HYDROLOGY REPORT
FOR
NORTH ALBUQUERQUE ACRES/SANDIA HEIGHTS
DRAINAGE STUDY
PHASES I & II

Prepared For:

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I. INTRODUCTION

A. Location

The North Albuquerque Acres/Sandia Heights-South, Phase I and Phase II study areas are located in the far northeast quadrant of Albuquerque. The Phase I area is roughly bounded by Eubank Boulevard on the west, Sandia Pueblo on the north, U.S. Forest Service land on the east and San Antonio Avenue on the south. Phase II is the unincorporated area west of Eubank and North of Paseo del Norte. See Exhibit 1. Three major transportation corridors traverse the area; Tramway Boulevard from north to south divides North Albuquerque Acres from Sandia Heights; Paseo del Norte divides North Albuquerque Acres along an east to west line from Tramway Boulevard to the west, and, also on an east-west axis, Alameda extends from the municipal limits to Eubank.

B. Purpose

The purpose of the North Albuquerque Acres Drainage Study is to prepare a coherent plan that will serve as the design analysis for future flood control improvements within the project area and to establish guidelines for development of existing platted lots. Utilizing existing studies where possible, supplemented with additional hydrologic and hydraulic analysis when required, and coordinated with the activities of other governmental agencies and private parties, the goal of the project is to provide a conceptual framework for future storm water management activities. Furthermore, proposed solutions are to be integrated with existing facilities to the greatest extent possible. Existing and proposed roadway profiles are to be evaluated with regards to drainage considerations. Interim findings for Phase I (pending FEMA acceptance of revised floodplain mapping) have been presented in the **North Albuquerque Acres and Sandia Heights - South Drainage Study Infrastructure Plan (October, 1998)**.

C. Background

The major portion of the project area is part of the North Albuquerque Acres Subdivision, originally platted in the 1930's on a uniform grid made up of nominal one acre lots. Topographic features and drainage patterns were ignored. Prior to the 1980's the only areas that saw significant development were the Sandia foothills (Sandia Heights) along Tramway Boulevard and some areas immediately adjacent to the I-25 corridor, several miles west of the study area. The area west of Tennyson Avenue started to experience limited single lot housing construction during the late 1980's. This was followed in the early 1990's with the Primrose Point Subdivision, which involved replatting for higher housing densities. With the exception of land immediately adjacent to Tramway Boulevard and the replatting for the Primrose Point subdivision most of the North Albuquerque Acres subdivision has continued to develop by construction of individual homes on existing one acre lots.

Sandia Heights subdivision was platted in the late 1960's into a mixture of one half acre lots in the foothills and higher densities adjacent to Tramway Boulevard. While the lots were laid out along winding roads taking maximum advantage of topographic features for home sites, little provision was made for the major arroyos that traverse the site from east to west. While dip-

sections and culverts were constructed for road crossings, drainage easements were not provided for.

With the increased level of development has come increased concern with drainage issues. Beginning in 1974, with the Leonard Rice **"Northeast Heights Drainage Management Plan" (AMAFCA, 1974)**, a series of drainage studies have been conducted that have resulted in the construction of flood control facilities to serve some of the needs in the area. These consist primarily of two AMAFCA flood control detention dams and related appurtenances, the Pino Diversion structure and transportation related hydraulic structures and storm drains along Paseo del Norte and Tramway Boulevard. With the exception of Primrose Point and some of the more recent townhouse development along Tramway few storm water management facilities have been constructed by private parties in the Phase I area. In the Phase II area west of Eubank a lined channel on the North Camino Arroyo for the Sunset Hills Estates subdivision and several small detention ponds are the main drainage improvements.

II. HYDROLOGY

A. Previous Studies

The current study has made extensive use of previous study efforts in the North Albuquerque Acres area. These consisted of the **"Hydrology Report: La Cueva, El Camino and North Camino Arroyos Drainage Management Plan,"** September, 1996, and the **"North and South Domingo Baca Arroyos and Paseo del Norte Corridor Drainage Management Plan,"** December, 1991, both prepared for the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) by RTI.

The North and South Domingo Baca Arroyo basins have seen extensive development since the completion of the AMAFCA study which necessitated major modifications to the hydrology model which are discussed below. The more recent work on the La Cueva, El Camino and North Camino basins has been incorporated into this study with only minor modifications. The current study ties in with the City of Albuquerque's recently completed **Master Drainage Plan for North Albuquerque Acres** (October, 1998), sharing a common hydrology model.

B. Assumptions and Methodology

1. General

All of the hydrological analysis contained in this report, including the above referenced AMAFCA studies, are based on the City of Albuquerque's **Development Process Manual, Volume 2, Design Criteria, Section 22.2, Hydrology,** January 1993 and the **Bernalillo County Drainage Ordinance**. Two exceptions taken to this methodology were to adopt the AMAFCA convention of treating rock outcrops in mountain areas as land treatment type C rather than as type D and the use of the 24-hour instead of the 6-hour, 100-year storm. These modifications were done in order to be consistent with the earlier hydrology studies in the area.

2. Routing and Sediment

The Muskingcum-Cunge method was used for all channel routings and the Variable Storage Coefficient method was used for closed conduit flow. Bulking factors were not added to the basic hydrology model but are reflected in all tabular values according to the rates shown in Table 1. See the Appendix for a discussion of the origins of this table.

TABLE 1

BULKING FACTORS FOR SEDIMENT AS A FUNCTION OF FLOW RATE*

Clean Water Flow Rate, Q (cfs)	Bulking Factor (%)
0 - 500	4
501 - 1000	5
1001 - 1600	6
1601 - 2100	7
2101 - 2600	8
2601 - 3200	9
3201 - 3700	10
3701 - 4200	11

*Valid for NAA and Sandia Heights natural channels west of USFS Boundary only, D_{50} 1.5 mm - 3.0 mm

3. Land Use

Existing condition land uses and sub-basin boundaries were taken from aerial photography flown for AMAFCA and/or Bernalillo County in 1991, 1994 and 1995 and by extensive field investigation. Subdivisions that had proceeded to the rough grading phase by October 1997 were considered as existing.

Future Conditions land treatments, shown on Exhibit 2, are based on the following assumptions concerning future development in specific areas.

- Sandia Heights/Tramway Boulevard (SH/TB): This area would be built out in patterns reflecting existing development.
- North Albuquerque Acres (NAA): The area between Ventura Street and Tennyson Street as well as the area east of Coronado Airport and north of Florence Avenue would continue to develop along the lines of the existing one acre lot platting.

- Residential (R): The area west of Ventura Street, south of Florence Avenue and east of Louisiana Boulevard would develop as relatively high density residential.
- Commercial/Industrial (C/I): The area west of Louisiana Boulevard, north of Modesto Avenue and east of I-25 would develop as high density commercial and industrial. Also used for Paseo del Norte Corridor.
- Medium Density Industrial (MI): Campus type industrial facilities and APS schools sites.
- Sandia Tribal Lands (ST): Sandia tribal lands south of Tramway Road and north of the Sandia Pueblo Grant Boundary were allocated land treatments consistent with moderate levels of development even though there are no current plans to develop this area.
- Primrose Point (PP): This major subdivision was allocated a distinct set of land use assumptions.

The relative weight of each type of Land Treatment is shown in Table 2.

TABLE 2

FUTURE FULL DEVELOPMENT HYDROLOGIC CONDITION ASSUMPTIONS

	Land Treatments (%)			
	A	B	C	D
Sandia Heights/Tramway (SH/TB)	20	40	5	35
North Albuquerque Acres (NAA)	22	23	38	17
Residential (R)	0	34	16	50
Commercial/Industrial (C/I)	0	20	10	70
Medium Density Industrial (MI)	0	20	30	50
Sandia Tribal Lands (ST)	20	20	40	20
Primrose Point (PP)	0	35	35	30

There are some major differences in the future full development land use assumptions between this report and those used in the **North and South Domingo Baca Arroyos and Paseo del Norte Corridor Drainage Management Plan (1991)**. In the 1991 AMAFCA Drainage Management Plan portions of this basin east of Ventura were assumed to have development densities of either 1 to 3 or 3 to 5 DU's per acre for the future full development condition. But these densities have not materialized over the last six years. Instead of a consolidation of existing one acre lots for replatting at higher densities there has been extensive residential construction utilizing the existing platting. This checkerboard nature of housing construction has made the future assemblage of undeveloped lots for replatting at higher densities very difficult. Therefore, a re-evaluation of the earlier assumptions was in order. This resulted in adopting the land treatment values used by AMAFCA in the **Hydrology Report: La Cueva, El Camino and North Camino Drainage Management Plan (1996)** for the unincorporated areas of the La

Cueva and Camino basins for the unincorporated portions of the North and South Domingo Baca basins and the Pino basin.

4. Drainage Basins

The major drainage basins were divided up by arroyo system watersheds. These were further subdivided in order to obtain calculated flows at points of interest or Analysis Points. In undeveloped areas sub-basins generally reflect topographical features. Existing and future condition basins are shown on Exhibits 3 through 15.

In developed areas that have been replatted terrain has been significantly modified and sub-basins often reflect the subdivision development process. Storm drains have been installed that discharge to improved conveyance facilities.

Sub-basin hydrologic characteristics are summarized in tables in the Appendix.

5. Avulsions

Identification and possible remediation of potential avulsions within the study area is another task identified in the project scope. An avulsion can be defined as a location where the flow path of an arroyo may change course, either totally, or partially. This change in course may be the result of natural forces, such as wind or water, or due to some human activity such as road building or site grading. An avulsion may occur over time as the historic arroyo bed is altered by natural processes or may occur quickly if caused by human activity. All of the arroyo systems in the North Albuquerque Acres area are subject to the effects of potential avulsions. Many of the major avulsions which cause concern in the study area were identified in the AMAFCA's **La Cueva, El Camino and North Camino Drainage Management Plan (1996)** and subsequently discussed in a **Report on North Albuquerque Acres Arroyo Avulsion Problems (March 1997)**. Major avulsion locations are shown on Exhibits 3 through 15. The hydrology presented in this report assumes that all avulsions have been controlled. If infrastructure is designed prior to controlling potential upstream avulsions that could impact the project, the "worst case" flows presented in the 1997 AMAFCA Avulsion Report should be considered. "Worst case" flows from the AMAFCA report are reproduced in the Appendix. Control measures for the major avulsions will be coordinated with AMAFCA and other public agencies.

There are also numerous minor avulsions located in the study area. These have been identified and control measures are proposed in the NAA/SH Infrastructure Plan.

C. Existing Storm Drainage Facilities

Private parties have constructed several major channels and storm drains as part of the subdivision process. These include the following:

- A one half-mile lined channel on the North Camino Arroyo at Sunset Hills.
- A one half-mile improved conveyance for the North Domingo Baca Arroyo at Primrose Pointe.

- A one thousand foot lined channel for a North Domingo Baca tributary at Primrose Pointe.
- A storm drain in Tennyson taking flows from the Willow Bend Subdivision to the Pino Arroyo at Tramway.

The Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) has constructed two major storm water detention facilities in the Phase I study area. These are the North Domingo Baca Dam and the South Domingo Baca Dam. A major concrete lined channel diverts one of the South Domingo Baca Arroyo tributaries to the South Domingo Baca Dam. Two major La Cueva Arroyo tributaries have been diverted to the North Domingo Baca Dam by a concrete lined channel. An AMAFCA constructed riprap lined channel and sediment basin between Lowell and Browning at Santa Monica diverts part of the North Pino arroyo flows to the Pino Arroyo system.

In addition to the two major detention dams there are about a dozen minor detention ponds (less than one half acre-foot) scattered throughout the Phase I and Phase II study areas. Most of the detention ponds are privately maintained.

Other publically financed drainage facilities include major storm drains in Paseo del Norte and Tramway Boulevard. One of the Tramway storm drains diverts a minor North Domingo Baca Arroyo tributary near Live Oak Road to the South Domingo Baca Dam. Another Tramway storm drain diverts a North Pino Arroyo tributary near San Rafael to the Pino Dam (south of the study area). Soon to be under construction is an additional 1000-feet of channel improvements on the North Domingo Baca Arroyo east of Tramway Boulevard.

Currently there are 113 road crossing culverts, six concrete box culverts, and one bridge in the Phase I area, and five roadway culverts and one bridge in the Phase II area. Most of these were constructed either as part of the subdivision process or as a part of major road projects.

Other Bernalillo County projects currently under design in the Phase I and Phase II study areas are diversions from the Paseo del Norte corridor to the South Domingo Baca Dam at Lowell and to the North Domingo Baca Dam just east of Eubank. Additional Paseo del Norte strom drains west of Eubank will tie into the recently constructed City of Albuquerque system from Wyoming to I-25.

D. Hydrology Results

The results of the hydrologic analysis are summarized in Table 3. Table 4 provides a comparison of the results of this study with those of previous studies in the project area. Additional data on individual basins is contained in the Appendix.

It should be noted that the North and South Domingo Baca basin existing condition models incorporate the Paseo del Norte Storm Drains from Tennyson to I-25. The Wyoming to I-25 segment is currently under construction and the Eubank to Wyoming segment is under design and scheduled for construction in 1999. The Eubank to Tennyson segment will be constructed soon thereafter and these storm drains will outfall either to the North or South Domingo Baca dams.

The future condition model for the South Domingo Baca basin includes a storm drain diversion to the South Domingo Baca dam at Lowell and the conveyance of the dam discharge in a pipe to Eubank as proposed by the **AMAFCA North and South Domingo Baca Arroyos and Paseo del Norte Drainage Master Plan.** These facilities were included in the plan in order to maximize the flows to this existing facility.

The future condition model for the North Domingo Baca basin includes concrete lining the North Domingo Baca Arroyo from Tramway Boulevard to Tramway Lane. This project has been designed with construction due to start in 1999.

III. SEDIMENT AND EROSION

A. General Issues

Sediment and erosion issues are significant problems with the natural arroyos coming off the mountains in the Sandia Heights and North Albuquerque Acres area. Arroyo bed aggradation is one of the major natural driving forces in the avulsion process. Arroyo bed degradation poses a long term threat to property owners by threatening to undercut foundations and roads. There are many existing homes, built prior to 1994, within what are now considered to be the minimum erosion setback lines. Therefore, an attempt has been made to highlight the areas where significant aggradation or degradation are taking place on the major branches of the natural arroyos.

B. AMAFCA Study

The main branch and the southern tributary of the La Cueva arroyo and the El Camino arroyo were studied extensively as part of the AMAFCA **La Cueva, El Camino and North Camino Arroyos Drainage Facility Plan (1998).** The section covering sediment and erosion issues is reproduced in the Appendix and copies of their summary tables and figures are included in this section. The methodology described in the AMAFCA report was utilized in this study for an analysis of the North and South Domingo Baca Arroyos utilizing the cross section data prepared for the FEMA Re-Study of these arroyos.

C. Results

The results of the sediment and erosion analysis for the North and South Domingo Baca Arroyos are summarized in Tables 5 and 6 and on Figure 1. Tables 7, 8 and 9, which cover the El Camino, North Camino and the La Cueva, are from the AMAFCA Report as are Figures 2 and 3. As can be seen there are major depositional areas in both Sandia Heights and in North Albuquerque Acres. These areas will require long term monitoring and possible periodic sediment removal. Care should be taken in the design of any future road crossing structures in order to avoid aggravating the existing problem.

The degradational reaches pose less of a problem in that existing and proposed future road crossing structures will provide limits on the depth and extent of future head cuts, especially in

the Sandia Heights area. Here there are numerous road crossing structures at frequent intervals. However, on long reaches without road crossing structures, typical of some parts of North Albuquerque Acres, it may be necessary to construct grade control structures to stabilize the arroyo bottom. Stabilizing degradational areas will also provide a benefit to the downstream aggradational areas by limiting the available sediment supply.

TABLE 3 HYDROLOGY SUMMARY					
		AP #	**AREA (sq mi)**	**Vol-100-yr (ac-ft)**	**Qp-100-yr (cfs)**
North Camino - Main					
@ Holbrook	Existing Future	303.9	2.0642	140.715 149.012	1605.0 1651.6
@ Ventura	Existing Future	305.19	2.2333	150.768 162.026	1625.1 1682.3
@ Barstow	Existing Future	305.29	2.3862	157.566 173.609	1638.0 1709.1
@ Wyoming	Existing Future	312.9	2.4522	160.179 178.243	1629.2 1702.8
@ Eubank	Existing Future	202.19	.5400	26.926 29.405	619 646
El Camino					
@ Holbrook	Existing Future	202.29	0.6499	33.040 37.485	607.7 652.4
@ Ventura	Existing Future	202.39	0.7183	37.077 41.907	607.1 673.3
@ Barstow	Existing Future	203.39	.9484 .9929	48.718 67.123	689.4 900.3
@ Wyoming	Existing Future	204.9	1.1603 1.0952	58.839 77.271	752.0 977.5
La Cueva Middle Tributary					
@ Tramway	Existing Future	103.99	.5103	34.046 35.582	729.5 743.9
@ Lowell	Existing Future	105.19	.6485	42.952 47.268	765.1 809.7
@ Browning	Existing Future	105.29	.7543	48.630 55.829	801.8 869.0
La Cueva South Tributary					
@ Tramway	Existing Future	103.49	.1569	11.010 15.782	300.9 387.2
@ Lowell	Existing Future	104.19	.3394	26.809 32.801	581.1 781.1

TABLE 3 HYDROLOGY SUMMARY					
		AP #	**AREA (sq mi)**	**Vol-100-yr (ac-ft)**	**Qp-100-yr (cfs)**
@ Browning	Existing Future	104.29	.4198	31.160 39.095	666.4 908.0
La Cueva - Main					
@ Browning	Existing Future	107.29	2.8680	196.529 200.690	2756.7 2781.0
@ Eubank	Existing Future	109.99	3.6031	235.592 254.444	2941.6 3040.2
North Domingo Baca - Main					
@ Tramway	Existing Future	902.99	.8937	68.200 72.705	1279.9 1284.3
@ Lowell	Existing Future	906.99	1.03193 1.0576	80.477 87.829	1334.6 1369.4
@ PDN Diversion to NDB Dam	Future	915.90	.0893	11.825	258.2
@ NDB Dam	Existing Future	912.95	1.26093 1.28656	96.212 106.800	1380.3 1431.6
@ Eubank	Existing Future*	914.99	2.7783 2.7784	199.905 232.067	157.1 150.8
@ Holbrook	Existing Future	919.19	2.8923 2.8924	206.569 240.902	203.6 230.7
South Domingo Baca Diversion Channel from North Domingo Baca Arroyo					
@ Tramway	Existing Future	400.79	1.1319	79.792 83.375	1225.8 1250.6
South Domingo Baca - Main					
@ Tramway	Existing Future	400.59	3.2942	223.979 227.023	2519.3 2528.0
@ SDB Dam	Existing Future	400.99	4.7703 4.8606	325.739 349.234	3297.5 3464.4
@ Eubank	Existing Future	404.95	5.3809 5.3723	357.051 387.940	636.1 932.3
*Reflects future enlargement of NDB Dam reservoir.					

TABLE 3 HYDROLOGY SUMMARY					
		AP #	**AREA (sq mi)**	**Vol-100-yr (ac-ft)**	**Qp-100-yr (cfs)**
@ Lowell Diversion to SDB Dam	Future	401.93	0.0902	7.049	185.0
@ PDN Diversion to SDB Dam	Future	402.92	0.1023	9.199	168.9
North Pino					
@ San Rafael and Tramway	Existing Future	500.94	.1692	13.946 16.055	364.0 394.2
Total Q to North Pino Dam	Existing Future	500.96	.2433	20.053 23.087	512.5 561.1
@ San Antonio North Pino Diversion	Existing Future	502.99	0.2373	15.474 19.057	395.4 472.0
@ Eubank to Quintessence	Existing Future	511.99	0.3055 0.29662	17.620 22.072	417.5 556.4
Pino					
@Tramway	Existing Future	510.99	4.411	303.274 309.098	4218.1 4244.8

TABLE 4

COMPARISON OF HYDROLOGY RESULTS WITH PREVIOUS STUDIES

Bernalillo County Public Works Division
Drainage Management Plan for Sandia Heights (South)
and North Albuquerque Acres
Phase I

Analysis Point	100-Year Peak Discharge and Cumulative Basins Area					
	HYD COND	This Study cfs (sq.mi.)	NDB/SDB[1] Arroyos cfs (sq.mi.)	Tramway Dr.[2] Rep. cfs (sq.mi.)	FEMA 1996 cfs (sq.mi.)[3]	Other Dr Rep cfs (sq.mi.)
NDB @ Tramway (902.99)	Existing	1279 (0.8937)	912 (0.9240)		1251 (0.8937)	
	Future	1285 (0.8937)	933 (0.9242)	1170 (0.9510)		1235 [4] ( )
NDB @ Lowell (906.99)	Existing	1379 (1.0319)	912 (1.0420)		1237 (1.0319)	
	Future	1392 (1.0319)	1396 (1.3771)	NA		1400 [4] ( )
SDB @ Tramway (400.59)	Existing	2519 (3.2942)	3069 (3.2492)		2540 (3.2942)	NA
	Future	2528 (3.2942)	3069 (3.2492)	3330 (3.130)	NA	NA
SDB Trib @ Tram (400.79)	Existing	1226 (1.1319)	1557 (1.1150)		1030 (1.1319)	NA
	Future	1251 (1.1319)	1557 (1.1150)	1150 (1.280)	NA	NA
SDB @ Eubank (404.95)	Existing	624 (5.3649)	351 (4.880)	NA	NA	NA
	Future	855 (5.3376)	1503* (5.360)	NA	NA	NA
N. Pino @ San Rafael (500.94)	Existing	364 (0.1692)	NA	NA	319 (0.1643)	
	Future	394 (0.1692)	270 (0.1760)	270 (0.1760)		
N. Pino @ San Antonio (502.99)	Existing	395 (0.2403)	NA	NA	NA	NA
	Future	472 (0.2403)	NA	NA	NA	NA

*Assumed SDB basins west of Tramway 34-50% impervious. This DMP assumed 17% impervious.

[1] North and South Domingo Baca Arroyos and Paseo del Norte Drainage Management Plan, RTI - 1991, AMAFCA
[2] Drainage Report for Tramway Boulevard Improvements from Montgomery to Tramway Road, RTI/H&N - 1987, BCPW
[3] Unpublished FEMA Re-Study, RTI - 1996
[4] Final Drainage Report for AMAFCA Infrastructure, Primrose Point Unit 2, Community Sciences Corp. - 1994
[5] Hydrology Report: La Cueva, El Camino and North Camino Arroyos Drainage Management Plan, RTI - 1996, AMAFCA

TABLE 4

COMPARISON OF HYDROLOGY RESULTS WITH PREVIOUS STUDIES

Bernalillo County Public Works Division
Drainage Management Plan for Sandia Heights (South)
and North Albuquerque Acres
Phase I

Analysis Point	100-Year Peak Discharge and Cumulative Basins Area					
	HYD COND	This Study cfs (sq.mi.)	NDB/SDB[1] Arroyos cfs (sq.mi.)	Tramway Dr.[2] Rep. cfs (sq.mi.)	FEMA 1996 cfs (sq.mi.)[3]	Other Dr Rep cfs (sq.mi.)
N. Pino @ Eubank (511.99)	Existing	417 (0.3223)	NA	NA	NA	NA
	Future	556 (0.29662)	NA	NA	NA	NA
Pino @ Tramway (510.99)	Existing	4218 (4.411)	NA	NA		NA
	Future	4245 (4.411)	NA	NA	4290 (4.411)	NA
El Camino @ Tramway (200.0)	Existing	507 (.3030)	NA	NA	NA	472[5] (.3030)
	Future	507 (.3030)	NA	NA	NA	472 (.3030)
El Camino @ Eubank (202.19)	Existing	619 (.5400)	NA	NA	NA	619[5] (.5400)
	Future	646 (.5400)	NA	NA	NA	646 (.5400)
Middle La Cueva @ Tramway (103.99)	Existing	730 (.5103)	NA	550 (.5210)	NA	730[5] (.5103)
	Future	744 (.5103)	NA	690 (.5210)	NA	744 (.5103)
La Cueva Main @ Tramway (102.90)	Existing	2758 (2.6960)	NA	NA	NA	2758[5] (2.6960)
	Future	2758 (2.6960)	NA	NA	NA	2758 (2.6960)
La Cueva Main @ Eubank (109.99)	Existing	2942 (3.6031)	NA	NA	NA	2942[5] (3.6031)
	Future	3040 (3.6031)	NA	NA	NA	3040 (3.6031)

[1] North and South Domingo Baca Arroyos and Paseo del Norte Drainage Management Plan, RTI - 1991, AMAFCA
[2] Drainage Report for Tramway Boulevard Improvements from Montgomery to Tramway Road, RTI/H&N - 1987, BCPW
[3] Unpublished FEMA Re-Study, RTI - 1996
[4] Final Drainage Report for AMAFCA Infrastructure, Primrose Point Unit 2, Community Sciences Corp. - 1994
[5] Hydrology Report: La Cueva, El Camino and North Camino Arroyos Drainage Management Plan, RTI - 1996, AMAFCA

TABLE 5

SUMMARY OF NORTH DOMINGO BACA ARROYO SYSTEM
NORTH FORK OF THE NORTH DOMINGO BACA ARROYO

Reach*	SEDIMENT CAPACITY IN TONS BY FREQUENCY							Average Annual Aggradation (+) Degradation (-) Tons	100-Year Aggradation (+) Degradation (-) Tons	30-Year Cumulative Plus 100-Year Tons
	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	Average Annual			
Supply A	18262	32781	44614	64614	79356	91334	22575	-	-	-
1	12387	26042	37628	56836	67168	74538	17572	+5003	+16796	+166873
Additional Supply for Reach 2 Supply "B"										
	123	297	468	800	1071	1303	214			
2	6566	13411	19267	30778	41025	50172	9449	+8337	+25669	+275782
Additional Supply for Reach 3 Supply "C"										
	1322	2678	3867	6901	9869	12719	1989			
3	19321	35319	48403	69907	86045	99123	24238	-12801	-36232	-420250
Existing Channel with Full Conveyance										
4	4416	8801	12480	18635	23494	29112	6059	+18179	+70011	+615374
Additional Supply for Reach 5 Supply "D"										
	105	204	292	491	622	731	146			
5	3112	6130	9095	16870	24303	30810	4700	+1506	-967	+44204
6	4017	7870	11177	20359	28989	38292	5899	-1199	-7482	-43441

*Reach locations are shown on Figure 1. (Supply reaches on National Forest Land not shown)

TABLE 6 SUMMARY OF SOUTH DOMINGO BACA ARROYO SYSTEM										
Reach*	SEDIMENT CAPACITY IN TONS BY FREQUENCY							Average Annual Aggradation (+) Degradation (-) Tons	100-Year Aggradation (+) Degradation (-) Tons	30-Year Cumulative Plus 100-Year Tons
	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	Average Annual			
Supply	38124	81064	121536	247420	334213	400379	62101	-	-	-
1	10193	26563	43863	92217	130286	163645	20966	+41104	+236734	1469868
2	22570	50581	78745	167712	245627	306602	40436	-19439	-142957	-726134

*Reach locations are shown on Figure 1. (Supply reaches on National Forest Land not shown)

TABLE 7

SUMMARY OF EXISTING CONDITIONS
EL CAMINO ARROYO

Reach*	Sediment Transport Capacity in Tons by Frequency							Average Annual Aggradation (+) Degradation (-) Tons	100-Year Aggradation (+) Degradation (-) Tons	30-Year Cumulative Plus 100-Year Tons
	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	Average Annual			
1A	779	1515	2830	4525	6283	7851	1234	-	-	-
1B	762	1359	2273	3282	4264	5110	1030	+204	+2741	+8861
2A	1005	1865	3213	4770	6388	7847	1436	-406	-2737	-14917
2B	970	1690	2700	3766	4881	5881	1254	+182	+1966	+7426
2C	1011	1810	3220	5118	6990	8587	1462	-208	-2706	-8946
3A	1092	1953	3405	5115	6522	7656	1517	-55	+931	-719
3B	1130	2081	3677	5763	7499	8769	1610	-93	-1113	-3903
4A	1028	1872	2918	4045	5216	6401	1377	+233	+2368	+9358
4B	975	1762	3069	4515	5864	7071	1363	+14	-670	-250
5A	1488	2423	3800	5234	6586	7724	1808	-445	-653	-14003
5B	1775	2922	4449	6110	7568	8761	2140	-332	-1037	-10997
5C	1683	2813	4389	6065	7720	9224	2084	+56	-463	+1217
6A	3454	6287	11234	14439	17528	20279	4682	-2598	-11055	-88995
6B	1684	2961	4796	6692	8398	9794	2190	+2492	+10485	+85245
6C	2224	4123	6944	10249	13496	16350	3127	-937	-6556	-34666

*Reach locations are shown on Figures 2 and 3
(From AMAFCA La Cueva, El Camino and North Camino Arroyos Facilities Plan, 1998)

TABLE 8

SUMMARY OF EXISTING CONDITIONS
LA CUEVA ARROYO

Reach*	Sediment Transport Capacity in Tons by Frequency							Average Annual Aggradation (+) Degradation (-) Tons	100-Year Aggradation (+) Degradation (-) Tons	30-Year Cumulative Plus 100-Year Ton
	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	Average Annual			
1A	9679	19751	36471	57934	80862	101926	15599	-	-	-
1B	11171	22942	45824	74322	106044	139271	19375	-3776	-37345	-150625
1C	7699	14395	26721	42104	58562	74455	11473	+7902	+64816	+301876
2A	8402	15999	28533	42679	56436	69690	12442	-969	+4765	-24305
2B	8098	16098	30027	47267	66135	83010	12989	-547	-13320	-29730
3A	8850	15626	25786	37222	48940	60423	11857	+1132	+22587	+23719
3B	7617	13329	23150	34453	45437	54992	10449	+1408	+5431	+47671
4A	7730	14986	27889	43606	59745	73322	12061	-1612	-18330	-66690
4B	14578	29226	53690	84653	119144	151733	23421	-11360	-78411	-419211
4C	11233	21689	35445	49832	64502	75893	15766	+7655	+75840	+305490
5 (Nor Este Channel)										
6A	14481	25850	42897	61000	77897	93882	19411	-3645	-17989	-127329
6B	13801	21251	33843	48297	62099	73112	16438	+2973	+20770	+109960

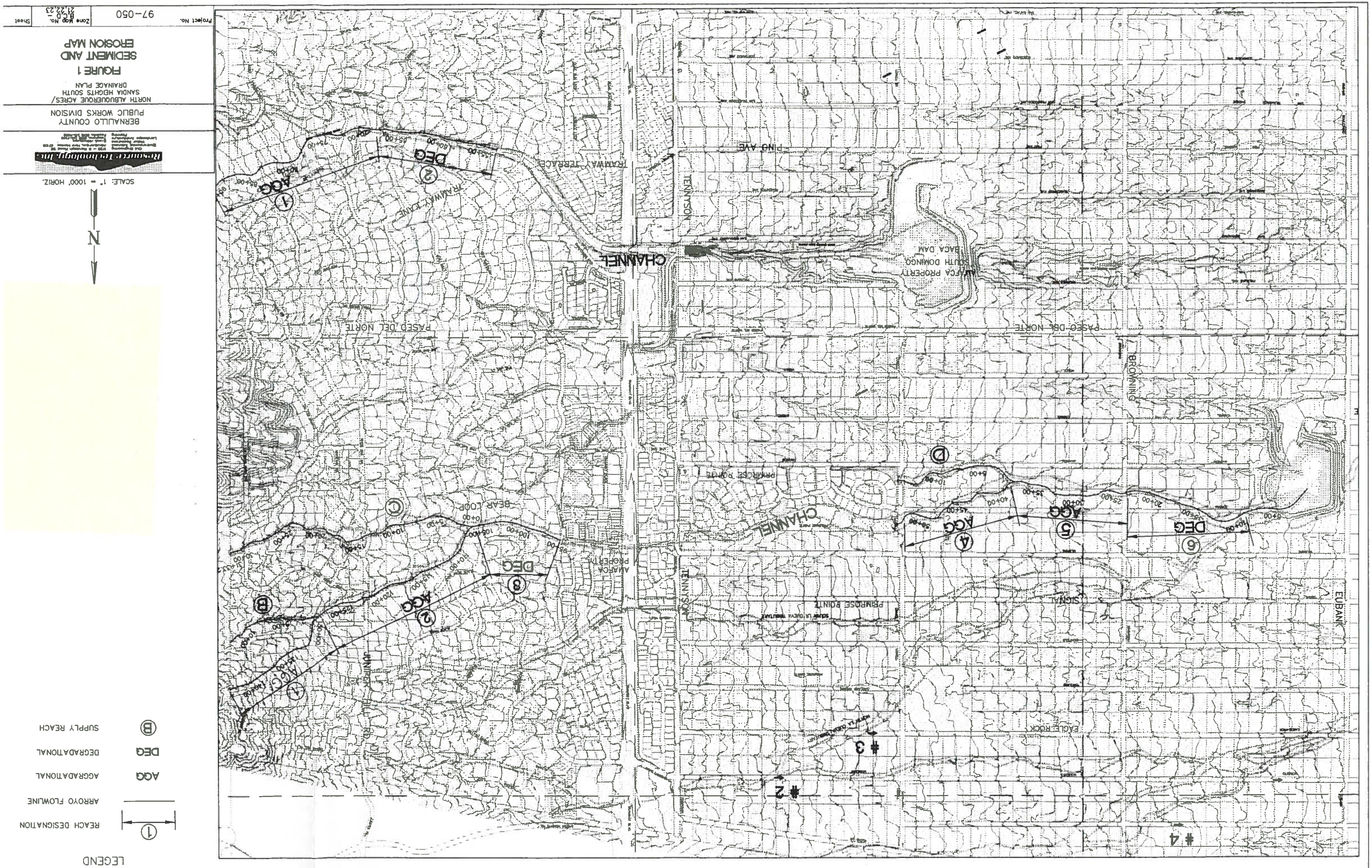
*Reach locations are shown on Figures 2 and 3
(From AMAFCA La Cueva, El Camino and North Camino Arroyos Facilities Plan, 1998)

TABLE 9

SUMMARY OF EXISTING CONDITIONS
LA CUEVA TRIBUTARY ARROYO

Reach*	Sediment Transport Capacity in Tons by Frequency							Average Annual Aggradation (+) Degradation (-) Tons	100-Year Aggradation (+) Degradation (-) Tons	30-Year Cumulative Plus 100-Year Tons
	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	Average Annual			
1A	1431	2603	4706	6986	9305	11511	2061	-	-	-
1B	1146	2068	3277	4332	5372	6229	1481	+580	+5282	+22682
1C	1420	2437	3792	5210	6713	8248	1792	-311	-2019	-11349
1D	875	1644	3048	4391	5350	6157	1271	+521	+2091	+17721
1E	1199	2036	3546	5589	7508	9189	1644	-373	-3032	-14222
1F	997	1794	3121	4765	6564	8143	1418	+226	+1046	+7826
1G	986	1933	3856	6396	8783	10878	1640	-222	-2735	-9395
1H	1164	1899	2968	4139	5337	6363	1424	+216	+4515	+10995

*Reach locations are shown on Figures 2 and 3`
(From AMAFCA La Cueva, El Camino and North Camino Arroyos Facilities Plan, 1998)


CHANNEL
PASEO DEL NORTE
TENNYSON
PINO AVE
TRAMWAY TERRACE
TRAMWAY LANE
BACA DAM
SOUTH DOMINGO BACA PROPERTY
BROWNING
EUBANK
PRINROSE POINTE
SIGNAL
EAGLE ROCK
BEAR LOOP
JUNIPER HILL RD
ABACA PROPERTY
ACC
AGG
DEG
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1
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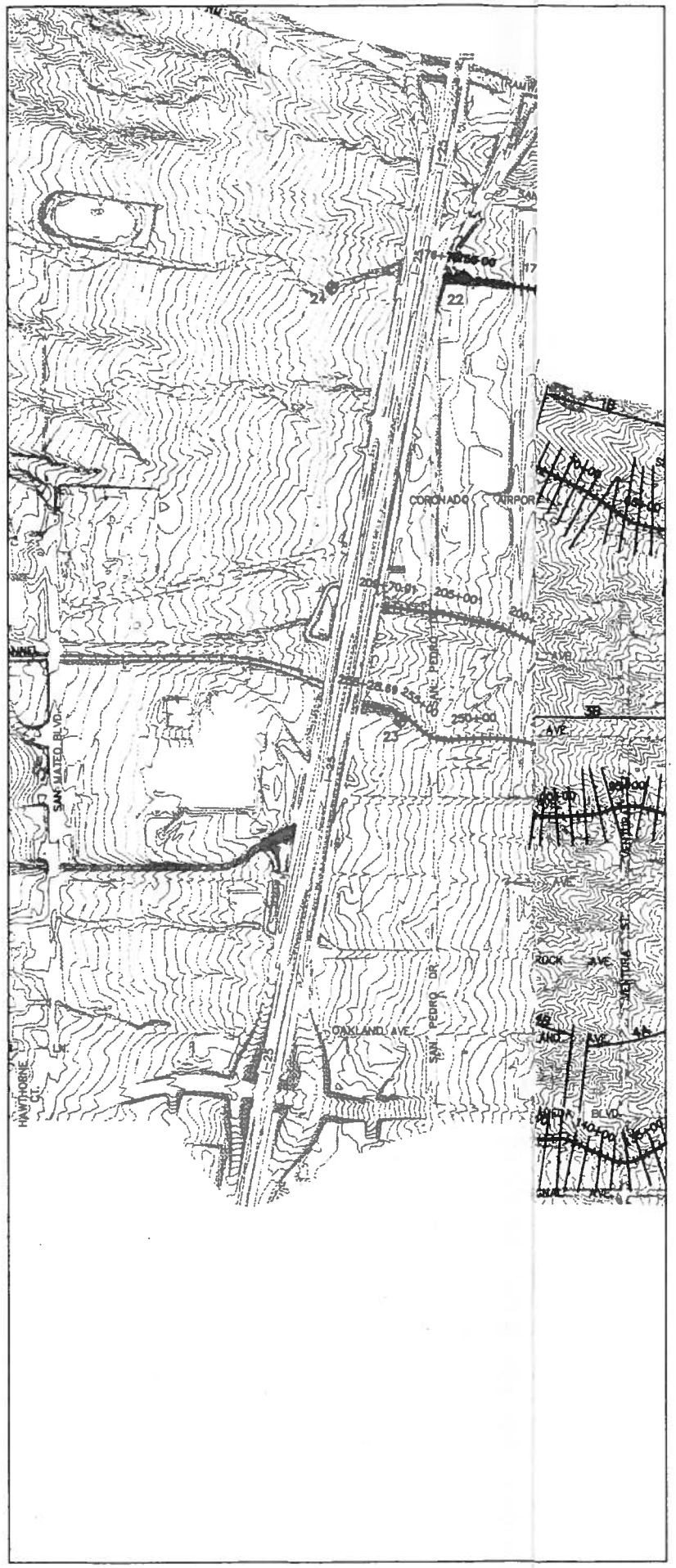
#4
LEGEND
REACH DESIGNATION
ARROYO FLOWLINE
AGGRADATIONAL
DEGRADATIONAL
SUPPLY REACH
SCALE: 1" = 1000' HORIZ.
N
Resource Technology, Inc.
BERNALILLO COUNTY
PUBLIC WORKS DIVISION
NORTH ALBUQUERQUE ACRES/
SANDIA HEIGHTS SOUTH
DRAINAGE PLAN
FIGURE 1
SEDIMENT AND
EROSION MAP
Project No. 97-050
Zone Map No. B-C-D - 21-22-23
Sheet



LEGEND

1A — REACH DESIGNATION

ARROYO FLOWLINE

1 — SEDIMENT SAMPLE LOCATION

NOTE:

SEDIMENT LOCATIONS 5–10 ARE NOT SHOWN. THEY ARE LOCATED OUTSIDE THE LIMITS OF THIS MAPPING.

500 250 0 500 1000

SCALE: 1" = 500'

Resource Technology, Inc.
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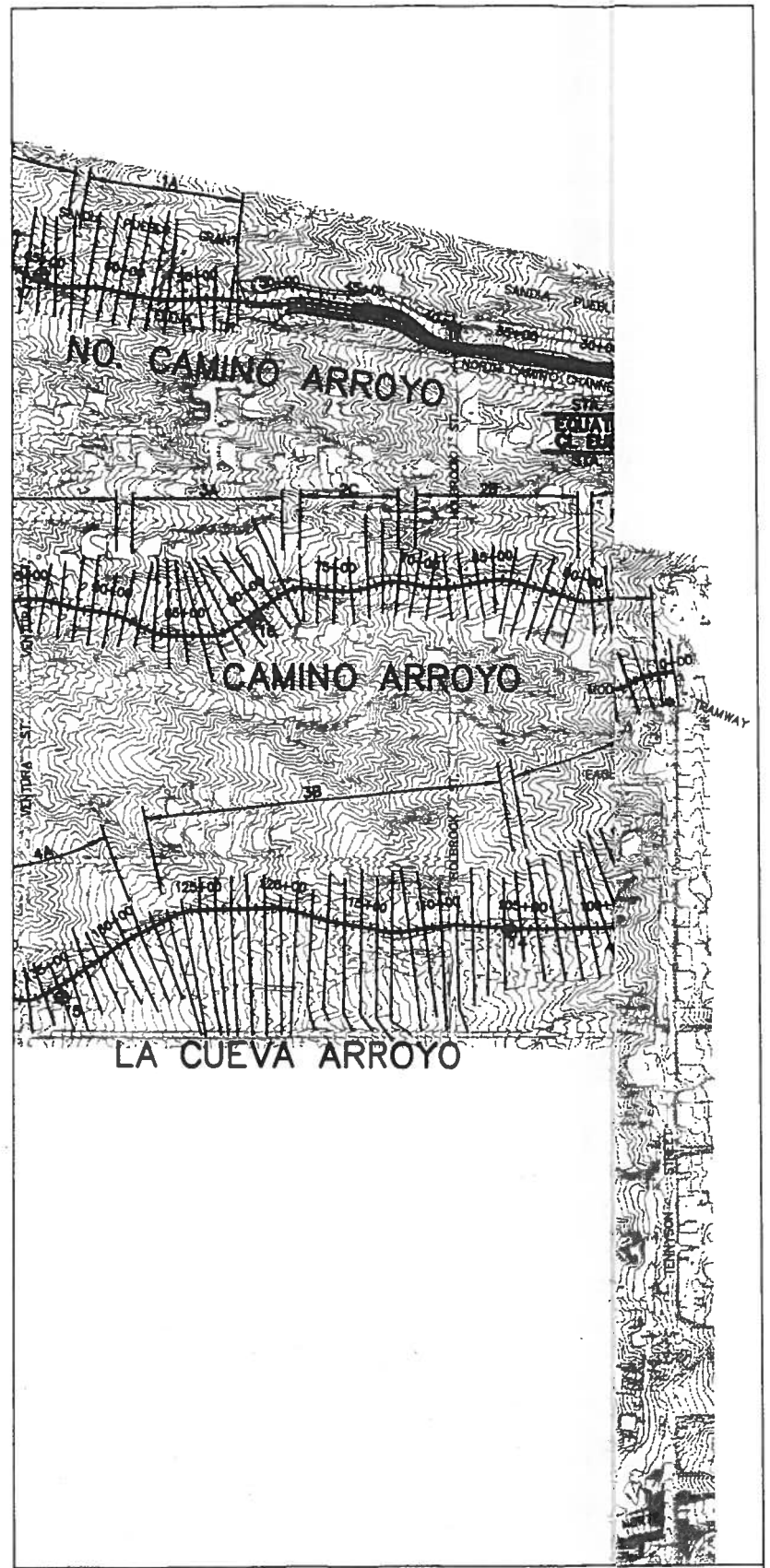
ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

TITLE: LA CUEVA, CAMINO AND NORTH CAMINO ARROYOS DRAINAGE MANAGEMENT PLAN

SEDIMENT AND EROSION MAP

FIGURE 2

PROJECT NO.	97-050	MAP NO.	SHEET	OF
		B-C18,19,20		



LEGEND

1A — REACH DESIGNATION

ARROYO FLOWLINE

1 — SEDIMENT SAMPLE LOCATION

NOTE:

SEDIMENT LOCATIONS 5–10 ARE NOT SHOWN. THEY ARE LOCATED OUTSIDE THE LIMITS OF THIS MAPPING.

N

500 250 0 500 1000

SCALE: 1" = 500'

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TITLE: LA CUEVA, CAMINO AND NORTH CAMINO ARROYOS DRAINAGE MANAGEMENT PLAN

SEDIMENT AND EROSION MAP

FIGURE 3

PROJECT NO.	97-050	MAP NO.	SHEET	OF
		B-C18,19,20		

TABLE A-1

NORTH CAMINO EXISTING CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
300	.8840	34.987	509.61	68.141	1001.07
301	.8520	24.387	374.23	54.493	862.46
302.0	.1576	3.014	98.52	7.701	250.67
303.0	.1706	5.250	138.60	10.99	288.51
304.0	.0840	2.306	63.70	4.992	138.67
305.1	.1691	4.665	106.64	10.106	237.45
305.2	.1529	2.543	52.98	6.756	146.57
306.0	.1051	3.072	93.29	6.528	193.49
307.0	.0663	1.296	40.21	3.196	98.65
308.0	.0535	.856	27.40	2.296	72.95
309.0	.0796	1.276	35.55	3.439	96.16
310.0	.1033	1.609	35.86	4.361	100.32
311.0	.1528	2.264	50.41	6.278	147.74
312.0	.0660	.995	24.85	2.761	70.11
313.0	.2092	4.628	107.68	10.599	266.92

TABLE A-2

NORTH CAMINO FUTURE CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
300	.8840	34.987	509.61	68.141	1001.07
301	.8520	24.387	374.23	54.493	862.46
302.0	.1576	7.816	213.57	14.313	377.68
303.0	.1706	6.966	184.83	13.452	340.12
304.0	.0840	3.106	92.34	6.183	171.88
305.1	.1691	6.681	159.69	13.014	302.07
305.2	.1529	5.912	125.07	11.517	236.60
306.0	.1051	3.751	117.15	7.537	220.14
307.0	.0582	2.165	66.17	4.267	121.68
308.0	.0535	1.845	58.24	3.706	108.45
309.0	.0796	2.731	75.82	5.522	143.06
310.0	.1033	3.483	80.12	7.037	154.99
311.0	.1528	5.107	116.78	10.352	230.86
312.0	.0660	2.401	61.07	4.765	114.08
313.0	.2092	11.376	250.33	19.847	437.50

TABLE A-3

EL CAMINO EXISTING CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
200.0	.3030	5.927	197.06	15.384	487.60
201.0	.1339	2.525	81.06	6.497	207.70
202.1	.1031	2.226	68.80	5.334	164.12
202.2	.1099	2.692	79.79	6.162	180.49
203.1	.1258	2.799	81.09	6.547	192.92
203.2	.0485	1.043	31.32	2.466	74.17
203.3	.0558	1.152	34.52	2.757	83.29
204.0	.2119	4.166	89.98	10.122	235.18
204.1	.1484	2.914	71.63	7.086	181.03
204.2	.1333	2.508	71.82	6.169	185.49
205.0	.0459	3.150	77.96	5.191	123.43

TABLE A-4

EL CAMINO FUTURE CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
200.0	.3030	5.927	197.06	15.384	487.60
201.0	.1339	2.525	81.06	6.497	207.70
202.1	.1031	3.961	121.81	7.813	223.44
202.2	.1099	4.133	122.75	8.219	229.39
203.1	.1258	4.591	139.73	9.143	257.46
203.2	.0395	1.826	52.27	3.366	90.47
203.3	.1259	7.465	193.61	12.845	320.68
204.0	.1023	5.899	153.51	10.191	255.42
204.1	.1288	5.455	131.42	10.225	239.10
204.2	.0688	4.812	118.86	7.907	187.81
204.3	.1112	3.694	117.18	7.507	224.48
204.4	.0297	.987	30.96	2.006	58.84
205.0	.0543	3.726	92.31	6.140	146.01

TABLE A-5

LA CUEVA ARROYO EXISTING CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
100.0	1.2140	45.333	598.79	87.881	1201.70
101.0	.6070	23.352	498.34	45.841	953.84
102.0	.8750	23.497	439.84	54.313	1033.60
102.1	.0930	1.592	59.2	4.405	147.55
103.0	.2120	6.637	184.92	14.423	365.76
103.1	.2299	6.117	149.93	14.085	326.84
103.2	.0616	2.326	68.41	4.677	127.12
103.4	.0953	2.969	92.00	6.348	184.28
103.5	.0625	3.605	94.68	6.408	157.65
103.6	.0684	2.959	72.88	5.606	137.46
104.1	.1200	5.006	132.31	9.569	251.45
104.2	.0804	1.825	48.56	4.326	114.02
105.1	.1382	4.265	123.03	9.014	260.36
105.2	.1058	2.369	73.17	5.646	172.94
106.0	.0436	1.337	35.83	2.829	77.44
106.1	.1116	2.796	81.48	6.465	187.37
107.1	.1808	3.422	105.83	8.922	208.74
107.2	.1720	3.958	95.27	9.43	237.40
108.0	.2055	4.801	127.09	11.246	311.04
109.0	.1006	2.314	69.18	5.441	164.16
110.0	.1634	3.502	79.91	8.385	202.35
111.0	.0674	1.044	31.33	2.940	88.80
111.1	.1194	2.453	73.86	5.962	184.36

TABLE A-6

LA CUEVA ARROYO FUTURE CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
100.0	1.214	45.333	598.79	87.881	1201.70
101.0	.6070	23.352	498.34	45.841	953.84
102.0	.8750	20.905	392.78	54.313	1033.60
102.1	.0930	1.622	60.53	4.457	149.17
103.0	.2120	6.637	184.92	14.423	365.76
103.1	.2299	6.117	149.93	14.085	326.84
103.2	.0616	3.311	87.21	5.997	147.27
103.4	.0953	5.497	142.27	9.771	239.06
103.5	.0625	3.605	94.68	6.408	157.65
103.6	.0684	4.042	101.97	7.142	169.48
104.1	.1367	7.422	203.74	13.378	344.63
104.2	.0471	1.877	50.46	3.688	91.02
105.1	.1305	6.150	173.78	11.502	308.49
105.2	.1045	4.123	125.95	8.123	230.30
106.0	.0436	1.732	52.14	3.448	95.85
106.1	.1116	4.342	126.34	8.685	238.47
107.1	.1808	7.151	208.11	14.303	399.38
107.2	.1720	7.115	168.43	13.591	325.87
108.0	.2055	7.759	207.96	15.573	404.63
109.0	.1006	3.750	114.66	7.552	216.30
110.0	.1634	5.774	138.24	11.738	275.61
111.0	.0533	1.823	57.02	3.739	108.83
111.1	.0500	2.054	57.41	7.699	195.97
111.3	.0420	2.498	64.56	4.348	107.90
111.4	.0141	.482	15.09	.989	28.80

TABLE A-7

NORTH DOMINGO BACA EXISTING CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
900	.4410	17.063	328.97	33.763	640.16
901	.1180	4.570	165.92	9.218	281.25
902.1	.0887	2.878	56.10	6.141	116.14
902.2	.1220	3.958	77.32	8.447	161.86
902.3	.0730	3.816	98.65	6.993	173.70
903.0	.0641	3.591	94.20	6.488	158.75
904.0	.0413	2.315	60.83	4.183	102.46
905.0	.0092	.516	13.56	.932	22.84
906.0	.0237	1.391	34.64	2.476	58.73
910.21	.0137	.279	9.05	.704	21.87
910.31	.1563	5.839	164.33	11.680	326.81
911.0	.0580	1.620	37.27	3.530	83.52
912.11	.0590	1.374	39.99	3.224	94.77
912.21	.1960	5.094	141.21	11.549	321.78
913.1	.0360	.634	19.96	1.688	52.68
913.2	.0170	.387	11.75	.919	27.83
914.2	.0350	1.003	32.46	2.212	66.39
915.1	.0343	.760	22.02	1.807	5
915.2	.0370	.820	23.76	1.949	5
917.0	.0406	.693	21.97	1.863	5
918.0	.1140	2.545	45.61	6.050	1
919.1	.0790	1.888	65.91	4.487	1
919.2	.0610	1.279	43.32	3.178	1
920.0	.0431	.890	23.68	2.152	5
920.1	.0202	.448	13.52	1.058	3
921.1	.0292	.603	17.60	1.458	4
921.2	.0874	1.827	54.31	4.415	1
921.3	.0284	.587	17.12	1.418	4
922.0	.0210	.665	16.25	1.398	32.59

TABLE A-8

NORTH DOMINGO BACA FUTURE CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
900	.4410	17.063	328.97	33.763	640.16
901	.1180	4.570	165.92	9.218	281.25
902.1	.0887	4.340	72.14	8.032	134.65
902.2	.1220	5.969	99.04	11.047	186.8
902.3	.0730	3.939	95.14	7.105	169.92
903.0	.0897	5.028	131.56	9.084	223.26
904.0	.0413	2.315	60.83	4.183	102.46
905.0	.0092	.516	13.56	.932	22.84
906.0	.0237	1.642	38.91	2.816	63.36
910.21	.0137	.537	16.31	1.073	30.01
910.31	.1563	7.192	201.64	13.622	368.32
911.0	.0580	2.248	57.52	4.444	106.44
912.11	.0590	2.254	67.97	4.520	126.55
912.21	.1960	7.489	201.16	15.016	391.52
913.1	.0360	1.343	40.82	2.701	76.37
913.2	.0170	.792	22.16	1.479	39.50
914.2	.0350	1.631	44.99	3.045	80.30
915.2	.0370	3.047	68.99	4.819	107.40
917.0	.0406	1.325	36.32	2.985	85.47
918.0	.1140	4.131	79.28	8.381	156.75
919.1	.0790	2.863	88.16	5.808	167.03
919.2	.0427	1.547	47.67	3.139	89.89
920.0	.0300	1.057	32.58	2.142	61.70
920.1	.0202	.712	21.94	1.443	41.55
921.1	.0292	1.029	31.71	2.085	60.06
921.2	.0874	5.935	145.56	9.939	237.09
921.3	.0140	.493	15.21	1.000	28.81
922.0	.0210	.713	17.26	1.462	33.77
920.2	.0085	.300	9.24	.607	17.50
921.4	.0144	.508	15.64	1.028	29.63

TABLE A-9

SOUTH DOMINGO BACA EXISTING CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
400.00	2.069	73.559	854.14	145.723	1792.15
400.10	.2482	6.636	209.84	14.947	477.22
400.13	.0139	.955	22.93	1.627	37.55
400.30	.2550	9.922	348.72	19.788	620.56
400.51	.1688	7.463	195.83	14.234	375.02
400.52	.0734	3.245	77.40	6.190	146.12
400.53	.9830	24.788	245.71	58.278	644.20
400.61	.0930	4.112	107.60	7.842	202.27
400.62	.0980	4.333	113.41	8.264	213.43
400.65	.5919	16.022	193.67	36.701	488.03
400.66	.0940	4.156	104.95	7.927	198.10
401.20	.0850	1.497	47.39	3.955	124.87
401.31	.0538	1.332	40.02	3.072	90.87
401.32	.0520	1.242	36.62	2.893	85.27
401.33	.0430	.790	24.88	2.066	64.19
401.40	.0432	1.077	32.04	2.481	72.94
401.50	0.045	1.083	31.62	2.519	73.79
402.14	.0821	2.836	64.91	5.772	134.07
403.10	.0795	1.530	49.19	3.928	123.44
403.20	.1103	2.446	62.84	5.802	154.79
404.30	.0463	.851	26.79	2.224	69.12
404.20	.0525	.925	29.10	2.443	76.30

TABLE A-10

SOUTH DOMINGO BACA FUTURE CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
400.00	2.069	73.559	854.14	145.723	1792.15
400.10	.2420	12.248	329.21	22.579	601.75
400.13	.0139	.955	22.93	1.627	37.55
400.30	.2550	9.922	348.72	19.788	620.56
400.51	.1688	9.058	220.94	16.356	402.59
400.52	.0734	3.939	88.50	7.112	158.7
400.53	.9830	24.788	245.71	58.278	644.20
400.61	.0930	4.991	120.24	9.011	215.52
400.62	.0980	5.259	128.39	9.496	230.10
400.65	.5919	16.022	193.67	36.701	488.03
400.66	.0940	5.044	119.29	9.108	214.19
401.20	.0850	3.172	96.33	6.345	180.40
401.31	.0518	1.979	59.68	3.969	111.11
401.32	.0520	1.987	59.91	3.984	111.54
401.33	.0430	1.643	49.54	3.294	92.24
401.40	.0452	1.817	54.36	3.533	98.36
401.50	0.045	1.809	54.12	3.517	97.92
402.14	.0884	4.139	90.65	7.582	168.01
403.10	.0673	2.571	77.53	5.156	144.54
403.20	.0796	2.959	79.67	5.942	150.24
403.3	.0155	.576	17.49	1.157	32.72
404.20	.0525	1.951	59.21	3.919	110.77
404.30	.0463	1.769	53.34	3.547	99.31
408.1	.0098	.364	11.06	.732	20.69
507.0	.0089	.322	9.82	.650	18.50

TABLE A-11

PINO ARROYO EXISTING CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
500.0	.0635	2.735	71.54	5.234	134.41
500.1	.0549	2.365	57.39	4.525	108.56
500.2	.0508	2.188	57.23	4.187	107.50
500.3	.0532	2.292	52.71	4.385	99.55
500.4	.0209	.900	23.55	1.723	44.24
501.0	.0139	.371	11.52	0.833	24.75
501.1	.0392	1.045	32.43	2.345	69.66
501.2	.0501	1.244	38.59	2.840	85.46
502.0	.0660	1.760	54.62	3.948	117.44
502.1	.0750	2.000	62.15	4.487	133.93
502.2	.0339	.904	24.01	2.028	52.21
502.3	.0395	1.053	32.68	2.363	70.20
503.0	.0561	1.496	45.82	3.356	98.61
503.1	.0220	.587	17.16	1.316	37.19
503.2	.0494	1.226	38.05	2.800	84.27
504.0	.0372	.923	28.66	2.109	63.46
505.0	.0287	.712	22.11	1.627	48.96
506.0	.0484	1.201	25.65	2.744	58.52
508.0	.0259	1.696	41.79	2.903	68.75
509.0	.0259	1.626	40.32	2.793	66.74
510.0	3.178	112.5	1562	228.7	3292.8
510.1	.464	16.42	447.72	33.40	869.97
510.2	.270	4.494	170.53	12.18	448.49
510.3	.278	6.322	209.94	15.17	513.58
510.4	.221	7.391	209.90	15.32	447.07

TABLE A-12

PINO ARROYO FUTURE CONDITIONS

Sub basin	Area (sq mi)	10-Yr Vol (ac-ft)	10-Yr Qp (cfs)	100-Yr Vol (ac-ft)	100-yr Qp (cfs)
500.0	.0635	3.327	81.38	6.026	145.38
500.1	.0549	2.877	65.77	5.210	118.02
500.2	.0508	2.662	65.11	4.821	116.28
500.3	.0532	2.787	60.29	5.048	108.06
500.4	.0209	1.095	26.79	1.983	47.85
501.0	.0139	0.534	16.22	1.067	29.99
501.1	.0392	1.503	45.66	3.006	84.43
501.2	.0501	1.815	55.26	3.661	104.03
502.0	.0660	2.531	76.87	5.061	142.27
502.1	.0750	2.876	87.34	5.751	162.06
502.2	.0339	1.300	34.32	2.599	63.93
502.3	.0395	1.515	46.01	3.029	85.08
503.0	.0561	2.151	64.65	4.302	120.82
503.1	.0220	.844	24.37	1.687	45.41
503.2	.0494	1.790	54.49	3.610	102.58
504.0	.0372	1.348	41.03	2.718	77.25
505.0	.0287	1.040	31.66	2.097	59.60
506.0	.0484	1.754	38.27	3.537	73.61
508.0	.0259	1.696	41.79	2.903	68.75
509.0	.0259	1.626	40.32	2.793	66.74
510.0	3.178	112.5	1592.0	228.7	3292.8
510.1	.464	16.42	447.72	33.40	869.97
510.2	.270	4.494	170.53	12.18	448.49
510.3	.278	6.322	209.94	15.17	513.58
510.4	.221	11.63	283.91	21.15	530.73

TABLE B-1

NORTH CAMINO ARROYO SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
300	Existing	.8840	0	0	100	0	.432
	Future	.8840	0	0	100	0	.432
301	Existing	.8520	10	50	40	0	.402
	Future	.8520	10	50	40	0	.402
302	Existing	.1576	90	0	5	5	.133
	Future	.1576	20	20	30	30	.133
303	Existing	.1706	60	0	25	15	.16
	Future	.1706	20	20	40	20	.16
304	Existing	.0840	70	5	10	15	.14
	Future	.0840	22	23	38	17	.14
305.1	Existing	.1691	70	0	15	15	.19
	Future	.1691	20	20	40	20	.19
305.2	Existing	.1529	90	0	5	5	.23
	Future	.1529	20	20	40	20	.23
306	Existing	.1051	50	15	20	15	.133
	Future	.1051	22	23	38	17	.133
307	Existing	.0663	78	3	11	8	.133
	Future	.0582	20	22	38	20	.133
308	Existing	.0535	88	0	7	5	.133
	Future	.0535	22	23	38	17	.133
309	Existing	.0796	87	0	8	5	.16
	Future	.0796	22	23	38	17	.16
310	Existing	.1033	87	0	8	5	.21
	Future	.1033	22	23	38	17	.21
311	Existing	.1528	90	0	5	5	.21
	Future	.1528	22	23	38	17	.21
312	Existing	.0660	90	0	5	5	.18
	Future	.0660	20	20	40	20	.18
313	Existing	.2092	78	0	7	15	.18
	Future	.2092	9	21	21	49	.18
314	Existing	.0960	87	0	5	8	.133
	Future	.0960	0	20	30	50	.133

TABLE B-1 (cont.)

NORTH CAMINO ARROYO BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
315	Existing	.0426	92	0	3	5	.133
	Future	.0426	0	20	30	50	.133
401	Existing	.0556	0	0	100	0	.133
	Future	.0556	0	20	30	50	.133
402	Existing	.2918	0	0	90	10	.17
	Future	.2918	0	20	30	50	.17

TABLE B-2

EL CAMINO ARROYO SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment %				TP (hrs)
			A	B	C	D	
201	Existing	.1339	95	0	0	5	.133
	Future	.1339	95	0	0	5	.133
200	Existing	.3030	65	20	15	0	.167
	Future	.3030	65	20	15	0	.167
202.1	Existing	.1031	84	0	8	8	.133
	Future	.1031	22	23	38	17	.133
202.2	Existing	.1099	70	5	15	10	.14
	Future	.1099	22	23	38	17	.14
202.3	Existing	.0684	60	10	15	15	.133
	Future	.0518	11	26	33	30	.133
203.1	Existing	.1258	80	0	10	10	.14
	Future	.1258	22	23	38	17	.14
203.2	Existing	.0485	80	0	10	10	.133
	Future	.0394	11	26	33	30	.133
203.3	Existing	.0558	80	0	10	10	.133
	Future	.1259	20	20	34	26	.133
204	Existing	.2119	80	0	10	10	.21
	Future	.0773	20	20	34	26	.133
204.2	Existing	.1333	80	0	10	10	.14
	Future	.0687	8	22	25	45	.14
204.1	Existing	.1484	80	0	10	10	.18
	Future	.1288	17	22	31	30	.18
204.3	Future	.0870	10	15	30	45	.133
204.4	Future	.0546	21	21	36	22	.133
205	Existing	.0459	10	0	20	70	.133
	Future	.0543	0	10	20	70	.133
206.1	Existing	.1221	75	5	10	10	.150
	Future	.1221	0	20	30	50	.150
206.2	Existing	.0561	75	5	10	10	.133
	Future	.0561	0	20	30	50	.133
206.3	Existing	.0480	0	7	7	86	.133
	Future	.0480	0	7	7	86	.133
206.4	Existing	.0327	40	25	5	30	.133
	Future	.0327	0	20	30	50	.133

TABLE B-3

LA CUEVA ARROYO SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
100	Existing	1.2140	0	0	100	0	.475
	Future	1.2140	0	0	100	0	.475
101	Existing	.6070	0	0	100	0	.267
	Future	.6070	0	0	100	0	.267
102	Existing	.8750	20	40	40	0	.320
	Future	.8750	20	40	40	0	.320
102.1	Existing	.0930	82	0	18	0	.133
	Future	.0930	80	0	20	0	.133
106	Existing	.0436	78	0	5	17	.133
	Future	.0436	22	23	38	17	.133
106.1	Existing	.1116	75	0	15	10	.14
	Future	.1116	22	23	38	17	.14
107.1	Existing	.1808	92	0	3	5	.14
	Future	.1808	22	23	38	17	.14
107.2	Existing	.1720	86	0	5	9	.18
	Future	.1720	22	23	38	17	.18
108	Existing	.2055	80	0	10	10	.16
	Future	.2055	22	23	38	17	.16
109	Existing	.1006	80	0	10	10	.133
	Future	.1006	22	23	38	17	.133
110	Existing	.1634	80	0	10	10	.19
	Future	.1634	22	23	38	17	.19
111	Existing	.0674	90	0	5	5	.14
	Future	.0533	16	26	33	25	.14
111.1*	Existing	.1194	80	0	10	10	.133
	Future	.0969	0	34	16	50	.133
111.3*	Future	.0420	0	34	16	50	.133
111.4*	Future	.0141	22	23	38	17	.133
112.1*	Existing	.0894	0	34	16	50	.140
	Future	.0894	0	34	16	50	.140

*Modified for COA NAA MDP 9/97

TABLE B-3 (cont.)

LA CUEVA ARROYO SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
112.2*	Existing	.0826	11	29	15	45	.140
	Future	.0826	0	34	16	50	.140
113*	Existing	.1136	80	0	15	5	.133
	Future	.0750	0	25	15	60	.133
115*	Existing	.1337	80	0	15	5	.133
	Future	.1202	0	26	12	62	.133
116*	Existing	.1309	80	0	5	15	.133
116.1	Future	.1000	0	25	15	50	.133
116.2	Future	.0719	0	25	15	50	.133
116.21	Future	.0344	0	40	20	40	.133
117.2*	Existing	.1391	73	0	7	20	.22
	Future	.0500	0	34	16	50	.133
117.21*	Existing	.0234	0	34	16	50	.133
117.22*	Future	.0156	0	20	10	70	.133
117.3*	Existing	.0863	65	5	15	15	.133
	Future	.1172	0	34	16	50	.133
117.31*	Existing	.0250	0	34	16	50	.133
117.32*	Existing	.0090	0	34	16	50	.133
117.4*	Existing	.0750	85	0	5	10	.133
	Future	.0512	0	25	15	60	.133
117.5*	Existing	.0550	0	10	20	70	.133
	Future	.0550	0	10	20	70	.133
118	Existing	.0649	0	20	10	70	.133
	Future	.0649	0	20	10	70	.133
118.1	Existing	.0306	75	5	10	10	.133
	Future	.0306	0	20	30	50	.133
119	Existing	.0549	0	20	10	70	.133
	Future	.0549	0	20	10	70	.133
120	Existing	.0268	50	0	0	50	.133
	Future	.0268	0	20	10	70	.133

*Modified for COA NAA MDP 9/97

TABLE B-3 (cont.)

LA CUEVA ARROYO SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
121	Existing	.0489	80	0	15	5	.133
	Future	.0489	0	20	10	70	.133
122	Existing	.0225	0	34	16	50	.133
	Future	.0225	0	34	16	50	.133
123	Existing	.0185	0	48	12	40	.133
	Future	.0185	0	34	16	50	.133
124	Existing	.0251	0	34	16	50	.133
	Future	.0251	0	34	16	50	.133
125	Existing	.0508	0	20	10	70	.133
	Future	.0508	0	20	10	70	.133
126	Existing	.0737	0	20	10	70	.133
	Future	.0737	0	20	10	70	.133
127	Existing	.0633	0	0	90	10	.133
	Future	.0633	0	20	10	70	.133
128	Existing	.1373	0	0	90	10	.17
	Future	.1373	0	20	10	70	.17

*Modified for COA NAA MDP 9/97

TABLE B-4

LA CUEVA DIVERSION TO NDB DAM SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment %				TP (hrs)
			A	B	C	D	
103	Existing	.212	6	41	53	0	.198
	Future	.212	6	41	53	0	.198
103.1	Existing	.2299	27	33	40	0	.234
	Future	.2299	27	33	40	0	.234
103.2	Existing	.0616	25	30	31	14	.139
	Future	.0616	20	5	46	29	.139
103.4	Existing	.0953	55	0	35	10	.136
	Future	.0953	20	5	40	35	.136
103.5	Existing	.0625	20	5	40	35	.133
	Future	.0625	20	5	40	35	.133
103.6	Existing	.0684	58	8	8	26	.137
	Future	.0684	20	5	40	35	.137
104.1	Existing	.1200	50	10	15	25	.133
	Future	.1367	16	26	33	25	.133
104.2	Existing	.0804	84	0	8	8	.16
	Future	.0471	22	23	38	17	.16
105.1	Existing	.1382	70	0	15	15	.133
	Future	.1305	16	26	33	25	.133
105.2	Existing	.1058	84	0	8	8	.133
	Future	.1045	22	23	38	17	.133

TABLE B-5

NORTH DOMINGO BACA SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
900	Existing	.441	0	0	100	0	.303
	Future	.441	0	0	100	0	.303
901	Existing	.118	0	0	100	0	.133
	Future	.118	0	0	100	0	.133
902.1	Existing	.0887	35	25	30	10	.248
	Future	.0887	30	30	10	30	.248
902.2	Existing	.1220	35	25	30	10	.248
	Future	.1220	30	30	10	30	.248
902.3	Existing	.073	20	20	30	30	.133
	Future	.073	20	40	5	35	.133
903	Existing	.06405	0	35	35	30	.133
	Future	.08968	0	35	35	30	.133
904	Existing	.0413	0	35	35	30	.133
	Future	.0413	0	35	35	30	.133
905	Existing	.0092	0	35	35	30	.133
	Future	.0092	0	35	35	30	.133
906	Existing	.02368	10	25	30	35	.133
	Future	.02368	0	25	30	45	.133
910.21	Existing	.0137	80	5	10	5	.133
	Future	.0137	22	23	38	17	.133
910.31	Existing	.1563	45	15	20	20	.133
	Future	.1563	20	20	35	25	.133
911	Existing	.058	75	5	5	15	.171
	Future	.058	22	23	38	17	.171
912.11	Existing	.059	80	5	5	10	.133
	Future	.059	22	23	38	17	.133
912.21	Existing	.184	65	5	20	10	.154
	Future	.196	22	23	38	17	.154

TABLE B-5 (cont.)

NORTH DOMINGO BACA SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
913.1	Existing Future	.0360 .0360	88 22	2 23	5 38	5 17	.133 .133
913.2	Existing Future	.017 .017	78 20	2 20	10 30	10 30	.133 .133
914.2	Existing Future	.035 .035	48 20	2 20	40 30	10 30	.133 .133
915.1	Existing	.0343	85	0	5	10	.133
915.2	Existing Future	.0370 .0370	85 0	0 20	5 10	10 70	.133 .133
402.5	Existing Future	.0280 .0280	0 0	20 20	10 10	70 70	.1333 .1333
402.6	Existing Future	.0243 .0243	0 0	20 20	10 10	70 70	.133 .133
408.1	Existing	.019	83	2	10	5	.15
919.1	Existing Future	.079 .079	50 22	5 23	40 38	5 17	.133 .133
919.2	Existing Future	.0610 .0427	65 22	5 23	25 38	5 17	.133 .133
921.3	Existing Future	.0284 .0140	83 22	2 23	5 38	10 17	.133 .133
918	Existing Future	.114 .114	78 22	2 23	10 38	10 17	.26 .26
921.1	Existing Future	.0292 .0292	83 22	2 23	5 38	10 17	.133 .133
921.2	Existing Future	.0874 .0874	80 0	0 34	10 16	10 50	.133 .133
917	Existing Future	.0406 .0406	88 22	2 23	5 38	5 17	.133 .133

TABLE B-5 (cont.)

NORTH DOMINGO BACA SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
920.1	Existing Future	.0202 .0202	70 22	10 23	10 38	10 17	.133 .133
920	Existing Future	.0431 .0431	83 22	2 23	5 38	10 17	.147 .147
922	Existing Future	.021 .021	30 22	15 23	40 38	15 17	.19 .19
922.1	Existing Future	.007 .007	66 0	17 34	0 16	17 50	.133 .133
922.2	Existing Future	.0148 .0148	0 0	30 30	30 30	40 40	.133 .133
922.3	Existing Future	.0415 .0415	0 0	30 30	30 30	40 40	.133 .133
923	Existing Future	.007 .007	60 0	10 20	20 10	10 70	.133 .133
926.2	Future	.0470	0	34	16	50	.133
926.1	Existing Future	.012 .012	22 0	23 34	38 16	17 50	.133 .133
926	Existing Future	.0375 .0578	50 0	0 25	25 15	25 60	.133 .133
925.2	Existing Future	.014 .0094	96 0	0 34	2 16	2 50	.133 .133
925.1	Existing Future	.064 .064	0 0	34 34	16 16	50 50	.133 .133
925.3	Existing Future	.0105 .0105	0 0	34 34	16 16	50 50	.133 .133
925.4	Existing Future	.0370 .0370	0 0	20 20	30 30	50 50	.133 .133
924.1	Existing Future	.019 .019	95 0	0 34	3 16	2 50	.133 .133

TABLE B-5 (cont.)

NORTH DOMINGO BACA SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
924.2	Existing Future	.007 .025	80 0	5 34	5 16	10 50	.133 .133
924.3	Existing Future	.027 .027	0 0	30 30	20 20	50 50	.133 .133
924.4	Existing Future	.0172 .0172	75 0	0 34	15 16	10 50	.133 .133
929.	Existing Future	.024 .024	0 0	15 15	20 20	65 65	.133 .133
930	Existing Future	.085 .085	0 0	34 25	16 15	50 60	.133 133
935	Existing Future	.110 .110	85 11	0 29	10 20	5 40	.133 .133
931	Existing Future	.0605 .0605	0 0	40 30	5 10	55 60	.260 .260
932.1	Existing Future	.0073 .0073	0 0	25 25	20 20	55 55	.133 .133
932.2	Existing Future	.0073 .0073	0 0	25 25	20 20	55 55	.133 .133
932.3	Existing Future	.0313 .0313	0 0	25 25	20 20	55 55	.133 .133
932.4	Existing Future	.0574 .0574	0 0	25 25	20 20	55 55	.133 .133
934.1	Existing Future	.0468 .1031	10 0	30 25	20 15	40 60	.133 .133
421.4	Existing	.012	80	0	10	10	.133
937	Existing Future	.0352 .0452	80 0	0 25	10 15	10 60	.133 .133
960	Existing Future	.0075 .0075	0 0	25 25	25 25	50 50	.133 .133

TABLE B-5 (cont.)

NORTH DOMINGO BACA SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
940.2	Existing	.0156	0	34	16	50	.133
	Future	.0156	0	34	16	50	.133
939.16	Existing	.0128	0	34	16	50	.133
	Future	.0128	0	34	16	50	.133
939.14	Existing	.0112	0	10	30	60	.133
	Future	.0112	0	10	30	60	.133
940.0	Existing	.0141	0	34	16	50	.133
	Future	.0141	0	34	16	50	.133
940.1	Existing	.007	0	20	10	70	.133
	Future	.007	0	20	10	70	.133
942.1	Existing	.0469	20	5	30	45	.133
	Future	.0469	0	10	20	70	.133
942.2	Existing	.1031	15	15	25	45	.160
	Future	.1031	0	34	16	50	.160
943.1	Existing	.012	0	15	20	65	.133
	Future	.012	0	15	20	65	.133
943.2	Existing	.013	80	0	10	10	.133
	Future	.0375	0	20	10	70	.133
443.2	Existing	.0703	30	10	10	50	.133
	Future	.0703	0	10	20	70	.133

TABLE B-6

SOUTH DOMINGO BACA SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
400	Existing Future	2.069 2.069	0 0	13 13	87 87	0 0	0.543 0.543
400.51	Existing Future	0.1688 0.1688	30 20	35 40	10 5	25 35	0.133 0.133
400.52	Existing Future	0.0734 0.0734	30 20	35 40	10 5	25 35	0.150 0.150
400.53	Existing Future	0.9830 0.9830	34 34	50 50	12 12	4 4	0.579 0.579
400.3	Existing Future	0.255 0.255	0 0	0 0	100 100	0 0	0.133 0.133
400.61	Existing Future	0.093 0.093	30 20	35 40	10 5	25 35	0.133 0.136
400.62	Existing Future	0.098 0.098	30 20	35 40	10 5	25 35	0.133 0.133
400.65	Existing Future	0.5919 0.5919	22 22	64 64	9 9	5 5	0.468 0.468
400.66	Existing Future	0.094 0.094	30 20	35 40	10 5	25 35	0.140 0.140
400.13	Existing Future	0.0139 0.0139	0 0	34 34	16 16	50 50	0.133 0.133
400.1	Existing Future	0.2482 0.2420	63 15	5 20	20 35	10 30	0.133 0.133
403.1	Existing Future	0.0795 0.0673	83 22	2 33	10 38	5 17	0.133 0.133
403.2	Existing Future	0.1103 0.0796	83 22	2 23	5 38	10 17	0.156 0.156
403.3	Future	0.0155	22	23	38	17	0.133
402.14	Existing Future	0.0821 0.0884	65 40	5 15	10 15	20 30	0.169 0.169

TABLE B-6 (cont.)

SOUTH DOMINGO BACA SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment (%)				TP (hrs)
			A	B	C	D	
404.3	Existing Future	0.0463 0.0463	88 22	2 23	5 38	5 17	0.133 0.133
404.2	Existing Future	0.0525 0.0525	88 22	2 23	5 38	5 17	0.133 0.133
401.4	Existing Future	0.0432 0.0452	75 22	5 23	10 38	10 17	0.133 0.133
401.32	Existing Future	0.052 0.052	78 22	2 23	10 38	10 17	0.133 0.133
401.5	Existing Future	0.029 0.045	80 22	5 23	5 38	10 17	0.133 0.133
401.33	Existing Future	0.043 0.043	88 22	2 23	5 38	5 17	0.133 0.133
401.31	Existing Future	0.0538 0.0518	73 22	2 23	15 38	10 17	0.133 0.133
401.2	Existing Future	0.085 0.085	88 22	2 23	5 38	5 17	0.133 0.133
408.1	Future	0.0098	22	23	38	17	0.133
507.0	Future	0.0089	60	10	20	10	0.133

TABLE B-7

PINO ARROYO BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatments (%)				TP (hrs)
			A	B	C	D	
500.0	Existing Future	0.0635 0.0635	33 20	29 40	13 5	25 35	0.133 0.133
500.1	Existing Future	0.0549 0.0549	33 20	29 40	13 5	25 35	0.147 0.147
500.2	Existing Future	0.0508 0.0508	33 20	29 40	13 5	25 35	0.133 0.133
500.3	Existing Future	0.0532 0.0532	33 20	29 40	13 5	25 35	0.159 0.159
500.4	Existing Future	0.0209 0.0209	33 20	29 40	13 5	25 35	0.133 0.133
501.0	Existing Future	0.0139 0.0139	60 22	10 23	20 38	10 17	0.133 0.133
501.1.	Existing Future	0.0392 0.0392	60 22	10 23	20 38	10 17	0.133 0.133
501.2	Existing Future	0.0501 0.0501	60 22	10 23	20 38	10 17	0.133 0.133
502.0	Existing Future	0.0660 0.0660	60 22	10 23	20 38	10 17	0.133 0.133
502.1	Existing Future	0.0750 0.0750	60 22	10 23	20 38	10 17	0.133 0.133
502.2	Existing Future	0.0339 0.0339	60 22	10 23	20 38	10 17	0.163 0.163
502.3	Existing Future	0.0395 0.0395	60 22	10 23	20 38	10 17	0.133 0.133
503.0	Existing Future	0.0561 0.0561	60 22	10 23	20 38	10 17	0.135 0.135
503.1	Existing Future	0.0220 0.0220	60 22	10 23	20 38	10 17	0.142 0.142

TABLE B-7 (cont.)

PINO ARROYO BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatments (%)				TP (hrs)
			A	B	C	D	
503.2	Existing Future	0.0494 0.0494	60 22	10 23	20 38	10 17	0.133 0.133
504.0	Existing Future	0.0372 0.0372	60 22	10 23	20 38	10 17	0.133 0.133
505.0	Existing Future	0.0287 0.0287	60 22	10 23	20 38	10 17	0.133 0.133
506.0	Existing Future	0.0484 0.0484	60 22	10 23	20 38	10 17	0.216 0.216
507.0	Existing	0.0089	60	10	20	10	0.133
508.0	Existing Future	0.0259 0.0259	0 0	34 34	16 16	50 50	0.133 0.133
509.0	Existing Future	0.0259 0.0259	0 0	34 34	16 16	50 50	0.133 0.133
510.0	Existing Future	3.178 3.178	0 0	13 13	87 87	0 0	0.429 0.429
510.1	Existing Future	0.464 0.464	0 0	13 13	87 87	0 0	0.195 0.195
510.2	Existing Future	0.270 0.270	90 90	9 9	1 1	0 0	0.138 0.138
510.3	Existing Future	0.278 0.278	70 70	17 17	7 7	6 6	0.133 0.133
510.4	Existing Future	0.221 0.221	48 20	30 40	6 5	16 35	0.133 0.133

TABLE 5-1

NORTH CAMINO ARROYO - WORST CASE

	Avulsion Control Q_{100} (cfs)	No Avulsion Control, Primary Avulsion Q_{100} (cfs)	No Avulsion Control, Secondary Avulsion Q_{100} (cfs)
I-25 (AP 313.99)			
Existing	1846	#5 2127	NA
Future	1982	#5 2399	NA
North Diversion Channel (AP 402.9)			
Existing	1863	#5 2167	NA
Future	2422	#5 2883	NA

NORTH CAMINO TRIBUTARY ARROYO

Barstow (AP 307.9)			
Existing	181	#5 660	NA
Future	232	#5 744	NA
Wyoming (AP310.9)			
Existing	199	#5 672	NA
Future	296	#5 766	NA
Coronado Airport (AP311.99)			
Existing	527	#5 875	NA
Future	820	#5 1290	NA

(Rev. 11/97)

TABLE 5-2

EL CAMINO ARROYO - WORST CASE

	Avulsion Control Q_{100} (cfs)	No Avulsion Control, Primary Avulsion Q_{100} (cfs)	No Avulsion Control, Secondary Avulsion Q_{100} (cfs)
Tramway (AP 200.0)			
Existing	472	#1 1791	NA
Future	472	#1 1791	NA
Browning (AP 201.9)			
Existing	587	#1 1782	NA
Future	587	#1 1796	NA
Eubank (AP 202.19)			
Existing	619	#1 1790	NA
Future	646	#1 1806	NA
Holbrook (AP 202.29)			
Existing	638	#4 3161	#1 1803
Future	685	#4 3243	#1 1816
Ventura (AP 202.39)			
Existing	638	#4 3165	#1 1810
Future	710	#4 3247	#1 1826
Barstow (AP 203.39)			
Existing	726	#4 3213	#1 1841
Future	920	#4 3310	#1 1883
Wyoming (AP 204.9)			
Existing	790	#4 3243	#1 1852
Future	1130	#4 3380	#1 1926
I-25 (AP 205.9)			
Existing	908	#4 3286	#1 1876
Future	1335	#4 3438	#1 1975

TABLE 5-3

LA CUEVA ARROYO - WORST CASE

	Avulsion Control Q_{100} (cfs)	No Avulsion Control, Primary Avulsion Q_{100} (cfs)	No Avulsion Control, Secondary Avulsion Q_{100} (cfs)
Eubank (AP 109.99)			
Existing	2942	#2 3535	NA
Future	3040	#2 3647	NA
Ventura (AP 110.90)			
Existing	2939	#3 3545	#2 3537
Future	3048	#3 3709	#2 3693
Barstow (AP 111.99)			
Existing	2953	#3 3560	#2 3530
Future	3066	#3 3744	#2 3727
Wyoming (AP 112.90)			
Existing	2986	#3 3597	#2 3562
Future	3094	#3 3795	#2 3774
Louisiana (AP 113.90)			
Existing	2989	#3 3589	#2 3548
Future	3106	#3 3820	#2 3799
I-25 (AP 115.90)			
Existing	2994	#3 3587	#2 3546
Future	3108	#3 3830	#2 3809
North Diversion Channel			
Existing	3898	#3 4545	#2 4440
Future	4591	#3 5290	#2 5251