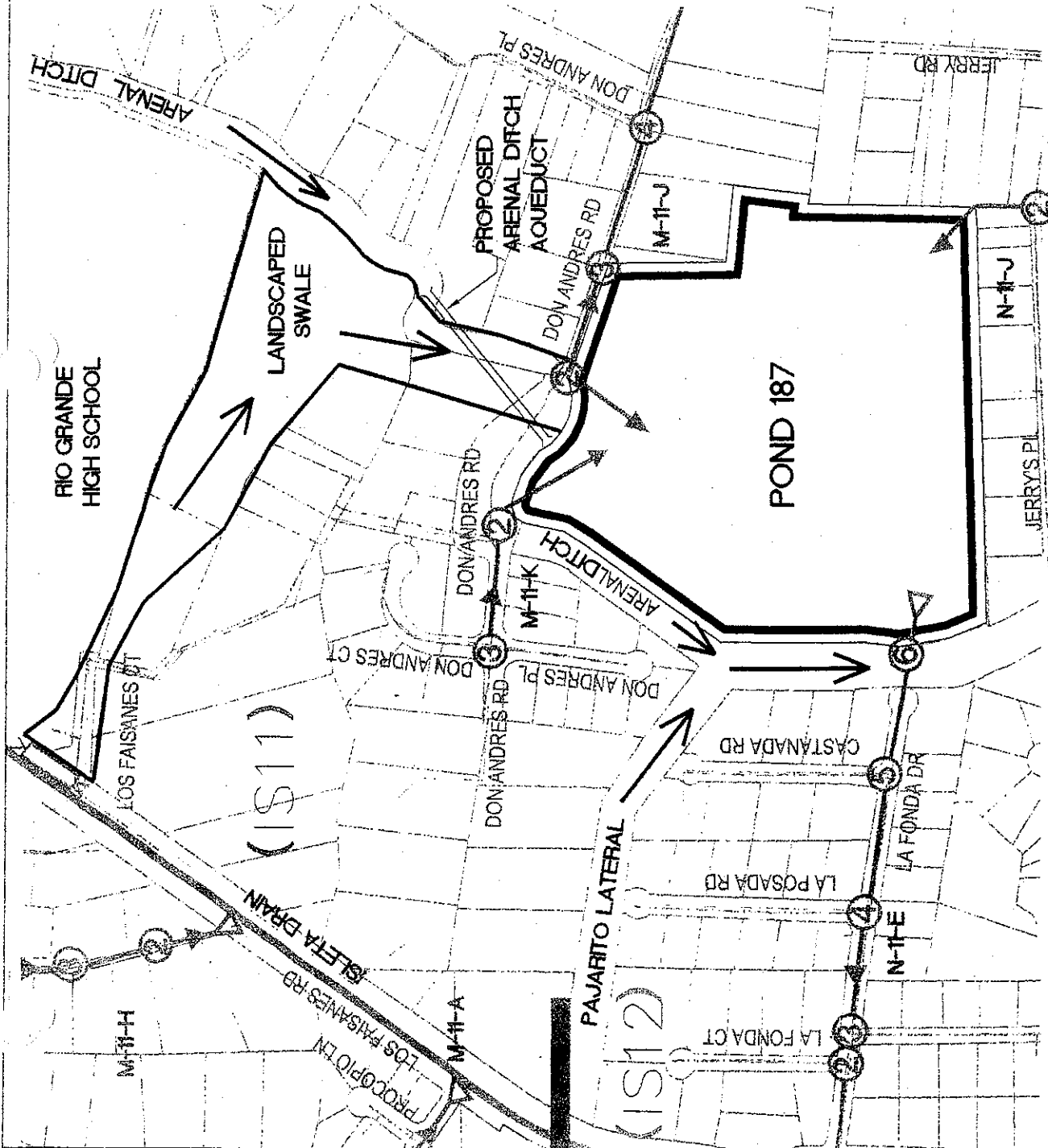


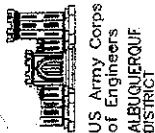
Civil Engineering - Environmental Sciences - Water Resources
Landscape Architecture - Planning
RESOURCES TECHNOLOGIES, INC.

**SOUTHWEST VALLEY
LOCALLY PREFERRED PLAN
POND 187**



**ZONE ATLAS
GRID N-11,M-11**





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ALBUQUERQUE
DISTRICT

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Civil Engineering - Environmental Sciences - Water Resources
Landscape Architecture - Planning

**SOUTHWEST VALLEY
LOCALLY PREFERRED PLAN
POND 44**

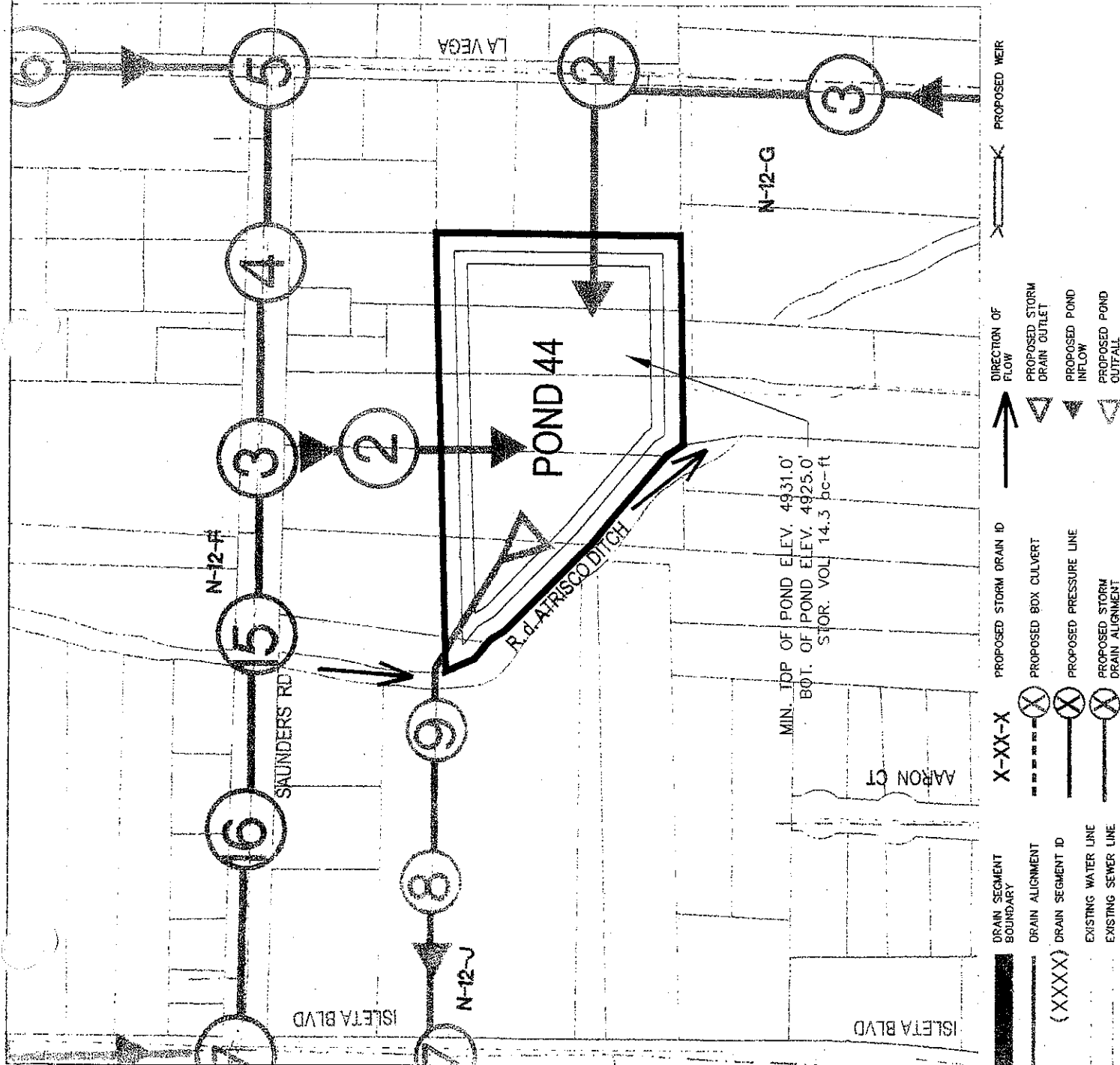
EXHIBIT

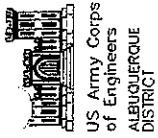


0 100 200
Scale 1"=200'

ZONE ATLAS

GRID N-12



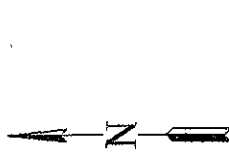


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ALBUQUERQUE
DISTRICT

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Landscape Architecture - Planning
Water Resources

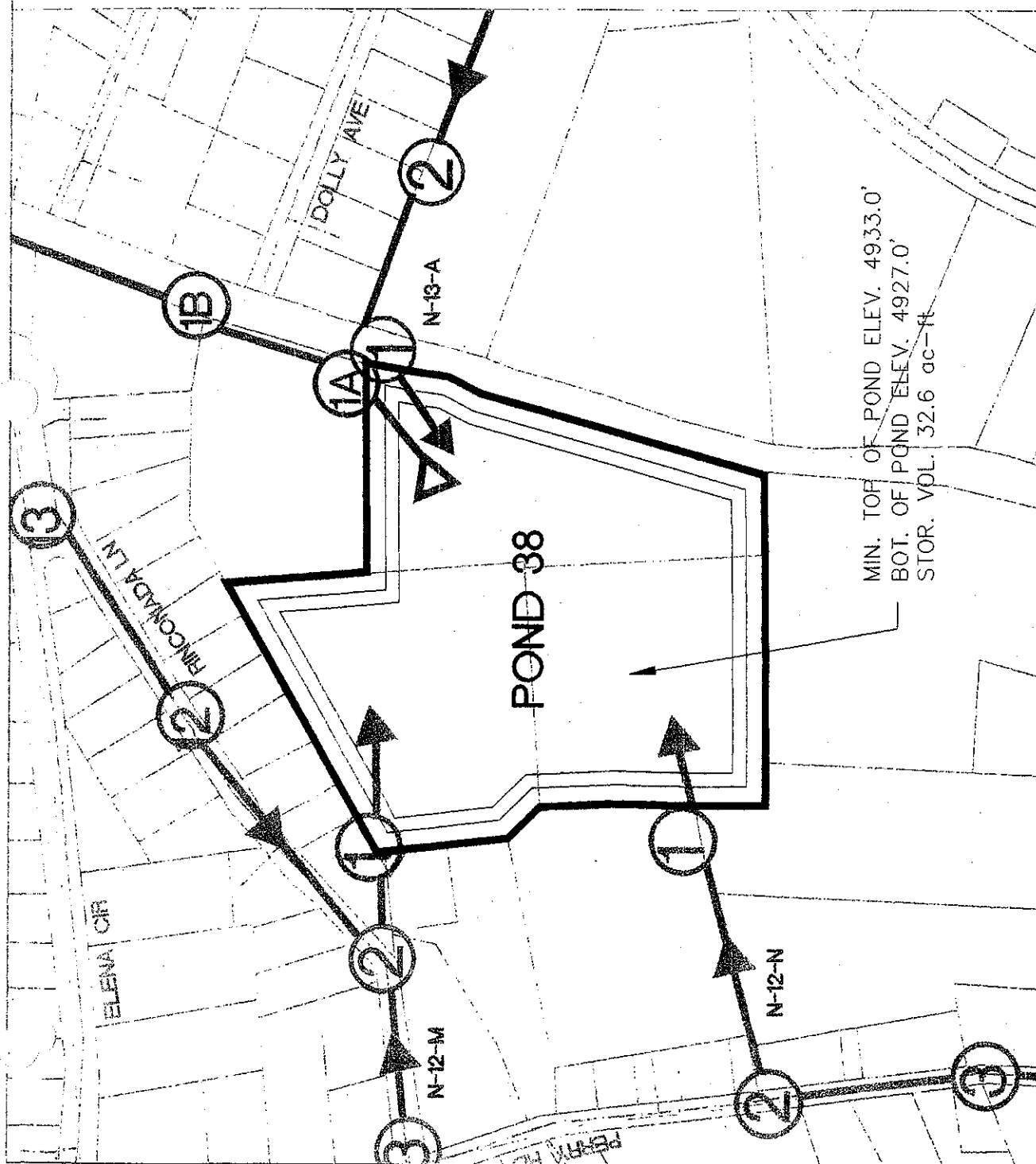
POND 38
LOCALLY PREFERRED PLAN
SOUTHWEST VALLEY

EXHIBIT



0 100 200
Scale 1"=200'

ZONE ATLAS
GRID
N-12, N-13



MIN. TOP OF POND ELEV. 4933.0'
BOT. OF POND ELEV. 4927.0'
STOR. VOL. 32.6 ac-ft

	DRAIN SEGMENT BOUNDARY		PROPOSED STORM DRAIN ID		DIRECTION OF FLOW		PROPOSED WEIR
	DRAIN ALIGNMENT		PROPOSED BOX CULVERT		PROPOSED STORM DRAIN OUTLET		
	DRAIN SEGMENT ID		PROPOSED PRESSURE LINE		PROPOSED POND INFLOW		
	EXISTING WATER LINE		PROPOSED STORM DRAIN ALIGNMENT		PROPOSED POND OUTFALL		

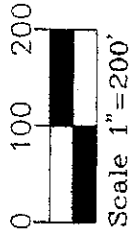
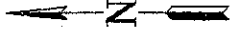


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SOUTHWEST VALLEY LOCALLY PREFERRED PLAN POND 194

EXHIBIT



ZONE ATLAS

GRID P-10

MIN. TOP OF POND ELEV. 4928.0'
BOT. OF POND ELEV. 4922.0'
STOR. VOL. 17.4 ac-ft

POND
194

COORS BLVD

RIO BRAVO BLVD

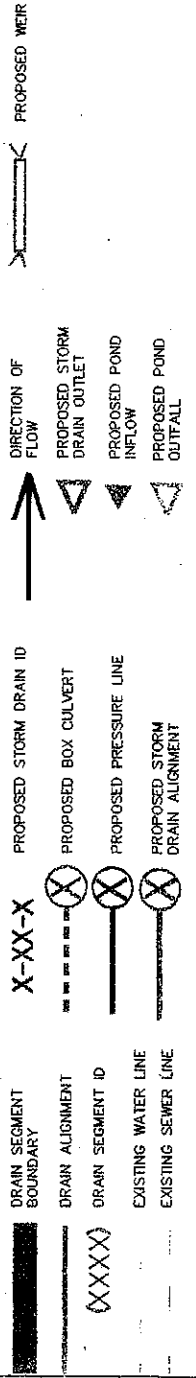
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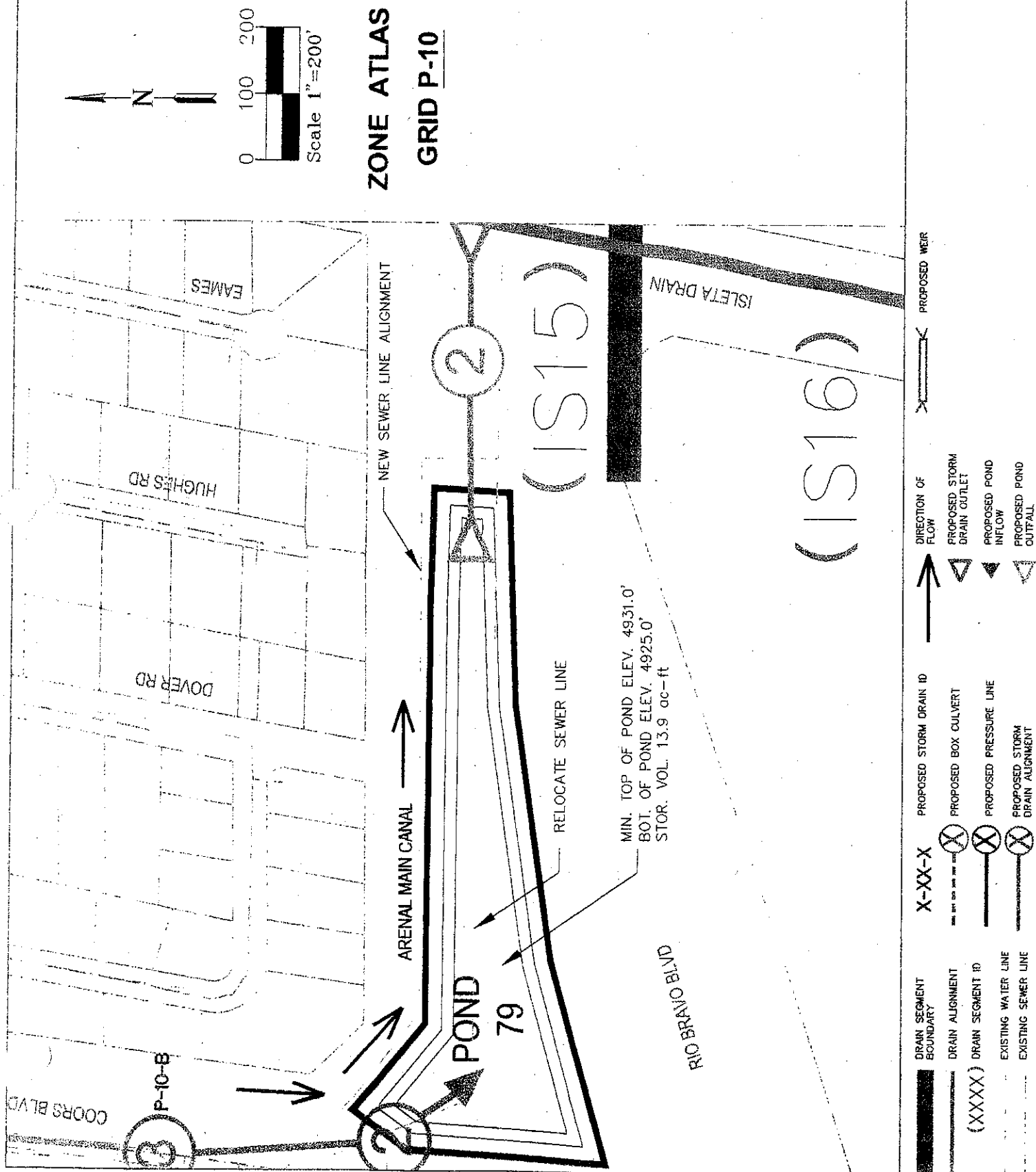
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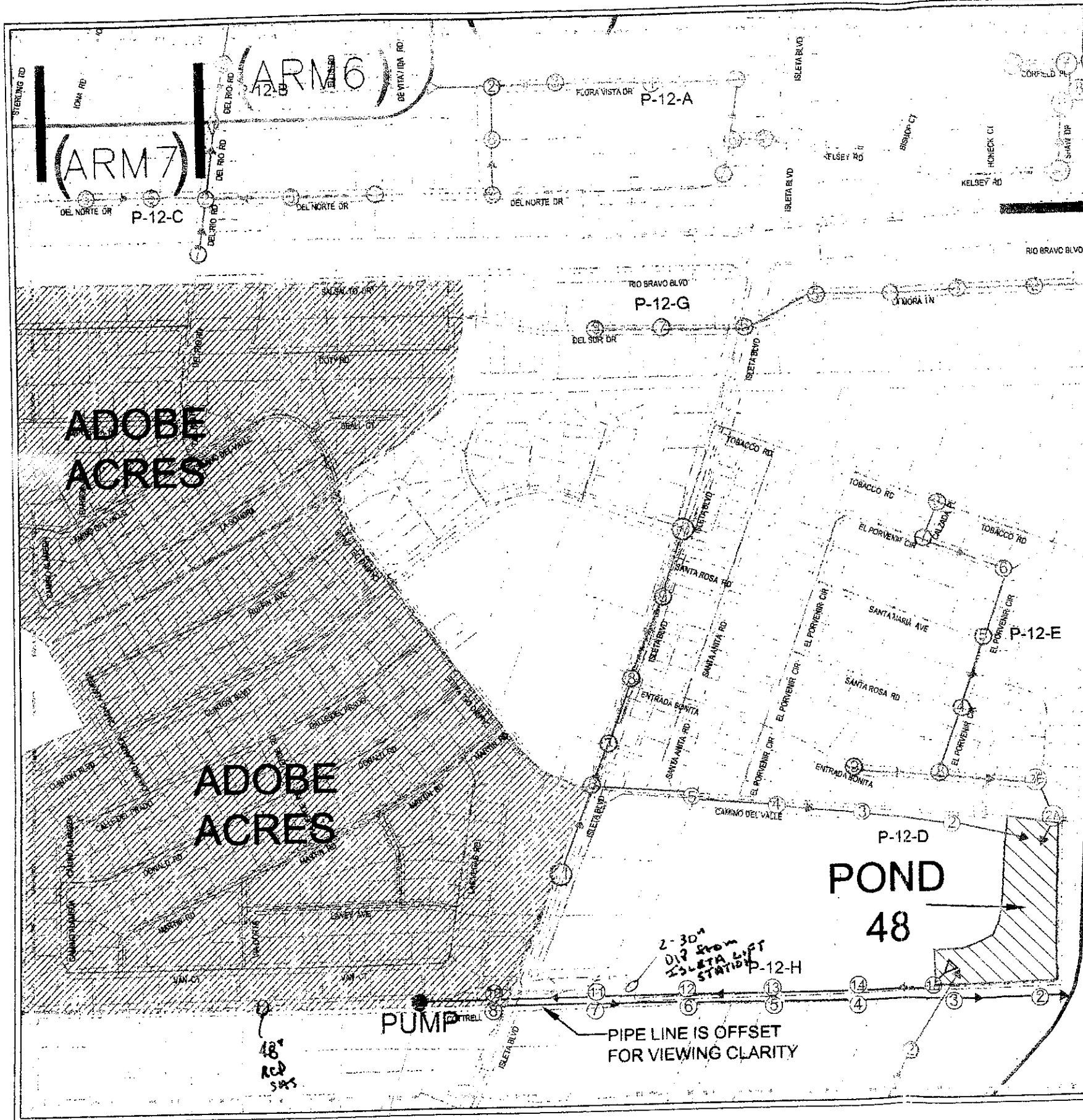
GUN CLUB LATERAL

JAMESWAY DR

3







ZONE ATLAS GRID P-12

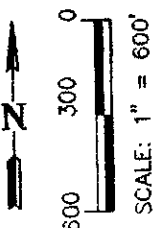
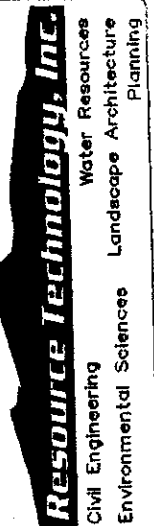
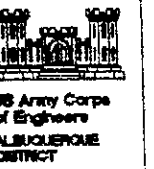
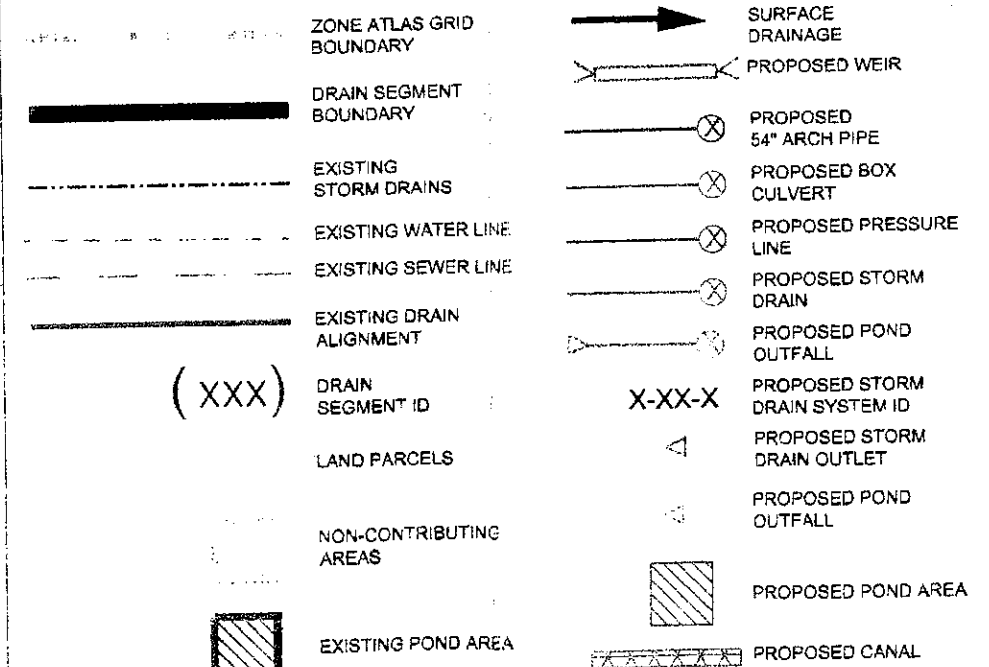
MRGCD DRAINS: ARMIJO, ATRISCO RIVERSIDE

ARMIJO DRAIN

Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
6	6	4924	2136	10.00
7	7	4924	790	4.10
8	4	4925	1754	5.96

ATRISCO RIVERSIDE DRAIN

Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
4 A	5	4925	4479	10.28



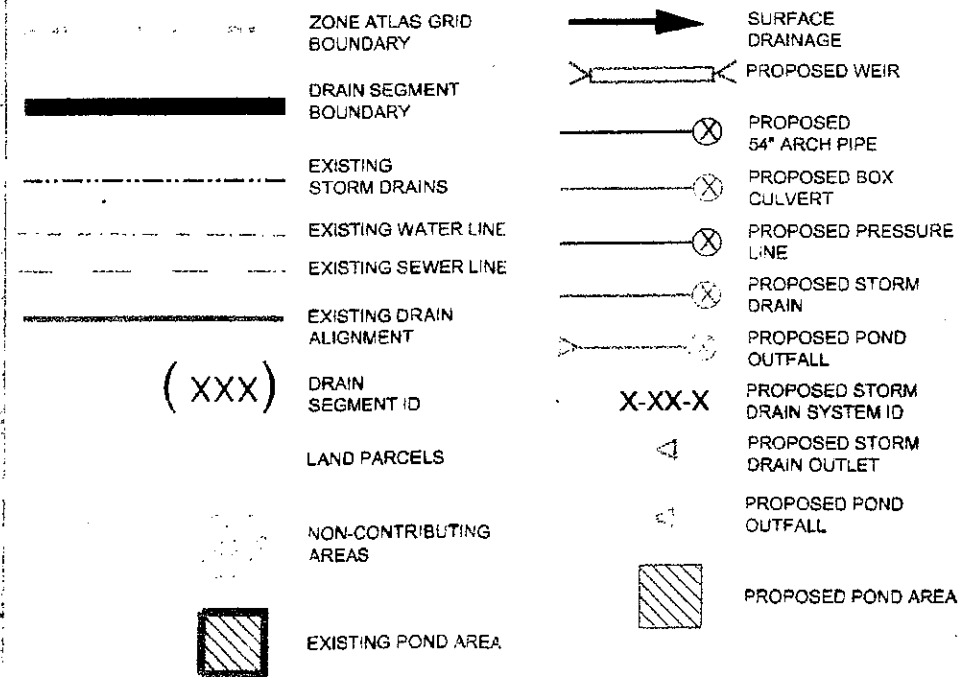
PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
P-12

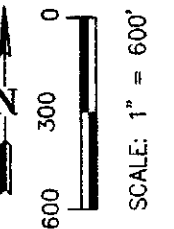
NON-
CONTRIBUTING

NON-
CONTRIBUTING

ZONE ATLAS GRID K-11
MRGCD DRAINS: NONE

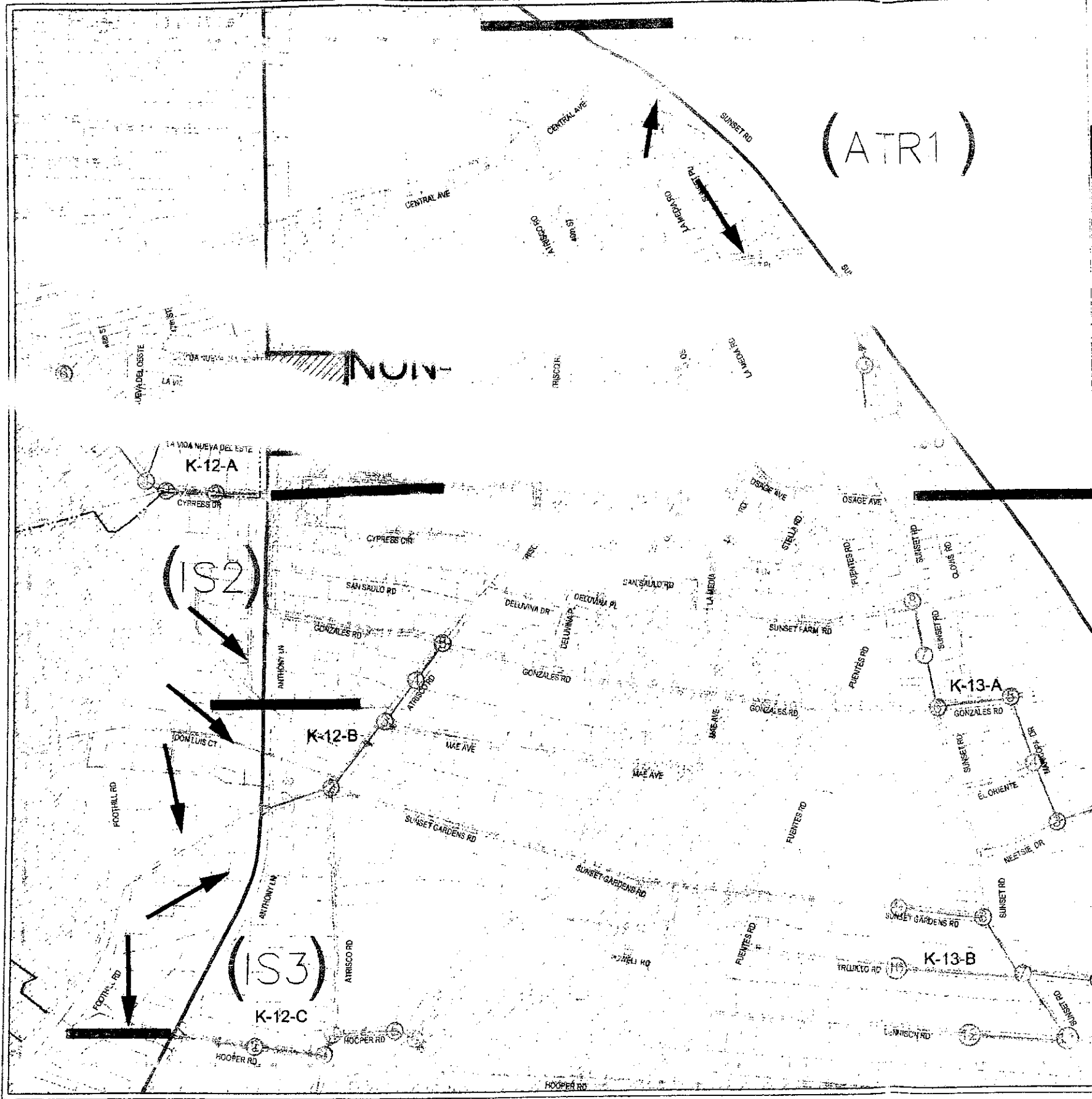


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PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
K-11



ZONE ATLAS GRID K-12

MRGCD DRAINS: ISLETA, ATRISCO RIVERSIDE DRAIN

ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
1	N/A	N/A	N/A	N/A
2	5	4948	982	6.27
3	5	4945	1691	10.79
4	5	4942	1841	11.75

ATRISCO RIVERSIDE DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
1	5	4946	2809	6.45
2 A	5	4942	2630	6.04

- ZONE ATLAS GRID BOUNDARY

DRAIN SEGMENT BOUNDARY

EXISTING STORM DRAINS

EXISTING WATER LINE

EXISTING SEWER LINE

EXISTING DRAIN ALIGNMENT

(XXX)

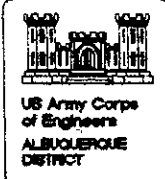
DRAIN SEGMENT ID

LAND PARCELS

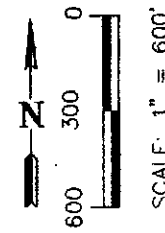
NON-CONTRIBUTING AREAS

EXISTING POND AREA
- SURFACE DRAINAGE
- PROPOSED WEIR
- PROPOSED 54" ARCH PIPE
- PROPOSED BOX CULVERT
- PROPOSED PRESSURE LINE
- PROPOSED STORM DRAIN
- PROPOSED POND OUTFALL
- X-XX-X

PROPOSED STORM DRAIN SYSTEM ID
- PROPOSED STORM DRAIN OUTLET
- PROPOSED POND OUTFALL
- PROPOSED POND AREA

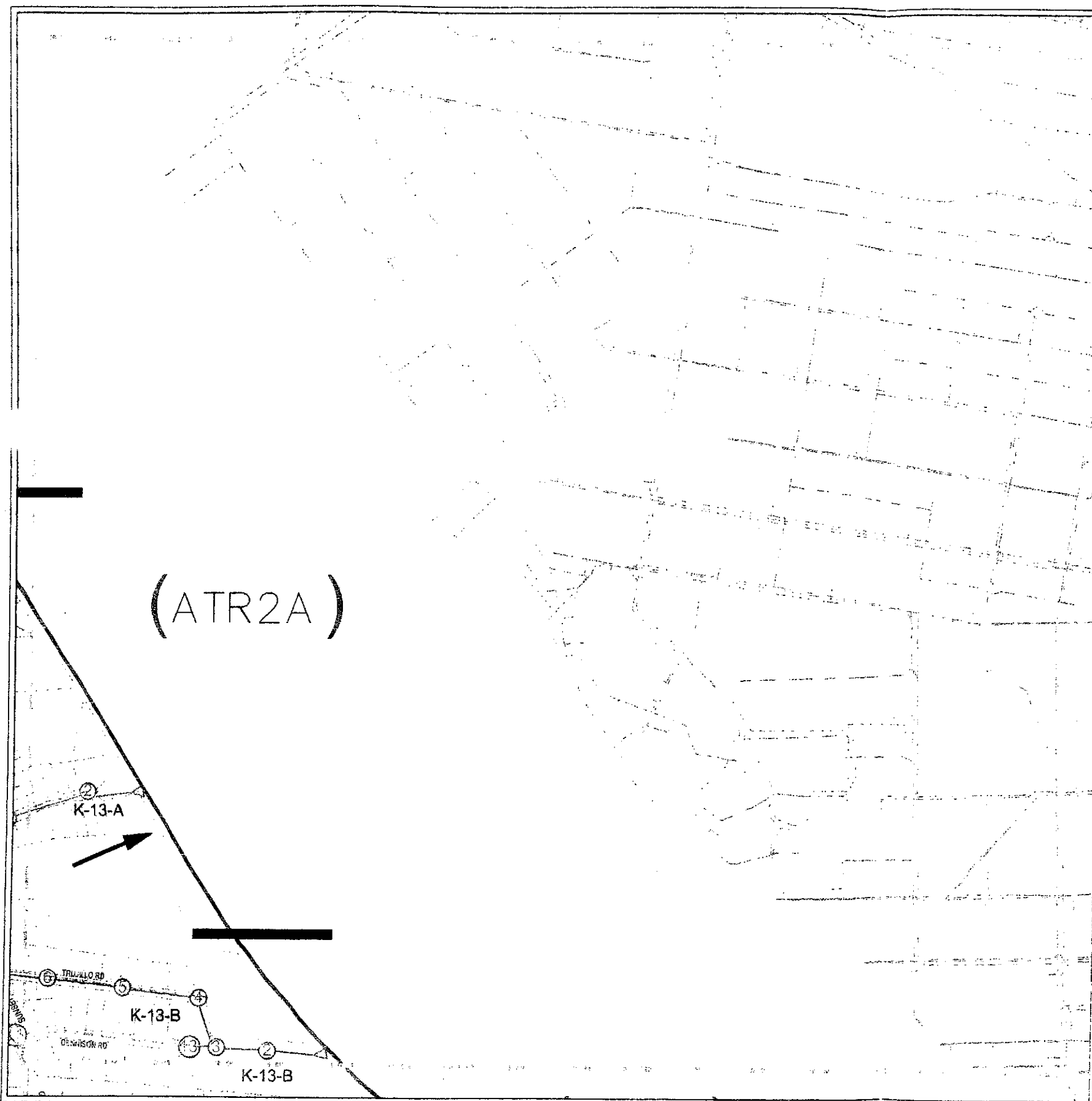


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PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
K-12



ZONE ATLAS GRID K-13 MRGCD DRAINS: ATRISCO RIVERSIDE

ATRISCO RIVERSIDE DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
2 A	5	4942	2630	6.04
2 B	6	4939	3143	7.79

- ZONE ATLAS GRID BOUNDARY

— DRAIN SEGMENT BOUNDARY

--- EXISTING STORM DRAINS

--- EXISTING WATER LINE

--- EXISTING SEWER LINE

--- EXISTING DRAIN ALIGNMENT

(XXX) DRAIN SEGMENT ID

--- LAND PARCELS

--- NON-CONTRIBUTING AREAS

■ EXISTING POND AREA
- SURFACE DRAINAGE

— PROPOSED WEIR

— PROPOSED 54" ARCH PIPE

— PROPOSED BOX CULVERT

— PROPOSED PRESSURE LINE

— PROPOSED STORM DRAIN

— PROPOSED POND OUTFALL

X-XX-X PROPOSED STORM DRAIN SYSTEM ID

△ PROPOSED STORM DRAIN OUTLET

△ PROPOSED POND OUTFALL

■ PROPOSED POND AREA

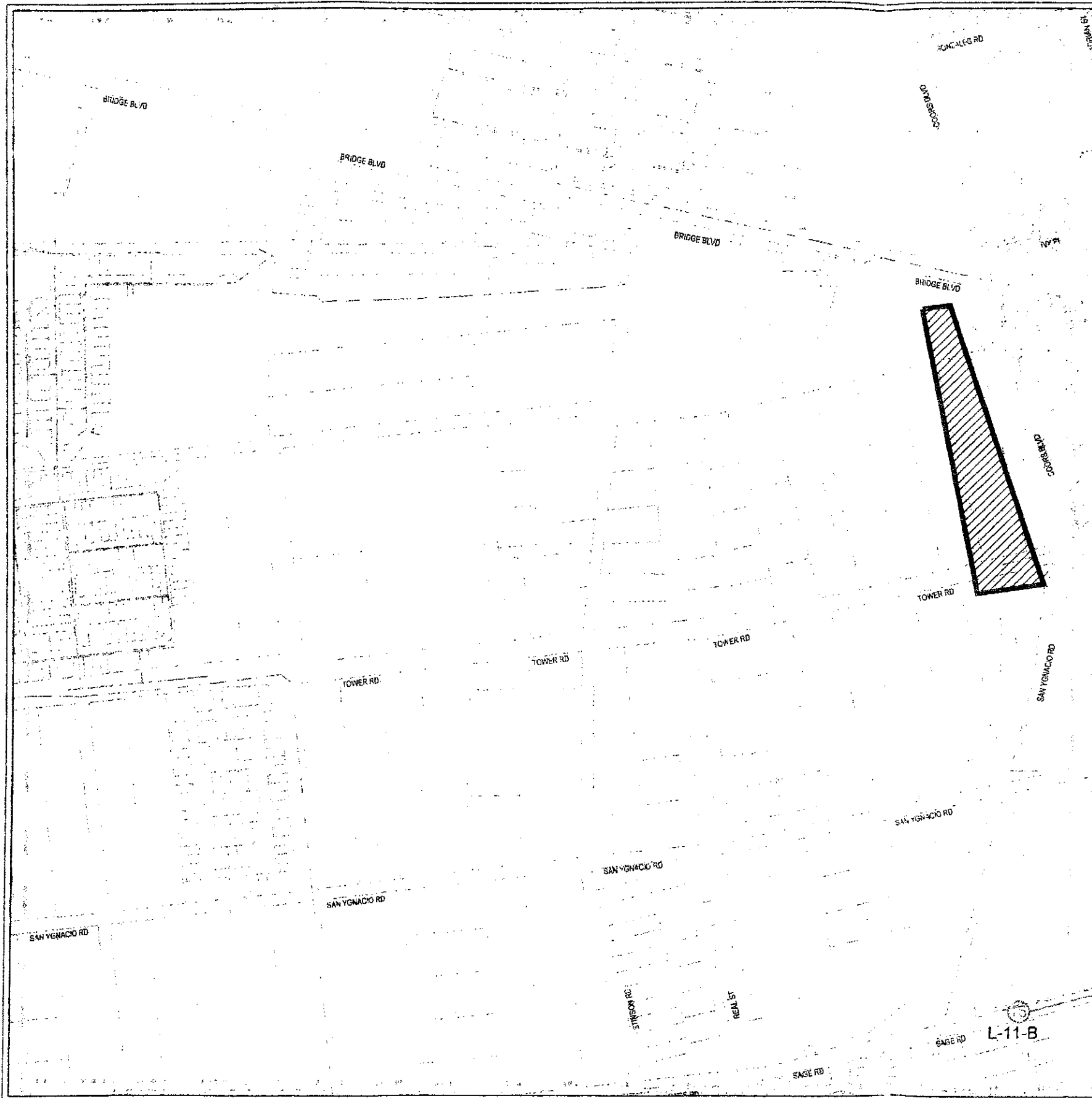
US Army Corps of Engineers
ALBUQUERQUE DISTRICT

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Environmental Sciences
Water Resources
Landscape Architecture
Planning

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SCALE: 1" = 600'

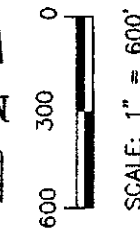
PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
K-13



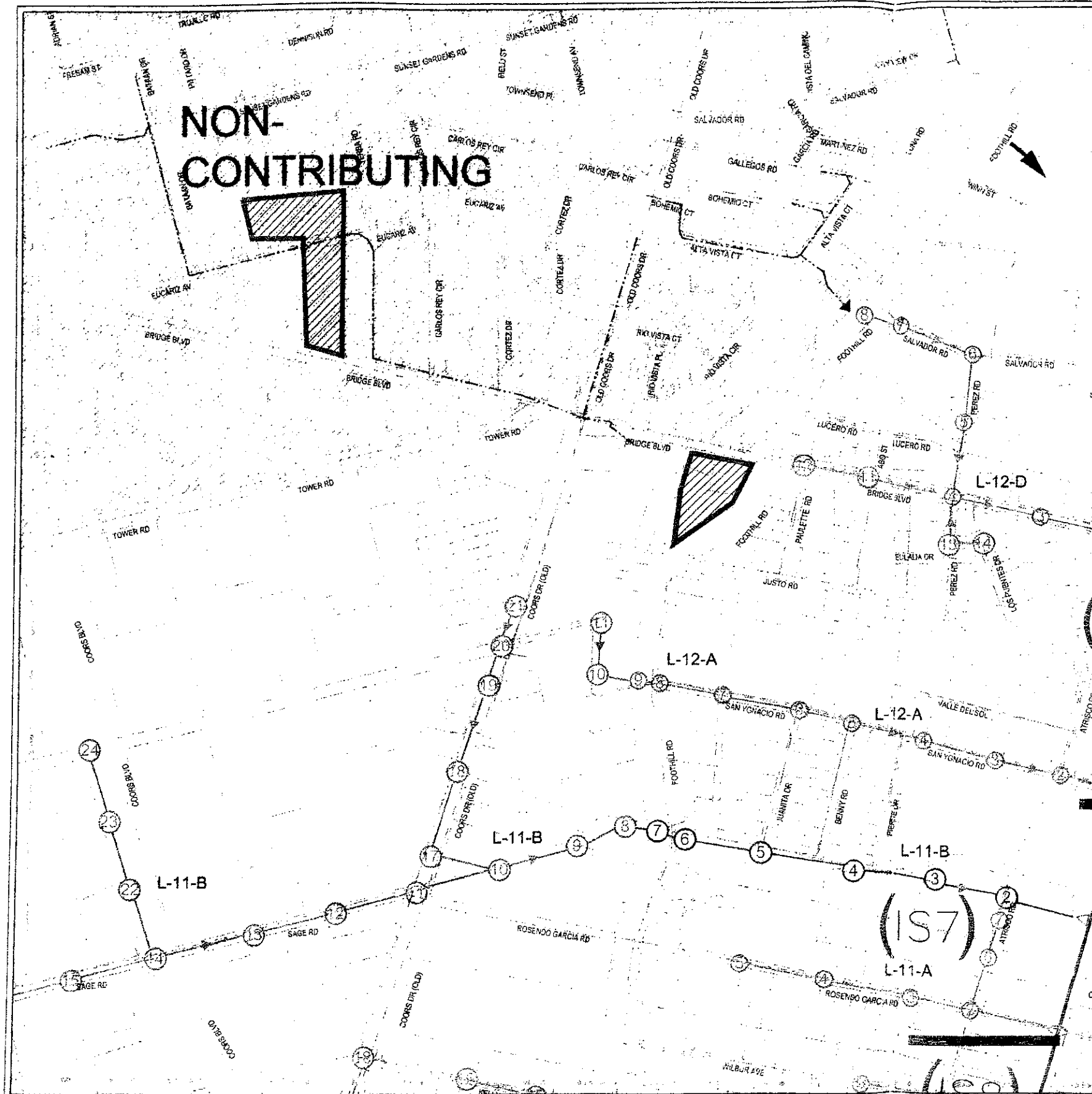
ZONE ATLAS GRID L-10
MRGCD DRAINS: NONE

- | | | | |
|--|--------------------------|--|--------------------------------|
| | ZONE ATLAS GRID BOUNDARY | | SURFACE DRAINAGE |
| | DRAIN SEGMENT BOUNDARY | | PROPOSED WEIR |
| | EXISTING STORM DRAINS | | PROPOSED 54" ARCH PIPE |
| | EXISTING WATER LINE | | PROPOSED BOX CULVERT |
| | EXISTING SEWER LINE | | PROPOSED PRESSURE LINE |
| | EXISTING DRAIN ALIGNMENT | | PROPOSED STORM DRAIN |
| | DRAIN SEGMENT ID | | PROPOSED POND OUTFALL |
| | LAND PARCELS | | PROPOSED STORM DRAIN SYSTEM ID |
| | NON-CONTRIBUTING AREAS | | PROPOSED STORM DRAIN OUTLET |
| | EXISTING POND AREA | | PROPOSED POND OUTLET |
| | | | PROPOSED POND AREA |



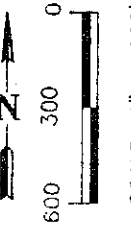
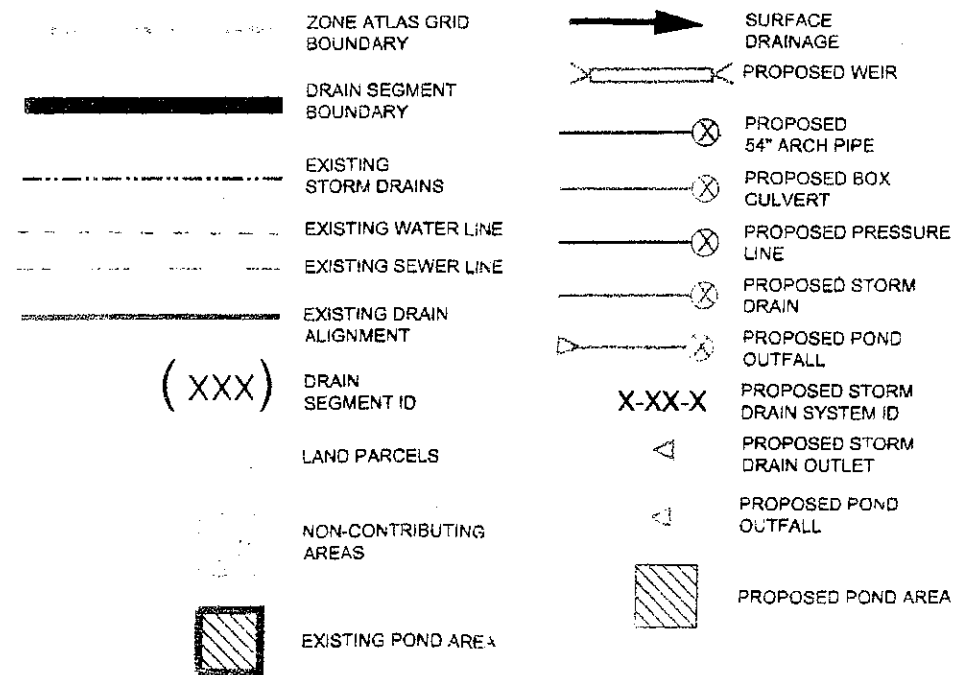
PROPOSED STORM DRAINS FOR
 ALBUQUERQUE SOUTHWEST VALLEY
 LOCAL DRAINAGE PLAN

GRID
L-10



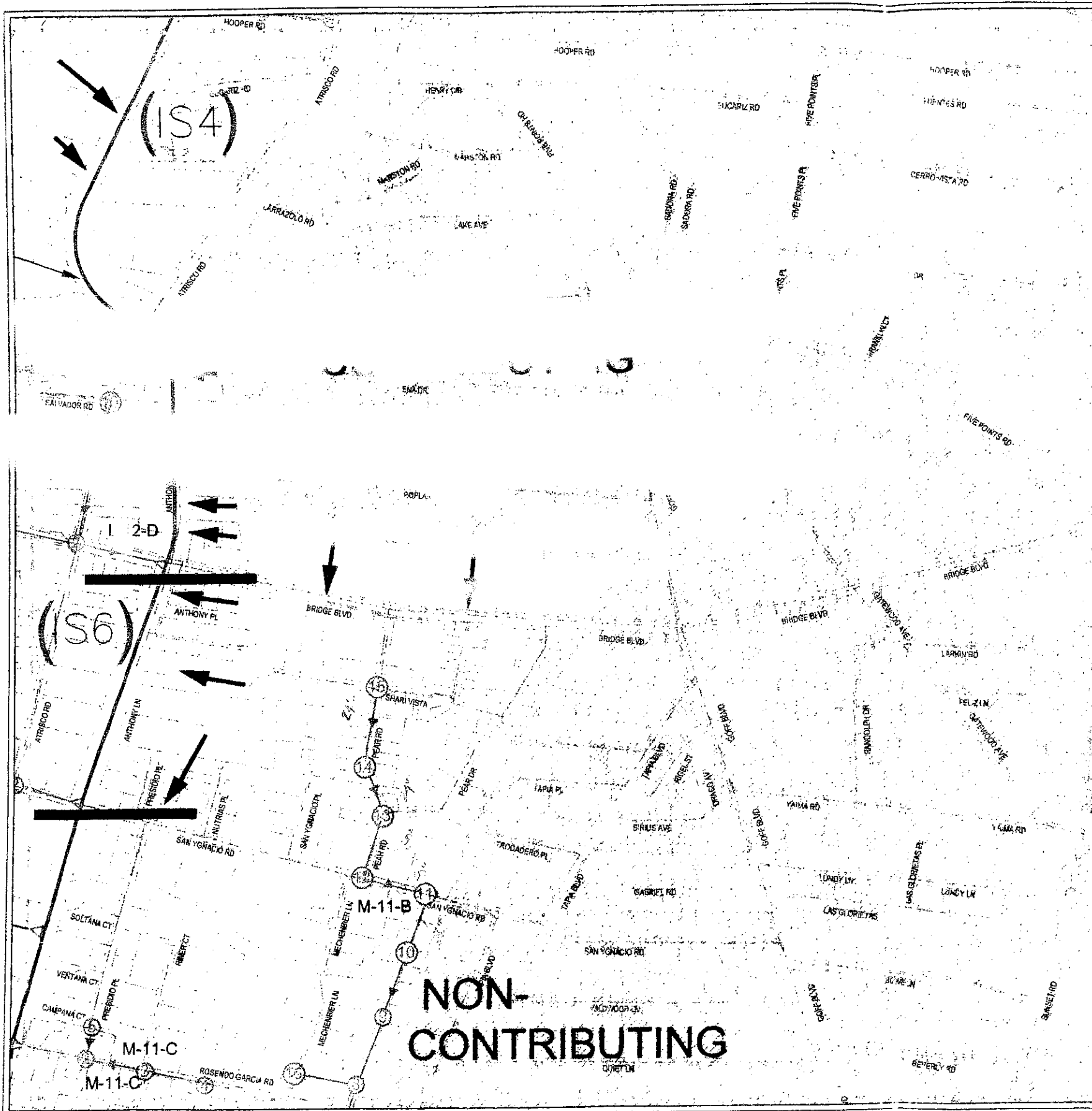
ZONE ATLAS GRID L-11 MRGCD DRAINS: ISLETA

ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
7	6	4938	1178	8.76
8	4	4937	854	4.47



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
L-11

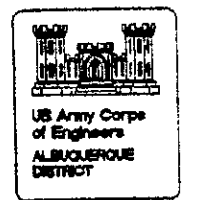


ZONE ATLAS GRID L-12
MRGCD DRAINS: ISLETA

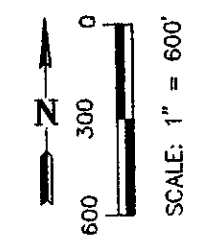
ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
4	5	4942	1841	11.75
5	6	4942	1165	8.67
6	7	4941	1104	9.28
7	6	4938	1178	8.76

ZONE ATLAS GRID BOUNDARY
 DRAIN SEGMENT BOUNDARY
 EXISTING STORM DRAINS
 EXISTING WATER LINE
 EXISTING SEWER LINE
 EXISTING DRAIN ALIGNMENT
 (XXX) DRAIN SEGMENT ID
 LAND PARCELS
 NON-CONTRIBUTING AREAS
 EXISTING POND AREA

SURFACE DRAINAGE
 PROPOSED WEIR
 PROPOSED 54" ARCH PIPE
 PROPOSED BOX CULVERT
 PROPOSED PRESSURE LINE
 PROPOSED STORM DRAIN
 PROPOSED POND OUTFALL
 PROPOSED STORM DRAIN SYSTEM ID
 PROPOSED STORM DRAIN OUTLET
 PROPOSED POND OUTFALL
 PROPOSED POND AREA

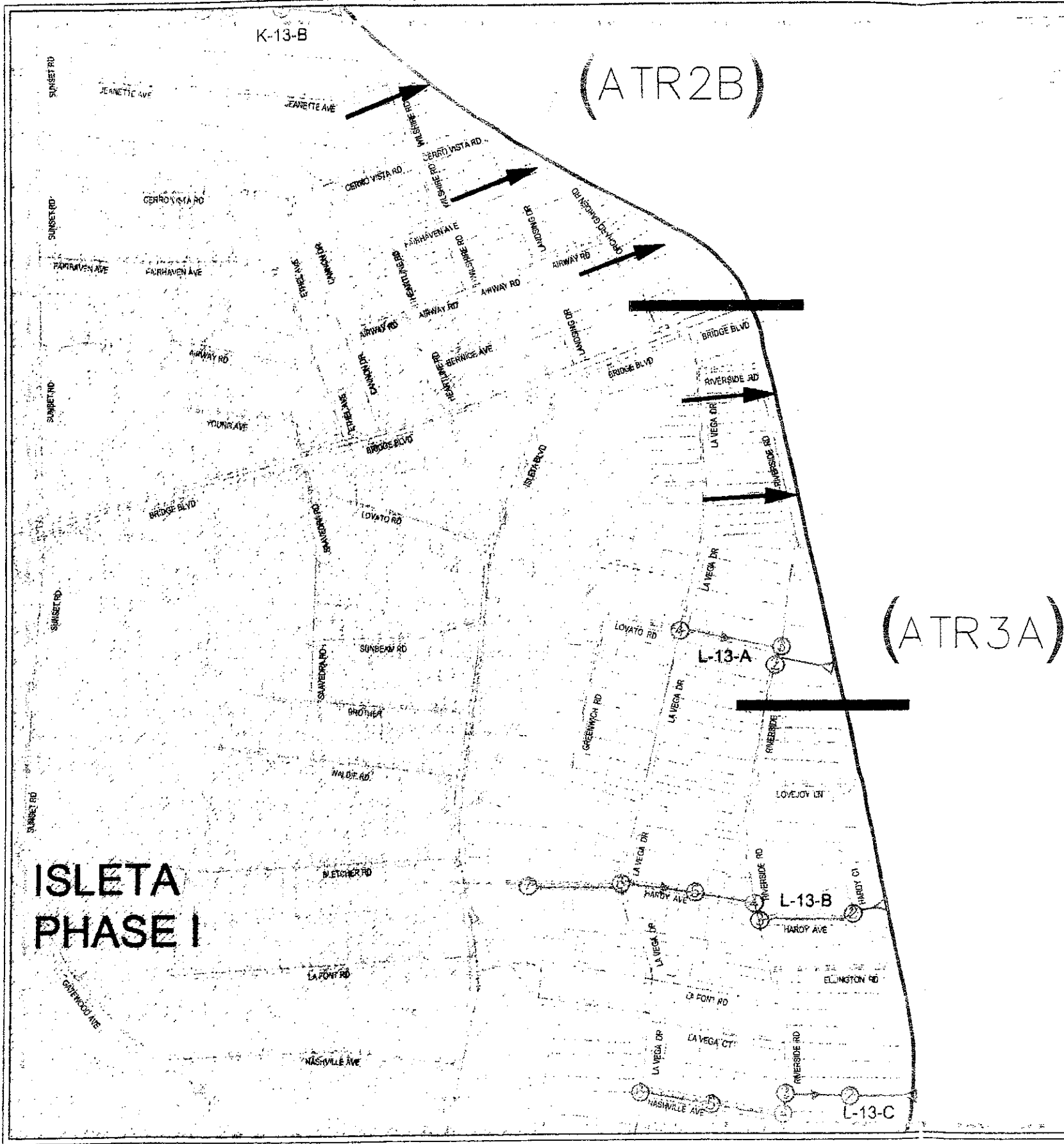


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PROPOSED STORM DRAINS FOR
 ALBUQUERQUE SOUTHWEST VALLEY
 LOCAL DRAINAGE PLAN

GRID
L-12



ZONE ATLAS GRID L-13
MRGCD DRAINS: ATRISCO RIVERSIDE

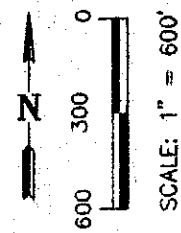
ATRISCO RIVERSIDE DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
2 B	6	4939	3143	7.79
3 A	7	4935	1931	4.96
3 B	5	4932	3785	8.69

ZONE ATLAS GRID BOUNDARY
 DRAIN SEGMENT BOUNDARY
 EXISTING STORM DRAINS
 EXISTING WATER LINE
 EXISTING SEWER LINE
 EXISTING DRAIN ALIGNMENT
 DRAIN SEGMENT ID
 LAND PARCELS
 NON-CONTRIBUTING AREAS
 EXISTING POND AREA

SURFACE DRAINAGE
 PROPOSED WEIR
 PROPOSED 54" ARCH PIPE
 PROPOSED BOX CULVERT
 PROPOSED PRESSURE LINE
 PROPOSED STORM DRAIN
 PROPOSED POND OUTFALL
 PROPOSED STORM DRAIN SYSTEM ID
 PROPOSED STORM DRAIN OUTLET
 PROPOSED POND OUTFALL
 PROPOSED POND AREA

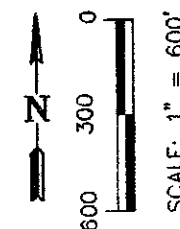
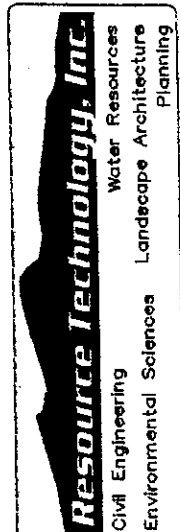
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Environmental Sciences
Landscape Architecture
Planning



PROPOSED STORM DRAINS FOR
 ALBUQUERQUE SOUTHWEST VALLEY
 LOCAL DRAINAGE PLAN

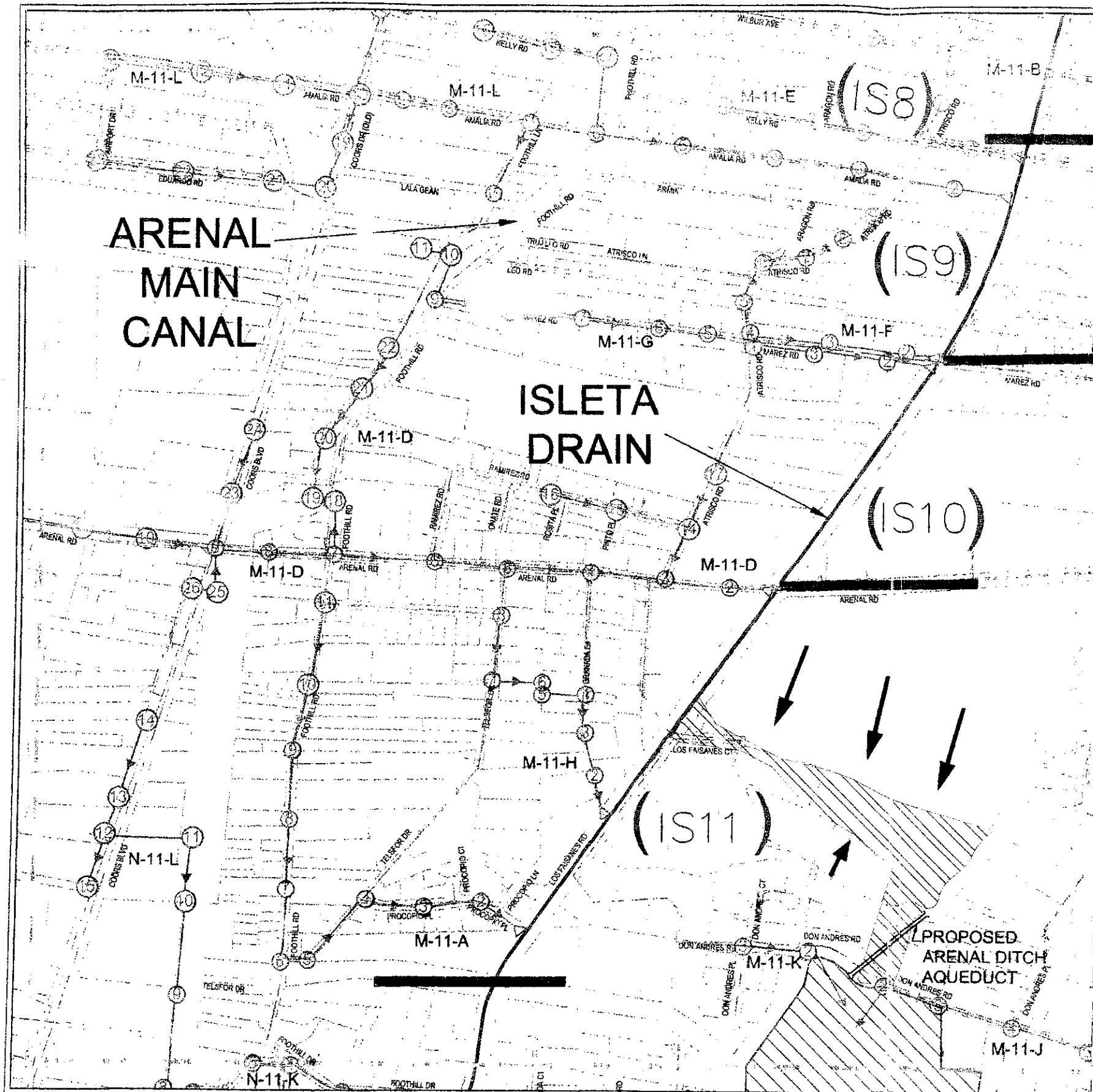
GRID
L-13



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
M-10

ZONE ATLAS GRID M-10
MRGCD DRAINS: NONE



ZONE ATLAS GRID M-11 MRGCD DRAINS: ISLETA

ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
8	4	4937	854	4.47
9	6	4937	1085	8.07
10	4	4934	1373	7.19
11	6	4934	2349	17.47
12	7	4934	1768	14.86

- ZONE ATLAS GRID BOUNDARY

DRAIN SEGMENT BOUNDARY

EXISTING STORM DRAINS

EXISTING WATER LINE

EXISTING SEWER LINE

EXISTING DRAIN ALIGNMENT

(XXX) DRAIN SEGMENT ID

LAND PARCELS

NON-CONTRIBUTING AREAS
- SURFACE DRAINAGE

PROPOSED WEIR

PROPOSED 54" ARCH PIPE

PROPOSED BOX CULVERT

PROPOSED PRESSURE LINE

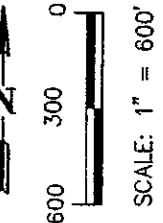
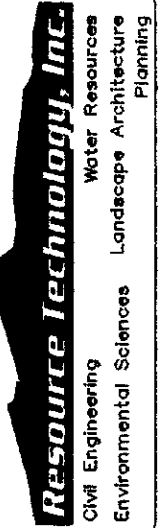
PROPOSED STORM DRAIN

PROPOSED POND OUTFALL

PROPOSED STORM DRAIN SYSTEM ID

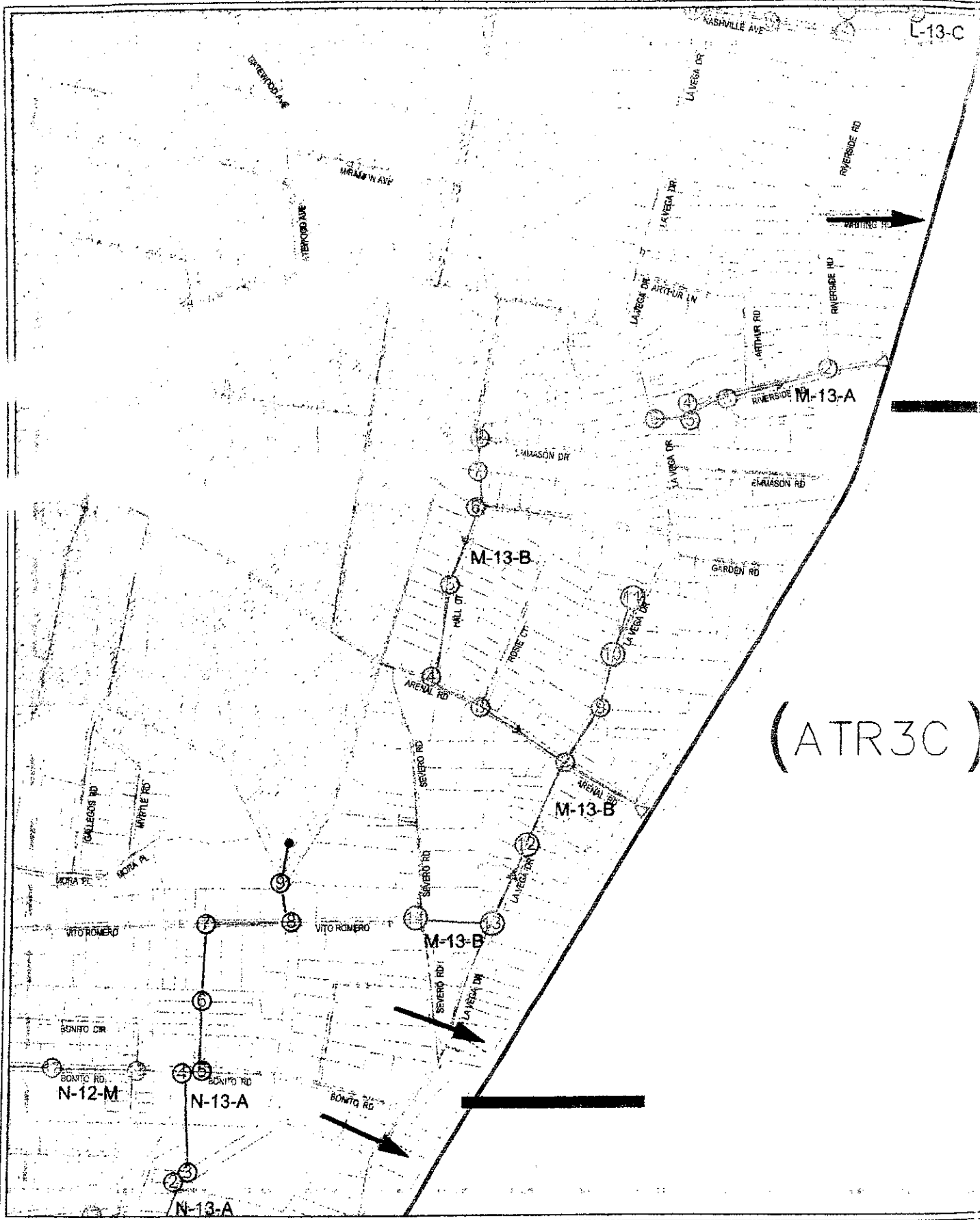
PROPOSED STORM DRAIN OUTLET

PROPOSED POND AREA



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
M-11

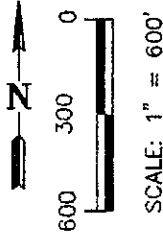
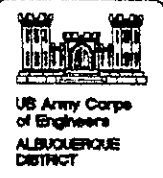


ZONE ATLAS GRID M-13 MRGCD DRAINS: ATRISCO RIVERSIDE

ATRISCO RIVERSIDE DRAIN

Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
3 B	5	4932	3785	8.69
3 C	6	4929	3647	9.04
3 D	5	4926	3384	9.04

- ZONE ATLAS GRID BOUNDARY
- DRAIN SEGMENT BOUNDARY
- EXISTING STORM DRAINS
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING DRAIN ALIGNMENT
- (XXX) DRAIN SEGMENT ID
- LAND PARCELS
- NON-CONTRIBUTING AREAS
- SURFACE DRAINAGE
- PROPOSED WEIR
- PROPOSED 54" ARCH PIPE
- PROPOSED BOX CULVERT
- PROPOSED PRESSURE LINE
- PROPOSED STORM DRAIN
- PROPOSED POND OUTFALL
- X-XX-X PROPOSED STORM DRAIN SYSTEM ID
- PROPOSED STORM DRAIN OUTLET
- PROPOSED POND AREA



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
M-13

ZONE ATLAS GRID N-10
MRGCD DRAINS: NONE

ARENAL MAIN
CANAL

AMOLE DAM

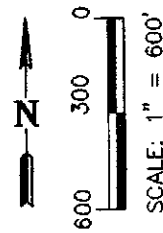
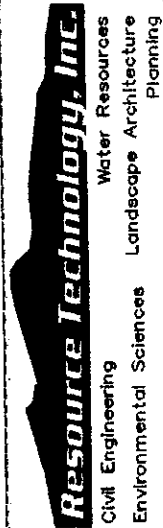
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N-11-M

P-10-B

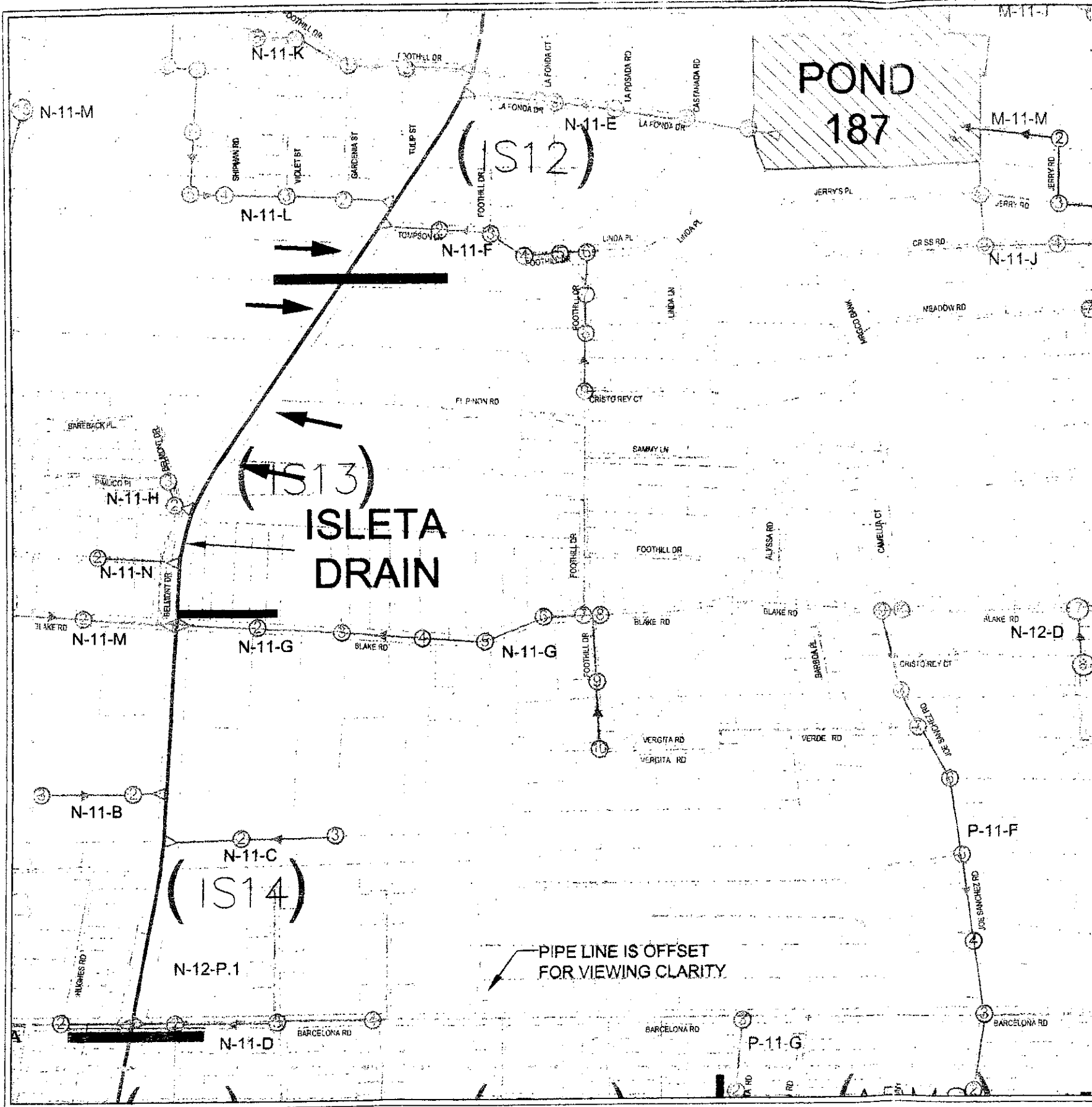
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| | ZONE ATLAS GRID BOUNDARY | | SURFACE DRAINAGE |
| | DRAIN SEGMENT BOUNDARY | | PROPOSED WEIR |
| | EXISTING STORM DRAINS | | PROPOSED 54" ARCH PIPE |
| | EXISTING WATER LINE | | PROPOSED BOX CULVERT |
| | EXISTING SEWER LINE | | PROPOSED PRESSURE LINE |
| | EXISTING DRAIN ALIGNMENT | | PROPOSED STORM DRAIN |
| | DRAIN SEGMENT ID | | PROPOSED POND OUTFALL |
| | LAND PARCELS | | PROPOSED STORM DRAIN SYSTEM ID |
| | NON-CONTRIBUTING AREAS | | PROPOSED STORM DRAIN OUTLET |
| | EXISTING POND AREA A | | PROPOSED POND OUTFALL |
| | | | PROPOSED POND AREA |
| | | | PROPOSED CANAL |



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
N10



ZONE ATLAS GRID N-11
MRGCD DRAINS: ISLETA

ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
12	7	4934	1768	14.86
13	6	4930	1912	14.22
14	5	4929	1967	12.55
15	5	4928	933	5.95

- ZONE ATLAS GRID BOUNDARY

— DRAIN SEGMENT BOUNDARY

--- EXISTING STORM DRAINS

--- EXISTING WATER LINE

--- EXISTING SEWER LINE

--- EXISTING DRAIN ALIGNMENT

(XXX) DRAIN SEGMENT ID

--- LAND PARCELS

--- NON-CONTRIBUTING AREAS

--- EXISTING POND AREA
- SURFACE DRAINAGE

--- PROPOSED WEIR

⊗ PROPOSED 54" ARCH PIPE

⊗ PROPOSED BOX CULVERT

⊗ PROPOSED PRESSURE LINE

⊗ PROPOSED STORM DRAIN

⊗ PROPOSED POND OUTFALL

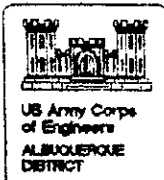
X-XX-X PROPOSED STORM DRAIN SYSTEM ID

△ PROPOSED STORM DRAIN OUTLET

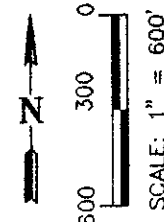
△ PROPOSED POND OUTFALL

▨ PROPOSED POND AREA

--- PROPOSED CANAL

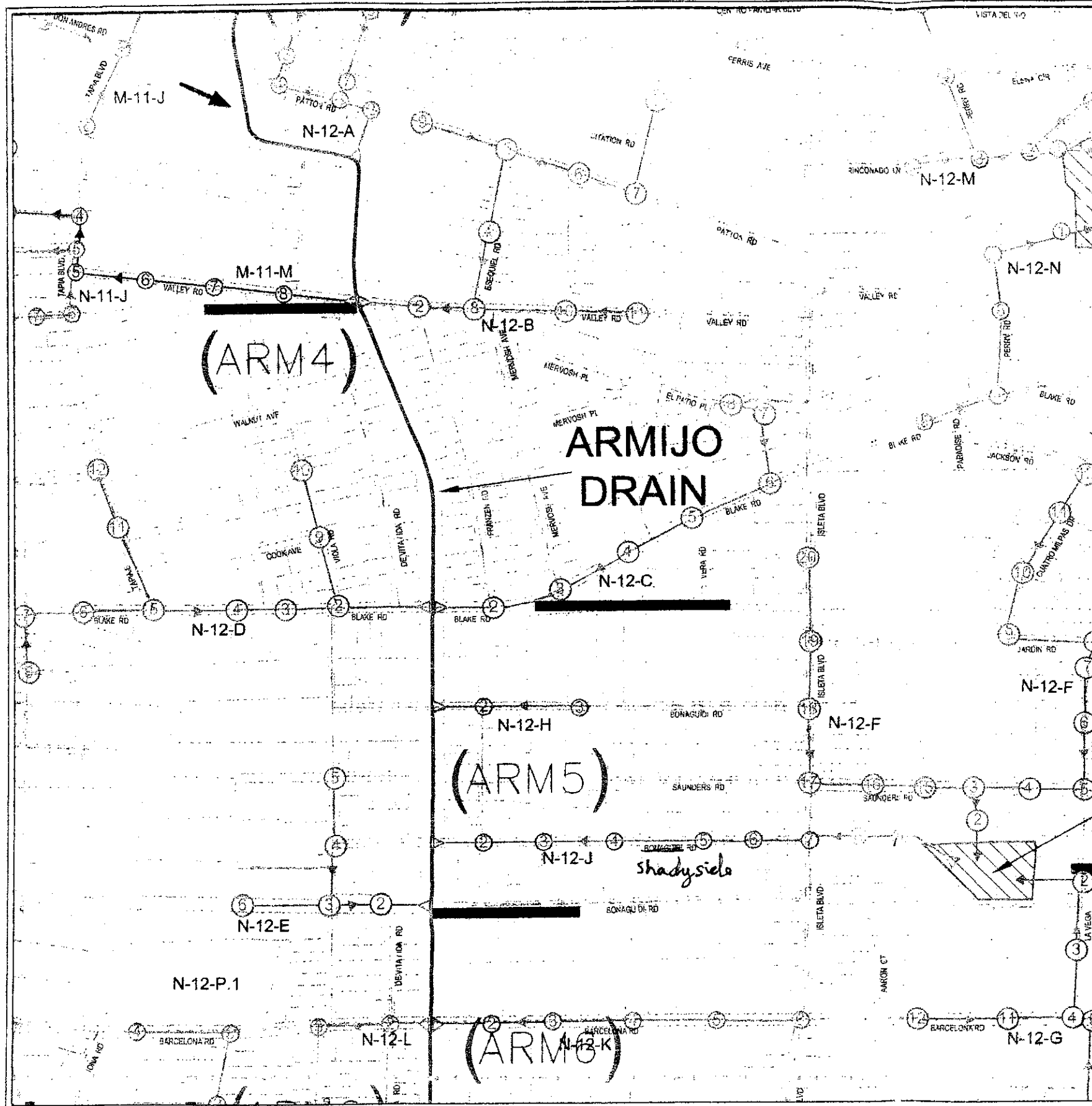


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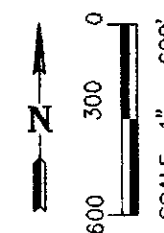
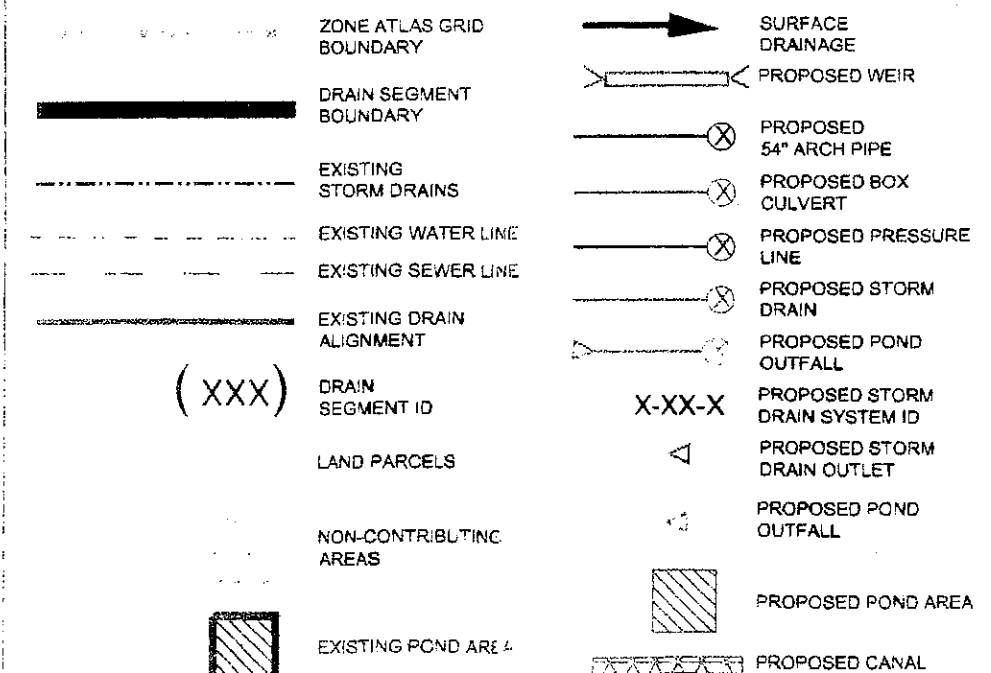
PROPOSED STORM DRAINS FOR
 ALBUQUERQUE SOUTHWEST VALLEY
 LOCAL DRAINAGE PLAN

GRID
N-11



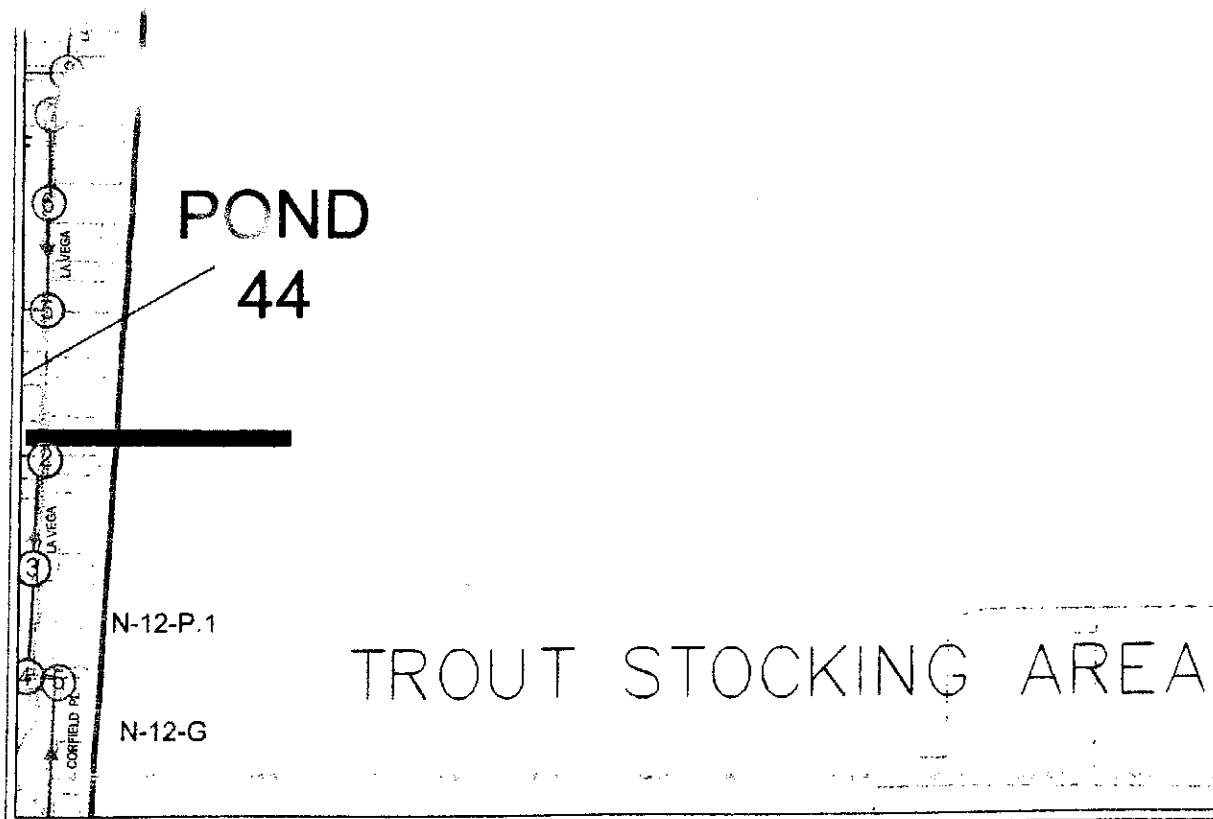
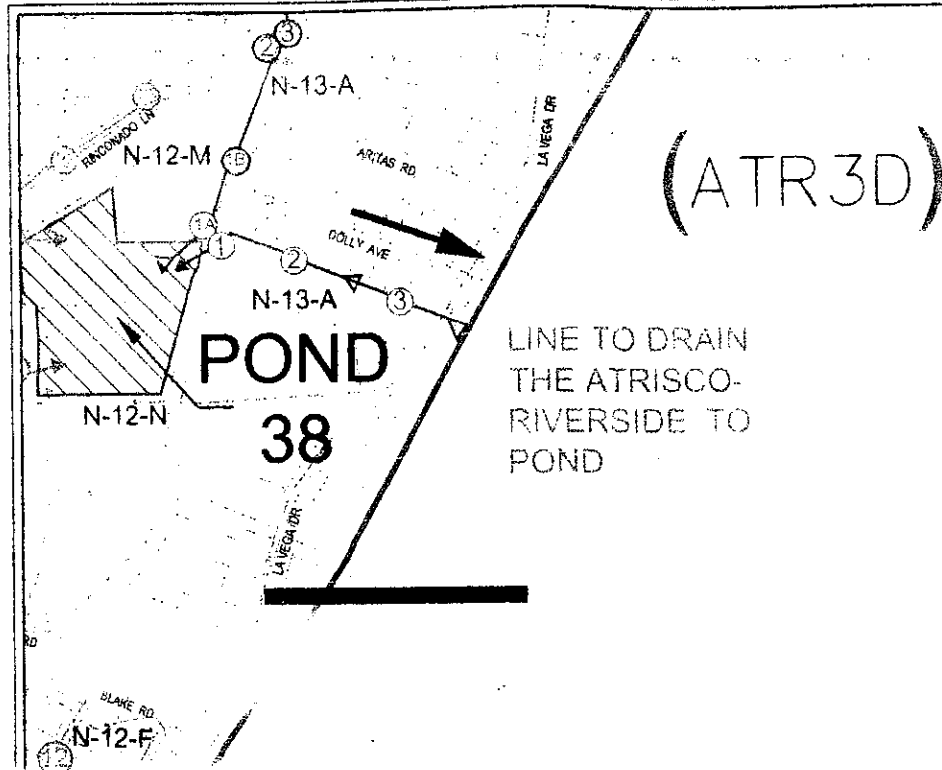
ZONE ATLAS GRID N-12 MRGCD DRAINS: ARMIJO

ARMIJO DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
3	8	4927	2775	15.54
4	6	4928	1546	7.24
5	7	4934	1372	7.12
6	6	4924	2136	10.00



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
N-12

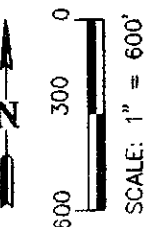
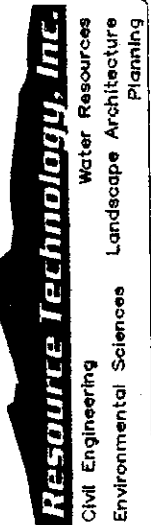
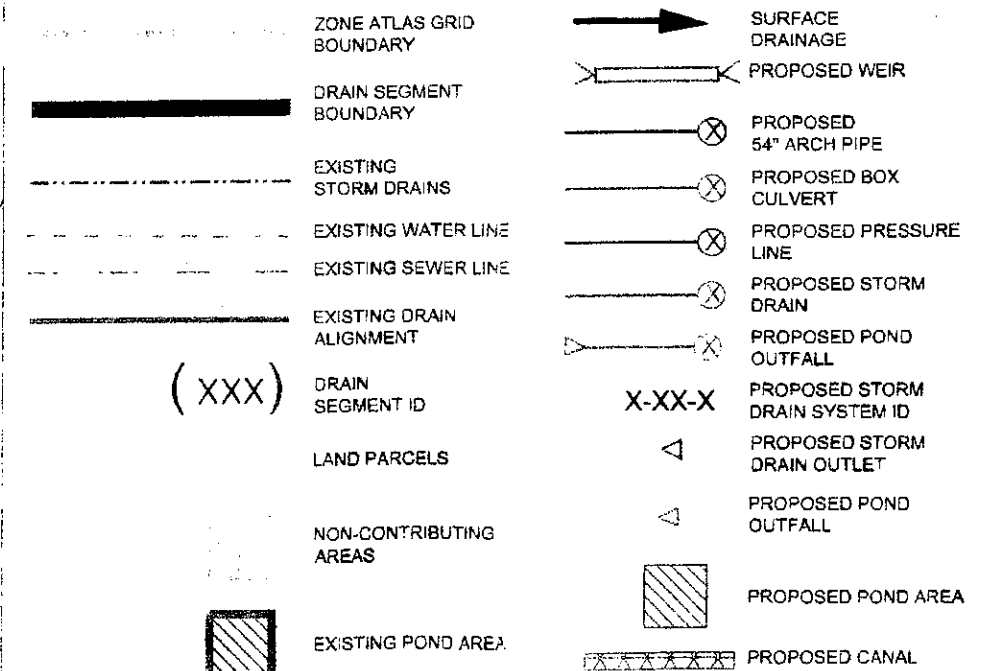


ZONE ATLAS GRID N-13

MRGCD DRAINS: ATRISCO RIVERSIDE

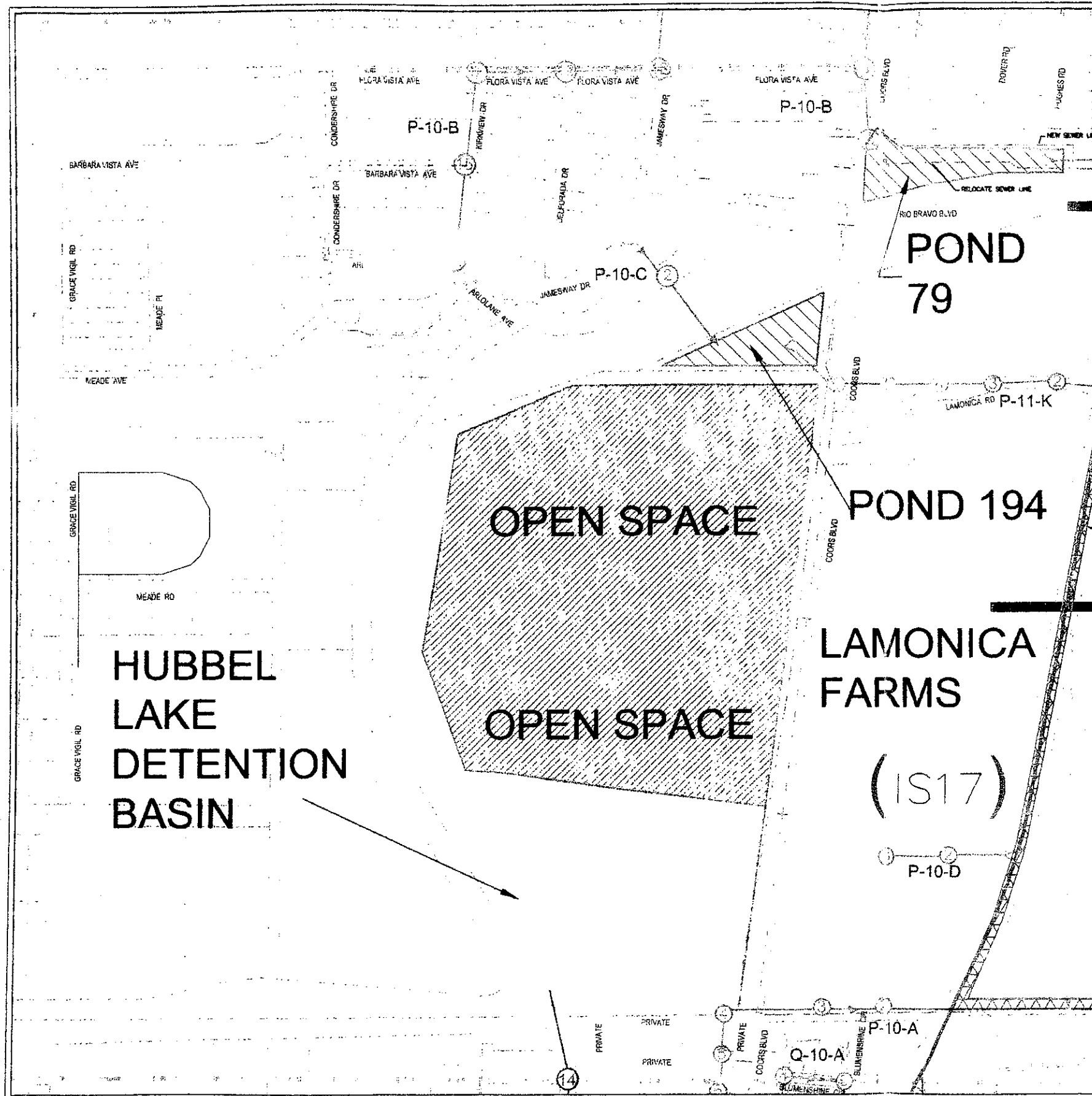
ATRISCO RIVERSIDE DRAIN

Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
3 D	5	4926	3384	9.04
3 E	5	4930	1658	9.51
T F	5	4930	1917	4.40



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

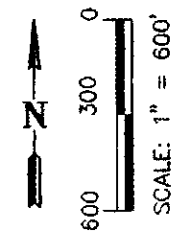
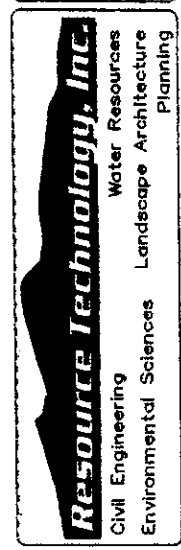
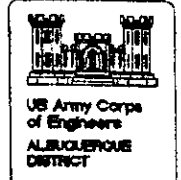
GRID
N-13



ZONE ATLAS GRID P-10
MRGCD DRAINS: ISLETA

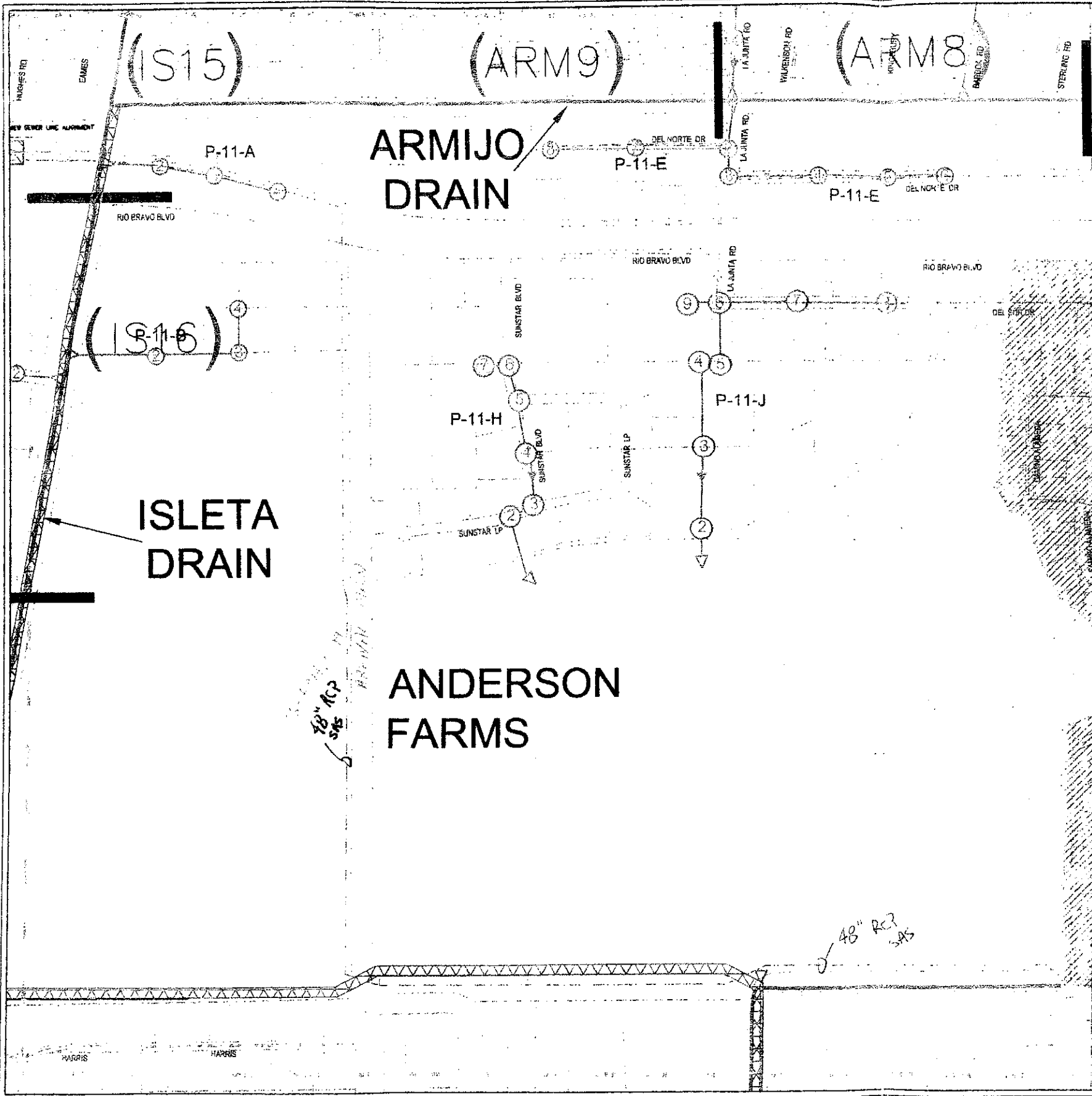
ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
16	8	4921	2059	19.10
17	5	4916	3678	23.47

- ZONE ATLAS GRID BOUNDARY
- DRAIN SEGMENT BOUNDARY
- EXISTING STORM DRAINS
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING DRAIN ALIGNMENT
- (XXX) DRAIN SEGMENT ID
- LAND PARCELS
- NON-CONTRIBUTING AREAS
- EXISTING POND AREA
- SURFACE DRAINAGE
- PROPOSED WEIR
- PROPOSED 54" ARCH PIPE
- PROPOSED BOX CULVERT
- PROPOSED PRESSURE LINE
- PROPOSED STORM DRAIN
- PROPOSED POND OUTFALL
- X-XX-X PROPOSED STORM DRAIN SYSTEM ID
- PROPOSED STORM DRAIN OUTLET
- PROPOSED POND OUTFALL
- PROPOSED POND AREA
- PROPOSED CANAL



PROPOSED STORM DRAINS FOR
 ALBUQUERQUE SOUTHWEST VALLEY
 LOCAL DRAINAGE PLAN

GRID
P-10



ZONE ATLAS GRID P-11
MRGCD DRAINS: ISLETA, ARMIJO

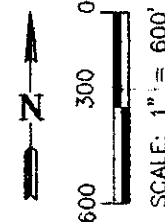
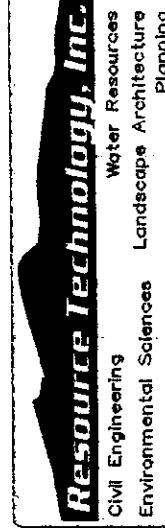
ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
15	5	4928	933	5.95
16	8	4921	2059	19.10

ARMIJO DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
8	4	4925	1754	5.96
9	5	4924	3121	12.75

LOS PADILLAS DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
1	6	4918	1317	7.07

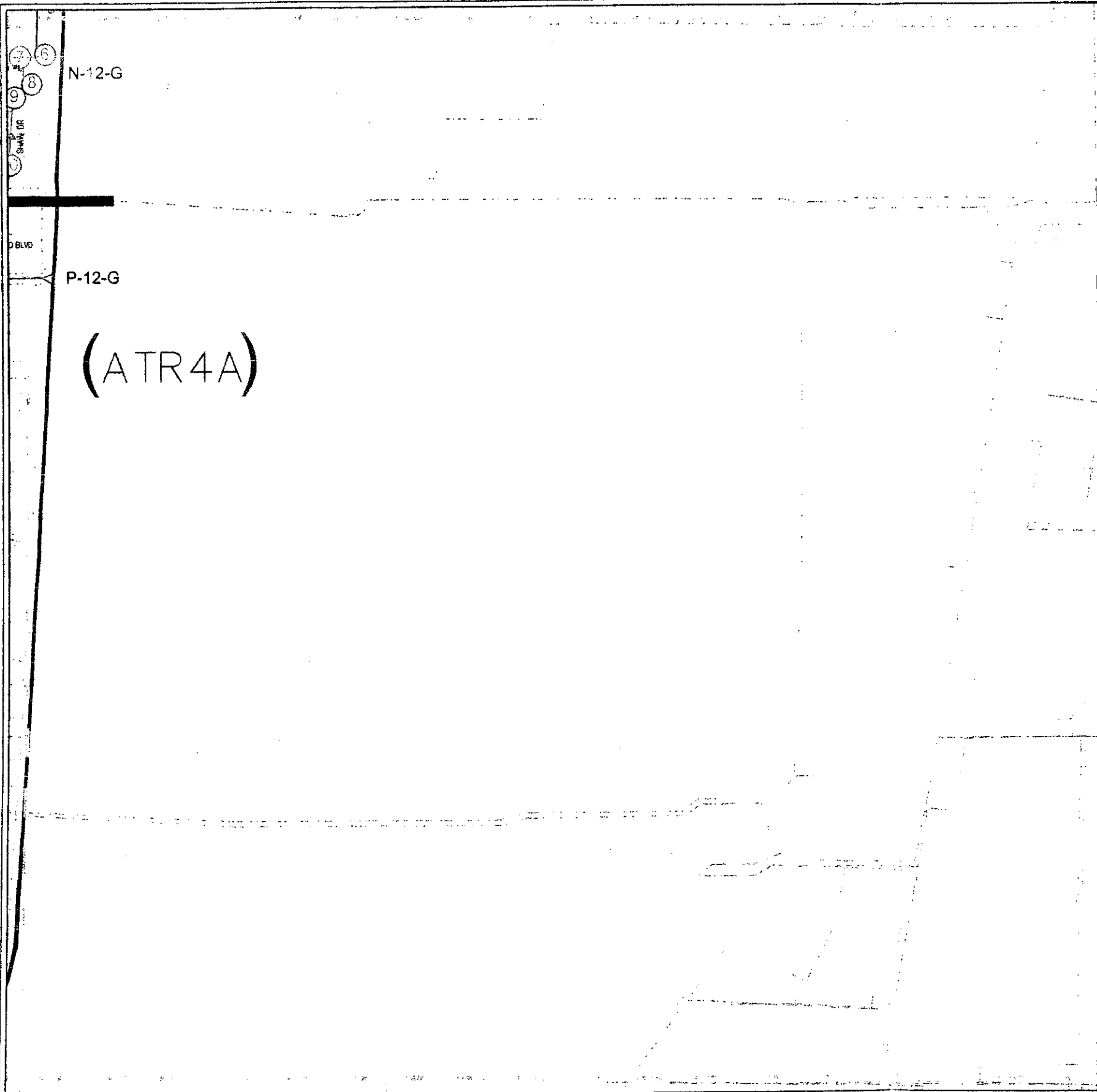
ZONE ATLAS GRID BOUNDARY
 DRAIN SEGMENT BOUNDARY
 EXISTING STORM DRAINS
 EXISTING WATER LINE
 EXISTING SEWER LINE
 EXISTING DRAIN ALIGNMENT
 DRAIN SEGMENT ID
 LAND PARCELS
 NON-CONTRIBUTING AREAS
 EXISTING POND AREA

SURFACE DRAINAGE
 PROPOSED WEIR
 PROPOSED 54" ARCH PIPE
 PROPOSED BOX CULVERT
 PROPOSED PRESSURE LINE
 PROPOSED STORM DRAIN
 PROPOSED POND OUTFALL
 PROPOSED STORM DRAIN SYSTEM ID
 PROPOSED STORM DRAIN OUTLET
 PROPOSED POND OUTFALL
 PROPOSED POND AREA
 PROPOSED CANAL



PROPOSED STORM DRAINS FOR
 ALBUQUERQUE SOUTHWEST VALLEY
 LOCAL DRAINAGE PLAN

GRID
P-11



ZONE ATLAS GRID P-13
MRGCD DRAINS: ATRISCO RIVERSIDE

ATRISCO RIVERSIDE DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
T F	5	4930	1917	4.40
4 A	5	4925	4479	10.28

- ZONE ATLAS GRID BOUNDARY

DRAIN SEGMENT BOUNDARY

EXISTING STORM DRAINS

EXISTING WATER LINE

EXISTING SEWER LINE

EXISTING DRAIN ALIGNMENT

(XXX)

DRAIN SEGMENT ID

LAND PARCELS

NON-CONTRIBUTING AREAS

EXISTING POND AREA
- SURFACE DRAINAGE

PROPOSED WEIR

PROPOSED 54" ARCH PIPE

PROPOSED BOX CULVERT

PROPOSED PRESSURE LINE

PROPOSED STORM DRAIN

PROPOSED POND OUTFALL

X-XX-X

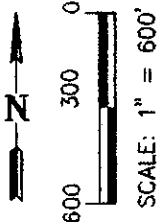
PROPOSED STORM DRAIN SYSTEM ID

PROPOSED STORM DRAIN OUTLET

PROPOSED POND OUTFALL

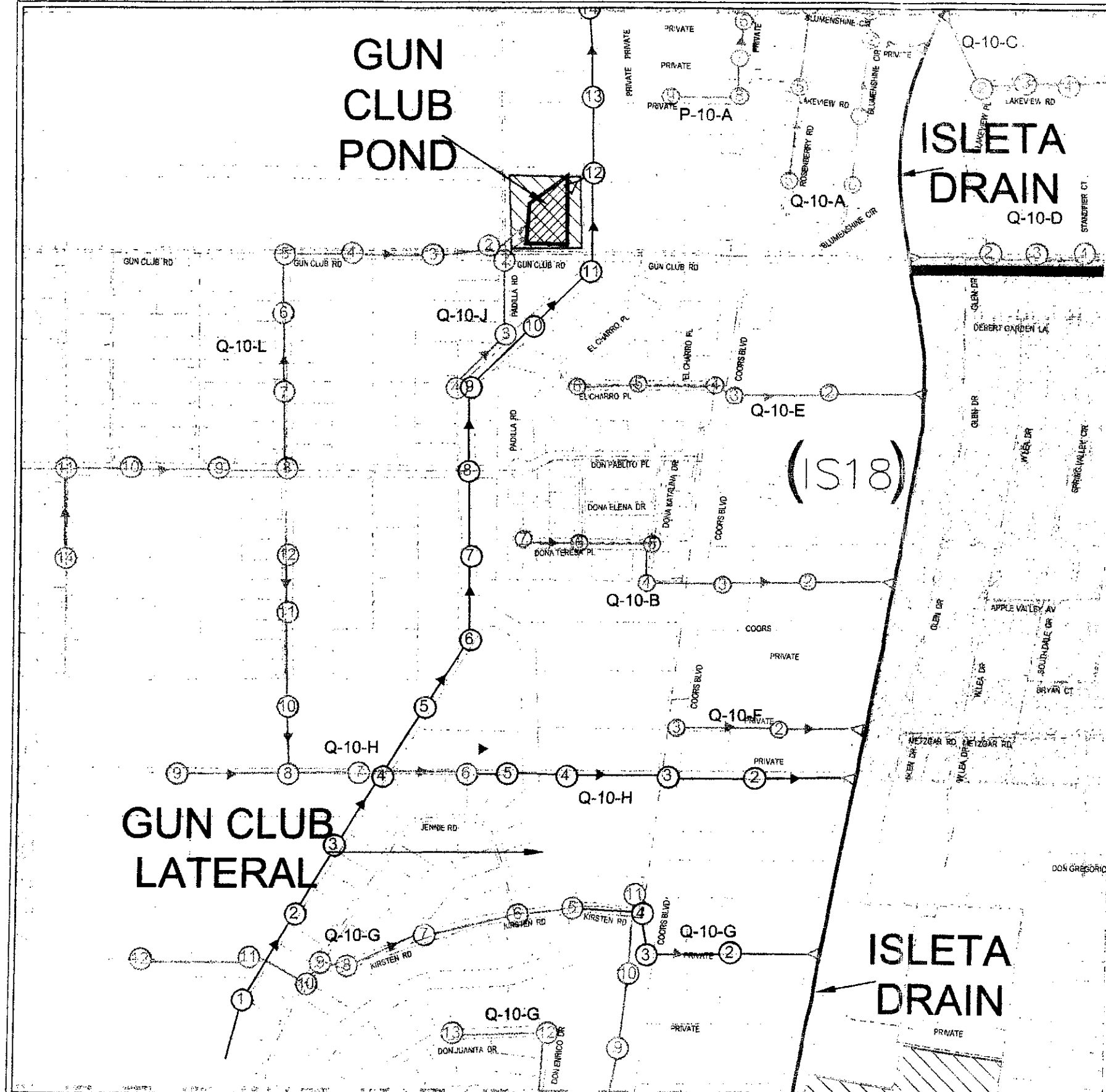
PROPOSED POND AREA

PROPOSED CANAL



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
P-13



ZONE ATLAS GRID Q-10
MRGCD DRAINS: ISLETA

ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
17	5	4916	3678	23.47
18	4	4915	4802	25.13

- ZONE ATLAS GRID BOUNDARY

DRAIN SEGMENT BOUNDARY

EXISTING STORM DRAINS

EXISTING WATER LINE

EXISTING SEWER LINE

EXISTING DRAIN ALIGNMENT

(XXX) DRAIN SEGMENT ID

LAND PARCELS

NON-CONTRIBUTING AREAS

EXISTING POND AREA
- SURFACE DRAINAGE

PROPOSED WEIR

PROPOSED 54" ARCH PIPE

PROPOSED BOX CULVERT

PROPOSED PRESSURE LINE

PROPOSED STORM DRAIN

PROPOSED POND OUTFALL

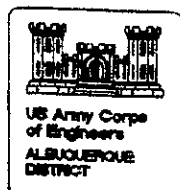
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PROPOSED STORM DRAIN OUTLET

PROPOSED POND OUTFALL

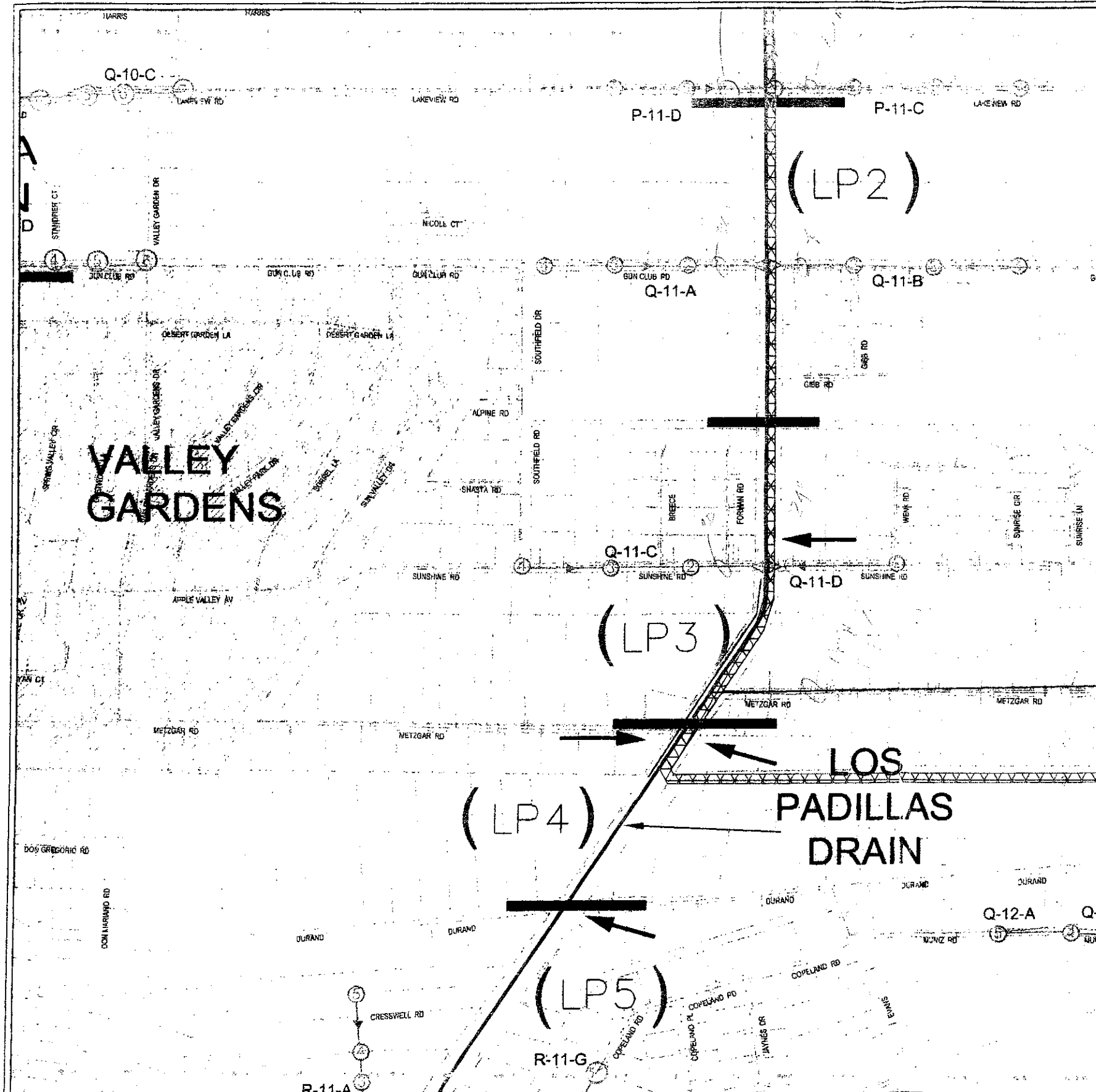
PROPOSED POND AREA

PROPOSED CANAL



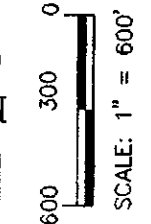
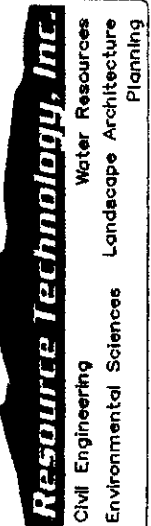
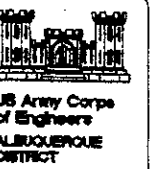
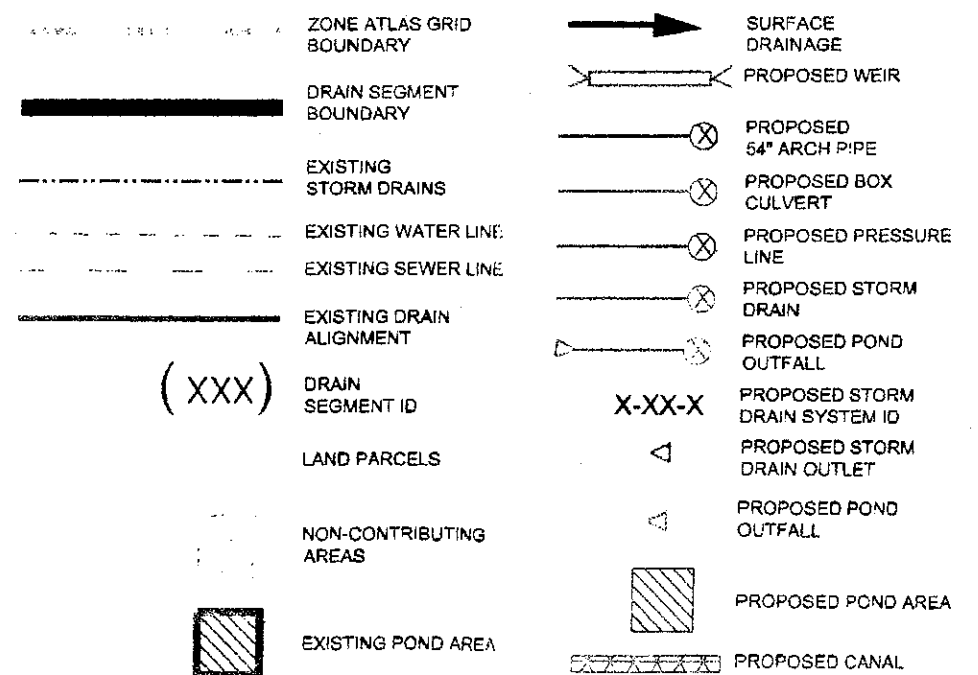
PROPOSED STORM DRAINS FOR
 ALBUQUERQUE SOUTHWEST VALLEY
 LOCAL DRAINAGE PLAN

GRID
Q-10



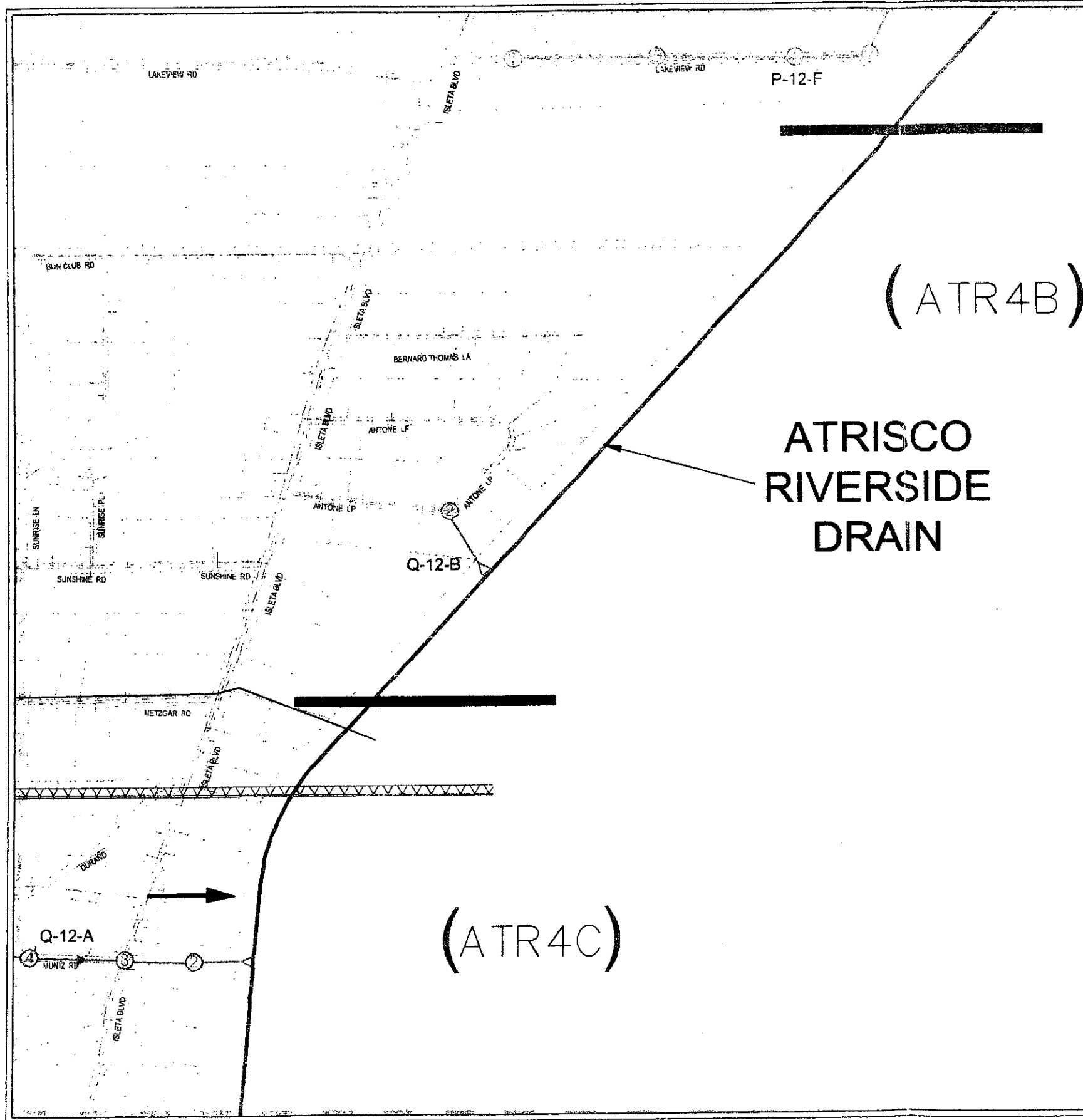
ZONE ATLAS GRID Q-11 MRGCD DRAINS: LOS PADILLAS

LOS PADILLAS DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
1	6	4918	1317	7.07
2	6	4917	2020	10.85
3	5	4916	2775	12.93
4	9	4912	1546	10.90
5	7	4912	1372	7.12



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
Q-11



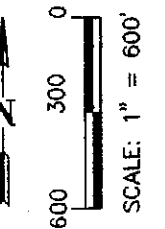
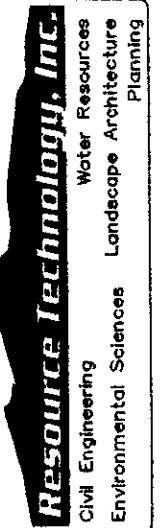
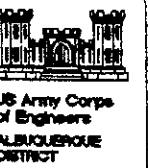
ZONE ATLAS GRID Q-12

MRGCD DRAINS: ATRISCO RIVERSIDE

ATRISCO RIVERSIDE DRAIN

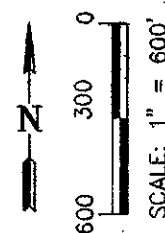
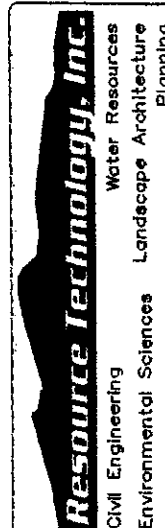
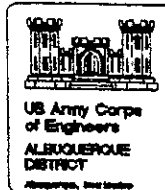
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
4 A	5	4925	4479	10.28
4 B	7	4936	3220	8.28
4 C	6	4915	3594	8.91

- ZONE ATLAS GRID BOUNDARY
- DRAIN SEGMENT BOUNDARY
- EXISTING STORM DRAINS
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING DRAIN ALIGNMENT
- (XXX) DRAIN SEGMENT ID
- LAND PARCELS
- NON-CONTRIBUTING AREAS
- EXISTING POND AREA
- SURFACE DRAINAGE
- PROPOSED WEIR
- PROPOSED 54" ARCH PIPE
- PROPOSED BOX CULVERT
- PROPOSED PRESSURE LINE
- PROPOSED STORM DRAIN
- PROPOSED POND OUTFALL
- X-XX-X PROPOSED STORM DRAIN SYSTEM ID
- PROPOSED STORM DRAIN OUTLET
- PROPOSED POND OUTFALL
- PROPOSED POND AREA
- PROPOSED CANAL



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
Q-12



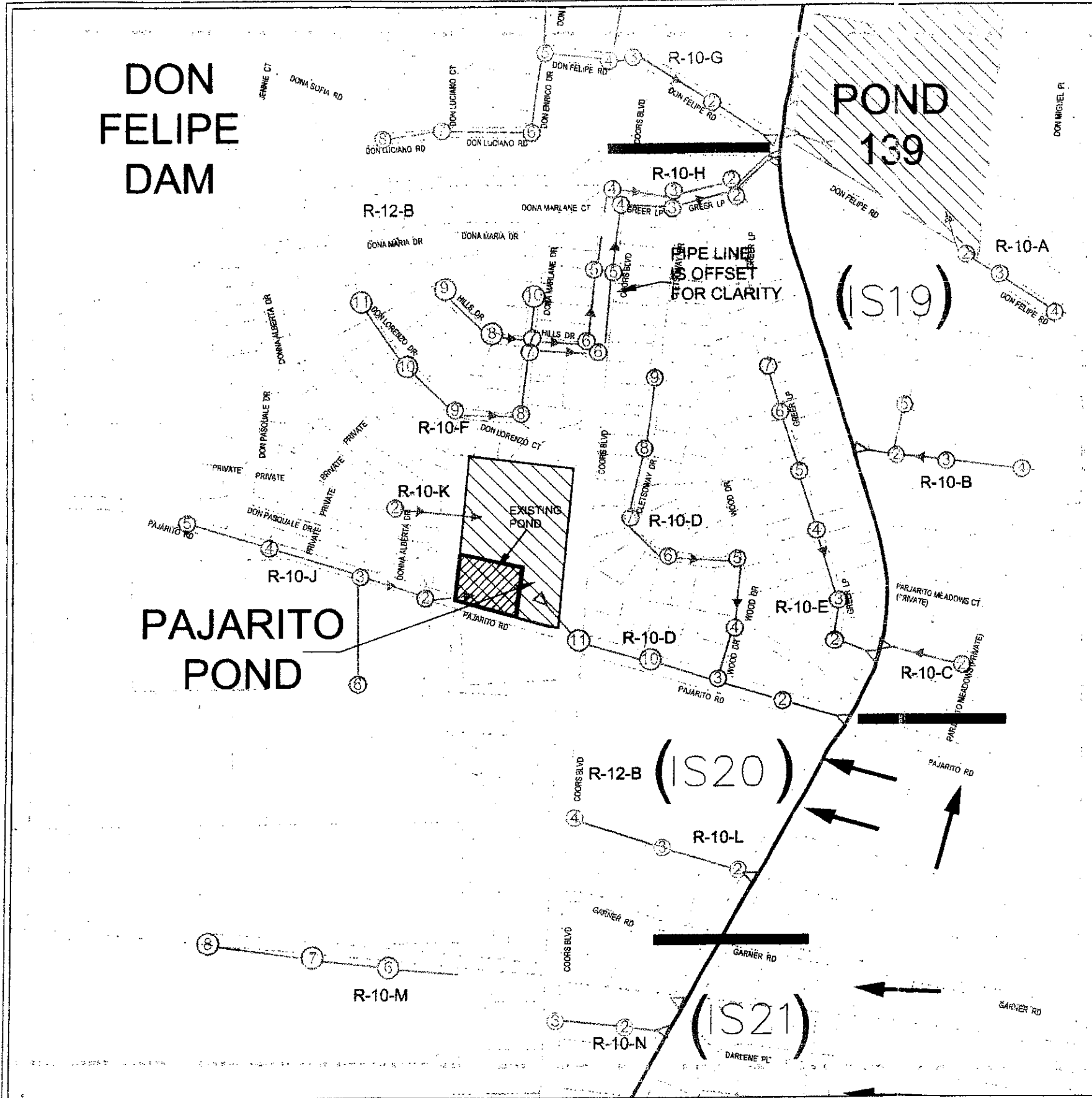
PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

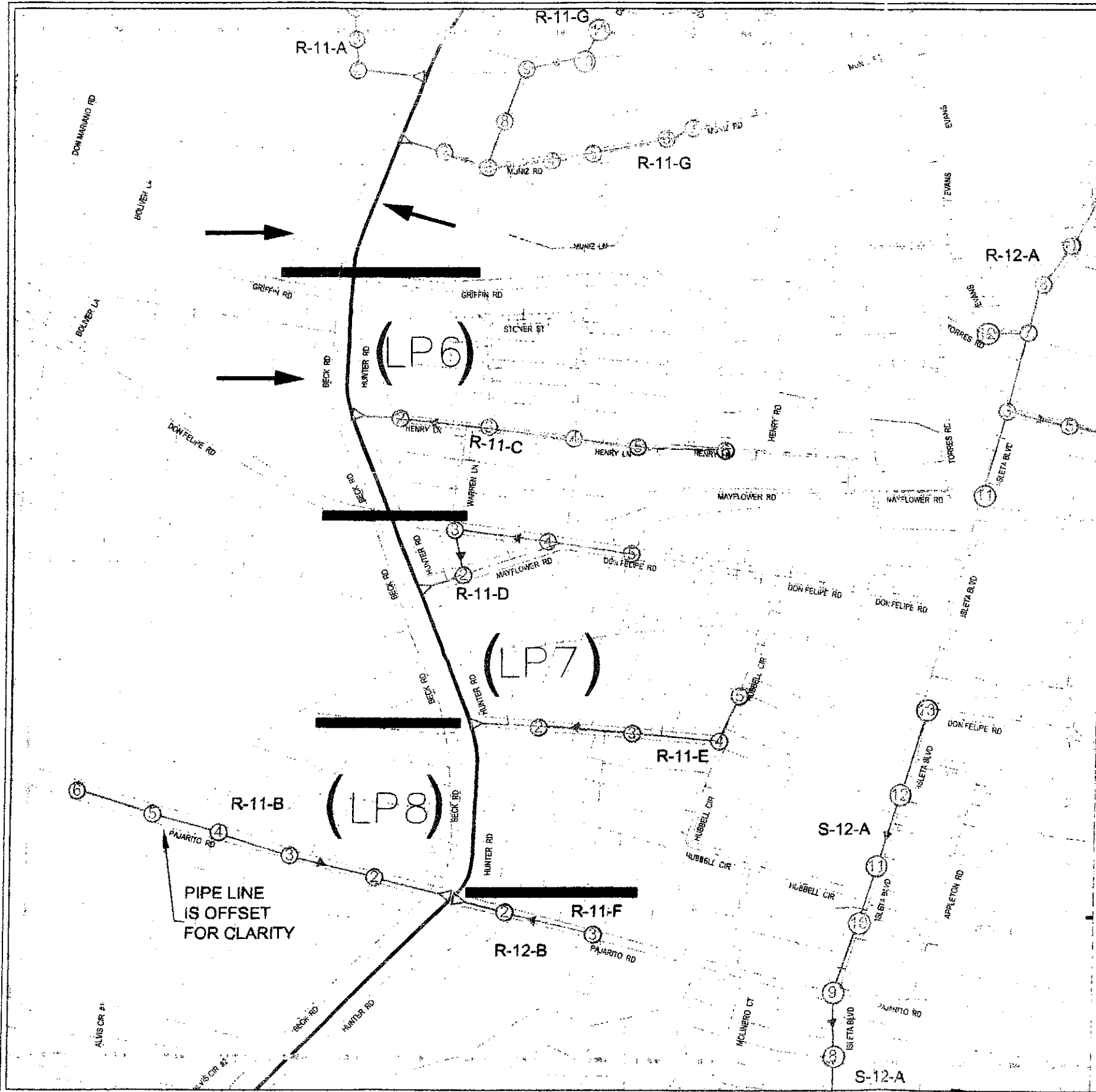
GRID
R-10

ZONE ATLAS GRID R-10
MRGCD DRAINS: ISLETA

ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
18	4	4915	4802	25.13
19	5	4914	2950	18.83
20	5	4913	1210	7.72
21	6	4911	1054	7.84

- ZONE ATLAS GRID BOUNDARY
- DRAIN SEGMENT BOUNDARY
- EXISTING STORM DRAINS
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING DRAIN ALIGNMENT
- LAND PARCELS
- NON-CONTRIBUTING AREAS
- EXISTING POND AREA

SURFACE DRAINAGEPROPOSED WEIRPROPOSED 54" ARCH PIPEPROPOSED BOX CULVERTPROPOSED PRESSURE LINEPROPOSED STORM DRAINPROPOSED POND OUTFALLPROPOSED STORM DRAIN SYSTEM IDPROPOSED STORM DRAIN OUTLETPROPOSED POND OUTFALLPROPOSED POND AREA

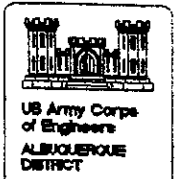


ZONE ATLAS GRID R-11
MRGCD DRAINS: LOS PADILLAS

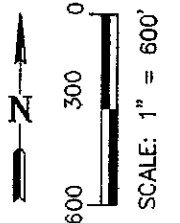
LOS PADILLAS DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
5	7	4912	1372	7.12
6	7	4906	2136	11.08
7	8	4905	790	5.19
8	6	4905	1754	9.42
9	9	4903	3121	22.00

- ZONE ATLAS GRID BOUNDARY
 DRAIN SEGMENT BOUNDARY
 EXISTING STORM DRAINS
 EXISTING WATER LINE
 EXISTING SEWER LINE
 EXISTING DRAIN ALIGNMENT
 DRAIN SEGMENT ID
 LAND PARCELS
 NON-CONTRIBUTING AREAS
 EXISTING POND AREA

SURFACE DRAINAGE
 PROPOSED WEIR
 PROPOSED 54" ARCH PIPE
 PROPOSED BOX CULVERT
 PROPOSED PRESSURE LINE
 PROPOSED STORM DRAIN
 PROPOSED POND OUTFALL
 PROPOSED STORM DRAIN SYSTEM ID
 PROPOSED STORM DRAIN OUTLET
 PROPOSED POND OUTFALL
 PROPOSED POND AREA

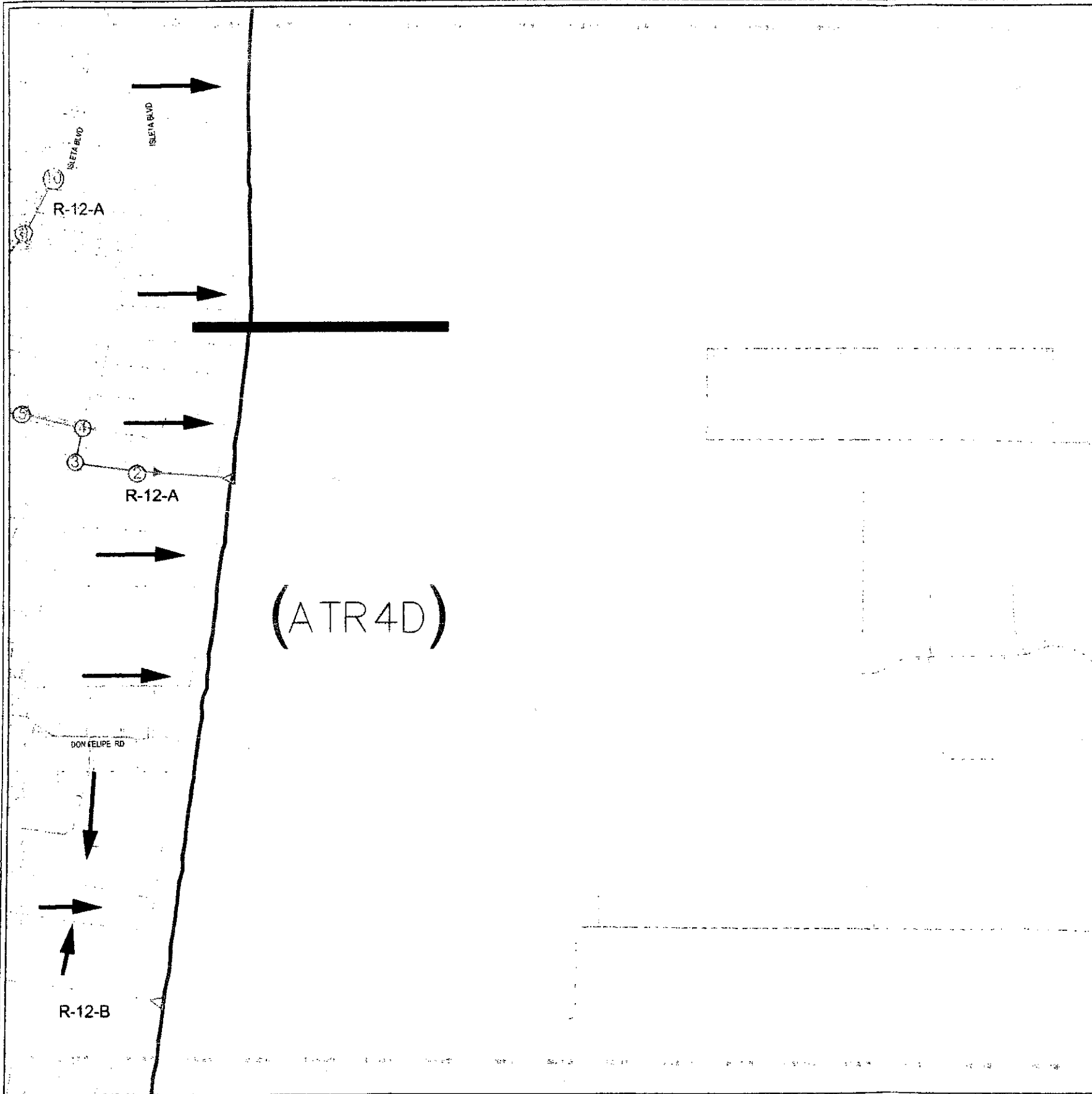


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 Landscape Architecture
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PROPOSED STORM DRAINS FOR
 ALBUQUERQUE SOUTHWEST VALLEY
 LOCAL DRAINAGE PLAN

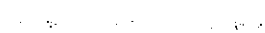
GRID
R-11



ZONE ATLAS GRID R-12
MRGCD DRAINS: ATRISCO RIVERSIDE

ATRISCO RIVERSIDE DRAIN

Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
4 C	6	4915	3594	8.91
4 D	7	4913	4366	11.23

-  ZONE ATLAS GRID BOUNDARY

 DRAIN SEGMENT BOUNDARY

 EXISTING STORM DRAINS

 EXISTING WATER LINE

 EXISTING SEWER LINE

 EXISTING DRAIN ALIGNMENT

 DRAIN SEGMENT ID

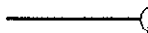
 LAND PARCELS

 NON-CONTRIBUTING AREAS

 EXISTING POND AREA
-  SURFACE DRAINAGE

 PROPOSED WEIR

 PROPOSED 54" ARCH PIPE

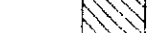
 PROPOSED BOX CULVERT

 PROPOSED PRESSURE LINE

 PROPOSED STORM DRAIN

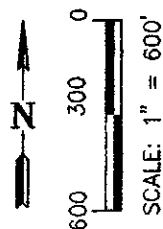
 PROPOSED POND OUTFALL

 PROPOSED STORM DRAIN SYSTEM ID

 PROPOSED STORM DRAIN OUTLET

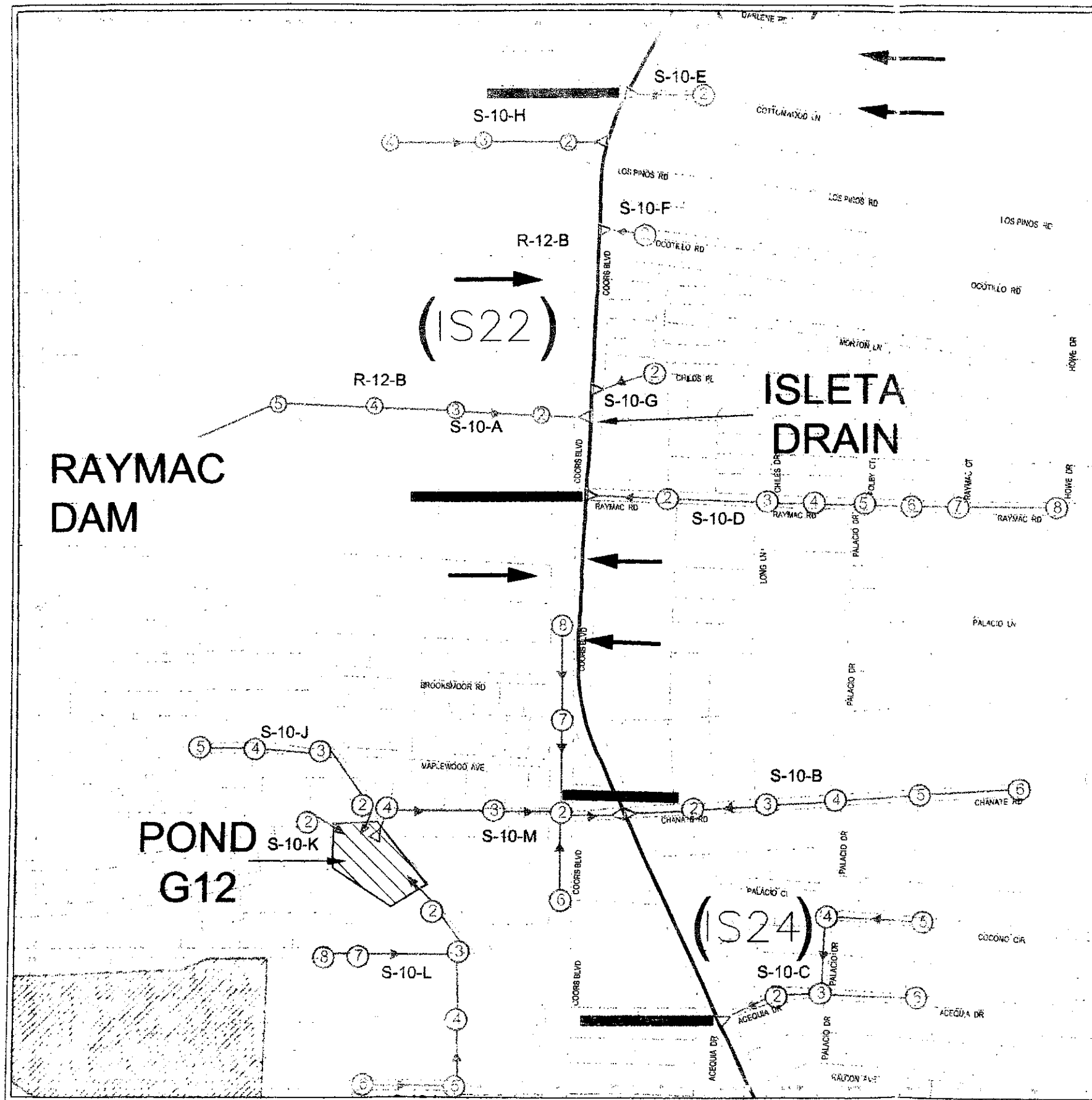
 PROPOSED POND OUTFALL

 PROPOSED POND AREA



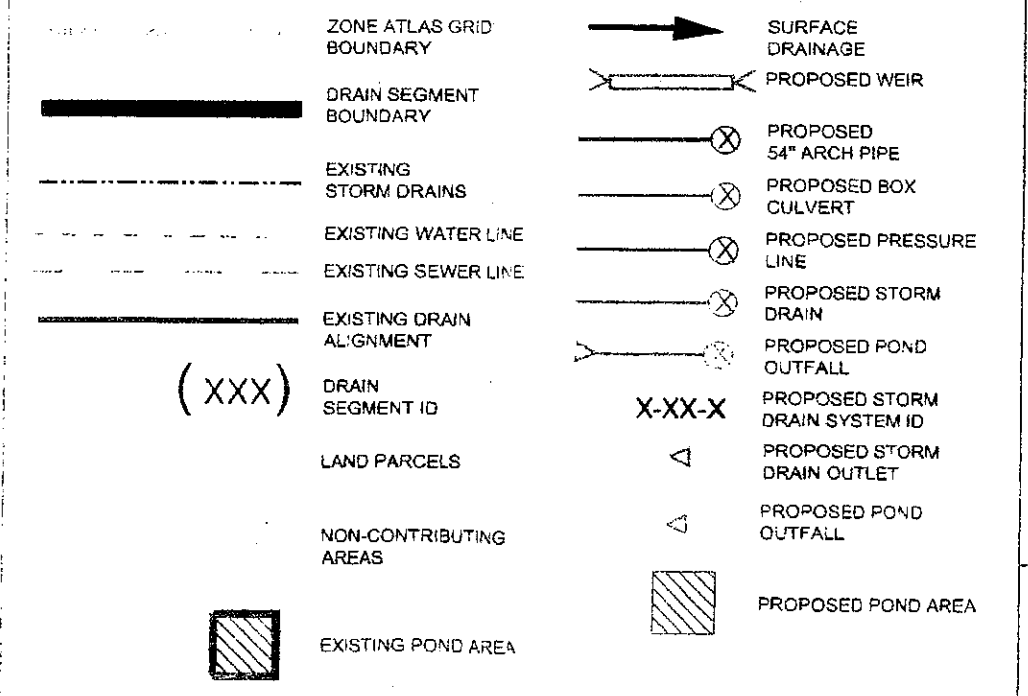
PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
R-12



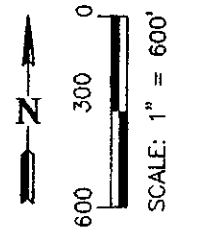
ZONE ATLAS GRID S-10
MRGCD DRAINS: ISLETA

ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
21	6	4911	1054	7.84
22	7	4909	1972	16.57
23	6	4909	1568	11.66
24	7	4906	1106	9.29
25	4	4904	2101	11.00



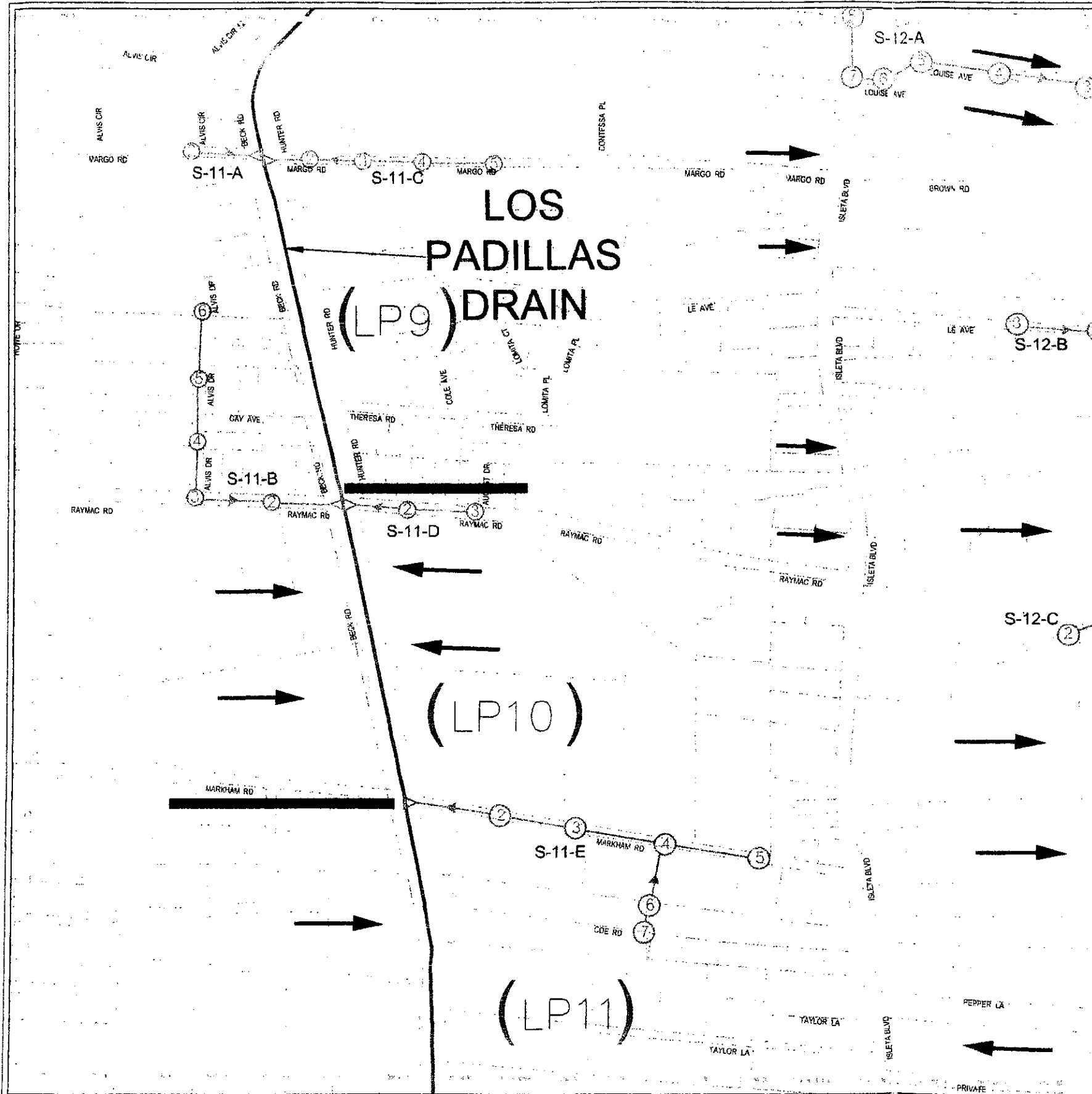
US Army Corps of Engineers
 ALBUQUERQUE DISTRICT

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 Water Resources
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 Environmental Sciences
 Landscape Architecture
 Planning



PROPOSED STORM DRAINS FOR
 ALBUQUERQUE SOUTHWEST VALLEY
 LOCAL DRAINAGE PLAN

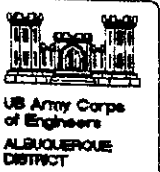
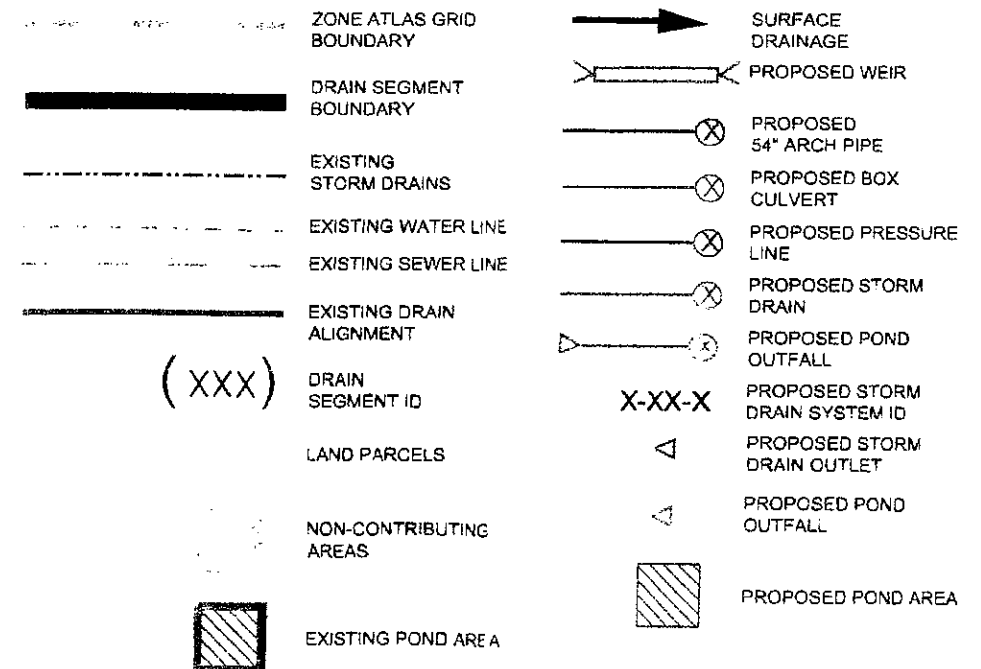
GRID
S-10



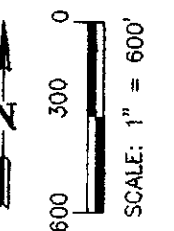
ZONE ATLAS GRID S-11 **MRGCD DRAINS: LOS PADILLAS**

LOS PADILLAS DRAIN

Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
9	9	4903	3121	22.00
10	6	4903	1372	7.37
11	7	4901	2136	12.80

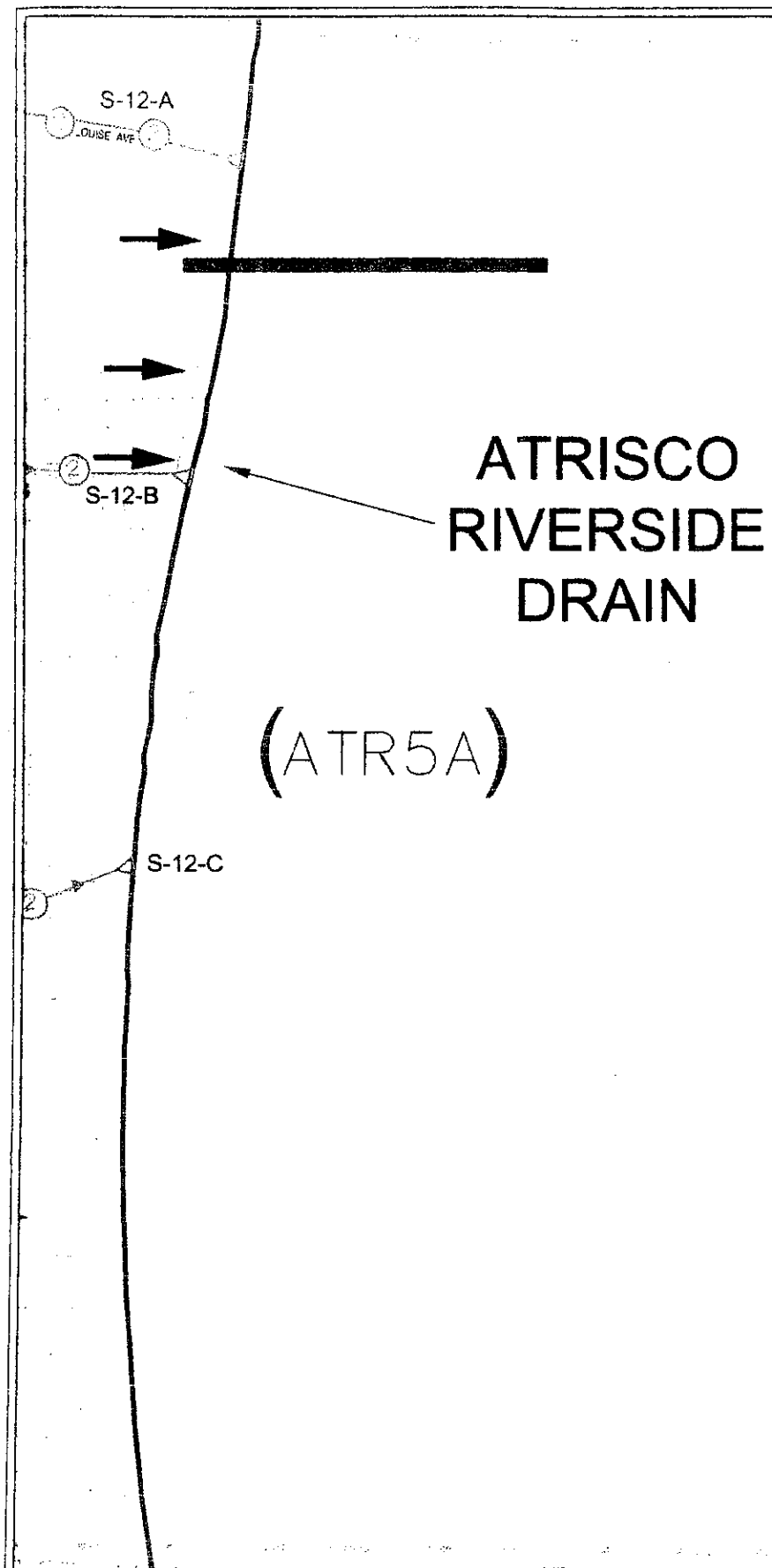


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PROPOSED STORM DRAINS FOR
 ALBUQUERQUE SOUTHWEST VALLEY
 LOCAL DRAINAGE PLAN

GRID
S-11

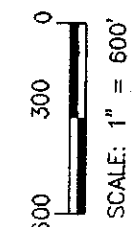
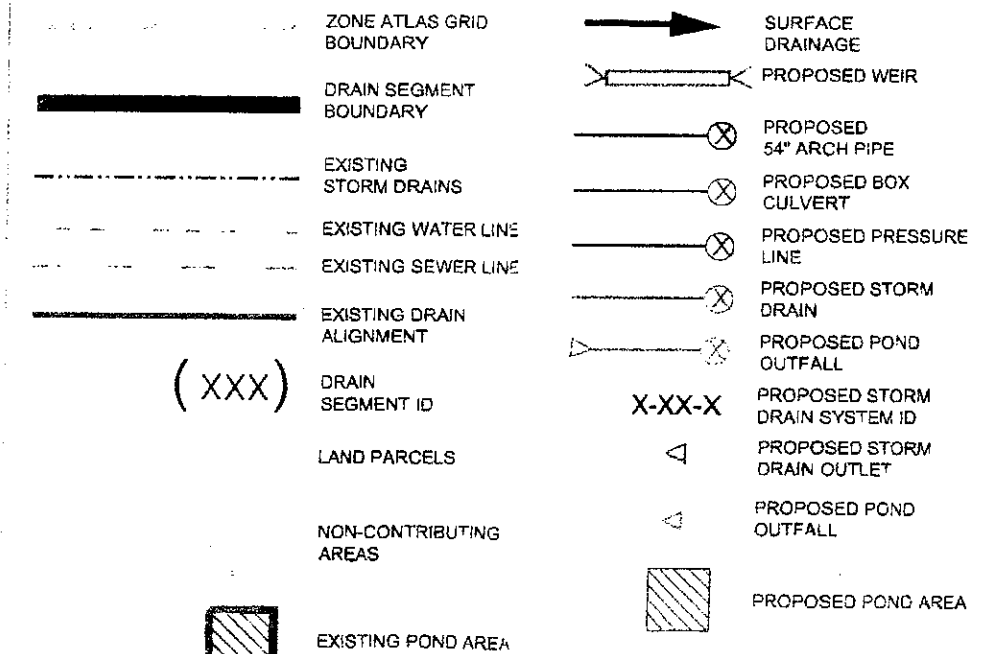


ZONE ATLAS GRID S-12

MRGCD DRAINS: ATRISCO RIVERSIDE

ATRISCO RIVERSIDE DRAIN

Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
4 D	7	4913	4366	11.23
5 A	6	4908	6255	15.51



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
S-12

ZONE ATLAS GRID T-11

MRGCD DRAINS: LOS PADILLAS

LOS PADILLAS DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
11	7	4901	2136	12.80
12	7	4898	790	4.73
13	6	4896	1754	9.42
14	7	4895	3121	18.70

ZONE ATLAS GRID BOUNDARY

DRAIN SEGMENT BOUNDARY

EXISTING STORM DRAINS

EXISTING WATER LINE

EXISTING SEWER LINE

EXISTING DRAIN ALIGNMENT

(XXX) DRAIN SEGMENT ID

LAND PARCELS

NON-CONTRIBUTING AREAS

EXISTING POND AREA

SURFACE DRAINAGE

PROPOSED WEIR

PROPOSED 54" ARCH PIPE

PROPOSED BOX CULVERT

PROPOSED PRESSURE LINE

PROPOSED STORM DRAIN

PROPOSED POND OUTFALL

X-XX-X PROPOSED STORM DRAIN SYSTEM ID

PROPOSED STORM DRAIN OUTLET

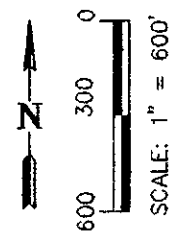
PROPOSED POND OUTFALL

PROPOSED POND AREA

US Army Corps of Engineers
ALBUQUERQUE DISTRICT

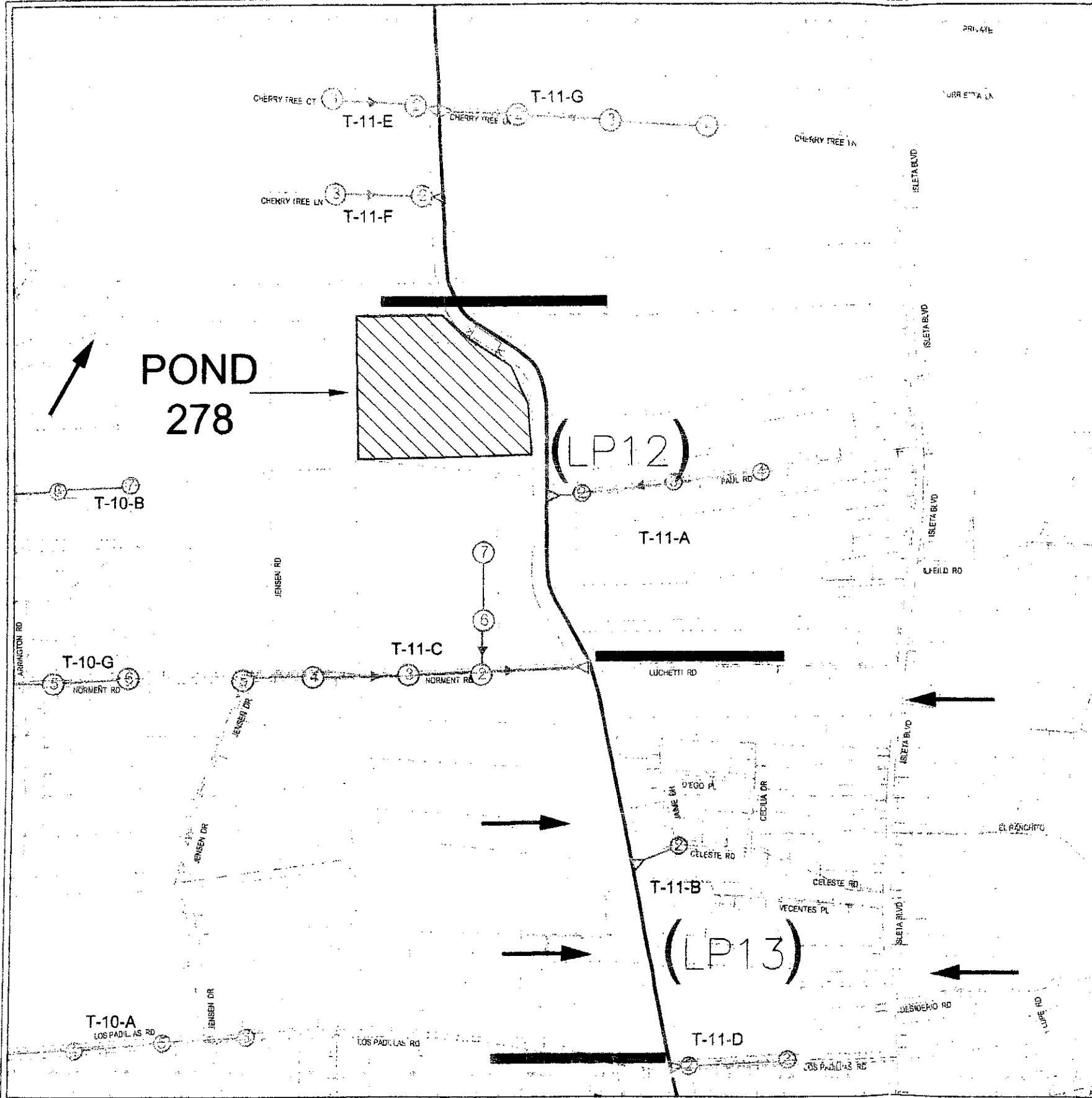
Resource Technology, Inc.
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Environmental Sciences

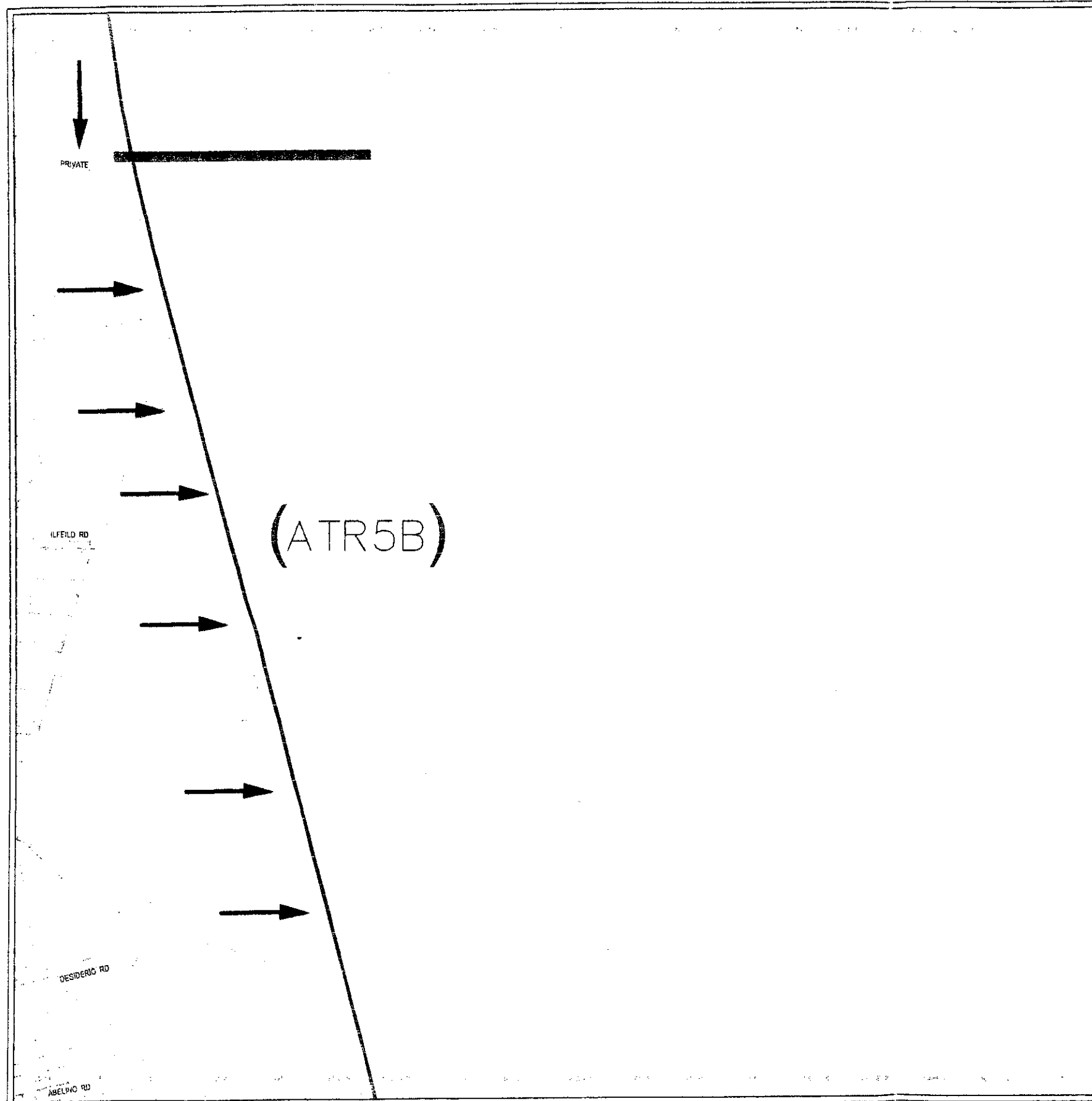
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PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
T-11



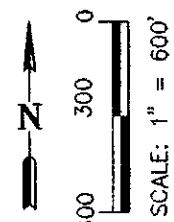
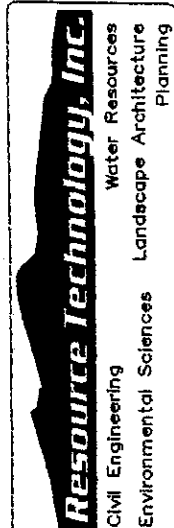
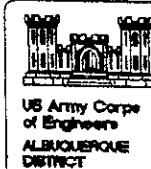
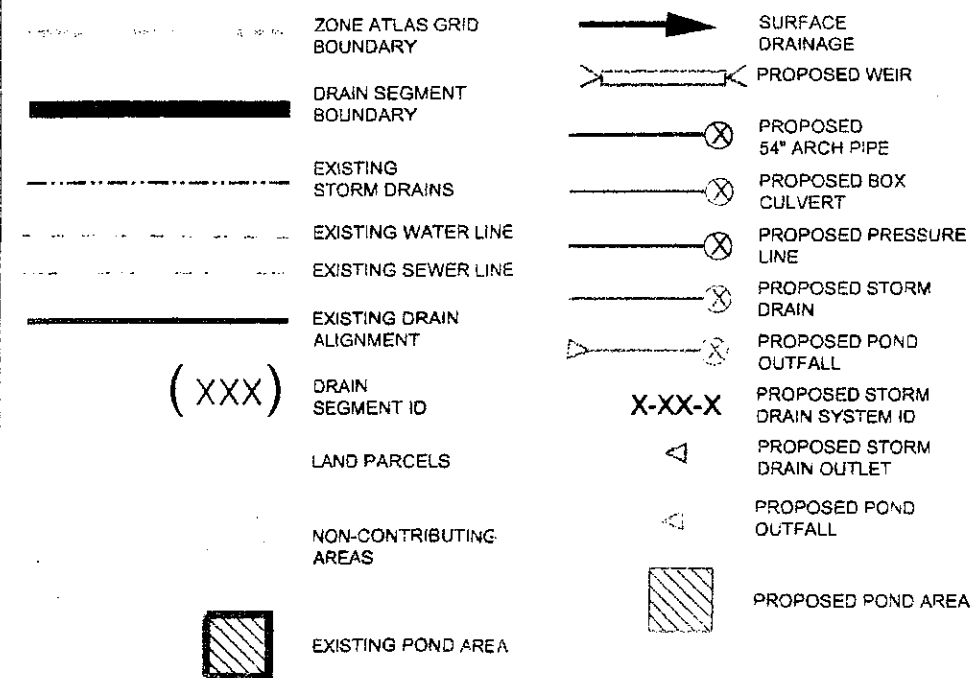


ZONE ATLAS GRID T-12

MRGCD DRAINS: ATRISCO RIVERSIDE

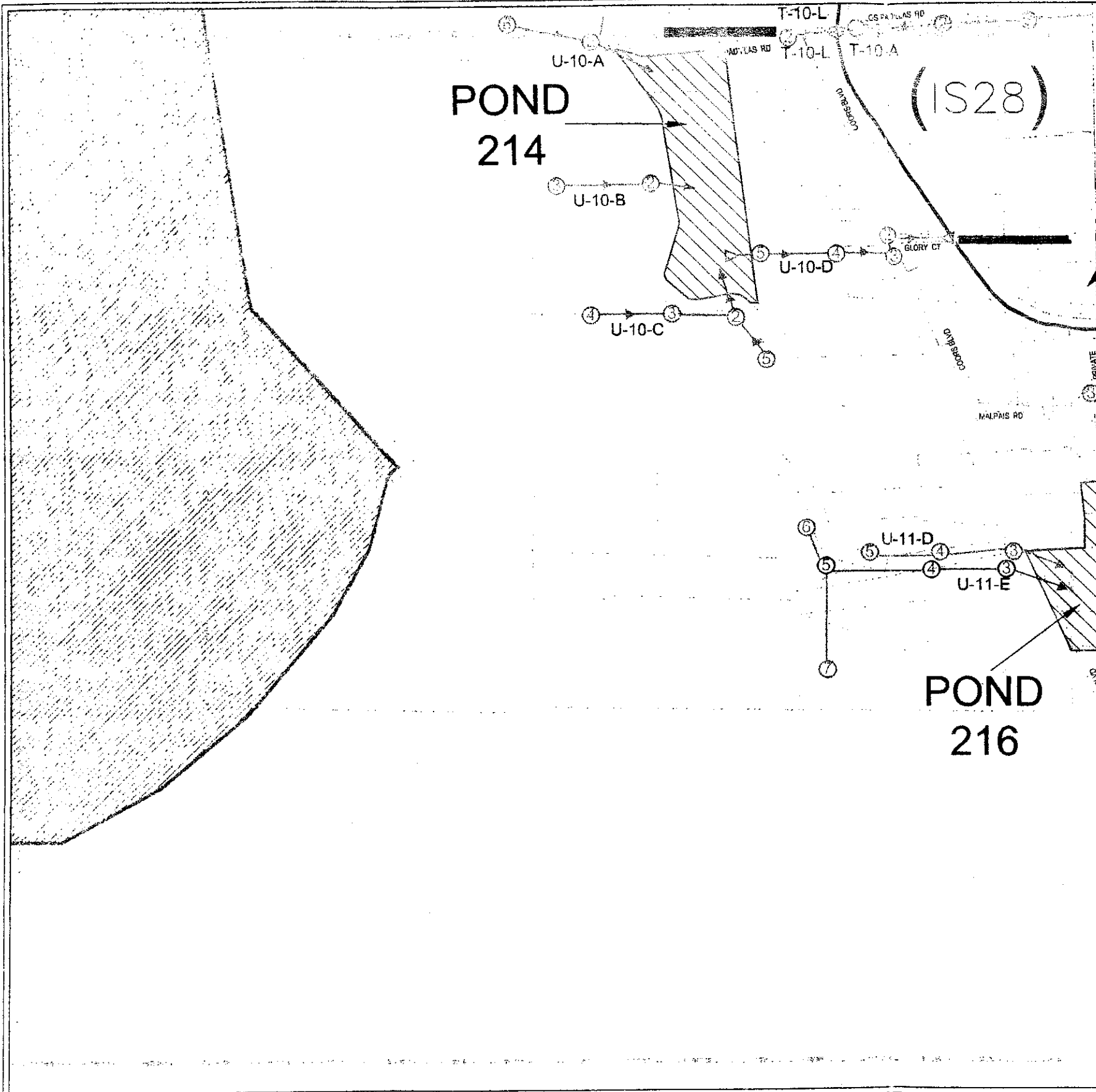
ATRISCO RIVERSIDE DRAIN

Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
5 A	6	4908	6255	15.51
5 B	3	4903	6377	5.27



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
T-12



ZONE ATLAS GRID U-10
MRGCD DRAINS: ISLETA

ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
28	6	4901	1169	8.70
29	6	4896	1399	10.41

- ZONE ATLAS GRID BOUNDARY

DRAIN SEGMENT BOUNDARY

EXISTING STORM DRAINS

EXISTING WATER LINE

EXISTING SEWER LINE

EXISTING DRAIN ALIGNMENT

(XXX) DRAIN SEGMENT ID

LAND PARCELS

NON-CONTRIBUTING AREAS

EXISTING POND AREA
- SURFACE DRAINAGE

PROPOSED WEIR

PROPOSED 54" ARCH PIPE

PROPOSED BOX CULVERT

PROPOSED PRESSURE LINE

PROPOSED STORM DRAIN

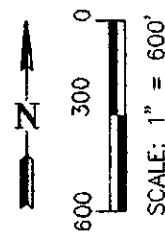
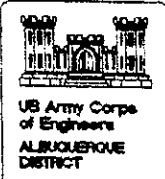
PROPOSED POND OUTFALL

X-XX-X PROPOSED STORM DRAIN SYSTEM ID

PROPOSED STORM DRAIN OUTLET

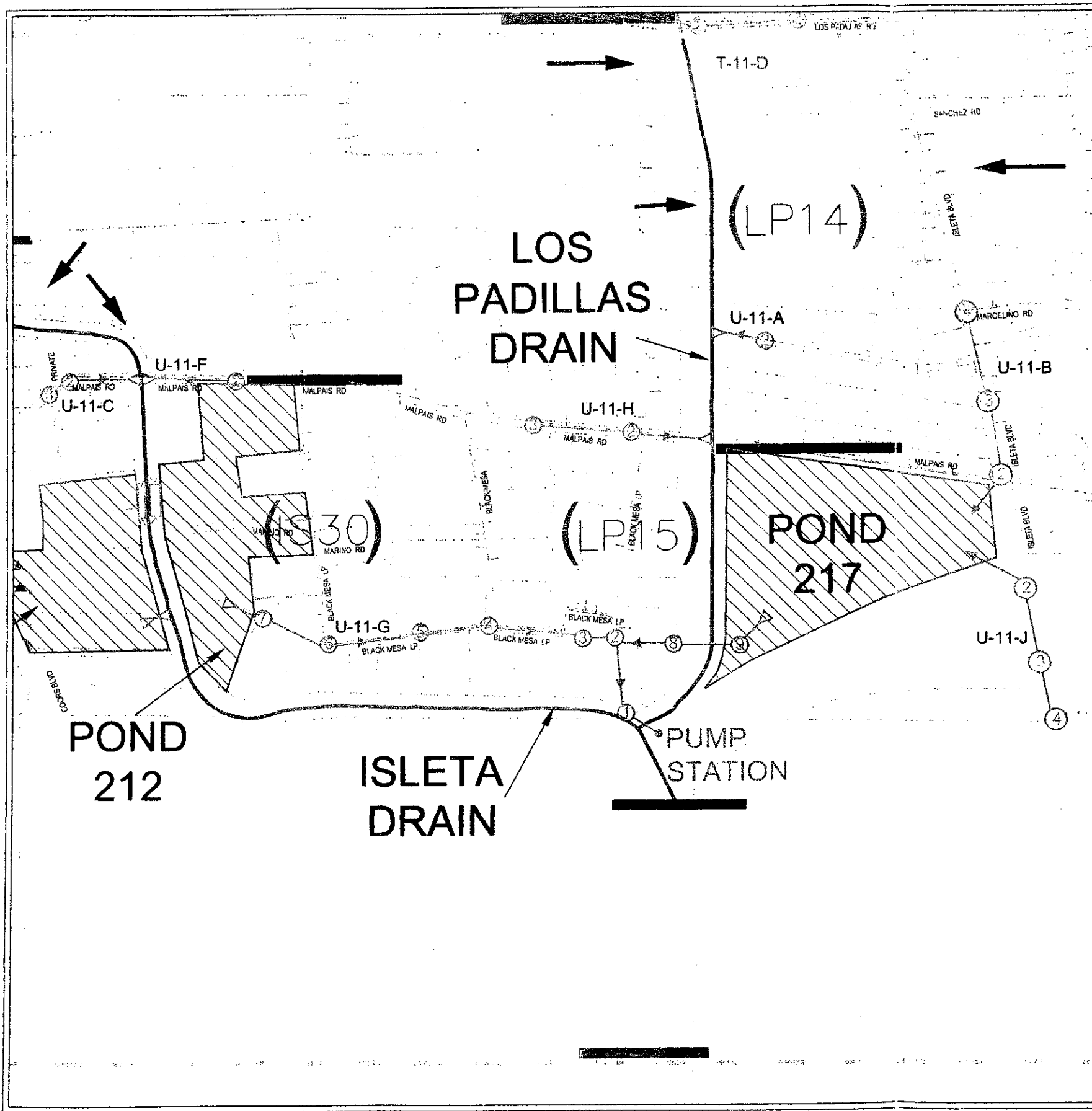
PROPOSED POND OUTFALL

PROPOSED POND AREA



PROPOSED STORM DRAINS FOR
 ALBUQUERQUE SOUTHWEST VALLEY
 LOCAL DRAINAGE PLAN

GRID
U-10



ZONE ATLAS GRID U-11
MRGCD DRAINS: ISLETA, LOS PADILLAS

ISLETA DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
29	6	4896	1399	10.41
30	3	4916	5475	15.84

LOS PADILLAS DRAIN				
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
14	7	4895	3121	18.70

ZONE ATLAS GRID BOUNDARY

DRAIN SEGMENT BOUNDARY

EXISTING STORM DRAINS

EXISTING WATER LINE

EXISTING SEWER LINE

EXISTING DRAIN ALIGNMENT

(XXX) DRAIN SEGMENT ID

LAND PARCELS

NON-CONTRIBUTING AREAS

EXISTING POND AREA

SURFACE DRAINAGE

PROPOSED WEIR

PROPOSED 54" ARCH PIPE

PROPOSED BOX CULVERT

PROPOSED PRESSURE LINE

PROPOSED STORM DRAIN

PROPOSED POND OUTFALL

PROPOSED STORM DRAIN SYSTEM ID

PROPOSED STORM DRAIN OUTLET

PROPOSED POND OUTFALL

PROPOSED POND AREA

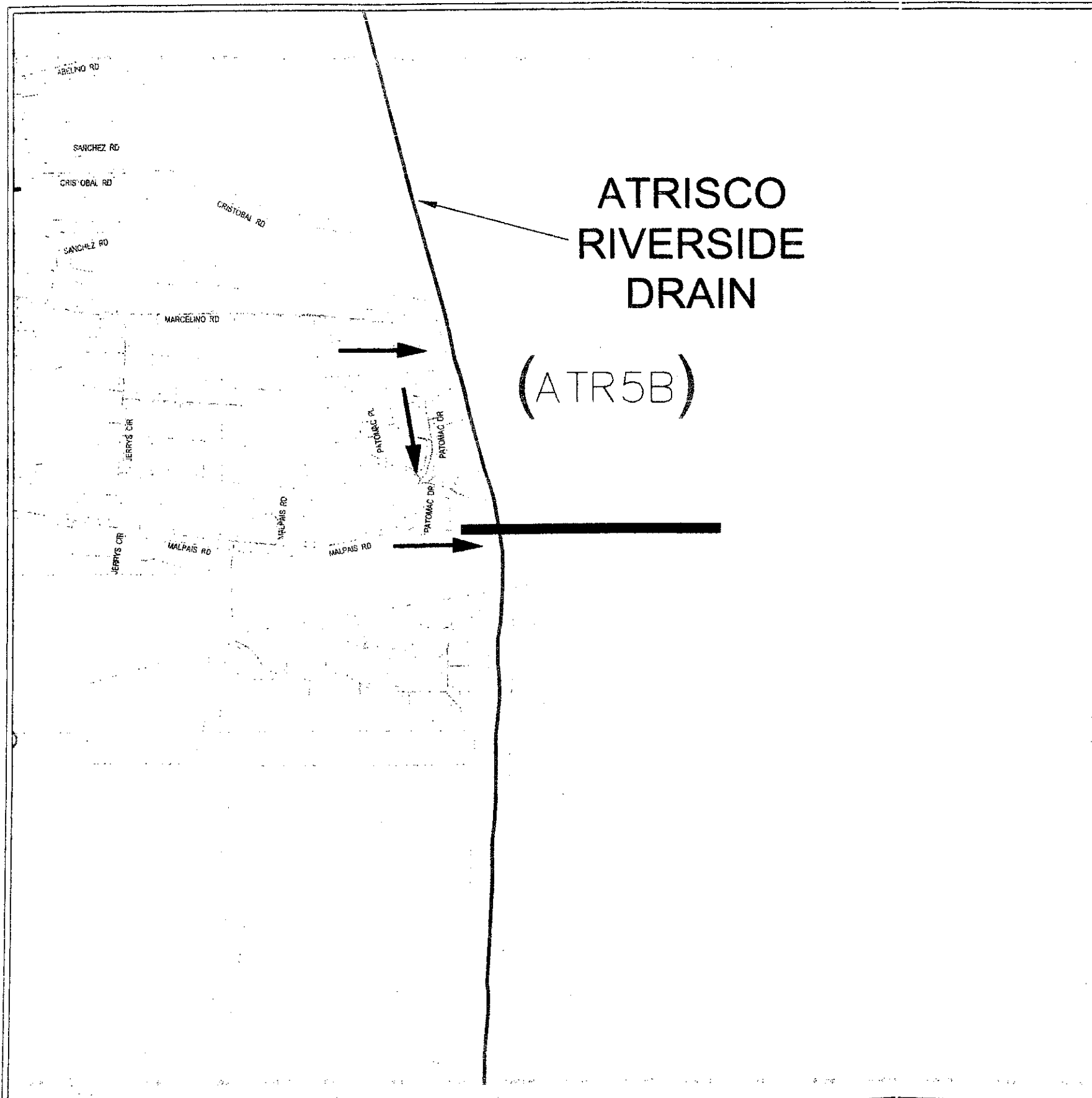
US Army Corps of Engineers
ALBUQUERQUE DISTRICT

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0
300
600
SCALE: 1" = 600'

PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
U-11



ATRISCO RIVERSIDE DRAIN

(ATR5B)

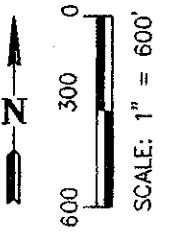
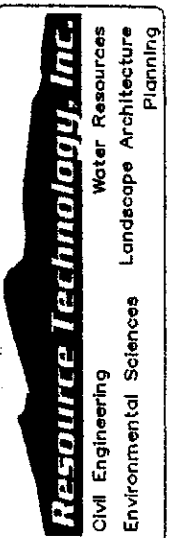
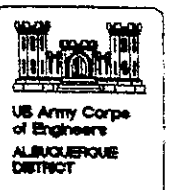
ZONE ATLAS GRID U-12

MRGCD DRAINS: ATRISCO RIVERSIDE

ATRISCO RIVERSIDE DRAIN

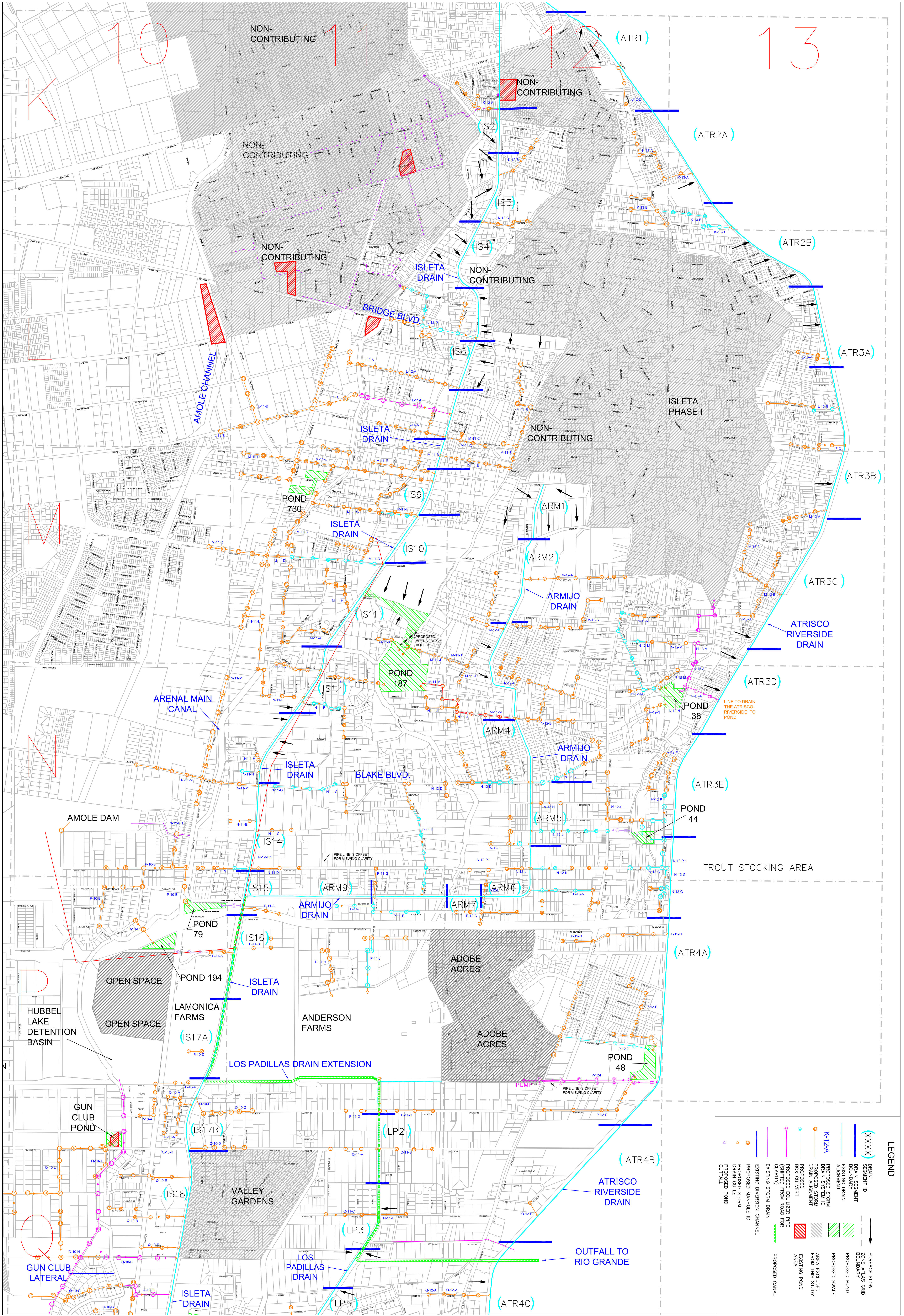
Segment ID	Depth (ft)	WS Elevation (ft)	Length (ft)	Cumulative Volume (ac-ft)
5 B	3	4903	6377	5.27

- ZONE ATLAS GRID BOUNDARY
- DRAIN SEGMENT BOUNDARY
- EXISTING STORM DRAINS
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING DRAIN ALIGNMENT
- (XXX) DRAIN SEGMENT ID
- LAND PARCELS
- NON-CONTRIBUTING AREAS
- EXISTING POND AREA
- SURFACE DRAINAGE
- PROPOSED WEIR
- PROPOSED 54" ARCH PIPE
- PROPOSED BOX CULVERT
- PROPOSED PRESSURE LINE
- PROPOSED STORM DRAIN
- PROPOSED POND OUTFALL
- X-XX-X PROPOSED STORM DRAIN SYSTEM ID
- PROPOSED STORM DRAIN OUTLET
- PROPOSED POND OUTFALL
- PROPOSED POND AREA



PROPOSED STORM DRAINS FOR
ALBUQUERQUE SOUTHWEST VALLEY
LOCAL DRAINAGE PLAN

GRID
U-12



Resource Technology, Inc.

Job No. 02-120	Date 10/29/2002	By	gdw	Checked By																	
Client		Project	SW Valley DMP																		
Subject	Storm Drain Design																				
		Basin		27-24		Frequency		100 Year Flood													
		Grid		K12		Length		24 Hours													
		Description		San Saulo		Conditions		Future													
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Str.No.	Discr.	Rim Elev.	Inv.	D	H.G.	Cover	A	K	V	Q	V ² /2g	E.G.	S _f	L	H _f	H _b	H _j	H _m	H _{out}	Total H _L	E.G.
		Approx. (ft)	(ft)	(in)	(ft)	(sq ft)	(sq ft)		(ft/sec)	cfs	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
K12B1	Outflow	4946.50	4940.00	36	4943.14	3.36	7.07		5.94	42	0.548	4943.69	0.00396	400	1.585			0.1371	0.137		4943.69
K12B2	MH/DI	4947.50	4941.75	36	4944.75	2.75	7.07	0.00492	5.94	42	0.548	4945.30	0.00396	400	0.607			0.0274		1.612	4945.30
K12B3	MH/DI	4947.50	4942.37	24	4945.37	2.13	3.14	0.00492	4.14	13	0.266	4945.58	0.00330	250	0.825			0.0105		0.618	4945.58
K12B4	MH	4948.00	4944.21	24	4946.21	1.79	3.14	0.00492	4.14	13	0.266	4946.47	0.00330	250	0.825			0.0133		0.838	4946.47
K12B5	MH/DI	4948.50	4945.04		4947.04	1.46						4947.31	0.00330					0.0133		0.838	4947.31
Total L = 1300														Total H _f =		3.84		Total Form Losses =		0.20	
17 H _f Friction Loss														18 H _b Bend Loss		19 H _j Junction Loss		20 H _m Manhole Loss = 0.06 V ² /2g		21 Exit Structure Losses = 0.25 V ² /2g	

S.W. VALLEY COST ESTIMATE SUMMARY

PROJECT NAME:		SYSTEM K-12-B				
BID	SPEC					
ITEM	ITEM	SHORT DESCRIPTION	UNIT	QTY	UNIT	COST
NO.	NO.				COST	ESTIMATE
1		OUTLET STRUCTURE *	1	1	16,000.00	16,000.00
2	910.010	24" RCP, IV	LF	500	27.86	13,931.65
3	910.014	30" RCP, IV	LF	0	35.08	0.00
4	910.018	36" RCP, IV	LF	800	45.72	36,575.96
5	910.020	42" RCP, IV	LF	0	61.87	0.00
6	910.022	48" RCP, IV	LF	0	73.73	0.00
7	910.024	54" RCP, IV	LF	0	89.77	0.00
8	910.026	60" RCP, IV	LF	0	107.38	0.00
9	910.030	72" RCP, IV	LF	0	149.68	0.00
10	801.011	30" WL PIPE, w/o FIT	LF	0	82.87	0.00
11	801.012	36" WL PIPE, w/o FIT	LF	0	132.10	0.00
12	801.013	42" WL PIPE, w/o FIT	LF	0	150.79	0.00
13	801.014	48" WL PIPE, w/o FIT	LF	0	161.56	0.00
14	EXTRAPOLATED	54" WL PIPE, w/o FIT	LF	0	182.00	0.00
15	EXTRAPOLATED	60" WL PIPE, w/o FIT	LF	0	202.00	0.00
20	915.010	CTH BSN, A, SG	EA	11	2,267.67	24,944.37
25	920.010	MH, 4' DIA, C, <6' D	EA	5	1,312.43	6,562.14
30		24" BOX CULVERT *	CY	0	360.80	0.00
31		30" BOX CULVERT *	CY	0	360.80	0.00
32		36" BOX CULVERT *	CY	0	360.80	0.00
33		42" BOX CULVERT *	CY	0	360.80	0.00
34		48" BOX CULVERT *	CY	0	360.80	0.00
35		54" BOX CULVERT *	CY	0	360.80	0.00
36		60" BOX CULVERT *	CY	0	360.80	0.00
37		72" BOX CULVERT *	CY	0	360.80	0.00
40	343.112	LOCAL PAVEMENT	SY	0	13.11	0.00
41	343.11	MAJOR LOCAL PAVEMENT	SY	1733	25.00	43,325.00
42	343.13	ARTERIAL PAVEMENT	SY	0	35.00	0.00
45	701.1	TRCH, 12' WIDE*	LF	1300	23.00	29,900.00
46	701.15	TRCH, 24' WIDE*	LF	0	46.00	0.00
47		TRCH, 20' WIDE(BARCELONA)*	LF	0	68.00	0.00
50		NEW EASEMENT *	AC	0.00	5,000.00	0.00
		SUBTOTAL				\$171,239.12
		PLUS 25% E&C				\$42,809.78
		TOTAL				\$214,048.89

NOTES:	BID ITEM:				
	1	COST PROVIDED BY AMAFCA			
	50	AREA BASED ON 20 FT. WIDE EASEMENT, UNIT COST PROVIDED BY BERNALILLO COUNTY			
	*	REFER TO FOLLOWING PAGE(S) FOR QUANTITY ESTIMATE			

Resource Technology, Inc.

Job No. 02-120	Date 11/11/2002	By gdw	Checked By	Basin Grid	1	Frequency	100 Year Flood
Client		Project SW Valley DMP		Description	K12	Length	24 Hours
Subject Storm Drain Design					Sunset Place	Conditions	Future

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Structure	Discr.	Rim Elev. Approx. (ft)	Inv. (ft)	D (in)	H.G. (ft)	Cover (ft)	A (sq ft)	K	V (ft/sec)	Q cfs	V ² /2g (ft)	E.G. (ft)	S _f (ft/ft)
K12D1	Outflow	4954.50	4946.00	48	4950.07	4.43	12.57		4.14	52	0.266	4950.33	
				48			12.57	0.00492	4.14	52	0.266		0.00131
K12D2	MH/DI	4952.50	4946.15		4950.15	2.35						4950.41	
				42			9.62	0.00492	4.05	39	0.255		0.00150
K12D3	MH/DI	4952.50	4947.26		4950.76	1.74						4951.01	
				24			3.14	0.00492	4.14	13	0.266		0.00330
K12D4	MH/DI	4953.50	4950.26		4952.26	1.24						4952.52	
Manning's n = 0.013 $K = 2.5(n)^{2/3} / R^{2/3}$ $S_f = K(V^{2/3}) / R^{2/3}$													

15	16	17	18	19	20	21	22
L (ft)	H _f (ft)	H _b (ft)	H _j (ft)	H _m (ft)	H _{exit} (ft)	Total H _L (ft)	E.G. (ft)
50	0.065				0.0665	0.066	4950.33
400	0.601			0.0133		0.079	4950.41
450	1.485			0.0128		0.613	4951.01
Total L = 900						Total H _f = 2.15	Total Form Losses = 1.498
							0.11

16 H _f Friction Loss	19 H _m Manhole Loss = 0.05 V ² /2g
17 H _b Bend Loss	20 Exit Structure Losses = 0.25 V ² /2g
18 H _j Junction Loss	

S.W. VALLEY STORM DRAIN COST ESTIMATE SUMMARY

PROJECT NAME: SYSTEM K-12-D						
BID	SPEC					
ITEM	ITEM	SHORT DESCRIPTION	UNIT	QTY	UNIT	COST
NO.	NO.				COST	ESTIMATE
1		OUTLET STRUCTURE *		1	16,000.00	16,000.00
2	910.010	24" RCP, IV	LF	450	27.86	12,538.48
3	910.014	30" RCP, IV	LF	0	35.08	0.00
4	910.018	36" RCP, IV	LF	0	49.02	0.00
5	910.020	42" RCP, IV	LF	400	59.17	23,666.28
6	910.022	48" RCP, IV	LF	50	73.73	3,686.56
7	910.024	54" RCP, IV	LF	0	89.77	0.00
8	910.026	60" RCP, IV	LF	0	107.38	0.00
9	910.030	72" RCP, IV	LF	0	149.68	0.00
10	801.011	30" WL PIPE, w/o FIT	LF	0	82.87	0.00
11	801.012	36" WL PIPE, w/o FIT	LF	0	132.10	0.00
12	801.013	42" WL PIPE, w/o FIT	LF	0	150.79	0.00
13	801.014	48" WL PIPE, w/o FIT	LF	0	161.56	0.00
14	EXTRAPOLATED	54" WL PIPE, w/o FIT	LF	0	182.00	0.00
15	EXTRAPOLATED	60" WL PIPE, w/o FIT	LF	0	202.00	0.00
20	915.010	CTH BSN, A, SG	EA	10	2,267.67	22,676.70
25	920.010	MH, 4' DIA, C, <6' D	EA	4	1,312.43	5,249.71
30		24" BOX CULVERT *	CY	0	360.80	0.00
31		30" BOX CULVERT *	CY	0	360.80	0.00
32		36" BOX CULVERT *	CY	0	360.80	0.00
33		42" BOX CULVERT *	CY	0	360.80	0.00
34		48" BOX CULVERT *	CY	0	360.80	0.00
35		54" BOX CULVERT *	CY	0	360.80	0.00
36		60" BOX CULVERT *	CY	0	360.80	0.00
37		72" BOX CULVERT *	CY	0	360.80	0.00
40	343.112	LOCAL PAVEMENT	SY	1200	13.11	15,729.52
41	343.11	MAJOR LOCAL PAVEMENT	SY	0	25.00	0.00
42	343.13	ARTERIAL PAVEMENT	SY	0	35.00	0.00
45	701.1	TRCH, 12' WIDE*	LF	900	23.00	20,700.00
46	701.15	TRCH, 24' WIDE*	LF	0	46.00	0.00
47		TRCH, 20' WIDE(BARCELONA)*	LF	0	68.00	0.00
50		NEW EASEMENT *	AC	0.00	5,000.00	0.00
		SUBTOTAL				\$120,247.25
		PLUS 25% E&C				\$30,061.81
		TOTAL				\$150,309.07

NOTES:	BID ITEM:				
	1	COST PROVIDED BY AMAFCA			
	50	AREA BASED ON 20 FT. WIDE EASEMENT, UNIT COST PROVIDED BY BERNALILLO COUNTY			
	*	REFER TO FOLLOWING PAGE(S) FOR QUANTITY ESTIMATE			

Resource Technology, Inc.

Job No. 02-120	Date 11/11/2002	By gdw	Checked By	Basin Grid	18/2	Frequency	100 Year Flood
Client		Project SW Valley DMP		Description	K13	Length	24 Hours
Subject Storm Drain Design					Gonzales & Sunset	Conditions	Future

	15	16	17	18	19	20	21	22
L (ft)								
H _i (ft)								
H _b (ft)								
H _m (ft)								
H _{out} (ft)								
Total H _t (ft)								
E.G. (ft)								

	15	16	17	18	19	20	21	22
L (ft)	250	0.327						
H _i (ft)	450	0.589						
H _b (ft)	350	0.525						
H _m (ft)	350	0.525						
H _{out} (ft)	370	0.562						
Total H _t (ft)	250	0.825						
E.G. (ft)	300	0.990						
Total L = 2320	Total H _t =		4.34		Total Form Losses =		1.003	
								0.16

16 H _i Friction Loss	19 H _m Manhole Loss = 0.05 V ² /2g
17 H _b Bend Loss	20 Exit Structure Losses = 0.25 V ² /2g
18 H _j Junction Loss	

Structure	Discr.	Rim Elev. Approx. (ft)	Inv. (ft)	D (in)	H.G. (ft)	Cover (ft)	A (sq ft)	K	V (ft/sec)	Q (cfs)	V ² /2g (ft)	E.G. (ft)	S _f (ft/ft)
K13A1	Outflow	4948.00	4941.00	48	4945.07	2.93	12.57		4.14	52	0.266	4945.33	
K13A2	MI	4947.50	4941.41	48	4945.41	2.09	12.57	0.00492	4.14	52	0.266	4945.67	0.00131
K13A3	MH/DI	4949.50	4942.01	48	4946.01	3.49	12.57	0.00492	4.14	52	0.266	4946.28	0.00131
K13A4	MI	4950.00	4943.05	42	4946.55	3.45	9.62	0.00492	4.05	39	0.255	4946.80	0.00150
K13A5	MH/DI	4950.00	4943.59	42	4947.09	2.91	9.62	0.00492	4.05	39	0.255	4947.34	0.00150
K13A6	MH/DI	4950.50	4944.66	36	4947.66	2.84	7.07	0.00492	3.68	26	0.210	4947.87	0.00152
K13A7	MI	4950.50	4946.50	24	4948.50	2.00	3.14	0.00492	4.14	13	0.266	4948.76	0.00330
K13A8	MH/DI	4951.00	4947.50	24	4949.50	1.50	3.14	0.00492	4.14	13	0.266	4949.77	0.00330

Manning's n	0.013
K = 2g(n) ² /2.21	S _f = K(V ² /2g)/R ^{4/3}

S.W. VALLEY STORM DRAIN COST ESTIMATE SUMMARY

PROJECT NAME:		SYSTEM K-13-A				
BID	SPEC					
ITEM	ITEM	SHORT DESCRIPTION	UNIT	QTY	UNIT	COST
NO.	NO.				COST	ESTIMATE
1		OUTLET STRUCTURE *	1	1	16,000.00	16,000.00
2	910.010	24" RCP, IV	LF	550	27.86	15,324.81
3	910.014	30" RCP, IV	LF	0	35.08	0.00
4	910.018	36" RCP, IV	LF	370	47.37	17,526.18
5	910.020	42" RCP, IV	LF	700	59.17	41,416.00
6	910.022	48" RCP, IV	LF	700	70.47	49,330.74
7	910.024	54" RCP, IV	LF	0	89.77	0.00
8	910.026	60" RCP, IV	LF	0	107.38	0.00
9	910.030	72" RCP, IV	LF	0	149.68	0.00
10	801.011	30" WL PIPE, w/o FIT	LF	0	82.87	0.00
11	801.012	36" WL PIPE, w/o FIT	LF	0	132.10	0.00
12	801.013	42" WL PIPE, w/o FIT	LF	0	150.79	0.00
13	801.014	48" WL PIPE, w/o FIT	LF	0	161.56	0.00
14	EXTRAPOLATED	54" WL PIPE, w/o FIT	LF	0	182.00	0.00
15	EXTRAPOLATED	60" WL PIPE, w/o FIT	LF	0	202.00	0.00
20	915.010	CTH BSN, A, SG	EA	10	2,267.67	22,676.70
25	920.010	MH, 4' DIA, C, <6' D	EA	8	1,312.43	10,499.43
30	*	24" BOX CULVERT	CY	0	360.80	0.00
31	*	30" BOX CULVERT	CY	0	360.80	0.00
32	*	36" BOX CULVERT	CY	0	360.80	0.00
33	*	42" BOX CULVERT	CY	0	360.80	0.00
34	*	48" BOX CULVERT	CY	0	360.80	0.00
35	*	54" BOX CULVERT	CY	0	360.80	0.00
36	*	60" BOX CULVERT	CY	0	360.80	0.00
37	*	72" BOX CULVERT	CY	0	360.80	0.00
40	343.112	LOCAL PAVEMENT	SY	3093	13.11	40,542.84
41	343.11	MAJOR LOCAL PAVEMENT	SY	0	25.00	0.00
42	343.13	ARTERIAL PAVEMENT	SY	0	35.00	0.00
45	701.1	TRCH, 12' WIDE*	LF	2320	23.00	53,360.00
46	701.15	TRCH, 24' WIDE*	LF	0	46.00	0.00
47		TRCH, 20' WIDE(BARCELONA)*	LF	0	68.00	0.00
50		NEW EASEMENT *	AC	0.00	5,000.00	0.00
		SUBTOTAL				\$266,676.68
		PLUS 25% E&C				\$66,669.17
		TOTAL				\$333,345.86

NOTES:	BID ITEM:					
	1	COST PROVIDED BY AMAFCA				
	50	AREA BASED ON 20 FT. WIDE EASEMENT, UNIT COST PROVIDED BY BERALILLO COUNTY				
	*	REFER TO FOLLOWING PAGE(S) FOR QUANTITY ESTIMATE				

Resource Technology, Inc.

Job No. 02-120	Date 12/5/2002	By gdw	Checked By	66/718/722/724	Frequency 100 Year Flood
Client		Project SW Valley DMP		L11	Length 24 Hours
Subject Storm Drain Design				Pressure Pipe from Sage to Isleta Conditions	Future

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Structure	Disor.	Number of Drop Inlets	Rim Elev. Approx. (ft)	Inv. (ft)	D (in)	H.G. (ft)	Cover (ft)	A (sq ft)	K	V (ft/sec)	Q cfs	V ² /2g (ft)	E.G. (ft)	S _r (ft/ft)
L11B1	Outflow		4939.00	4935.50	30		1.00	4.91		16.30	80	4.124		0.00233
L11B2	MH		4940.00	4936.50	30		1.00	4.91		16.30	80	4.124		0.00000
L11B3	MH		4940.00	4936.50	30		1.00	4.91		16.30	80	4.124		0.00444
L11B4	MH		4942.00	4938.50	30		1.00	4.91		16.30	80	4.124		0.00444
L11B5	MH		4944.00	4940.50	30		1.00	4.91		16.30	80	4.124		0.01333
L11B6	MH		4950.00	4946.50	30		1.00	4.91		16.30	80	4.124		0.14286
L11B7	MH		4970.00	4966.50	30		1.00	4.91		16.30	80	4.124		0.03333
L11B8	MH/DI	3	4975.00	4971.50			1.00							

17 H _r Friction Loss	20 H _m Manhole Loss = 0.05 V ² /2g
18 H _b Bend Loss	21 Exit Structure Losses = 0.25 V ² /2g
19 H _j Junction Loss	

Resource Technology, Inc.

Job No.	02-120	Date	11/20/2002	By	gdu	Checked By		Basin	Grid	Frequency	100 Year Flood											
Client	SW Valley DWP	Project	SW Valley DWP					Description	L11	Length	24 Hours											
Subject	Storm Drain Design									Conditions	Future											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Structure	Discr.	Rim Elev.	Inv.	D	H.G.	Cover	A	K	V	Q	V/2g	E.G.	S _i	L	H _i	H _b	H _j	H _m	H _{out}	Total H _t	E.G.	
		Approx. (ft)	(ft)	(in)	(ft)	(ft)	(sq ft)		(ft/sec)	cfs	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
L11B8	MH/DI	4982.50	4975.68	36	4978.76	3.74	7.07	11.32	80	1.989	4980.75	0.01263	0.01263	250	3.158			0.0964		0.099	4980.75	
L11B9	MH	4987.00	4978.01	36	4982.01	4.99	7.07	0.00492	10.61	75	1.748	4983.75	0.03341	450	15.033			0.0874		3.246	4983.75	
L11B10	MH	5000.00	4994.72	30	4997.22	2.78	4.91	0.00492	15.28	75	3.625	5000.84	0.00465	400	1.819			0.1812		15.214	5000.84	
L11B11	MH/DI	5002.00	4998.07	36	4999.07	2.93	7.07	0.00492	6.37	45	0.629	4999.70	0.00275	450	1.238			0.0315		1.851	4999.70	
L11B12	MH	5003.00	4997.33	36	5000.33	2.87	7.07	0.00492	4.95	35	0.381	5000.71	0.00275	450	1.238			0.0190		1.257	5000.71	
L11B13	MH	5004.00	4998.58	36	5001.58	2.42	7.07	0.00492	4.95	35	0.381	5001.97	0.00275	450	1.238			0.0190		1.257	5001.97	
L11B14	MH/DI	5008.00	4999.84	36	5002.84	3.16	7.07	0.00492	4.95	35	0.381	5003.22	0.00195	450	0.879			0.0190		1.257	5003.22	
L11B15	MH	5008.00	5001.73	24	5003.73	4.27	3.14	0.00492	3.18	10	0.157	5003.88	0.00195	450	0.879			0.0079		0.886	5003.88	
L11B16	MH/DI	5012.00	5002.61	24	5004.61	7.39	3.14	0.00492	3.18	10	0.157	5004.77	0.00195	450	0.879			0.0079		0.886	5004.77	
L11B10	MH	5002.00	4984.22	36	4997.22	4.78	7.07	0.00492	4.24	30	0.280	4997.50	0.00202		0.000			0.0140		0.014	4997.50	
L11B17	MH	5004.00	4984.22	36	4997.22	6.78	7.07	0.00492	4.24	30	0.280	4997.50	0.00202	350	0.707			0.0140		0.721	4997.50	
L11B18	MH/DI	5005.00	4984.80	36	4997.80	7.20	7.07	0.00492	4.24	30	0.280	4998.08	0.00202	280	0.566			0.0140		0.590	4998.08	
L11B19	MH	5006.00	4988.65	24	5000.95	5.05	3.14	0.00492	6.37	20	0.829	5001.58	0.00781	400	3.124			0.0315		3.155	5001.58	
L11B20	MH/DI	5008.50	5002.11	24	5004.11	4.39	3.14	0.00492	6.37	20	0.829	5004.74	0.00781	400	3.124			0.0315		3.155	5004.74	
L11B21	MH/DI	5008.00	5002.21	24	5004.21	3.79	3.14	0.00492	1.59	5	0.039	5004.25	0.00049	200	0.088			0.0020		0.100	5004.25	
L11B14	MH/DI	5008.00	5000.84	24	5002.84	3.16	3.14	0.00492	3.18	10	0.157	5003.00	0.00195		0.000			0.0079		0.008	5003.00	
L11B22	MH	5007.00	5001.49	24	5003.49	3.51	3.14	0.00492	3.18	10	0.157	5003.65	0.00195	330	0.644			0.0079		0.652	5003.65	
L11B23	MH	5008.00	5002.22	24	5004.22	3.78	3.14	0.00492	3.18	10	0.157	5004.38	0.00195	370	0.722			0.0079		0.730	5004.38	
L11B24	MH/DI	5010.00	5002.95	24	5004.95	5.05	3.14	0.00492	3.18	10	0.157	5005.11	0.00195	370	0.722			0.0079		0.730	5005.11	
														Total L = 4980		Total H _t =		33.10 Total Form Losses =				0.58
														16 H _t Friction Loss				19 H _t Manhole Loss = 0.05 V/2g				
														17 H _t Bend Loss				20 Est. Structure Losses = 0.25 V/2g				
														18 H _t Junction Loss								

Manning's n0.013

K = 26(n)^{2/3}2.21S_r = KV^{2/3}/R^{2/3}

S.W. VALLEY STORM DRAIN COST ESTIMATE SUMMARY

PROJECT NAME:		SYSTEM L-11-B				
BID	SPEC					
ITEM	ITEM	SHORT DESCRIPTION	UNIT	QTY	UNIT	COST
NO.	NO.				COST	ESTIMATE
1		OUTLET STRUCTURE *	1	1	16,000.00	16,000.00
2	910.010	24" RCP, IV	LF	2970	27.06	80,362.10
3	910.014	30" RCP, IV	LF	450	34.47	15,511.74
4	910.018	36" RCP, IV	LF	2630	45.72	120,243.46
5	910.020	42" RCP, IV	LF	0	61.87	0.00
6	910.022	48" RCP, IV	LF	0	73.73	0.00
7	910.024	54" RCP, IV	LF	0	89.77	0.00
8	910.026	60" RCP, IV	LF	0	107.38	0.00
9	910.030	72" RCP, IV	LF	0	149.68	0.00
10	801.010	24" WL PIPE, w/o FIT	LF	0	69.51	0.00
1	801.011	30" WL PIPE, w/o FIT	LF	0	82.87	0.00
11	801.012	36" WL PIPE, w/o FIT	LF	0	132.10	0.00
12	801.013	42" WL PIPE, w/o FIT	LF	0	150.79	0.00
13	801.014	48" WL PIPE, w/o FIT	LF	0	161.56	0.00
14	EXTRAPOLATED	54" WL PIPE, w/o FIT	LF	0	182.00	0.00
15	EXTRAPOLATED	60" WL PIPE, w/o FIT	LF	0	202.00	0.00
20	915.010	CTH BSN, A, SG	EA	41	2,267.67	92,974.47
25	920.010	MH, 4' DIA, C, <6' D	EA	24	1,273.19	30,556.53
30		24" BOX CULVERT *	CY	0	360.80	0.00
31		30" BOX CULVERT *	CY	0	360.80	0.00
32		36" BOX CULVERT *	CY	0	360.80	0.00
33		42" BOX CULVERT *	CY	0	360.80	0.00
34		48" BOX CULVERT *	CY	0	360.80	0.00
35		54" BOX CULVERT *	CY	0	360.80	0.00
36		60" BOX CULVERT *	CY	0	360.80	0.00
37		72" BOX CULVERT *	CY	0	360.80	0.00
40	343.112	LOCAL PAVEMENT	SY	0	11.98	0.00
41	343.11	MAJOR LOCAL PAVEMENT	SY	4707	25.00	117,666.67
42	343.13	ARTERIAL PAVEMENT	SY	1427	35.00	49,933.33
1	701.100	TRCH, 12' WIDE	LF	8470	23.00	194,810.00
2	701.15	TRCH, 24' WIDE*	LF	0	46.00	0.00
3		TRCH, 20' WIDE(BARCELONA)*	LF	0	68.00	0.00
50		NEW EASEMENT *	AC	1.78	5,000.00	8,884.30
SUBTOTAL						\$726,942.60
PLUS 25% E&C						\$181,735.65
TOTAL						\$908,678.24

NOTES:	BID ITEM:				
	1	COST PROVIDED BY AMAFCA			
	50	AREA BASED ON 20 FT. WIDE EASEMENT, UNIT COST PROVIDED BY BERNALILLO COUNTY			
	*	REFER TO FOLLOWING PAGE(S) FOR QUANTITY ESTIMATE			

Resource Technology, Inc.

Job No.	02-120	Date	11/18/2002	By	gtdw	Checked By	100 Year Flood														
Client				Project	SW Valley DMP		M11														
Subject	Storm Drain Design						Arenal and Coors to Isleta Drain Conditions														
							15	16	17	18	19	20	21	22							
Structure	Discr.	Rim Elev. Approx. (ft)	Inv. (ft)	D* (in)	H.G. (ft)	Cover (ft)	A (sq ft)	K	V (ft/sec)	Q cfs	V ² /2g (ft)	E.G. (ft)	S _i (ft/ft)	L (ft)	H _i (ft)	H _b (ft)	H ₁ (ft)	H _m (ft)	H _{out} (ft)	Total H _t (ft)	E.G. (ft)
M11D1	Outflow	4935.00	4929.00	48	4933.07	1.93	55.00		4.21	231.5	0.275	4933.34	0.00101	250	0.253				0.0688	0.069	4933.34
M11D2	MH	4935.00	4929.34	48	4933.34	1.66	55.00		4.21	231.5	0.275	4933.61	0.00101	300	0.303			0.0138	0.0138	0.266	4933.61
M11D3	MH/DI	4935.50	4929.65	48	4933.65	1.85	49.00		4.21	231.5	0.275	4933.93	0.00104	370	0.385			0.0138	0.0138	0.317	4933.93
M11D4	MH	4935.50	4930.05	48	4934.05	1.45	49.00		4.19	205.5	0.273	4934.32	0.00104	450	0.468			0.0137	0.0137	0.398	4934.32
M11D5	MH	4935.50	4930.53	48	4934.53	1.97	49.00		4.19	205.5	0.273	4934.81	0.00104	370	0.385			0.0137	0.0137	0.482	4934.81
M11D6	MH	4935.50	4930.93	48	4934.93	1.57	49.00		4.19	205.5	0.273	4935.20	0.00104	450	0.468			0.0137	0.0137	0.398	4935.20
M11D7	MH/DI	4944.00	4931.41	36	4935.41	8.59	7.07	0.00492	7.36	52	0.840	4935.69	0.00607	310	1.883			0.0420	0.0420	1.925	4938.18
M11D8	MH/DI	4948.00	4934.34	24	4937.34	10.66	3.14	0.00492	16.55	52	4.254	4938.18	0.05279	310	16.366			0.2127	0.2127	16.578	4958.17
M11D9	MH/DI	4964.00	4951.92	30	4953.92	10.08	4.91	0.00492	10.59	52	1.743	4958.17	0.01606	330	5.300			0.0871	0.0871	5.387	4961.04
M11D10	MH	4971.00	4956.80	30	4959.30	11.70	4.91	0.00492	10.59	52	1.743	4961.04	0.01606	330	5.300			0.0871	0.0871	5.387	4966.43
M11D11	MH/DI	4978.00	4952.19	24	4964.89	13.31	3.14	0.00492	8.28	26	1.064	4966.43	0.01320	380	5.015			0.0532	0.0532	5.068	4970.82
M11D12	MH	4984.00	4987.76	24	4969.76	14.24	3.14	0.00492	8.28	26	1.064	4970.82	0.01320	380	5.015			0.0532	0.0532	5.068	4975.89
M11D13	MH/DI	4990.00	4972.83		4974.83	15.17						4975.89									
M11D3	MH/DI	4935.50	4933.65	36	4933.65	1.85	7.07	0.00492	0.00	0.000	0.000	4933.65	0.00152	240	0.364			0.0000	0.0000	0.000	4933.65
M11D14	MH/DI	4935.50	4931.03	36	4934.03	1.47	7.07	0.00492	3.68	26	0.210	4934.24	0.00038	350	0.133			0.0105	0.0105	0.375	4934.24
M11D15	MH	4935.50	4931.16	36	4934.16	1.34	7.07	0.00492	1.84	13	0.053	4934.21	0.00038	300	0.114			0.0026	0.0026	0.135	4934.21
M11D16	MH/DI	4935.50	4931.28	36	4934.28	1.22	7.07	0.00492	1.84	13	0.053	4934.33	0.00038					0.0026	0.0026	0.116	4934.33
D*	crete Box Storm Drains			M11D1	M11D3	13.75 ft 4 ft H															
				M11D3	M11D7	12.25 ft 4 ft H															

Resource Technology, Inc.

M11D14	MH/DI	4935.50	4931.03	36	4934.03	1.47	7.07	0.00492	0.00	0.000	4934.03	0.0000	0.000	0.000	4934.03
M11D17	MH/DI	4935.50	4931.14	36	4934.14	1.36	7.07	0.00492	1.84	13	0.053	0.00038	0.114	0.0026	4934.20
M11D7	MH/DI	4944.00	4932.41	36	4935.41	8.59	7.07	0.00492	0.00	0.000	4935.41	0.0000	0.000	0.000	4935.41
M11D18	MH	4946.00	4936.88	36	4939.88	6.12	7.07	0.00492	11.03	78	1.891	0.01366	4.373	0.0945	4941.77
M11D19	MH/DI	4950.00	4938.89	36	4941.89	8.11	7.07	0.00492	11.03	78	1.891	0.01366	1.913	0.0945	4943.78
M11D20	MH/DI	4950.00	4941.32	36	4944.32	5.68	7.07	0.00492	9.20	65	1.313	0.00949	2.372	0.0657	4945.64
M11D21	MH	4950.00	4943.05	30	4945.55	4.45	4.91	0.00492	5.30	26	0.436	0.00401	1.204	0.0218	4945.99
M11D22	MH/DI	4950.00	4944.28	30	4946.78	3.22	4.91	0.00492	5.30	26	0.436	0.00401	1.204	0.0218	4947.21
M11D9	MH/DI	4964.00	4950.92	36	4953.92	10.08	7.07	0.00492	0.00	0.000	4953.92	0.0000	0.000	0.000	4953.92
M11D23	MH	4963.00	4952.03	36	4955.03	7.97	7.07	0.00492	5.52	39	0.473	0.00342	1.093	0.0236	4955.50
M11D24	MH/DI	4962.00	4953.15	36	4956.15	5.85	7.07	0.00492	5.52	39	0.473	0.00342	1.093	0.0236	4956.62
M11D9	MH/DI	4962.00	4951.42	30	4953.92	8.08	4.91	0.00492	0.00	0.000	4953.92	0.0000	0.000	0.000	4953.92
M11D25	MH	4962.00	4952.92	30	4955.42	6.58	4.91	0.00492	5.30	26	0.436	0.00401	1.485	0.0218	4955.86
M11D26	MH/DI	4962.00	4953.59	30	4956.09	5.91	4.91	0.00492	5.30	26	0.436	0.00401	0.642	0.0218	4956.52
										Total L = 7900 Total H _f = 57.25 Total Form Losses = 1.09					
										Manning's n 0.013 K = 26(n)^{2/3} 2.21 S_f = K(V^{2/3}/2g)R^{4/3}					
										16 H_f Friction Loss 17 H_b Bend Loss 18 H_j Junction Loss					
										19 H_m Manhole Loss = 0.05 V²/2g 20 Exit Structure Losses = 0.25 V²/2g					

S.W. VALLEY STORM DRAIN COST ESTIMATE SUMMARY

PROJECT NAME:		SYSTEM M-11-D				
BID	SPEC					
ITEM	ITEM	SHORT DESCRIPTION	UNIT	QTY	UNIT	COST
NO.	NO.				COST	ESTIMATE
1		OUTLET STRUCTURE *	1	1	16,000.00	16,000.00
2	910.010	24" RCP, IV	LF	760	27.86	21,176.10
3	910.014	30" RCP, IV	LF	1790	33.86	60,612.99
4	910.018	36" RCP, IV	LF	2850	45.72	130,301.85
5	910.020	42" RCP, IV	LF	0	61.87	0.00
6	910.022	48" RCP, IV	LF	0	73.73	0.00
7	910.024	54" RCP, IV	LF	0	89.77	0.00
8	910.026	60" RCP, IV	LF	0	107.38	0.00
9	910.030	72" RCP, IV	LF	0	149.68	0.00
10	801.010	24" WL PIPE, w/o FIT	LF	0	69.51	0.00
1	801.011	30" WL PIPE, w/o FIT	LF	0	82.87	0.00
11	801.012	36" WL PIPE, w/o FIT	LF	0	132.10	0.00
12	801.013	42" WL PIPE, w/o FIT	LF	0	150.79	0.00
13	801.014	48" WL PIPE, w/o FIT	LF	0	161.56	0.00
14	EXTRAPOLATED	54" WL PIPE, w/o FIT	LF	0	182.00	0.00
15	EXTRAPOLATED	60" WL PIPE, w/o FIT	LF	0	202.00	0.00
20	915.010	CTH BSN, A, SG	EA	57	2,267.67	129,257.19
25	920.010	MH, 4' DIA, C, <6' D	EA	26	1,273.19	33,102.91
30		24" BOX CULVERT *	CY	0	360.80	0.00
31		30" BOX CULVERT *	CY	0	360.80	0.00
32		36" BOX CULVERT *	CY	0	360.80	0.00
33		42" BOX CULVERT *	CY	0	360.80	0.00
34		48" BOX CULVERT *	CY	2205	360.80	795,564.00
35		54" BOX CULVERT *	CY	0	360.80	0.00
36		60" BOX CULVERT *	CY	0	360.80	0.00
37		72" BOX CULVERT *	CY	0	360.80	0.00
40	343.112	LOCAL PAVEMENT	SY	4400	13.11	57,674.91
41	343.11	MAJOR LOCAL PAVEMENT	SY	5640	25.00	141,000.00
42	343.13	ARTERIAL PAVEMENT	SY	0	35.00	0.00
1	701.100	TRCH, 12' WIDE	LF	7900	23.00	181,700.00
2	701.15	TRCH, 24' WIDE*	LF	0	46.00	0.00
3		TRCH, 20' WIDE(BARCELONA)*	LF	0	68.00	0.00
50		NEW EASEMENT *	AC	0.17	5,000.00	849.40
		SUBTOTAL				\$1,567,239.34
		PLUS 25% E&C				\$391,809.84
		TOTAL				\$1,959,049.18

NOTES:	BID ITEM:				
	1	COST PROVIDED BY AMAFCA			
	50	AREA BASED ON 20 FT. WIDE EASEMENT, UNIT COST PROVIDED BY BERNALILLO COUNTY			
	*	REFER TO FOLLOWING PAGE(S) FOR QUANTITY ESTIMATE			

Resource Technology, Inc.

Job No. 02-120	Date 12/24/2002	By gdw	Checked By	202	Frequency	100 Year Flood
Client		Project SW Valley DMP		P11	Length	24 Hours
Subject Storm Drain Design					Conditions	Future

Basin	Grid	Description	16	17	18	19	20	21	22	23
			L	H _i	H _b	H _j	H _m	H _{exit}	Total H _L	E.G.
			(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			280	0.924			0.0133	0.0665	0.937	4925.77
			280	0.924			0.0133	0.937	4926.71	
			Total L = 560 Total H _i = 1.85 Total Form Losses = 0.09							

17 H _i Friction Loss	20 H _m Manhole Loss = 0.05 V ² /2g
18 H _b Bend Loss	21 Exit Structure Losses = 0.25 V ² /2g
19 H _j Junction Loss	

Manning's n	0.013	$K = 2g(n)^2/2.21$	$S_f = K(V^2/2g)/R^{4/3}$
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Structure	Discr.	Number of Drop Inters	Rim Elev. Approx. (ft)	Inv. (ft)	D (in)	H.G. (ft)	Cover (ft)	A (sq ft)	K	V (ft/sec)	Q cfs	V ² /2g (ft)	E.G. (ft)	S _f (ft/ft)
P11K1	Outflow		4930.00	4922.50	24	4924.57	5.43	3.14	0.00492	4.14	13	0.266	4924.83	0.00330
P11K2	MH		4928.00	4923.50	24	4925.50	2.50	3.14	0.00492	4.14	13	0.266	4925.77	0.00330
P11K3	MH/DI	3	4928.00	4924.44	24	4926.44	1.56	3.14	0.00492	4.14	13	0.266	4926.71	0.00330

S.W. VALLEY STORM DRAIN COST ESTIMATE SUMMARY

PROJECT NAME:		SYSTEM P-11-K				
BID	SPEC					
ITEM	ITEM	SHORT DESCRIPTION	UNIT	QTY	UNIT	COST
NO.	NO.				COST	ESTIMATE
1		OUTLET STRUCTURE *	1	1	16,000.00	16,000.00
2	910.006	18" RCP, IV	LF	0	21.19	0.00
3	910.010	24" RCP, IV	LF	560	27.86	15,603.44
4	910.014	30" RCP, IV	LF	0	35.08	0.00
5	910.018	36" RCP, IV	LF	0	49.02	0.00
6	910.020	42" RCP, IV	LF	0	61.87	0.00
7	910.022	48" RCP, IV	LF	0	73.73	0.00
8	910.024	54" RCP, IV	LF	0	89.77	0.00
9	910.026	60" RCP, IV	LF	0	107.38	0.00
10	910.030	72" RCP, IV	LF	0	149.68	0.00
11	801.010	24" WL PIPE, w/o FIT	LF	0	69.51	0.00
12	801.011	30" WL PIPE, w/o FIT	LF	0	82.87	0.00
13	801.012	36" WL PIPE, w/o FIT	LF	0	132.10	0.00
14	801.013	42" WL PIPE, w/o FIT	LF	0	150.79	0.00
15	801.014	48" WL PIPE, w/o FIT	LF	0	161.56	0.00
16	EXTRAPOLATED	54" WL PIPE, w/o FIT	LF	0	182.00	0.00
17	EXTRAPOLATED	60" WL PIPE, w/o FIT	LF	0	202.00	0.00
20	915.010	CTH BSN, A, SG	EA	3	2,267.67	6,803.01
25	920.010	MH, 4' DIA, C, <6' D	EA	3	1,312.43	3,937.29
30		24" BOX CULVERT *	CY	0	360.80	0.00
31		30" BOX CULVERT *	CY	0	360.80	0.00
32		36" BOX CULVERT *	CY	0	360.80	0.00
33		42" BOX CULVERT *	CY	0	360.80	0.00
34		48" BOX CULVERT *	CY	0	360.80	0.00
35		54" BOX CULVERT *	CY	0	360.80	0.00
36		60" BOX CULVERT *	CY	0	360.80	0.00
37		72" BOX CULVERT *	CY	0	360.80	0.00
40	343.112	LOCAL PAVEMENT	SY	747	13.11	9,787.26
41	343.11	MAJOR LOCAL PAVEMENT	SY	0	25.00	0.00
42	343.13	ARTERIAL PAVEMENT	SY	0	35.00	0.00
1	701.100	TRCH, 12' WIDE	LF	560	23.00	12,880.00
2	701.15	TRCH, 24' WIDE*	LF	0	46.00	0.00
3		TRCH, 20' WIDE(BARCELONA)*	LF	0	68.00	0.00
50		NEW EASEMENT *	AC	0.00	5,000.00	0.00
		SUBTOTAL				\$65,010.99
		PLUS 25% E&C				\$16,252.75
		TOTAL				\$81,263.74

NOTES:	BID ITEM:				
	1	COST PROVIDED BY AMAFCA			
	50	AREA BASED ON 20 FT. WIDE EASEMENT, UNIT COST PROVIDED BY BERNALILLO COUNTY			
	*	REFER TO FOLLOWING PAGE(S) FOR QUANTITY ESTIMATE			

Resource Technology, Inc.

Job No.	02-120	Date	12/11/2002	By	gdw	Checked By	205	Frequency	100 Year Flood					
Client			Revised	Project	SW Valley	DMP	Q10	Length	24 Hours					
Subject	Storm Drain Design						Gun Club Rd	Conditions	Future					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Structure	Discr.	Number of Drop Inlets	Rim Elev. Approx. (ft)	Inv. (ft)	D (in)	H.G. (ft)	Cover (ft)	A (sq ft)	K	V (ft/sec)	Q (cfs)	V ^{2/2g} (ft)	E.G. (ft)	S _r (ft/ft)
Q10D1	Outflow		4921.00	4916.90	30	4919.43	1.57	4.91		2.65	13	0.109	4919.54	0.00100
Q10D2	MH		4924.50	4917.33	30			4.91	0.00492	2.65	13	0.109		
Q10D3	MH		4923.50	4917.54	30	4919.83	4.67	4.91	0.00492	2.65	13	0.109	4919.94	0.00100
Q10D4	MH		4923.00	4917.82	30	4920.04	3.46	4.91	0.00492	2.65	13	0.109	4920.15	0.00100
Q10D5	MH		4923.50	4918.05	30	4920.32	2.68	4.91	0.00492	2.65	13	0.109	4920.43	0.00100
Q10D6	MH/DI		4923.50	4918.31	30	4920.55	2.95	4.91	0.00492	2.65	13	0.109	4920.66	0.00100
			4923.50	4918.31		4920.81	2.69						4920.92	
										Total L = 1350				
										Total H _r =				
										1.35				
										Total Form Losses =				
										0.054				
										0.256				
										4920.92				

Manning's n 0.013

K = 2g(n)²/2.21 S_r = K(V²/2g)/R^{4/3}

17 H _r Friction Loss 18 H _b Bend Loss 19 H _j Junction Loss	20 H _m Manhole Loss = 0.05 V ² /2g 21 Exit Structure Losses = 0.25 V ² /2g	
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S.W. VALLEY STORM DRAIN COST ESTIMATE SUMMARY

PROJECT NAME:		SYSTEM Q-10-D				
BID		SPEC				
ITEM NO.	ITEM NO.	SHORT DESCRIPTION	UNIT	QTY	UNIT COST	COST ESTIMATE
1		OUTLET STRUCTURE *	1	1	16,000.00	16,000.00
2	910.006	18" RCP, IV	LF	0	21.19	0.00
3	910.010	24" RCP, IV	LF	0	28.67	0.00
4	910.014	30" RCP, IV	LF	1350	33.86	45,713.70
5	910.018	36" RCP, IV	LF	0	49.02	0.00
6	910.020	42" RCP, IV	LF	0	61.87	0.00
7	910.022	48" RCP, IV	LF	0	73.73	0.00
8	910.024	54" RCP, IV	LF	0	89.77	0.00
9	910.026	60" RCP, IV	LF	0	107.38	0.00
10	910.030	72" RCP, IV	LF	0	149.68	0.00
11	801.010	24" WL PIPE, w/o FIT	LF	0	69.51	0.00
12	801.011	30" WL PIPE, w/o FIT	LF	0	82.87	0.00
13	801.012	36" WL PIPE, w/o FIT	LF	0	132.10	0.00
14	801.013	42" WL PIPE, w/o FIT	LF	0	150.79	0.00
15	801.014	48" WL PIPE, w/o FIT	LF	0	161.56	0.00
16	EXTRAPOLATED	54" WL PIPE, w/o FIT	LF	0	182.00	0.00
17	EXTRAPOLATED	60" WL PIPE, w/o FIT	LF	0	202.00	0.00
20	915.010	CTH BSN, A, SG	EA	3	2,267.67	6,803.01
25	920.010	MH, 4' DIA, C, <6' D	EA	6	1,312.43	7,874.57
30		24" BOX CULVERT *	CY	0	360.80	0.00
31		30" BOX CULVERT *	CY	0	360.80	0.00
32		36" BOX CULVERT *	CY	0	360.80	0.00
33		42" BOX CULVERT *	CY	0	360.80	0.00
34		48" BOX CULVERT *	CY	0	360.80	0.00
35		54" BOX CULVERT *	CY	0	360.80	0.00
36		60" BOX CULVERT *	CY	0	360.80	0.00
37		72" BOX CULVERT *	CY	0	360.80	0.00
40	343.112	LOCAL PAVEMENT	SY	0	13.11	0.00
41	343.11	MAJOR LOCAL PAVEMENT	SY	1800	25.00	45,000.00
42	343.13	ARTERIAL PAVEMENT	SY	0	35.00	0.00
1	701.100	TRCH, 12' WIDE	LF	1350	23.00	31,050.00
2	701.15	TRCH, 24' WIDE*	LF	0	46.00	0.00
3		TRCH, 20' WIDE(BARCELONA)*	LF	0	68.00	0.00
50		NEW EASEMENT *	AC	0.00	5,000.00	0.00
SUBTOTAL						\$152,441.28
PLUS 25% E&C						\$38,110.32
TOTAL						\$190,551.60

NOTES:	BID ITEM:				
	1	COST PROVIDED BY AMAFCA			
	50	AREA BASED ON 20 FT. WIDE EASEMENT, UNIT COST PROVIDED BY BERNALILLO COUNTY			
	*	REFER TO FOLLOWING PAGE(S) FOR QUANTITY ESTIMATE			