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

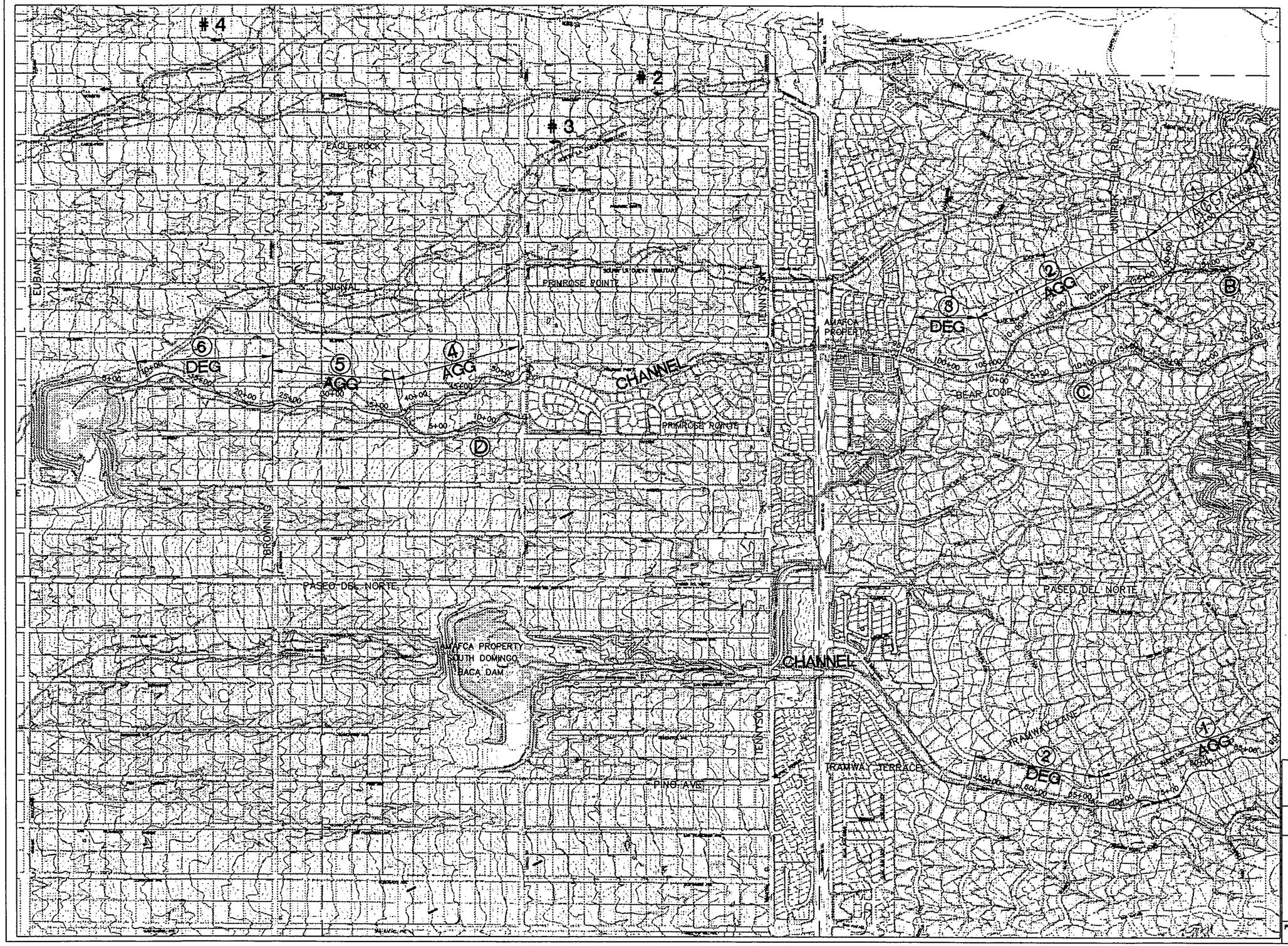
*Reach locations are shown on Figures 2 and 3
(From AMAFCA La Cueva, El Camino and North Camino Arroyos Facilities Plan, 1998)

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)



LEGEND

①	REACH DESIGNATION
	ARROYO FLOWLINE
AGG	AGGRADATIONAL
DEG	DEGRADATIONAL
Ⓑ	SUPPLY REACH

N

SCALE: 1" = 1000' HORIZ.

Resource Technology, Inc.

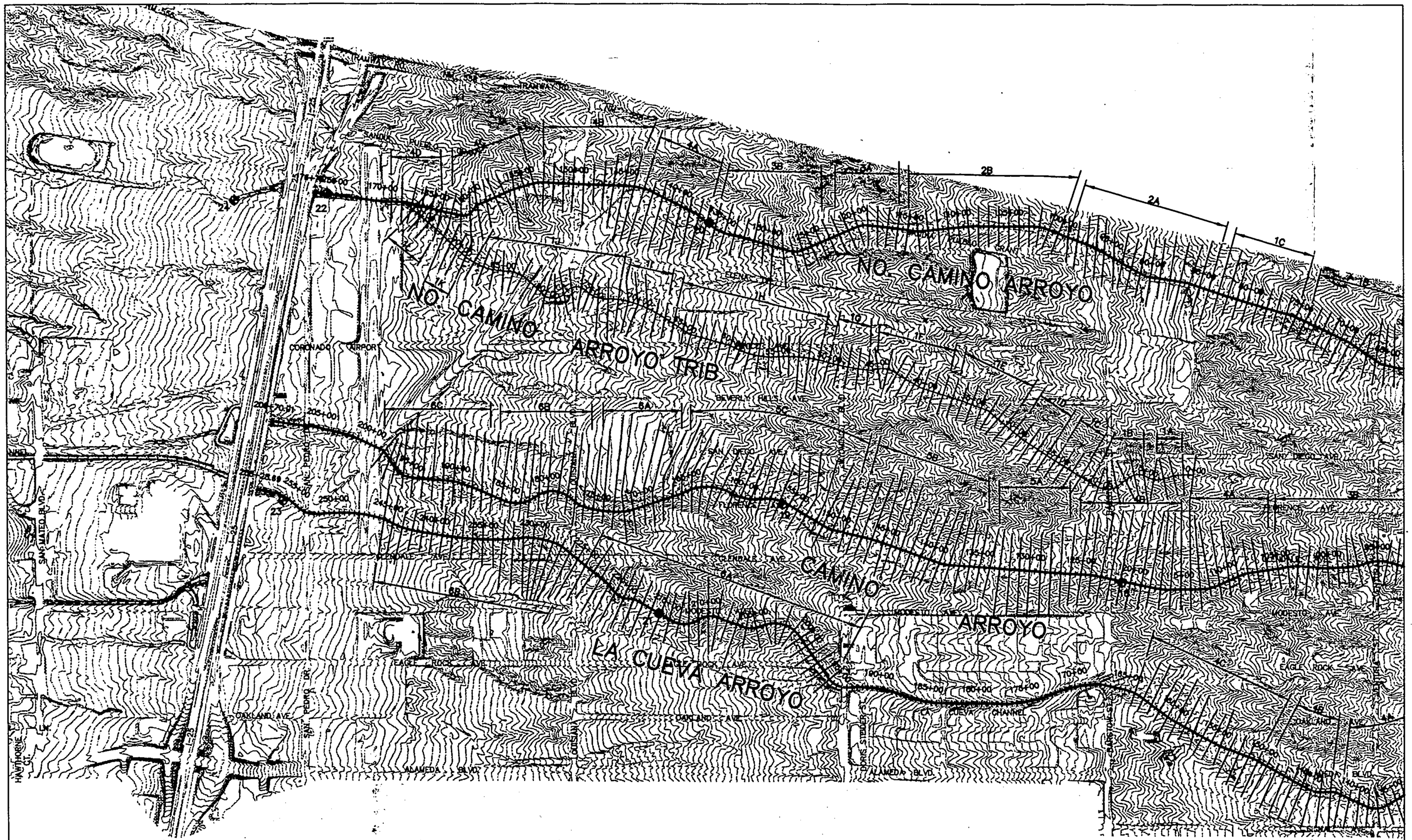
BERNALILLO COUNTY
PUBLIC WORKS DIVISION

NORTH ALBUQUERQUE ACRES/
SANDIA HEIGHTS SOUTH
DRAINAGE PLAN

FIGURE 1

SEDIMENT AND EROSION MAP

Project No.	Zone Map No.	Sheet	Of
97-050	B.C.O. - 21,22,23		



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.
ENGINEERS & ENVIRONMENTAL SCIENTISTS
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TELEPHONE – (505) 345 – 3118

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.	B-C18,19,20	SHEET	OF

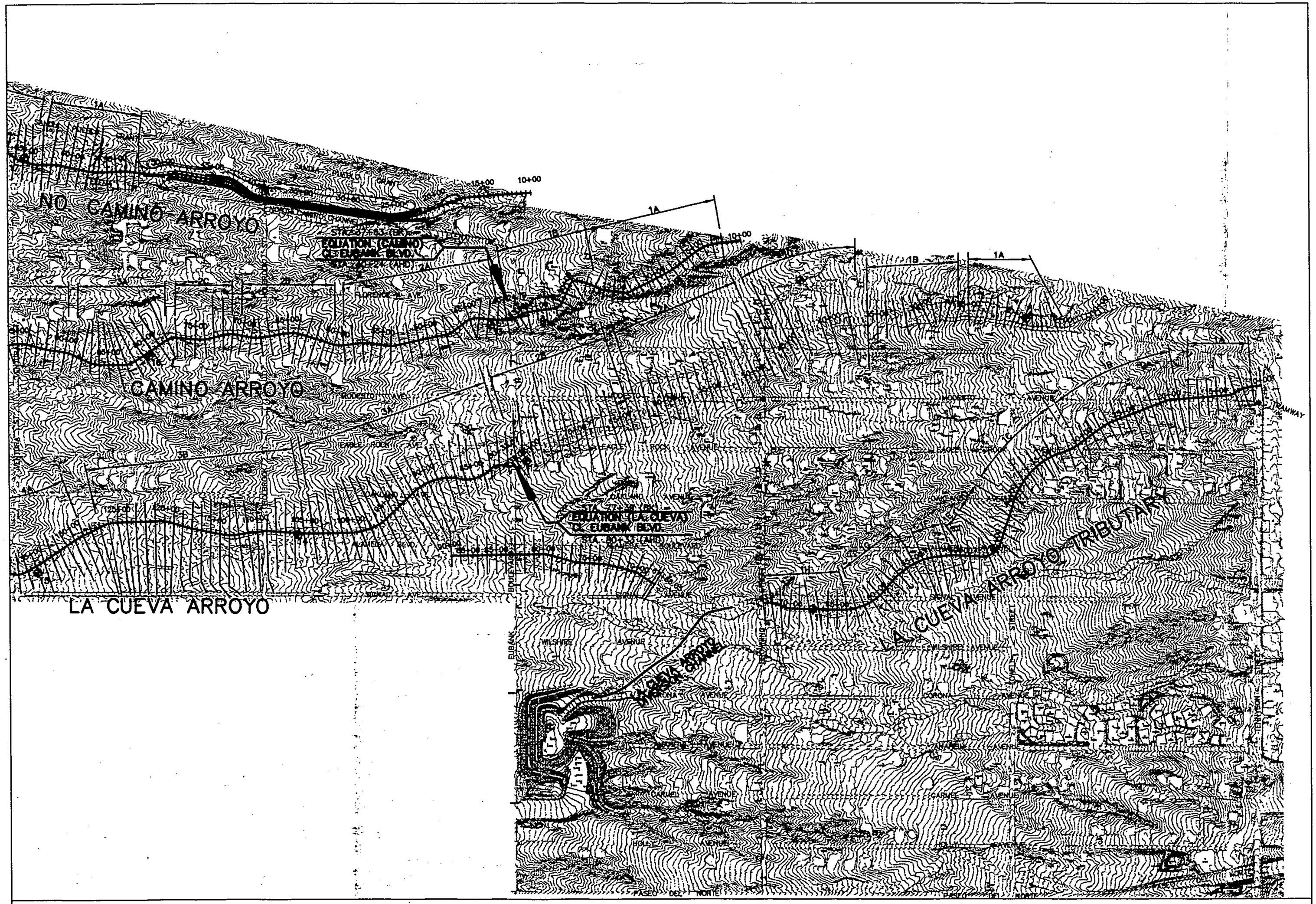
NO CAMINO ARROYO
CAMINO ARROYO
LA CUEVA ARROYO
LA CUEVA ARROYO TRIBUTARY
EQUATION (CAMINO)
EQUATION (LA CUEVA)
1A
1B
2A
3A
3B
10+00
15+00
20+00
25+00
30+00
35+00
40+00
45+00
50+00
55+00
60+00
65+00
70+00
75+00
80+00
85+00
90+00
95+00
100+00
105+00
110+00
115+00
120+00
125+00
130+00
135+00
140+00
145+00
150+00
155+00
160+00
165+00
170+00
175+00
180+00
185+00
190+00
195+00
200+00
205+00

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	53.31
915.2	.0370	.820	23.76	1.949	57.51
917.0	.0406	.693	21.97	1.863	58.42
918.0	.1140	2.545	45.61	6.050	113.10
919.1	.0790	1.888	65.91	4.487	142.38
919.2	.0610	1.279	43.32	3.178	100.60
920.0	.0431	.890	23.68	2.152	58.97
920.1	.0202	.448	13.52	1.058	31.87
921.1	.0292	.603	17.60	1.458	43.61
921.2	.0874	1.827	54.31	4.415	134.09
921.3	.0284	.587	17.12	1.418	42.42
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	.0360	88	2	5	5	.133
	Future	.0360	22	23	38	17	.133
913.2	Existing	.017	78	2	10	10	.133
	Future	.017	20	20	30	30	.133
914.2	Existing	.035	48	2	40	10	.133
	Future	.035	20	20	30	30	.133
915.1	Existing	.0343	85	0	5	10	.133
915.2	Existing	.0370	85	0	5	10	.133
	Future	.0370	0	20	10	70	.133
402.5	Existing	.0280	0	20	10	70	.1333
	Future	.0280	0	20	10	70	.1333
402.6	Existing	.0243	0	20	10	70	.133
	Future	.0243	0	20	10	70	.133
408.1	Existing	.019	83	2	10	5	.15
919.1	Existing	.079	50	5	40	5	.133
	Future	.079	22	23	38	17	.133
919.2	Existing	.0610	65	5	25	5	.133
	Future	.0427	22	23	38	17	.133
921.3	Existing	.0284	83	2	5	10	.133
	Future	.0140	22	23	38	17	.133
918	Existing	.114	78	2	10	10	.26
	Future	.114	22	23	38	17	.26
921.1	Existing	.0292	83	2	5	10	.133
	Future	.0292	22	23	38	17	.133
921.2	Existing	.0874	80	0	10	10	.133
	Future	.0874	0	34	16	50	.133
917	Existing	.0406	88	2	5	5	.133
	Future	.0406	22	23	38	17	.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	.0202	70	10	10	10	.133
	Future	.0202	22	23	38	17	.133
920	Existing	.0431	83	2	5	10	.147
	Future	.0431	22	23	38	17	.147
922	Existing	.021	30	15	40	15	.19
	Future	.021	22	23	38	17	.19
922.1	Existing	.007	66	17	0	17	.133
	Future	.007	0	34	16	50	.133
922.2	Existing	.0148	0	30	30	40	.133
	Future	.0148	0	30	30	40	.133
922.3	Existing	.0415	0	30	30	40	.133
	Future	.0415	0	30	30	40	.133
923	Existing	.007	60	10	20	10	.133
	Future	.007	0	20	10	70	.133
926.2	Future	.0470	0	34	16	50	.133
926.1	Existing	.012	22	23	38	17	.133
	Future	.012	0	34	16	50	.133
926	Existing	.0375	50	0	25	25	.133
	Future	.0578	0	25	15	60	.133
925.2	Existing	.014	96	0	2	2	.133
	Future	.0094	0	34	16	50	.133
925.1	Existing	.064	0	34	16	50	.133
	Future	.064	0	34	16	50	.133
925.3	Existing	.0105	0	34	16	50	.133
	Future	.0105	0	34	16	50	.133
925.4	Existing	.0370	0	20	30	50	.133
	Future	.0370	0	20	30	50	.133
924.1	Existing	.019	95	0	3	2	.133
	Future	.019	0	34	16	50	.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	.007	80	5	5	10	.133
	Future	.025	0	34	16	50	.133
924.3	Existing	.027	0	30	20	50	.133
	Future	.027	0	30	20	50	.133
924.4	Existing	.0172	75	0	15	10	.133
	Future	.0172	0	34	16	50	.133
929.	Existing	.024	0	15	20	65	.133
	Future	.024	0	15	20	65	.133
930	Existing	.085	0	34	16	50	.133
	Future	.085	0	25	15	60	133
935	Existing	.110	85	0	10	5	.133
	Future	.110	11	29	20	40	.133
931	Existing	.0605	0	40	5	55	.260
	Future	.0605	0	30	10	60	.260
932.1	Existing	.0073	0	25	20	55	.133
	Future	.0073	0	25	20	55	.133
932.2	Existing	.0073	0	25	20	55	.133
	Future	.0073	0	25	20	55	.133
932.3	Existing	.0313	0	25	20	55	.133
	Future	.0313	0	25	20	55	.133
932.4	Existing	.0574	0	25	20	55	.133
	Future	.0574	0	25	20	55	.133
934.1	Existing	.0468	10	30	20	40	.133
	Future	.1031	0	25	15	60	.133
421.4	Existing	.012	80	0	10	10	.133
937	Existing	.0352	80	0	10	10	.133
	Future	.0452	0	25	15	60	.133
960	Existing	.0075	0	25	25	50	.133
	Future	.0075	0	25	25	50	.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	2.069	0	13	87	0	0.543
	Future	2.069	0	13	87	0	0.543
400.51	Existing	0.1688	30	35	10	25	0.133
	Future	0.1688	20	40	5	35	0.133
400.52	Existing	0.0734	30	35	10	25	0.150
	Future	0.0734	20	40	5	35	0.150
400.53	Existing	0.9830	34	50	12	4	0.579
	Future	0.9830	34	50	12	4	0.579
400.3	Existing	0.255	0	0	100	0	0.133
	Future	0.255	0	0	100	0	0.133
400.61	Existing	0.093	30	35	10	25	0.133
	Future	0.093	20	40	5	35	0.136
400.62	Existing	0.098	30	35	10	25	0.133
	Future	0.098	20	40	5	35	0.133
400.65	Existing	0.5919	22	64	9	5	0.468
	Future	0.5919	22	64	9	5	0.468
400.66	Existing	0.094	30	35	10	25	0.140
	Future	0.094	20	40	5	35	0.140
400.13	Existing	0.0139	0	34	16	50	0.133
	Future	0.0139	0	34	16	50	0.133
400.1	Existing	0.2482	63	5	20	10	0.133
	Future	0.2420	15	20	35	30	0.133
403.1	Existing	0.0795	83	2	10	5	0.133
	Future	0.0673	22	33	38	17	0.133
403.2	Existing	0.1103	83	2	5	10	0.156
	Future	0.0796	22	23	38	17	0.156
403.3	Future	0.0155	22	23	38	17	0.133
402.14	Existing	0.0821	65	5	10	20	0.169
	Future	0.0884	40	15	15	30	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	0.0463	88	2	5	5	0.133
	Future	0.0463	22	23	38	17	0.133
404.2	Existing	0.0525	88	2	5	5	0.133
	Future	0.0525	22	23	38	17	0.133
401.4	Existing	0.0432	75	5	10	10	0.133
	Future	0.0452	22	23	38	17	0.133
401.32	Existing	0.052	78	2	10	10	0.133
	Future	0.052	22	23	38	17	0.133
401.5	Existing	0.029	80	5	5	10	0.133
	Future	0.045	22	23	38	17	0.133
401.33	Existing	0.043	88	2	5	5	0.133
	Future	0.043	22	23	38	17	0.133
401.31	Existing	0.0538	73	2	15	10	0.133
	Future	0.0518	22	23	38	17	0.133
401.2	Existing	0.085	88	2	5	5	0.133
	Future	0.085	22	23	38	17	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	0.0635	33	29	13	25	0.133
	Future	0.0635	20	40	5	35	0.133
500.1	Existing	0.0549	33	29	13	25	0.147
	Future	0.0549	20	40	5	35	0.147
500.2	Existing	0.0508	33	29	13	25	0.133
	Future	0.0508	20	40	5	35	0.133
500.3	Existing	0.0532	33	29	13	25	0.159
	Future	0.0532	20	40	5	35	0.159
500.4	Existing	0.0209	33	29	13	25	0.133
	Future	0.0209	20	40	5	35	0.133
501.0	Existing	0.0139	60	10	20	10	0.133
	Future	0.0139	22	23	38	17	0.133
501.1.	Existing	0.0392	60	10	20	10	0.133
	Future	0.0392	22	23	38	17	0.133
501.2	Existing	0.0501	60	10	20	10	0.133
	Future	0.0501	22	23	38	17	0.133
502.0	Existing	0.0660	60	10	20	10	0.133
	Future	0.0660	22	23	38	17	0.133
502.1	Existing	0.0750	60	10	20	10	0.133
	Future	0.0750	22	23	38	17	0.133
502.2	Existing	0.0339	60	10	20	10	0.163
	Future	0.0339	22	23	38	17	0.163
502.3	Existing	0.0395	60	10	20	10	0.133
	Future	0.0395	22	23	38	17	0.133
503.0	Existing	0.0561	60	10	20	10	0.135
	Future	0.0561	22	23	38	17	0.135
503.1	Existing	0.0220	60	10	20	10	0.142
	Future	0.0220	22	23	38	17	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

COMPUTING APPROXIMATE SEDIMENT BULKING FACTORS FOR HYDROLOGIC USE IN NORTH ALBUQUERQUE ACRES CITY OF ALBUQUERQUE, NEW MEXICO

1. INTRODUCTION

Resource Technology, Inc. (RTI) was contracted by Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) to prepare "Drainage Management Plan (DMP) for La Cueva, El Camino and North Camino Arroyos." These arroyos are located in North Albuquerque Acres, City of Albuquerque, New Mexico. As part of DMP, RTI computed sediment bulking factors at several locations (from Tramway Blvd. to I-25) using AHYMO194 model. The AHYMO194 is state of the art hydrology model for the City of Albuquerque. In this paper, an attempt is made to correlate the peak clear water discharge with sediment bulking factors in an equation form for limited use in adjusting peak flow rates to account for sediment load where a higher degree of accuracy does not justify the expense of more detailed analysis.

2. DEVELOPMENT OF HYDROLOGY MODEL

Hydrology was computed using the AHYMO194 model. The hydrology model extends from Sandia Mountains to past I-25 for all three arroyos. The initial abstraction and uniform loss rates were chosen as defined in Section 22.2, Hydrology of the Development Process Manual (DPM), Volume 2, Design Criteria for the City of Albuquerque, New Mexico. The land treatments used in the model were chosen based on man-made development and slope criteria given in the DPM. Rock outcrop areas of the Sandia Mountains were initially regarded as totally impervious areas, land treatment type "D." Finally the steep slope procedure was applied, as specified in the DPM, to sub-basins with greater than 4% slopes.

After the regression analysis in this paper, the hydrology model was modified to the extent that rock outcrops were considered the same as compacted natural soil, land treatment type "C," rather than as totally impervious. However this should not affect the regression analysis performed for this paper because the analysis relates the absolute peak discharge (in cfs) to the sediment bulking factor (in percent) in the study area.

3. SOIL SAMPLES

The soil samples were collected in plastic bags at twenty-three locations. These locations range from Tramway Blvd. to I-25. The samples were collected in all three arroyos. Some samples were collected in the arroyos and some were collected in the watershed area. The top two inches of soil cover was removed before collecting any samples. However, only those samples that were collected in the arroyos were used in the sediment analysis.

After collecting these soil samples, they were taken to the soil testing laboratory for sieve analysis to obtain the soil gradation information. Using this information, the D_{50} (median size) was determined for all the samples. These median sizes ranged from 1.5 to 3 mm. See Appendix B.

4. SEDIMENT TRANSPORT ANALYSIS

The sediment transport analysis is described in the "Sediment and Erosion Design Guide" for the Albuquerque area. This guide was compiled by Resource Consultants & Engineers, Inc. for AMAFCA. The sediment transport analysis involves using the hydrology model, to determine sediment wash loads and flow rates for various frequencies, hydraulic model to determine hydraulic characteristics at various flow rates, and then the hydrology model again with the wash load data and hydraulic rating curves to determine sediment transport capacity and bulking factors. The hydraulics model used was the U.S. Army Corps of Engineers' HEC-2. The AHYMO194 model was used to compute the sediment yield (wash load) as well as sediment bed-load using the commands SEDIMENT WASH LOAD and SEDIMENT TRANS respectively. The SEDIMENT WASH LOAD uses the MUSLE equation to compute the sediment yield. The SEDIMENT TRANS can use either MPM-WOO bed-load equation or Zeller and Fullerton relation. For this project, MPM-WOO equation was selected.

The sediment transport analysis procedure consists of following steps:

A. Develop the hydrology model using AHYMO194.
B. Using the best available topographic data, generate cross-sections and identify reaches based on similar cross-section characteristics. Develop hydraulic models (i.e., HEC-2 models) for each arroyo.
C. Run hydraulic model with a range of discharges. Obtain the velocity and top width for each discharge for each cross-section.
D. Average the velocity and top width parameters for a given discharge and the reach.
E. Compile the sediment wash load parameters. This information was compiled from four sources. They are: 1) Sediment and Erosion Design Guide (Resource Consultants & Engineers, 1994); 2) Prudent analysis, La Cueva Arroyo and Watershed Between Tennyson Street and Modesto Avenue (Resource Consultants & Engineers, 1992); 3) Albuquerque Arroyos Sedimentation Study Numerical Model Investigation (U.S. Army Corps of Engineers, 1995); and, 4) Soil Survey Maps.
F. Compile the sediment bed-load parameters using D_{50} from soil gradation samples and "Sediment and Erosion Design Guide."
G. Input the sediment wash load parameters, sediment bed-load parameters and average values of velocity and top width for a given peak discharge and reach into the AHYMO194 model below the hydrograph of interest.
H. Run AHYMO194 model to get the sediment bulking factors. There are two sediment bulking factors. One is for the peak discharge value (peak sediment bulking factor) and the other is for the entire hydrograph (average sediment bulking factor).

5. SELECTION OF SAMPLE DATA

The sediment bulking factors were computed for 2-, 5-, 10-, 25-, 50- and 100-year return periods in the DMP for all three arroyos. However, the data for 100-year and 10-year return periods were chosen as the sample data because of the large number of data points. The reason behind selecting the two return periods instead of one was to obtain the range of sediment bulking factors for the regression analysis. The average sediment bulking factors were used as the sample data.

6. REGRESSION ANALYSIS

6.1 CURVE Program

The CURVE program, written by U.S. Army Corps of Engineers for DOS applications, was used in performing this regression analysis. This program contains the algorithm for nine different equations. They are of following form:

Exponential:	$SB = A * e^{B * Q}$	(1)
Power:	$SB = A * Q^{B}$	(2)
Common LOG (LOG1):	$SB = A_1 + A_2 * LOG(Q) + A_3 * (LOG(Q))^2$	(3)
Common LOG (LOG2):	$SB = A_1 + A_2 * Q + A_3 * LOG(Q)$	(4)
Natural LOG (LOG1):	$SB = A + B * LN(Q)$	(5)
Polynomial (Degree 1):	$SB = A_1 + A_2 * Q$	(6)
Polynomial (Degree 2):	$SB = A_1 + A_2 * Q + A_3 * Q^2$	(7)
Polynomial (Degree 3):	$SB = A_1 + A_2 * Q + A_3 * Q^2 + A_4 * Q^3$	(8)
Hyperbola:	$SB = A + (B/Q)$	(9)

where

SB = Sediment bulking factor in percent
Q = Peak discharge in cfs
A, B, A_1, A_2, A_3, A_4 = Regression constants

RTI used one additional equation which is not part of the CURVE program:

$$SB = 10^{((Q + A)/B)} \quad (10)$$

The regression analysis for this equation was performed separately in the spreadsheet program Quattro Pro (Version 6.0 for Windows).

6.2 Slope Criteria

The data were divided into two different slope data sets, one with flatter slopes (< 3.5%) and the other with steeper slopes (≥ 3.5%). It was initially thought that slope as well as flow rate might be a significant variables. Regression analysis was performed on these two different data sets to obtain two different equations using the CURVE program as well as the Quattro Pro (Version 6.0 for Windows) spreadsheet.

6.3 Results

The sample correlation coefficient (r^2) in regression analysis gives a measure of the curves fit with the observed data. The closer this parameter is to 1, the better the degree of curve fit. The correlation coefficients along with the equations are given in Table 1 and Table 2.

Table 1. Regression Results for Flatter Slopes (< 3.5%) N = 60

Equation #	Correlation Coefficient	Equation
1	0.30	$SB = 4.34 * e^{0.00018 * Q}$
2	0.20	$SB = 1.06 * Q^{0.24}$
3	0.35	$SB = 61.27 - 40.23 * LOG(Q) + 7.17 * (LOG(Q))^2$
4	0.36	$SB = 11.99 + 0.002 * (Q) - 2.97 * LOG(Q)$
5	0.26	$SB = -5.70 + 1.67 * LN(Q)$
6	0.34	$SB = 4.13 + 0.0013 * Q$
7	0.37	$SB = 4.95 + 0.00006 * Q$
8	0.37	$SB = 5.07 - 0.00023 * Q$
9	0.16	$SB = 7.40 - 1236.58/Q$
10	0.37	$SB = 10^{(Q + 2139.95)/4751.74)}$

Table 2. Regression Results for Steeper Slopes (≥ 3.5%) N = 23

Equation #	Correlation Coefficient	Equation
1	0.64	$SB = 3.45 * e^{0.00038 * Q}$
2	0.57	$SB = 0.07 * Q^{0.63}$
3	0.62	$SB = 84.73 - 60.66 * LOGg(Q) + 11.40 * (LOG(Q))^2$
4	0.62	$SB = 2.37 + 0.003 * (Q) - 0.066 * LOG(Q)$
5	0.57	$SB = -25.8 + 4.62 * LN(Q)$
6	0.62	$SB = 2.55 + 0.00295 * Q$
7	0.62	$SB = 2.64 + 0.00284 * Q$
8	0.63	$SB = 0.09 + 0.0089 * Q$
9	0.41	$SB = 11.64 - 4284.92/Q$
10	0.59	$SB = 10^{(Q + 1206.6)/3612.59)}$

Table 3 and Table 4 list the original sediment bulking factor data used in the regression analysis along with that computed using the regression coefficients for each equation.

For slopes less than 3.5%, Equations 1, 2, 5 and 9 do not represent a good correlation between the peak discharge and sediment bulking factor based on the correlation coefficient. Equations 7 and 8 can also be eliminated because these equations are showing a linear correlation while

they themselves are non-linear. In Equations. 3 and 4, the predicted sediment bulking factor decreases with increase in peak discharge for a particular range as evident from Table 3. The Equation 10 has a slightly better correlation coefficient than that for Equation 6. However, to keep the equation simple, the linear equation (Equation 6) was selected as the sediment bulking factor equation for flatter slopes (i.e., slopes lower than 3.5%).

Table 3. Results of Regression Analysis for Flatter Slopes (< 3.5%)

Peak Discharge (cfs)	Original Average Sediment Bulking Factors	Calculated Average Sediment Bulking Factors									
		Equation 1	Equation 2	Equation 3	Equation 4	Equation 5	Equation 6	Equation 7	Equation 8	Equation 9	Equation 10
350	4.4	4.7	4.3	5.4	5.2	4.1	4.6	5.0	5.0	3.9	3.3
350	5.6	4.7	4.3	5.4	5.2	4.1	4.6	5.0	5.0	3.9	3.3
386	5.4	4.7	4.4	5.2	5.1	4.2	4.6	5.0	5.0	4.2	3.4
386	4.2	4.7	4.4	5.2	5.1	4.2	4.6	5.0	5.0	4.2	3.4
386	5.2	4.7	4.4	5.2	5.1	4.2	4.6	5.0	5.0	4.2	3.4
399	5.0	4.7	4.4	5.2	5.1	4.3	4.6	5.0	5.0	4.3	3.4
399	4.4	4.7	4.4	5.2	5.1	4.3	4.6	5.0	5.0	4.3	3.4
399	4.1	4.7	4.4	5.2	5.1	4.3	4.6	5.0	5.0	4.3	3.4
511	3.9	4.8	4.7	4.9	5.0	4.7	4.8	5.0	5.0	5.0	3.6
511	4.0	4.8	4.7	4.9	5.0	4.7	4.8	5.0	5.0	5.0	3.6
511	3.4	4.8	4.7	4.9	5.0	4.7	4.8	5.0	5.0	5.0	3.6
524	5.7	4.8	4.7	4.9	5.0	4.7	4.8	5.0	4.9	5.0	3.6
524	3.8	4.8	4.7	4.9	5.0	4.7	4.8	5.0	4.9	5.0	3.6
524	8.5	4.8	4.7	4.9	5.0	4.7	4.8	5.0	4.9	5.0	3.6
661	5.2	4.9	5.0	4.9	5.0	5.1	5.0	5.0	4.9	5.5	3.9
661	8.2	4.9	5.0	4.9	5.0	5.1	5.0	5.0	4.9	5.5	3.9
729	7.3	5.0	5.1	4.9	5.0	5.3	5.1	5.0	4.9	5.7	4.0
729	6.8	5.0	5.1	4.9	5.0	5.3	5.1	5.0	4.9	5.7	4.0
729	5.0	5.0	5.1	4.9	5.0	5.3	5.1	5.0	4.9	5.7	4.0
752	5.5	5.0	5.2	4.9	5.0	5.3	5.1	5.0	4.9	5.8	4.1
752	5.2	5.0	5.2	4.9	5.0	5.3	5.1	5.0	4.9	5.8	4.1
752	5.7	5.0	5.2	4.9	5.0	5.3	5.1	5.0	4.9	5.8	4.1
964	3.6	5.2	5.5	5.1	5.2	5.8	5.4	5.0	4.8	6.1	4.5
964	4.2	5.2	5.5	5.1	5.2	5.8	5.4	5.0	4.8	6.1	4.5
964	4.7	5.2	5.5	5.1	5.2	5.8	5.4	5.0	4.8	6.1	4.5
988	4.2	5.2	5.5	5.1	5.2	5.8	5.4	5.0	4.8	6.2	4.6
988	8.6	5.2	5.5	5.1	5.2	5.8	5.4	5.0	4.8	6.2	4.6
988	7.4	5.2	5.5	5.1	5.2	5.8	5.4	5.0	4.8	6.2	4.6
1039	5.5	5.3	5.6	5.2	5.2	5.9	5.5	5.0	4.8	6.2	4.7
1039	4.6	5.3	5.6	5.2	5.2	5.9	5.5	5.0	4.8	6.2	4.7

Table 3. Results of Regression Analysis for Flatter Slopes (< 3.5%)

Peak Discharge (cfs)	Original Average Sediment Bulking Factors	Calculated Average Sediment Bulking Factors									
		Equation 1	Equation 2	Equation 3	Equation 4	Equation 5	Equation 6	Equation 7	Equation 8	Equation 9	Equation 10
1047	5.6	5.3	5.6	5.2	5.2	5.9	5.5	5.0	4.8	6.2	4.7
1047	4.2	5.3	5.6	5.2	5.2	5.9	5.5	5.0	4.8	6.2	4.7
1050	4.0	5.3	5.6	5.2	5.2	5.9	5.5	5.0	4.8	6.2	4.7
1050	4.1	5.3	5.6	5.2	5.2	5.9	5.5	5.0	4.8	6.2	4.7
1050	3.9	5.3	5.6	5.2	5.2	5.9	5.5	5.0	4.8	6.2	4.7
1050	4.9	5.3	5.6	5.2	5.2	5.9	5.5	5.0	4.8	6.2	4.7
1050	4.9	5.3	5.6	5.2	5.2	5.9	5.5	5.0	4.8	6.2	4.7
1961	6.9	6.2	6.5	6.6	6.4	6.9	6.7	5.1	4.6	6.8	7.3
1961	5.7	6.2	6.5	6.6	6.4	6.9	6.7	5.1	4.6	6.8	7.3
1976	4.8	6.2	6.5	6.6	6.4	6.9	6.7	5.1	4.6	6.8	7.3
1976	7.4	6.2	6.5	6.6	6.4	6.9	6.7	5.1	4.6	6.8	7.3
1981	5.3	6.3	6.5	6.6	6.4	7.0	6.7	5.1	4.6	6.8	7.4
1981	4.9	6.3	6.5	6.6	6.4	7.0	6.7	5.1	4.6	6.8	7.4
1981	5.4	6.3	6.5	6.6	6.4	7.0	6.7	5.1	4.6	6.8	7.4
1981	4.6	6.3	6.5	6.6	6.4	7.0	6.7	5.1	4.6	6.8	7.4
1981	5.5	6.3	6.5	6.6	6.4	7.0	6.7	5.1	4.6	6.8	7.4
2008	5.8	6.3	6.5	6.7	6.4	7.0	6.7	5.1	4.6	6.8	7.5
2008	5.1	6.3	6.5	6.7	6.4	7.0	6.7	5.1	4.6	6.8	7.5
2057	6.2	6.3	6.6	6.7	6.5	7.0	6.8	5.1	4.6	6.8	7.6
2057	11.7	6.3	6.6	6.7	6.5	7.0	6.8	5.1	4.6	6.8	7.6
2057	7.0	6.3	6.6	6.7	6.5	7.0	6.8	5.1	4.6	6.8	7.6
2099	8.5	6.4	6.6	6.8	6.6	7.0	6.9	5.1	4.6	6.8	7.8
2099	6.9	6.4	6.6	6.8	6.6	7.0	6.9	5.1	4.6	6.8	7.8
3788	8.1	8.7	7.6	9.2	9.4	8.0	9.1	5.2	4.2	7.1	17.7
3788	6.6	8.7	7.6	9.2	9.4	8.0	9.1	5.2	4.2	7.1	17.7
3882	8.1	8.8	7.6	9.3	9.6	8.1	9.2	5.2	4.2	7.1	18.5
3882	7.8	8.8	7.6	9.3	9.6	8.1	9.2	5.2	4.2	7.1	18.5
3882	18.4	8.8	7.6	9.3	9.6	8.1	9.2	5.2	4.2	7.1	18.5
3961	7.8	8.9	7.7	9.4	9.7	8.1	9.3	5.2	4.2	7.1	19.2
3961	10.4	8.9	7.7	9.4	9.7	8.1	9.3	5.2	4.2	7.1	19.2

Table 4. Results of Regression Analysis for Steeper Slopes (> 3.5%)

Peak Discharge (cfs)	Original Average Sediment Bulking Factors	Calculated Average Sediment Bulking Factors									
		Equation 1	Equation 2	Equation 3	Equation 4	Equation 5	Equation 6	Equation 7	Equation 8	Equation 9	Equation 10
399	5.5	4.0	3.0	4.0	3.4	1.9	3.7	3.8	3.6	0.9	2.8
485	3.4	4.1	3.4	4.0	3.6	2.8	4.0	4.0	4.4	2.8	2.9
498	3.2	4.2	3.5	4.0	3.7	2.9	4.0	4.1	4.5	3.0	3.0
540	1.9	4.2	3.7	4.1	3.8	3.3	4.1	4.2	4.9	3.7	3.0
752	6.2	4.6	4.5	4.5	4.4	4.8	4.8	4.8	6.8	5.9	3.5
988	8.6	5.0	5.4	5.3	5.1	6.1	5.5	5.4	8.9	7.3	4.1
1039	5.9	5.1	5.5	5.4	5.2	6.3	5.6	5.6	9.4	7.5	4.2
1045	4.2	5.1	5.5	5.5	5.2	6.4	5.6	5.6	9.4	7.5	4.2
1046	3.9	5.1	5.5	5.5	5.2	6.4	5.6	5.6	9.4	7.5	4.2
1050	8.0	5.1	5.6	5.5	5.3	6.4	5.6	5.6	9.5	7.6	4.2
1213	2.8	5.4	6.1	6.0	5.7	7.1	6.1	6.1	10.9	8.1	4.7
1900	9.7	7.0	8.1	8.3	7.7	9.1	8.2	8.0	17.0	9.4	7.2
1900	7.1	7.0	8.1	8.3	7.7	9.1	8.2	8.0	17.0	9.4	7.2
1900	12.3	7.0	8.1	8.3	7.7	9.1	8.2	8.0	17.0	9.4	7.2
1961	7.6	7.2	8.2	8.5	7.9	9.3	8.3	8.2	17.6	9.5	7.5
1981	9.4	7.3	8.3	8.6	8.0	9.3	8.4	8.3	17.8	9.5	7.6
1997	6.6	7.3	8.3	8.7	8.0	9.4	8.4	8.3	17.9	9.5	7.7
1997	7.2	7.3	8.3	8.7	8.0	9.4	8.4	8.3	17.9	9.5	7.7
3584	15.0	13.3	12.0	13.1	12.6	12.1	13.1	12.8	32.1	10.4	21.2
3584	10.8	13.3	12.0	13.1	12.6	12.1	13.1	12.8	32.1	10.4	21.2
3767	10.8	14.2	12.4	13.5	13.2	12.3	13.7	13.3	33.7	10.5	23.8
3767	9.2	14.2	12.4	13.5	13.2	12.3	13.7	13.3	33.7	10.5	23.8
3884	21.1	14.9	12.6	13.8	13.5	12.4	14.0	13.7	34.7	10.5	25.7

For steeper slopes, Equations 7, 8 and 9 were eliminated for the same reasons as those identified for flatter slopes. Equations 3 and 4 were eliminated considering the behavior of these equations under flatter slopes criteria. Equations 2, 5 and 10 were eliminated considering the low correlation coefficients. Equations 1 and 6 gave reasonable results and have nearly identical correlation coefficients. For the purpose of simplicity and consistency with the equation for flatter slopes, the linear equation (Equation. 6) was selected as the sediment bulking factor equation for the slopes greater than or equal to 3.5%.

The two selected equations were:

$$SB = 4.13 + (0.0013 \times Q) \text{ for flatter slopes } (< 3.5\%)$$
$$SB = 2.55 + (0.00295 \times Q) \text{ for steeper slopes } (\geq 3.5\%)$$

However, the predicted sediment bulking factors for flatter slopes are greater than those for steeper slopes at low discharges. This did not seem to be reasonable.

For this reason, it was decided to combine all the data points into one data set and ignore the effects of slope. Also, instead of performing the regression analysis on all ten equations, it was decided to perform only linear regression analysis. The correlation coefficient for this new equation was 0.43. This equation is:

$$SB = 3.622 + (0.001875 \times Q)$$

where SB = Average sediment bulking factor (in percent)
Q = Discharge (in cfs)

Figure 1 shows the above equation (solid line) with original data points. Table 5 documents the original sediment bulking factors along with the computed sediment bulking factor using the above equation. For the purpose of simplicity, Table 6 is created to show the predicted sediment bulking factors (rounded off to nearest integer) for the corresponding range of peak discharge values.

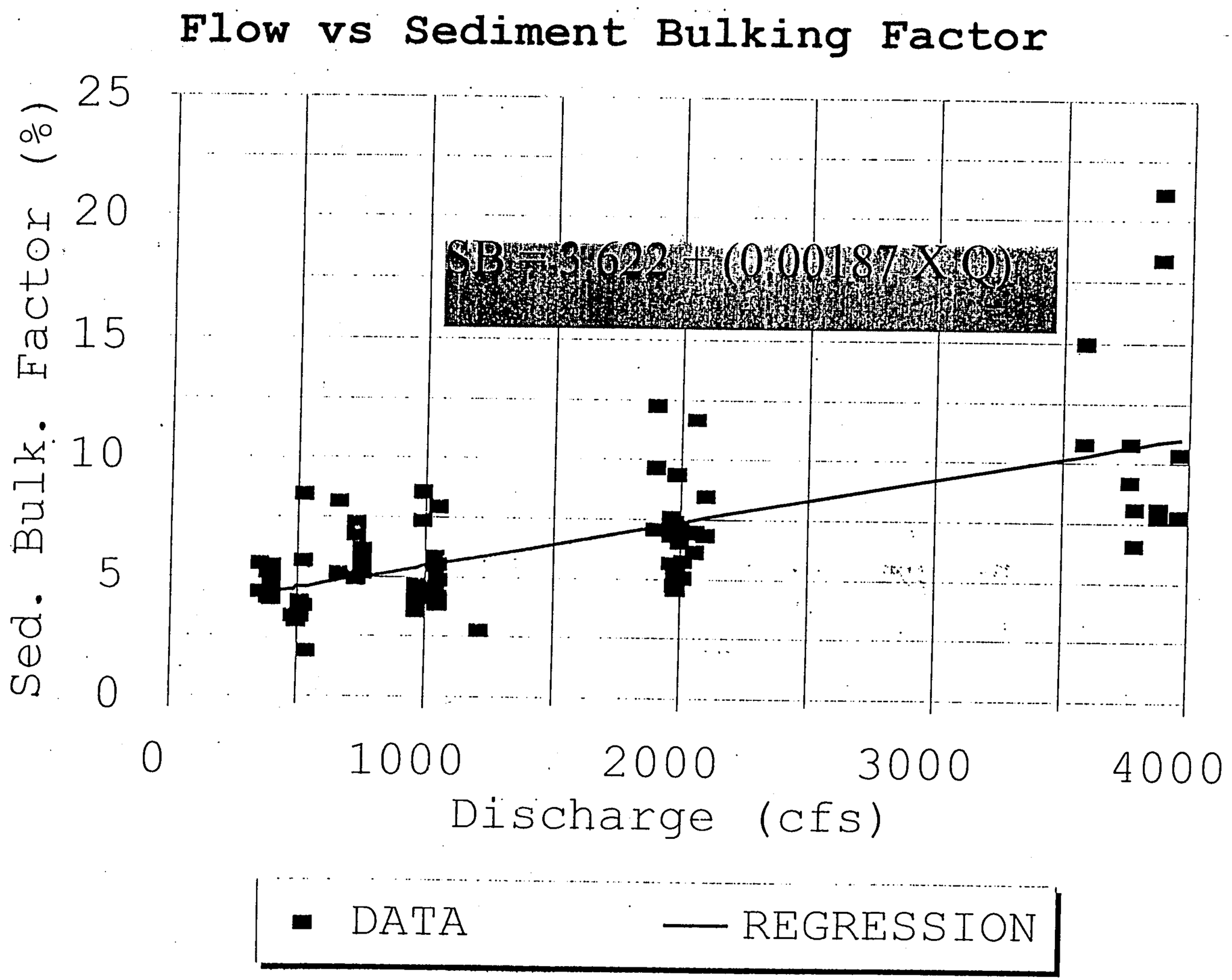

Figure 1. Discharge vs. Average Sediment Bulking Factors From Final Regression Equation

Table 5. Results of Final Prediction Equation for Sediment Bulking Factors

Peak Discharge (cfs)	Original Average Sediment Bulking Factors	Calculated Average Sediment Bulking Factors*
350	5.6	4.3
350	4.4	4.3
386	5.2	4.3
386	4.2	4.3
386	5.4	4.3
399	4.1	4.4
399	5.5	4.4
399	5.0	4.4
399	4.4	4.4
485	3.4	4.5
498	3.2	4.6
511	3.9	4.6
511	4.0	4.6
511	3.4	4.6
524	5.7	4.6
524	3.8	4.6
524	8.5	4.6
540	1.9	4.6
661	5.2	4.9
661	8.2	4.9
729	5.0	5.0
729	7.3	5.0
729	6.8	5.0
752	6.2	5.0
752	5.2	5.0
752	5.7	5.0
752	5.5	5.0
964	3.6	5.4
964	4.2	5.4
964	4.7	5.4
988	8.6	5.5
988	4.2	5.5
988	8.6	5.5
988	7.4	5.5
1039	5.9	5.6
1039	5.5	5.6
1039	4.6	5.6
1045	4.2	5.6
1046	3.9	5.6
1047	4.2	5.6
1047	5.6	5.6
1050	3.9	5.6

Table 5. Results of Final Prediction Equation for Sediment Bulking Factors

Peak Discharge (cfs)	Original Average Sediment Bulking Factors	Calculated Average Sediment Bulking Factors*
1050	8.0	5.6
1050	4.9	5.6
1050	4.9	5.6
1050	4.1	5.6
1050	4.0	5.6
1213	2.8	5.9
1900	12.3	7.2
1900	7.1	7.2
1900	9.7	7.2
1961	5.7	7.3
1961	6.9	7.3
1961	7.6	7.3
1976	4.8	7.3
1976	7.4	7.3
1981	9.4	7.3
1981	5.4	7.3
1981	4.6	7.3
1981	5.5	7.3
1981	4.9	7.3
1981	5.3	7.3
1997	7.2	7.4
1997	6.6	7.4
2008	5.1	7.4
2008	5.8	7.4
2057	6.2	7.5
2057	11.7	7.5
2057	7.0	7.5
2099	6.9	7.6
2099	8.5	7.6
3584	10.8	10.3
3584	15.0	10.3
3767	10.8	10.7
3767	9.2	10.7
3788	8.1	10.7
3788	6.6	10.7
3882	18.4	10.9
3882	7.8	10.9
3882	8.1	10.9
3884	21.1	10.9
3961	7.8	11
3961	10.4	11

* Calculated using $SB = 3.622 + (0.001875 \times Q)$

Table 6. Predicted Average Sediment Bulking Factors For a Given Discharge in North Albuquerque Acres Area, East of I-25

Unbulked Peak Discharge (cfs)	Average Sediment 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

*Rounded off to nearest integer.

7. CONCLUSION

The average sediment bulking factors were calculated for La Cueva, El Camino and North Camino arroyos using the methods presented in AMAFCA's "Sediment and Erosion Design Guide." A regression analysis was performed on these sediment bulking factors to obtain a correlation between the sediment bulking factors and peak discharge values irrespective of the slopes in corresponding watersheds. This analysis resulted in a linear equation

This prediction equation can be used to estimate the sediment bulking factor to be applied to clean water discharge rates in other natural arroyos with a similar geomorphology, soil characteristics and slopes in far northeast Albuquerque where approximate methods can be utilized. It should not be used where a higher degree of accuracy is required for sediment and erosion studies, such as for aggradation/degradation determination, prudent line analysis, scour at major hydraulic structures, etc. The relatively low correlation coefficient ($r^2 = .43$) indicates that there are clearly other factors which need to be considered besides clear water flow rates where the highest degree of accuracy is desired.

NORTH CAMINO EXISTING COND. 10-YEAR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = nc10b.ext USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										TIME= .00
RAINFALL TYPE= 2										RAIN24= 2.660
COMPUTE NM HYD	300.00	-	1	.88400	509.61	34.987	.74209	1.800	.901	PER IMP= .00
ROUTE MCUNGE	300.80	1	2	.88400	491.66	34.807	.73826	2.150	.869	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.390
COMPUTE NM HYD	301.00	-	1	.85200	374.23	24.387	.53669	1.800	.686	PER IMP= .00
ADD HYD	301.90	1& 2	11	1.73600	719.02	59.194	.63933	2.050	.647	
*S NORTH EL CAMINO ARROYO AT TRAMWAY ROAD (301.90)										
ROUTE MCUNGE	301.82	11	2	1.73600	710.39	59.155	.63892	2.200	.639	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.230
COMPUTE NM HYD	302.00	-	1	.15760	98.52	3.014	.35859	1.500	.977	PER IMP= 5.00
ADD HYD	302.90	1& 2	5	1.89360	716.62	62.169	.61559	2.200	.591	
ROUTE MCUNGE	302.81	5	1	1.89360	715.07	62.083	.61473	2.207	.590	CCODE = .2
ROUTE MCUNGE	302.82	1	2	1.89360	714.79	62.328	.61716	2.350	.590	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.150
COMPUTE NM HYD	303.00	-	1	.17060	138.60	5.250	.57705	1.550	1.269	PER IMP= 15.00
ADD HYD	303.90	1& 2	5	2.06420	725.37	67.579	.61385	2.250	.549	
*S NORTH EL CAMINO ARROYO AT HOLBROOK (303.90)										
ROUTE MCUNGE	303.80	5	2	2.06420	718.36	67.496	.61309	2.400	.544	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.090
COMPUTE NM HYD	305.10	-	1	.16910	106.64	4.665	.51729	1.550	.985	PER IMP= 15.00
ADD HYD	305.19	1& 2	5	2.23330	725.99	72.161	.60584	2.400	.508	
*S NORTH EL CAMINO ARROYO AT VENTURA (305.19)										
ROUTE MCUNGE	305.18	5	2	2.23330	719.49	72.114	.60544	2.500	.503	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.050
COMPUTE NM HYD	305.20	-	1	.15290	52.98	2.543	.31188	1.600	.541	PER IMP= 5.00
ADD HYD	305.29	1& 2	5	2.38620	723.74	74.657	.58663	2.500	.474	
*S NORTH EL CAMINO ARROYO AT BARSTOW (305.29)										
ROUTE MCUNGE	305.28	5	2	2.38620	715.20	74.558	.58585	2.650	.468	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.970
COMPUTE NM HYD	312.00	-	1	.06600	24.85	.995	.28279	1.550	.588	PER IMP= 5.00
ADD HYD	312.90	1& 2	5	2.45220	716.31	75.554	.57770	2.650	.456	
*S NORTH EL CAMINO ARROYO AT WYOMING (312.90)										
ROUTE MCUNGE	312.80	5	2	2.45220	715.53	75.502	.57731	2.750	.456	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 1.910
COMPUTE NM HYD	313.00	-	1	.20920	107.68	4.628	.41481	1.550	.804	PER IMP= 15.00
ADD HYD	313.90	1& 2	7	2.66140	719.04	80.130	.56453	2.750	.422	
RAINFALL TYPE= 2										RAIN24= 2.110
COMPUTE NM HYD	304.00	-	1	.08400	63.70	2.306	.51474	1.500	1.185	PER IMP= 15.00
ROUTE MCUNGE	304.80	1	2	.08400	56.24	2.224	.49647	1.800	1.046	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.020
COMPUTE NM HYD	307.00	-	1	.06630	40.21	1.296	.36660	1.500	.948	PER IMP= 8.00
ADD HYD	307.90	1& 2	5	.15030	67.19	3.520	.43918	1.800	.699	
*S NORTH CAMINO ARROYO (TRIB) AT BARSTOW (307.90)										
ROUTE MCUNGE	307.81	5	1	.15030	61.42	3.451	.43053	2.050	.638	CCODE = .1
ROUTE MCUNGE	307.82	1	2	.15030	58.30	3.431	.42799	2.200	.606	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.970
COMPUTE NM HYD	310.00	-	1	.10330	35.86	1.609	.29205	1.600	.542	PER IMP= 5.00
ADD HYD	310.90	1& 2	6	.25360	63.51	5.040	.37261	2.200	.391	

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
RAINFALL TYPE= 2										RAIN24= 2.050
COMPUTE NM HYD	306.00	-	1	.10510	93.29	3.072	.54801	1.500	1.387	PER IMP= 15.00
ROUTE MCUNGE	306.80	1	2	.10510	79.75	2.971	.52998	1.800	1.186	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.990
COMPUTE NM HYD	308.00	-	1	.05350	27.40	.856	.29998	1.500	.800	PER IMP= 5.00
ADD HYD	308.90	1& 2	5	.15860	87.71	3.827	.45239	1.750	.864	
RAINFALL TYPE= 2										RAIN24= 1.990
COMPUTE NM HYD	309.00	-	1	.07960	35.55	1.276	.30060	1.550	.698	PER IMP= 5.00
ADD HYD	309.90	1& 5	5	.23820	104.30	5.103	.40166	1.750	.684	
ROUTE MCUNGE	309.80	5	2	.23820	92.92	5.033	.39618	2.050	.610	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.970
COMPUTE NM HYD	311.00	-	1	.15280	50.41	2.264	.27775	1.600	.515	PER IMP= 5.00
ADD HYD	311.90	1& 2	5	.39100	105.56	7.297	.34990	2.050	.422	
ADD HYD	311.99	5& 6	5	.64460	156.12	12.336	.35884	2.050	.378	
*S NORTH CAMINO ARROYO (TRIB) AT CORONADO RUNWAY (311.99)										
ROUTE MCUNGE	311.81	5	1	.64460	153.93	12.295	.35763	2.150	.373	CCODE = .1
ROUTE MCUNGE	311.82	1	2	.64460	153.74	12.137	.35305	2.176	.373	CCODE = .2
*S NORTH EL CAMINO ARROYO AT I-25 (AP 313.99)										
ADD HYD	313.99	2& 7	5	3.30600	767.73	91.988	.52171	2.712	.363	
ROUTE MCUNGE	313.88	5	2	3.30600	767.00	92.027	.52193	2.750	.363	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	314.00	-	1	.09600	44.42	1.482	.28950	1.500	.723	PER IMP= 8.00
ADD HYD	314.99	1& 2	5	3.40200	767.81	93.509	.51537	2.750	.353	
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	315.00	-	1	.04260	16.59	.536	.23596	1.500	.609	PER IMP= 5.00
ADD HYD	315.99	1& 5	5	3.44460	768.14	94.045	.51192	2.750	.348	
RECALL HYD	206.39	-	19	.25890	196.30	7.942	.57519	1.500	1.185	
ADD HYD	206.99	5&19	5	3.70350	772.07	101.988	.51634	2.750	.326	
ROUTE MCUNGE	206.88	5	2	3.70350	765.39	101.972	.51626	2.900	.323	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.840
COMPUTE NM HYD	401.00	-	1	.05560	63.78	1.623	.54738	1.500	1.792	PER IMP= .00
ADD HYD	401.90	1& 2	5	3.75910	765.66	103.595	.51672	2.900	.318	
RAINFALL TYPE= 2										RAIN24= 1.820
COMPUTE NM HYD	402.00	-	1	.29180	288.97	10.105	.64929	1.550	1.547	PER IMP= 10.00
ADD HYD	402.90	1& 5	6	4.05090	770.06	113.700	.52627	2.900	.297	
*S FLOW TO N. DIVERSION CHANNEL FROM NORTH EL CAMINO ARROYO										
FINISH										

NORTH CAMINO EXISTING COND. 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = nc100b.ext USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
										RAIN24= 3.990
COMPUTE NM HYD	300.00	-	1	.88400	1001.07	68.141	1.44530	1.800	1.769	PER IMP= .00
ROUTE MCUNGE	300.80	1	2	.88400	976.60	67.873	1.43962	2.050	1.726	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.590
COMPUTE NM HYD	301.00	-	1	.85200	862.46	54.493	1.19922	1.800	1.582	PER IMP= .00
ADD HYD	301.90	1& 2	11	1.73600	1605.38	122.366	1.32164	1.950	1.445	
*S NORTH EL CAMINO ARROYO AT TRAMWAY ROAD (301.90)										
ROUTE MCUNGE	301.82	11	2	1.73600	1587.76	122.145	1.31925	2.100	1.429	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.340
COMPUTE NM HYD	302.00	-	1	.15760	250.67	7.701	.91624	1.500	2.485	PER IMP= 5.00
ADD HYD	302.90	1& 2	5	1.89360	1608.31	129.846	1.28570	2.100	1.327	
ROUTE MCUNGE	302.81	5	1	1.89360	1604.35	129.690	1.28417	2.107	1.324	CCODE = .2
ROUTE MCUNGE	302.82	1	2	1.89360	1583.35	129.725	1.28451	2.250	1.307	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.220
COMPUTE NM HYD	303.00	-	1	.17060	288.51	10.990	1.20788	1.550	2.642	PER IMP= 15.00
ADD HYD	303.90	1& 2	5	2.06420	1604.95	140.715	1.27818	2.250	1.215	
*S NORTH EL CAMINO ARROYO AT HOLBROOK (303.90)										
ROUTE MCUNGE	303.80	5	2	2.06420	1604.39	140.662	1.27770	2.300	1.214	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 3.130
COMPUTE NM HYD	305.10	-	1	.16910	237.45	10.106	1.12056	1.550	2.194	PER IMP= 15.00
ADD HYD	305.19	1& 2	5	2.23330	1625.07	150.768	1.26580	2.300	1.137	
*S NORTH EL CAMINO ARROYO AT VENTURA (305.19)										
ROUTE MCUNGE	305.18	5	2	2.23330	1622.13	150.810	1.26615	2.350	1.135	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 3.070
COMPUTE NM HYD	305.20	-	1	.15290	146.57	6.756	.82850	1.600	1.498	PER IMP= 5.00
ADD HYD	305.29	1& 2	5	2.38620	1638.02	157.566	1.23810	2.300	1.073	
*S NORTH EL CAMINO ARROYO AT BARSTOW (305.29)										
ROUTE MCUNGE	305.28	5	2	2.38620	1624.82	157.418	1.23694	2.450	1.064	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.960
COMPUTE NM HYD	312.00	-	1	.06600	70.11	2.761	.78428	1.550	1.660	PER IMP= 5.00
ADD HYD	312.90	1& 2	5	2.45220	1629.17	160.179	1.22476	2.450	1.038	
*S NORTH EL CAMINO ARROYO AT WYOMING (312.90)										
ROUTE MCUNGE	312.80	5	2	2.45220	1617.14	159.972	1.22317	2.550	1.030	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.870
COMPUTE NM HYD	313.00	-	1	.20920	266.92	10.599	.94995	1.550	1.994	PER IMP= 15.00
ADD HYD	313.90	1& 2	7	2.66140	1629.15	170.571	1.20170	2.550	.956	
RAINFALL TYPE= 2										RAIN24= 3.160
COMPUTE NM HYD	304.00	-	1	.08400	138.67	4.992	1.11436	1.500	2.579	PER IMP= 15.00
ROUTE MCUNGE	304.80	1	2	.08400	127.81	4.955	1.10611	1.700	2.377	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.030
COMPUTE NM HYD	307.00	-	1	.06630	98.65	3.196	.90371	1.500	2.325	PER IMP= 8.00
ADD HYD	307.90	1& 2	5	.15030	174.12	8.151	1.01683	1.700	1.810	
*S NORTH CAMINO ARROYO (TRIB) AT BARSTOW (307.90)										
ROUTE MCUNGE	307.81	5	1	.15030	164.37	8.121	1.01304	1.850	1.709	CCODE = .1
ROUTE MCUNGE	307.82	1	2	.15030	158.65	8.051	1.00441	1.950	1.649	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.950
COMPUTE NM HYD	310.00	-	1	.10330	100.32	4.361	.79158	1.600	1.517	PER IMP= 5.00
ADD HYD	310.90	1& 2	6	.25360	191.03	12.412	.91771	1.950	1.177	

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
RAINFALL TYPE= 2										RAIN24= 3.080
COMPUTE NM HYD	306.00	-	1	.10510	193.49	6.528	1.16463	1.500	2.877	PER IMP= 15.00
ROUTE MCUNGE	306.80	1	2	.10510	175.36	6.480	1.15606	1.700	2.607	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.980
COMPUTE NM HYD	308.00	-	1	.05350	72.95	2.296	.80462	1.500	2.131	PER IMP= 5.00
ADD HYD	308.90	1& 2	5	.15860	209.86	8.776	1.03751	1.700	2.067	
RAINFALL TYPE= 2										RAIN24= 2.990
COMPUTE NM HYD	309.00	-	1	.07960	96.16	3.439	.80999	1.550	1.888	PER IMP= 5.00
ADD HYD	309.90	1& 5	5	.23820	278.03	12.215	.96148	1.650	1.824	
ROUTE MCUNGE	309.80	5	2	.23820	261.19	12.109	.95318	1.850	1.713	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.950
COMPUTE NM HYD	311.00	-	1	.15280	147.74	6.278	.77037	1.600	1.511	PER IMP= 5.00
ADD HYD	311.90	1& 2	5	.39100	335.66	18.387	.88174	1.800	1.341	
ADD HYD	311.99	5& 6	5	.64460	501.68	30.799	.89589	1.850	1.216	
*S NORTH CAMINO ARROYO (TRIB) AT CORONADO RUNWAY (311.99)										
ROUTE MCUNGE	311.81	5	1	.64460	496.75	30.745	.89430	1.900	1.204	CCODE = .1
ROUTE MCUNGE	311.82	1	2	.64460	494.22	30.142	.87677	1.913	1.198	CCODE = .2
*S NORTH EL CAMINO ARROYO AT I-25 (AP 313.99)										
ADD HYD	313.99	2& 7	5	3.30600	1725.31	199.649	1.13231	2.520	.815	
ROUTE MCUNGE	313.88	5	2	3.30600	1710.28	199.463	1.13126	2.600	.808	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	314.00	-	1	.09600	125.48	3.960	.77351	1.500	2.042	PER IMP= 8.00
ADD HYD	314.99	1& 2	5	3.40200	1713.33	203.423	1.12116	2.600	.787	
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	315.00	-	1	.04260	50.88	1.578	.69449	1.500	1.866	PER IMP= 5.00
ADD HYD	315.99	1& 5	5	3.44460	1714.65	205.001	1.11588	2.600	.778	
RECALL HYD	206.39	-	19	.25890	415.02	16.003	1.15898	1.500	2.505	
ADD HYD	206.99	5&19	5	3.70350	1726.61	221.004	1.11890	2.600	.728	
ROUTE MCUNGE	206.88	5	2	3.70350	1725.43	221.017	1.11896	2.650	.728	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.760
COMPUTE NM HYD	401.00	-	1	.05560	114.46	3.498	1.17962	1.500	3.217	PER IMP= .00
ADD HYD	401.90	1& 2	5	3.75910	1726.99	224.515	1.11986	2.650	.718	
RAINFALL TYPE= 2										RAIN24= 2.730
COMPUTE NM HYD	402.00	-	1	.29180	557.26	20.367	1.30869	1.550	2.984	PER IMP= 10.00
ADD HYD	402.90	1& 5	6	4.05090	1741.11	244.882	1.13346	2.650	.672	
*S FLOW TO N. DIVERSION CHANNEL FROM NORTH EL CAMINO ARROYO										
FINISH										

NORTH CAMINO FUTURE CONDITION 10-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = ctnc10.fut USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
										RAIN24= 2.660
COMPUTE NM HYD	300.00	-	1	.88400	509.61	34.987	.74209	1.800	.901	PER IMP= .00
ROUTE MCUNGE	300.80	1	2	.88400	491.66	34.807	.73826	2.150	.869	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.390
COMPUTE NM HYD	301.00	-	1	.85200	374.23	24.387	.53669	1.800	.686	PER IMP= .00
ADD HYD	301.90	1& 2	11	1.73600	719.02	59.194	.63933	2.050	.647	
*S NORTH EL CAMINO ARROYO AT TRAMWAY ROAD (301.90)										
ROUTE MCUNGE	301.82	11	2	1.73600	710.39	59.155	.63892	2.200	.639	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.230
COMPUTE NM HYD	302.00	-	1	.15760	213.57	7.816	.92984	1.500	2.117	PER IMP= 30.00
ADD HYD	302.90	1& 2	5	1.89360	725.20	66.971	.66313	2.200	.598	
ROUTE MCUNGE	302.81	5	1	1.89360	724.01	66.514	.65861	2.207	.597	CCODE = .1
ROUTE MCUNGE	302.82	1	2	1.89360	722.36	66.661	.66006	2.350	.596	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.150
COMPUTE NM HYD	303.00	-	1	.17060	184.83	6.966	.76565	1.550	1.693	PER IMP= 20.00
ADD HYD	303.90	1& 2	5	2.06420	732.53	73.627	.66878	2.350	.554	
*S NORTH EL CAMINO ARROYO AT HOLBROOK (303.90)										
ROUTE MCUNGE	303.80	5	2	2.06420	728.11	73.609	.66863	2.400	.551	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.090
COMPUTE NM HYD	305.10	-	1	.16910	159.69	6.681	.74082	1.550	1.476	PER IMP= 20.00
ADD HYD	305.19	1& 2	5	2.23330	738.56	80.291	.67409	2.400	.517	
*S NORTH EL CAMINO ARROYO AT VENTURA (305.19)										
ROUTE MCUNGE	305.18	5	2	2.23330	731.91	80.183	.67319	2.500	.512	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.050
COMPUTE NM HYD	305.20	-	1	.15290	125.07	5.912	.72493	1.600	1.278	PER IMP= 20.00
ADD HYD	305.29	1& 2	5	2.38620	740.94	86.095	.67651	2.500	.485	
*S NORTH EL CAMINO ARROYO AT BARSTOW (305.29)										
ROUTE MCUNGE	305.28	5	2	2.38620	732.79	86.015	.67588	2.650	.480	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.970
COMPUTE NM HYD	312.00	-	1	.06600	61.07	2.401	.68219	1.550	1.446	PER IMP= 20.00
ADD HYD	312.90	1& 2	5	2.45220	734.79	88.416	.67605	2.650	.468	
*S NORTH EL CAMINO ARROYO AT WYOMING (312.90)										
ROUTE MCUNGE	312.80	5	2	2.45220	728.86	88.364	.67565	2.750	.464	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.910
COMPUTE NM HYD	313.00	-	1	.20920	250.33	11.376	1.01961	1.550	1.870	PER IMP= 49.00
ADD HYD	313.90	1& 2	7	2.66140	735.95	99.740	.70269	2.750	.432	
RAINFALL TYPE= 2										RAIN24= 2.110
COMPUTE NM HYD	304.00	-	1	.08400	92.34	3.106	.69341	1.500	1.718	PER IMP= 17.00
ROUTE MCUNGE	304.80	1	2	.08400	78.37	3.012	.67222	1.800	1.458	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.020
COMPUTE NM HYD	307.00	-	1	.05820	66.17	2.165	.69744	1.500	1.776	PER IMP= 20.00
ADD HYD	307.90	1& 2	5	.14220	99.20	5.176	.68254	1.750	1.090	
*S NORTH CAMINO ARROYO (TRIB) AT BARSTOW (307.90)										
ROUTE MCUNGE	307.81	5	1	.14220	88.26	5.063	.66764	2.000	.970	CCODE = .1
ROUTE MCUNGE	307.82	1	2	.14220	85.25	5.016	.66138	2.150	.937	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.970
COMPUTE NM HYD	310.00	-	1	.10330	80.12	3.483	.63215	1.600	1.212	PER IMP= 17.00
ADD HYD	310.90	1& 2	6	.24550	98.33	8.499	.64908	2.150	.626	

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
RAINFALL TYPE= 2										RAIN24= 2.050
COMPUTE NM HYD	306.00	-	1	.10510	117.15	3.751	.66916	1.500	1.742	PER IMP= 17.00
ROUTE MCUNGE	306.80	1	2	.10510	98.22	3.614	.64474	1.750	1.460	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.990
COMPUTE NM HYD	308.00	-	1	.05350	58.24	1.845	.64646	1.500	1.701	PER IMP= 17.00
ADD HYD	308.90	1& 2	5	.15860	116.73	5.459	.64532	1.750	1.150	
RAINFALL TYPE= 2										RAIN24= 1.990
COMPUTE NM HYD	309.00	-	1	.07960	75.82	2.731	.64323	1.550	1.488	PER IMP= 17.00
ADD HYD	309.90	1& 5	5	.23820	149.47	8.189	.64462	1.750	.980	
ROUTE MCUNGE	309.80	5	2	.23820	139.37	8.158	.64219	1.950	.914	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.970
COMPUTE NM HYD	311.00	-	1	.15280	116.78	5.107	.62669	1.600	1.194	PER IMP= 17.00
ADD HYD	311.90	1& 2	5	.39100	198.87	13.265	.63613	1.750	.795	
ADD HYD	311.99	5& 6	5	.63650	261.16	21.764	.64113	1.700	.641	
*S NORTH CAMINO ARROYO (TRIB) AT CORONADO RUNWAY (311.99)										
ROUTE MCUNGE	311.81	5	1	.63650	255.38	21.718	.63977	2.050	.627	CCODE = .1
ROUTE MCUNGE	311.82	1	2	.63650	253.91	21.418	.63092	2.042	.623	CCODE = .2
*S NORTH EL CAMINO ARROYO AT I-25 (AP 313.99)										
ADD HYD	313.99	2& 7	5	3.29790	796.87	120.575	.68552	2.712	.378	
ROUTE MCUNGE	313.88	5	2	3.29790	795.23	120.610	.68572	2.750	.377	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	314.00	-	1	.09600	144.47	5.411	1.05679	1.500	2.351	PER IMP= 50.00
ADD HYD	314.99	1& 2	5	3.39390	796.95	126.021	.69622	2.750	.367	
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	315.00	-	1	.04260	64.05	2.396	1.05449	1.500	2.349	PER IMP= 50.00
ADD HYD	315.99	1& 5	5	3.43650	797.72	128.417	.70066	2.750	.363	
RECALL HYD	206.39	-	19	.25890	376.50	15.625	1.13156	1.500	2.272	
ADD HYD	206.99	5&19	5	3.69540	847.98	144.041	.73085	1.950	.359	
ROUTE MCUNGE	206.88	5	2	3.69540	840.62	143.957	.73042	2.100	.355	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.840
COMPUTE NM HYD	401.00	-	1	.05560	82.44	3.035	1.02340	1.500	2.317	PER IMP= 50.00
ADD HYD	401.90	1& 2	5	3.75100	852.31	146.992	.73476	2.050	.355	
RAINFALL TYPE= 2										RAIN24= 1.820
COMPUTE NM HYD	402.00	-	1	.29180	360.39	15.753	1.01221	1.550	1.930	PER IMP= 50.00
ADD HYD	402.90	1& 5	6	4.04280	1033.27	162.744	.75479	1.650	.399	
*S FLOW TO N. DIVERSION CHANNEL FROM NORTH EL CAMINO ARROYO										
FINISH										

NORTH CAMINO FUTURE CONDITION 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = ctnc100.fut USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
										RAIN24= 3.990
COMPUTE NM HYD	300.00	-	1	.88400	1001.07	68.141	1.44530	1.800	1.769	PER IMP= .00
ROUTE MCUNGE	300.80	1	2	.88400	976.60	67.873	1.43962	2.050	1.726	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.590
COMPUTE NM HYD	301.00	-	1	.85200	862.46	54.493	1.19922	1.800	1.582	PER IMP= .00
ADD HYD	301.90	1& 2	11	1.73600	1605.38	122.366	1.32164	1.950	1.445	
*S NORTH EL CAMINO ARROYO AT TRAMWAY ROAD (301.90)										
ROUTE MCUNGE	301.82	11	2	1.73600	1587.76	122.145	1.31925	2.100	1.429	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.340
COMPUTE NM HYD	302.00	-	1	.15760	377.68	14.313	1.70288	1.500	3.744	PER IMP= 30.00
ADD HYD	302.90	1& 2	5	1.89360	1631.74	136.458	1.35117	2.100	1.346	
ROUTE MCUNGE	302.81	5	1	1.89360	1628.16	135.566	1.34235	2.107	1.343	CCODE = .2
ROUTE MCUNGE	302.82	1	2	1.89360	1623.95	135.667	1.34335	2.200	1.340	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 3.220
COMPUTE NM HYD	303.00	-	1	.17060	340.12	13.452	1.47844	1.550	3.115	PER IMP= 20.00
ADD HYD	303.90	1& 2	5	2.06420	1655.63	149.119	1.35451	2.150	1.253	
*S NORTH EL CAMINO ARROYO AT HOLBROOK (303.90)										
ROUTE MCUNGE	303.80	5	2	2.06420	1651.58	149.012	1.35354	2.250	1.250	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.130
COMPUTE NM HYD	305.10	-	1	.16910	302.07	13.014	1.44303	1.550	2.791	PER IMP= 20.00
ADD HYD	305.19	1& 2	5	2.23330	1682.34	162.026	1.36032	2.250	1.177	
*S NORTH EL CAMINO ARROYO AT VENTURA (305.19)										
ROUTE MCUNGE	305.18	5	2	2.23330	1680.41	162.092	1.36087	2.300	1.176	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 3.070
COMPUTE NM HYD	305.20	-	1	.15290	236.60	11.517	1.41235	1.600	2.418	PER IMP= 20.00
ADD HYD	305.29	1& 2	5	2.38620	1709.09	173.609	1.36417	2.300	1.119	
*S NORTH EL CAMINO ARROYO AT BARSTOW (305.29)										
ROUTE MCUNGE	305.28	5	2	2.38620	1695.57	173.479	1.36314	2.400	1.110	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.960
COMPUTE NM HYD	312.00	-	1	.06600	114.08	4.765	1.35364	1.550	2.701	PER IMP= 20.00
ADD HYD	312.90	1& 2	5	2.45220	1702.84	178.243	1.36288	2.400	1.085	
*S NORTH EL CAMINO ARROYO AT WYOMING (312.90)										
ROUTE MCUNGE	312.80	5	2	2.45220	1700.61	178.267	1.36306	2.423	1.084	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.870
COMPUTE NM HYD	313.00	-	1	.20920	437.50	19.847	1.77880	1.550	3.268	PER IMP= 49.00
ADD HYD	313.90	1& 2	7	2.66140	1727.38	198.075	1.39547	2.423	1.014	
RAINFALL TYPE= 2										RAIN24= 3.160
COMPUTE NM HYD	304.00	-	1	.08400	171.88	6.183	1.38016	1.500	3.197	PER IMP= 17.00
ROUTE MCUNGE	304.80	1	2	.08400	157.05	6.140	1.37048	1.700	2.921	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.030
COMPUTE NM HYD	307.00	-	1	.05820	121.68	4.267	1.37458	1.500	3.267	PER IMP= 20.00
ADD HYD	307.90	1& 2	5	.14220	213.89	10.406	1.37215	1.700	2.350	
*S NORTH CAMINO ARROYO (TRIB) AT BARSTOW (307.90)										
ROUTE MCUNGE	307.81	5	1	.14220	203.98	10.321	1.36091	1.850	2.241	CCODE = .1
ROUTE MCUNGE	307.82	1	2	.14220	202.08	10.318	1.36053	1.900	2.220	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.950
COMPUTE NM HYD	310.00	-	1	.10330	154.99	7.037	1.27736	1.600	2.344	PER IMP= 17.00
ADD HYD	310.90	1& 2	6	.24550	271.70	17.356	1.32553	1.850	1.729	

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
RAINFALL TYPE= 2										RAIN24= 3.080
COMPUTE NM HYD	306.00	-	1	.10510	220.14	7.537	1.34456	1.500	3.273	PER IMP= 17.00
ROUTE MCUNGE	306.80	1	2	.10510	197.50	7.491	1.33639	1.700	2.936	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.980
COMPUTE NM HYD	308.00	-	1	.05350	108.45	3.706	1.29894	1.500	3.167	PER IMP= 17.00
ADD HYD	308.90	1& 2	5	.15860	248.41	11.197	1.32375	1.700	2.447	
RAINFALL TYPE= 2										RAIN24= 2.990
COMPUTE NM HYD	309.00	-	1	.07960	143.06	5.522	1.30064	1.550	2.808	PER IMP= 17.00
ADD HYD	309.90	1& 5	5	.23820	353.40	16.719	1.31603	1.650	2.318	
ROUTE MCUNGE	309.80	5	2	.23820	353.09	16.763	1.31953	1.750	2.316	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.950
COMPUTE NM HYD	311.00	-	1	.15280	230.86	10.352	1.27025	1.600	2.361	PER IMP= 17.00
ADD HYD	311.90	1& 2	5	.39100	530.42	27.115	1.30027	1.700	2.120	
ADD HYD	311.99	5& 6	5	.63650	765.49	44.471	1.31001	1.750	1.879	
*S NORTH CAMINO ARROYO (TRIB) AT CORONADO RUNWAY (311.99)										
ROUTE MCUNGE	311.81	5	1	.63650	764.71	44.450	1.30941	1.800	1.877	CCODE = .2
ROUTE MCUNGE	311.82	1	2	.63650	762.27	43.031	1.26760	1.772	1.871	CCODE = .2
*S NORTH EL CAMINO ARROYO AT I-25 (AP 313.99)										
ADD HYD	313.99	2& 7	5	3.29790	1909.25	238.385	1.35532	1.793	.905	
ROUTE MCUNGE	313.88	5	2	3.29790	1869.26	238.121	1.35382	1.900	.886	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	314.00	-	1	.09600	239.07	9.345	1.82515	1.500	3.891	PER IMP= 50.00
ADD HYD	314.99	1& 2	5	3.39390	1930.42	247.466	1.36716	1.900	.889	
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	315.00	-	1	.04260	104.88	4.130	1.81763	1.500	3.847	PER IMP= 50.00
ADD HYD	315.99	1& 5	5	3.43650	1957.19	251.596	1.37274	1.900	.890	
RECALL HYD	206.39	-	19	.25890	619.79	26.255	1.90144	1.500	3.741	
ADD HYD	206.99	5&19	5	3.69540	2138.80	277.851	1.40978	1.900	.904	
ROUTE MCUNGE	206.88	5	2	3.69540	2137.06	277.937	1.41022	1.950	.904	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.760
COMPUTE NM HYD	401.00	-	1	.05560	135.75	5.261	1.77417	1.500	3.815	PER IMP= 50.00
ADD HYD	401.90	1& 2	5	3.75100	2167.63	283.198	1.41561	1.950	.903	
RAINFALL TYPE= 2										RAIN24= 2.730
COMPUTE NM HYD	402.00	-	1	.29180	631.89	27.357	1.75788	1.550	3.384	PER IMP= 50.00
ADD HYD	402.90	1& 5	6	4.04280	2351.65	310.555	1.44031	1.900	.909	
*S FLOW TO N. DIVERSION CHANNEL FROM NORTH EL CAMINO ARROYO										
FINISH										

EL CAMINO EXISTING CONDITION 10-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = ec10b.ext USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
										RAIN24= 2.250
COMPUTE NM HYD	201.00	-	1	.13390	81.06	2.525	.35355	1.500	.946	PER IMP= 5.00
RAINFALL TYPE= 2										RAIN24= 2.330
COMPUTE NM HYD	200.00	-	3	.30300	197.06	5.927	.36680	1.550	1.016	PER IMP= .00
*S EL CAMINO ARROYO AT TRAMWAY BLVD (200.0)										
ROUTE MCUNGE	200.80	3	4	.30300	174.00	5.666	.35063	1.750	.897	CCODE = .1
ADD HYD	201.90	4& 1	5	.43690	201.09	8.191	.35152	1.750	.719	
*S EL CAMINO ARROYO (MAIN) AT BROWNING (201.9)										
ROUTE MCUNGE	201.80	5	2	.43690	186.22	8.142	.34941	1.950	.666	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.170
COMPUTE NM HYD	202.10	-	1	.10310	68.80	2.226	.40486	1.500	1.043	PER IMP= 8.00
ADD HYD	202.19	1& 2	5	.54000	196.34	10.368	.36000	1.950	.568	
*S EL CAMINO ARROYO (MAIN) AT EUBANK (202.19)										
ROUTE MCUNGE	202.18	5	2	.54000	194.42	10.406	.36132	2.000	.563	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.130
COMPUTE NM HYD	202.20	-	1	.10990	79.79	2.692	.45922	1.500	1.134	PER IMP= 10.00
ADD HYD	202.29	1& 2	5	.64990	205.88	13.098	.37788	2.000	.495	
*S EL CAMINO ARROYO (MAIN) AT HOLBROOK (202.29)										
ROUTE MCUNGE	202.28	5	2	.64990	193.86	13.046	.37639	2.200	.466	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.050
COMPUTE NM HYD	202.30	-	1	.06840	55.75	1.887	.51719	1.500	1.274	PER IMP= 15.00
ADD HYD	202.39	1& 2	6	.71830	197.66	14.933	.38980	2.200	.430	
*S EL CAMINO ARROYO (MAIN) AT VENTURA (202.39)										
RAINFALL TYPE= 2										RAIN24= 2.090
COMPUTE NM HYD	203.10	-	1	.12580	81.09	2.799	.41718	1.500	1.007	PER IMP= 10.00
*S EL CAMINO ARROYO (TRIBUTARY) AT HOLBROOK (203.1)										
ROUTE MCUNGE	203.18	1	2	.12580	71.96	2.717	.40496	1.750	.894	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.050
COMPUTE NM HYD	203.20	-	1	.04850	31.32	1.043	.40304	1.500	1.009	PER IMP= 10.00
ADD HYD	203.29	1& 2	5	.17430	82.94	3.759	.40442	1.750	.744	
ADD HYD	202.90	5& 6	5	.89260	216.21	18.692	.39265	2.200	.378	
ROUTE MCUNGE	202.80	5	2	.89260	213.98	18.682	.39243	2.250	.375	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.010
COMPUTE NM HYD	203.30	-	1	.05580	34.52	1.152	.38696	1.500	.967	PER IMP= 10.00
ADD HYD	203.39	1& 2	5	.94840	216.00	19.833	.39211	2.250	.356	
*S EL CAMINO ARROYO (MAIN) AT BARSTOW (203.39)										
ROUTE MCUNGE	203.98	5	2	.94840	206.24	19.779	.39104	2.450	.340	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.970
COMPUTE NM HYD	204.00	-	1	.21190	89.98	4.166	.36862	1.600	.664	PER IMP= 10.00
ADD HYD	204.90	1& 2	5	1.16030	230.99	23.945	.38694	2.000	.311	
*S EL CAMINO ARROYO AT WYOMING (204.9)										
ROUTE MCUNGE	204.80	5	2	1.16030	223.54	23.884	.38595	2.200	.301	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.930
COMPUTE NM HYD	204.20	-	1	.13330	71.82	2.508	.35273	1.500	.842	PER IMP= 10.00
ADD HYD	204.29	1& 2	5	1.29360	229.07	26.392	.38253	2.200	.277	
RAINFALL TYPE= 2										RAIN24= 1.940
COMPUTE NM HYD	204.10	-	1	.14840	71.63	2.914	.36813	1.550	.754	PER IMP= 10.00
ROUTE MCUNGE	204.18	1	2	.14840	69.91	2.905	.36706	1.600	.736	CCODE = .2

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	204.19	2& 5	5	1.44200	240.19	29.297	.38094	2.200	.260	
*S EL CAMINO ARROYO AT CORONADO AIRPORT (204.29)										
ROUTE MCUNGE	204.28	5	2	1.44200	239.03	29.197	.37965	2.209	.259	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 1.900
COMPUTE NM HYD	205.00	-	1	.04590	77.96	3.150	1.28671	1.500	2.654	PER IMP= 70.00
ADD HYD	205.90	1& 2	5	1.48790	244.86	32.330	.40742	2.209	.257	
*S EL CAMINO ARROYO AT I-25 (205.90)										
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	206.10	-	1	.12210	57.36	2.154	.33078	1.550	.734	PER IMP= 10.00
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	206.20	-	2	.05610	29.10	.990	.33078	1.500	.810	PER IMP= 10.00
ADD HYD	206.29	1& 2	5	.17820	85.76	3.144	.33078	1.500	.752	
ROUTE	206.28	5	3	.17820	87.56	3.144	.33078	1.550	.768	
RAINFALL TYPE= 2										RAIN24= 1.840
COMPUTE NM HYD	206.40	-	1	.03270	29.76	1.107	.63495	1.500	1.422	PER IMP= 30.00
ROUTE	206.48	1	2	.03270	29.08	1.107	.63496	1.500	1.389	
ADD HYD	206.49	2& 3	5	.21090	116.20	4.251	.37794	1.550	.861	
RAINFALL TYPE= 2										RAIN24= 1.840
COMPUTE NM HYD	206.30	-	1	.04800	89.62	3.691	1.44188	1.500	2.917	PER IMP= 86.00
ADD HYD	206.39	1& 5	6	.25890	196.30	7.942	.57519	1.500	1.185	
FINISH										

EL CAMINO EXISTING CONDITION 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = ec100b.ext USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
										RAIN24= 3.370
COMPUTE NM HYD	201.00	-	1	.13390	207.70	6.497	.90979	1.500	2.424	PER IMP= 5.00
RAINFALL TYPE= 2										RAIN24= 3.500
COMPUTE NM HYD	200.00	-	3	.30300	487.60	15.384	.95201	1.550	2.514	PER IMP= .00
*S EL CAMINO ARROYO AT TRAMWAY BLVD (200.0)										
ROUTE MCUNGE	200.80	3	4	.30300	453.59	15.176	.93914	1.700	2.339	CCODE = .1
ADD HYD	201.90	4& 1	5	.43690	559.37	21.674	.93014	1.650	2.000	
*S EL CAMINO ARROYO (MAIN) AT BROWNING (201.9)										
ROUTE MCUNGE	201.80	5	2	.43690	534.38	21.592	.92664	1.800	1.911	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.250
COMPUTE NM HYD	202.10	-	1	.10310	164.12	5.334	.97014	1.500	2.487	PER IMP= 8.00
ADD HYD	202.19	1& 2	5	.54000	589.48	26.926	.93495	1.750	1.706	
*S EL CAMINO ARROYO (MAIN) AT EUBANK (202.19)										
ROUTE MCUNGE	202.18	5	2	.54000	565.85	26.878	.93327	1.850	1.637	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.190
COMPUTE NM HYD	202.20	-	1	.10990	180.49	6.162	1.05124	1.500	2.566	PER IMP= 10.00
ADD HYD	202.29	1& 2	5	.64990	607.66	33.040	.95322	1.850	1.461	
*S EL CAMINO ARROYO (MAIN) AT HOLBROOK (202.29)										
ROUTE MCUNGE	202.28	5	2	.64990	588.10	33.013	.95244	1.950	1.414	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.070
COMPUTE NM HYD	202.30	-	1	.06840	118.36	4.064	1.11411	1.500	2.704	PER IMP= 15.00
ADD HYD	202.39	1& 2	6	.71830	607.11	37.077	.96783	1.950	1.321	
*S EL CAMINO ARROYO (MAIN) AT VENTURA (202.39)										
RAINFALL TYPE= 2										RAIN24= 3.140
COMPUTE NM HYD	203.10	-	1	.12580	192.92	6.547	.97587	1.500	2.396	PER IMP= 10.00
*S EL CAMINO ARROYO (TRIBUTARY) AT HOLBROOK (203.1)										
ROUTE MCUNGE	203.18	1	2	.12580	176.32	6.466	.96366	1.700	2.190	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.070
COMPUTE NM HYD	203.20	-	1	.04850	74.17	2.466	.95343	1.500	2.389	PER IMP= 10.00
ADD HYD	203.29	1& 2	5	.17430	211.27	8.932	.96081	1.700	1.894	
ADD HYD	202.90	5& 6	5	.89260	685.83	46.009	.96646	1.950	1.201	
ROUTE MCUNGE	202.80	5	2	.89260	680.66	45.950	.96522	1.990	1.192	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 3.020
COMPUTE NM HYD	203.30	-	1	.05580	83.29	2.757	.92642	1.500	2.332	PER IMP= 10.00
ADD HYD	203.39	1& 2	5	.94840	691.83	48.707	.96294	1.990	1.140	
*S EL CAMINO ARROYO (MAIN) AT BARSTOW (203.39)										
ROUTE MCUNGE	203.98	5	2	.94840	689.37	48.718	.96315	2.050	1.136	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.960
COMPUTE NM HYD	204.00	-	1	.21190	235.18	10.122	.89562	1.600	1.734	PER IMP= 10.00
ADD HYD	204.90	1& 2	5	1.16030	752.02	58.839	.95082	1.800	1.013	
*S EL CAMINO ARROYO AT WYOMING (204.9)										
ROUTE MCUNGE	204.80	5	2	1.16030	737.66	58.784	.94992	1.900	.993	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.890
COMPUTE NM HYD	204.20	-	1	.13330	185.49	6.169	.86774	1.500	2.174	PER IMP= 10.00
ADD HYD	204.29	1& 2	5	1.29360	770.82	64.953	.94145	1.900	.931	
RAINFALL TYPE= 2										RAIN24= 2.910
COMPUTE NM HYD	204.10	-	1	.14840	181.03	7.086	.89528	1.550	1.906	PER IMP= 10.00
ROUTE MCUNGE	204.18	1	2	.14840	177.98	7.092	.89603	1.599	1.874	CCODE = .2

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	204.19	2& 5	5	1.44200	832.88	72.022	.93648	1.899	.902	
*S EL CAMINO ARROYO AT CORONADO AIRPORT (204.29)										
ROUTE MCUNGE	204.28	5	2	1.44200	831.34	70.867	.92147	1.901	.901	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.850
COMPUTE NM HYD	205.00	-	1	.04590	123.43	5.191	2.12030	1.500	4.202	PER IMP= 70.00
ADD HYD	205.90	1& 2	5	1.48790	864.92	75.765	.95476	1.901	.908	
*S EL CAMINO ARROYO AT I-25 (205.90)										
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	206.10	-	1	.12210	154.08	5.425	.83315	1.550	1.972	PER IMP= 10.00
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	206.20	-	2	.05610	76.53	2.493	.83315	1.500	2.132	PER IMP= 10.00
ADD HYD	206.29	1& 2	5	.17820	228.80	7.918	.83315	1.500	2.006	
ROUTE	206.28	5	3	.17820	232.98	7.918	.83315	1.550	2.043	
RAINFALL TYPE= 2										RAIN24= 2.760
COMPUTE NM HYD	206.40	-	1	.03270	59.24	2.164	1.24111	1.500	2.831	PER IMP= 30.00
ROUTE	206.48	1	2	.03270	58.63	2.165	1.24112	1.500	2.802	
ADD HYD	206.49	2& 3	5	.21090	289.80	10.083	.89640	1.550	2.147	
RAINFALL TYPE= 2										RAIN24= 2.760
COMPUTE NM HYD	206.30	-	1	.04800	138.49	5.921	2.31273	1.500	4.508	PER IMP= 86.00
ADD HYD	206.39	1& 5	6	.25890	415.02	16.003	1.15899	1.500	2.505	
FINISH										

EL CAMINO FUTURE CONDITION 10-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = ctec10.fut USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										TIME= .00
RAINFALL TYPE= 2										RAIN24= 2.250
COMPUTE NM HYD	201.00	-	1	.13390	81.06	2.525	.35355	1.500	.946	PER IMP= 5.00
RAINFALL TYPE= 2										RAIN24= 2.330
COMPUTE NM HYD	200.00	-	3	.30300	197.06	5.927	.36680	1.550	1.016	PER IMP= .00
*S EL CAMINO ARROYO AT TRAMWAY BLVD (200.0)										
ROUTE MCUNGE	200.80	3	4	.30300	174.00	5.666	.35063	1.750	.897	CCODE = .1
ADD HYD	201.90	4& 1	5	.43690	201.09	8.191	.35152	1.750	.719	
*S EL CAMINO ARROYO (MAIN) AT BROWNING (201.9)										
ROUTE MCUNGE	201.80	5	2	.43690	186.22	8.142	.34941	1.950	.666	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.170
COMPUTE NM HYD	202.10	-	1	.10310	121.81	3.961	.72027	1.500	1.846	PER IMP= 17.00
ADD HYD	202.19	1& 2	5	.54000	204.64	12.102	.42022	1.950	.592	
*S EL CAMINO ARROYO (MAIN) AT EUBANK (202.19)										
ROUTE MCUNGE	202.18	5	2	.54000	202.93	12.151	.42189	2.050	.587	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.130
COMPUTE NM HYD	202.20	-	1	.10990	122.75	4.133	.70507	1.500	1.745	PER IMP= 17.00
ADD HYD	202.29	1& 2	5	.64990	232.22	16.283	.46978	1.600	.558	
*S EL CAMINO ARROYO (MAIN) AT HOLBROOK (202.29)										
ROUTE MCUNGE	202.28	5	2	.64990	230.99	16.359	.47196	1.700	.555	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.050
COMPUTE NM HYD	202.30	-	1	.05186	68.69	2.399	.86748	1.500	2.069	PER IMP= 30.00
ADD HYD	202.39	1& 2	6	.70176	260.20	18.758	.50119	1.700	.579	
*S EL CAMINO ARROYO (MAIN) AT VENTURA (202.39)										
RAINFALL TYPE= 2										RAIN24= 2.090
COMPUTE NM HYD	203.10	-	1	.12580	136.73	4.591	.68422	1.500	1.698	PER IMP= 17.00
*S EL CAMINO ARROYO (TRIBUTARY) AT HOLBROOK (203.1)										
ROUTE MCUNGE	203.18	1	2	.12580	123.10	4.553	.67854	1.700	1.529	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.050
COMPUTE NM HYD	203.20	-	1	.03946	52.27	1.826	.86748	1.500	2.070	PER IMP= 30.00
ADD HYD	203.29	1& 2	5	.16526	145.32	6.378	.72365	1.700	1.374	
ADD HYD	202.90	5& 6	5	.86702	405.52	25.136	.54359	1.700	.731	
ROUTE MCUNGE	202.80	5	2	.86702	387.67	25.102	.54286	1.750	.699	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.010
COMPUTE NM HYD	203.30	-	1	.12590	193.61	7.465	1.11170	1.500	2.403	PER IMP= 50.00
ADD HYD	203.39	1& 2	5	.99292	457.85	32.567	.61498	1.750	.720	
*S EL CAMINO ARROYO (MAIN) AT BARSTOW (203.39)										
ROUTE MCUNGE	203.98	5	2	.99292	456.60	32.559	.61483	1.750	.719	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 1.970
COMPUTE NM HYD	204.00	-	1	.10230	153.51	5.899	1.08121	1.500	2.345	PER IMP= 50.00
*S EL CAMINO ARROYO AT WYOMING (204.9)										
ADD HYD	204.90	1& 2	5	1.09522	511.98	38.458	.65839	1.750	.730	
ROUTE MCUNGE	204.80	5	2	1.09522	493.64	38.428	.65788	1.850	.704	CCODE = .1
COMPUTE NM HYD	204.40	-	1	.02968	30.96	.987	.62352	1.500	1.630	PER IMP= 17.00
ROUTE MCUNGE	204.81	1	6	.02968	25.83	.967	.61064	1.750	1.360	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.940
COMPUTE NM HYD	204.30	-	1	.11120	117.18	3.694	.62281	1.500	1.646	PER IMP= 17.00
ADD HYD	204.91	1& 6	10	.14088	118.58	4.660	.62024	1.500	1.315	
ADD HYD	204.92	10& 2	5	1.23610	541.01	43.088	.65359	1.800	.684	
*S (204.92=EL CAMINO ARROYO AT LOUISIANA)										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ROUTE MCUNGE	204.82	5	3	1.23610	539.85	43.061	.65318	1.850	.682	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.930
COMPUTE NM HYD	204.20	-	1	.06875	118.86	4.812	1.31248	1.500	2.701	PER IMP= 70.00
ADD HYD	204.29	1& 3	5	1.30485	575.04	47.873	.68791	1.850	.689	
RAINFALL TYPE= 2										RAIN24= 1.940
COMPUTE NM HYD	204.10	-	1	.12880	131.42	5.455	.79413	1.550	1.594	PER IMP= 30.00
ROUTE MCUNGE	204.18	1	2	.12880	129.96	5.451	.79354	1.600	1.577	CCODE = .2
ADD HYD	204.19	2& 5	5	1.43365	683.28	53.324	.69740	1.600	.745	
*S EL CAMINO ARROYO AT CORONADO AIRPORT (204.29)										
ROUTE MCUNGE	204.28	5	2	1.43365	681.88	53.303	.69712	1.650	.743	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.900
COMPUTE NM HYD	205.00	-	1	.05430	92.31	3.726	1.28671	1.500	2.656	PER IMP= 70.00
*S EL CAMINO ARROYO AT I-25 (205.90)										
ADD HYD	205.90	1& 2	5	1.48795	731.24	57.029	.71864	1.650	.768	
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	206.10	-	1	.12210	166.02	6.844	1.05092	1.500	2.124	PER IMP= 50.00
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	206.20	-	2	.05610	83.55	3.144	1.05092	1.500	2.327	PER IMP= 50.00
ADD HYD	206.29	1& 2	5	.17820	249.57	9.988	1.05092	1.500	2.188	
ROUTE	206.28	5	3	.17820	247.14	9.988	1.05092	1.550	2.167	
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	206.40	-	1	.03270	48.70	1.833	1.05092	1.500	2.327	PER IMP= 50.00
ROUTE	206.48	1	2	.03270	47.99	1.833	1.05094	1.500	2.293	
ADD HYD	206.49	2& 3	5	.21090	293.29	11.821	1.05092	1.550	2.173	
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	206.30	-	1	.04800	90.31	3.804	1.48587	1.500	2.940	PER IMP= 86.00
ADD HYD	206.39	1& 5	6	.25890	376.50	15.625	1.13156	1.500	2.272	
FINISH										

EL CAMINO FUTURE CONDITION 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = ctec100.fut USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
										RAIN24= 3.370
COMPUTE NM HYD	201.00	-	1	.13390	207.70	6.497	.90979	1.500	2.424	PER IMP= 5.00
RAINFALL TYPE= 2										RAIN24= 3.500
COMPUTE NM HYD	200.00	-	3	.30300	487.60	15.384	.95201	1.550	2.514	PER IMP= .00
*S EL CAMINO ARROYO AT TRAMWAY BLVD (200.0)										
ROUTE MCUNGE	200.80	3	4	.30300	453.59	15.176	.93914	1.700	2.339	CCODE = .1
ADD HYD	201.90	4& 1	5	.43690	559.37	21.674	.93014	1.650	2.000	
*S EL CAMINO ARROYO (MAIN) AT BROWNING (201.9)										
ROUTE MCUNGE	201.80	5	2	.43690	534.38	21.592	.92664	1.800	1.911	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.250
COMPUTE NM HYD	202.10	-	1	.10310	223.44	7.813	1.42091	1.500	3.386	PER IMP= 17.00
ADD HYD	202.19	1& 2	5	.54000	615.10	29.405	1.02101	1.750	1.780	
*S EL CAMINO ARROYO (MAIN) AT EUBANK (202.19)										
ROUTE MCUNGE	202.18	5	2	.54000	591.52	29.266	1.01619	1.850	1.712	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.190
COMPUTE NM HYD	202.20	-	1	.10990	229.39	8.219	1.40216	1.500	3.261	PER IMP= 17.00
ADD HYD	202.29	1& 2	5	.64990	652.42	37.485	1.08146	1.850	1.569	
*S EL CAMINO ARROYO (MAIN) AT HOLBROOK (202.29)										
ROUTE MCUNGE	202.28	5	2	.64990	647.14	37.484	1.08143	1.950	1.556	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 3.070
COMPUTE NM HYD	202.30	-	1	.05186	118.89	4.423	1.59917	1.500	3.582	PER IMP= 30.00
ADD HYD	202.39	1& 2	6	.70176	673.28	41.907	1.11969	1.900	1.499	
*S EL CAMINO ARROYO (MAIN) AT VENTURA (202.39)										
RAINFALL TYPE= 2										RAIN24= 3.140
COMPUTE NM HYD	203.10	-	1	.12580	257.46	9.143	1.36267	1.500	3.198	PER IMP= 17.00
*S EL CAMINO ARROYO (TRIBUTARY) AT HOLBROOK (203.1)										
ROUTE MCUNGE	203.18	1	2	.12580	237.85	9.047	1.34848	1.650	2.954	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.070
COMPUTE NM HYD	203.20	-	1	.03946	90.47	3.366	1.59917	1.500	3.582	PER IMP= 30.00
ADD HYD	203.29	1& 2	5	.16526	289.97	12.413	1.40833	1.650	2.742	
ADD HYD	202.90	5& 6	5	.86702	797.80	54.320	1.17471	1.900	1.438	
ROUTE MCUNGE	202.80	5	2	.86702	786.15	54.278	1.17380	1.950	1.417	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.020
COMPUTE NM HYD	203.30	-	1	.12590	320.68	12.845	1.91302	1.500	3.980	PER IMP= 50.00
ADD HYD	203.39	1& 2	5	.99292	900.27	67.123	1.26753	1.700	1.417	
*S EL CAMINO ARROYO (MAIN) AT BARSTOW (203.39)										
ROUTE MCUNGE	203.98	5	2	.99292	891.55	67.080	1.26671	1.800	1.403	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.960
COMPUTE NM HYD	204.00	-	1	.10230	255.42	10.191	1.86790	1.500	3.901	PER IMP= 50.00
*S EL CAMINO ARROYO AT WYOMING (204.9)										
ADD HYD	204.90	1& 2	5	1.09522	977.51	77.271	1.32287	1.750	1.395	
ROUTE MCUNGE	204.80	5	2	1.09522	971.65	77.219	1.32198	1.850	1.386	CCODE = .1
COMPUTE NM HYD	204.40	-	1	.02968	58.84	2.006	1.26739	1.500	3.098	PER IMP= 17.00
ROUTE MCUNGE	204.81	1	6	.02968	57.97	2.037	1.28687	1.550	3.052	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.910
COMPUTE NM HYD	204.30	-	1	.11120	224.48	7.507	1.26586	1.500	3.154	PER IMP= 17.00
ADD HYD	204.91	1& 6	10	.14088	267.70	9.544	1.27029	1.500	2.969	
ADD HYD	204.92	10& 2	5	1.23610	1047.47	86.764	1.31609	1.800	1.324	
*S (204.92=EL CAMINO ARROYO AT LOUISIANA)										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ROUTE MCUNGE	204.82	5	3	1.23610	1046.91	86.713	1.31531	1.850	1.323	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.890
COMPUTE NM HYD	204.20	-	1	.06875	187.81	7.907	2.15643	1.500	4.268	PER IMP= 70.00
ADD HYD	204.29	1& 3	5	1.30485	1104.21	94.619	1.35963	1.850	1.322	
RAINFALL TYPE= 2										RAIN24= 2.910
COMPUTE NM HYD	204.10	-	1	.12880	239.10	10.225	1.48848	1.550	2.901	PER IMP= 30.00
ROUTE MCUNGE	204.18	1	2	.12880	236.02	10.215	1.48706	1.550	2.863	CCODE = .2
ADD HYD	204.19	2& 5	5	1.43365	1213.28	104.834	1.37108	1.650	1.322	
*S EL CAMINO ARROYO AT CORONADO AIRPORT (204.29)										
ROUTE MCUNGE	204.28	5	2	1.43365	1211.93	104.826	1.37097	1.650	1.321	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.850
COMPUTE NM HYD	205.00	-	1	.05430	146.01	6.140	2.12030	1.500	4.202	PER IMP= 70.00
*S EL CAMINO ARROYO AT I-25 (205.90)										
ADD HYD	205.90	1& 2	5	1.48795	1294.36	110.966	1.39831	1.600	1.359	
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	206.10	-	1	.12210	279.20	11.808	1.81320	1.500	3.573	PER IMP= 50.00
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	206.20	-	2	.05610	137.40	5.425	1.81320	1.500	3.827	PER IMP= 50.00
ADD HYD	206.29	1& 2	5	.17820	416.60	17.233	1.81319	1.500	3.653	
ROUTE	206.28	5	3	.17820	407.60	17.233	1.81320	1.550	3.574	
RAINFALL TYPE= 2										RAIN24= 2.760
COMPUTE NM HYD	206.40	-	1	.03270	80.27	3.102	1.77859	1.500	3.836	PER IMP= 50.00
ROUTE	206.48	1	2	.03270	79.75	3.102	1.77860	1.500	3.811	
ADD HYD	206.49	2& 3	5	.21090	482.92	20.334	1.80783	1.550	3.578	
RAINFALL TYPE= 2										RAIN24= 2.760
COMPUTE NM HYD	206.30	-	1	.04800	138.49	5.921	2.31273	1.500	4.508	PER IMP= 86.00
ADD HYD	206.39	1& 5	6	.25890	619.79	26.255	1.90144	1.500	3.741	
FINISH										

LC DIVERSION EXISTING COND. 10-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = lcdv10b.ext USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
										RAIN24= 2.370
COMPUTE NM HYD	103.20	-	1	.06160	68.41	2.326	.70815	1.500	1.735	PER IMP= 14.00
ROUTE MCUNGE	103.80	1	2	.06160	63.03	2.316	.70501	1.600	1.599	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.330
COMPUTE NM HYD	103.40	-	1	.09530	92.00	2.969	.58416	1.500	1.508	PER IMP= 10.00
ADD HYD	103.49	1& 2	11	.15690	137.74	5.285	.63160	1.550	1.372	
*S SOUTH LACUEVA TRIB @ TRAMWAY BLVD (103.49)										
RAINFALL TYPE= 2										RAIN24= 2.330
COMPUTE NM HYD	103.50	-	1	.06250	94.68	3.605	1.08145	1.500	2.367	PER IMP= 35.00
ADD HYD	103.59	1&11	5	.21940	222.82	8.890	.75975	1.550	1.587	
ROUTE MCUNGE	103.48	5	2	.21940	206.68	8.801	.75213	1.700	1.472	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.300
COMPUTE NM HYD	104.10	-	1	.12000	132.31	5.006	.78225	1.500	1.723	PER IMP= 25.00
ADD HYD	104.19	1& 2	5	.33940	263.37	13.807	.76277	1.700	1.212	
*S SOUTH LACUEVA TRIB @ LOWELL (104.19)										
ROUTE MCUNGE	104.18	5	2	.33940	255.73	13.789	.76176	1.800	1.177	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.230
COMPUTE NM HYD	104.20	-	1	.08040	48.56	1.825	.42552	1.550	.944	PER IMP= 8.00
ADD HYD	104.29	1& 2	6	.41980	273.75	15.613	.69736	1.800	1.019	
*S SOUTH LACUEVA TRIB @ BROWNING (104.29)										
RAINFALL TYPE= 2										RAIN24= 2.500
COMPUTE NM HYD	103.00	-	1	.21200	184.92	6.637	.58699	1.550	1.363	PER IMP= .00
ROUTE RESERVOIR	103.11	1	2	.21200	151.32	6.637	.58699	1.650	1.115	AC-FT= .752
ROUTE MCUNGE	103.81	2	3	.21200	150.12	6.566	.58073	1.800	1.106	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.400
COMPUTE NM HYD	103.60	-	1	.06840	72.88	2.959	.81112	1.500	1.665	PER IMP= 26.00
ADD HYD	103.19	1& 3	5	.28040	172.67	9.525	.63693	1.800	.962	
RAINFALL TYPE= 2										RAIN24= 2.400
COMPUTE NM HYD	103.10	-	1	.22990	149.93	6.117	.49885	1.600	1.019	PER IMP= .00
ROUTE MCUNGE	103.88	1	2	.22990	144.39	6.107	.49806	1.750	.981	CCODE = .1
ADD HYD	103.99	5& 2	5	.51030	316.60	15.632	.57436	1.750	.969	
*S NORTH LACUEVA TRIB @ TRAMWAY BLVD (103.99)										
ROUTE MCUNGE	103.18	5	2	.51030	315.19	15.675	.57596	1.800	.965	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.270
COMPUTE NM HYD	105.10	-	1	.13820	123.03	4.265	.57864	1.500	1.391	PER IMP= 15.00
ADD HYD	105.19	1& 2	5	.64850	348.40	19.940	.57653	1.800	.839	
*S NORTH LACUEVA TRIB @ LOWELL (105.19)										
ROUTE MCUNGE	105.18	5	2	.64850	343.94	19.906	.57554	1.900	.829	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.220
COMPUTE NM HYD	105.20	-	1	.10580	73.17	2.369	.41977	1.500	1.081	PER IMP= 8.00
ADD HYD	105.29	1& 2	5	.75430	356.37	22.275	.55369	1.900	.738	
*S NORTH LACUEVA TRIB @ BROWNING (105.29)										
ADD HYD	105.90	5& 6	17	1.17410	604.74	37.888	.60506	1.850	.805	
*S TOTAL RUNOFF TO LACUEVA DIVERSION CHANNEL (105.9)										
FINISH										

LC DIVERSION EXISTING COND. 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = lcdv100b.ext USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
START											
RAINFALL TYPE= 2										TIME=	.00
COMPUTE NM HYD	103.20	-	1	.06160	127.12	4.677	1.42358	1.500	3.224	RAIN24= PER IMP=	3.550 14.00
ROUTE MCUNGE	103.80	1	2	.06160	121.23	4.662	1.41909	1.600	3.075	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	103.40	-	1	.09530	184.28	6.348	1.24889	1.500	3.021	RAIN24= PER IMP=	3.500 10.00
ADD HYD	103.49	1& 2	11	.15690	289.35	11.010	1.31571	1.550	2.882		
*S SOUTH LACUEVA TRIB @ TRAMWAY BLVD (103.49)											
RAINFALL TYPE= 2											
COMPUTE NM HYD	103.50	-	1	.06250	157.65	6.408	1.92240	1.500	3.941	RAIN24= PER IMP=	3.500 35.00
ADD HYD	103.59	1&11	5	.21940	432.28	17.418	1.48853	1.500	3.079		
ROUTE MCUNGE	103.48	5	2	.21940	408.77	17.240	1.47338	1.650	2.911	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	104.10	-	1	.12000	251.45	9.569	1.49513	1.500	3.274	RAIN24= PER IMP=	3.450 25.00
ADD HYD	104.19	1& 2	5	.33940	553.42	26.809	1.48106	1.650	2.548		
*S SOUTH LACUEVA TRIB @ LOWELL (104.19)											
ROUTE MCUNGE	104.18	5	2	.33940	548.56	26.834	1.48244	1.650	2.525	CCODE =	.2
RAINFALL TYPE= 2											
COMPUTE NM HYD	104.20	-	1	.08040	114.02	4.326	1.00893	1.550	2.216	RAIN24= PER IMP=	3.350 8.00
ADD HYD	104.29	1& 2	6	.41980	634.68	31.160	1.39175	1.650	2.362		
*S SOUTH LACUEVA TRIB @ BROWNING (104.29)											
RAINFALL TYPE= 2											
COMPUTE NM HYD	103.00	-	1	.21200	365.76	14.423	1.27562	1.550	2.696	RAIN24= PER IMP=	3.750 .00
ROUTE RESERVOIR	103.11	1	2	.21200	341.18	14.423	1.27562	1.600	2.515	AC-FT=	1.951
ROUTE MCUNGE	103.81	2	3	.21200	329.31	14.386	1.27236	1.750	2.427	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	103.60	-	1	.06840	137.46	5.606	1.53665	1.500	3.140	RAIN24= PER IMP=	3.600 26.00
ADD HYD	103.19	1& 3	5	.28040	382.39	19.992	1.33683	1.750	2.131		
RAINFALL TYPE= 2											
COMPUTE NM HYD	103.10	-	1	.22990	326.84	14.085	1.14876	1.600	2.221	RAIN24= PER IMP=	3.600 .00
ROUTE MCUNGE	103.88	1	2	.22990	316.24	14.054	1.14622	1.700	2.149	CCODE =	.1
ADD HYD	103.99	5& 2	5	.51030	694.78	34.046	1.25095	1.750	2.127		
*S NORTH LACUEVA TRIB @ TRAMWAY BLVD (103.99)											
ROUTE MCUNGE	103.18	5	2	.51030	672.61	33.939	1.24701	1.850	2.059	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	105.10	-	1	.13820	260.36	9.014	1.22294	1.500	2.944	RAIN24= PER IMP=	3.400 15.00
ADD HYD	105.19	1& 2	5	.64850	728.66	42.952	1.24188	1.850	1.756		
*S NORTH LACUEVA TRIB @ LOWELL (105.19)											
ROUTE MCUNGE	105.18	5	2	.64850	728.46	42.985	1.24281	1.850	1.755	CCODE =	.2
RAINFALL TYPE= 2											
COMPUTE NM HYD	105.20	-	1	.10580	172.94	5.646	1.00054	1.500	2.554	RAIN24= PER IMP=	3.330 8.00
ADD HYD	105.29	1& 2	5	.75430	763.62	48.630	1.20882	1.850	1.582		
*S NORTH LACUEVA TRIB @ BROWNING (105.29)											
ADD HYD	105.90	5& 6	17	1.17410	1245.48	79.791	1.27423	1.750	1.657		
*S TOTAL RUNOFF TO LACUEVA DIVERSION CHANNEL (105.9)											
FINISH											

LC DIVERSION FUTURE COND. 10-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = lcdv10x.fut USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
START											
RAINFALL TYPE= 2										TIME=	.00
										RAIN24=	2.370
COMPUTE NM HYD	103.20	-	1	.06160	87.21	3.311	1.00774	1.500	2.212	PER IMP=	29.00
ROUTE MCUNGE	103.80	1	2	.06160	86.26	3.315	1.00904	1.550	2.188	CCODE =	.2
RAINFALL TYPE= 2											
										RAIN24=	2.330
COMPUTE NM HYD	103.40	-	1	.09530	142.27	5.497	1.08145	1.500	2.333	PER IMP=	35.00
ADD HYD	103.49	1& 2	11	.15690	217.05	8.812	1.05302	1.500	2.162		
*S SOUTH LACUEVA TRIB @ TRAMWAY BLVD (103.49)											
RAINFALL TYPE= 2											
										RAIN24=	2.330
COMPUTE NM HYD	103.50	-	1	.06250	94.68	3.605	1.08145	1.500	2.367	PER IMP=	35.00
ADD HYD	103.59	1&11	5	.21940	311.73	12.416	1.06112	1.500	2.220		
ROUTE MCUNGE	103.48	5	2	.21940	286.01	12.329	1.05366	1.650	2.037	CCODE =	.1
RAINFALL TYPE= 2											
										RAIN24=	2.300
COMPUTE NM HYD	104.10	-	1	.13670	203.74	7.422	1.01804	1.500	2.329	PER IMP=	30.00
ADD HYD	104.19	1& 2	5	.35610	396.93	19.751	1.03999	1.650	1.742		
*S SOUTH LACUEVA TRIB @ LOWELL (104.19)											
ROUTE MCUNGE	104.18	5	2	.35610	391.15	19.808	1.04297	1.700	1.716	CCODE =	.2
RAINFALL TYPE= 2											
										RAIN24=	2.230
COMPUTE NM HYD	104.20	-	1	.04710	50.46	1.877	.74734	1.550	1.674	PER IMP=	17.00
ADD HYD	104.29	1& 2	6	.40320	419.22	21.685	1.00844	1.700	1.625		
*S SOUTH LACUEVA TRIB @ BROWNING (104.29)											
RAINFALL TYPE= 2											
										RAIN24=	2.500
COMPUTE NM HYD	103.00	-	1	.21200	184.92	6.637	.58699	1.550	1.363	PER IMP=	.00
ROUTE RESERVOIR	103.11	1	2	.21200	151.32	6.637	.58699	1.650	1.115	AC-FT=	.752
ROUTE MCUNGE	103.81	2	3	.21200	150.12	6.566	.58073	1.800	1.106	CCODE =	.1
RAINFALL TYPE= 2											
										RAIN24=	2.400
COMPUTE NM HYD	103.60	-	1	.06840	101.97	4.042	1.10801	1.500	2.329	PER IMP=	35.00
ADD HYD	103.19	1& 3	5	.28040	181.24	10.608	.70935	1.750	1.010		
RAINFALL TYPE= 2											
										RAIN24=	2.400
COMPUTE NM HYD	103.10	-	1	.22990	149.93	6.117	.49885	1.600	1.019	PER IMP=	.00
ROUTE MCUNGE	103.88	1	2	.22990	144.39	6.107	.49806	1.750	.981	CCODE =	.1
ADD HYD	103.99	5& 2	5	.51030	325.62	16.715	.61416	1.750	.997		
*S NORTH LACUEVA TRIB @ TRAMWAY BLVD (103.99)											
ROUTE MCUNGE	103.18	5	2	.51030	323.28	16.780	.61656	1.850	.990	CCODE =	.2
RAINFALL TYPE= 2											
										RAIN24=	2.270
COMPUTE NM HYD	105.10	-	1	.13050	173.78	6.150	.88358	1.500	2.081	PER IMP=	25.00
ADD HYD	105.19	1& 2	5	.64080	377.37	22.930	.67094	1.750	.920		
*S NORTH LACUEVA TRIB @ LOWELL (105.19)											
ROUTE MCUNGE	105.18	5	2	.64080	375.00	23.002	.67305	1.850	.914	CCODE =	.2
RAINFALL TYPE= 2											
										RAIN24=	2.220
COMPUTE NM HYD	105.20	-	1	.10450	125.95	4.123	.73985	1.500	1.883	PER IMP=	17.00
ADD HYD	105.29	1& 2	5	.74530	404.61	27.126	.68242	1.800	.848		
*S NORTH LACUEVA TRIB @ BROWNING (105.29)											
ADD HYD	105.90	5& 6	17	1.14850	767.03	48.811	.79687	1.750	1.044		
*S TOTAL RUNOFF TO LACUEVA DIVERSION CHANNEL (105.9)											
FINISH											

LC DIVERSION FUTURE COND. 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = lcdv100x.fut USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
START											
RAINFALL TYPE= 2										TIME=	.00
COMPUTE NM HYD	103.20	-	1	.06160	147.27	5.997	1.82535	1.500	3.736	RAIN24=	3.550
ROUTE MCUNGE	103.80	1	2	.06160	147.22	6.011	1.82961	1.550	3.734	PER IMP=	29.00
RAINFALL TYPE= 2										CCODE =	.2
COMPUTE NM HYD	103.40	-	1	.09530	239.06	9.771	1.92240	1.500	3.919	RAIN24=	3.500
ADD HYD	103.49	1& 2	11	.15690	372.35	15.782	1.88597	1.500	3.708	PER IMP=	35.00
*S SOUTH LACUEVA TRIB @ TRAMWAY BLVD (103.49)											
RAINFALL TYPE= 2											
COMPUTE NM HYD	103.50	-	1	.06250	157.65	6.408	1.92240	1.500	3.941	RAIN24=	3.500
ADD HYD	103.59	1&11	5	.21940	530.01	22.190	1.89634	1.500	3.775	PER IMP=	35.00
ROUTE MCUNGE	103.48	5	2	.21940	527.26	22.226	1.89941	1.550	3.755	CCODE =	.2
RAINFALL TYPE= 2										RAIN24=	3.450
COMPUTE NM HYD	104.10	-	1	.13670	344.63	13.378	1.83501	1.500	3.939	PER IMP=	30.00
ADD HYD	104.19	1& 2	5	.35610	836.01	35.604	1.87469	1.550	3.668		
*S SOUTH LACUEVA TRIB @ LOWELL (104.19)											
ROUTE MCUNGE	104.18	5	2	.35610	788.81	35.454	1.86678	1.650	3.461	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	3.350
COMPUTE NM HYD	104.20	-	1	.04710	91.02	3.688	1.46800	1.550	3.020	PER IMP=	17.00
ADD HYD	104.29	1& 2	6	.40320	864.75	39.142	1.82020	1.600	3.351		
*S SOUTH LACUEVA TRIB @ BROWNING (104.29)											
RAINFALL TYPE= 2										RAIN24=	3.750
COMPUTE NM HYD	103.00	-	1	.21200	365.76	14.423	1.27562	1.550	2.696	PER IMP=	.00
ROUTE RESERVOIR	103.11	1	2	.21200	341.18	14.423	1.27562	1.600	2.515	AC-FT=	1.951
ROUTE MCUNGE	103.81	2	3	.21200	329.31	14.386	1.27236	1.750	2.427	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	3.600
COMPUTE NM HYD	103.60	-	1	.06840	169.48	7.142	1.95774	1.500	3.872	PER IMP=	35.00
ADD HYD	103.19	1& 3	5	.28040	396.12	21.528	1.43955	1.750	2.207		
RAINFALL TYPE= 2										RAIN24=	3.600
COMPUTE NM HYD	103.10	-	1	.22990	326.84	14.085	1.14876	1.600	2.221	PER IMP=	.00
ROUTE MCUNGE	103.88	1	2	.22990	316.24	14.054	1.14622	1.700	2.149	CCODE =	.1
ADD HYD	103.99	5& 2	5	.51030	708.51	35.582	1.30739	1.750	2.169		
*S NORTH LACUEVA TRIB @ TRAMWAY BLVD (103.99)											
ROUTE MCUNGE	103.18	5	2	.51030	686.03	35.448	1.30247	1.850	2.101	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	3.400
COMPUTE NM HYD	105.10	-	1	.13050	308.49	11.502	1.65254	1.500	3.694	PER IMP=	25.00
ADD HYD	105.19	1& 2	5	.64080	765.91	46.950	1.37376	1.850	1.868		
*S NORTH LACUEVA TRIB @ LOWELL (105.19)											
ROUTE MCUNGE	105.18	5	2	.64080	764.05	46.957	1.37397	1.850	1.863	CCODE =	.2
RAINFALL TYPE= 2										RAIN24=	3.330
COMPUTE NM HYD	105.20	-	1	.10450	230.30	8.123	1.45755	1.500	3.443	PER IMP=	17.00
ADD HYD	105.29	1& 2	5	.74530	821.41	55.080	1.38569	1.850	1.722		
*S NORTH LACUEVA TRIB @ BROWNING (105.29)											
ADD HYD	105.90	5& 6	17	1.14850	1487.55	94.222	1.53823	1.650	2.024		
*S TOTAL RUNOFF TO LACUEVA DIVERSION CHANNEL (105.9)											
FINISH											

LA CUEVA EXISTING COND. 10-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = lc10bm.ext

RUN DATE (MON/DAY/YR) =11/05/1998
USER NO.= RSTECHNM.STE

PAGE = 1

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
COMPUTE NM HYD	101.00	-	1	.60700	498.34	23.352	.72133	1.650	1.283	RAIN24= 2.700 PER IMP= .00
ROUTE MCUNGE	101.80	1	2	.60700	465.97	23.106	.71372	1.950	1.199	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.800
COMPUTE NM HYD	100.00	-	1	1.21400	598.79	45.333	.70016	1.850	.771	PER IMP= .00
ROUTE MCUNGE	100.80	1	3	1.21400	582.68	45.134	.69708	2.150	.750	CCODE = .1
ADD HYD	101.88	3& 2	5	1.82100	963.69	68.239	.70263	2.000	.827	
RAINFALL TYPE= 2										RAIN24= 2.430
COMPUTE NM HYD	102.00	-	1	.87500	439.84	23.497	.50350	1.700	.785	PER IMP= .00
ADD HYD	102.90	1& 5	5	2.69600	1187.21	91.736	.63800	1.950	.688	
*S LA CUEVA TRIBUTARY ARROYO @ TRAMWAY BLVD. (102.9)										
ROUTE MCUNGE	102.80	5	2	2.69600	1173.65	91.522	.63651	2.100	.680	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.250
COMPUTE NM HYD	107.20	-	1	.17200	95.27	3.958	.43146	1.550	.865	PER IMP= 9.00
ADD HYD	107.29	1& 2	4	2.86800	1188.43	95.480	.62421	2.100	.647	
*S NORTH LA CUEVA AT GLENDALE AND BROWNING (107.29)										
RAINFALL TYPE= 2										RAIN24= 2.330
COMPUTE NM HYD	102.10	-	1	.09300	59.20	1.592	.32090	1.500	.995	PER IMP= .00
*S LA CUEVA TRIBUTARY @ TRAMWAY BLVD.										
ROUTE MCUNGE	102.18	.1	2	.09300	50.75	1.482	.29872	1.800	.853	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.250
COMPUTE NM HYD	107.10	-	1	.18080	105.83	3.422	.35487	1.500	.915	PER IMP= 5.00
ADD HYD	107.19	1& 2	5	.27380	105.83	4.904	.33580	1.500	.604	
*S NORTH LA CUEVA (TRIB) AT FLORENCE AND BROWNING (107.19)										
ADD HYD	107.90	5& 4	3	3.14180	1213.68	100.383	.59908	2.100	.604	
RAINFALL TYPE= 2										RAIN24= 2.270
COMPUTE NM HYD	106.00	-	1	.04360	35.83	1.337	.57515	1.500	1.284	PER IMP= 17.00
ROUTE MCUNGE	106.80	1	2	.04360	31.28	1.283	.55176	1.750	1.121	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.210
COMPUTE NM HYD	106.10	-	1	.11160	81.48	2.796	.46971	1.500	1.141	PER IMP= 10.00
ADD HYD	106.19	1& 2	6	.15520	82.80	4.079	.49275	1.500	.834	
*S LA CUEVA TRIBUTARY ARROYO @ BROWNING (106.19)										
ADD HYD	107.99	3& 6	5	3.29700	1232.52	104.462	.59407	2.100	.584	
ROUTE MCUNGE	107.80	5	2	3.29700	1232.04	104.512	.59436	2.150	.584	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.150
COMPUTE NM HYD	109.00	-	1	.10060	69.18	2.314	.43128	1.500	1.075	PER IMP= 10.00
ADD HYD	109.90	1& 2	5	3.39760	1237.79	106.826	.58953	2.150	.569	
RAINFALL TYPE= 2										RAIN24= 2.170
COMPUTE NM HYD	108.00	-	7	.20550	127.09	4.801	.43804	1.550	.966	PER IMP= 10.00
ADD HYD	109.99	5& 7	5	3.60310	1251.87	111.627	.58089	2.150	.543	
*S LA CUEVA ARROYO @ EUBANK (MAIN) (109.99)										
ROUTE MCUNGE	109.88	5	2	3.60310	1234.25	111.421	.57982	2.300	.535	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.090
COMPUTE NM HYD	110.00	-	1	.16340	79.91	3.502	.40187	1.550	.764	PER IMP= 10.00
ADD HYD	110.90	1& 2	5	3.76650	1241.62	114.923	.57210	2.300	.515	
*S LA CUEVA ARROYO @ VENTURA (MAIN) (110.90)										
ROUTE MCUNGE	110.80	5	2	3.76650	1240.39	114.910	.57203	2.300	.515	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.010
COMPUTE NM HYD	111.10	-	1	.11940	73.86	2.453	.38525	1.500	.967	PER IMP= 10.00
ADD HYD	111.19	1& 2	5	3.88590	1244.16	117.363	.56629	2.300	.500	
COMPUTE NM HYD	111.00	-	1	.06740	31.33	1.044	.29052	1.500	.726	PER IMP= 5.00
ADD HYD	111.99	1& 5	5	3.95330	1245.96	118.408	.56159	2.300	.492	
*S LA CUEVA ARROYO @ BARSTOW (111.99)										
ROUTE MCUNGE	111.80	5	2	3.95330	1244.99	118.391	.56151	2.350	.492	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.970
COMPUTE NM HYD	112.10	-	1	.08940	129.98	5.152	1.08050	1.500	2.272	PER IMP= 50.00
COMPUTE NM HYD	112.20	-	3	.08260	110.08	4.342	.98553	1.500	2.082	PER IMP= 45.00
*S COMBINE HYD.'S 112.1 AND 112.2 AS 112.8										
ADD HYD	112.80	1& 3	1	.17200	240.06	9.493	1.03489	1.500	2.181	
ADD HYD	112.90	1& 2	5	4.12530	1256.29	127.885	.58125	2.350	.476	
*S LA CUEVA ARROYO @ WYOMING (112.90)										
ROUTE MCUNGE	112.80	5	2	4.12530	1244.04	127.813	.58093	2.450	.471	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.950
COMPUTE NM HYD	113.00	-	1	.11360	58.65	1.793	.29591	1.500	.807	PER IMP= 5.00
ADD HYD	113.90	1& 2	5	4.23890	1246.08	129.606	.57329	2.450	.459	
*S LA CUEVA MAIN ARROYO @ LOUISIANA (113.90)										
ROUTE MCUNGE	113.80	5	4	4.23890	1235.17	129.525	.57293	2.550	.455	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.900

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
COMPUTE NM HYD	115.00	-	3	.13370	64.79	1.981	.27786	1.500	.757	PER IMP= 5.00
ADD HYD	115.90	4& 3	5	4.37260	1236.96	131.506	.56391	2.550	.442	
*S LA CUEVA NORTH (MAIN) ARROYO @ I-25 (115.90)										
RECALL HYD	205.90	-	9	1.48790	243.55	32.441	.40881	2.200	.256	
ADD HYD	115.99	5& 9	5	5.86050	1443.56	163.947	.52453	2.550	.385	
ROUTE MCUNGE	115.80	5	2	5.86050	1436.37	163.933	.52449	2.600	.383	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	118.00	-	1	.06490	107.89	4.414	1.27523	1.500	2.598	PER IMP= 70.00
ADD HYD	118.90	1& 2	5	5.92540	1438.61	168.347	.53271	2.600	.379	
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	118.10	-	1	.03060	16.20	.547	.33545	1.500	.827	PER IMP= 10.00
ADD HYD	118.99	1& 5	5	5.95600	1439.01	168.894	.53169	2.600	.378	
*S LA CUEVA NORTH (MAIN) ARROYO @ SAN MATEO										
ROUTE MCUNGE	118.80	5	2	5.95600	1436.19	168.839	.53152	2.600	.377	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.840
COMPUTE NM HYD	126.00	-	1	.07370	121.94	4.869	1.23882	1.500	2.585	PER IMP= 70.00
ADD HYD	126.90	1& 2	5	6.02970	1438.60	173.708	.54016	2.600	.373	
ROUTE MCUNGE	126.80	5	2	6.02970	1436.67	173.680	.54008	2.650	.372	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 1.800
COMPUTE NM HYD	127.00	-	1	.06330	75.56	2.120	.62810	1.500	1.865	PER IMP= 10.00
ADD HYD	127.90	1& 2	8	6.09300	1437.47	175.800	.54099	2.650	.369	
*S NORTH LA CUEVA ARROYO AT APPROXIMATELY JEFFERSON ST.										
*S NOW BEGIN THE SOUTH LA CUEVA ARROYO EAST OF I-25										
RAINFALL TYPE= 2										RAIN24= 1.900
COMPUTE NM HYD	116.00	-	5	.13090	77.34	2.783	.39870	1.500	.923	PER IMP= 15.00
*S DIVIDE HYD WITH 50 % TO CONVENIENCE CENTER POND										
DIVIDE HYD	116.10	5	10	.06545	38.67	1.392	.39870	1.500	.923	
	116.20	AND	11	.06545	38.67	1.392	.39870	1.500	.923	
*S SIGNAL HILL POND										
ROUTE RESERVOIR	116.18	10	7	.06545	14.31	1.392	.39870	1.750	.342	AC-FT= .572
*S ROUTE TO SAN PEDRO										
ROUTE	116.19	7	9	.06545	14.27	1.392	.39870	1.750	.341	
COMPUTE NM HYD	117.40	-	1	.07500	37.59	1.292	.32308	1.500	.783	PER IMP= 10.00
ROUTE MCUNGE	117.45	1	2	.07500	34.13	1.257	.31427	1.650	.711	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.930
COMPUTE NM HYD	117.31	-	17	.02500	36.12	1.394	1.04565	1.500	2.258	PER IMP= 50.00
*S ROUTE THRU SONORA POND										
ROUTE RESERVOIR	117.35	17	20	.02500	13.23	1.401	1.05042	1.750	.827	AC-FT= .468
COMPUTE NM HYD	117.32	-	18	.00900	13.01	.502	1.04565	1.500	2.259	PER IMP= 50.00
*S SIGNAL HILL POND										
ROUTE RESERVOIR	117.36	18	17	.00900	5.14	.502	1.04561	1.700	.892	AC-FT= .163
*S ADD 2 POND DISCHARGES										
ADD HYD	117.37	20&17	17	.03400	18.37	1.902	1.04914	1.750	.844	
*S ROUTE TO SAN PEDRO 30" PIPE										
ROUTE	117.39	17	20	.03400	18.36	1.902	1.04916	1.750	.844	
COMPUTE NM HYD	117.30	-	3	.08630	58.74	2.044	.44400	1.500	1.063	PER IMP= 15.00
*S TOTAL Q TO SAN PEDRO& SIGNAL SD + STREET (117.33)										
ADD HYD	117.33	20& 3	6	.12030	71.36	3.946	.61503	1.500	.927	
*S ADD IN 117.45 AT ALAMEDA 117.41 TO SD 117.42 TO ALAMEDA INTERSECTION										
DIVIDE HYD	117.41	2	7	.06402	20.00	1.073	.31426	1.600	.488	
	117.42	AND	4	.01098	14.13	.184	.31426	1.650	2.011	
*S ADD IN Q TO SD AT ALAMEDA 117.44										
ADD HYD	117.44	7&20	20	.09802	38.36	2.975	.56916	1.750	.612	
COMPUTE NM HYD	117.50	-	1	.05500	95.92	3.907	1.33209	1.500	2.725	PER IMP= 70.00
*S ADD IN Q TO ALAMEDA FROM 117.42 AS 117.55										
ADD HYD	117.44	1& 4	1	.06598	95.92	4.091	1.16272	1.500	2.272	
*S COMBINE HYDS 117.3 AND 117.55 AS TOTAL ALAMEDA INT Q (117.59)										
ADD HYD	117.59	3& 1	2	.15228	154.66	6.135	.75541	1.500	1.587	
*S BASIN 117.21 TO RETENTION BASIN										
COMPUTE NM HYD	117.21	-	1	.02340	33.81	1.305	1.04565	1.500	2.258	PER IMP= 50.00
COMPUTE NM HYD	117.20	-	1	.13910	69.79	3.624	.48856	1.600	.784	PER IMP= 20.00
DIVIDE HYD	117.92	1	6	.13910	69.79	3.624	.48856	1.600	.784	
	117.27	AND	10	.00000	.00	.000	.00000	-.050	.000	
*S ADD IN Q AT OAKLEND/EAGLE ROCK (117.93)										
ADD HYD	117.93	20& 6	1	.23712	106.85	6.600	.52188	1.600	.704	
*S ADD CONVENIENCE CENTER FLOW (117.94)										
ADD HYD	117.94	1& 9	1	.30257	118.15	7.992	.49523	1.600	.610	
*S TOTAL RUNOFF TO SAN PEDRO STORM DRAIN										
ROUTE	117.98	1	2	.30257	114.40	7.992	.49523	1.650	.591	
*S COMBINE HYDS 117.98 AND 116.2 (116.99)										
ADD HYD	116.99	11& 2	5	.36802	136.51	9.383	.47806	1.650	.580	
*S SOUTH LACUEVA ARROYO AT CONFLUENCE JUST WEST OF I-25 CROSSING										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	117.29	10& 5	5	.36802	136.51	9.383	.47806	1.650	.580	
ROUTE MCUNGE	117.28	5	2	.36802	133.53	9.371	.47745	1.700	.567	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	119.00	-	1	.05490	91.31	3.734	1.27523	1.500	2.599	PER IMP= 70.00
ADD HYD	119.90	1& 2	5	.42292	174.23	13.105	.58101	1.650	.644	
RAINFALL TYPE= 2										RAIN24= 1.880
COMPUTE NM HYD	120.00	-	1	.02680	30.60	1.281	.89639	1.500	1.784	PER IMP= 50.00
ADD HYD	120.90	1& 5	5	.44972	190.83	14.386	.59980	1.650	.663	
ROUTE MCUNGE	120.80	5	2	.44972	190.83	14.395	.60017	1.600	.663	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 1.840
COMPUTE NM HYD	125.00	-	1	.05080	83.53	3.351	1.23688	1.500	2.569	PER IMP= 70.00
ADD HYD	125.90	1& 2	6	.50052	256.83	17.746	.66479	1.550	.802	
*S LA CUEVA ARROYO SOUTH BEFORE WILDFLOWER FLOWS JUST UPSTREAM OF 96" RCP										
COMPUTE NM HYD	121.00	-	1	.04890	21.36	.664	.25476	1.500	.683	PER IMP= 5.00
*S WILDFLOWER ARROYO AT SAN MATEO BLVD.										
DIVIDE HYD	121.83	1	11	.02445	10.68	.332	.25475	1.500	.683	
	121.84	AND	12	.02445	10.68	.332	.25475	1.500	.683	
ROUTE MCUNGE	121.81	11	2	.02445	9.50	.332	.25477	1.750	.607	CCODE = .1
COMPUTE NM HYD	123.00	-	1	.01850	22.92	.836	.84750	1.500	1.936	PER IMP= 40.00
ADD HYD	123.90	1& 2	5	.04295	23.47	1.168	.51006	1.500	.854	
ROUTE MCUNGE	121.82	12	2	.02445	10.38	.319	.24484	1.700	.663	CCODE = .2
COMPUTE NM HYD	122.00	-	1	.02250	31.38	1.184	.98695	1.500	2.179	PER IMP= 50.00
ADD HYD	122.90	1& 2	3	.04695	32.29	1.504	.60046	1.500	1.075	
COMPUTE NM HYD	124.00	-	1	.02510	35.00	1.321	.98695	1.500	2.179	PER IMP= 50.00
ADD HYD	124.91	3& 1	4	.07205	67.29	2.825	.73510	1.500	1.459	
DIVIDE HYD	122.85	4	1	.07205	67.29	2.825	.73510	1.500	1.459	
	124.92	AND	2	.00000	.00	.000	.00000	-.050	.000	
*S TOTAL OUTFLOW TO ALAMEDA FROM JEFFERSON VIA 36" STORM DRAIN.										
ROUTE MCUNGE	124.83	2	3	.04695	.00	.000	.00000	-.050	.000	CCODE = .2
ADD HYD	124.91	5& 3	4	.08990	23.47	1.168	.24368	1.500	.408	
*S SUBTRACT FLOW INTERCEPTED BY 36" PIPE TO WATERCRESS CHANNEL										
DIVIDE HYD	123.81	4	1	.08990	23.47	1.168	.24368	1.500	.408	
	123.99	AND	2	.00000	.00	.000	.00000	-.050	.000	
ADD HYD	125.99	6& 1	3	.59042	278.96	18.914	.60067	1.550	.738	
*S TOTAL FLOW AT ENTRANCE TO 96" PIPE										
ROUTE	125.88	3	1	.59042	281.57	18.915	.60067	1.550	.745	
ADD HYD	127.91	1& 8	8	6.68342	1467.70	194.715	.54626	2.600	.343	
ADD HYD	127.92	2& 8	5	6.68342	1467.70	194.715	.54626	2.600	.343	
RAINFALL TYPE= 2										RAIN24= 1.790
COMPUTE NM HYD	128.00	-	1	.13730	136.97	4.592	.62710	1.550	1.559	PER IMP= 10.00
ADD HYD	128.90	1& 5	5	6.82072	1471.34	199.307	.54789	2.600	.337	
*S LA CUEVA ARROYO TOTAL @ THE NORTH DIVERSION CHANNEL										
FINISH										

LA CUEVA EXISTING COND. 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = lc100bm.ext

RUN DATE (MON/DAY/YR) =11/05/1998
USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
COMPUTE NM HYD	101.00	-	1	.60700	953.84	45.841	1.41600	1.650	2.455	RAIN24= 4.050 PER IMP= .00
ROUTE MCUNGE	101.80	1	2	.60700	912.90	45.469	1.40451	1.850	2.350	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 4.200
COMPUTE NM HYD	100.00	-	1	1.21400	1201.70	87.881	1.35730	1.850	1.547	PER IMP= .00
ROUTE MCUNGE	100.80	1	3	1.21400	1177.21	87.700	1.35451	2.100	1.515	CCODE = .1
ADD HYD	101.88	3& 2	5	1.82100	1882.13	133.168	1.37117	1.950	1.615	
RAINFALL TYPE= 2										RAIN24= 3.650
COMPUTE NM HYD	102.00	-	1	.87500	1033.60	54.313	1.16386	1.700	1.846	PER IMP= .00
ADD HYD	102.90	1& 5	5	2.69600	2554.30	187.482	1.30389	1.900	1.480	
*S LA CUEVA TRIBUTARY ARROYO @ TRAMWAY BLVD. (102.9)										
ROUTE MCUNGE	102.80	5	2	2.69600	2515.07	187.100	1.30123	2.050	1.458	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.370
COMPUTE NM HYD	107.20	-	1	.17200	237.40	9.430	1.02797	1.550	2.157	PER IMP= 9.00
ADD HYD	107.29	1& 2	4	2.86800	2552.53	196.529	1.28484	2.050	1.391	
*S NORTH LA CUEVA AT GLENDALE AND BROWNING (107.29)										
RAINFALL TYPE= 2										RAIN24= 3.500
COMPUTE NM HYD	102.10	-	1	.09300	147.55	4.405	.88811	1.500	2.479	PER IMP= .00
*S LA CUEVA TRIBUTARY @ TRAMWAY BLVD.										
ROUTE MCUNGE	102.18	1	2	.09300	134.74	4.349	.87687	1.700	2.264	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.380
COMPUTE NM HYD	107.10	-	1	.18080	280.74	8.922	.92528	1.500	2.426	PER IMP= 5.00
ADD HYD	107.19	1& 2	5	.27380	303.70	13.271	.90883	1.600	1.733	
*S NORTH LA CUEVA (TRIB) AT FLORENCE AND BROWNING (107.19)										
ADD HYD	107.90	5& 4	3	3.14180	2611.52	209.801	1.25207	2.000	1.299	
RAINFALL TYPE= 2										RAIN24= 3.400
COMPUTE NM HYD	106.00	-	1	.04360	77.44	2.829	1.21672	1.500	2.775	PER IMP= 17.00
ROUTE MCUNGE	106.80	1	2	.04360	69.78	2.777	1.19435	1.700	2.501	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.340
COMPUTE NM HYD	106.10	-	1	.11160	187.37	6.465	1.08624	1.500	2.623	PER IMP= 10.00
ADD HYD	106.19	1& 2	6	.15520	196.76	9.243	1.11660	1.600	1.981	
*S LA CUEVA TRIBUTARY ARROYO @ BROWNING (106.19)										
ADD HYD	107.99	3& 6	5	3.29700	2658.92	219.043	1.24570	2.000	1.260	
ROUTE MCUNGE	107.80	5	2	3.29700	2647.18	218.906	1.24491	2.100	1.255	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.230
COMPUTE NM HYD	109.00	-	1	.10060	164.16	5.441	1.01402	1.500	2.550	PER IMP= 10.00
ADD HYD	109.90	1& 2	5	3.39760	2662.81	224.346	1.23808	2.100	1.225	
RAINFALL TYPE= 2										RAIN24= 3.250
COMPUTE NM HYD	108.00	-	7	.20550	311.04	11.246	1.02605	1.550	2.365	PER IMP= 10.00
ADD HYD	109.99	5& 7	5	3.60310	2698.71	235.592	1.22598	2.100	1.170	
*S LA CUEVA ARROYO @ EUBANK (MAIN) (109.99)										
ROUTE MCUNGE	109.88	5	2	3.60310	2673.21	235.416	1.22507	2.200	1.159	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.130
COMPUTE NM HYD	110.00	-	1	.16340	202.35	8.385	.96218	1.550	1.935	PER IMP= 10.00
ADD HYD	110.90	1& 2	5	3.76650	2695.65	243.801	1.21366	2.200	1.118	
*S LA CUEVA ARROYO @ VENTURA (MAIN) (110.90)										
ROUTE MCUNGE	110.80	5	2	3.76650	2692.04	243.873	1.21402	2.200	1.117	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 3.020
COMPUTE NM HYD	111.10	-	1	.11940	184.36	5.962	.93630	1.500	2.413	PER IMP= 10.00
ADD HYD	111.19	1& 2	5	3.88590	2703.93	249.835	1.20549	2.200	1.087	
RAINFALL TYPE= 2										RAIN24= 3.050
COMPUTE NM HYD	111.00	-	1	.06740	88.80	2.940	.81779	1.500	2.059	PER IMP= 5.00
ADD HYD	111.99	1& 5	5	3.95330	2710.28	252.775	1.19888	2.200	1.071	
*S LA CUEVA ARROYO @ BARSTOW (111.99)										
ROUTE MCUNGE	111.80	5	2	3.95330	2706.82	251.708	1.19382	2.229	1.070	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.960
COMPUTE NM HYD	112.10	-	1	.08940	219.11	8.942	1.87543	1.500	3.829	PER IMP= 50.00
COMPUTE NM HYD	112.20	-	3	.08260	191.10	7.690	1.74561	1.500	3.615	PER IMP= 45.00
*S COMBINE HYD.'S 112.1 AND 112.2 AS 112.8										
ADD HYD	112.80	1& 3	1	.17200	410.21	16.632	1.81308	1.500	3.726	
ADD HYD	112.90	1& 2	5	4.12530	2737.52	267.687	1.21667	2.229	1.037	
*S LA CUEVA ARROYO @ WYOMING (112.90)										
ROUTE MCUNGE	112.80	5	2	4.12530	2732.89	267.664	1.21657	2.273	1.035	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.930
COMPUTE NM HYD	113.00	-	1	.11360	160.25	4.875	.80462	1.500	2.204	PER IMP= 5.00
ADD HYD	113.90	1& 2	5	4.23890	2740.90	272.538	1.20552	2.273	1.010	
*S LA CUEVA MAIN ARROYO @ LOUISIANA (113.90)										
ROUTE MCUNGE	113.80	5	4	4.23890	2736.89	272.527	1.20547	2.300	1.009	CCODE = .2

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
RAINFALL TYPE= 2											
COMPUTE NM HYD	115.00	-	3	.13370	183.65	5.503	.77170	1.500	2.146	RAIN24=	2.850
ADD HYD	115.90	4& 3	5	4.37260	2745.20	278.030	1.19221	2.300	.981	PER IMP=	5.00
*S LA CUEVA NORTH (MAIN) ARROYO @ I-25 (115.90)											
RECALL HYD	205.90	-	9	1.48790	864.92	75.764	.95475	1.901	.908		
ADD HYD	115.99	5& 9	5	5.86050	3388.92	353.273	1.13026	2.266	.904		
ROUTE MCUNGE	115.80	5	2	5.86050	3384.43	352.332	1.12725	2.303	.902	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	118.00	-	1	.06490	172.75	7.273	2.10117	1.500	4.159	RAIN24=	2.830
ADD HYD	118.90	1& 2	5	5.92540	3393.77	359.096	1.13630	2.303	.895	PER IMP=	70.00
RAINFALL TYPE= 2											
COMPUTE NM HYD	118.10	-	1	.03060	42.12	1.370	.83948	1.500	2.150	RAIN24=	2.830
ADD HYD	118.99	1& 5	5	5.95600	3395.86	360.432	1.13467	2.303	.891	PER IMP=	10.00
*S LA CUEVA NORTH (MAIN) ARROYO @ SAN MATEO											
ROUTE MCUNGE	118.80	5	2	5.95600	3393.69	359.673	1.13228	2.316	.890	CCODE =	.2
RAINFALL TYPE= 2											
COMPUTE NM HYD	126.00	-	1	.07370	195.81	8.059	2.05022	1.500	4.151	RAIN24=	2.760
ADD HYD	126.90	1& 2	5	6.02970	3403.69	367.139	1.14166	2.316	.882	PER IMP=	70.00
ROUTE MCUNGE	126.80	5	2	6.02970	3401.46	367.136	1.14165	2.335	.881	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	127.00	-	1	.06330	134.62	4.342	1.28604	1.500	3.323	RAIN24=	2.700
ADD HYD	127.90	1& 2	8	6.09300	3406.55	371.409	1.14294	2.335	.874	PER IMP=	10.00
*S NORTH LA CUEVA ARROYO AT APPROXIMATELY JEFFERSON ST.											
*S NOW BEGIN THE SOUTH LA CUEVA ARROYO EAST OF I-25											
RAINFALL TYPE= 2											
COMPUTE NM HYD	116.00	-	5	.13090	193.62	6.460	.92539	1.500	2.311	RAIN24=	2.850
*S DIVIDE HYD WITH 50 % TO CONVENIENCE CENTER POND										PER IMP=	15.00
DIVIDE HYD	116.10	5	10	.06545	96.81	3.230	.92539	1.500	2.311		
	116.20	AND	11	.06545	96.81	3.230	.92539	1.500	2.311		
*S SIGNAL HILL POND											
ROUTE RESERVOIR	116.18	10	7	.06545	30.65	3.230	.92539	1.750	.732	AC-FT=	1.508
*S ROUTE TO SAN PEDRO											
ROUTE	116.19	7	9	.06545	30.64	3.230	.92539	1.800	.731		
RAINFALL TYPE= 2											
COMPUTE NM HYD	117.40	-	1	.07500	102.09	3.335	.83378	1.500	2.127	RAIN24=	2.890
ROUTE MCUNGE	117.45	1	2	.07500	94.34	3.293	.82330	1.600	1.965	PER IMP=	10.00
RAINFALL TYPE= 2										CCODE =	.1
COMPUTE NM HYD	117.31	-	17	.02500	60.81	2.418	1.81357	1.500	3.801	RAIN24=	2.890
*S ROUTE THRU SONORA POND										PER IMP=	50.00
ROUTE RESERVOIR	117.35	17	20	.02500	21.16	2.423	1.81746	1.800	1.323	AC-FT=	.919
COMPUTE NM HYD	117.32	-	18	.00900	21.90	.871	1.81357	1.500	3.803	PER IMP=	50.00
*S SIGNAL HILL POND											
ROUTE RESERVOIR	117.36	18	17	.00900	6.23	.870	1.81354	1.850	1.082	AC-FT=	.359
*S ADD 2 POND DISCHARGES											
ADD HYD	117.37	20&17	17	.03400	27.39	3.294	1.81641	1.800	1.259		
*S ROUTE TO SAN PEDRO 30" PIPE											
ROUTE	117.39	17	20	.03400	27.40	3.294	1.81643	1.800	1.259		
COMPUTE NM HYD	117.30	-	3	.08630	136.26	4.588	.99691	1.500	2.467	PER IMP=	15.00
*S TOTAL Q TO SAN PEDRO& SIGNAL SD + STREET (117.33)											
ADD HYD	117.33	20& 3	6	.12030	153.48	7.882	1.22852	1.500	1.993		
*S ADD IN 117.45 AT ALAMEDA 117.41 TO SD 117.42 TO ALAMEDA INTERSECTION											
DIVIDE HYD	117.41	2	7	.03888	20.00	1.707	.82330	1.500	.804		
	117.42	AND	4	.03612	74.34	1.586	.82330	1.600	3.215		
*S ADD IN Q TO SD AT ALAMEDA 117.44											
ADD HYD	117.44	7&20	20	.07288	47.40	5.001	1.28664	1.800	1.016		
COMPUTE NM HYD	117.50	-	1	.05500	151.76	6.417	2.18755	1.500	4.311	PER IMP=	70.00
*S ADD IN Q TO ALAMEDA FROM 117.42 AS 117.55											
ADD HYD	117.44	1& 4	1	.09112	187.75	8.003	1.64671	1.550	3.219		
*S COMBINE HYDS 117.3 AND 117.55 AS TOTAL ALAMEDA INT Q (117.59)											
ADD HYD	117.59	3& 1	2	.17742	314.46	12.591	1.33064	1.550	2.769		
RAINFALL TYPE= 2											
*S BASIN 117.21 TO RETENTION BASIN										RAIN24=	2.890
COMPUTE NM HYD	117.21	-	1	.02340	56.92	2.263	1.81357	1.500	3.801	PER IMP=	50.00
COMPUTE NM HYD	117.20	-	1	.13910	160.02	7.778	1.04839	1.600	1.797	PER IMP=	20.00
DIVIDE HYD	117.92	1	6	.10519	70.00	5.881	1.04838	1.450	1.040		
	117.27	AND	10	.03391	90.02	1.896	1.04838	1.600	4.147		
*S ADD IN Q AT OAKLEND/EAGLE ROCK (117.93)											
ADD HYD	117.93	20& 6	1	.17806	117.40	10.882	1.14589	1.800	1.030		
*S ADD CONVENIENCE CENTER FLOW (117.94)											
ADD HYD	117.94	1& 9	1	.24351	148.04	14.112	1.08662	1.800	.950		
*S TOTAL RUNOFF TO SAN PEDRO STORM DRAIN											
ROUTE	117.98	1	2	.24351	147.87	14.112	1.08663	1.850	.949		
*S COMBINE HYDS 117.98 AND 116.2 (116.99)											

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	116.99	11& 2	5	.30896	211.66	17.343	1.05247	1.550	1.070	
*S SOUTH LACUEVA ARROYO AT CONFLUENCE JUST WEST OF I-25 CROSSING										
ADD HYD	117.29	10& 5	5	.34288	296.16	19.239	1.05206	1.600	1.350	
ROUTE MCUNGE	117.28	5	2	.34288	296.02	18.933	1.03535	1.601	1.349	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	119.00	-	1	.05490	146.12	6.152	2.10117	1.500	4.159	PER IMP= 70.00
ADD HYD	119.90	1& 2	5	.39778	407.62	24.933	1.17526	1.568	1.601	
RAINFALL TYPE= 2										RAIN24= 2.820
COMPUTE NM HYD	120.00	-	1	.02680	55.08	2.259	1.58045	1.500	3.211	PER IMP= 50.00
ADD HYD	120.90	1& 5	5	.42458	454.55	27.138	1.19847	1.535	1.673	
ROUTE MCUNGE	120.80	5	2	.42458	449.48	26.684	1.17842	1.582	1.654	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.760
COMPUTE NM HYD	125.00	-	1	.05080	134.25	5.548	2.04765	1.500	4.129	PER IMP= 70.00
ADD HYD	125.90	1& 2	6	.47538	551.24	31.991	1.26182	1.582	1.812	
*S LA CUEVA ARROYO SOUTH BEFORE WILDFLOWER FLOWS JUST UPSTREAM OF 96" RCP										
RAINFALL TYPE= 2										RAIN24= 2.810
COMPUTE NM HYD	121.00	-	1	.04890	63.24	1.947	.74674	1.500	2.021	PER IMP= 5.00
*S WILDFLOWER ARROYO AT SAN MATEO BLVD.										
DIVIDE HYD	121.83	1	11	.02445	31.62	.974	.74673	1.500	2.021	
	121.84	AND	12	.02445	31.62	.974	.74673	1.500	2.021	
ROUTE MCUNGE	121.81	11	2	.02445	29.40	.952	.73022	1.650	1.879	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.750
COMPUTE NM HYD	123.00	-	1	.01850	40.84	1.521	1.54168	1.500	3.449	PER IMP= 40.00
ADD HYD	123.90	1& 2	5	.04295	59.16	2.473	1.07972	1.550	2.152	
ROUTE MCUNGE	121.82	12	2	.02445	28.91	.957	.73427	1.650	1.847	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.750
COMPUTE NM HYD	122.00	-	1	.02250	53.55	2.068	1.72356	1.500	3.719	PER IMP= 50.00
ADD HYD	122.90	1& 2	3	.04695	62.44	3.026	1.20836	1.600	2.078	
RAINFALL TYPE= 2										RAIN24= 2.740
COMPUTE NM HYD	124.00	-	1	.02510	59.74	2.301	1.71856	1.500	3.719	PER IMP= 50.00
ADD HYD	124.91	3& 1	4	.07205	115.71	5.326	1.38609	1.500	2.509	
DIVIDE HYD	122.85	4	1	.06779	90.00	5.012	1.38609	1.450	2.074	
	124.92	AND	2	.00426	25.71	.315	1.38609	1.500	9.437	
*S TOTAL OUTFLOW TO ALAMEDA FROM JEFFERSON VIA 36" STORM DRAIN.										
ROUTE MCUNGE	124.83	2	3	.00426	23.96	.294	1.29335	1.600	8.795	CCODE = .1
ADD HYD	124.91	5& 3	4	.04721	82.22	2.767	1.09897	1.600	2.722	
*S SUBTRACT FLOW INTERCEPTED BY 36" PIPE TO WATERCRESS CHANNEL										
DIVIDE HYD	123.81	4	1	.04584	70.00	2.687	1.09897	1.550	2.386	
	123.99	AND	2	.00136	12.22	.080	1.09897	1.600	14.016	
ADD HYD	125.99	6& 1	3	.52122	621.24	34.619	1.24535	1.582	1.862	
*S TOTAL FLOW AT ENTRANCE TO 96" PIPE										
ROUTE	125.88	3	1	.52122	620.76	34.625	1.24559	1.600	1.861	
ADD HYD	127.91	1& 8	8	6.61422	3518.59	405.173	1.14858	2.316	.831	
ADD HYD	127.92	2& 8	5	6.61558	3518.59	405.251	1.14857	2.316	.831	
RAINFALL TYPE= 2										RAIN24= 2.690
COMPUTE NM HYD	128.00	-	1	.13730	254.82	9.454	1.29103	1.550	2.900	PER IMP= 10.00
ADD HYD	128.90	1& 5	5	6.75288	3535.11	414.559	1.15106	2.316	.818	
*S LA CUEVA ARROYO TOTAL @ THE NORTH DIVERSION CHANNEL										
FINISH										

LA CUEVA FUTURE CONDITION 10-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = lc10bm.fut

RUN DATE (MON/DAY/YR) =11/06/1998
USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
START											
RAINFALL TYPE= 2										TIME=	.00
COMPUTE NM HYD	101.00	-	1	.60700	498.34	23.352	.72133	1.650	1.283	RAIN24=	2.700
ROUTE MCUNGE	101.80	1	2	.60700	465.97	23.106	.71372	1.950	1.199	PER IMP=	.00
RAINFALL TYPE= 2										CCODE =	.1
COMPUTE NM HYD	100.00	-	1	1.21400	598.79	45.333	.70016	1.850	.771	RAIN24=	2.800
ROUTE MCUNGE	100.80	1	3	1.21400	582.68	45.134	.69708	2.150	.750	PER IMP=	.00
ADD HYD	101.88	3& 2	5	1.82100	963.69	68.239	.70263	2.000	.827	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	102.00	-	1	.87500	392.78	20.905	.44797	1.700	.701	RAIN24=	2.430
ADD HYD	102.90	1& 5	5	2.69600	1166.38	89.145	.61998	2.000	.676	PER IMP=	.00
*S LA CUEVA TRIBUTARY ARROYO @ TRAMWAY BLVD. (102.9)											
ROUTE MCUNGE	102.80	5	2	2.69600	1151.50	89.066	.61943	2.100	.667	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	2.450
COMPUTE NM HYD	107.20	-	1	.17200	168.43	7.115	.77560	1.550	1.530	PER IMP=	17.00
ADD HYD	107.29	1& 2	4	2.86800	1176.56	96.181	.62880	2.100	.641		
*S NORTH LA CUEVA AT GLENDALE AND BROWNING (107.29)											
RAINFALL TYPE= 2										RAIN24=	2.330
COMPUTE NM HYD	102.10	-	1	.09300	60.53	1.622	.32704	1.500	1.017	PER IMP=	.00
*S LA CUEVA TRIBUTARY @ TRAMWAY BLVD.											
ROUTE MCUNGE	102.18	1	2	.09300	51.38	1.502	.30282	1.800	.863	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	2.250
COMPUTE NM HYD	107.10	-	1	.18080	208.11	7.151	.74160	1.500	1.798	PER IMP=	17.00
ADD HYD	107.19	1& 2	5	.27380	208.11	8.653	.59256	1.500	1.188		
*S NORTH LA CUEVA (TRIB) AT FLORENCE AND BROWNING (107.19)											
ADD HYD	107.90	5& 4	3	3.14180	1213.69	104.834	.62564	2.100	.604		
RAINFALL TYPE= 2											
COMPUTE NM HYD	106.00	-	1	.04360	52.14	1.732	.74501	1.500	1.869	RAIN24=	2.270
ROUTE MCUNGE	106.80	1	2	.04360	45.40	1.684	.72416	1.750	1.627	PER IMP=	17.00
RAINFALL TYPE= 2										CCODE =	.1
COMPUTE NM HYD	106.10	-	1	.11160	126.34	4.342	.72952	1.500	1.769	RAIN24=	2.230
ADD HYD	106.19	1& 2	6	.15520	127.67	6.026	.72801	1.500	1.285	PER IMP=	17.00
*S LA CUEVA TRIBUTARY ARROYO @ BROWNING (106.19)											
ADD HYD	107.99	3& 6	5	3.29700	1238.89	110.860	.63046	2.100	.587		
ROUTE MCUNGE	107.80	5	2	3.29700	1236.49	110.915	.63077	2.150	.586	CCODE =	.2
RAINFALL TYPE= 2										RAIN24=	2.150
COMPUTE NM HYD	109.00	-	1	.10060	114.66	3.750	.69888	1.500	1.781	PER IMP=	17.00
ADD HYD	109.90	1& 2	5	3.39760	1245.19	114.665	.63279	2.150	.573		
RAINFALL TYPE= 2										RAIN24=	2.170
COMPUTE NM HYD	108.00	-	7	.20550	207.96	7.759	.70798	1.550	1.581	PER IMP=	17.00
ADD HYD	109.99	5& 7	5	3.60310	1267.39	122.424	.63708	2.150	.550		
*S LA CUEVA ARROYO @ EUBANK (MAIN) (109.99)											
ROUTE MCUNGE	109.88	5	2	3.60310	1250.06	122.037	.63506	2.300	.542	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	2.080
COMPUTE NM HYD	110.00	-	1	.16340	138.24	5.774	.66257	1.550	1.322	PER IMP=	17.00
ADD HYD	110.90	1& 2	5	3.76650	1261.77	127.811	.63625	2.300	.523		
*S LA CUEVA ARROYO @ VENTURA (MAIN) (110.90)- FINAL											
*S ROUTE TO BARSTOW											
ROUTE MCUNGE	110.88	5	2	3.76650	1257.14	127.065	.63254	2.321	.522	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	2.000
COMPUTE NM HYD	111.00	-	1	.05330	57.02	1.823	.64118	1.500	1.672	PER IMP=	17.00
COMPUTE NM HYD	111.40	-	4	.01410	15.09	.482	.64118	1.500	1.672	PER IMP=	17.00
*S COMBINE HYD.'S 111.0 AND 111.4 AS 111.49											
ADD HYD	111.49	1& 4	4	.06740	72.12	2.305	.64117	1.500	1.672		
*S ROUTE TO LA CUEVA CHANEL @ OAKLAND											
*S PIPE ROUTING											
ROUTE	111.48	4	5	.06740	70.85	2.305	.64118	1.550	1.642		
RAINFALL TYPE= 2										RAIN24=	2.020
COMPUTE NM HYD	111.10	-	1	.05000	57.41	2.054	.77030	1.500	1.794	PER IMP=	26.00
COMPUTE NM HYD	111.30	-	6	.04200	64.56	2.498	1.11532	1.500	2.402	PER IMP=	50.00
ADD HYD	111.39	1& 6	1	.09200	121.96	4.552	.92780	1.500	2.071		
*S COMBINE HYD.'S 111.48 AND 111.39 AS 111.88											
ADD HYD	111.88	1& 5	1	.15940	188.09	6.857	.80661	1.500	1.844		
*S LA CUEVA CHANNEL AT BARSTOW (111.89)-NOT FINAL											
ADD HYD	111.89	1& 2	5	3.92590	1266.37	133.807	.63906	2.321	.504		
*S DIVERSION FROM NDB ABOVE CARRINGTON											
COMPUTE NM HYD	924.10	-	6	.02500	38.43	1.487	1.11533	1.500	2.402	PER IMP=	50.00
COMPUTE NM HYD	924.20	-	7	.01900	29.21	1.130	1.11532	1.500	2.402	PER IMP=	50.00
*S COMBINE HYD.'S 924.10 AND 924.20 AS 924.22											

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	924.22	6& 7	6	.04400	67.64	2.617	1.11531	1.500	2.402	
*S ROUTE TO BARSTOW IN ALAMEDA AS 924.28										
ROUTE	924.28	6	2	.04400	64.86	2.617	1.11533	1.550	2.303	
ADD HYD	111.99	5& 2	5	3.96990	1270.00	136.367	.64407	2.321	.500	
*S LA CUEVA MAIN AT BARSTOW 111.99 FINAL										
ROUTE MCUNGE	111.80	5	2	3.96990	1266.79	136.407	.64426	2.345	.499	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 1.970
COMPUTE NM HYD	112.10	-	1	.08940	129.98	5.152	1.08050	1.500	2.272	PER IMP= 50.00
COMPUTE NM HYD	112.20	-	3	.08260	120.22	4.760	1.08050	1.500	2.274	PER IMP= 50.00
*S COMBINE HYD.'S 112.1 AND 112.2 AS 112.8										
ADD HYD	112.80	1& 3	1	.17200	250.20	9.912	1.08050	1.500	2.273	
ADD HYD	112.90	1& 2	5	4.14190	1278.68	146.154	.66163	2.345	.482	
*S LA CUEVA ARROYO @ WYOMING (112.90)										
ROUTE MCUNGE	112.80	5	2	4.14190	1278.48	146.123	.66148	2.354	.482	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 1.950
COMPUTE NM HYD	113.00	-	1	.10000	159.65	6.393	1.19873	1.500	2.495	PER IMP= 60.00
COMPUTE NM HYD	116.10	-	7	.10280	164.05	6.572	1.19873	1.500	2.493	PER IMP= 60.00
ADD HYD	113.80	1& 7	1	.20280	323.70	12.965	1.19872	1.500	2.494	
ADD HYD	113.90	1& 2	5	4.34470	1292.43	158.918	.68583	2.354	.465	
*S LA CUEVA MAIN ARROYO @ LOUISIANA (113.90)										
ROUTE MCUNGE	113.80	5	4	4.34470	1288.56	158.931	.68588	2.400	.463	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 1.900
COMPUTE NM HYD	115.00	-	3	.12020	189.15	7.581	1.18257	1.500	2.459	PER IMP= 62.00
ADD HYD	115.90	4& 3	5	4.46490	1295.73	166.512	.69926	2.400	.453	
*S LA CUEVA NORTH (MAIN) ARROYO @ I-25 (115.90)										
RECALL HYD	205.90	-	9	1.53490	814.33	59.816	.73069	1.600	.829	
ADD HYD	115.99	5& 9	5	5.99980	1803.23	226.328	.70730	1.600	.470	
ROUTE MCUNGE	115.80	5	2	5.99980	1797.48	222.462	.69522	1.858	.468	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	118.00	-	1	.06490	115.66	4.475	1.29291	1.500	2.785	PER IMP= 70.00
ADD HYD	118.90	1& 2	5	6.06470	1833.46	226.708	.70091	1.639	.472	
RAINFALL TYPE= 2										RAIN24= 1.890
COMPUTE NM HYD	118.10	-	1	.03060	45.38	1.714	1.05011	1.500	2.317	PER IMP= 50.00
ADD HYD	118.99	1& 5	5	6.09530	1860.53	228.351	.70244	1.612	.477	
*S LA CUEVA NORTH (MAIN) ARROYO @ SAN MATEO										
ROUTE MCUNGE	118.80	5	2	6.09530	1855.00	226.425	.69651	1.658	.476	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.840
COMPUTE NM HYD	126.00	-	1	.07370	121.94	4.869	1.23882	1.500	2.585	PER IMP= 70.00
ADD HYD	126.90	1& 2	5	6.16900	1918.44	230.982	.70205	1.658	.486	
ROUTE MCUNGE	126.80	5	2	6.16900	1907.47	230.980	.70204	1.686	.483	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.800
COMPUTE NM HYD	127.00	-	1	.06330	102.87	4.070	1.20560	1.500	2.539	PER IMP= 70.00
ADD HYD	127.90	1& 2	8	6.23230	1955.25	234.830	.70649	1.686	.490	
*S NORTH LA CUEVA ARROYO AT APPROXIMATELY JEFFERSON ST.										
*S NOW BEGIN THE SOUTH LA CUEVA ARROYO EAST OF I-25										
RAINFALL TYPE= 2										
COMPUTE NM HYD	117.40	-	1	.05120	80.83	3.225	1.18115	1.500	2.467	RAIN24= 1.930 PER IMP= 60.00
*S ROUTE in alameda to san pedro										
ROUTE	117.49	1	2	.05120	75.83	3.225	1.18116	1.550	2.314	
COMPUTE NM HYD	117.30	-	1	.11720	167.85	6.536	1.04565	1.500	2.238	PER IMP= 50.00
ADD HYD	117.39	2& 1	3	.16840	238.31	9.761	1.08685	1.500	2.211	
*S TOTAL Q AT ALAMEDA & SAN PEDRO (117.39) WITHOUT PONDS										
COMPUTE NM HYD	117.50	-	1	.05500	95.92	3.907	1.33209	1.500	2.725	PER IMP= 70.00
*S TOTAL Q AT ALAMEDA INT (117.5)										
*S ROUTE IN SAN PEDRO FROM ALAMEDA TO OAKLAND (117.38)										
ROUTE	117.38	3	2	.16840	234.01	9.761	1.08685	1.550	2.171	
COMPUTE NM HYD	117.20	-	1	.05000	72.23	2.788	1.04565	1.500	2.257	PER IMP= 50.00
*S COMBINE HYDS 117.38 AND 117.2 AT OAKLAND (117.69)										
ADD HYD	117.39	2& 1	3	.21840	298.51	12.550	1.07741	1.550	2.136	
*S ROUTE FROM OAKLAND TO EAGLE ROCK (117.68)										
ROUTE	117.68	3	2	.21840	300.78	12.550	1.07742	1.550	2.152	
COMPUTE NM HYD	116.20	-	4	.07190	113.32	4.529	1.18116	1.500	2.463	PER IMP= 60.00
*S COMBINE HYDS 117.68 AND 116.2 AT EAGLE ROCK (116.29)										
ADD HYD	116.39	2& 4	3	.29030	401.44	17.079	1.10311	1.500	2.161	
DIVIDE HYD	117.25	3	6	.21404	150.00	12.592	1.10311	1.400	1.095	
	116.49	AND	7	.07626	251.44	4.487	1.10311	1.500	5.152	
COMPUTE NM HYD	117.22	-	5	.01560	27.22	1.108	1.33209	1.500	2.726	PER IMP= 70.00
*S TOTAL Q TO WILDFLOWER DIVERSION AT I-25 (117.27)										
ADD HYD	117.27	5& 6	10	.22964	177.22	13.701	1.11866	1.500	1.206	
ROUTE	117.98	7	2	.07626	257.23	4.487	1.10321	1.550	5.270	
COMPUTE NM HYD	116.21	-	4	.03440	45.58	1.682	.91666	1.500	2.070	PER IMP= 40.00
ADD HYD	116.99	4& 2	5	.11066	298.26	6.169	1.04521	1.550	4.211	
*S TOTAL Q AT I-25 & MODESTO (116.99)										
*S SOUTH LACUEVA ARROYO AT CONFLUENCE JUST WEST OF I-25 CROSSING										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	117.29	10& 5	5	.34030	472.23	19.869	1.09478	1.550	2.168	
ROUTE MCUNGE	117.28	5	2	.34030	467.67	19.035	1.04878	1.551	2.147	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	119.00	-	1	.05490	146.12	6.152	2.10117	1.500	4.159	PER IMP= 70.00
ADD HYD	119.90	1& 2	5	.39520	595.85	24.933	1.18294	1.551	2.356	
RAINFALL TYPE= 2										RAIN24= 1.880
COMPUTE NM HYD	120.00	-	1	.02680	44.20	1.810	1.26628	1.500	2.577	PER IMP= 70.00
ADD HYD	120.90	1& 5	5	.42200	634.60	26.661	1.18457	1.551	2.350	
ROUTE MCUNGE	120.80	5	2	.42200	628.86	26.140	1.16144	1.575	2.328	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 1.840
COMPUTE NM HYD	125.00	-	1	.05080	83.53	3.351	1.23688	1.500	2.569	PER IMP= 70.00
ADD HYD	125.90	1& 2	6	.47280	694.11	29.285	1.16135	1.575	2.294	
*S LA CUEVA ARROYO SOUTH BEFORE WILDFLOWER FLOWS JUST UPSTREAM OF 96" RCP										
RAINFALL TYPE= 2										RAIN24= 1.870
COMPUTE NM HYD	121.00	-	1	.04890	81.21	3.287	1.26052	1.500	2.595	PER IMP= 70.00
*S WILDFLOWER ARROYO AT SAN MATEO BLVD.										
DIVIDE HYD	121.83	1	11	.02445	40.61	1.644	1.26051	1.500	2.595	
	121.84	AND	12	.02445	40.61	1.644	1.26051	1.500	2.595	
ROUTE MCUNGE	121.81	11	2	.02445	38.67	1.641	1.25820	1.600	2.471	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 1.830
COMPUTE NM HYD	123.00	-	1	.01850	25.99	.971	.98395	1.500	2.195	PER IMP= 50.00
ADD HYD	123.90	1& 2	5	.04295	61.75	2.611	1.14005	1.550	2.246	
ROUTE MCUNGE	121.82	12	2	.02445	39.57	1.651	1.26615	1.600	2.529	CCODE = .2
COMPUTE NM HYD	122.00	-	1	.02250	31.61	1.181	.98395	1.500	2.195	PER IMP= 50.00
ADD HYD	122.90	1& 2	3	.04695	67.11	2.832	1.13089	1.550	2.234	
COMPUTE NM HYD	124.00	-	1	.02510	35.26	1.317	.98395	1.500	2.195	PER IMP= 50.00
ADD HYD	124.91	3& 1	4	.07205	100.22	4.149	1.07970	1.500	2.173	
DIVIDE HYD	122.85	4	1	.07070	90.00	4.071	1.07970	1.500	1.989	
	124.92	AND	2	.00135	10.22	.078	1.07970	1.500	11.792	
*S TOTAL OUTFLOW TO ALAMEDA FROM JEFFERSON VIA 36" STORM DRAIN.										
ROUTE MCUNGE	124.83	2	3	.00135	6.25	.076	1.05367	1.650	7.206	CCODE = .1
ADD HYD	124.91	5& 3	4	.04430	62.57	2.688	1.13740	1.550	2.207	
*S SUBTRACT FLOW INTERCEPTED BY 36" PIPE TO WATERCRESS CHANNEL										
DIVIDE HYD	123.81	4	1	.04430	62.57	2.688	1.13740	1.550	2.207	
	123.99	AND	2	.00000	.00	.000	.00000	-.050	.000	
ADD HYD	125.99	6& 1	3	.51710	755.38	31.819	1.15376	1.575	2.282	
*S TOTAL FLOW AT ENTRANCE TO 96" PIPE										
ROUTE	125.88	3	1	.51710	745.11	31.849	1.15483	1.600	2.251	
ADD HYD	127.91	1& 8	8	6.74940	2555.42	266.678	.74084	1.661	.592	
ADD HYD	127.92	2& 8	5	6.74940	2555.42	266.678	.74084	1.661	.592	
RAINFALL TYPE= 2										RAIN24= 1.790
COMPUTE NM HYD	128.00	-	1	.13730	193.62	8.777	1.19860	1.550	2.203	PER IMP= 70.00
ADD HYD	128.90	1& 5	5	6.88670	2690.28	274.995	.74871	1.661	.610	
*S LA CUEVA ARROYO TOTAL @ THE NORTH DIVERSION CHANNEL										
FINISH										

LA CUEVA FUTURE CONDITION 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/06/1998
INPUT FILE = lc100bm.fut USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
START											
RAINFALL TYPE= 2										TIME=	.00
COMPUTE NM HYD	101.00	-	1	.60700	953.84	45.841	1.41600	1.650	2.455	RAIN24=	4.050
ROUTE MCUNGE	101.80	1	2	.60700	912.90	45.469	1.40451	1.850	2.350	PER IMP=	.00
RAINFALL TYPE= 2										CCODE =	.1
COMPUTE NM HYD	100.00	-	1	1.21400	1201.70	87.881	1.35730	1.850	1.547	RAIN24=	4.200
ROUTE MCUNGE	100.80	1	3	1.21400	1177.21	87.700	1.35451	2.100	1.515	PER IMP=	.00
ADD HYD	101.88	3& 2	5	1.82100	1882.13	133.168	1.37117	1.950	1.615	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	102.00	-	1	.87500	1033.60	54.313	1.16386	1.700	1.846	RAIN24=	3.650
ADD HYD	102.90	1& 5	5	2.69600	2554.30	187.482	1.30389	1.900	1.480	PER IMP=	.00
*S LA CUEVA TRIBUTARY ARROYO @ TRAMWAY BLVD. (102.9)											
ROUTE MCUNGE	102.80	5	2	2.69600	2515.07	187.100	1.30123	2.050	1.458	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	107.20	-	1	.17200	325.87	13.591	1.48157	1.550	2.960	RAIN24=	3.370
ADD HYD	107.29	1& 2	4	2.86800	2575.01	200.690	1.31205	2.050	1.403	PER IMP=	17.00
*S NORTH LA CUEVA AT GLENDALE AND BROWNING (107.29)											
RAINFALL TYPE= 2											
COMPUTE NM HYD	102.10	-	1	.09300	149.17	4.457	.89867	1.500	2.506	RAIN24=	3.500
*S LA CUEVA TRIBUTARY @ TRAMWAY BLVD.										PER IMP=	.00
ROUTE MCUNGE	102.18	1	2	.09300	136.20	4.395	.88600	1.700	2.288	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	107.10	-	1	.18080	399.38	14.303	1.48327	1.500	3.452	RAIN24=	3.380
ADD HYD	107.19	1& 2	5	.27380	399.38	18.697	1.28040	1.500	2.279	PER IMP=	17.00
*S NORTH LA CUEVA (TRIB) AT FLORENCE AND BROWNING (107.19)											
ADD HYD	107.90	5& 4	3	3.14180	2666.73	219.388	1.30929	2.000	1.326		
RAINFALL TYPE= 2											
COMPUTE NM HYD	106.00	-	1	.04360	95.85	3.448	1.48281	1.500	3.435	RAIN24=	3.400
ROUTE MCUNGE	106.80	1	2	.04360	86.06	3.396	1.46043	1.700	3.084	PER IMP=	17.00
RAINFALL TYPE= 2										CCODE =	.1
COMPUTE NM HYD	106.10	-	1	.11160	238.47	8.685	1.45925	1.500	3.339	RAIN24=	3.340
ADD HYD	106.19	1& 2	6	.15520	257.25	12.081	1.45958	1.550	2.590	PER IMP=	17.00
*S LA CUEVA TRIBUTARY ARROYO @ BROWNING (106.19)											
ADD HYD	107.99	3& 6	5	3.29700	2733.21	231.469	1.31636	2.000	1.295		
ROUTE MCUNGE	107.80	5	2	3.29700	2713.95	231.319	1.31551	2.100	1.286	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	109.00	-	1	.10060	216.30	7.552	1.40751	1.500	3.359	RAIN24=	3.230
ADD HYD	109.90	1& 2	5	3.39760	2736.13	238.871	1.31823	2.100	1.258	PER IMP=	17.00
RAINFALL TYPE= 2											
COMPUTE NM HYD	108.00	-	7	.20550	404.63	15.573	1.42091	1.550	3.077	RAIN24=	3.250
ADD HYD	109.99	5& 7	5	3.60310	2789.17	254.444	1.32409	2.100	1.210	PER IMP=	17.00
*S LA CUEVA ARROYO @ EUBANK (MAIN) (109.99)											
ROUTE MCUNGE	109.88	5	2	3.60310	2763.62	254.113	1.32237	2.200	1.198	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	110.00	-	1	.16340	275.61	11.738	1.34689	1.550	2.636	RAIN24=	3.130
ADD HYD	110.90	1& 2	5	3.76650	2796.05	265.851	1.32343	2.200	1.160	PER IMP=	17.00
*S LA CUEVA ARROYO @ VENTURA (MAIN) (110.90)- FINAL											
*S ROUTE TO BARSTOW											
ROUTE MCUNGE	110.88	5	2	3.76650	2792.08	263.889	1.31366	2.219	1.158	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	111.00	-	1	.05330	108.83	3.739	1.31526	1.500	3.190	RAIN24=	3.020
COMPUTE NM HYD	111.40	-	4	.01410	28.80	.989	1.31527	1.500	3.192	PER IMP=	17.00
*S COMBINE HYD.'S 111.0 AND 111.4 AS 111.49										PER IMP=	17.00
ADD HYD	111.49	1& 4	4	.06740	137.63	4.728	1.31525	1.500	3.191		
*S ROUTE TO LA CUEVA CHANEL @ OAKLAND											
*S PIPE ROUTING											
ROUTE	111.48	4	5	.06740	133.79	4.728	1.31527	1.550	3.102		
RAINFALL TYPE= 2											
COMPUTE NM HYD	111.10	-	1	.09690	195.97	7.699	1.48968	1.500	3.160	RAIN24=	3.050
RAINFALL TYPE= 2										PER IMP=	26.00
COMPUTE NM HYD	111.30	-	6	.04200	107.90	4.348	1.94094	1.500	4.014	RAIN24=	3.050
ADD HYD	111.39	1& 6	1	.13890	303.87	12.046	1.62612	1.500	3.418	PER IMP=	50.00
*S COMBINE HYD.'S 111.48 AND 111.39 AS 111.88											
ADD HYD	111.88	1& 5	1	.20630	436.39	16.774	1.52456	1.500	3.305		
*S LA CUEVA CHANNEL AT BARSTOW (111.89)-NOT FINAL											
ADD HYD	111.89	1& 2	5	3.97280	2827.78	280.143	1.32216	2.194	1.112		
*S DIVERSION FROM NDB ABOVE CARRINGTON											
COMPUTE NM HYD	924.10	-	6	.02500	64.23	2.588	1.94094	1.500	4.015	PER IMP=	50.00
COMPUTE NM HYD	924.20	-	7	.01900	48.82	1.967	1.94094	1.500	4.015	PER IMP=	50.00
*S COMBINE HYD.'S 924.10 AND 924.20 AS 924.22											

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	924.22	6& 7	6	.04400	113.05	4.555	1.94093	1.500	4.015	
*S ROUTE TO BARSTOW IN ALAMEDA AS 924.28										
ROUTE	924.28	6	2	.04400	109.83	4.555	1.94094	1.500	3.900	
ADD HYD	111.99	5& 2	5	4.01680	2838.79	284.498	1.32801	2.194	1.104	
*S LA CUEVA MAIN AT BARSTOW 111.99 FINAL										
ROUTE MCUNGE	111.80	5	2	4.01680	2835.32	284.453	1.32780	2.229	1.103	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.960
COMPUTE NM HYD	112.10	-	1	.08940	219.11	8.942	1.87543	1.500	3.829	PER IMP= 50.00
COMPUTE NM HYD	112.20	-	3	.08260	202.31	8.262	1.87543	1.500	3.827	PER IMP= 50.00
*S COMBINE HYD.'S 112.1 AND 112.2 AS 112.8										
ADD HYD	112.80	1& 3	1	.17200	421.41	17.204	1.87543	1.500	3.828	
ADD HYD	112.90	1& 2	5	4.18880	2869.92	300.975	1.34723	2.202	1.071	
*S LA CUEVA ARROYO @ WYOMING (112.90)										
ROUTE MCUNGE	112.80	5	2	4.18880	2864.32	300.965	1.34719	2.257	1.068	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.930
COMPUTE NM HYD	113.00	-	1	.10000	262.65	10.797	2.02440	1.500	4.104	PER IMP= 60.00
COMPUTE NM HYD	116.10	-	7	.10280	270.05	11.099	2.02440	1.500	4.105	PER IMP= 60.00
ADD HYD	113.80	1& 7	1	.20280	532.70	21.896	2.02440	1.500	4.104	
ADD HYD	113.90	1& 2	5	4.39160	2897.59	322.031	1.37492	2.257	1.031	
*S LA CUEVA MAIN ARROYO @ LOUISIANA (113.90)										
ROUTE MCUNGE	113.80	5	4	4.39160	2893.34	322.114	1.37527	2.284	1.029	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.850
COMPUTE NM HYD	115.00	-	3	.12020	312.21	12.750	1.98890	1.500	4.058	PER IMP= 62.00
ADD HYD	115.90	4& 3	5	4.51180	2912.58	334.701	1.39094	2.248	1.009	
*S LA CUEVA NORTH (MAIN) ARROYO @ I-25 (115.90)										
RECALL HYD	205.90	-	9	1.48800	1294.36	110.966	1.39827	1.600	1.359	
ADD HYD	115.99	5& 9	5	5.99980	3754.12	444.694	1.38972	2.212	.978	
ROUTE MCUNGE	115.80	5	2	5.99980	3752.12	438.666	1.37088	2.218	.977	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	118.00	-	1	.06490	172.75	7.273	2.10117	1.500	4.159	PER IMP= 70.00
ADD HYD	118.90	1& 2	5	6.06470	3765.43	445.430	1.37712	2.197	.970	
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	118.10	-	1	.03060	75.34	2.966	1.81763	1.500	3.847	PER IMP= 50.00
ADD HYD	118.99	1& 5	5	6.09530	3771.22	448.225	1.37880	2.197	.967	
*S LA CUEVA NORTH (MAIN) ARROYO @ SAN MATEO										
ROUTE MCUNGE	118.80	5	2	6.09530	3767.60	446.431	1.37328	2.240	.966	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.760
COMPUTE NM HYD	126.00	-	1	.07370	195.81	8.059	2.05022	1.500	4.151	PER IMP= 70.00
ADD HYD	126.90	1& 2	5	6.16900	3793.29	453.897	1.37957	1.803	.961	
ROUTE MCUNGE	126.80	5	2	6.16900	3791.23	453.916	1.37963	1.810	.960	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.700
COMPUTE NM HYD	127.00	-	1	.06330	165.35	6.750	1.99932	1.500	4.081	PER IMP= 70.00
ADD HYD	127.90	1& 2	8	6.23230	3846.45	460.185	1.38447	1.810	.964	
*S NORTH LA CUEVA ARROYO AT APPROXIMATELY JEFFERSON ST.										
*S NOW BEGIN THE SOUTH LA CUEVA ARROYO EAST OF I-25										
RAINFALL TYPE= 2										RAIN24= 2.890
COMPUTE NM HYD	117.40	-	1	.05120	132.07	5.432	1.98937	1.500	4.030	PER IMP= 60.00
*S ROUTE in alameda to san pedro										
ROUTE	117.49	1	2	.05120	124.38	5.432	1.98938	1.550	3.796	
RAINFALL TYPE= 2										RAIN24= 2.890
COMPUTE NM HYD	117.30	-	1	.11720	286.33	11.336	1.81357	1.500	3.817	PER IMP= 50.00
ADD HYD	117.39	2& 1	3	.16840	405.11	16.768	1.86702	1.500	3.759	
*S TOTAL Q AT ALAMEDA & SAN PEDRO (117.39) WITHOUT PONDS										
COMPUTE NM HYD	117.50	-	1	.05500	151.76	6.417	2.18755	1.500	4.311	PER IMP= 70.00
*S TOTAL Q AT ALAMEDA INT (117.5)										
*S ROUTE IN SAN PEDRO FROM ALAMEDA TO OAKLAND (117.38)										
ROUTE	117.38	3	2	.16840	392.75	16.768	1.86702	1.550	3.644	
COMPUTE NM HYD	117.20	-	1	.05000	121.61	4.836	1.81357	1.500	3.800	PER IMP= 50.00
*S COMBINE HYDS 117.38 AND 117.2 AT OAKLAND (117.69)										
ADD HYD	117.39	2& 1	3	.21840	512.70	21.604	1.85478	1.500	3.668	
*S ROUTE FROM OAKLAND TO EAGLE ROCK (117.68)										
ROUTE	117.68	3	2	.21840	512.47	21.605	1.85478	1.550	3.666	
COMPUTE NM HYD	116.20	-	4	.07190	185.54	7.629	1.98937	1.500	4.032	PER IMP= 60.00
*S COMBINE HYDS 117.68 AND 116.2 AT EAGLE ROCK (116.29)										
ADD HYD	116.39	2& 4	3	.29030	676.91	29.233	1.88811	1.550	3.643	
DIVIDE HYD	117.25	3	6	.23564	325.00	23.729	1.88811	1.400	2.155	
	116.49	AND	7	.05466	351.91	5.504	1.88811	1.550	10.060	
COMPUTE NM HYD	117.22	-	5	.01560	43.06	1.820	2.18755	1.500	4.313	PER IMP= 70.00
*S TOTAL Q TO WILDFLOWER DIVERSION AT I-25 (117.27)										
ADD HYD	117.27	5& 6	10	.25124	368.06	25.549	1.90670	1.500	2.289	
ROUTE	117.98	7	2	.05466	346.60	5.504	1.88826	1.550	9.908	
COMPUTE NM HYD	116.21	-	4	.03440	79.13	3.024	1.64799	1.500	3.594	PER IMP= 40.00

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	116.99	4& 2	5	.08906	417.68	8.528	1.79544	1.550	7.328	
*S TOTAL Q AT I-25 & MODESTO (116.99)										
*S SOUTH LACUEVA ARROYO AT CONFLUENCE JUST WEST OF I-25 CROSSING										
ADD HYD	117.29	10& 5	5	.34030	780.59	34.077	1.87758	1.550	3.584	
ROUTE MCUNGE	117.28	5	2	.34030	774.07	32.451	1.78799	1.531	3.554	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.830
COMPUTE NM HYD	119.00	-	1	.05490	146.12	6.152	2.10117	1.500	4.159	PER IMP= 70.00
ADD HYD	119.90	1& 2	5	.39520	909.43	38.277	1.81603	1.531	3.596	
RAINFALL TYPE= 2										RAIN24= 2.820
COMPUTE NM HYD	120.00	-	1	.02680	70.98	2.990	2.09159	1.500	4.139	PER IMP= 70.00
ADD HYD	120.90	1& 5	5	.42200	975.18	41.108	1.82646	1.531	3.611	
ROUTE MCUNGE	120.80	5	2	.42200	965.62	40.506	1.79973	1.561	3.575	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.760
COMPUTE NM HYD	125.00	-	1	.05080	134.25	5.548	2.04765	1.500	4.129	PER IMP= 70.00
ADD HYD	125.90	1& 2	6	.47280	1084.17	45.692	1.81204	1.539	3.583	
*S LA CUEVA ARROYO SOUTH BEFORE WILDFLOWER FLOWS JUST UPSTREAM OF 96" RCP										
RAINFALL TYPE= 2										RAIN24= 2.810
COMPUTE NM HYD	121.00	-	1	.04890	130.08	5.442	2.08650	1.500	4.156	PER IMP= 70.00
*S WILDFLOWER ARROYO AT SAN MATEO BLVD.										
DIVIDE HYD	121.83	1	11	.02445	65.04	2.721	2.08649	1.500	4.156	
	121.84	AND	12	.02445	65.04	2.721	2.08649	1.500	4.156	
ROUTE MCUNGE	121.81	11	2	.02445	60.11	2.697	2.06844	1.600	3.841	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.750
COMPUTE NM HYD	123.00	-	1	.01850	44.03	1.701	1.72356	1.500	3.719	PER IMP= 50.00
ADD HYD	123.90	1& 2	5	.04295	93.48	4.398	1.91987	1.550	3.401	
ROUTE MCUNGE	121.82	12	2	.02445	60.16	2.690	2.06322	1.600	3.845	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.750
COMPUTE NM HYD	122.00	-	1	.02250	53.55	2.068	1.72356	1.500	3.719	PER IMP= 50.00
ADD HYD	122.90	1& 2	3	.04695	100.95	4.759	1.90043	1.550	3.360	
RAINFALL TYPE= 2										RAIN24= 2.740
COMPUTE NM HYD	124.00	-	1	.02510	59.74	2.301	1.71856	1.500	3.719	PER IMP= 50.00
ADD HYD	124.91	3& 1	4	.07205	154.29	7.059	1.83707	1.550	3.346	
DIVIDE HYD	122.85	4	1	.06183	90.00	6.058	1.83707	1.450	2.274	
	124.92	AND	2	.01022	64.29	1.001	1.83707	1.550	9.833	
*S TOTAL OUTFLOW TO ALAMEDA FROM JEFFERSON VIA 36" STORM DRAIN.										
ROUTE MCUNGE	124.83	2	3	.01022	58.69	.966	1.77240	1.585	8.976	CCODE = .1
ADD HYD	124.91	5& 3	4	.05317	150.58	5.359	1.88982	1.585	4.425	
*S SUBTRACT FLOW INTERCEPTED BY 36" PIPE TO WATERCRESS CHANNEL										
DIVIDE HYD	123.81	4	1	.04179	70.00	4.212	1.88982	1.489	2.617	
	123.99	AND	2	.01138	80.58	1.147	1.88982	1.585	11.068	
ADD HYD	125.99	6& 1	3	.51459	1154.17	49.630	1.80834	1.539	3.505	
*S TOTAL FLOW AT ENTRANCE TO 96" PIPE										
ROUTE	125.88	3	1	.51459	1132.56	49.585	1.80670	1.550	3.439	
ADD HYD	127.91	1& 8	8	6.74689	4572.38	509.254	1.41525	1.615	1.059	
ADD HYD	127.92	2& 8	5	6.75827	4645.52	510.373	1.41597	1.615	1.074	
RAINFALL TYPE= 2										RAIN24= 2.690
COMPUTE NM HYD	128.00	-	1	.13730	318.30	14.604	1.99431	1.550	3.622	PER IMP= 70.00
ADD HYD	128.90	1& 5	5	6.89557	4910.89	523.958	1.42471	1.615	1.113	
*S LA CUEVA ARROYO TOTAL @ THE NORTH DIVERSION CHANNEL										
FINISH										

NORTH DOMINGO BACA EXISTING COND. 10-YR

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AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994          RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = nbac10.ext                                                                   USER NO.= RSTECHNM.STE

                                FROM  TO                          PEAK      RUNOFF                    TIME TO   CFS      PAGE =   1
                   HYDROGRAPH   ID    ID        AREA     DISCHARGE  VOLUME    RUNOFF                     PEAK    PER
COMMAND          IDENTIFICATION NO.  NO.      (SQ MI)     (CFS)    (AC-FT)  (INCHES)                   (HOURS)  ACRE      NOTATION

*S 10-YR RETURN PERIOD, 24-HR STORM, EXISTING CONDITIONS
*S MUSKINGUM-CUNGE CHANNEL ROUTING
START
RAINFALL  TYPE= 2                                                                                                  TIME=       .00
COMPUTE NM HYD        900.00   -     1        .44100      328.97    17.063     .72545    1.700    1.166 RAIN24=    2.670
*S ROUTE HYD. 900 THROUGH 902.1 (900.8)                                                                   PER IMP=     .00
ROUTE MCUNGE          900.80   1     2        .44100      320.94    16.998     .72271    1.850    1.137 CCODE =       .1
RAINFALL  TYPE= 2                                                                                                  RAIN24=    2.390
COMPUTE NM HYD        902.10   -     5        .08870       56.10     2.878     .60832    1.600     .988 PER IMP=   10.00
*S (902.91=NORTH BRANCH OF ARROYO AT JUNCTION EAST OF TRAMWAY LANE)
ADD HYD               902.91  2& 5   2        .52970      352.97    19.876     .70356    1.850    1.041
RAINFALL  TYPE= 2                                                                                                  RAIN24=    2.570
COMPUTE NM HYD        901.00   -     1        .11800      165.92     4.570     .72623    1.500    2.197 PER IMP=     .00
*S  20% AVULSION FROM SOUTH DOMINGO BACA WATERSHED SUB-BASIN 400.3
RECALL HYD            400.30   -    15        .25500      348.72     9.922     .72958    1.500    2.137
DIVIDE HYD            400.61  15    15        .05100       69.74     1.984     .72957    1.500    2.137
                     400.6SDB AND   19        .20400      278.98     7.938     .72957    1.500    2.137
*S COMBINE 901 AND 20% AVULSION AS 901.1
ADD HYD               901.10 1&15   1        .16900      235.66     6.555     .72724    1.500    2.179
*S ROUTE HYD. 901.1 THROUGH 902.2 (901.8)
ROUTE MCUNGE          901.80   1     3        .16900      203.55     6.482     .71913    1.700    1.882 CCODE =       .1
RAINFALL  TYPE= 2                                                                                                  RAIN24=    2.390
COMPUTE NM HYD        902.20   -     5        .12200       77.32     3.958     .60832    1.600     .990 PER IMP=   10.00
*S (902.92=SOUTH BRANCH OF ARROYO AT JUNCTION EAST OF TRAMWAY LANE)
ADD HYD               902.92  3& 5   3        .29100      274.14    10.440     .67267    1.700    1.472
*S (902.93=SUM OF FLOWS AT ARROYO JUNCTION EAST OF TRAMWAY LANE)
ADD HYD               902.93  2& 3   1        .82070      579.31    30.316     .69260    1.750    1.103
ROUTE MCUNGE          902.80   1     2        .82070      575.74    30.305     .69235    1.850    1.096 CCODE =       .2
COMPUTE NM HYD        902.30   -     3        .07300       98.65     3.816     .98008    1.500    2.111 PER IMP=   30.00
*S (902.99=TOTAL FLOW @ TRAMWAY FROM 902 SUBBASINS, 901, 900)
ADD HYD               902.99  2& 3   1        .89370      601.47    34.120     .71585    1.800    1.052
*S*************************************************************************
*S                    BEGIN: PRIMROSE POINTE DEVELOPMENT
*S*************************************************************************
ROUTE MCUNGE          902.90   1    17        .89370      599.92    34.113     .71569    1.850    1.049 CCODE =       .1
*S ROUTE 902.9 TO PRIMROSE POINTE CONCRETE CHANNEL AS 902.99
ROUTE MCUNGE          902.99  17    16        .89370      597.11    34.100     .71542    1.850    1.044 CCODE =       .1
RAINFALL  TYPE= 2                                                                                                  RAIN24=    2.430
COMPUTE NM HYD        906.00   -    12        .02368       34.64     1.391    1.10124    1.500    2.286 PER IMP=   35.00
ADD HYD               906.10 16&12  2        .91738      605.20    35.491     .72538    1.850    1.031
*S ROUTE THRU  THROUGH PRIMROSE POINTE TO LOWELL
ROUTE MCUNGE          906.19   2    16        .91738      592.23    35.438     .72431    1.950    1.009 CCODE =       .1
COMPUTE NM HYD        904.00   -     1        .04130       60.83     2.315    1.05117    1.500    2.301 PER IMP=   30.00
*S ROUTE HYDOGRAPH THRU POND NDB1
ROUTE RESERVOIR       904.90   1    17        .04130       24.10     2.113     .95949    1.700     .912 AC-FT=      .953
COMPUTE NM HYD        905.00   -    10        .00920       13.56      .516    1.05117    1.500    2.303 PER IMP=   30.00
*S ROUTE 905 HYDOGRAPH THRU POND NDB2
ROUTE RESERVOIR       905.90  10    18        .00920        6.89      .467     .95141    1.650    1.171 AC-FT=      .226
*S BASIN 903.0
COMPUTE NM HYD        903.00   -     2        .06405       94.20     3.591    1.05117    1.500    2.298 PER IMP=   30.00
*S POND 3 DISCHARGE TO THE NORTH DOMINGO BACA ARROYO
ROUTE RESERVOIR       903.90   2    24        .06405        2.00     2.613     .76483    2.600     .049 AC-FT=     2.731
ADD HYD               906.29 24&18 26        .07325        8.10     3.079     .78826    1.650     .173
ADD HYD               906.39 17&26  1        .11455       32.19     5.193     .84999    1.700     .439
*S ********** TOTAL NORTH DOMINGO BACA FLOW AT LOWELL STREET **************
ADD HYD               906.99 1&16   1       1.03193      617.89    40.631     .73826    1.950     .936
*S*************************************************************************
*S                    END: PRIMROSE POINTE DEVELOPMENT
*S*************************************************************************
ROUTE MCUNGE          906.88   1     2       1.03193      617.56    40.635     .73833    2.000     .935 CCODE =       .2
RAINFALL  TYPE= 2                                                                                                  RAIN24=    2.230
COMPUTE NM HYD        910.21   -     1        .01370        9.05      .279     .38120    1.500    1.033 PER IMP=    5.00
ADD HYD               910.29  2& 1   5       1.04563      618.61    40.913     .73365    2.000     .924
RAINFALL  TYPE= 2                                                                                                  RAIN24=    2.250
COMPUTE NM HYD        910.31   -     2        .15630      164.33     5.839     .70050    1.500    1.643 PER IMP=   20.00
ADD HYD               910.90  5& 2   1       1.20193      643.76    46.753     .72934    2.000     .837
ROUTE MCUNGE          910.88   1     2       1.20193      630.94    46.703     .72857    2.100     .820 CCODE =       .1
RAINFALL  TYPE= 2                                                                                                  RAIN24=    2.220
COMPUTE NM HYD        912.11   -     3        .05900       39.99     1.374     .43659    1.500    1.059 PER IMP=   10.00
*S N D B ARROYO BETWEEN BROWNING AND EUBANK (AP 912.95) - UNBULKED
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                                FROM  TO                          PEAK        RUNOFF                          TIME TO   CFS
                   HYDROGRAPH   ID    ID        AREA        DISCHARGE    VOLUME        RUNOFF        PEAK      PER
COMMAND          IDENTIFICATION NO.   NO.      (SQ MI)       (CFS)      (AC-FT)      (INCHES)     (HOURS)    ACRE      NOTATION
ADD HYD                 912.95  3& 2   1       1.26093       635.18      48.077       .71490       2.100      .787
COMPUTE NM HYD          912.21   -     2        .19600       141.21       5.094       .48730       1.550     1.126  PER IMP=   10.00
ADD HYD                 912.98  1& 2  15       1.45693       652.01      53.171       .68428       2.100      .699
RAINFALL  TYPE= 2                                                                                              RAIN24=    2.230
COMPUTE NM HYD          402.50   -     4        .02800        52.16       2.306      1.54415       1.500     2.911  PER IMP=   70.00
COMPUTE NM HYD          402.60   -     5        .02430        45.27       2.001      1.54415       1.500     2.911  PER IMP=   70.00
*S COMBINE 402.5 AND 402.6 AS 402.9 (AT BROWNING)
ADD HYD                 402.90  4& 5  11        .05230        97.43       4.307      1.54414       1.500     2.911
*S ROUTE 402.9 AS 402.8 IN 42-INCH SD TO END OF 915.2
ROUTE                   402.80   11    6        .05230        95.66       4.307      1.54415       1.500     2.858
RAINFALL  TYPE= 2                                                                                              RAIN24=    2.170
COMPUTE NM HYD          915.20   -     2        .03700        23.76        .820       .41567       1.500     1.003  PER IMP=   10.00
COMPUTE NM HYD          915.10   -    29        .03430        22.02        .760       .41567       1.500     1.003  PER IMP=   10.00
ADD HYD                 915.90  6& 2  11        .08930       119.41       5.127      1.07657       1.500     2.089
*S ROUTE 915.9 AS 915.8 TO NDB DAM IN 54-INCH PIPE
ROUTE                   915.80   11    7        .08930       116.82       5.127      1.07658       1.550     2.044
*S COMBINE HYD'S 912.98 AND 915.8 AS 912.99 (FLOW TO NDB DAM FROM PDN DRAIN)
ADD HYD                 912.99 15& 7  15       1.54623       673.72      58.298       .70694       2.100      .681
*S*************************************************************************
*S   AP 105.9 IS FROM "LA CUEVA, EL CAMINO & NORTH CAMINO ARROYOS - DRAINAGE
*S   MANAGEMENT PLAN" (RESOURCE TECHNOLOGY, INC., 1996).
*S   FILENAME: LCDV100B.EXT
*S*************************************************************************
*S   AP 105.9 IS FROM LA CUEVA TRIBUTARY (DIVERTED TO UPPER N. D. B. DAM
*S   THROUGH LA CUEVA DIVERSION CHANNEL)
RECALL HYD              105.90   -    17       1.17410       604.74      37.888       .60506       1.850      .805
ROUTE MCUNGE            105.80   17    2       1.17410       603.64      37.853       .60450       1.900      .803  CCODE =      .2
RAINFALL  TYPE= 2                                                                                              RAIN24=    2.220
COMPUTE NM HYD          911.00   -     3        .05800        37.27       1.620       .52379       1.550     1.004  PER IMP=   15.00
*S  TOTAL INFLOW HYDROGRAPH INTO UPPER N.D.B. DAM. FROM LA CUEVA DIVERSION
*S  CHANNEL (HYD NO. 911.99) - UNBULKED
ADD HYD                 911.99  2& 3   1       1.23210       614.93      39.473       .60070       1.900      .780
*S  TOTAL INFLOW HYDROGRAPH INTO UPPER N.D.B. DAM. (HYD NO. 914.79)
*S  (BULKED)
ADD HYD                 914.79 15& 1   1       2.77833      1132.30      97.772       .65983       2.050      .637
*S            ROUTING THROUGH UPPER NORTH DOMINGO BACA DAM
*S
*S  THIS STORAGE OUTFLOW DATA WAS BASED ON TOPOGRAPHY IN JUNE 1994.
*S  OUTFLOW IS TAKEN FROM "DESIGN ANALYSIS REPORT FOR LA CUEVA DIVERSION
*S  CHANNEL" (RESOURCE TECHNOLOGY, INC., 1994). STORAGE INFORMATION WAS
*S  CALCULATED AT RTI. THE ELEVATION OF EMERGENCY SPILLWAY
*S  IS AT 5749.
ROUTE RESERVOIR         914.99    1    2       2.77833       136.43      97.639       .65893       2.900      .077  AC-FT=    66.369
*S  UPPER N.D.B. DAM OUTFLOW HYDROGRAPH AT EUBANK. (HYD NO. 914.99)
*S   AP 914.99 IS THROUGH THE PRINCIPAL SPILLWAY
*S   AP NDB.SPILL IS THROUGH THE EMERGENCY SPILLWAY
DIVIDE HYD              914.99    2    2       2.77833       136.43      97.639       .65893       2.900      .077
                     NDB.SPILL  AND   20        .00000          .00        .000       .00000       -.050      .000
ROUTE MCUNGE            914.68    2    3       2.77833       136.41      97.621       .65881       3.000      .077  CCODE =      .1
ROUTE                 SPILL.ROU   20   19        .00000          .00        .000       .00000       -.050      .000
RAINFALL  TYPE= 2                                                                                              RAIN24=    2.130
COMPUTE NM HYD          914.20   -     1        .03500        32.46       1.003       .53739       1.500     1.449  PER IMP=   10.00
*S  UNDBD DAM SPILL AT EUBANK (AP 914.29)
ADD HYD                 914.29  1&19   1        .03500        32.46       1.003       .53738       1.500     1.449
ROUTE MCUNGE            914.28    1    2        .03500        29.50       1.003       .53740       1.650     1.317  CCODE =      .1
*S N D B ARROYO BETWEEN EUBANK AND HOLBROOK
*S (AP 914.78)
ADD HYD                 914.78  2& 3   2       2.81333       136.81      98.624       .65730       2.950      .076
ROUTE MCUNGE            914.88    2    3       2.81333       136.80      98.618       .65726       3.000      .076  CCODE =      .2
RAINFALL  TYPE= 2                                                                                              RAIN24=    2.100
COMPUTE NM HYD          919.10   -     1        .07900        65.91       1.888       .44803       1.500     1.304  PER IMP=    5.00
*S N D B ARROYO HOLBROOK (HYD NO. 919.19) - FINAL
ADD HYD                 919.19  1& 3   1       2.89233       137.38     100.506       .65154       2.900      .074
*S   BETWEEN HOLBROOK AND VENTURA (AP 919.18) - NOT FINAL
ROUTE MCUNGE            919.18    1    5       2.89233       137.38     100.497       .65149       3.050      .074  CCODE =      .2
*S   ROUTE 915.1 TO HOLBROOK THRU 919.2 AS 915.18
ROUTE MCUNGE            915.18   29    7        .03430        19.73        .760       .41567       1.700      .899  CCODE =      .1
COMPUTE NM HYD          919.20   -     1        .06100        43.32       1.279       .39312       1.500     1.110  PER IMP=    5.00
ADD HYD                 919.28  7& 1   1        .09530        48.28       2.039       .40123       1.550      .792
*S   HOLBROOK (HYD NO. 919.28)-FINAL
*S ROUTE AP 919.28 TO RP 919.27
ROUTE MCUNGE            919.27    1    3        .09530        47.35       2.039       .40123       1.600      .776  CCODE =      .1
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                          FROM  TO                          PEAK        RUNOFF                          TIME TO   CFS
                HYDROGRAPH  ID   ID          AREA      DISCHARGE     VOLUME      RUNOFF                    PEAK   PER
COMMAND       IDENTIFICATION  NO.  NO.      (SQ MI)      (CFS)       (AC-FT)   (INCHES)                 (HOURS)  ACRE      NOTATION
ROUTE MCUNGE          919.28   3    2       .09530       46.02        2.039      .40123                   1.750   .754 CCODE =      .1
*S  N D B ARROYO BETWEEN HOLBROOK AND VENTURA. (AP 919.38) - NOT FINAL
ADD HYD               919.38  2& 5  6      2.98763      141.75      102.536      .64351                   1.850   .074
RAINFALL  TYPE= 2
COMPUTE NM HYD        921.30   -    7       .02840       17.12         .587      .38728                   1.500   .942                RAIN24=   2.070
RAINFALL  TYPE= 2                                                                                                                   PER IMP=  10.00
COMPUTE NM HYD        913.20   -    1       .01700       11.75         .387      .42635                   1.500  1.080                RAIN24=   2.130
ROUTE MCUNGE          913.18   1    2       .01700       11.72         .387      .42637                   1.700  1.077                PER IMP=  10.00
RAINFALL  TYPE= 2                                                                                                                   CCODE =      .2
COMPUTE NM HYD        918.00   -    1       .11400       45.61        2.545      .41856                   1.650   .625                RAIN24=   2.100
*S  HOLBROOK (AP 918.99) - FINAL                                                                                                    PER IMP=  10.00
ADD HYD               918.99  1& 2  1       .13100       54.81        2.931      .41956                   1.700   .654
ROUTE MCUNGE          918.88   1    2       .13100       54.45        2.931      .41957                   1.750   .649 CCODE =      .2
RAINFALL  TYPE= 2
COMPUTE NM HYD        921.10   -    1       .02920       17.60         .603      .38728                   1.500   .942                RAIN24=   2.070
*S   UPSTREAM OF END OF VINYARD ESTATES SUBDIVISION UNIT IV BETWEEN                                                                  PER IMP=  10.00
*S   HOLBROOK & VENTURA
*S   ANAHEIM (AP 921.19) - FINAL
ADD HYD               921.19  1& 2  1       .16020       60.69        3.534      .41368                   1.750   .592
*S  ***********************************************************************
*S                 BEGIN: VINYARD ESTATES - UNIT IV
*S  ***********************************************************************
*S ROUTE 921.19
*S (48-INCH RCP)
ROUTE                 921.80   1   12       .16020       60.70        3.534      .41368                   1.750   .592
*S (54-INCH RCP)
ROUTE                 921.89  12   16       .16020       60.66        3.534      .41368                   1.750   .592
*S COMBINE 921.89 & 921.3 AS 921.98
ADD HYD               921.98 16& 7  14       .18860       66.73        4.121      .40970                   1.750   .553
ROUTE RESERVOIR       921.99  14   15.      .18860       10.53        1.028      .10223                   2.400   .087 AC-FT=     3.190
*S  ***********************************************************************
*S                 END: VINYARD ESTATES - UNIT IV
*S  ***********************************************************************
*S N D B ARROYO BETWEEN HOLBROOK & VENTURA (AP 921.78) - FINAL
ADD HYD               921.78  6&15  1.      3.17623      146.51      103.565      .61137                   2.450   .072
ROUTE MCUNGE          921.80   1    2.      3.17623      146.36      103.558      .61133                   2.550   .072 CCODE =      .1
RAINFALL  TYPE= 2
COMPUTE NM HYD        921.20   -    1       .08740       54.31        1.827      .39203                   1.500   .971                RAIN24=   2.050
*S  N D B ARROYO AT VENTURA (AP 921.9) - NOT FINAL                                                                                   PER IMP=  10.00
ADD HYD               921.90  1& 2  26      3.26363      149.84      105.386      .60546                   1.900   .072
RAINFALL  TYPE= 2
COMPUTE NM HYD        913.10   -    1       .03600       19.96         .634      .33028                   1.500   .866                RAIN24=   2.170
ROUTE MCUNGE          913.88   1    2       .03600       17.36         .634      .33028                   1.800   .754                PER IMP=   5.00
RAINFALL  TYPE= 2                                                                                                                   CCODE =      .1
COMPUTE NM HYD        917.00   -    1       .04060       21.97         .693      .32022                   1.500   .845                RAIN24=   2.100
*S    HOLBROOK (AP 917.99) - FINAL                                                                                                  PER IMP=   5.00
ADD HYD               917.99  1& 2  1       .07660       24.10        1.327      .32494                   1.750   .492
ROUTE MCUNGE          917.88   1    2       .07660       23.96        1.328      .32495                   1.850   .489 CCODE =      .2
RAINFALL  TYPE= 2
COMPUTE NM HYD        920.10   -    1       .02020       13.52         .448      .41586                   1.500  1.045                RAIN24=   2.070
*S  INTO VINEYARD ESTATES SUBDIVISION UNIT IV AT NORTH END                                                                           PER IMP=  10.00
*S  BETWEEN HOLBROOK AND VENTURA (AP 920.19) - FINAL (UNBULKED)
ADD HYD               920.19  2& 1  1       .09680       33.38        1.775      .34391                   1.600   .539
COMPUTE NM HYD        920.00   -    5       .04310       23.68         .890      .38728                   1.500   .858 PER IMP=  10.00
*S  INTO VINEYARD ESTATES SUBDIVISION UNIT IV AT EAST (NORTH END)
*S  BETWEEN HOLBROOK AND VENTURA (AP 920) - FINAL (UNBULKED)
*S  ***********************************************************************
*S                 BEGIN: VINYARD ESTATES - UNIT IV
*S  ***********************************************************************
RAINFALL  TYPE= 2
COMPUTE NM HYD        922.10   -    2       .00700        4.91         .180      .48193                   1.500                RAIN24=   2.010
COMPUTE NM HYD        923.00   -   12       .00700        4.92         .158      .42326                   1.500  1.096 PER IMP=  17.00
COMPUTE NM HYD        922.20   -    9       .01480       21.04         .781      .98968                   1.500  1.098 PER IMP=  10.00
COMPUTE NM HYD        922.30   -   16       .04150       58.97        2.190      .98968                   1.500  2.221 PER IMP=  40.00
*S COMBINE 920.1 + 922.1 AS 922.19                                                                                                  2.220 PER IMP=  40.00
ADD HYD               922.19  1& 2  3       .10380       36.97        1.955      .35321                   1.600   .556
*S ROUTE 920 TO POND AS 920.8
ROUTE MCUNGE          920.80   5    4       .04310       23.61         .890      .38725                   1.550   .856 CCODE =      .1
*S   ROUTE 922.19 THRU POND AS 920.88
ROUTE RESERVOIR       920.88   3    7       .10380       18.83        1.955      .35321                   2.000   .283 AC-FT=      .850
*S ADD 920.88  920.8 AS 920.9 (POND Q + 920)
ADD HYD               920.90  4& 7  7       .14690       28.11        2.845      .36319                   1.600   .299
*S ROUTE POND DISCHARGE & 920 THRU 30" PIPE AS 920.98
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                                FROM  TO                          PEAK      RUNOFF                          TIME TO   CFS
COMMAND          HYDROGRAPH      ID   ID        AREA        DISCHARGE   VOLUME        RUNOFF          PEAK      PER
                IDENTIFICATION   NO.  NO.      (SQ MI)        (CFS)     (AC-FT)      (INCHES)       (HOURS)    ACRE        NOTATION
ROUTE                920.98      7    8        .14690         28.53      2.845        .36319        1.600     .304
*S ADD 922.2 + 920.98 AS 922.28
ADD HYD              922.28   8& 9   10        .16170         45.84      3.627        .42053        1.550     .443
*S  Route 922.28 flows to Ventura Interceptor AS 922.29
ROUTE                922.29     10   11        .16170         45.99      3.627        .42053        1.550     .444
*S Route 923 flows to 48" Ventura Line AS 923.8
ROUTE                923.80     12   13        .00700          5.00       .158        .42335        1.500    1.115
*S ADD 923.8 + 922.29 AS 923.9
ADD HYD              923.90 11&13   14        .16870         50.69      3.785        .42064        1.550     .469
*S ROUTE 923.9 TO MAIN POND AS 923.91
ROUTE                923.91     14   15        .16870         50.54      3.785        .42064        1.550     .468
*S Total flows entering main pond
*S ADD 923.91 + 923.3 AS 923.92
ADD HYD              923.92 16&15   17        .21020        103.47      5.975        .53298        1.550     .769
*S ROUT 923.92 THRU POND AS 923.99
ROUTE RESERVOIR      923.99     17   18        .21020         40.43      5.756        .51343        1.950     .301 AC-FT=     2.154
*S*************************************************************************
*S                 END: VINYARD ESTATES - UNIT IV
*S*************************************************************************
*S  N D B ARROYO AT VENTURA (AP 921.99) - FINAL
ADD HYD              921.99 18&26    1       3.47383        190.08    111.142        .59989        1.900     .085
DIVIDE HYD           950.00      1   18       1.14636         62.73     36.677        .59989        1.900     .085
                     951.00    AND   26       2.32747        127.35     74.465        .59989        1.900     .085
RAINFALL  TYPE= 2
COMPUTE NM HYD       926.10      -    3        .01200         12.54       .408        .63728        1.500    1.633 RAIN24=     2.010
*S LA CUEVA SUBDIVISION (AP 926.1) - FINAL                                                                     PER IMP=    17.71
ROUTE RESERVOIR      926.18      3    2        .01200          2.00       .252        .39430        1.950     .260 AC-FT=      .269
*S N D B ARROYO AT ~400 FT WEST OF VENTURA. (HYD NO. 926.19) - FINAL
ADD HYD              926.19   1& 2    1       3.48583        192.07    111.394        .59918        1.900     .086
ROUTE MCUNGE         926.17      1    2       3.48583        191.94    111.383        .59912        2.050     .086 CCODE =       .2
RAINFALL  TYPE= 2                                                                                              RAIN24=     2.000
COMPUTE NM HYD       926.00      -    1        .03750         36.64      1.326        .66301        1.500    1.527 PER IMP=    25.00
*S  N D B ARROYO AT BARSTOW. (AP 926.79) - NOT FINAL
ADD HYD              926.79   1& 2   11       3.52333        197.63    112.709        .59980        2.050     .088
RAINFALL  TYPE= 2                                                                                              RAIN24=     2.010
COMPUTE NM HYD       925.20      -    1        .01400          5.62       .169        .22680        1.500     .628 PER IMP=     2.00
ROUTE MCUNGE         925.27      1    3        .01400          4.77       .165        .22122        1.750     .532 CCODE =       .1
COMPUTE NM HYD       925.10      -    1        .06400         96.60      3.766       1.10339        1.500    2.359 PER IMP=    50.00
*S  COMBINE 925.1 & 925.27 AS 925.18 (VINYARD FLOW TO APS SITE)
ADD HYD              925.18   1& 3    1        .07800         96.78      3.931        .94504        1.500    1.939
*S (925.19=4-FOOT STORM SEWER ROUTING)
ROUTE                925.19      1    2        .07800         95.34      3.931        .94505        1.500    1.910
COMPUTE NM HYD       925.40      -    4        .03700         58.52      2.246       1.13797        1.500    2.471 PER IMP=    50.00
*S  INFLOW INTO DETENTION POND AT BARSTOW IN VINEYARD ESTATES
*S  (AP 925.48) - FINAL
ADD HYD              925.48   2& 4   15        .11500        153.87      6.177       1.00711        1.500    2.091
COMPUTE NM HYD       922.00      -    1        .02100         16.25       .665        .59360        1.550    1.209 PER IMP=    15.00
ROUTE MCUNGE         922.80      1    2        .02100         15.52       .652        .58174        1.700    1.155 CCODE =       .1
COMPUTE NM HYD       924.10      -    1        .01900          7.75       .233        .22984        1.500     .638 PER IMP=     2.00
*S    INTO DETENTION POND JUST UPSTREAM OF CARRINGTON SUBDIVISION
*S    (AP 924.19) - (UNBULKED)
ADD HYD              924.19   1& 2    1        .04000         19.95       .884        .41457        1.650     .779
*S THE FOLLOWING DETENTION POND INFORMATION WAS CALCULATED BY RTI USING THE
*S DESIGN DATA IN GRADING & DRAINAGE PLAN FOR CARRINGTON SUBDIVISION
*S (COMMUNITY SCIENCES CORPORATION, 1992)
ROUTE RESERVOIR      924.18      1    3        .04000          2.29       .884        .41452        2.350     .089 AC-FT=      .603
ROUTE MCUNGE         924.17      3    2        .04000          2.29       .884        .41451        2.550     .089 CCODE =       .2
RAINFALL  TYPE= 2                                                                                              RAIN24=     1.990
COMPUTE NM HYD       924.20      -    1        .00700          3.99       .136        .36334        1.500     .891 PER IMP=    10.00
ROUTE MCUNGE         924.28      1    4        .00700          3.29       .133        .35641        1.750     .734 CCODE =       .1
RAINFALL  TYPE= 2                                                                                              RAIN24=     2.000
COMPUTE NM HYD       924.30      -    1        .02700         41.20      1.593       1.10648        1.500    2.384 PER IMP=    50.00
*S CARRINGTON SUBDIVISION (AP 924.3)
COMPUTE NM HYD       924.40      -    7        .01720         10.81       .358        .39054        1.500     .982 PER IMP=    10.00
*S TOTAL CARRINGTON DISCHARGE   (AP 924.38) - FINAL
ADD HYD              924.38   1& 2    3        .06700         41.21      2.478        .69336        1.500     .961
*S TOTAL  BARSTOW Q NORTH OF CARRINGTON (AP 924.48) - FINAL
ADD HYD              924.48   7& 4    4        .02420         10.97       .491        .38063        1.500     .708
*S TOTAL BARSTOW @ CARRINGTON  (AP 924.99) - FINAL
ADD HYD              924.99   4& 3    5        .09120         52.18      2.969        .61038        1.500     .894
*S  AP 924.91 INTO STORM SEWER
*S  AP 924.92 INTO BARSTOW
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                                FROM   TO                          PEAK        RUNOFF                          TIME TO   CFS
                   HYDROGRAPH    ID    ID        AREA           DISCHARGE     VOLUME        RUNOFF             PEAK    PER
COMMAND          IDENTIFICATION  NO.   NO.      (SQ MI)          (CFS)       (AC-FT)      (INCHES)           (HOURS)  ACRE      NOTATION

DIVIDE HYD            924.91      5     3       .07530           20.00        2.451        .61038            1.400    .415
                      924.92    AND     4       .01590           32.18         .518        .61038            1.500   3.162
*S (924.81=24-INCH STORM SEWER ROUTING)
ROUTE                 924.81      3     2       .07530           21.26        2.451        .61038            1.850    .441
COMPUTE NM HYD        925.30      -     1       .01050           15.82         .614       1.09694            1.500   2.354 PER IMP=  50.00
*S COMBINE CARRINGTON FLOW WITH VINYARD FLOW 925.3 + 924.81 AS 925.38
ADD HYD               925.38   1& 2     5       .08580           34.87        3.066        .66991            1.500    .635
ROUTE                 924.81      5     2       .08580           34.69        3.066        .66992            1.550    .632
*S BARSTOW SD WITH VINYARD SD FLOW AT POND
ADD HYD               925.38  15& 2     5       .20080          187.86        9.243        .86303            1.500   1.462
ADD HYD               925.39   5& 4     5       .21670          220.04        9.760        .84449            1.500   1.587
*S       (DETENTION POND AT BARSTOW AT APS  MS)
ROUTE RESERVOIR       925.85      5     2       .21670           54.00        9.760        .84447            1.950    .389 AC-FT=    4.618
ADD HYD               926.99   2&11     5      3.74003          250.82      122.469        .61398            2.050    .105
*S  N D B ARROYO AT BARTSOW (AP 926.99) - FINAL
ROUTE MCUNGE          926.70      5     3      3.74003          250.10      122.462        .61394            2.100    .104 CCODE =      .2
ROUTE MCUNGE          926.80      3     5      3.74003          249.18      122.421        .61374            2.150    .104 CCODE =      .1
COMPUTE NM HYD        932.40      -     3       .05740           91.59        3.605       1.17753            1.500   2.493 PER IMP=  55.00
RAINFALL  TYPE= 2                                                                                                     RAIN24=   1.970
COMPUTE NM HYD        930.00      -     1       .08500          125.30        4.874       1.07504            1.500   2.303 PER IMP=  50.00
*S  N D B ARROYO AT WYOMING (AP 930.59) -
ADD HYD               930.59   1& 3     1       .14240          216.89        8.478       1.11635            1.500   2.380
*S  N D B ARROYO AT WYOMING (AP 930.99) - FINAL
ADD HYD               930.99   1& 5     1      3.88243          281.65      130.899        .63217            2.050    .113
ROUTE MCUNGE          930.80      1    12      3.88243          275.92      130.798        .63168            2.250    .111 CCODE =      .1
RAINFALL  TYPE= 2                                                                                                     RAIN24=   1.970
COMPUTE NM HYD        935.00      -    14       .11000           53.54        1.668        .28428            1.500    .761 PER IMP=   5.00
ADD HYD               930.85  14&12    13      3.99243          278.98      132.465        .62211            2.250    .109
*S*************************************************************************
*S                 BEGIN: WYOMING STORM DRAIN
*S*************************************************************************
COMPUTE NM HYD        929.00      -     4       .02400           41.00        1.658       1.29529            1.500   2.669 PER IMP=  65.00
COMPUTE NM HYD        931.00      -     1       .06050           62.04        3.619       1.12156            1.650   1.602 PER IMP=  55.00
*S NO POND AT LA CUEVA HIGH SCHOOL
ADD HYD               931.80   4& 1     1       .08450           90.06        5.277       1.17089            1.550   1.665
COMPUTE NM HYD        932.10      -     4       .00730           11.58         .450       1.15472            1.500   2.479 PER IMP=  55.00
*S CHURCH (AP 932.1)
*S  WYOMING AND WILSHIRE (AP 931.99)
ADD HYD               931.99   4& 1     1       .09180          100.19        5.726       1.16960            1.550   1.705
*S (931.98=5-FOOT PIPE ROUTING)
ROUTE                 931.98      1     3       .09180           99.99        5.726       1.16961            1.550   1.702
COMPUTE NM HYD        932.20      -     1       .00730           11.46         .450       1.15472            1.500   2.452 PER IMP=  55.00
ADD HYD               932.80   3& 1     1       .09910          110.17        6.176       1.16850            1.550   1.737
*S  AT CORONA W/O CORONA Q
COMPUTE NM HYD        932.30      -     2       .03130           49.09        1.928       1.15472            1.500   2.450 PER IMP=  55.00
*S  EXISTING POND AT NORESTE BETWEEN CORONA AND ANAHEIM
ROUTE RESERVOIR       932.84      2     5       .03130            6.01        1.922       1.15141            2.100    .300 AC-FT=    1.229
*S  COMBINED POND AND WYOMING STORM DRAIN FLOW (AP 932.99)
ADD HYD               932.99   1& 5    10       .13040          113.12        8.098       1.16440            1.550   1.355
*S*************************************************************************
*S                 END: WYOMING STORM DRAIN
*S*************************************************************************
ROUTE MCUNGE          932.81     10     2       .13040          108.65        8.098       1.16436            1.700   1.302 CCODE =      .1
COMPUTE NM HYD        934.10      -     1       .04680           61.41        2.303        .92278            1.500   2.050 PER IMP=  40.00
ADD HYD               934.99   1& 2     3       .17720          134.80       10.401       1.10056            1.700   1.189
*S LNDBDD INFLOW HYDROGRAPH (AP 930.84) - NOT FINAL
ADD HYD               930.84  3&13    11      4.16963          359.91      142.866        .64244            1.700    .135
COMPUTE NM HYD        937.00      -     1       .03520           20.09         .680       .36246            1.500    .892 PER IMP=  10.00
*S TOTAL DAM INFLOW HYDROGRAPH (AP 930.86)-FINAL
ADD HYD               930.86  1&11    11      4.20483          368.87      143.547        .64010            1.700    .137
*S
*S                 LOWER NORTH DOMINGO BACA DETENTION DAM
*S  LOW FLOW OUTLET (PRINCIPLE SPILLWAY). THIS PRINCIPLE SPILLWAY JOINS
*S  ONE OF THE FOUR BOX CULVERTS AT THE I-25. IT ALSO PICKS UP FLOWS FROM
*S  SUB-BASINS 940.2, 939.16, 939.14 & 943.1. THE FLOWS FROM SUB-BASINS
*S  939.14 AND 943.1 ARE INCLUDED BY SAD221 PROJECT WHICH IS ALREADY
*S  IN PLACE. THE FOLLOWING RATING CURVE IS FOR A 40-INCH ORIFICE PLATE.
*S  EMERGENCY SPILLWAY IS NOT USED IN THE FOLLOWING RATING CURVE.
*S
ROUTE RESERVOIR       930.87     11    12      4.20483          146.10      143.665        .64063            5.350    .054 AC-FT=   25.496
*S LNDBAD DAM OUTFLOW HYDROGRAPH (AP 930.87)
RAINFALL  TYPE= 2                                                                                                     RAIN24=   1.900
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                          FROM  TO                          PEAK        RUNOFF                        TIME TO   CFS
                HYDROGRAPH  ID   ID        AREA     DISCHARGE    VOLUME        RUNOFF      PEAK     PER
COMMAND       IDENTIFICATION NO.  NO.     (SQ MI)     (CFS)      (AC-FT)     (INCHES)   (HOURS)   ACRE      NOTATION

COMPUTE NM HYD        960.00   -    1      .00750       11.02       .418      1.04522     1.500    2.295 PER IMP=  50.00
*S    STORM DRAIN OUT OF LNDBD DAM AT LOUISIANA BLVD. (AP 930.89)
ADD HYD               930.89  1&12  12    4.21233      146.14    144.083      .64135     5.350     .054
COMPUTE NM HYD        940.20   -    1      .01560       22.23       .853     1.02474     1.500    2.226 PER IMP=  50.00
COMPUTE NM HYD        939.16   -    3      .01280       18.24       .700     1.02474     1.500    2.227 PER IMP=  50.00
ADD HYD               940.26  1& 3  3      .02840       40.47      1.552     1.02472     1.500    2.226
*S  AT THE END OF LA CUEVA OESTE PHASE 1, IN STORM DRAIN PIPE (AP 939.88)
*S  (UNBULKED)
ADD HYD               939.88 12& 3  12    4.24073      146.30    145.635      .64391     5.450     .054
*S STORM DRAIN PIPE FROM THE END OF LA CUEVA OESTE PHASE 1 TILL SAN PEDRO
*S BENEATH ANAHEIM AVE -- TWO REACHES
*S   RCP DIA=4 FT TO 940.0 OUTFALL
*S (939.78=4-FOOT PIPE ROUTING)
ROUTE                 939.78   12   15    4.24073      146.30    145.626      .64387     5.450     .054
COMPUTE NM HYD        940.00   -    1      .01410       20.09       .771     1.02474     1.500    2.227 PER IMP=  50.00
ADD HYD               939.68 15& 1  15    4.25483      163.49    146.396      .64513     1.500     .060
*S  RCP DIA=4 FT TO SAN PEDRO
ROUTE                 939.58   15   16    4.25483      164.10    146.393      .64512     1.500     .060
*S STORM DRAIN PIPE FROM SAN PEDRO TO UTE DR. BENEATH ANAHEIM AVE.
*S (939.48=RCP DIA=4 FT)
ROUTE                 939.48   16   14    4.25483      163.79    146.388      .64510     1.550     .060
COMPUTE NM HYD        939.14   -    1      .01120       18.32       .714     1.19546     1.500    2.556 PER IMP=  60.00
COMPUTE NM HYD        943.10   -    3      .01200       19.85       .793     1.23850     1.500    2.585 PER IMP=  65.00
*S STORM DRAIN BENEATH ANAHEIM AT UTE (AP 943.18)
ADD HYD               943.18  1& 3  3      .02320       38.17      1.507     1.21770     1.500    2.571
*S STORM DRAIN FLOW AT I-25 (AP 943.19)
ADD HYD               943.19  3&14  3    4.27803      199.00    147.895      .64820     1.500     .073
COMPUTE NM HYD        940.10   -    1      .00700       11.73       .479     1.28349     1.500    2.618 PER IMP=  70.00
ROUTE MCUNGE          940.80    1   6      .00700       11.70       .479     1.28353     1.600    2.611 CCODE =      .2
COMPUTE NM HYD        943.20   -    1      .01300        6.74       .230      .33102     1.500     .810 PER IMP=  10.00
*S OVERLAND FLOW AT I-25 (AP 943.29)
ADD HYD               943.29  1& 6  5      .02000       16.77       .709      .66435     1.600    1.310
*S TOTAL NDB Q AT I-25 BOX CULVERT  (943.98)
ADD HYD               943.98  5& 3  9    4.29803      214.08    148.603      .64828     1.550     .078
*S CORONA SD SYSTEM
COMPUTE NM HYD        942.20   -    1      .10310      121.03      5.193     .94442     1.550    1.834 PER IMP=  45.00
*S (ROUTE IN SD DIA=4 FT)
ROUTE                 942.29    1   5      .10310      122.98      5.193     .94443     1.550    1.864
COMPUTE NM HYD        942.10   -    2      .04690       62.18      2.362     .94442     1.500    2.072 PER IMP=  45.00
*S  TOTAL Q AT CORONADO MH PARK (943.99)
ADD HYD               943.99  2& 9  3    4.34493      275.16    150.965      .65147     1.500     .099
FINISH
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NORTH DOMINGO BACA EXISTING COND. 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = nbac100.ext USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
*S 100-YR RETURN PERIOD, 24-HR STORM, FUTURE CONDITIONS										
*S MUSKINGUM-CUNGE CHANNEL ROUTING										
START										
RAINFALL TYPE= 2										TIME= .00
COMPUTE NM HYD	900.00	-	1	.44100	640.16	33.763	1.43550	1.700	2.268	RAIN24= 4.000 PER IMP= .00
*S ROUTE HYD. 900 THROUGH 902.1 (900.8)										
ROUTE MCUNGE	900.80	1	2	.44100	625.07	33.593	1.42827	1.800	2.215	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.580
COMPUTE NM HYD	902.10	-	5	.08870	116.14	6.141	1.29815	1.600	2.046	PER IMP= 10.00
*S (902.91=NORTH BRANCH OF ARROYO AT JUNCTION EAST OF TRAMWAY LANE)										
ADD HYD	902.91	2& 5	2	.52970	709.60	39.734	1.40648	1.800	2.093	
RAINFALL TYPE= 2										RAIN24= 3.860
COMPUTE NM HYD	901.00	-	1	.11800	281.25	9.218	1.46480	1.500	3.724	PER IMP= .00
*S 20% AVULSION FROM SOUTH DOMINGO BACA WATERSHED SUB-BASIN 400.3										
RECALL HYD	400.30	-	15	.25500	620.57	19.788	1.45500	1.500	3.802	
DIVIDE HYD	400.61	15	15	.05100	124.11	3.958	1.45500	1.500	3.802	
	400.6SD8	AND	19	.20400	496.45	15.830	1.45500	1.500	3.802	
*S COMBINE 901 AND 20% AVULSION AS 901.1										
ADD HYD	901.10	1&15	1	.16900	405.36	13.176	1.46184	1.500	3.748	
*S ROUTE HYD. 901.1 THROUGH 902.2 (901.8)										
ROUTE MCUNGE	901.80	1	3	.16900	364.15	13.055	1.44840	1.700	3.367	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.580
COMPUTE NM HYD	902.20	-	5	.12200	161.86	8.447	1.29815	1.600	2.073	PER IMP= 10.00
*S (902.92=SOUTH BRANCH OF ARROYO AT JUNCTION EAST OF TRAMWAY LANE)										
ADD HYD	902.92	3& 5	3	.29100	514.87	21.502	1.38541	1.700	2.765	
*S (902.93=SUM OF FLOWS AT ARROYO JUNCTION EAST OF TRAMWAY LANE)										
ADD HYD	902.93	2& 3	1	.82070	1144.97	61.235	1.39901	1.750	2.180	
ROUTE MCUNGE	902.80	1	2	.82070	1141.81	61.208	1.39837	1.750	2.174	CCODE = .2
COMPUTE NM HYD	902.30	-	3	.07300	173.70	6.993	1.79608	1.500	3.718	PER IMP= 30.00
*S (902.99=TOTAL FLOW @ TRAMWAY FROM 902 SUBBASINS, 901, 900)										
ADD HYD	902.99	2& 3	1	.89370	1207.42	68.200	1.43086	1.750	2.111	
*S**********										
*S BEGIN: PRIMROSE POINTE DEVELOPMENT										
*S**********										
ROUTE MCUNGE	902.90	1	17	.89370	1199.05	68.190	1.43064	1.800	2.096	CCODE = .1
*S ROUTE 902.9 TO PRIMROSE POINTE CONCRETE CHANNEL AS 902.99										
ROUTE MCUNGE	902.99	17	16	.89370	1181.91	68.174	1.43030	1.800	2.066	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.650
COMPUTE NM HYD	906.00	-	12	.02368	58.73	2.476	1.96050	1.500	3.875	PER IMP= 35.00
ADD HYD	906.10	16&12	2	.91738	1200.71	70.650	1.44398	1.800	2.045	
*S ROUTE THRU THROUGH PRIMROSE POINTE TO LOWELL										
ROUTE MCUNGE	906.19	2	16	.91738	1174.76	70.507	1.44107	1.900	2.001	CCODE = .1
COMPUTE NM HYD	904.00	-	1	.04130	102.46	4.183	1.89923	1.500	3.876	PER IMP= 30.00
*S ROUTE HYDOGRAPH THRU POND NDB1										
ROUTE RESERVOIR	904.90	1	17	.04130	35.03	3.899	1.77023	1.800	1.325	AC-FT= 1.773
COMPUTE NM HYD	905.00	-	10	.00920	22.84	.932	1.89922	1.500	3.879	PER IMP= 30.00
*S ROUTE 905 HYDOGRAPH THRU POND NDB2										
ROUTE RESERVOIR	905.90	10	18	.00920	15.30	.839	1.71009	1.600	2.599	AC-FT= .296
*S BASIN 903.0										
COMPUTE NM HYD	903.00	-	2	.06405	158.75	6.488	1.89922	1.500	3.873	PER IMP= 30.00
*S POND 3 DISCHARGE TO THE NORTH DOMINGO BACA ARROYO										
ROUTE RESERVOIR	903.90	2	24	.06405	43.76	5.232	1.53165	1.850	1.068	AC-FT= 3.918
ADD HYD	906.29	24&18	26	.07325	52.56	6.071	1.55407	1.850	1.121	
ADD HYD	906.39	17&26	1	.11455	87.40	9.970	1.63201	1.850	1.192	
*S ********** TOTAL NORTH DOMINGO BACA FLOW AT LOWELL STREET **********										
ADD HYD	906.99	1&16	1	1.03193	1259.05	80.477	1.46226	1.900	1.906	
*S**********										
*S END: PRIMROSE POINTE DEVELOPMENT										
*S**********										
ROUTE MCUNGE	906.88	1	2	1.03193	1244.63	80.472	1.46216	2.000	1.885	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.350
COMPUTE NM HYD	910.21	-	1	.01370	21.87	.704	.96392	1.500	2.494	PER IMP= 5.00
ADD HYD	910.29	2& 1	5	1.04563	1247.20	81.176	1.45563	2.000	1.864	
RAINFALL TYPE= 2										RAIN24= 3.380
COMPUTE NM HYD	910.31	-	2	.15630	326.81	11.680	1.40110	1.500	3.267	PER IMP= 20.00
ADD HYD	910.90	5& 2	1	1.20193	1294.74	92.855	1.44854	2.000	1.683	
ROUTE MCUNGE	910.88	1	2	1.20193	1289.81	92.988	1.45060	2.000	1.677	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 3.330
COMPUTE NM HYD	912.11	-	3	.05900	94.77	3.224	1.02468	1.500	2.510	PER IMP= 10.00
*S N D B ARROYO BETWEEN BROWNING AND EUBANK (AP 912.95) - UNBULKED										

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                                FROM   TO                          PEAK        RUNOFF                          TIME TO    CFS
                   HYDROGRAPH   ID    ID          AREA        DISCHARGE     VOLUME                RUNOFF        PEAK      PER
COMMAND          IDENTIFICATION NO.   NO.       (SQ MI)       (CFS)       (AC-FT)               (INCHES)      (HOURS)    ACRE      NOTATION
ADD HYD                912.95  3& 2   1        1.26093      1302.18       96.212               1.43067        2.000     1.614
RAINFALL  TYPE= 2
COMPUTE NM HYD         912.21   -     2         .19600       321.78       11.549               1.10477        1.550     2.565  RAIN24=   3.330
ADD HYD                912.98  1& 2  15        1.45693      1348.83      107.761               1.38683        2.000     1.447  PER IMP=  10.00
RAINFALL  TYPE= 2
COMPUTE NM HYD         402.50   -     4         .02800        82.16        3.763               2.51978        1.500     4.585  RAIN24=   3.350
RAINFALL  TYPE= 2                                                                                                                 PER IMP=  70.00
COMPUTE NM HYD         402.60   -     5         .02430        70.94        3.243               2.50242        1.500     4.561  RAIN24=   3.330
*S COMBINE 402.5 AND 402.6 AS 402.9 (AT BROWNING)                                                                                  PER IMP=  70.00
ADD HYD                402.90  4& 5  11         .05230       153.10        7.006               2.51170        1.500     4.574
*S ROUTE 402.9 AS 402.8 IN 42-INCH SD TO END OF 915.2
ROUTE                  402.80   11    6         .05230       150.80        7.006               2.51171        1.500     4.505
RAINFALL  TYPE= 2
COMPUTE NM HYD         915.20   -     2         .03700        57.51        1.949                .98762        1.500     2.429  RAIN24=   3.250
COMPUTE NM HYD         915.10   -    29         .03430        53.31        1.807                .98763        1.500     2.429  PER IMP=  10.00
ADD HYD                915.90  6& 2  11         .08930       208.31        8.955               1.88022        1.500     3.645  PER IMP=  10.00
*S ROUTE 915.9 AS 915.8 TO NDB DAM IN 54-INCH PIPE
ROUTE                  915.80   11    7         .08930       200.74        8.955               1.88023        1.550     3.512
*S COMBINE HYD'S 912.98 AND 915.8 AS 912.99 (FLOW TO NDB DAM FROM PDN DRAIN)
ADD HYD                912.99 15& 7  15        1.54623      1394.43      116.716               1.41533        2.000     1.409
*S*************************************************************************
*S   AP 105.9 IS FROM "LA CUEVA, EL CAMINO & NORTH CAMINO ARROYOS - DRAINAGE
*S   MANAGEMENT PLAN" (RESOURCE TECHNOLOGY, INC., 1996).
*S   FILENAME: LCDV100B.EXT
*S*************************************************************************
*S.  AP 105.9 IS FROM LA CUEVA TRIBUTARY (DIVERTED TO UPPER N. D. B. DAM
*S   THROUGH LA CUEVA DIVERSION CHANNEL)
RECALL HYD             105.90   -    17        1.17410      1245.48       79.791               1.27423        1.750     1.657
ROUTE MCUNGE           105.80   17    2         1.17410      1244.13       79.796               1.27431        1.750     1.656  CCODE =     .2
RAINFALL  TYPE= 2                                                                                                                 RAIN24=   3.330
COMPUTE NM HYD         911.00   -     3         .05800        83.52        3.530               1.14108        1.550     2.250  PER IMP=  15.00
*S  TOTAL INFLOW HYDROGRAPH INTO UPPER N.D.B. DAM. FROM LA CUEVA DIVERSION
*S  CHANNEL (HYD NO. 911.99) - UNBULKED
ADD HYD                911.99  2& 3   1        1.23210      1288.13       83.325               1.26804        1.750     1.634
*S  TOTAL INFLOW HYDROGRAPH INTO UPPER N.D.B. DAM. (HYD NO. 914.79)
*S  (BULKED)
ADD HYD                914.79 15& 1   1        2.77833      2426.66      200.042               1.35001        1.950     1.365
*S            ROUTING THROUGH UPPER NORTH DOMINGO BACA DAM
*S
*S  THIS STORAGE OUTFLOW DATA WAS BASED ON TOPOGRAPHY IN JUNE 1994.
*S  OUTFLOW IS TAKEN FROM "DESIGN ANALYSIS REPORT FOR LA CUEVA DIVERSION
*S  CHANNEL" (RESOURCE TECHNOLOGY, INC., 1994). STORAGE INFORMATION WAS
*S  CALCULATED AT RTI. THE ELEVATION OF EMERGENCY SPILLWAY
*S  IS AT 5749.
ROUTE RESERVOIR        914.99    1    2        2.77833       157.07      199.905               1.34909        3.150      .088  AC-FT=  155.992
*S  UPPER N.D.B. DAM OUTFLOW HYDROGRAPH AT EUBANK. (HYD NO. 914.99)
*S   AP 914.99 IS THROUGH THE PRINCIPAL SPILLWAY
*S   AP NDB.SPILL IS THROUGH THE EMERGENCY SPILLWAY
DIVIDE HYD             914.99    2    2        2.77833       157.07      199.905               1.34909        3.150      .088
                    NDB.SPILL  AND   20         .00000          .00         .000               .00000       -.050      .000
ROUTE MCUNGE           914.68    2    3        2.77833       157.07      199.896               1.34903        3.200      .088  CCODE =     .2
ROUTE                SPILL.ROU   20   19         .00000          .00         .000               .00000       -.050      .000
RAINFALL  TYPE= 2                                                                                                                 RAIN24=   3.200
COMPUTE NM HYD         914.20   -     1         .03500        66.39        2.212               1.18478        1.500     2.964  PER IMP=  10.00
*S  UNDBD DAM SPILL AT EUBANK (AP 914.29)
ADD HYD                914.29  1&19   1         .03500        66.39        2.212               1.18477        1.500     2.964
ROUTE MCUNGE           914.28    1    2         .03500        61.20        2.212               1.18479        1.650     2.732  CCODE =     .1
*S N D B ARROYO BETWEEN EUBANK AND HOLBROOK
*S (AP 914.78)
ADD HYD                914.78  2& 3   2        2.81333       172.03      202.107               1.34698        1.700      .096
ROUTE MCUNGE           914.88    2    3        2.81333       167.64      202.082               1.34681        1.850      .093  CCODE =     .1
RAINFALL  TYPE= 2                                                                                                                 RAIN24=   3.150
COMPUTE NM HYD         919.10   -     1         .07900       142.38        4.487               1.06496        1.500     2.816  PER IMP=   5.00
*S N D B ARROYO HOLBROOK (HYD NO. 919.19) - FINAL
ADD HYD                919.19  1& 3   1        2.89233       203.64      206.569               1.33912        1.800      .110
*S   BETWEEN HOLBROOK AND VENTURA (AP 919.18) - NOT FINAL
ROUTE MCUNGE           919.18    1    5        2.89233       202.09      206.543               1.33895        1.850      .109  CCODE =     .2
*S  ROUTE  915.1 TO HOLBROOK   THRU 919.2  AS 915.18
ROUTE MCUNGE           915.18   29    7         .03430        47.82        1.807                .98763        1.750     2.178  CCODE =     .1
RAINFALL  TYPE= 2                                                                                                                 RAIN24=   3.150
COMPUTE NM HYD         919.20   -     1         .06100       100.60        3.178                .97669        1.500     2.577  PER IMP=   5.00
ADD HYD                919.28  7& 1   1         .09530       105.36        4.984                .98062        1.550     1.727
*S   HOLBROOK (HYD NO. 919.28)-FINAL
*S ROUTE AP 919.2 TO RP 919.27
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                          FROM  TO                    PEAK      RUNOFF                    TIME TO   CFS
                HYDROGRAPH  ID   ID        AREA    DISCHARGE   VOLUME     RUNOFF          PEAK     PER
COMMAND       IDENTIFICATION NO.  NO.    (SQ MI)     (CFS)     (AC-FT)   (INCHES)       (HOURS)   ACRE      NOTATION
ROUTE MCUNGE          919.27   1    3     .09530      104.88     4.984     .98063        1.600    1.720 CCODE =      .1
ROUTE MCUNGE          919.28   3    2     .09530      102.24     4.984     .98063        1.750    1.676 CCODE =      .1
*S  N D B ARROYO BETWEEN HOLBROOK AND VENTURA. (AP 919.38) - NOT FINAL
ADD HYD               919.38 2& 5   6    2.98763      297.04   211.527    1.32752        1.800     .155
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.100
COMPUTE NM HYD        921.30   -    7     .02840       42.42     1.418     .93639        1.500    2.334 PER IMP=  10.00
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.200
COMPUTE NM HYD        913.20   -    1     .01700       27.83      .919    1.01321        1.500    2.558 PER IMP=  10.00
ROUTE MCUNGE          913.18   1    2     .01700       23.51      .911    1.00464        1.800    2.160 CCODE =      .1
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.150
COMPUTE NM HYD        918.00   -    1     .11400      113.10     6.050     .99514        1.650    1.550 PER IMP=  10.00
*S  HOLBROOK (AP 918.99) - FINAL
ADD HYD               918.99 1& 2   1     .13100      122.15     6.961     .99636        1.700    1.457
ROUTE MCUNGE          918.88   1    2     .13100      119.88     6.940     .99337        1.800    1.430 CCODE =      .1
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.100
COMPUTE NM HYD        921.10   -    1     .02920       43.61     1.458     .93639        1.500    2.334 PER IMP=  10.00
*S   UPSTREAM OF END OF VINYARD ESTATES SUBDIVISION UNIT IV BETWEEN
*S   HOLBROOK & VENTURA
*S   ANAHEIM (AP 921.19) - FINAL
ADD HYD               921.19 1& 2   1     .16020      131.96     8.399     .98298        1.800    1.287
*S  ************************************************************************
*S                 BEGIN: VINYARD ESTATES - UNIT IV
*S  ************************************************************************
*S ROUTE 921.19
*S (48-INCH RCP)
ROUTE                 921.80   1   12     .16020      132.16     8.399     .98298        1.800    1.289
*S (54-INCH RCP)
ROUTE                 921.89  12   16     .16020      132.32     8.399     .98298        1.800    1.291
*S COMBINE 921.89 & 921.3 AS 921.98
ADD HYD               921.98 16& 7  14     .18860      146.39     9.817     .97596        1.750    1.213
ROUTE RESERVOIR       921.99  14   15     .18860      118.11     6.724     .66844        1.950     .979 AC-FT=    4.011
*S  ************************************************************************
*S                 END: VINYARD ESTATES - UNIT IV
*S  ************************************************************************
*S N D B ARROYO BETWEEN HOLBROOK & VENTURA (AP 921.78) - FINAL
ADD HYD               921.78 6&15   1    3.17623      402.87   218.250    1.28838        1.900     .198
ROUTE MCUNGE          921.80   1    2    3.17623      399.35   218.244    1.28834        1.950     .196 CCODE =      .1
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.070
COMPUTE NM HYD        921.20   -    1     .08740      134.09     4.415     .94707        1.500    2.397 PER IMP=  10.00
*S  N D B ARROYO AT VENTURA (AP 921.9) - NOT FINAL
ADD HYD               921.90 1& 2  26    3.26363      418.92   222.658    1.27920        1.950     .201
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.250
COMPUTE NM HYD        913.10   -    1     .03600       52.68     1.688     .87916        1.500    2.287 PER IMP=   5.00
ROUTE MCUNGE          913.88   1    2     .03600       46.53     1.688     .87916        1.800    2.020 CCODE =      .1
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.150
COMPUTE NM HYD        917.00   -    1     .04060       58.42     1.863     .86049        1.500    2.248 PER IMP=   5.00
*S    HOLBROOK (AP 917.99) - FINAL
ADD HYD               917.99 1& 2   1     .07660       66.30     3.551     .86926        1.750    1.352
ROUTE MCUNGE          917.88   1    2     .07660       65.96     3.551     .86927        1.850    1.345 CCODE =      .2
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.100
COMPUTE NM HYD        920.10   -    1     .02020       31.87     1.058     .98186        1.500    2.465 PER IMP=  10.00
*S  INTO VINEYARD ESTATES SUBDIVISION UNIT IV AT NORTH END
*S  BETWEEN HOLBROOK AND VENTURA (AP 920.19) - FINAL (UNBULKED)
ADD HYD               920.19 2& 1   1     .09680       86.13     4.609     .89275        1.600    1.390
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.100
COMPUTE NM HYD        920.00   -    5     .04310       58.97     2.152     .93639        1.500    2.138 PER IMP=  10.00
*S  INTO VINEYARD ESTATES SUBDIVISION UNIT IV AT EAST (NORTH END)
*S  BETWEEN HOLBROOK AND VENTURA (AP 920) - FINAL (UNBULKED)
*S  ************************************************************************
*S                 BEGIN: VINYARD ESTATES - UNIT IV
*S  ************************************************************************
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.030
COMPUTE NM HYD        922.10   -    2     .00700       11.18      .394    1.05631        1.500    2.496 PER IMP=  17.00
COMPUTE NM HYD        923.00   -   12     .00700       11.32      .370     .99230        1.500    2.526 PER IMP=  10.00
COMPUTE NM HYD        922.20   -    9     .01480       35.69     1.396    1.76805        1.500    3.767 PER IMP=  40.00
COMPUTE NM HYD        922.30   -   16     .04150      100.03     3.913    1.76805        1.500    3.766 PER IMP=  40.00
*S COMBINE 920.1 + 922.1 AS 922.19
ADD HYD               922.19 1& 2   3     .10380       94.57     5.003     .90378        1.600    1.424
*S ROUTE 920 TO POND AS 920.8
ROUTE MCUNGE          920.80   5    4     .04310       58.82     2.150     .93541        1.550    2.133 CCODE =      .1
*S   ROUTE 922.19 THRU POND AS 920.88
ROUTE RESERVOIR       920.88   3    7     .10380       42.57     5.003     .90378        2.050     .641 AC-FT=    2.296
*S ADD 920.88  920.8 AS 920.9 (POND Q + 920)
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                          FROM  TO                    PEAK      RUNOFF                    TIME TO   CFS
                HYDROGRAPH  ID   ID        AREA     DISCHARGE   VOLUME     RUNOFF          PEAK    PER
COMMAND       IDENTIFICATION NO.  NO.     (SQ MI)     (CFS)     (AC-FT)   (INCHES)       (HOURS)  ACRE      NOTATION
ADD HYD              920.90  4& 7   7      .14690      78.57      7.153     .91305        1.600    .836
*S ROUTE POND DISCHARGE & 920 THRU 30" PIPE AS 920.98
ROUTE                920.98    7    8      .14690      77.82      7.153     .91305        1.600    .828
*S ADD 922.2 + 920.98 AS 922.28
ADD HYD              922.28  8& 9  10      .16170     103.26      8.549     .99130        1.600    .998
*S  Route 922.28 flows to Ventura Interceptor AS 922.29
ROUTE                922.29   10   11      .16170     103.02      8.549     .99130        1.600    .995
*S Route 923 flows to 48" Ventura Line AS 923.8
ROUTE                923.80   12   13      .00700      11.29       .370     .99238        1.500   2.519
*S ADD 923.8 + 922.29 AS 923.9
ADD HYD              923.90 11&13  14      .16870     111.89      8.919     .99134        1.600   1.036
*S ROUTE 923.9 TO MAIN POND AS 923.91
ROUTE                923.91   14   15      .16870     112.43      8.919     .99134        1.600   1.041
*S Total flows entering main pond
*S ADD 923.91 + 923.3 AS 923.92
ADD HYD              923.92 16&15  17      .21020     200.77     12.833    1.14469        1.550   1.492
*S ROUT 923.92 THRU POND AS 923.99
ROUTE RESERVOIR      923.99   17   18      .21020      79.80     12.613    1.12509        2.000    .593 AC-FT=    4.312
*S*************************************************************************
*S                 END: VINYARD ESTATES - UNIT IV
*S*************************************************************************
*S  N D B ARROYO AT VENTURA (AP 921.99) - FINAL
ADD HYD              921.99 18&26   1     3.47383     498.57    235.271    1.26988        1.950    .224
DIVIDE HYD           950.00    1   18     1.14636     164.53     77.639    1.26988        1.950    .224
                     951.00  AND   26     2.32747     334.04    157.632    1.26988        1.950    .224
RAINFALL  TYPE= 2
COMPUTE NM HYD       926.10    -    3      .01200      24.21       .836    1.30669        1.500   3.153 RAIN24=   3.030
*S LA CUEVA SUBDIVISION (AP 926.1) - FINAL                                                            PER IMP=  17.71
ROUTE RESERVOIR      926.18    3    2      .01200       6.92       .681    1.06334        1.800    .901 AC-FT=    .473
*S N D B ARROYO AT ~400 FT WEST OF VENTURA. (HYD NO. 926.19) - FINAL
ADD HYD              926.19  1& 2   1     3.48583     505.07    235.952    1.26917        1.950    .226
ROUTE MCUNGE         926.17    1    2     3.48583     494.99    235.934    1.26907        2.150    .222 CCODE =     .1
RAINFALL  TYPE= 2                                                                                     RAIN24=   3.000
COMPUTE NM HYD       926.00    -    1      .03750      72.25      2.624    1.31188        1.500   3.011 PER IMP=  25.00
*S  N D B ARROYO AT BARSTOW. (AP 926.79) - NOT FINAL
ADD HYD              926.79  1& 2  11     3.52333     501.43    238.558    1.26953        2.150    .222
RAINFALL  TYPE= 2                                                                                     RAIN24=   3.030
COMPUTE NM HYD       925.20    -    1      .01400      17.65       .536     .71846        1.500   1.970 PER IMP=   2.00
ROUTE MCUNGE         925.27    1    3      .01400      16.37       .531     .71141        1.600   1.827 CCODE =     .1
COMPUTE NM HYD       925.10    -    1      .06400     162.00      6.547    1.91802        1.500   3.955 PER IMP=  50.00
*S  COMBINE 925.1 & 925.27 AS 925.18 (VINYARD FLOW TO APS SITE)
ADD HYD              925.18  1& 3   1      .07800     168.77      7.078    1.70144        1.500   3.381
*S (925.19=4-FOOT STORM SEWER ROUTING)
ROUTE                925.19    1    2      .07800     164.62      7.078    1.70145        1.500   3.298
COMPUTE NM HYD       925.40    -    4      .03700      96.45      3.887    1.96954        1.500   4.073 PER IMP=  50.00
*S  INFLOW INTO DETENTION POND AT BARSTOW IN VINEYARD ESTATES
*S  (AP 925.48) - FINAL
ADD HYD              925.48  2& 4  15      .11500     261.07     10.965    1.78769        1.500   3.547
RAINFALL  TYPE= 2                                                                                     RAIN24=   3.030
COMPUTE NM HYD       922.00    -    1      .02100      32.59      1.398    1.24859        1.550   2.425 PER IMP=  15.00
ROUTE MCUNGE         922.80    1    2      .02100      31.14      1.391    1.24223        1.650   2.317 CCODE =     .1
RAINFALL  TYPE= 2                                                                                     RAIN24=   3.030
COMPUTE NM HYD       924.10    -    1      .01900      24.11       .733     .72328        1.500   1.983 PER IMP=   2.00
*S    INTO DETENTION POND JUST UPSTREAM OF CARRINGTON SUBDIVISION
*S    (AP 924.19) - (UNBULKED)
ADD HYD              924.19  1& 2   1      .04000      46.43      2.124     .99571        1.600   1.814
*S THE FOLLOWING DETENTION POND INFORMATION WAS CALCULATED BY RTI USING THE
*S DESIGN DATA IN GRADING & DRAINAGE PLAN FOR CARRINGTON SUBDIVISION
*S (COMMUNITY SCIENCES CORPORATION, 1992)
ROUTE RESERVOIR      924.18    1    3      .04000       3.73      2.124     .99564        2.450    .146 AC-FT=    1.851
ROUTE MCUNGE         924.17    3    2      .04000       3.72      2.124     .99544        2.700    .145 CCODE =     .1
RAINFALL  TYPE= 2                                                                                     RAIN24=   2.980
COMPUTE NM HYD       924.20    -    1      .00700      10.16       .335     .89814        1.500   2.267 PER IMP=  10.00
ROUTE MCUNGE         924.28    1    4      .00700       9.33       .330     .88389        1.650   2.082 CCODE =     .1
RAINFALL  TYPE= 2                                                                                     RAIN24=   3.000
COMPUTE NM HYD       924.30    -    1      .02700      68.50      2.753    1.91154        1.500   3.964 PER IMP=  50.00
*S CARRINGTON SUBDIVISION (AP 924.3)
COMPUTE NM HYD       924.40    -    7      .01720      26.21       .862     .93974        1.500   2.381 PER IMP=  10.00
*S TOTAL CARRINGTON DISCHARGE   (AP 924.38) - FINAL
ADD HYD              924.38  1& 2   3      .06700      68.50      4.876    1.36461        1.500   1.598
*S TOTAL  BARSTOW Q NORTH OF CARRINGTON (AP 924.48) - FINAL
ADD HYD              924.48  7& 4   4      .02420      29.41      1.192     .92355        1.550   1.899
*S TOTAL BARSTOW @ CARRINGTON  (AP 924.99) - FINAL
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                          FROM  TO                          PEAK        RUNOFF                          TIME TO   CFS
                HYDROGRAPH  ID   ID        AREA        DISCHARGE     VOLUME        RUNOFF        PEAK      PER
COMMAND       IDENTIFICATION NO.  NO.     (SQ MI)       (CFS)       (AC-FT)      (INCHES)     (HOURS)    ACRE      NOTATION

ADD HYD              924.99  4& 3   5     .09120        95.81        6.068       1.24758       1.500     1.642
*S  AP 924.91 INTO STORM SEWER
*S  AP 924.92 INTO BARSTOW
DIVIDE HYD           924.91    5    3     .06333        20.00        4.214       1.24758       1.350      .493
                     924.92  AND    4     .02787        75.81        1.854       1.24758       1.500     4.251
*S (924.81=24-INCH STORM SEWER ROUTING)
ROUTE                924.81    3    2     .06333        21.11        4.214       1.24757       2.100      .521
COMPUTE NM HYD       925.30    -    1     .01050        26.43        1.063       1.89760       1.500     3.933 PER IMP=  50.00
*S COMBINE CARRINGTON FLOW WITH VINYARD FLOW 925.3 + 924.81 AS 925.38
ADD HYD              925.38  1& 2   5     .07383        46.00        5.277       1.34001       1.500      .973
ROUTE                924.81    5    2     .07383        45.19        5.277       1.34001       1.500      .956
*S BARSTOW SD WITH VINYARD SD FLOW AT POND
ADD HYD              925.38 15& 2   5     .18883       306.26       16.241       1.61265       1.500     2.534
ADD HYD              925.39  5& 4   5     .21670       382.07       18.095       1.56570       1.500     2.755
*S       (DETENTION POND AT BARSTOW AT APS  MS)
ROUTE RESERVOIR      925.85    5    2     .21670       176.89       18.095       1.56567       1.750     1.275 AC-FT=    6.631
ADD HYD              926.99  2&11   5    3.74003       601.12      256.653       1.28669       2.100      .251
*S  N D B ARROYO AT BARTSOW (AP 926.99) - FINAL
ROUTE MCUNGE         926.70    5    3    3.74003       599.24      256.647       1.28666       2.150      .250 CCODE =      .2
ROUTE MCUNGE         926.80    3    5    3.74003       598.97      256.680       1.28682       2.150      .250 CCODE =      .2
COMPUTE NM HYD       932.40    -    3     .05740       150.03        6.135       2.00401       1.500     4.084 PER IMP=  55.00
RAINFALL  TYPE= 2                                                                                          RAIN24=   2.960
COMPUTE NM HYD       930.00    -    1     .08500       211.88        8.468       1.86790       1.500     3.895 PER IMP=  50.00
*S  N D B ARROYO AT WYOMING (AP 930.59) -
ADD HYD              930.59  1& 3   1     .14240       361.91       14.603       1.92276       1.500     3.971
*S  N D B ARROYO AT WYOMING (AP 930.99) - FINAL
ADD HYD              930.99  1& 5   1    3.88243       635.92      271.283       1.31015       2.150      .256
ROUTE MCUNGE         930.80    1   12    3.88243       631.33      271.094       1.30924       2.200      .254 CCODE =      .1
RAINFALL  TYPE= 2                                                                                          RAIN24=   2.950
COMPUTE NM HYD       935.00    -   14     .11000       151.68        4.640        .79087       1.500     2.154 PER IMP=   5.00
ADD HYD              930.85 14&12  13    3.99243       641.74      275.734       1.29495       2.150      .251
*S*************************************************************************
*S                 BEGIN: WYOMING STORM DRAIN
*S*************************************************************************
COMPUTE NM HYD       929.00    -    4     .02400        65.77        2.752       2.14971       1.500     4.282 PER IMP=  65.00
COMPUTE NM HYD       931.00    -    1     .06050       104.39        6.185       1.91693       1.650     2.696 PER IMP=  55.00
*S NO POND AT LA CUEVA HIGH SCHOOL
ADD HYD              931.80  4& 1   1     .08450       149.28        8.937       1.98303       1.550     2.760
COMPUTE NM HYD       932.10    -    4     .00730        19.08         .766       1.96752       1.500     4.083 PER IMP=  55.00
*S CHURCH (AP 932.1)
*S  WYOMING AND WILSHIRE (AP 931.99)
ADD HYD              931.99  4& 1   1     .09180       165.98        9.703       1.98179       1.550     2.825
*S (931.98=5-FOOT PIPE ROUTING)
ROUTE                931.98    1    3     .09180       165.26        9.703       1.98180       1.550     2.813
COMPUTE NM HYD       932.20    -    1     .00730        18.89         .766       1.96752       1.500     4.043 PER IMP=  55.00
ADD HYD              932.80  3& 1   1     .09910       182.05       10.469       1.98074       1.550     2.870
*S  AT CORONA W/O CORONA Q
COMPUTE NM HYD       932.30    -    2     .03130        80.93        3.284       1.96752       1.500     4.040 PER IMP=  55.00
*S  EXISTING POND AT NORESTE BETWEEN CORONA AND ANAHEIM
ROUTE RESERVOIR      932.84    2    5     .03130         8.98        3.276       1.96261       2.150      .448 AC-FT=    2.156
*S  COMBINED POND AND WYOMING STORM DRAIN FLOW (AP 932.99)
ADD HYD              932.99  1& 5  10     .13040       187.75       13.745       1.97639       1.550     2.250
*S*************************************************************************
*S                 END: WYOMING STORM DRAIN
*S*************************************************************************
ROUTE MCUNGE         932.81   10    2     .13040       181.03       13.745       1.97633       1.700     2.169 CCODE =      .1
COMPUTE NM HYD       934.10    -    1     .04680       107.84        4.148       1.66192       1.500     3.600 PER IMP=  40.00
ADD HYD              934.99  1& 2   3     .17720       230.58       17.893       1.89329       1.700     2.033
*S LNDBDD INFLOW HYDROGRAPH (AP 930.84) - NOT FINAL
ADD HYD              930.84  3&13  11    4.16963       750.67      293.627       1.32038       2.050      .281
COMPUTE NM HYD       937.00    -    1     .03520        51.06        1.680        .89462       1.500     2.267 PER IMP=  10.00
*S TOTAL DAM INFLOW HYDROGRAPH (AP 930.86)-FINAL
ADD HYD              930.86  1&11  11    4.20483       756.57      295.307       1.31682       2.050      .281
*S
*S                LOWER NORTH DOMINGO BACA DETENTION DAM
*S  LOW FLOW OUTLET (PRINCIPLE SPILLWAY). THIS PRINCIPLE SPILLWAY JOINS
*S  ONE OF THE FOUR BOX CULVERTS AT THE I-25. IT ALSO PICKS UP FLOWS FROM
*S  SUB-BASINS 940.2, 939.16, 939.14 & 943.1. THE FLOWS FROM SUB-BASINS
*S  939.14 AND 943.1 ARE INCLUDED BY SAD221 PROJECT WHICH IS ALREADY
*S  IN PLACE. THE FOLLOWING RATING CURVE IS FOR A 40-INCH ORIFICE PLATE.
*S  EMERGENCY SPILLWAY IS NOT USED IN THE FOLLOWING RATING CURVE.
*S
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                          FROM  TO                    PEAK        RUNOFF                    TIME TO   CFS
                HYDROGRAPH  ID   ID        AREA     DISCHARGE     VOLUME      RUNOFF         PEAK    PER
COMMAND       IDENTIFICATION  NO.  NO.     (SQ MI)    (CFS)       (AC-FT)    (INCHES)      (HOURS)  ACRE      NOTATION

ROUTE RESERVOIR       930.87   11   12     4.20483     181.28     295.307     1.31682       5.400    .067 AC-FT=    66.227
*S LNDBAD DAM OUTFLOW HYDROGRAPH (AP 930.87)
RAINFALL  TYPE= 2
COMPUTE NM HYD        960.00    -    1      .00750      18.46        .727     1.81681       1.500   3.845 RAIN24=    2.850
*S    STORM DRAIN OUT OF LNDBD DAM AT LOUISIANA BLVD. (AP 930.89)                                            PER IMP=   50.00
ADD HYD               930.89  1&12   12    4.21233     181.36     296.034     1.31771       5.400    .067
COMPUTE NM HYD        940.20    -    1      .01560      37.64       1.486     1.78583       1.500   3.770 PER IMP=   50.00
COMPUTE NM HYD        939.16    -    3      .01280      30.89       1.219     1.78582       1.500   3.770 PER IMP=   50.00
ADD HYD               940.26  1& 3    3     .02840      68.53       2.705     1.78580       1.500   3.770
*S  AT THE END OF LA CUEVA OESTE PHASE 1, IN STORM DRAIN PIPE (AP 939.88)
*S  (UNBULKED)
ADD HYD               939.88 12& 3   12    4.24073     187.85     298.739     1.32085       1.500    .069
*S STORM DRAIN PIPE FROM THE END OF LA CUEVA OESTE PHASE 1 TILL SAN PEDRO
*S BENEATH ANAHEIM AVE -- TWO REACHES
*S   RCP DIA=4 FT TO 940.0 OUTFALL
*S (939.78=4-FOOT PIPE ROUTING)
ROUTE                 939.78   12   15    4.24073     188.38     298.730     1.32081       1.550    .069
COMPUTE NM HYD        940.00    -    1      .01410      34.02       1.343     1.78583       1.500   3.770 PER IMP=   50.00
ADD HYD               939.68 15& 1   15    4.25483     218.75     300.073     1.32235       1.550    .080
*S  RCP DIA=4 FT TO SAN PEDRO
ROUTE                 939.58   15   16    4.25483     220.40     300.069     1.32233       1.550    .081
*S STORM DRAIN PIPE FROM SAN PEDRO TO UTE DR. BENEATH ANAHEIM AVE.
*S (939.48=RCP DIA=4 FT)
ROUTE                 939.48   16   14    4.25483     219.00     300.065     1.32231       1.550    .080
COMPUTE NM HYD        939.14    -    1      .01120      29.58       1.203     2.01454       1.500   4.127 PER IMP=   60.00
COMPUTE NM HYD        943.10    -    3      .01200      31.97       1.322     2.06603       1.500   4.162 PER IMP=   65.00
*S STORM DRAIN BENEATH ANAHEIM AT UTE (AP 943.18)
ADD HYD               943.18  1& 3    3     .02320      61.55       2.526     2.04114       1.500   4.145
*S STORM DRAIN FLOW AT I-25 (AP 943.19)
ADD HYD               943.19  3&14    3    4.27803     273.42     302.590     1.32621       1.550    .100
COMPUTE NM HYD        940.10    -    1      .00700      18.82        .791     2.11965       1.500   4.202 PER IMP=   70.00
ROUTE MCUNGE          940.80    1    6      .00700      18.75        .791     2.11970       1.600   4.185 CCODE =       .2
COMPUTE NM HYD        943.20    -    1      .01300      17.86        .582      .83952       1.500   2.147 PER IMP=   10.00
*S OVERLAND FLOW AT I-25 (AP 943.29)
ADD HYD               943.29  1& 6    5     .02000      33.52       1.373     1.28754       1.550   2.619
*S TOTAL NDB Q AT I-25 BOX CULVERT  (943.98)
ADD HYD               943.98  5& 3    9    4.29803     306.94     303.963     1.32603       1.550    .112
*S CORONA SD SYSTEM
COMPUTE NM HYD        942.20    -    1      .10310     212.49       9.227     1.67810       1.550   3.220 PER IMP=   45.00
*S (ROUTE IN SD DIA=4 FT)
ROUTE                 942.29    1    5      .10310     213.70       9.227     1.67810       1.550   3.239
COMPUTE NM HYD        942.10    -    2      .04690     108.16       4.197     1.67810       1.500   3.603 PER IMP=   45.00
*S  TOTAL Q AT CORONADO MH PARK (943.99)
ADD HYD               943.99  2& 9    3    4.34493     407.26     308.161     1.32983       1.500    .146
FINISH
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NORTH DOMINGO BACA FUTURE COND. 10-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = nbac10.fut USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
*S 100-YR RETURN PERIOD, 24-HR STORM, FUTURE CONDITIONS										
*S MUSKINGUM-CUNGE CHANNEL ROUTING										
START										
RAINFALL TYPE= 2										TIME= .00
COMPUTE NM HYD	900.00	-	1	.44100	328.97	17.063	.72545	1.700	1.166	RAIN24= 2.670 PER IMP= .00
*S ROUTE HYD. 900 THROUGH 902.1 (900.8)										
ROUTE MCUNGE	900.80	1	2	.44100	320.94	16.998	.72271	1.850	1.137	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.390
COMPUTE NM HYD	902.10	-	5	.08870	72.14	4.340	.91736	1.600	1.271	PER IMP= 30.00
*S (902.91=NORTH BRANCH OF ARROYO AT JUNCTION EAST OF TRAMWAY LANE)										
ADD HYD	902.91	2& 5	2	.52970	362.68	21.338	.75530	1.850	1.070	
RAINFALL TYPE= 2										RAIN24= 2.570
COMPUTE NM HYD	901.00	-	1	.11800	165.92	4.570	.72623	1.500	2.197	PER IMP= .00
*S 20% AVULSION FROM SOUTH DOMINGO BACA WATERSHED SUB-BASIN 400.3										
RECALL HYD	400.30	-	15	.25500	348.72	9.922	.72958	1.500	2.137	
DIVIDE HYD	400.61	15	15	.05100	69.74	1.984	.72957	1.500	2.137	
	400.6SDB	AND	19	.20400	278.98	7.938	.72957	1.500	2.137	
*S COMBINE 901 AND 20% AVULSION AS 901.1										
ADD HYD	901.10	1&15	1	.16900	235.66	6.555	.72724	1.500	2.179	
*S ROUTE HYD. 901.1 THROUGH 902.2 (901.8)										
ROUTE MCUNGE	901.80	1	3	.16900	203.55	6.482	.71913	1.700	1.882	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.390
COMPUTE NM HYD	902.20	-	5	.12200	99.04	5.969	.91736	1.600	1.268	PER IMP= 30.00
*S (902.92=SOUTH BRANCH OF ARROYO AT JUNCTION EAST OF TRAMWAY LANE)										
ADD HYD	902.92	3& 5	3	.29100	292.63	12.451	.80223	1.700	1.571	
*S (902.93=SUM OF FLOWS AT ARROYO JUNCTION EAST OF TRAMWAY LANE)										
ADD HYD	902.93	2& 3	1	.82070	607.34	33.788	.77194	1.750	1.156	
ROUTE MCUNGE	902.80	1	2	.82070	606.01	33.755	.77119	1.800	1.154	CCODE = .2
COMPUTE NM HYD	902.30	-	3	.07300	95.14	3.939	1.01170	1.500	2.036	PER IMP= 35.00
*S (902.99=TOTAL FLOW @ TRAMWAY FROM 902 SUBBASINS, 901, 900)										
ADD HYD	902.99	2& 3	1	.89370	633.76	37.694	.79083	1.800	1.108	
*S**********										
*S BEGIN: PRIMROSE POINTE DEVELOPMENT										
*S**********										
ROUTE MCUNGE	902.90	1	17	.89370	633.05	31.648	.66398	1.806	1.107	CCODE = .2
*S ROUTE 902.9 TO PRIMROSE POINTE CONCRETE CHANNEL AS 902.99										
ROUTE MCUNGE	902.99	17	16	.89370	632.53	31.635	.66370	1.804	1.106	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.430
COMPUTE NM HYD	906.00	-	12	.02368	38.91	1.642	1.30021	1.500	2.567	PER IMP= 45.00
ADD HYD	906.10	16&12	2	.91738	643.63	32.966	.67379	1.804	1.096	
*S ROUTE THRU THROUGH PRIMROSE POINTE TO LOWELL										
ROUTE MCUNGE	906.19	2	16	.91738	630.57	32.874	.67189	1.900	1.074	CCODE = .1
COMPUTE NM HYD	904.00	-	1	.04130	60.83	2.315	1.05117	1.500	2.301	PER IMP= 30.00
*S ROUTE HYDOGRAPH THRU POND NDB1										
ROUTE RESERVOIR	904.90	1	17	.04130	24.10	2.113	.95949	1.700	.912	AC-FT= .953
COMPUTE NM HYD	905.00	-	10	.00920	13.56	.516	1.05117	1.500	2.303	PER IMP= 30.00
*S ROUTE 905 HYDOGRAPH THRU POND NDB2										
ROUTE RESERVOIR	905.90	10	18	.00920	6.89	.467	.95141	1.650	1.171	AC-FT= .226
*S BASIN 903.0										
COMPUTE NM HYD	903.00	-	2	.08968	131.56	5.028	1.05117	1.500	2.292	PER IMP= 30.00
*S POND 3 DISCHARGE TO THE NORTH DOMINGO BACA ARROYO										
ROUTE RESERVOIR	903.90	2	24	.08968	11.58	3.801	.79467	2.150	.202	AC-FT= 3.637
ADD HYD	906.29	24&18	26	.09888	13.28	4.268	.80925	2.150	.210	
ADD HYD	906.39	17&26	1	.14018	32.79	6.381	.85352	1.700	.365	
*S ********** TOTAL NORTH DOMINGO BACA FLOW AT LOWELL STREET **********										
ADD HYD	906.99	1&16	1	1.05756	658.26	39.255	.69596	1.900	.973	
*S**********										
*S END: PRIMROSE POINTE DEVELOPMENT										
*S**********										
ROUTE MCUNGE	906.88	1	2	1.05756	649.88	38.789	.68771	1.963	.960	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 2.230
COMPUTE NM HYD	910.21	-	1	.01370	16.31	.537	.73520	1.500	1.860	PER IMP= 17.00
ADD HYD	910.29	2& 1	5	1.07126	652.25	39.323	.68827	1.963	.951	
RAINFALL TYPE= 2										RAIN24= 2.250
COMPUTE NM HYD	910.31	-	2	.15630	201.64	7.192	.86272	1.500	2.016	PER IMP= 25.00
ADD HYD	910.90	5& 2	1	1.22756	688.70	46.525	.71064	1.921	.877	
ROUTE MCUNGE	910.88	1	2	1.22756	673.72	46.430	.70919	2.050	.858	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 2.220
COMPUTE NM HYD	912.11	-	3	.05900	67.97	2.254	.71642	1.500	1.800	PER IMP= 17.00
*S N D B ARROYO BETWEEN BROWNING AND EUBANK (AP 912.95) - UNBULKED										

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                                FROM  TO                          PEAK        RUNOFF                        TIME TO   CFS
                   HYDROGRAPH   ID    ID        AREA        DISCHARGE    VOLUME        RUNOFF        PEAK      PER
COMMAND          IDENTIFICATION NO.   NO.      (SQ MI)       (CFS)      (AC-FT)      (INCHES)     (HOURS)    ACRE      NOTATION
ADD HYD                912.95  3& 2   1       1.28656       681.80      48.685       .70952       2.050      .828
RAINFALL  TYPE= 2
COMPUTE NM HYD         912.21   -     2        .19600       201.16       7.489       .71642       1.550     1.604  RAIN24=   2.220
ADD HYD                912.98  1& 2  15       1.48256       712.14      56.174       .71043       2.000      .751  PER IMP=  17.00
RAINFALL  TYPE= 2
COMPUTE NM HYD         402.50   -     4        .02800        52.16       2.306      1.54415       1.500     2.911  RAIN24=   2.230
COMPUTE NM HYD         402.60   -     5        .02430        45.27       2.001      1.54415       1.500     2.911  PER IMP=  70.00
*S COMBINE 402.5 AND 402.6 AS 402.9 (AT BROWNING)                                                                    PER IMP=  70.00
ADD HYD                402.90  4& 5  11        .05230        97.43       4.307      1.54414       1.500     2.911
*S ROUTE 402.9 AS 402.8 IN 42-INCH SD TO END OF 915.2
ROUTE                  402.80   11    6        .05230        95.66       4.307      1.54415       1.500     2.858
COMPUTE NM HYD         915.20   -     2        .03700        68.99       3.047      1.54415       1.500     2.913  PER IMP=  70.00
ADD HYD                915.90  6& 2  11        .08930       164.64       7.354      1.54414       1.500     2.881
*S ROUTE 915.9 AS 915.8 TO NDB DAM IN 54-INCH PIPE
ROUTE                  915.80   11    7        .08930       157.85       7.354      1.54415       1.550     2.762
*S COMBINE HYD'S 912.98 AND 915.8 AS 912.99 (FLOW TO NDB DAM FROM PDN DRAIN)
ADD HYD                912.99 15& 7  15       1.57186       751.34      63.528       .75779       2.000      .747
*S*************************************************************************
*S   AP 105.9 IS FROM "LA CUEVA, EL CAMINO & NORTH CAMINO ARROYOS - DRAINAGE
*S   MANAGEMENT PLAN" (RESOURCE TECHNOLOGY, INC., 1996).
*S   FILENAME: LCDV100X.FUT
*S*************************************************************************
*S   AP 105.9 IS FROM LA CUEVA TRIBUTARY (DIVERTED TO UPPER N. D. B. DAM
*S   THROUGH LA CUEVA DIVERSION CHANNEL)
*S 10-YR FUTURE CND HYD
RECALL HYD             105.90   -    17       1.17410       766.40      48.832       .77982       1.750     1.020
ROUTE MCUNGE           105.80   17    2       1.17410       764.04      48.883       .78065       1.742     1.017  CCODE =      .2
COMPUTE NM HYD         911.00   -     3        .05800        57.52       2.248       .72671       1.550     1.550  PER IMP=  17.00
*S  TOTAL INFLOW HYDROGRAPH INTO UPPER N.D.B. DAM. FROM LA CUEVA DIVERSION
*S  CHANNEL (HYD NO. 911.99) - UNBULKED
ADD HYD                911.99  2& 3   1       1.23210       792.16      51.129       .77807       1.742     1.005
*S  TOTAL INFLOW HYDROGRAPH INTO UPPER N.D.B. DAM. (HYD NO. 914.79)
*S  (BULKED)
ADD HYD                914.79 15& 1   1       2.80396      1299.18     114.646       .76664       1.698      .724
*S            ROUTING THROUGH UPPER NORTH DOMINGO BACA DAM
*S
*S  THIS STORAGE OUTFLOW DATA WAS BASED ON TOPOGRAPHY IN JUNE 1994.
*S  OUTFLOW IS TAKEN FROM "DESIGN ANALYSIS REPORT FOR LA CUEVA DIVERSION
*S  CHANNEL" (RESOURCE TECHNOLOGY, INC., 1994). STORAGE INFORMATION WAS
*S  CALCULATED AT RTI - PROPOSED FUTURE CONDITION EXCAVATION.
*S  THE ELEVATION OF EMERGENCY SPILLWAY IS AT 5749.
ROUTE RESERVOIR        914.99    1    2       2.80396       129.27     114.554       .76602       2.904      .072  AC-FT=   84.852
*S  UPPER N.D.B. DAM OUTFLOW HYDROGRAPH AT EUBANK. (HYD NO. 914.99)
*S   AP 914.99 IS THROUGH THE PRINCIPAL SPILLWAY
*S   AP NDB.SPILL IS THROUGH THE EMERGENCY SPILLWAY
DIVIDE HYD             914.99    2    2       2.80396       129.27     114.554       .76602       2.904      .072
                    NDB.SPILL  AND   20        .00000          .00        .000       .00000       -.045      .000
ROUTE MCUNGE           914.68    2    3       2.80396       129.28     114.552       .76601       2.950      .072  CCODE =      .2
ROUTE               SPILL.ROU   20   19        .00000          .00        .000       .00000       -.050      .000
RAINFALL  TYPE= 2
COMPUTE NM HYD         914.20   -     1        .03500        44.99       1.631      .87376       1.500     2.009  RAIN24=   2.130
*S  UNDBD DAM SPILL AT EUBANK (AP 914.29)                                                                            PER IMP=  30.00
ADD HYD                914.29  1&19   1        .03500        44.99       1.631      .87375       1.500     2.009
ROUTE MCUNGE           914.28    1    2        .03500        40.82       1.631      .87377       1.650     1.822  CCODE =      .1
*S N D B ARROYO BETWEEN EUBANK AND HOLBROOK
*S (AP 914.78)
ADD HYD                914.78  2& 3   2       2.83896       129.99     116.183       .76733       2.750      .072
ROUTE MCUNGE           914.88    2    3       2.83896       129.96     116.183       .76733       2.900      .072  CCODE =      .1
RAINFALL  TYPE= 2
COMPUTE NM HYD         919.10   -     1        .07900        88.16       2.863      .67950       1.500     1.744  RAIN24=   2.100
*S N D B ARROYO HOLBROOK (HYD NO. 919.19) - FINAL                                                                    PER IMP=  17.00
ADD HYD                919.19  1& 3   4       2.91796       136.13     119.046       .76496       1.800      .073
COMPUTE NM HYD         919.20   -     1        .04270        47.67       1.547      .67950       1.500     1.744  PER IMP=  17.00
*S   HOLBROOK (HYD NO. 919.29) NOT FINAL
ADD HYD                919.29  1& 4  22       2.96066       153.96     120.593       .76372       1.550      .081
RAINFALL  TYPE= 2
COMPUTE NM HYD         920.20   -     3        .00850         9.24        .300      .66087       1.500     1.698  RAIN24=   2.070
RAINFALL  TYPE= 2                                                                                                    PER IMP=  17.00
COMPUTE NM HYD         913.10   -     1        .03600        40.82       1.343      .69964       1.500     1.772  RAIN24=   2.170
ROUTE MCUNGE           913.88    1    2        .03600        34.88       1.343      .69965       1.800     1.514  PER IMP=  17.00
RAINFALL  TYPE= 2                                                                                                    CCODE =      .1
COMPUTE NM HYD         917.00   -     1        .04060        36.32       1.325      .61202       1.500     1.398  RAIN24=   2.100
*S    HOLBROOK (AP 917.99) - FINAL                                                                                   PER IMP=  17.00
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COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
ADD HYD	917.99	1& 2	21	.07660	44.45	2.669	.65319	1.750	.907		
*S (AP 920.29)											
ADD HYD	920.29	21& 3	4	.08510	47.83	2.968	.65395	1.500	.878		
*S ROUTE IN HOLBROOK TO CORONA IN 48" SD											
ROUTE	920.28	4	9	.08510	46.73	2.968	.65396	1.550	.858		
RAINFALL TYPE= 2											
COMPUTE NM HYD	913.20	-	1	.01700	22.16	.792	.87376	1.500	2.037	RAIN24=	2.130
ROUTE MCUNGE	913.18	1	2	.01700	21.98	.792	.87378	1.700	2.021	PER IMP=	30.00
RAINFALL TYPE= 2										CCODE =	.2
COMPUTE NM HYD	918.00	-	1	.11400	79.28	4.131	.67950	1.650	1.087	RAIN24=	2.100
*S HOLBROOK (AP 918.88) - FINAL										PER IMP=	17.00
ADD HYD	918.88	1& 2	1	.13100	96.73	4.924	.70471	1.650	1.154		
*S ADD 920.28 AND 918.89 AND ROUTE TO NDB											
ADD HYD	918.89	1& 9	1	.21610	139.37	7.892	.68472	1.700	1.008		
*S ROUTE IN HOLBROOK TO CARMEL IN 66"SD											
ROUTE	918.99	1	8	.21610	139.05	7.892	.68472	1.700	1.005		
RAINFALL TYPE= 2											
COMPUTE NM HYD	921.40	-	6	.01440	15.64	.508	.66087	1.500	1.697	RAIN24=	2.070
COMPUTE NM HYD	921.30	-	7	.01400	15.21	.493	.66087	1.500	1.697	PER IMP=	17.00
*S COMBINER ALL HOLBROOK AND NDB FLOWS AT HOLBROOK CROSSING										PER IMP=	17.00
*S ADD 918.99 AND 920.4 AS 920.49											
ADD HYD	920.49	8& 6	6	.23050	145.46	8.399	.68323	1.700	.986		
*S ADD 920.49 TO 919.29 AS 919.99											
ADD HYD	919.99	6&22	20	3.19116	293.11	128.992	.75791	1.700	.144		
*S BETWEEN HOLBROOK AND VENTURA (AP 919.18) - NOT FINAL											
ROUTE MCUNGE	919.18	20	5	3.19116	292.55	128.993	.75791	1.750	.143	CCODE =	.2
RAINFALL TYPE= 2											
COMPUTE NM HYD	921.10	-	1	.02920	31.71	1.029	.66087	1.500	1.697	RAIN24=	2.070
*S UPSTREAM OF END OF VINYARD ESTATES SUBDIVISION UNIT IV BETWEEN										PER IMP=	17.00
*S HOLBROOK & VENTURA											
*S **********											
*S BEGIN: VINYARD ESTATES - UNIT IV SE CORNER											
*S **********											
*S ROUTE 921.19											
*S (48-INCH RCP)											
ROUTE	921.80	1	12	.02920	31.76	1.029	.66088	1.500	1.700		
*S (54-INCH RCP)											
ROUTE	921.89	12	16	.02920	31.84	1.029	.66088	1.500	1.704		
*S COMBINE 921.89 & 921.3 AS 921.98											
ADD HYD	921.98	16& 7	15	.04320	47.05	1.523	.66085	1.500	1.702		
*S **********											
*S END: VINYARD ESTATES - UNIT IV											
*S **********											
*S N D B ARROYO BETWEEN HOLBROOK & VENTURA (AP 921.78) - FINAL											
ADD HYD	921.78	5&15	1	3.23436	321.26	130.515	.75661	1.600	.155		
ROUTE MCUNGE	921.80	1	2	3.23436	318.91	130.504	.75655	1.600	.154	CCODE =	.1
RAINFALL TYPE= 2											
COMPUTE NM HYD	921.20	-	1	.08740	145.56	5.935	1.27323	1.500	2.602	RAIN24=	2.050
*S N D B ARROYO AT VENTURA (AP 921.9) - NOT FINAL										PER IMP=	60.00
ADD HYD	921.90	1& 2	26	3.32176	419.49	136.439	.77014	1.600	.197		
RAINFALL TYPE= 2											
COMPUTE NM HYD	920.10	-	17	.02020	21.94	.712	.66087	1.500	1.697	RAIN24=	2.070
COMPUTE NM HYD	920.00	-	5	.03000	32.58	1.057	.66087	1.500	1.697	PER IMP=	17.00
*S **********										PER IMP=	17.00
*S BEGIN: VINYARD ESTATES - UNIT IV											
*S **********											
RAINFALL TYPE= 2											
COMPUTE NM HYD	922.10	-	2	.00700	10.43	.412	1.10436	1.500	2.328	RAIN24=	2.020
COMPUTE NM HYD	923.00	-	12	.00700	12.15	.515	1.37845	1.500	2.711	PER IMP=	50.00
COMPUTE NM HYD	922.20	-	9	.01480	21.04	.784	.99368	1.500	2.221	PER IMP=	70.00
COMPUTE NM HYD	922.30	-	16	.04150	58.97	2.199	.99368	1.500	2.220	PER IMP=	40.00
*S COMBINE 920 + 922.1 AS 922.19										PER IMP=	40.00
ADD HYD	922.19	5& 2	4	.03700	43.00	1.470	.74475	1.500	1.816		
*S ROUTE 922.19 THRU 30" PIPE AS 920.98											
ROUTE	920.98	4	8	.03700	42.40	1.470	.74477	1.500	1.791		
*S ADD 922.2 + 920.98 AS 922.28											
ADD HYD	922.28	8& 9	10	.05180	63.43	2.254	.81587	1.500	1.913		
*S Route 922.28 flows to Ventura Interceptor AS 922.29											
ROUTE	922.29	10	11	.05180	63.13	2.254	.81589	1.500	1.904		
RAINFALL TYPE= 2											
COMPUTE NM HYD	922.00	-	1	.02100	17.26	.713	.63633	1.550	1.284	RAIN24=	2.020
*S COMBINE 922 AND 923 AS 923.99										PER IMP=	17.00

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                                FROM  TO                          PEAK        RUNOFF                        TIME TO   CFS
                   HYDROGRAPH   ID    ID        AREA        DISCHARGE     VOLUME        RUNOFF        PEAK      PER
COMMAND          IDENTIFICATION NO.   NO.      (SQ MI)       (CFS)       (AC-FT)      (INCHES)     (HOURS)    ACRE      NOTATION
ADD HYD                920.98  1&12   1        .02800        27.97        1.227        .82183       1.550     1.561
*S ROUTE 920.1 DOWN WILSHIRE TO VENTURA
ROUTE                  920.18   17   12        .02020        21.34         .712        .66089       1.550     1.651
*S COMBINE 920.18 AND 920.98 AS 920.99
ADD HYD                920.99  1&12   1        .04820        49.31        1.939        .75437       1.550     1.599
*S Route 923.99 FLOW FROM NO OF VINYARD IV TO 48" Ventura Line AS 923.8
ROUTE                  923.80    1   13        .04820        49.65        1.939        .75439       1.550     1.609
*S ADD 923.8 + 922.29 AS 923.9
ADD HYD                923.90 11&13  14        .10000       110.91        4.193        .78623       1.550     1.733
*S ROUTE 923.9 TO NDB (NOT FINAL)
ROUTE                  923.91   14   15        .10000       113.48        4.193        .78624       1.550     1.773
*S ADD 923.91 + 923.3 AS 923.92
ADD HYD                923.92 16&15  18        .14150       166.41        6.393        .84707       1.550     1.838
*S NO POND AT VENTURA
*S*************************************************************************
*S                    END: VINYARD ESTATES - UNIT IV
*S*************************************************************************
*S  N D B ARROYO AT VENTURA (AP 921.99) - FINAL
ADD HYD                921.99 18&26   1      3.46326       581.05      142.831        .77328       1.550      .262
RAINFALL  TYPE= 2                                                                                   RAIN24=    2.020
COMPUTE NM HYD         926.10    -    2        .01200        18.12         .709       1.10839       1.500     2.360 PER IMP=  50.00
*S LA CUEVA SUBDIVISION (AP 926.1) - NO POND   FINAL
*S N D B ARROYO AT ~400 FT WEST OF VENTURA. (HYD NO. 926.19) - FINAL
ADD HYD                926.19  1& 2   1      3.47526       597.21      143.541        .77444       1.550      .269
ROUTE MCUNGE           926.17    1    2      3.47526       574.30      143.524        .77435       1.650      .258 CCODE =      .1
RAINFALL  TYPE= 2                                                                                   RAIN24=    2.000
COMPUTE NM HYD         926.00    -    1        .05780        91.71        3.630       1.17740       1.500     2.479 PER IMP=  55.56
*S  N D B ARROYO AT BARSTOW. (AP 926.79) - NOT FINAL
ADD HYD                926.79  1& 2  11      3.53306       628.88      147.154        .78095       1.600      .278
RAINFALL  TYPE= 2                                                                                   RAIN24=    2.020
COMPUTE NM HYD         925.20    -    1        .00940        14.20         .556       1.10839       1.500     2.361 PER IMP=  50.00
ROUTE MCUNGE           925.27    1    3        .00940        13.07         .551       1.09910       1.600     2.172 CCODE =      .1
COMPUTE NM HYD         925.10    -    1        .06400        96.60        3.783       1.10839       1.500     2.359 PER IMP=  50.00
*S  COMBINE 925.1 & 925.27 AS 925.18 (VINYARD FLOW TO APS SITE)
ADD HYD                925.18  1& 3   1        .07340       103.87        4.334       1.10719       1.500     2.211
*S (925.19=4.5-FOOT STORM SEWER ROUTING)
ROUTE                  925.19    1    2        .07340        99.09        4.334       1.10720       1.550     2.109
COMPUTE NM HYD         925.40    -    4        .03700        58.52        2.255       1.14297       1.500     2.471 PER IMP=  50.00
*S  INFLOW NDB FROM VINYARD SD AND APS MID SCHOOL 925.48
*S  (AP 925.48) - FINAL
ADD HYD                925.48  2& 4  15        .11040       151.18        6.590       1.11918       1.550     2.140
RAINFALL  TYPE= 2                                                                                   RAIN24=    2.000
COMPUTE NM HYD         924.30    -    1        .02700        41.20        1.593       1.10648       1.500     2.384 PER IMP=  50.00
*S CARRINGTON SUBDIVISION (AP 924.3)
COMPUTE NM HYD         924.40    -    7        .01720        25.91        1.006       1.09694       1.500     2.354 PER IMP=  50.00
*S TOTAL BARSTOW @ CARRINGTON  (AP 924.99) - FINAL
ADD HYD                924.99  1& 7   5        .04420        67.11        2.600       1.10275       1.500     2.372
COMPUTE NM HYD         925.30    -    1        .01050        15.82         .614       1.09694       1.500     2.354 PER IMP=  50.00
*S COMBINE CARRINGTON FLOW WITH VINYARD FLOW 925.3 + 924.99 AS 925.38
ADD HYD                925.38  1& 5   5        .05470        82.93        3.214       1.10163       1.500     2.369
*S       (STORM SEWER FROM GREEN ARBOR TO NDB)
ROUTE                  924.81    5    2        .05470        79.28        3.214       1.10165       1.550     2.265
*S BARSTOW SD WITH VINYARD SD FLOW AT NDB
ADD HYD                925.38 15& 2   6        .16510       230.46        9.804       1.11337       1.550     2.181
*S BARSTOW DIVERSION
COMPUTE NM HYD         926.20    -    1        .04700        65.15        2.418        .96448       1.500     2.166 PER IMP=  40.00
ROUTE                  926.28    1    2        .04700        62.70        2.418        .96448       1.500     2.084
*S  N D B ARROYO AT BARTSOW (AP 926.99) - FINAL
ADD HYD                926.89 11& 2   2      3.58006       679.27      149.572        .78336       1.600      .296
ADD HYD                926.99  2& 6   5      3.74516       875.93      159.375        .79790       1.600      .365
ROUTE MCUNGE           926.70    5    3      3.74516       856.27      159.323        .79765       1.650      .357 CCODE =      .1
ROUTE MCUNGE           926.80    3    5      3.74516       845.31      159.217        .79712       1.700      .353 CCODE =      .1
COMPUTE NM HYD         932.40    -    3        .05740        91.59        3.605       1.17753       1.500     2.493 PER IMP=  55.00
RAINFALL  TYPE= 2                                                                                   RAIN24=    1.970
COMPUTE NM HYD         930.00    -    1        .08500       136.59        5.499       1.21296       1.500     2.511 PER IMP=  60.00
*S  N D B ARROYO AT WYOMING (AP 930.59) -
ADD HYD                930.59  1& 3   1        .14240       228.18        9.104       1.19867       1.500     2.504
*S  N D B ARROYO AT WYOMING (AP 930.99) - FINAL
ADD HYD                930.99  1& 5   1      3.88756       944.36      168.321        .81183       1.700      .380
ROUTE MCUNGE           930.80    1   12      3.88756       935.63      168.408        .81224       1.750      .376 CCODE =      .2
COMPUTE NM HYD         935.00    -   14        .11000       143.07        5.401        .92069       1.500     2.032 PER IMP=  40.00
ADD HYD                930.85 14&12  13      3.99756       987.12      173.809        .81523       1.700      .386
*S*************************************************************************
*S                  BEGIN: WYOMING STORM DRAIN
*S*************************************************************************
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                                FROM  TO                          PEAK        RUNOFF                        TIME TO   CFS
                   HYDROGRAPH   ID    ID        AREA        DISCHARGE    VOLUME        RUNOFF        PEAK      PER
COMMAND          IDENTIFICATION NO.   NO.      (SQ MI)       (CFS)      (AC-FT)      (INCHES)     (HOURS)    ACRE      NOTATION

COMPUTE NM HYD        929.00    -     4        .02400        41.00       1.658       1.29529      1.500    2.669 PER IMP=  65.00
COMPUTE NM HYD        931.00    -     1        .06050        66.31       3.878       1.20180      1.650    1.713 PER IMP=  60.00
*S NO POND AT LA CUEVA HIGH SCHOOL FOR FUTURE CONDITION
ADD HYD               931.80  4& 1    1        .08450        93.78       5.536       1.22834      1.550    1.734
COMPUTE NM HYD        932.10    -     4        .00730        11.58        .450       1.15472      1.500    2.479 PER IMP=  55.00
*S CHURCH (AP 932.1)
*S  WYOMING AND WILSHIRE (AP 931.99)
ADD HYD               931.99  4& 1    1        .09180       103.90       5.985       1.22248      1.550    1.768
*S (931.98=5-FOOT PIPE ROUTING)
ROUTE                 931.98    1     3        .09180       103.49       5.985       1.22249      1.550    1.762
COMPUTE NM HYD        932.20    -     1        .00730        11.46        .450       1.15472      1.500    2.452 PER IMP=  55.00
ADD HYD               932.80  3& 1    1        .09910       113.67       6.435       1.21749      1.550    1.792
COMPUTE NM HYD        932.30    -     2        .03130        49.09       1.928       1.15472      1.500    2.450 PER IMP=  55.00
ADD HYD               932.00  2& 1   10        .13040       157.29       8.362       1.20242      1.550    1.885
*S        NO POND AT NORESTE BETWEEN CORONA AND ANAHEIM
*S*************************************************************************
*S                 END: WYOMING STORM DRAIN
*S*************************************************************************
ROUTE MCUNGE          932.81   10     2        .13040       150.60       8.362       1.20242      1.700    1.805 CCODE =     .1
COMPUTE NM HYD        934.10    -     1        .10310       165.19       6.670       1.21296      1.500    2.503 PER IMP=  60.00
ADD HYD               934.99  1& 2    3        .23350       232.14      15.032       1.20707      1.650    1.553
*S LNDBDD INFLOW HYDROGRAPH (AP 930.84) - NOT FINAL
ADD HYD               930.84  3&13   11       4.23106      1209.93     188.841        .83685      1.700     .447
COMPUTE NM HYD        937.00    -     1        .04520        72.91       2.924       1.21296      1.500    2.520 PER IMP=  60.00
*S TOTAL DAM INFLOW HYDROGRAPH (930.86)-FINAL
ADD HYD               930.86  1&11   11       4.27626      1241.53     191.765        .84083      1.700     .454
*S
*S                LOWER NORTH DOMINGO BACA DETENTION DAM
*S  LOW FLOW OUTLET (PRINCIPLE SPILLWAY). THIS PRINCIPLE SPILLWAY JOINS
*S  ONE OF THE FOUR BOX CULVERTS AT THE I-25. IT ALSO PICKS UP FLOWS FROM
*S  SUB-BASINS 940.2, 939.16, 939.14 & 943.1. THE FLOWS FROM SUB-BASINS
*S  939.14 AND 943.1 ARE INCLUDED BY SAD221 PROJECT WHICH IS ALREADY
*S  IN PLACE. THE FOLLOWING RATING CURVE IS FOR A 40-INCH ORIFICE PLATE.
*S  EMERGENCY SPILLWAY IS NOT USED IN THE FOLLOWING RATING CURVE.
*S
ROUTE RESERVOIR       930.87   11    12       4.27626       171.36     191.870        .84129      2.900     .063 AC-FT=  51.290
*S LNDBAD DAM OUTFLOW HYDROGRAPH (AP 930.87)
RAINFALL  TYPE= 2                                                                                   RAIN24=   1.900
COMPUTE NM HYD        960.00    -     1        .00750        11.02        .418       1.04522      1.500    2.295 PER IMP=  50.00
*S    STORM DRAIN OUT OF LNDBD DAM AT LOUISIANA BLVD. (AP 930.89)
ADD HYD               930.89  1&12   12       4.28376       171.46     192.288        .84164      2.850     .063
COMPUTE NM HYD        940.20    -     1        .01560        22.23        .853       1.02474      1.500    2.226 PER IMP=  50.00
COMPUTE NM HYD        939.16    -     3        .01280        18.24        .700       1.02474      1.500    2.227 PER IMP=  50.00
ADD HYD               940.26  1& 3    3        .02840        40.47       1.552       1.02472      1.500    2.226
*S  AT THE END OF LA CUEVA OESTE PHASE 1, IN STORM DRAIN PIPE (AP 939.88)
*S  (UNBULKED)
ADD HYD               939.88 12& 3   12       4.31216       172.58     193.840        .84285      2.050     .063
*S STORM DRAIN PIPE FROM THE END OF LA CUEVA OESTE PHASE 1 TILL SAN PEDRO
*S BENEATH ANAHEIM AVE -- TWO REACHES
*S   RCP DIA=4 FT TO 940.0 OUTFALL
*S (939.78=4-FOOT PIPE ROUTING)
ROUTE                 939.78   12    15       4.31216       172.54     193.840        .84285      2.050     .063
COMPUTE NM HYD        940.00    -     1        .01410        20.09        .771       1.02474      1.500    2.227 PER IMP=  50.00
ADD HYD               939.68 15& 1   15       4.32626       176.38     194.611        .84344      1.550     .064
*S  RCP DIA=4 FT TO SAN PEDRO
ROUTE                 939.58   15    16       4.32626       177.23     194.611        .84344      1.550     .064
*S STORM DRAIN PIPE FROM SAN PEDRO TO UTE DR. BENEATH ANAHEIM AVE.
*S (939.48=RCP DIA=4 FT)
ROUTE                 939.48   16    14       4.32626       176.28     194.611        .84344      1.550     .064
COMPUTE NM HYD        939.14    -     1        .01120        18.32        .714       1.19546      1.500    2.556 PER IMP=  60.00
COMPUTE NM HYD        943.10    -     3        .01200        19.85        .793       1.23850      1.500    2.585 PER IMP=  65.00
*S STORM DRAIN BENEATH ANAHEIM AT UTE (AP 943.18)
ADD HYD               943.18  1& 3    3        .02320        38.17       1.507       1.21770      1.500    2.571
*S STORM DRAIN FLOW AT I-25 (AP 943.19)
ADD HYD               943.19  3&14    3       4.34946       210.06     196.118        .84544      1.550     .075
COMPUTE NM HYD        940.10    -     1        .00700        11.73        .479       1.28349      1.500    2.618 PER IMP=  70.00
ROUTE MCUNGE          940.80    1     6        .00700        11.70        .479       1.28353      1.600    2.611 CCODE =     .2
COMPUTE NM HYD        943.20    -     1        .03750        62.80       2.567       1.28348      1.500    2.617 PER IMP=  70.00
*S OVERLAND FLOW AT I-25 (AP 943.29)
ADD HYD               943.29  1& 6    5        .04450        70.05       3.046       1.28347      1.500    2.459
*S TOTAL NDB Q AT I-25 BOX CULVERT  (943.98)
ADD HYD               943.98  5& 3    9       4.39396       275.64     199.164        .84988      1.550     .098
*S CORONA SD SYSTEM
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COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
COMPUTE NM HYD	942.20	-	1	.10310	136.08	5.996	1.09048	1.550	2.062	PER IMP= 55.00
*S (ROUTE IN SD DIA=4 FT)										
ROUTE	942.29	1	5	.10310	138.34	5.996	1.09048	1.550	2.097	
COMPUTE NM HYD	942.10	-	2	.04690	80.87	3.270	1.30728	1.500	2.694	PER IMP= 70.00
*S CORONA SD AT I-25										
ADD HYD	942.59	2& 5	3	.15000	209.60	9.266	1.15826	1.550	2.183	
*S TOTAL Q AT CORONADO MH PARK (943.99)										
ADD HYD	943.99	3& 9	3	4.54396	485.23	208.430	.86005	1.550	.167	
COMPUTE NM HYD	443.20	-	2	.07030	121.03	4.901	1.30728	1.500	2.690	PER IMP= 70.00
FINISH										

NORTH DOMINGO BACA FUTURE CONDITION 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/05/1998
INPUT FILE = nbac100.fut USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
*S 100-YR RETURN PERIOD, 24-HR STORM, FUTURE CONDITIONS										
*S MUSKINGUM-CUNGE CHANNEL ROUTING										
START										
RAINFALL TYPE= 2										TIME= .00
COMPUTE NM HYD	900.00	-	1	.44100	640.16	33.763	1.43550	1.700	2.268	RAIN24= 4.000 PER IMP= .00
*S ROUTE HYD. 900 THROUGH 902.1 (900.8)										
ROUTE MCUNGE	900.80	1	2	.44100	625.07	33.593	1.42827	1.800	2.215	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.580
COMPUTE NM HYD	902.10	-	5	.08870	134.65	8.032	1.69784	1.600	2.372	PER IMP= 30.00
*S (902.91=NORTH BRANCH OF ARROYO AT JUNCTION EAST OF TRAMWAY LANE)										
ADD HYD	902.91	2& 5	2	.52970	719.50	41.625	1.47341	1.800	2.122	
RAINFALL TYPE= 2										RAIN24= 3.860
COMPUTE NM HYD	901.00	-	1	.11800	281.25	9.218	1.46480	1.500	3.724	PER IMP= .00
*S 20% AVULSION FROM SOUTH DOMINGO BACA WATERSHED SUB-BASIN 400.3										
RECALL HYD	400.30	-	15	.25500	620.57	19.788	1.45500	1.500	3.802	
DIVIDE HYD	400.61	15	15	.05100	124.11	3.958	1.45500	1.500	3.802	
	400.6SDB	AND	19	.20400	496.45	15.830	1.45500	1.500	3.802	
*S COMBINE 901 AND 20% AVULSION AS 901.1										
ADD HYD	901.10	1&15	1	.16900	405.36	13.176	1.46184	1.500	3.748	
*S ROUTE HYD. 901.1 THROUGH 902.2 (901.8)										
ROUTE MCUNGE	901.80	1	3	.16900	364.15	13.055	1.44840	1.700	3.367	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.580
COMPUTE NM HYD	902.20	-	5	.12200	186.80	11.047	1.69784	1.600	2.392	PER IMP= 30.00
*S (902.92=SOUTH BRANCH OF ARROYO AT JUNCTION EAST OF TRAMWAY LANE)										
ADD HYD	902.92	3& 5	3	.29100	536.71	24.102	1.55297	1.650	2.882	
*S (902.93=SUM OF FLOWS AT ARROYO JUNCTION EAST OF TRAMWAY LANE)										
ADD HYD	902.93	2& 3	1	.82070	1172.79	65.727	1.50162	1.750	2.233	
ROUTE MCUNGE	902.80	1	2	.82070	1158.45	65.601	1.49874	1.800	2.206	CCODE = .1
COMPUTE NM HYD	902.30	-	3	.07300	169.92	7.105	1.82479	1.500	3.637	PER IMP= 35.00
*S (902.99=TOTAL FLOW @ TRAMWAY FROM 902 SUBBASINS, 901, 900)										
ADD HYD	902.99	2& 3	1	.89370	1211.61	72.705	1.52537	1.800	2.118	
*S**********										
*S BEGIN: PRIMROSE POINTE DEVELOPMENT										
*S**********										
ROUTE MCUNGE	902.90	1	17	.89370	1208.11	72.707	1.52542	1.800	2.112	CCODE = .2
*S ROUTE 902.9 TO PRIMROSE POINTE CONCRETE CHANNEL AS 902.99										
ROUTE MCUNGE	902.99	17	16	.89370	1195.81	72.696	1.52518	1.850	2.091	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.650
COMPUTE NM HYD	906.00	-	12	.02368	63.36	2.816	2.22941	1.500	4.181	PER IMP= 45.00
ADD HYD	906.10	16&12	2	.91738	1214.08	75.512	1.54336	1.850	2.068	
*S ROUTE THRU THROUGH PRIMROSE POINTE TO LOWELL										
ROUTE MCUNGE	906.19	2	16	.91738	1189.60	75.371	1.54048	1.950	2.026	CCODE = .1
COMPUTE NM HYD	904.00	-	1	.04130	102.46	4.183	1.89923	1.500	3.876	PER IMP= 30.00
*S ROUTE HYDOGRAPH THRU POND NDB1										
ROUTE RESERVOIR	904.90	1	17	.04130	35.03	3.899	1.77023	1.800	1.325	AC-FT= 1.773
COMPUTE NM HYD	905.00	-	10	.00920	22.84	.932	1.89922	1.500	3.879	PER IMP= 30.00
*S ROUTE 905 HYDOGRAPH THRU POND NDB2										
ROUTE RESERVOIR	905.90	10	18	.00920	15.30	.839	1.71009	1.600	2.599	AC-FT= .296
*S BASIN 903.0										
COMPUTE NM HYD	903.00	-	2	.08968	223.26	9.084	1.89923	1.500	3.890	PER IMP= 30.00
*S POND 3 DISCHARGE TO THE NORTH DOMINGO BACA ARROYO										
ROUTE RESERVOIR	903.90	2	24	.08968	107.77	7.719	1.61393	1.700	1.878	AC-FT= 4.303
ADD HYD	906.29	24&18	26	.09888	121.85	8.558	1.62288	1.700	1.926	
ADD HYD	906.39	17&26	1	.14018	156.53	12.458	1.66629	1.700	1.745	
*S ********** TOTAL NORTH DOMINGO BACA FLOW AT LOWELL STREET **********										
ADD HYD	906.99	1&16	1	1.05756	1291.88	87.829	1.55716	1.900	1.909	
*S**********										
*S END: PRIMROSE POINTE DEVELOPMENT										
*S**********										
ROUTE MCUNGE	906.88	1	2	1.05756	1281.79	87.795	1.55657	2.000	1.894	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.350
COMPUTE NM HYD	910.21	-	1	.01370	30.01	1.073	1.46801	1.500	3.423	PER IMP= 17.00
ADD HYD	910.29	2& 1	5	1.07126	1286.34	88.868	1.55543	2.000	1.876	
RAINFALL TYPE= 2										RAIN24= 3.380
COMPUTE NM HYD	910.31	-	2	.15630	368.32	13.622	1.63413	1.500	3.682	PER IMP= 25.00
ADD HYD	910.90	5& 2	1	1.22756	1344.84	102.490	1.56545	2.000	1.712	
ROUTE MCUNGE	910.88	1	2	1.22756	1334.29	102.279	1.56224	2.050	1.698	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.330
COMPUTE NM HYD	912.11	-	3	.05900	126.55	4.520	1.43652	1.500	3.351	PER IMP= 17.00
*S N D B ARROYO BETWEEN BROWNING AND EUBANK (AP 912.95) - UNBULKED										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	912.95	3& 2	1	1.28656	1350.52	106.800	1.55647	2.050	1.640	
RAINFALL TYPE= 2										
COMPUTE NM HYD	912.21	-	2	.19600	391.52	15.016	1.43652	1.500	3.121	RAIN24= 3.330 PER IMP= 17.00
ADD HYD	912.98	1& 2	15	1.48256	1408.79	121.816	1.54061	2.050	1.485	
RAINFALL TYPE= 2										
COMPUTE NM HYD	402.50	-	4	.02800	82.16	3.763	2.51978	1.500	4.585	RAIN24= 3.350 PER IMP= 70.00
RAINFALL TYPE= 2										
COMPUTE NM HYD	402.60	-	5	.02430	70.94	3.243	2.50242	1.500	4.561	RAIN24= 3.330 PER IMP= 70.00
*S COMBINE 402.5 AND 402.6 AS 402.9 (AT BROWNING)										
ADD HYD	402.90	4& 5	11	.05230	153.10	7.006	2.51170	1.500	4.574	
*S ROUTE 402.9 AS 402.8 IN 42-INCH SD TO END OF 915.2										
ROUTE	402.80	11	6	.05230	150.80	7.006	2.51171	1.500	4.505	
RAINFALL TYPE= 2										
COMPUTE NM HYD	915.20	-	2	.03700	107.40	4.819	2.44196	1.500	4.535	RAIN24= 3.250 PER IMP= 70.00
ADD HYD	915.90	6& 2	11	.08930	258.20	11.825	2.48280	1.500	4.518	
*S ROUTE 915.9 AS 915.8 TO NDB DAM IN 54-INCH PIPE										
ROUTE	915.80	11	7	.08930	247.33	11.825	2.48281	1.550	4.328	
*S COMBINE HYD'S 912.98 AND 915.8 AS 912.99 (FLOW TO NDB DAM FROM PDN DRAIN)										
ADD HYD	912.99	15& 7	15	1.57186	1465.10	133.641	1.59414	2.050	1.456	
*S**********										
*S AP 105.9 IS FROM "LA CUEVA, EL CAMINO & NORTH CAMINO ARROYOS - DRAINAGE										
*S MANAGEMENT PLAN" (RESOURCE TECHNOLOGY, INC., 1996).										
*S FILENAME: LCDV100X.FUT										
*S**********										
*S AP 105.9 IS FROM LA CUEVA TRIBUTARY (DIVERTED TO UPPER N. D. B. DAM										
*S THROUGH LA CUEVA DIVERSION CHANNEL)										
RECALL HYD	105.90	-	17	1.14850	1487.55	94.222	1.53823	1.650	2.024	
ROUTE MCUNGE	105.80	17	2	1.14850	1480.99	94.104	1.53631	1.650	2.015	CCODE = .1
RAINFALL TYPE= 2										
COMPUTE NM HYD	911.00	-	3	.05800	106.44	4.444	1.43652	1.550	2.868	RAIN24= 3.330 PER IMP= 17.00
*S TOTAL INFLOW HYDROGRAPH INTO UPPER N.D.B. DAM. FROM LA CUEVA DIVERSION										
*S CHANNEL (HYD NO. 911.99) - UNBULKED										
ADD HYD	911.99	2& 3	1	1.20650	1563.93	98.548	1.53151	1.650	2.025	
*S TOTAL INFLOW HYDROGRAPH INTO UPPER N.D.B. DAM. (HYD NO. 914.79)										
*S (BULKED)										
ADD HYD	914.79	15& 1	1	2.77836	2563.31	232.188	1.56694	1.650	1.442	
*S ROUTING THROUGH UPPER NORTH DOMINGO BACA DAM										
*S										
*S THIS STORAGE OUTFLOW DATA WAS BASED ON TOPOGRAPHY IN JUNE 1994.										
*S OUTFLOW IS TAKEN FROM "DESIGN ANALYSIS REPORT FOR LA CUEVA DIVERSION										
*S CHANNEL" (RESOURCE TECHNOLOGY, INC., 1994). STORAGE INFORMATION WAS										
*S CALCULATED AT RTI - PROPOSED FUTURE CONDITION EXCAVATION.										
*S THE ELEVATION OF EMERGENCY SPILLWAY IS AT 5749.										
ROUTE RESERVOIR	914.99	1	2	2.77836	150.76	232.067	1.56612	3.200	.085	AC-FT= 181.374
*S UPPER N.D.B. DAM OUTFLOW HYDROGRAPH AT EUBANK. (HYD NO. 914.99)										
*S AP 914.99 IS THROUGH THE PRINCIPAL SPILLWAY										
*S AP NDB.SPILL IS THROUGH THE EMERGENCY SPILLWAY										
DIVIDE HYD	914.99	2	2	2.77836	150.76	232.067	1.56612	3.200	.085	
	NDB.SPILL	AND	20	.00000	.00	.000	.00000	-.050	.000	
ROUTE MCUNGE	914.68	2	3	2.77836	150.76	232.061	1.56608	3.250	.085	CCODE = .2
ROUTE	SPILL.ROU	20	19	.00000	.00	.000	.00000	-.050	.000	
RAINFALL TYPE= 2										
COMPUTE NM HYD	914.20	-	1	.03500	80.30	3.045	1.63137	1.500	3.585	RAIN24= 3.200 PER IMP= 30.00
*S UNDBD DAM SPILL AT EUBANK (AP 914.29)										
ADD HYD	914.29	1&19	1	.03500	80.30	3.045	1.63137	1.500	3.585	
ROUTE MCUNGE	914.28	1	2	.03500	79.85	3.045	1.63139	1.600	3.565	CCODE = .2
*S N D B ARROYO BETWEEN EUBANK AND HOLBROOK										
*S (AP 914.78)										
ADD HYD	914.78	2& 3	2	2.81336	160.68	235.106	1.56690	1.700	.089	
ROUTE MCUNGE	914.88	2	3	2.81336	157.48	235.094	1.56681	1.750	.087	CCODE = .1
RAINFALL TYPE= 2										
COMPUTE NM HYD	919.10	-	1	.07900	167.03	5.808	1.37846	1.500	3.304	RAIN24= 3.150 PER IMP= 17.00
*S N D B ARROYO HOLBROOK (HYD NO. 919.19) - FINAL										
ADD HYD	919.19	1& 3	4	2.89236	230.72	240.902	1.56167	1.650	.125	
RAINFALL TYPE= 2										
COMPUTE NM HYD	919.20	-	1	.04270	89.89	3.139	1.37846	1.500	3.289	RAIN24= 3.150 PER IMP= 17.00
*S HOLBROOK (HYD NO. 919.29) NOT FINAL										
ADD HYD	919.29	1& 4	22	2.93506	305.75	244.041	1.55900	1.550	.163	
RAINFALL TYPE= 2										
COMPUTE NM HYD	920.20	-	3	.00850	17.50	.607	1.33902	1.500	3.216	RAIN24= 3.100 PER IMP= 17.00
RAINFALL TYPE= 2										
COMPUTE NM HYD	913.10	-	1	.03600	76.37	2.701	1.40683	1.500	3.314	RAIN24= 3.250 PER IMP= 17.00

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ROUTE MCUNGE	913.88	1	2	.03600	75.95	2.701	1.40683	1.700	3.297	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 3.150
COMPUTE NM HYD	917.00	-	1	.04060	85.47	2.985	1.37846	1.500	3.289	PER IMP= 17.00
*S HOLBROOK (AP 917.99) - FINAL										
ADD HYD	917.99	1& 2	21	.07660	123.74	5.686	1.39178	1.650	2.524	
*S (AP 920.29)										
ADD HYD	920.29	21& 3	4	.08510	134.05	6.293	1.38651	1.650	2.461	
*S ROUTE IN HOLBROOK TO CORONA IN 48" SD										
ROUTE	920.28	4	9	.08510	132.55	6.293	1.38652	1.650	2.434	
RAINFALL TYPE= 2										RAIN24= 3.200
COMPUTE NM HYD	913.20	-	1	.01700	39.50	1.479	1.63137	1.500	3.630	PER IMP= 30.00
ROUTE MCUNGE	913.18	1	2	.01700	32.68	1.456	1.60540	1.800	3.004	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.150
COMPUTE NM HYD	918.00	-	1	.11400	156.75	8.381	1.37846	1.650	2.148	PER IMP= 17.00
*S HOLBROOK (AP 918.88) - FINAL										
ADD HYD	918.88	1& 2	1	.13100	173.88	9.837	1.40790	1.700	2.074	
*S ADD 920.28 AND 918.89 AND ROUTE TO NDB										
ADD HYD	918.89	1& 9	1	.21610	304.68	16.129	1.39948	1.650	2.203	
*S ROUTE IN HOLBROOK TO CARMEL IN 66"SD										
ROUTE	918.99	1	8	.21610	304.20	16.129	1.39948	1.700	2.200	
RAINFALL TYPE= 2										RAIN24= 3.100
COMPUTE NM HYD	921.40	-	6	.01440	29.63	1.028	1.33902	1.500	3.215	PER IMP= 17.00
COMPUTE NM HYD	921.30	-	7	.01400	28.81	1.000	1.33902	1.500	3.215	PER IMP= 17.00
*S COMBINER ALL HOLBROOK AND NDB FLOWS AT HOLBROOK CROSSING										
*S ADD 918.99 AND 920.4 AS 920.49										
ADD HYD	920.49	8& 6	6	.23050	318.07	17.158	1.39570	1.700	2.156	
*S ADD 920.49 TO 919.29 AS 919.99										
ADD HYD	919.99	6&22	20	3.16556	599.30	261.198	1.54711	1.650	.296	
*S BETWEEN HOLBROOK AND VENTURA (AP 919.18) - NOT FINAL										
ROUTE MCUNGE	919.18	20	5	3.16556	596.68	261.191	1.54706	1.650	.295	CCODE = .2
RAINFALL TYPE= 2										RAIN24= 3.100
COMPUTE NM HYD	921.10	-	1	.02920	60.06	2.085	1.33902	1.500	3.214	PER IMP= 17.00
*S UPSTREAM OF END OF VINYARD ESTATES SUBDIVISION UNIT IV BETWEEN										
*S HOLBROOK & VENTURA										
*S **********										
*S BEGIN: VINYARD ESTATES - UNIT IV SE CORNER										
*S **********										
*S ROUTE 921.19										
*S (48-INCH RCP)										
ROUTE	921.80	1	12	.02920	60.11	2.085	1.33904	1.500	3.217	
*S (54-INCH RCP)										
ROUTE	921.89	12	16	.02920	60.14	2.085	1.33904	1.500	3.218	
*S COMBINE 921.89 & 921.3 AS 921.98										
ADD HYD	921.98	16& 7	15	.04320	88.95	3.085	1.33901	1.500	3.217	
*S **********										
*S END: VINYARD ESTATES - UNIT IV										
*S **********										
*S N D B ARROYO BETWEEN HOLBROOK & VENTURA (AP 921.78) - FINAL										
ADD HYD	921.78	5&15	1	3.20876	654.91	264.276	1.54426	1.600	.319	
ROUTE MCUNGE	921.80	1	2	3.20876	652.95	264.238	1.54404	1.600	.318	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.070
COMPUTE NM HYD	921.20	-	1	.08740	237.09	9.939	2.13220	1.500	4.239	PER IMP= 60.00
*S N D B ARROYO AT VENTURA (AP 921.9) - NOT FINAL										
ADD HYD	921.90	1& 2	26	3.29616	818.24	274.177	1.55964	1.600	.388	
RAINFALL TYPE= 2										RAIN24= 3.100
COMPUTE NM HYD	920.10	-	17	.02020	41.55	1.443	1.33902	1.500	3.214	PER IMP= 17.00
RAINFALL TYPE= 2										RAIN24= 3.100
COMPUTE NM HYD	920.00	-	5	.03000	61.70	2.142	1.33902	1.500	3.214	PER IMP= 17.00
*S **********										
*S BEGIN: VINYARD ESTATES - UNIT IV										
*S **********										
RAINFALL TYPE= 2										RAIN24= 3.030
COMPUTE NM HYD	922.10	-	2	.00700	17.43	.711	1.90576	1.500	3.890	PER IMP= 50.00
COMPUTE NM HYD	923.00	-	12	.00700	19.32	.844	2.25972	1.500	4.312	PER IMP= 70.00
COMPUTE NM HYD	922.20	-	9	.01480	35.69	1.396	1.76805	1.500	3.767	PER IMP= 40.00
COMPUTE NM HYD	922.30	-	16	.04150	100.03	3.913	1.76805	1.500	3.766	PER IMP= 40.00
*S COMBINE 920 + 922.1 AS 922.19										
ADD HYD	922.19	5& 2	4	.03700	79.13	2.854	1.44623	1.500	3.342	
*S ROUTE 922.19 THRU 30" PIPE AS 920.98										
ROUTE	920.98	4	8	.03700	76.37	2.854	1.44625	1.500	3.225	
*S ADD 922.2 + 920.98 AS 922.28										
ADD HYD	922.28	8& 9	10	.05180	112.05	4.249	1.53817	1.500	3.380	
*S Route 922.28 flows to Ventura Interceptor AS 922.29										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ROUTE	922.29	10	11	.05180	110.00	4.249	1.53818	1.550	3.318	
RAINFALL TYPE= 2										
COMPUTE NM HYD	922.00	-	1	.02100	33.77	1.462	1.30533	1.550	2.512	RAIN24= 3.030 PER IMP= 17.00
*S COMBINE 922 AND 923 AS 923.99										
ADD HYD	920.98	1&12	1	.02800	50.81	2.306	1.54390	1.550	2.835	
*S ROUTE 920.1 DOWN WILSHIRE TO VENTURA										
ROUTE	920.18	17	12	.02020	40.28	1.443	1.33905	1.550	3.116	
*S COMBINE 920.18 AND 920.98 AS 920.99										
ADD HYD	920.99	1&12	1	.04820	91.09	3.748	1.45803	1.550	2.953	
*S Route 923.99 FLOW FROM NO OF VINYARD IV TO 48" Ventura Line AS 923.8										
ROUTE	923.80	1	13	.04820	91.54	3.748	1.45805	1.550	2.967	
*S ADD 923.8 + 922.29 AS 923.9										
ADD HYD	923.90	11&13	14	.10000	201.54	7.998	1.49955	1.550	3.149	
*S ROUTE 923.9 TO NDB (NOT FINAL)										
ROUTE	923.91	14	15	.10000	203.51	7.998	1.49956	1.550	3.180	
*S ADD 923.91 + 923.3 AS 923.92										
ADD HYD	923.92	16&15	18	.14150	293.19	11.911	1.57830	1.550	3.238	
*S NO POND AT VENTURA										
*S**********										
*S END: VINYARD ESTATES - UNIT IV										
*S**********										
*S N D B ARROYO AT VENTURA (AP 921.99) - FINAL										
ADD HYD	921.99	18&26	1	3.43766	1105.56	286.088	1.56041	1.550	.503	
RAINFALL TYPE= 2										
COMPUTE NM HYD	926.10	-	2	.01200	30.38	1.228	1.91802	1.500	3.956	RAIN24= 3.030 PER IMP= 50.00
*S LA CUEVA SUBDIVISION (AP 926.1) - NO POND FINAL										
*S N D B ARROYO AT ~400 FT WEST OF VENTURA. (HYD NO. 926.19) - FINAL										
ADD HYD	926.19	1& 2	1	3.44966	1132.67	287.316	1.56165	1.550	.513	
ROUTE MCUNGE	926.17	1	2	3.44966	1096.41	287.169	1.56086	1.650	.497	CCODE = .1
RAINFALL TYPE= 2										
COMPUTE NM HYD	926.00	-	1	.05780	154.00	6.406	2.07818	1.500	4.163	RAIN24= 3.000 PER IMP= 60.00
*S N D B ARROYO AT BARSTOW. (AP 926.79) - NOT FINAL										
ADD HYD	926.79	1& 2	11	3.50746	1192.76	293.576	1.56938	1.600	.531	
RAINFALL TYPE= 2										
COMPUTE NM HYD	925.20	-	1	.00940	23.81	.962	1.91802	1.500	3.957	RAIN24= 3.030 PER IMP= 50.00
ROUTE MCUNGE	925.27	1	3	.00940	22.10	.958	1.91061	1.550	3.674	CCODE = .1
COMPUTE NM HYD	925.10	-	1	.06400	162.00	6.547	1.91802	1.500	3.955	PER IMP= 50.00
*S COMBINE 925.1 & 925.27 AS 925.18 (VINYARD FLOW TO APS SITE)										
ADD HYD	925.18	1& 3	1	.07340	179.25	7.505	1.91706	1.500	3.816	
*S (925.19=4.5-FOOT STORM SEWER ROUTING)										
ROUTE	925.19	1	2	.07340	170.72	7.505	1.91707	1.550	3.634	
COMPUTE NM HYD	925.40	-	4	.03700	96.45	3.887	1.96954	1.500	4.073	PER IMP= 50.00
*S INFLOW NDB FROM VINYARD SD AND APS MID SCHOOL 925.48										
*S (AP 925.48) - FINAL										
ADD HYD	925.48	2& 4	15	.11040	256.58	11.391	1.93465	1.550	3.631	
RAINFALL TYPE= 2										
COMPUTE NM HYD	924.30	-	1	.02700	68.50	2.753	1.91154	1.500	3.964	RAIN24= 3.000 PER IMP= 50.00
*S CARRINGTON SUBDIVISION (AP 924.3)										
COMPUTE NM HYD	924.40	-	7	.01720	43.28	1.741	1.89760	1.500	3.932	PER IMP= 50.00
*S TOTAL BARSTOW @ CARRINGTON (AP 924.99) - FINAL										
ADD HYD	924.99	1& 7	5	.04420	111.78	4.493	1.90611	1.500	3.951	
COMPUTE NM HYD	925.30	-	1	.01050	26.43	1.063	1.89760	1.500	3.933	PER IMP= 50.00
*S COMBINE CARRINGTON FLOW WITH VINYARD FLOW 925.3 + 924.99 AS 925.38										
ADD HYD	925.38	1& 5	5	.05470	138.20	5.556	1.90447	1.500	3.948	
*S (STORM SEWER FROM GREEN ARBOR TO NDB)										
ROUTE	924.81	5	2	.05470	133.00	5.556	1.90448	1.550	3.799	
*S BARSTOW SD WITH VINYARD SD FLOW AT NDB										
ADD HYD	925.38	15& 2	6	.16510	389.58	16.947	1.92465	1.550	3.687	
*S BARSTOW DIVERSION										
COMPUTE NM HYD	926.20	-	1	.04700	111.97	4.330	1.72735	1.500	3.722	PER IMP= 40.00
ROUTE	926.28	1	2	.04700	106.30	4.330	1.72736	1.550	3.534	
*S N D B ARROYO AT BARTSOW (AP 926.99) - FINAL										
ADD HYD	926.89	11& 2	2	3.55446	1284.98	297.906	1.57147	1.600	.565	
ADD HYD	926.99	2& 6	5	3.71956	1618.82	314.853	1.58715	1.600	.680	
ROUTE MCUNGE	926.70	5	3	3.71956	1585.94	314.748	1.58662	1.600	.666	CCODE = .1
ROUTE MCUNGE	926.80	3	5	3.71956	1562.13	314.538	1.58556	1.700	.656	CCODE = .1
COMPUTE NM HYD	932.40	-	3	.05740	150.03	6.135	2.00401	1.500	4.084	PER IMP= 55.00
RAINFALL TYPE= 2										
COMPUTE NM HYD	930.00	-	1	.08500	224.35	9.278	2.04656	1.500	4.124	RAIN24= 2.960 PER IMP= 60.00
*S N D B ARROYO AT WYOMING (AP 930.59) -										
ADD HYD	930.59	1& 3	1	.14240	374.39	15.413	2.02940	1.500	4.108	
*S N D B ARROYO AT WYOMING (AP 930.99) - FINAL										

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                          FROM  TO                    PEAK       RUNOFF                    TIME TO   CFS
                HYDROGRAPH  ID   ID        AREA    DISCHARGE    VOLUME      RUNOFF          PEAK    PER
COMMAND       IDENTIFICATION  NO.  NO.    (SQ MI)     (CFS)     (AC-FT)    (INCHES)       (HOURS)   ACRE      NOTATION

ADD HYD              930.99  1& 5   1    3.86196     1732.40    329.950     1.60192        1.700     .701
ROUTE MCUNGE         930.80    1   12    3.86196     1692.74    329.639     1.60041        1.800     .685 CCODE =      .1
RAINFALL  TYPE= 2                                                                                          RAIN24=   2.950
COMPUTE NM HYD       935.00    -   14     .11000      254.57      9.731     1.65876        1.500    3.616 PER IMP=  40.00
ADD HYD              930.85 14&12  13    3.97196     1773.42    339.371     1.60203        1.800     .698
*S*************************************************************************
*S                BEGIN: WYOMING STORM DRAIN
*S*************************************************************************
COMPUTE NM HYD       929.00    -    4     .02400       65.77      2.752     2.14971        1.500    4.282 PER IMP=  65.00
COMPUTE NM HYD       931.00    -    1     .06050      109.47      6.529     2.02346        1.650    2.827 PER IMP=  60.00
*S NO POND AT LA CUEVA HIGH SCHOOL FOR FUTURE CONDITION
ADD HYD              931.80  4& 1   1     .08450      153.96      9.281     2.05931        1.600    2.847
COMPUTE NM HYD       932.10    -    4     .00730       19.08       .766     1.96752        1.500    4.083 PER IMP=  55.00
*S CHURCH (AP 932.1)
*S  WYOMING AND WILSHIRE (AP 931.99)
ADD HYD              931.99  4& 1   1     .09180      170.54     10.047     2.05201        1.550    2.903
*S (931.98=5-FOOT PIPE ROUTING)
ROUTE                931.98    1    3     .09180      169.55     10.047     2.05201        1.550    2.886
COMPUTE NM HYD       932.20    -    1     .00730       18.89       .766     1.96752        1.500    4.043 PER IMP=  55.00
ADD HYD              932.80  3& 1   1     .09910      186.34     10.813     2.04578        1.550    2.938
COMPUTE NM HYD       932.30    -    2     .03130       80.93      3.284     1.96752        1.500    4.040 PER IMP=  55.00
ADD HYD              932.00  2& 1  10     .13040      258.27     14.097     2.02699        1.550    3.095
*S        NO POND AT NORESTE BETWEEN CORONA AND ANAHEIM
*S*************************************************************************
*S                END: WYOMING STORM DRAIN
*S*************************************************************************
ROUTE MCUNGE         932.81   10    2     .13040      248.40     14.097     2.02700        1.700    2.976 CCODE =      .1
COMPUTE NM HYD       934.10    -    1     .10310      272.43     11.220     2.04056        1.500    4.129 PER IMP=  60.00
ADD HYD              934.99  1& 2   3     .23350      388.07     25.317     2.03298        1.650    2.597
*S LNDBDD INFLOW HYDROGRAPH (AP 930.84) - NOT FINAL
ADD HYD              930.84  3&13  11    4.20546     2107.61    364.688     1.62596        1.750     .783
COMPUTE NM HYD       937.00    -    1     .04520      119.15      4.919     2.04056        1.500    4.119 PER IMP=  60.00
*S TOTAL DAM INFLOW HYDROGRAPH (930.86)-FINAL
ADD HYD              930.86  1&11  11    4.25066     2153.83    369.607     1.63037        1.750     .792
*S
*S                LOWER NORTH DOMINGO BACA DETENTION DAM
*S  LOW FLOW OUTLET (PRINCIPLE SPILLWAY). THIS PRINCIPLE SPILLWAY JOINS
*S  ONE OF THE FOUR BOX CULVERTS AT THE I-25. IT ALSO PICKS UP FLOWS FROM
*S  SUB-BASINS 940.2, 939.16, 939.14 & 943.1. THE FLOWS FROM SUB-BASINS
*S  939.14 AND 943.1 ARE INCLUDED BY SAD221 PROJECT WHICH IS ALREADY
*S  IN PLACE. THE FOLLOWING RATING CURVE IS FOR A 40-INCH ORIFICE PLATE.
*S  EMERGENCY SPILLWAY IS NOT USED IN THE FOLLOWING RATING CURVE.
*S
ROUTE RESERVOIR      930.87   11   12    4.25066      200.70    369.646     1.63054        3.250     .074 AC-FT=  102.949
*S LNDBAD DAM OUTFLOW HYDROGRAPH (AP 930.87)
RAINFALL  TYPE= 2                                                                                          RAIN24=   2.850
COMPUTE NM HYD       960.00    -    1     .00750       18.46       .727     1.81681        1.500    3.845 PER IMP=  50.00
*S    STORM DRAIN OUT OF LNDBD DAM AT LOUISIANA BLVD. (AP 930.89)
ADD HYD              930.89  1&12  12    4.25816      200.83    370.372     1.63086        3.200     .074
COMPUTE NM HYD       940.20    -    1     .01560       37.64      1.486     1.78583        1.500    3.770 PER IMP=  50.00
COMPUTE NM HYD       939.16    -    3     .01280       30.89      1.219     1.78582        1.500    3.770 PER IMP=  50.00
ADD HYD              940.26  1& 3   3     .02840       68.53      2.705     1.78580        1.500    3.770
*S  AT THE END OF LA CUEVA OESTE PHASE 1, IN STORM DRAIN PIPE (AP 939.88)
*S  (UNBULKED)
ADD HYD              939.88 12& 3  12    4.28656      203.16    373.077     1.63189        2.050     .074
*S STORM DRAIN PIPE FROM THE END OF LA CUEVA OESTE PHASE 1 TILL SAN PEDRO
*S BENEATH ANAHEIM AVE -- TWO REACHES
*S   RCP DIA=4 FT TO 940.0 OUTFALL
*S (939.78=4-FOOT PIPE ROUTING)
ROUTE                939.78   12   15    4.28656      202.85    373.068     1.63185        2.050     .074
COMPUTE NM HYD       940.00    -    1     .01410       34.02      1.343     1.78583        1.500    3.770 PER IMP=  50.00
ADD HYD              939.68 15& 1  15    4.30066      232.55    374.411     1.63235        1.550     .084
*S  RCP DIA=4 FT TO SAN PEDRO
ROUTE                939.58   15   16    4.30066      234.18    374.407     1.63234        1.550     .085
*S STORM DRAIN PIPE FROM SAN PEDRO TO UTE DR. BENEATH ANAHEIM AVE.
*S (939.48=RCP DIA=4 FT)
ROUTE                939.48   16   14    4.30066      234.08    374.402     1.63232        1.550     .085
COMPUTE NM HYD       939.14    -    1     .01120       29.58      1.203     2.01454        1.500    4.127 PER IMP=  60.00
COMPUTE NM HYD       943.10    -    3     .01200       31.97      1.322     2.06603        1.500    4.162 PER IMP=  65.00
*S STORM DRAIN BENEATH ANAHEIM AT UTE (AP 943.18)
ADD HYD              943.18  1& 3   3     .02320       61.55      2.526     2.04114        1.500    4.145
*S STORM DRAIN FLOW AT I-25 (AP 943.19)
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COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	943.19	3&14	3	4.32386	288.50	376.928	1.63451	1.550	.104	
COMPUTE NM HYD	940.10	-	1	.00700	18.82	.791	2.11965	1.500	4.202	PER IMP= 70.00
ROUTE MCUNGE	940.80	1	6	.00700	18.75	.791	2.11970	1.600	4.185	CCODE = .2
COMPUTE NM HYD	943.20	-	1	.03750	100.77	4.239	2.11965	1.500	4.199	PER IMP= 70.00
*S OVERLAND FLOW AT I-25 (AP 943.29)										
ADD HYD	943.29	1& 6	5	.04450	112.79	5.031	2.11964	1.500	3.960	
*S TOTAL NDB Q AT I-25 BOX CULVERT (943.89)										
ADD HYD	943.98	5& 3	9	4.36836	394.04	381.959	1.63945	1.550	.141	
*S CORONA SD SYSTEM										
COMPUTE NM HYD	942.20	-	1	.10310	229.08	10.288	1.87097	1.550	3.472	PER IMP= 55.00
*S (ROUTE IN SD DIA=4 FT)										
ROUTE	942.29	1	5	.10310	231.01	10.288	1.87097	1.550	3.501	
COMPUTE NM HYD	942.10	-	2	.04690	128.50	5.391	2.15532	1.500	4.281	PER IMP= 70.00
*S CORONA SD AT I-25										
ADD HYD	942.59	2& 5	3	.15000	344.19	15.679	1.95987	1.550	3.585	
*S TOTAL Q AT CORONADO MH PARK (AP 943.99)										
ADD HYD	943.99	3& 9	3	4.51836	738.23	397.637	1.65009	1.550	.255	
COMPUTE NM HYD	443.20	-	2	.07030	192.62	8.081	2.15532	1.500	4.281	PER IMP= 70.00
FINISH										

SOUTH DOMINGO BACA EXISTING COND. 10-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =10/16/1998
INPUT FILE = sdb10.ext USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
*S 10-YR, 24-HOUR STORM EXISTING CONDTIONS											
*S SOUTH DOMINGO BACA ARROYO SYSTEM TO EUBANK BLVD.											
*S BEGIN SOUTH DOMINGO BACA BASIN ANALYSIS IN THE SANDIA MOUNTAINS											
START										TIME=	.00
RAINFALL TYPE= 2										RAIN24=	2.790
COMPUTE NM HYD	400.00	-	1	2.06900	854.14	73.559	.66661	1.900	.645	PER IMP=	.00
ROUTE MCUNGE	400.80	1	2	2.06900	835.54	73.243	.66376	2.250	.631	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	2.370
COMPUTE NM HYD	400.53	-	1	.98300	245.71	24.788	.47281	1.950	.391	PER IMP=	4.00
*S COMBINE HYD 400.53 AND 400.80 AS 400.32											
ADD HYD	400.32	1& 2	11	3.05200	1039.56	98.031	.60226	2.200	.532		
*SUB-BASIN 400.52											
COMPUTE NM HYD	400.52	-	1	.07340	77.40	3.245	.82897	1.500	1.648	PER IMP=	25.00
*S COMBINE HYD 400.52 AND 400.32 AS 400.33											
ADD HYD	400.33	1&11	2	3.12540	1046.45	101.276	.60758	2.200	.523		
*SUB-BASIN 400.51											
COMPUTE NM HYD	400.51	-	1	.16880	195.83	7.463	.82897	1.500	1.813	PER IMP=	25.00
*S COMBINE HYD 400.51 AND 400.33 AS 400.59											
ADD HYD	400.59	1& 2	1	3.29420	1060.35	108.739	.61892	2.200	.503		
*S SUM OF SOUTH DOMINGO BACA ARROYO FLOWS @ TRAMWAY (AP 400.59)											
*S ROUTE SUM OF FLOWS IN SDB CONCRETE CHANNEL AT TRAMWAY (400.58)											
ROUTE MCUNGE	400.58	1	3	3.29420	1056.21	108.682	.61860	2.250	.501	CCODE =	.1
*S START SOUTH DOMINGO BACA TRIBUTARY BASIN IN THE SANDIA MOUNTAINS											
RAINFALL TYPE= 2										RAIN24=	2.640
COMPUTE NM HYD	400.30	-	1	.25500	348.72	9.922	.72958	1.500	2.137	PER IMP=	.00
ROUTE MCUNGE	400.38	1	2	.25500	292.55	9.476	.69676	1.900	1.793	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	2.370
COMPUTE NM HYD	400.65	-	1	.59190	193.67	16.022	.50753	1.850	.511	PER IMP=	5.00
*S COMBINE HYDS. 400.65 AND 400.38 AS 400.21											
ADD HYD	400.21	1& 2	11	.84690	483.17	25.498	.56451	1.900	.891		
*S (400.61=FLOW E. OF TRAMWAY BETWEEN LIVE OAK ROAD AND TRAMWAY LANE CT.)											
COMPUTE NM HYD	400.61	-	1	.09300	107.60	4.112	.82897	1.500	1.808	PER IMP=	25.00
COMPUTE NM HYD	400.62	-	2	.09800	113.41	4.333	.82897	1.500	1.808	PER IMP=	25.00
*S (400.22=INTERMEDIATE COMBINATION STEP E. OF TRAMWAY @ N. DIV. CHANNEL INTAKE)											
ADD HYD	400.22	1& 2	12	.19100	221.01	8.444	.82896	1.500	1.808		
*S (400.23=INTERMEDIATE COMBINATION STEP E. OF TRAMWAY @ N. DIV. CHANNEL INTAKE)											
ADD HYD	400.23	11&12	11	1.03790	527.29	33.942	.61317	1.900	.794		
COMPUTE NM HYD	400.66	-	1	.09400	104.95	4.156	.82897	1.500	1.744	PER IMP=	25.00
*S (400.79=TOTAL FLOW AT N. DIV. CHANNEL TO SDB DIV.(E. OF TRAMWAY))											
ADD HYD	400.79	1&11	1	1.13190	552.57	38.098	.63109	1.850	.763		
*S ROUTE HYD. 400.79 AS 400.77 IN CONCRETE CHANNEL (DOM. BACA TRIB.)											
ROUTE MCUNGE	400.77	1	2	1.13190	543.97	38.015	.62973	1.950	.751	CCODE =	.1
*S TOTAL FLOW OF S D B ARROYO AND S D B ARROYO TRIBUTARY AT THEIR											
*S CONFLUENCE JUST WEST OF TRAMWAY (AP 400.89)											
ADD HYD	400.89	2& 3	1	4.42610	1366.56	146.698	.62145	2.100	.482		
ROUTE MCUNGE	400.87	1	3	4.42610	1365.84	146.782	.62180	2.150	.482	CCODE =	.2
ROUTE MCUNGE	400.88	3	2	4.42610	1363.37	146.757	.62170	2.150	.481	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	2.250
COMPUTE NM HYD	400.10	-	1	.24820	209.84	6.636	.50132	1.500	1.321	PER IMP=	10.00
*S COMBINE 400.88 AND 400.1 AS 402.91											
ADD HYD	400.91	1& 2	2	4.67430	1379.12	153.393	.61531	2.150	.461		
RAINFALL TYPE= 2										RAIN24=	2.300
*S AP 400.13 IS SANDIA COLONY											
COMPUTE NM HYD	400.13	-	14	.01390	22.93	.955	1.28770	1.500	2.578	PER IMP=	50.00
ROUTE MCUNGE	400.57	14	6	.01390	18.45	.933	1.25875	1.900	2.074	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	2.250
COMPUTE NM HYD	402.14	-	13	.08210	64.91	2.836	.64768	1.550	1.235	PER IMP=	20.00
*S (402.92=INTERMEDIATE COMBINATION STEP AT END OF 402.14)											
ADD HYD	402.92	6&13	6	.09600	65.31	3.769	.73615	1.550	1.063		
*S (400.99=TOTAL INFLOW TO SOUTH DOMINGO BACA DAM)											
ADD HYD	400.99	6& 2	1	4.77030	1396.76	157.162	.61774	2.150	.458		
*S S D B DAM OUTFLOW HYDROGRAPH (400.81)											
ROUTE RESERVOIR	400.81	1	2	4.77030	149.75	157.162	.61774	3.650	.049	AC-FT=	108.015
*S 400.81 IS THROUGH PRINCIPAL SPILLWAY											
*S SDB.SPILL IS THROUGH EMERGENCY SPILLWAY											
DIVIDE HYD	400.81	2	2	4.77030	149.75	157.162	.61774	3.650	.049		
	SDB.SPILL	AND	20	.00000	.00	.000	.00000	-.050	.000		
ROUTE MCUNGE	400.83	2	1	4.77030	149.75	157.160	.61773	3.700	.049	CCODE =	.1
ROUTE MCUNGE	400.82	1	2	4.77030	149.75	157.160	.61773	3.750	.049	CCODE =	.2

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
RAINFALL TYPE= 2										
										RAIN24= 2.220
COMPUTE NM HYD	403.10	-	1	.07950	49.19	1.530	.36073	1.500	.967	PER IMP= 5.00
*S S D B ARROYO AT BROWNING ST. (AP 403.99)										
ADD HYD	403.99	1& 2	1	4.84980	149.93	158.690	.61352	3.700	.048	
ROUTE MCUNGE	403.88	1	2	4.84980	149.93	158.690	.61352	3.850	.048	CCODE = .1
ROUTE MCUNGE	403.82	2	3	4.84980	149.93	158.686	.61350	3.900	.048	CCODE = .2
RAINFALL TYPE= 2										
										RAIN24= 2.170
COMPUTE NM HYD	403.20	-	1	.11030	62.84	2.446	.41573	1.550	.890	PER IMP= 10.00
*S S D B ARROYO AT EUBANK (AP 403.79)- NOT FINAL										
ADD HYD	403.79	1& 3	3	4.96010	150.28	161.132	.60911	3.800	.047	
RAINFALL TYPE= 2										
										RAIN24= 2.220
COMPUTE NM HYD	404.30	-	1	.04630	26.79	.851	.34459	1.500	.904	PER IMP= 5.00
ROUTE MCUNGE	404.38	1	2	.04630	23.91	.851	.34460	1.750	.807	CCODE = .1
RAINFALL TYPE= 2										
										RAIN24= 2.170
COMPUTE NM HYD	404.20	-	1	.05250	29.10	.925	.33028	1.500	.866	PER IMP= 5.00
ADD HYD	404.48	1& 2	5	.09880	34.37	1.776	.33698	1.700	.544	
*S S D B ARROYO @ EUBANK (AP 404.99)										
ADD HYD	404.99	5& 3	9	5.05890	176.64	162.908	.60379	1.750	.055	
*S										
*S END OF STUDY FOR S D B MAIN ARROYO (EUBANK)										
*S										
RAINFALL TYPE= 2										
										RAIN24= 2.250
COMPUTE NM HYD	401.40	-	1	.04320	32.04	1.077	.46745	1.500	1.159	PER IMP= 10.00
ROUTE MCUNGE	401.48	1	2	.04320	27.45	1.077	.46746	1.800	.993	CCODE = .1
RAINFALL TYPE= 2										
										RAIN24= 2.220
COMPUTE NM HYD	401.32	-	1	.05200	36.62	1.242	.44794	1.500	1.100	PER IMP= 10.00
ADD HYD	401.39	1& 2	1	.09520	39.39	2.319	.45679	1.750	.646	
ROUTE MCUNGE	401.38	1	6	.09520	39.03	2.319	.45680	1.800	.641	CCODE = .2
RAINFALL TYPE= 2										
										RAIN24= 2.250
COMPUTE NM HYD	401.50	-	1	.04500	31.62	1.083	.45105	1.500	1.098	PER IMP= 10.00
ROUTE MCUNGE	401.58	1	2	.04500	27.69	1.083	.45106	1.750	.962	CCODE = .1
RAINFALL TYPE= 2										
										RAIN24= 2.220
COMPUTE NM HYD	401.33	-	1	.04300	24.88	.790	.34459	1.500	.904	PER IMP= 5.00
ADD HYD	401.34	1& 2	1	.08800	37.34	1.873	.39903	1.700	.663	
ROUTE MCUNGE	401.07	1	3	.08800	37.30	1.873	.39903	1.750	.662	CCODE = .2
ROUTE MCUNGE	401.08	3	2	.08800	37.22	1.873	.39903	1.800	.661	CCODE = .2
ADD HYD	401.18	2& 6	6	.18320	76.25	4.192	.42904	1.800	.650	
ROUTE	SPILL.ROU	20	19	.00000	.00	.000	.00000	-.050	.000	
COMPUTE NM HYD	401.31	-	1	.05380	40.02	1.332	.46439	1.500	1.162	PER IMP= 10.00
ADD HYD	401.35	1&19	1	.05380	40.02	1.332	.46438	1.500	1.162	
ROUTE MCUNGE	401.28	1	3	.05380	39.66	1.333	.46444	1.600	1.152	CCODE = .2
ADD HYD	401.78	3& 6	1	.23700	108.22	5.525	.43708	1.600	.713	
ROUTE MCUNGE	401.77	1	3	.23700	108.12	5.525	.43708	1.650	.713	CCODE = .2
ROUTE MCUNGE	401.88	3	2	.23700	105.23	5.525	.43708	1.700	.694	CCODE = .1
RAINFALL TYPE= 2										
										RAIN24= 2.170
COMPUTE NM HYD	401.20	-	1	.08500	47.39	1.497	.33028	1.500	.871	PER IMP= 5.00
ADD HYD	401.29	1& 2	1	.32200	126.08	7.022	.40888	1.700	.612	
ADD HYD	404.95	1& 9	2	5.38090	293.04	169.930	.59213	1.750	.085	

*S SUM OF SDB FLOW AT EUBANK (404.95)
*S END OF STUDY AT EUBANK
*S **********
FINISH

SOUTH DOMINGO BACA EXISTING COND. 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =10/16/1998
INPUT FILE = sdb100.ext USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
*S 100-YR, 24-HOUR STORM EXISTING CONDTIONS										
*S SOUTH DOMINGO BACA ARROYO SYSTEM TO EUBANK BLVD.										
*S BEGIN SOUTH DOMINGO BACA BASIN ANALYSIS IN THE SANDIA MOUNTAINS										
START										
RAINFALL TYPE= 2										TIME= .00
COMPUTE NM HYD	400.00	-	1	2.06900	1792.15	145.723	1.32059	1.950	1.353	RAIN24= 4.180 PER IMP= .00
ROUTE MCUNGE	400.80	1	2	2.06900	1755.40	145.277	1.31656	2.200	1.326	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.550
COMPUTE NM HYD	400.53	-	1	.98300	644.20	58.278	1.11161	1.950	1.024	PER IMP= 4.00
*S COMBINE HYD 400.53 AND 400.80 AS 400.32										
ADD HYD	400.32	1& 2	11	3.05200	2285.82	203.555	1.25054	2.200	1.170	
*SUB-BASIN 400.52										
COMPUTE NM HYD	400.52	-	1	.07340	146.12	6.190	1.58112	1.500	3.111	PER IMP= 25.00
*S COMBINE HYD 400.52 AND 400.32 AS 400.33										
ADD HYD	400.33	1&11	2	3.12540	2300.68	209.745	1.25831	2.150	1.150	
*SUB-BASIN 400.51										
COMPUTE NM HYD	400.51	-	1	.16880	375.02	14.234	1.58112	1.500	3.471	PER IMP= 25.00
*S COMBINE HYD 400.51 AND 400.33 AS 400.59										
ADD HYD	400.59	1& 2	1	3.29420	2332.65	223.979	1.27485	2.150	1.106	
*S SUM OF SOUTH DOMINGO BACA ARROYO FLOWS @ TRAMWAY (AP 400.59)										
*S ROUTE SUM OF FLOWS IN SDB CONCRETE CHANNEL AT TRAMWAY (400.58)										
ROUTE MCUNGE	400.58	1	3	3.29420	2329.63	223.777	1.27370	2.200	1.105	CCODE = .1
*S START SOUTH DOMINGO BACA TRIBUTARY BASIN IN THE SANDIA MOUNTAINS										
RAINFALL TYPE= 2										RAIN24= 3.960
COMPUTE NM HYD	400.30	-	1	.25500	620.56	19.788	1.45500	1.500	3.802	PER IMP= .00
ROUTE MCUNGE	400.38	1	2	.25500	514.18	19.058	1.40134	1.850	3.151	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.550
COMPUTE NM HYD	400.65	-	1	.59190	488.03	36.701	1.16260	1.850	1.288	PER IMP= 5.00
*S COMBINE HYDS. 400.65 AND 400.38 AS 400.21										
ADD HYD	400.21	1& 2	11	.84690	1002.21	55.759	1.23449	1.850	1.849	
*S (400.61=FLOW E. OF TRAMWAY BETWEEN LIVE OAK ROAD AND TRAMWAY LANE CT.)										
COMPUTE NM HYD	400.61	-	1	.09300	202.27	7.842	1.58112	1.500	3.398	PER IMP= 25.00
COMPUTE NM HYD	400.62	-	2	.09800	213.43	8.264	1.58112	1.500	3.403	PER IMP= 25.00
*S (400.22=INTERMEDIATE COMBINATION STEP E. OF TRAMWAY @ N. DIV. CHANNEL INTAKE)										
ADD HYD	400.22	1& 2	12	.19100	415.71	16.106	1.58112	1.500	3.401	
*S (400.23=INTERMEDIATE COMBINATION STEP E. OF TRAMWAY @ N. DIV. CHANNEL INTAKE)										
ADD HYD	400.23	11&12	11	1.03790	1104.10	71.866	1.29827	1.850	1.662	
COMPUTE NM HYD	400.66	-	1	.09400	198.10	7.927	1.58112	1.500	3.293	PER IMP= 25.00
*S (400.79=TOTAL FLOW AT N. DIV. CHANNEL TO SDB DIV.(E. OF TRAMWAY))										
ADD HYD	400.79	1&11	1	1.13190	1156.42	79.792	1.32176	1.850	1.596	
*S ROUTE HYD. 400.79 AS 400.77 IN CONCRETE CHANNEL (DOM. BACA TRIB.)										
ROUTE MCUNGE	400.77	1	2	1.13190	1144.76	79.736	1.32084	1.850	1.580	CCODE = .1
*S TOTAL FLOW OF S D B ARROYO AND S D B ARROYO TRIBUTARY AT THEIR										
*S CONFLUENCE JUST WEST OF TRAMWAY (AP 400.89)										
ADD HYD	400.89	2& 3	1	4.42610	2975.36	303.513	1.28575	2.100	1.050	
ROUTE MCUNGE	400.87	1	3	4.42610	2973.62	303.415	1.28534	2.150	1.050	CCODE = .2
ROUTE MCUNGE	400.88	3	2	4.42610	2963.81	303.404	1.28529	2.150	1.046	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.380
COMPUTE NM HYD	400.10	-	1	.24820	477.22	14.947	1.12916	1.500	3.004	PER IMP= 10.00
*S COMBINE 400.88 AND 400.1 AS 402.91										
ADD HYD	400.91	1& 2	2	4.67430	2995.86	318.351	1.27700	2.150	1.001	
RAINFALL TYPE= 2										RAIN24= 3.450
*S AP 400.13 IS SANDIA COLONY										
COMPUTE NM HYD	400.13	-	14	.01390	37.55	1.627	2.19512	1.500	4.221	PER IMP= 50.00
ROUTE MCUNGE	400.57	14	6	.01390	32.26	1.617	2.18090	1.800	3.626	CCODE = .1
RAINFALL TYPE= 2										RAIN24= 3.380
COMPUTE NM HYD	402.14	-	13	.08210	134.07	5.772	1.31818	1.550	2.552	PER IMP= 20.00
*S (402.92=INTERMEDIATE COMBINATION STEP AT END OF 402.14)										
ADD HYD	402.92	6&13	6	.09600	134.96	7.389	1.44309	1.550	2.197	
*S (400.99=TOTAL INFLOW TO SOUTH DOMINGO BACA DAM)										
ADD HYD	400.99	6& 2	1	4.77030	3025.21	325.739	1.28034	2.150	.991	
*S S D B DAM OUTFLOW HYDROGRAPH (400.81)										
ROUTE RESERVOIR	400.81	1	2	4.77030	173.02	325.749	1.28038	4.250	.057	AC-FT= 258.942
*S 400.81 IS THROUGH PRINCIPAL SPILLWAY										
*S SDB.SPILL IS THROUGH EMERGENCY SPILLWAY										
DIVIDE HYD	400.81	2	2	4.77030	173.02	325.749	1.28038	4.250	.057	
	SDB.SPILL	AND	20	.00000	.00	.000	.00000	-.050	.000	
ROUTE MCUNGE	400.83	2	1	4.77030	173.02	325.747	1.28037	4.300	.057	CCODE = .1
ROUTE MCUNGE	400.82	1	2	4.77030	173.02	325.746	1.28037	4.350	.057	CCODE = .1

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
RAINFALL TYPE= 2										
COMPUTE NM HYD	403.10	-	1	.07950	123.44	3.928	.92653	1.500	2.426	RAIN24= 3.330 PER IMP= 5.00
*S S D B ARROYO AT BROWNING ST. (AP 403.99)										
ADD HYD	403.99	1& 2	1	4.84980	190.10	329.675	1.27457	1.550	.061	
ROUTE MCUNGE	403.88	1	2	4.84980	185.85	329.675	1.27457	1.700	.060	CCODE = .1
ROUTE MCUNGE	403.82	2	-3	4.84980	180.89	329.656	1.27450	1.850	.058	CCODE = .1
RAINFALL TYPE= 2										
COMPUTE NM HYD	403.20	-	1	.11030	154.79	5.802	.98627	1.550	2.193	RAIN24= 3.250 PER IMP= 10.00
*S S D B ARROYO AT EUBANK (AP 403.79)- NOT FINAL										
ADD HYD	403.79	1& 3	3	4.96010	232.99	335.458	1.26809	1.800	.073	
RAINFALL TYPE= 2										
COMPUTE NM HYD	404.30	-	1	.04630	69.12	2.224	.90077	1.500	2.332	RAIN24= 3.330 PER IMP= 5.00
ROUTE MCUNGE	404.38	1	2	.04630	62.61	2.224	.90078	1.750	2.113	CCODE = .1
RAINFALL TYPE= 2										
COMPUTE NM HYD	404.20	-	1	.05250	76.30	2.443	.87249	1.500	2.271	RAIN24= 3.250 PER IMP= 5.00
ADD HYD	404.48	1& 2	5	.09880	94.09	4.667	.88574	1.700	1.488	
*S S D B ARROYO @ EUBANK (AP 404.99)										
ADD HYD	404.99	5& 3	9	5.05890	320.17	340.126	1.26062	1.750	.099	
*S										
*S END OF STUDY FOR S D B MAIN ARROYO (EUBANK)										
*S										
RAINFALL TYPE= 2										
COMPUTE NM HYD	401.40	-	1	.04320	72.94	2.481	1.07692	1.500	2.638	RAIN24= 3.380 PER IMP= 10.00
ROUTE MCUNGE	401.48	1	2	.04320	62.99	2.442	1.05977	1.750	2.278	CCODE = .1
RAINFALL TYPE= 2										
COMPUTE NM HYD	401.32	-	1	.05200	85.27	2.893	1.04315	1.500	2.562	RAIN24= 3.330 PER IMP= 10.00
ADD HYD	401.39	1& 2	1	.09520	96.64	5.335	1.05069	1.700	1.586	
ROUTE MCUNGE	401.38	1	6	.09520	95.86	5.335	1.05069	1.800	1.573	CCODE = .2
RAINFALL TYPE= 2										
COMPUTE NM HYD	401.50	-	1	.04500	73.79	2.519	1.04945	1.500	2.562	RAIN24= 3.380 PER IMP= 10.00
ROUTE MCUNGE	401.58	1	2	.04500	65.67	2.519	1.04945	1.750	2.280	CCODE = .1
RAINFALL TYPE= 2										
COMPUTE NM HYD	401.33	-	1	.04300	64.19	2.066	.90077	1.500	2.333	RAIN24= 3.330 PER IMP= 5.00
ADD HYD	401.34	1& 2	1	.08800	93.91	4.584	.97679	1.700	1.667	
ROUTE MCUNGE	401.07	1	3	.08800	93.62	4.584	.97680	1.750	1.662	CCODE = .2
ROUTE MCUNGE	401.08	3	-2	.08800	93.15	4.584	.97680	1.800	1.654	CCODE = .2
ADD HYD	401.18	2& 6	6	.18320	189.01	9.919	1.01519	1.800	1.612	
ROUTE	SPILL.ROU	20	19	.00000	.00	.000	.00000	-.050	.000	
RAINFALL TYPE= 2										
COMPUTE NM HYD	401.31	-	1	.05380	90.87	3.072	1.07065	1.500	2.639	RAIN24= 3.330 PER IMP= 10.00
ADD HYD	401.35	1&19	1	.05380	90.87	3.072	1.07065	1.500	2.639	
ROUTE MCUNGE	401.28	1	3	.05380	84.69	3.051	1.06318	1.600	2.460	CCODE = .1
ADD HYD	401.78	3& 6	1	.23700	250.48	12.970	1.02608	1.600	1.651	
ROUTE MCUNGE	401.77	1	3	.23700	247.17	12.970	1.02609	1.700	1.630	CCODE = .1
ROUTE MCUNGE	401.88	3	2	.23700	244.09	12.970	1.02609	1.800	1.609	CCODE = .1
RAINFALL TYPE= 2										
COMPUTE NM HYD	401.20	-	1	.08500	124.87	3.955	.87249	1.500	2.295	RAIN24= 3.250 PER IMP= 5.00
ADD HYD	401.29	1& 2	1	.32200	285.66	16.925	.98554	1.750	1.386	
ADD HYD	404.95	1& 9	2	5.38090	605.83	357.051	1.24416	1.750	.176	

*S SUM OF SDB FLOW AT EUBANK (404.95)
*S END OF STUDY AT EUBANK
*S **********
FINISH

SOUTH DOMINGO BACA FUTURE COND. 10-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =10/16/1998
INPUT FILE = sdb10.fut USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
*S 10-YR, 24-HOUR STORM FUTURE CONDTIONS											
*S SOUTH DOMINGO BACA ARROYO SYSTEM TO EUBANK BLVD.											
*S BEGIN SOUTH DOMINGO BACA BASIN ANALYSIS IN THE SANDIA MOUNTAINS											
START											
RAINFALL TYPE= 2										TIME=	.00
COMPUTE NM HYD	400.00	-	1	2.06900	854.14	73.559	.66661	1.900	.645	RAIN24= PER IMP=	2.790 .00
*S (400=BASIN STARTS AT SANDIA CREST)											
ROUTE MCUNGE	400.80	1	2	2.06900	835.54	73.243	.66376	2.250	.631	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	2.370
COMPUTE NM HYD	400.53	-	1	.98300	245.71	24.788	.47281	1.950	.391	PER IMP=	4.00
*S											
*S COMBINE HYD 400.53 AND 400.80 AS 400.32											
ADD HYD	400.32	1& 2	11	3.05200	1039.56	98.031	.60226	2.200	.532		
COMPUTE NM HYD	400.52	-	1	.07340	88.50	3.939	1.00619	1.500	1.884	PER IMP=	35.00
*S COMBINE HYD 400.52 AND 400.32 AS 400.33											
ADD HYD	400.33	1&11	2	3.12540	1047.88	101.970	.61174	2.200	.524		
*SUB-BASIN 400.51											
COMPUTE NM HYD	400.51	-	1	.16880	220.94	9.058	1.00619	1.500	2.045	PER IMP=	35.00
*S COMBINE HYD 400.51 AND 400.33 AS 400.34											
ADD HYD	400.59	1& 2	1	3.29420	1064.66	111.028	.63195	2.200	.505		
*S SUM OF SOUTH DOMINGO BACA ARROYO FLOWS @ TRAMWAY (AP 400.59)											
*S ROUTE SUM OF FLOWS IN SDB CONCRETE CHANNEL AT TRAMWAY (400.58)											
ROUTE MCUNGE	400.58	1	3	3.29420	1060.22	111.017	.63189	2.250	.503	CCODE =	.1
*S START SOUTH DOMINGO BACA TRIBUTARY BASIN IN THE SANDIA MOUNTAINS											
RAINFALL TYPE= 2										RAIN24=	2.640
COMPUTE NM HYD	400.30	-	1	.25500	348.72	9.922	.72958	1.500	2.137	PER IMP=	.00
ROUTE MCUNGE	400.38	1	2	.25500	292.55	9.476	.69676	1.900	1.793	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	2.370
COMPUTE NM HYD	400.65	-	1	.59190	193.67	16.022	.50753	1.850	.511	PER IMP=	5.00
*S COMBINE HYDS. 400.65 AND 400.38 AS 400.21											
ADD HYD	400.21	1& 2	11	.84690	483.17	25.498	.56451	1.900	.891		
*S (400.61=FLOW E. OF TRAMWAY BETWEEN LIVE OAK ROAD AND TRAMWAY LANE CT.)											
COMPUTE NM HYD	400.61	-	1	.09300	120.24	4.991	1.00619	1.500	2.020	PER IMP=	35.00
COMPUTE NM HYD	400.62	-	2	.09800	128.39	5.259	1.00619	1.500	2.047	PER IMP=	35.00
*S (400.22=INTERMEDIATE COMBINATION STEP E. OF TRAMWAY @ N. DIV. CHANNEL INTAKE)											
ADD HYD	400.22	1& 2	12	.19100	248.63	10.250	1.00619	1.500	2.034		
*S (400.23=INTERMEDIATE COMBINATION STEP E. OF TRAMWAY @ N. DIV. CHANNEL INTAKE)											
ADD HYD	400.23	11&12	11	1.03790	538.75	35.747	.64579	1.850	.811		
COMPUTE NM HYD	400.66	-	1	.09400	119.29	5.044	1.00619	1.500	1.983	PER IMP=	35.00
*S (400.79=TOTAL FLOW AT N. DIV. CHANNEL TO SDB DIV.(E. OF TRAMWAY))											
ADD HYD	400.79	1&11	1	1.13190	570.68	40.792	.67572	1.850	.788		
ROUTE MCUNGE	400.77	1	2	1.13190	561.11	40.723	.67459	1.950	.775	CCODE =	.1
*S (400.89=TOTAL FLOW OF SDB ARROYO AND SDB ARROYO TRIBUTARY AT THEIR											
*S CONFLUENCE JUST WEST OF TRAMWAY)											
ADD HYD	400.89	2& 3	1	4.42610	1389.97	151.740	.64281	2.100	.491		
ROUTE MCUNGE	400.87	1	3	4.42610	1384.10	151.553	.64202	2.150	.489	CCODE =	.1
ROUTE MCUNGE	400.88	3	2	4.42610	1383.08	151.528	.64191	2.150	.488	CCODE =	.2
RAINFALL TYPE= 2										RAIN24=	2.250
COMPUTE NM HYD	400.10	-	1	.24200	329.21	12.248	.94897	1.500	2.126	PER IMP=	30.00
*S COMBINE 400.88 AND 400.1 AS 400.91											
ADD HYD	400.91	1& 2	2	4.66810	1412.51	163.776	.65783	2.150	.473		
RAINFALL TYPE= 2										RAIN24=	2.300
*S AP 400.13 IS SANDIA COLONY											
COMPUTE NM HYD	400.13	-	14	.01390	22.93	.955	1.28770	1.500	2.578	PER IMP=	50.00
ROUTE MCUNGE	400.57	14	6	.01390	18.45	.933	1.25875	1.900	2.074	CCODE =	.1
COMPUTE NM HYD	402.14	-	1	.08840	90.65	4.139	.87789	1.550	1.602	PER IMP=	30.00
*S (402.92=INTERMEDIATE COMBINATION STEP AT END OF 402.14)											
ADD HYD	402.92	6& 1	6	.10230	91.04	5.072	.92963	1.550	1.391		
*S (400.93=PARTIAL INFLOW TO SDB DAM - TOTAL=401.99)											
ADD HYD	400.93	6& 2	1	4.77040	1434.28	168.848	.66365	2.150	.470		
*S 401.5 AND 401.4 DIVERTED TO SDB DAM IN PROPOSED STORM DRAIN ON LOWELL											
COMPUTE NM HYD	401.50	-	18	.04500	54.12	1.809	.75374	1.500	1.879	PER IMP=	17.00
*S ROUTE 401.5 IN 54-INCH STORM DRAIN TO PINO AVE.											
ROUTE	401.80	18	6	.04500	48.82	1.809	.75375	1.550	1.695		
COMPUTE NM HYD	401.40	-	19	.04520	54.36	1.817	.75374	1.500	1.879	PER IMP=	17.00
ADD HYD	401.93	6&19	11	.09020	99.11	3.626	.75374	1.500	1.717		
*S ROUTE 401.93 IN 60-INCH STORM DRAIN TO SDB DAM											
ROUTE	401.82	11	7	.09020	100.42	3.626	.75375	1.550	1.739		
*S COMBINE 401.82 AND 400.92 AS 401.99											
*S (401.99=TOTAL INFLOW TO SOUTH DOMINGO BACA DAM)											

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                                FROM  TO                          PEAK        RUNOFF                        TIME TO   CFS
                  HYDROGRAPH     ID   ID        AREA        DISCHARGE     VOLUME        RUNOFF        PEAK     PER
COMMAND         IDENTIFICATION  NO.  NO.      (SQ MI)        (CFS)       (AC-FT)      (INCHES)     (HOURS)   ACRE      NOTATION

ADD HYD                401.99  7& 1   1       4.86060       1444.67      172.474        .66533       2.150    .464
*S    S D B DAM OUTFLOW HYDROGRAPH (400.81)
ROUTE RESERVOIR        400.81    1    2       4.86060        152.07      172.474        .66533       3.650    .049 AC-FT=  118.924
*S   AP 400.81 IS THROUGH PRINCIPAL SPILLWAY
*S   AP SDB.SPILL IS THROUGH EMERGENCY SPILLWAY
DIVIDE HYD             400.81    2    2       4.86060        152.07      172.474        .66533       3.650    .049
                    SDB.SPILL  AND   20        .00000           .00         .000        .00000       -.050    .000
*S ROUTE 400.81 IN 48-INCH RCP PALOMAS STORM DRAIN TO BROWNING (400.83)
ROUTE                  400.83    2    3       4.86060        152.07      172.474        .66533       3.650    .049
RAINFALL  TYPE= 2
COMPUTE NM HYD         403.10    -    1        .06730         77.53       2.571        .71642       1.500   1.800 RAIN24=   2.220
*S PALOMAS STORM DRAIN AT BROWNING ST. (403.99)                                                                 PER IMP=  17.00
ADD HYD                403.99  1& 3   1       4.92790        170.02      175.045        .66602       1.500    .054
*S ROUTE 403.99 IN 54-INCH RCP PALOMAS STORM DRAIN TO END OF 403.3 (403.88)
ROUTE                  403.88    1    2       4.92790        172.38      175.045        .66602       1.550    .055
RAINFALL  TYPE= 2
COMPUTE NM HYD         403.30    -    1        .01550         17.49        .576        .69689       1.500   1.763 RAIN24=   2.170
*S PALOMAS STORM DRAIN AT END OF 403.3 (403.89)                                                                 PER IMP=  17.00
ADD HYD                403.89  1& 2   1       4.94340        188.44      175.621        .66612       1.550    .060
*S ROUTE 403.89 IN 54-INCH RCP PALOMAS STORM DRAIN TO EUBANK (403.84)
ROUTE                  403.84    1    2       4.94340        189.34      175.621        .66612       1.550    .060
COMPUTE NM HYD         408.10    -    1        .00980         11.06        .364        .69689       1.500   1.764 PER IMP=  17.00
*S PALOMAS STORM DRAIN AT EUBANK (408.9)
ADD HYD                408.90  1& 2   1       4.95320        199.49      175.986        .66618       1.550    .063
*S ROUTE 408.9 IN 78-INCH RCP NORTH REACH OF EUBANK STORM DRAIN TO
*S COMBINATION AT 403.79 (403.84)
ROUTE                  408.80    1    3       4.95320        201.51      175.986        .66618       1.550    .064
COMPUTE NM HYD         403.20    -    1        .07960         79.67       2.959        .69689       1.550   1.564 PER IMP=  17.00
*S COMBINE 403.2 AND NORTH REACH OF EUBANK STORM DRAIN FLOW (NORTH SIDE
*S OF RANCHITOS (403.79))
ADD HYD                403.79  1& 3   8       5.03280        281.19      178.944        .66667       1.550    .087
RAINFALL  TYPE= 2
COMPUTE NM HYD         404.30    -    1        .04630         53.34       1.769        .71642       1.500   1.800 RAIN24=   2.220
ROUTE MCUNGE           404.38    1    2        .04630         47.12       1.769        .71642       1.750   1.590 PER IMP=  17.00
RAINFALL  TYPE= 2                                                                                               CCODE =      .1
COMPUTE NM HYD         404.20    -    1        .05250         59.21       1.951        .69689       1.500   1.762 RAIN24=   2.170
ADD HYD                404.48  1& 2   5        .09880         68.22       3.720        .70603       1.700   1.079 PER IMP=  17.00
*S
*S END OF STUDY FOR S D B MAIN ARROYO (EUBANK)
*S
RAINFALL  TYPE= 2
COMPUTE NM HYD         401.32    -    1        .05200         59.91       1.987        .71642       1.500   1.800 RAIN24=   2.220
ROUTE MCUNGE           401.38    1    6        .05200         59.09       1.987        .71643       1.550   1.776 PER IMP=  17.00
COMPUTE NM HYD         401.33    -    1        .04300         49.54       1.643        .71642       1.500   1.800 CCODE =      .2
ROUTE MCUNGE           401.07    1    3        .04300         46.70       1.643        .71643       1.600   1.697 PER IMP=  17.00
ROUTE MCUNGE           401.08    3    2        .04300         46.48       1.643        .71643       1.650   1.689 CCODE =      .1
ADD HYD                401.18  2& 6   6        .09500        103.54       3.630        .71641       1.600   1.703 CCODE =      .2
ROUTE                 SPILL.ROU   20  19        .00000           .00         .000        .00000       -.050    .000
COMPUTE NM HYD         401.31    -    1        .05180         59.68       1.979        .71642       1.500   1.800 PER IMP=  17.00
ADD HYD                401.35  1&19   1        .05180         59.68       1.979        .71641       1.500   1.800
ROUTE MCUNGE           401.28    1    3        .05180         58.82       1.979        .71643       1.550   1.774 CCODE =      .2
ADD HYD                401.78  3& 6   1        .14680        161.29       5.609        .71641       1.600   1.717
ROUTE MCUNGE           401.77    1    3        .14680        158.60       5.609        .71643       1.600   1.688 CCODE =      .2
ROUTE MCUNGE           401.88    3    2        .14680        155.40       5.609        .71643       1.700   1.654 CCODE =      .1
RAINFALL  TYPE= 2                                                                                               RAIN24=   2.170
COMPUTE NM HYD         401.20    -    1        .08500         96.33       3.172        .69964       1.500   1.771 PER IMP=  17.00
ADD HYD                401.29  1& 2   1        .23180        194.64       8.781        .71027       1.700   1.312
RAINFALL  TYPE= 2                                                                                               RAIN24=   2.130
COMPUTE NM HYD         507.00    -    4        .00890          9.82        .322        .67932       1.500   1.725 PER IMP=  17.00
*S SOUTH REACH OF EUBANK STORM DRAIN FLOW AT PINO AVE. (401.9)
ADD HYD                401.90  1& 4  11        .24070        198.70       9.103        .70912       1.650   1.290
*S ROUTE 401.9 IN 84-INCH RCP SOUTH REACH EUBANK STORM DRAIN
*S TO COMBINATION WITH 404.48 401.83)
ROUTE                  401.83   11    6        .24070        200.12       9.103        .70912       1.700   1.299
*S SOUTH REACH EUBANK STORM DRAIN FLOW AT SOUTH SIDE OF RANCHITOS
ADD HYD                404.99  5& 6  11        .33950        268.35      12.824        .70822       1.700   1.235
*S*****************************************************************
*S COMBINE HYDS. 404.99 AND 403.79 AS 404.95
*S 404.95=SUM OF SOUTH DOMINGO SD FLOWS AT EUBANK AND RANCHITOS
ADD HYD.               404.95  8&11   2       5.37230        498.45     191.768        .66929       1.550    .145
*S END OF STUDY AT EUBANK
*S ******************************************************************
FINISH
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SOUTH DOMINGO BACA FUTURE COND. 100-YR

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =10/16/1998
INPUT FILE = sdb100.fut USER NO.= RSTECHNM.STE

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
*S 100-YR, 24-HOUR STORM FUTURE CONDTIONS											
*S SOUTH DOMINGO BACA ARROYO SYSTEM TO EUBANK BLVD.											
*S BEGIN SOUTH DOMINGO BACA BASIN ANALYSIS IN THE SANDIA MOUNTAINS											
START											
RAINFALL TYPE= 2										TIME=	.00
COMPUTE NM HYD	400.00	-	1	2.06900	1792.15	145.723	1.32059	1.950	1.353	RAIN24= PER IMP=	4.180 .00
*S (400=BASIN STARTS AT SANDIA CREST)											
ROUTE MCUNGE	400.80	1	2	2.06900	1755.40	145.277	1.31656	2.200	1.326	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	3.550
COMPUTE NM HYD	400.53	-	1	.98300	644.20	58.278	1.11161	1.950	1.024	PER IMP=	4.00
*S											
*S COMBINE HYD 400.53 AND 400.80 AS 400.32											
ADD HYD	400.32	1& 2	11	3.05200	2285.82	203.555	1.25054	2.200	1.170		
COMPUTE NM HYD	400.52	-	1	.07340	158.70	7.112	1.81680	1.500	3.378	PER IMP=	35.00
*S COMBINE HYD 400.52 AND 400.32 AS 400.33											
ADD HYD	400.33	1&11	2	3.12540	2303.41	210.667	1.26384	2.150	1.152		
*SUB-BASIN 400.51											
COMPUTE NM HYD	400.51	-	1	.16880	402.59	16.356	1.81680	1.500	3.727	PER IMP=	35.00
*S COMBINE HYD 400.51 AND 400.33 AS 400.34											
ADD HYD	400.59	1& 2	1	3.29420	2340.71	227.023	1.29218	2.150	1.110		
*S SUM OF SOUTH DOMINGO BACA ARROYO FLOWS @ TRAMWAY (AP 400.59)											
*S ROUTE SUM OF FLOWS IN SDB CONCRETE CHANNEL AT TRAMWAY (400.58)											
ROUTE MCUNGE	400.58	1	3	3.29420	2339.75	227.128	1.29277	2.200	1.110	CCODE =	.2
*S START SOUTH DOMINGO BACA TRIBUTARY BASIN IN THE SANDIA MOUNTAINS											
RAINFALL TYPE= 2										RAIN24=	3.960
COMPUTE NM HYD	400.30	-	1	.25500	620.56	19.788	1.45500	1.500	3.802	PER IMP=	.00
ROUTE MCUNGE	400.38	1	2	.25500	514.18	19.058	1.40134	1.850	3.151	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	3.550
COMPUTE NM HYD	400.65	-	1	.59190	488.03	36.701	1.16260	1.850	1.288	PER IMP=	5.00
*S COMBINE HYDS. 400.65 AND 400.38 AS 400.21											
ADD HYD	400.21	1& 2	11	.84690	1002.21	55.759	1.23449	1.850	1.849		
*S (400.61=FLOW E. OF TRAMWAY BETWEEN LIVE OAK ROAD AND TRAMWAY LANE CT.)											
COMPUTE NM HYD	400.61	-	1	.09300	215.52	9.011	1.81680	1.500	3.621	PER IMP=	35.00
COMPUTE NM HYD	400.62	-	2	.09800	230.10	9.496	1.81680	1.500	3.669	PER IMP=	35.00
*S (400.22=INTERMEDIATE COMBINATION STEP E. OF TRAMWAY @ N. DIV. CHANNEL INTAKE)											
ADD HYD	400.22	1& 2	12	.19100	445.61	18.507	1.81679	1.500	3.645		
*S (400.23=INTERMEDIATE COMBINATION STEP E. OF TRAMWAY @ N. DIV. CHANNEL INTAKE)											
ADD HYD	400.23	11&12	11	1.03790	1120.12	74.266	1.34164	1.850	1.686		
COMPUTE NM HYD	400.66	-	1	.09400	214.19	9.108	1.81680	1.500	3.560	PER IMP=	35.00
*S (400.79=TOTAL FLOW AT N. DIV. CHANNEL TO SDB DIV.(E. OF TRAMWAY))											
ADD HYD	400.79	1&11	1	1.13190	1179.82	83.375	1.38110	1.850	1.629		
ROUTE MCUNGE	400.77	1	2	1.13190	1168.23	83.295	1.37979	1.850	1.613	CCODE =	.1
*S (400.89=TOTAL FLOW OF SDB ARROYO AND SDB ARROYO TRIBUTARY AT THEIR											
*S CONFLUENCE JUST WEST OF TRAMWAY)											
ADD HYD	400.89	2& 3	1	4.42610	3064.28	310.423	1.31502	2.100	1.082		
ROUTE MCUNGE	400.87	1	3	4.42610	3052.66	310.530	1.31548	2.100	1.078	CCODE =	.2
ROUTE MCUNGE	400.88	3	2	4.42610	3048.31	310.409	1.31497	2.150	1.076	CCODE =	.2
RAINFALL TYPE= 2										RAIN24=	3.380
COMPUTE NM HYD	400.10	-	1	.24200	601.75	22.579	1.74941	1.500	3.885	PER IMP=	30.00
*S COMBINE 400.88 AND 400.1 AS 400.91											
ADD HYD	400.91	1& 2	2	4.66810	3111.66	332.988	1.33749	2.100	1.042		
RAINFALL TYPE= 2										RAIN24=	3.450
*S AP 400.13 IS SANDIA COLONY											
COMPUTE NM HYD	400.13	-	14	.01390	37.55	1.627	2.19512	1.500	4.221	PER IMP=	50.00
ROUTE MCUNGE	400.57	14	6	.01390	32.26	1.617	2.18090	1.800	3.626	CCODE =	.1
RAINFALL TYPE= 2										RAIN24=	3.380
COMPUTE NM HYD	402.14	-	1	.08840	168.01	7.582	1.60823	1.550	2.970	PER IMP=	30.00
*S (402.92=INTERMEDIATE COMBINATION STEP AT END OF 402.14)											
ADD HYD	402.92	6& 1	6	.10230	168.90	9.199	1.68603	1.550	2.580		
*S (400.93=PARTIAL INFLOW TO SDB DAM - TOTAL=401.99)											
ADD HYD	400.93	6& 2	1	4.77040	3153.87	342.187	1.34496	2.100	1.033		
*S 401.5 AND 401.4 DIVERTED TO SDB DAM IN PROPOSED STORM DRAIN ON LOWELL											
RAINFALL TYPE= 2										RAIN24=	3.380
COMPUTE NM HYD	401.50	-	18	.04500	97.92	3.517	1.46537	1.500	3.400	PER IMP=	17.00
*S ROUTE 401.5 IN 54-INCH STORM DRAIN TO PINO AVE.											
ROUTE	401.80	18	6	.04500	88.90	3.517	1.46538	1.550	3.087		
RAINFALL TYPE= 2										RAIN24=	3.380
COMPUTE NM HYD	401.40	-	19	.04520	98.36	3.533	1.46537	1.500	3.400	PER IMP=	17.00
ADD HYD	401.93	6&19	11	.09020	184.96	7.049	1.46537	1.500	3.204		
*S ROUTE 401.93 IN 60-INCH STORM DRAIN TO SDB DAM											

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                                FROM  TO                          PEAK        RUNOFF                    TIME TO   CFS
                   HYDROGRAPH    ID   ID          AREA      DISCHARGE     VOLUME      RUNOFF              PEAK     PER
COMMAND          IDENTIFICATION  NO.  NO.       (SQ MI)       (CFS)      (AC-FT)    (INCHES)           (HOURS)   ACRE      NOTATION
ROUTE                  401.82    11    7        .09020        181.73       7.049     1.46537            1.550   3.148
*S COMBINE 401.82 AND 400.92 AS 401.99
*S (401.99=TOTAL INFLOW TO SOUTH DOMINGO BACA DAM)
ADD HYD                401.99  7& 1    1       4.86060       3178.37     349.237     1.34720            2.100   1.022
*S    S D B DAM OUTFLOW HYDROGRAPH (400.81)
ROUTE RESERVOIR        400.81     1    2       4.86060        174.81     349.244     1.34722            4.250    .056 AC-FT=  276.472
*S   AP 400.81 IS THROUGH PRINCIPAL SPILLWAY
*S   AP SDB.SPILL IS THROUGH EMERGENCY SPILLWAY
DIVIDE HYD             400.81     2    2       4.86060        174.81     349.244     1.34722            4.250    .056
                    SDB.SPILL   AND   20        .00000           .00        .000      .00000           -.050    .000
*S ROUTE 400.81 IN 48-INCH RCP PALOMAS STORM DRAIN TO BROWNING (400.83)
ROUTE                  400.83     2    3       4.86060        174.81     349.244     1.34722            4.250    .056
RAINFALL  TYPE= 2                                                                                                RAIN24=   3.330
COMPUTE NM HYD         403.10     -    1        .06730        144.54       5.156     1.43652            1.500   3.356 PER IMP=  17.00
*S PALOMAS STORM DRAIN AT BROWNING ST. (403.99)
ADD HYD                403.99  1& 3    1       4.92790        249.59     354.400     1.34844            1.500    .079
*S ROUTE 403.99 IN 54-INCH RCP PALOMAS STORM DRAIN TO END OF 403.3 (403.88)
ROUTE                  403.88     1    2       4.92790        248.73     354.399     1.34844            1.550    .079
RAINFALL  TYPE= 2                                                                                                RAIN24=   3.250
COMPUTE NM HYD         403.30     -    1        .01550         32.72       1.157     1.39974            1.500   3.298 PER IMP=  17.00
*S PALOMAS STORM DRAIN AT END OF 403.3 (403.89)
ADD HYD                403.89  1& 2    1       4.94340        279.12     355.557     1.34860            1.500    .088
*S ROUTE 403.89 IN 54-INCH RCP PALOMAS STORM DRAIN TO EUBANK (403.84)
ROUTE                  403.84     1    2       4.94340        279.70     355.557     1.34860            1.550    .088
COMPUTE NM HYD         408.10     -    1        .00980         20.69        .732     1.39974            1.500   3.299 PER IMP=  17.00
*S PALOMAS STORM DRAIN AT EUBANK (408.9)
ADD HYD                408.90  1& 2    1       4.95320        298.97     356.288     1.34870            1.500    .094
*S ROUTE 408.9 IN 78-INCH RCP NORTH REACH OF EUBANK STORM DRAIN TO
*S COMBINATION AT 403.79 (403.84)
ROUTE                  408.80     1   -3       4.95320        300.31     356.288     1.34870            1.550    .095
RAINFALL  TYPE= 2                                                                                                RAIN24=   3.250
COMPUTE NM HYD         403.20     -    1        .07960        150.24       5.942     1.39974            1.550   2.949 PER IMP=  17.00
*S COMBINE 403.2 AND NORTH REACH OF EUBANK STORM DRAIN FLOW (NORTH SIDE
*S OF RANCHITOS (403.79))
ADD HYD                403.79  1& 3    8       5.03280        450.55     362.231     1.34951            1.550    .140
RAINFALL  TYPE= 2                                                                                                RAIN24=   3.330
COMPUTE NM HYD         404.30     -    1        .04630         99.31       3.547     1.43652            1.500   3.352 PER IMP=  17.00
ROUTE MCUNGE           404.38     1    2        .04630         88.90       3.547     1.43652            1.750   3.000 CCODE =     .1
RAINFALL  TYPE= 2                                                                                                RAIN24=   3.250
COMPUTE NM HYD         404.20     -    1        .05250        110.77       3.919     1.39974            1.500   3.297 PER IMP=  17.00
ADD HYD                404.48  1& 2    5        .09880        137.07       7.466     1.41697            1.700   2.168
*S
*S END OF STUDY FOR S D B MAIN ARROYO (EUBANK)
*S
RAINFALL  TYPE= 2                                                                                                RAIN24=   3.330
COMPUTE NM HYD         401.32     -    1        .05200        111.54       3.984     1.43652            1.500   3.352 PER IMP=  17.00
ROUTE MCUNGE           401.38     1    6        .05200        110.74       3.984     1.43652            1.550   3.328 CCODE =     .2
RAINFALL  TYPE= 2                                                                                                RAIN24=   3.330
COMPUTE NM HYD         401.33     -    1        .04300         92.24       3.294     1.43652            1.500   3.352 PER IMP=  17.00
ROUTE MCUNGE           401.07     1    3        .04300         87.01       3.294     1.43653            1.600   3.162 CCODE =     .1
ROUTE MCUNGE           401.08     3    2        .04300         86.60       3.294     1.43653            1.600   3.147 CCODE =     .2
ADD HYD                401.18  2& 6    6        .09500        193.60       7.278     1.43651            1.600   3.184
ROUTE                SPILL.ROU    20   19        .00000           .00        .000      .00000           -.050    .000
RAINFALL  TYPE= 2                                                                                                RAIN24=   3.330
COMPUTE NM HYD         401.31     -    1        .05180        111.11       3.969     1.43652            1.500   3.352 PER IMP=  17.00
ADD HYD                401.35  1&19    1        .05180        111.11       3.969     1.43651            1.500   3.352
ROUTE MCUNGE           401.28     1    3        .05180        110.25       3.969     1.43652            1.550   3.326 CCODE =     .2
ADD HYD                401.78  3& 6    1        .14680        300.21      11.247     1.43651            1.600   3.195
ROUTE MCUNGE           401.77     1    3        .14680        299.63      11.247     1.43652            1.600   3.189 CCODE =     .2
ROUTE MCUNGE           401.88     3    2        .14680        291.56      11.247     1.43652            1.700   3.103 CCODE =     .1
RAINFALL  TYPE= 2                                                                                                RAIN24=   3.250
COMPUTE NM HYD         401.20     -    1        .08500        180.40       6.345     1.39974            1.500   3.316 PER IMP=  17.00
ADD HYD                401.29  1& 2    1        .23180        378.97      17.592     1.42303            1.650   2.555
RAINFALL  TYPE= 2                                                                                                RAIN24=   3.200
COMPUTE NM HYD         507.00     -    4        .00890         18.50        .650     1.37021            1.500   3.247 PER IMP=  17.00
*S SOUTH REACH OF EUBANK STORM DRAIN FLOW AT PINO AVE. (401.9)
ADD HYD                401.90  1& 4   11        .24070        389.82      18.243     1.42107            1.650   2.530
*S ROUTE 401.9 IN 84-INCH RCP SOUTH REACH EUBANK STORM DRAIN
*S TO COMBINATION WITH 404.48 401.83)
ROUTE                  401.83    11    6        .24070        386.59      18.243     1.42108            1.650   2.510
*S SOUTH REACH EUBANK STORM DRAIN FLOW AT SOUTH SIDE OF RANCHITOS
ADD HYD                404.99  5& 6   11        .33950        522.95      25.709     1.41988            1.700   2.407
*S*****************************************************************
*S COMBINE HYDS. 404.99 AND 403.79 AS 404.95
*S 404.95=SUM OF SOUTH DOMINGO SD FLOWS AT EUBANK AND RANCHITOS
```

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	404.95	8&11	2	5.37230	887.89	387.940	1.35396	1.600	.258	

*S END OF STUDY AT EUBANK
*S **********
FINISH

PINO SYS. EXISTING COND. 10-YR

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AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994          RUN DATE (MON/DAY/YR) =10/16/1998
INPUT FILE = pino10.ext                                                                   USER NO.= RSTECHNM.STE

                                FROM  TO                      PEAK        RUNOFF                TIME TO   CFS      PAGE =   1
                   HYDROGRAPH   ID    ID        AREA      DISCHARGE     VOLUME      RUNOFF        PEAK    PER
COMMAND          IDENTIFICATION NO.  NO.      (SQ MI)      (CFS)       (AC-FT)    (INCHES)      (HOURS)  ACRE      NOTATION

*S*************************************************************************
*S          NORTH PINO ARROYO (N. OF SAN ANTONIO DR.) AND MAIN PINO ARROYO
*S          EXISTING CONDITIONS, 10-YR RETURN PERIOD, 24-HR STORM
*S*************************************************************************
START                                                                                                   TIME=      .00
*S BEGIN ANALYSIS OF N. PINO WATERSHED EAST OF TRAMWAY
*S SUBBASIN 500.0=(FLOW E. OF TRAMWAY N.OF POND N.OF SAN RAFAEL)
RAINFALL  TYPE= 2                                                                                       RAIN24=   2.330
COMPUTE NM HYD       500.00   -    1        .06350       71.54       2.735       .80763    1.500    1.760 PER IMP=  25.00
COMPUTE NM HYD       500.10   -    2        .05490       57.39       2.365       .80763    1.500    1.633 PER IMP=  25.00
COMPUTE NM HYD       500.20   -    3        .05080       57.23       2.188       .80763    1.500    1.760 PER IMP=  25.00
*S ROUTE 500.1 THROUGH 500.2 - (NATURAL CHANNEL WEST OF QUAIL RUN LOOP)
ROUTE MCUNGE         500.82   2    7        .05490       56.95       2.364       .80736    1.500    1.621 CCODE =     .2
*S COMBINE ROUTED 500.1 WITH 500.2 AT AP 500.91
*S (FLOW E. OF TRAMWAY COLLECTED AT POND NORTH OF SAN RAFAEL)
ADD HYD              500.91  3& 7  11        .10570      114.18       4.552       .80748    1.500    1.688
*S DEVELOP HYDROGRAPH 500.3
*S (FLOW E. OF TRAMWAY BETWEEN SAN RAFAEL AND QUAIL RUN COURT)
COMPUTE NM HYD       500.30   -    2        .05320       52.71       2.292       .80763    1.550    1.548 PER IMP=  25.00
*S DEVELOP HYDROGRAPH 500.4
*S (FLOW E. OF TRAMWAY NEAR QUAIL RUN COURT)
COMPUTE NM HYD       500.40   -    3        .02090       23.55        .900       .80763    1.500    1.761 PER IMP=  25.00
*S COMBINE FLOWS TO ESTIMATE CONTRIBUTION STORM DRAIN AND PINO DAM
*S (500.94=COMBINED FLOW AT POND N. OF SAN RAFAEL)
ADD HYD              500.94 11& 1  12        .16920      185.72       7.287       .80754    1.500    1.715
*S (500.95=COMBINED FLOW AT TRAMWAY BETWEEN SAN RAFAEL AND QUAIL RUN COURT)
ADD HYD              500.95 12& 2  13        .22240      237.50       9.579       .80756    1.500    1.669
*S (500.96 = ESTIMATED FLOW TO DAM)
ADD HYD              500.96 13& 3  19        .24330      261.05      10.479       .80756    1.500    1.677
*S END OF ANALYSIS OF WATERSHED EAST OF TRAMWAY
*S *************************************************************************
*S BEGIN ANALYSIS OF WATERSHED WEST OF TRAMWAY
RAINFALL  TYPE= 2                                                                                       RAIN24=   2.200
COMPUTE NM HYD       501.00   -    1        .01392       11.52        .371       .50006    1.500    1.293 PER IMP=  10.00
*S (SUBBASIN 501.0=FLOW AT LOWELL STREET BETWEEN CORONADO AND SAN RAFAEL)
*S ROUTE 501.0 THROUGH 501.1
ROUTE MCUNGE         501.80   1    6        .01392        9.72        .371       .50007    1.800    1.091 CCODE =     .1
COMPUTE NM HYD       501.10   -    2        .03920       32.43       1.045       .50006    1.500    1.293 PER IMP=  10.00
*S COMBINE 501.80 WITH 501.1 AS 501.91
*S (501.91=FLOW AT BROWNING BETWEEN CORONADO AND SAN RAFAEL)
ADD HYD              501.91  6& 2  11        .05312       32.78       1.417       .50005    1.500     .964
*S ROUTE 501.91 THROUGH 501.2
ROUTE MCUNGE         501.81   11   6        .05312       29.94       1.401       .49437    1.650     .881 CCODE =     .1
RAINFALL  TYPE= 2                                                                                       RAIN24=   2.130
COMPUTE NM HYD       501.20   -    2        .05010       38.59       1.244       .46542    1.500    1.204 PER IMP=  10.00
*S COMBINE 501.81 WITH 501.2 AS 501.99
*S (501.99=FLOW AT EUBANK BETWEEN SAN RAFAEL AND DEL REY)
ADD HYD              501.99  6& 2  11        .10322       52.55       2.644       .48031    1.600     .795
*S *************************************************************************
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                          FROM  TO                    PEAK        RUNOFF                TIME TO   CFS
              HYDROGRAPH   ID   ID        AREA     DISCHARGE     VOLUME      RUNOFF      PEAK    PER
COMMAND     IDENTIFICATION NO.  NO.      (SQ MI)     (CFS)       (AC-FT)   (INCHES)    (HOURS)  ACRE      NOTATION

RAINFALL  TYPE= 2                                                                                   RAIN24=   2.200
COMPUTE NM HYD      508.00   -    1       .02590      41.79       1.696     1.22766     1.500   2.521 PER IMP=  50.00
*S (508.0=INFLOW FROM SANDIA HEIGHTS SOUTH UNITS 23 AND 24 TO SUBBASIN 502)
*S ROUTE 508.0 THROUGH 502.0
ROUTE MCUNGE        508.80   1    6       .02590      41.60       1.692     1.22485     1.550   2.510 CCODE =      .2
COMPUTE NM HYD      502.00   -    1       .06295      52.07       1.679      .50006     1.500   1.293 PER IMP=  10.00
*S COMBINE RP 508.0 WITH 502.0 AS 502.91
*S (502.91=FLOW AT LOWELL BETWEEN SAN RAFAEL AND DEL REY)
ADD HYD             502.91  1& 6  12       .08885      89.90       3.371      .71133     1.550   1.581
COMPUTE NM HYD      502.10   -    1       .07500      62.15       2.000      .50006     1.500   1.295 PER IMP=  10.00
*S (502.1=FLOW AT LOWELL IN NORTH 1/2 OF BLOCK BETWEEN DEL REY AND SANTA MONICA)
*S COMBINE 502.91 WITH 502.1 AS 502.92
*S (502.92=COMBINED FLOW IN ARROYO JUNCTION W.OF LOWELL BETWEEN
*S DEL REY AND SAN RAFAEL)
ADD HYD             502.92 12& 1  13       .16385     147.55       5.371      .61462     1.550   1.407
*S ROUTE 502.92 THROUGH 502.3
ROUTE MCUNGE        502.80   13   6       .16385     141.38       5.387      .61647     1.600   1.348 CCODE =      .2
COMPUTE NM HYD      502.20   -    1       .03390      24.01        .904      .50006     1.550   1.107 PER IMP=  10.00
*S (502.2=FLOW AT LOWELL IN SOUTH 1/2 OF BLOCK BETWEEN DEL REY AND SANTA MONICA)
*S ROUTE 502.2 THROUGH 502.3
ROUTE MCUNGE        502.81    1   7       .03390      22.64        .896      .49571     1.650   1.044 CCODE =      .1
*S COMBINE 502.81 WITH 502.80 AS 502.93
ADD HYD             502.93  6& 7  12       .19775     162.87       6.283      .59576     1.600   1.287
COMPUTE NM HYD      502.30   -    1       .03950      32.68       1.053      .50006     1.500   1.293 PER IMP=  10.00
*S COMBINE 502.3 WITH 502.93 AS 502.99
*S (502.99=FLOW TO PINO DIVERSION DROP STRUCTURE)
ADD HYD             502.99 12& 1  13       .23725     186.87       7.337      .57983     1.600   1.231
*S ***************************************************************
COMPUTE NM HYD      503.00   -    1       .05610      45.82       1.496      .50006     1.500   1.276 PER IMP=  10.00
*S (503.0=FLOW AT BROWNING BETWEEN DEL REY AND SANTA MONICA)
COMPUTE NM HYD      503.10   -    2       .02200      17.16        .587      .50006     1.500   1.218 PER IMP=  10.00
*S (503.1=FLOW AT BROWNING AT BETWEEN SAN RAFAEL AND DEL REY)
*S COMBIINE 503.0 AND 503.1 AS 503.91
ADD HYD             503.91  1& 2  12       .07810      62.97       2.083      .50006     1.500   1.260
*S (503.91=FLOW AT ARROYO JUNCTION W. OF BROWNING BETWEEN DEL REY
*S AND SANTA MONICA)
*S ROUTE 503.91 THROUGH 503.2
ROUTE MCUNGE        503.81   12   7       .07810      56.10       2.040      .48968     1.700   1.122 CCODE =      .1
RAINFALL  TYPE= 2                                                                                   RAIN24=   2.130
COMPUTE NM HYD      503.20   -    1       .04940      38.05       1.226      .46542     1.500   1.204 PER IMP=  10.00
*S COMBIINE 503.2 AND 503.91 AS 503.99
*S (503.99=FLOW AT EUBANK BETWEEN DEL REY AND SANTA MONICA)
ADD HYD             503.99  7& 1  20       .12750      72.59       3.266      .48027     1.650    .890
*S ***************************************************************
*S MISCELLANEOUS BASINS THAT FLOW TO EAST SIDE OF EUBANK
COMPUTE NM HYD      504.00   -    1       .03720      28.66        .923      .46542     1.500   1.204 PER IMP=  10.00
*S (504.0=FLOW AT EUBANK NORTH OF CORONADO BELOW SAN FRANCISCO)
COMPUTE NM HYD      505.00   -    2       .02870      22.11        .712      .46542     1.500   1.204 PER IMP=  10.00
*S (505.0=FLOW AT EUBANK FROM SMALL SUBBASIN THAT STRADDLES SAN RAFAEL)
COMPUTE NM HYD      506.00   -    3       .04840      25.65       1.201      .46542     1.600    .828 PER IMP=  10.00
*S (506.0=FLOW AT EUBANK NORTH OF SAN ANTONIO SOUTH OF SANTA MONICA)
COMPUTE NM HYD      507.00   -    4       .00890       6.86        .221      .46542     1.500   1.205 PER IMP=  10.00
*S (507.0=FLOW AT EUBANK NORTH OF SAN FRANCISCO BELOW S. DOMINGO
*S BACA WATERSHED DIVIDE)
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                          FROM  TO                    PEAK      RUNOFF                  TIME TO   CFS
                HYDROGRAPH  ID   ID        AREA     DISCHARGE   VOLUME     RUNOFF        PEAK     PER
COMMAND       IDENTIFICATION NO.  NO.     (SQ MI)     (CFS)     (AC-FT)   (INCHES)     (HOURS)   ACRE      NOTATION

COMPUTE NM HYD        509.00   -    5      .02590      40.32      1.626     1.17709      1.500   2.432 PER IMP=  50.00
*S (509.0=SANDIA HEIGHTS SOUTH UNITS 21 & 23 SD OUTFALL TO PINO DAM)
*S
*S ***************************************************************
*S HYDROGRAPHS AT QUINTESSENCE STORM DRAINS (EUBANK)
*S COMBINE 507.0 WITH 504.00 AT CORONADO AND EUBANK
ADD HYD               511.90  1& 4  12     .04610      35.52      1.144      .46541      1.500   1.204
*S ROUTE 511.90 THROUGH CHANNEL ON EAST SIDE OF EUBANK
*S (510.80=FLOW TO MH#4 AT CORONADO AND EUBANK)
ROUTE MCUNGE          511.80   12    7     .04610      35.49      1.144      .46539      1.550   1.203 CCODE =     .2
*S
*S (511.91= FLOW TO MH#3 AT SAN RAFAEL)
ADD HYD               511.91  2& 7  13     .07480      56.07      1.857      .46539      1.550   1.171
*S (511.92=FLOW TO MH#2 AT SANTA MONICA)
ADD HYD               510.92 13&11  21     .17802      98.35      4.501      .47404      1.550    .863
*S (511.99=FLOW AT OUTFALL WEST OF EUBANK AT SANTA MONICA)
ADD HYD               511.99 21&20  22     .30552     161.14      7.767      .47664      1.600    .824
*S END OF ANALYSIS OF N. PINO WATERSHED EAST OF TRAMWAY
*S*****************************************************************
*S          MAIN PINO ARROYO
*S          EXISTING CONDITIONS, 10-YR RETURN PERIOD, 24-HR STORM
*S*****************************************************************
*S          BEGIN MAIN PINO ARROYO BASINS
*S*****************************************************************
RAINFALL  TYPE= 2                                                                                  RAIN24=   2.730
COMPUTE NM HYD        510.00   -    1    3.17800    1561.97    112.465      .66354      1.833    .768 PER IMP=   .00
*S  ROUTE 510.0 THRU 510.2 (PA-1 THRU BASIN PA-16)
ROUTE MCUNGE          510.80    1    6    3.17800    1553.85    112.342      .66281      1.900    .764 CCODE =     .1
COMPUTE NM HYD        510.10   -    1     .46400     447.72     16.420      .66354      1.567   1.508 PER IMP=   .00
*S   ROUTE 510.1 THRU 510.2 (PA-2 THROUGH BASIN PA-15)
ROUTE MCUNGE          510.81    1    5     .46400     445.82     16.434      .66408      1.633   1.501 CCODE =     .2
*S ADD 510.81 AND 510.80
ADD HYD               510.90  6& 5  11    3.64200    1734.23    128.776      .66297      1.833    .744
*S   ROUTE 510.90 THRU 510.2
ROUTE MCUNGE          510.82   11    7    3.64200    1729.21    128.746      .66282      1.900    .742 CCODE =     .1
COMPUTE NM HYD        510.20   -   -1     .27000     170.53      4.494      .31211      1.500    .987 PER IMP=   .00
*S    ADD 510.9 AND 510.2 (ROUTED PA-1 TO PA-16)
ADD HYD               510.91  1& 7  12    3.91200    1748.06    133.240      .63861      1.900    .698
*S   ROUTE SUM OF 510.0 TO 510.2 THRU 510.3(PA-1 & PA-16 THROUGH BASIN PA-17)
ROUTE MCUNGE          510.83   12    7    3.91200    1735.44    132.731      .63617      2.033    .693 CCODE =     .1
RAINFALL  TYPE= 2                                                                                  RAIN24=   2.420
COMPUTE NM HYD        510.30   -    1     .27800     209.94      6.322      .42637      1.500   1.180 PER IMP=  6.00
*S SEPARATE 510.3 (PA-17) INTO NORTH AND SOUTH DRAINAGE
DIVIDE HYD            510.3N    1   11     .16124     121.77      3.667      .42637      1.500   1.180
                      510.3S  AND   12     .11676      88.18      2.655      .42637      1.500   1.180
*S SEPARATE 510.3S INTO A (FLOW TO S. EAGLE RIDGE DR.) AND B (FLOW TO CV-D23-47)
DIVIDE HYD           510.3SA   12   13     .06422      48.50      1.460      .42637      1.500   1.180
                     510.3SB  AND   14     .05254      39.68      1.195      .42637      1.500   1.180
*S ADD FLOW TO CV-D23-47 BACK TO P17N (DS FROM N. EAGLE RIDGE DR.)
ADD HYD               510.3N 14&11  11     .21378     161.44      4.861      .42636      1.500   1.180
*S    TOTAL DRAINAGE AT END OF BASIN 510.3 (PA-17) IN MAIN ARROYO
ADD HYD               510.92 11& 7  11    4.12578    1752.12    137.606      .62536      2.033    .664
*S SEPARATE 510.3SA(P17A) INTO FLOW TO 510.3SC (CV-D23-49) AND 510.3SD (DS-D23-1
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COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
DIVIDE HYD	510.3SC	13	14	.04559	34.43	1.037	.42636	1.500	1.180	
	510.3SD	AND	15	.01862	14.06	.423	.42636	1.500	1.180	
*S ADD FLOW DS FROM EAGLE ROCK PLACE										
ADD HYD	510.93	14&15	14	.06422	48.50	1.460	.42637	1.500	1.180	
*S ROUTE 510.93(P17C&D) THROUGH NATURAL CHANNEL TO CONF. W/MAIN PINO										
ROUTE MCUNGE	510.84	14	7	.06422	41.91	1.433	.41834	1.767	1.020	CCODE = .1
*S ROUTE SUMS 510.92(PA-1 THRU PA-17) THROUGH BASIN 510.4(PA-19)										
ROUTE MCUNGE	510.85	11	8	4.12578	1742.34	137.278	.62387	2.133	.660	CCODE = .1
COMPUTE NM HYD	510.40	-	1	.22100	209.90	7.391	.62702	1.500	1.484	PER IMP= 16.00
*S ADD ROUTED FLOWS TO 510.4										
ADD HYD	510.94	1& 8	19	4.34678	1761.87	144.668	.62403	2.133	.633	
*S 510.99=TOTAL MAIN PINO FLOW AT TRAMWAY										
ADD HYD	510.99	19& 7	20	4.41100	1770.22	146.101	.62104	2.133	.627	
FINISH										

PINO SYS. EXISTING COND. 100-YR

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AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994          RUN DATE (MON/DAY/YR) =10/16/1998
INPUT FILE = pino100.ext                                                                   USER NO.= RSTECHNM.STE

                                FROM  TO                      PEAK        RUNOFF                TIME TO    CFS      PAGE =   1
                   HYDROGRAPH   ID    ID        AREA      DISCHARGE      VOLUME      RUNOFF      PEAK     PER
COMMAND          IDENTIFICATION NO.  NO.      (SQ MI)      (CFS)        (AC-FT)    (INCHES)   (HOURS)    ACRE      NOTATION

*S*************************************************************************
*S          NORTH PINO ARROYO (N. OF SAN ANTONIO DR.) AND MAIN PINO ARROYO
*S          EXISTING CONDITIONS, 100-YR RETURN PERIOD, 24-HR STORM
*S*************************************************************************
START                                                                                                   TIME=       .00
*S BEGIN ANALYSIS OF N. PINO WATERSHED EAST OF TRAMWAY (N. OF MAIN PINO)
*S SUBBASIN 500.0=(FLOW E. OF TRAMWAY N.OF POND N.OF SAN RAFAEL)
RAINFALL  TYPE= 2                                                                                       RAIN24=   3.500
COMPUTE NM HYD       500.00  -    1        .06350       134.41       5.234     1.54547     1.500     3.307 PER IMP=  25.00
COMPUTE NM HYD       500.10  -    2        .05490       108.56       4.525     1.54547     1.500     3.090 PER IMP=  25.00
COMPUTE NM HYD       500.20  -    3        .05080       107.50       4.187     1.54547     1.500     3.307 PER IMP=  25.00
*S ROUTE 500.1 THROUGH 500.2 - (NATURAL CHANNEL WEST OF QUAIL RUN LOOP)
ROUTE MCUNGE         500.82   2   7        .05490       108.12       4.525     1.54530     1.500     3.077 CCODE =     .2
*S COMBINE ROUTED 500.1 WITH 500.2 AT AP 500.91
*S (FLOW E. OF TRAMWAY COLLECTED AT POND NORTH OF SAN RAFAEL)
ADD HYD              500.91 3& 7  11        .10570       215.63       8.712     1.54537     1.500     3.187
*S DEVELOP HYDROGRAPH 500.3
*S (FLOW E. OF TRAMWAY BETWEEN SAN RAFAEL AND QUAIL RUN COURT)
COMPUTE NM HYD       500.30  -    2        .05320        99.55       4.385     1.54547     1.550     2.924 PER IMP=  25.00
*S DEVELOP HYDROGRAPH 500.4
*S (FLOW E. OF TRAMWAY NEAR QUAIL RUN COURT)
COMPUTE NM HYD       500.40  -   .3        .02090        44.24       1.723     1.54547     1.500     3.307 PER IMP=  25.00
*S COMBINE FLOWS TO ESTIMATE CONTRIBUTION STORM DRAIN AND PINO DAM
*S (500.94=COMBINED FLOW AT POND N. OF SAN RAFAEL)
ADD HYD              500.94 11& 1  12       .16920       350.04      13.946     1.54541     1.500     3.232
*S (500.95=COMBINED FLOW AT TRAMWAY BETWEEN SAN RAFAEL AND QUAIL RUN COURT)
ADD HYD              500.95 12& 2  13       .22240       448.51      18.331     1.54542     1.500     3.151
*S (500.96 = ESTIMATED FLOW TO DAM)
ADD HYD              500.96 13& 3  19       .24330       492.75      20.053     1.54542     1.500     3.165
*S END OF ANALYSIS OF WATERSHED EAST OF TRAMWAY
*S ************************************************************************
*S BEGIN ANALYSIS OF WATERSHED WEST OF TRAMWAY
RAINFALL  TYPE= 2                                                                                       RAIN24=   3.300
COMPUTE NM HYD       501.00  -    1        .01392        24.75        .833     1.12163     1.500     2.778 PER IMP=  10.00
*S (SUBBASIN 501.0=FLOW AT LOWELL STREET BETWEEN CORONADO AND SAN RAFAEL)
*S ROUTE 501.0 THROUGH 501.1
ROUTE MCUNGE         501.80   1   6        .01392        21.42        .815     1.09713     1.750     2.404 CCODE =     .1
COMPUTE NM HYD       501.10  -    2        .03920        69.66       2.345     1.12163     1.500     2.777 PER IMP=  10.00
*S COMBINE 501.80 WITH 501.1 AS 501.91
*S (501.91=FLOW AT BROWNING BETWEEN CORONADO AND SAN RAFAEL)
ADD HYD              501.91 6& 2  11        .05312        70.70       3.159     1.11519     1.500     2.080
*S ROUTE 501.91 THROUGH 501.2
ROUTE MCUNGE         501.81  11   6        .05312        66.21       3.114     1.09906     1.650     1.947 CCODE =     .1
RAINFALL  TYPE= 2                                                                                       RAIN24=   3.200
COMPUTE NM HYD       501.20  -    2        .05010        85.46       2.840     1.06288     1.500     2.665 PER IMP=  10.00
*S COMBINE 501.81 WITH 501.2 AS 501.99
*S (501.99=FLOW AT EUBANK BETWEEN SAN RAFAEL AND DEL REY)
ADD HYD              501.99 6& 2  11        .10322       122.91       5.954     1.08149     1.600     1.861
*S ************************************************************
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                                FROM  TO                    PEAK        RUNOFF                TIME TO    CFS      PAGE =   2
                   HYDROGRAPH    ID   ID        AREA     DISCHARGE     VOLUME      RUNOFF      PEAK      PER
COMMAND          IDENTIFICATION  NO.  NO.     (SQ MI)     (CFS)       (AC-FT)    (INCHES)   (HOURS)    ACRE      NOTATION

RAINFALL  TYPE= 2                                                                                          RAIN24=   3.300
COMPUTE NM HYD          508.00   -    1       .02590      68.75        2.903      2.10174     1.500     4.147 PER IMP=  50.00
*S (508.0=INFLOW FROM SANDIA HEIGHTS SOUTH UNITS 23 AND 24 TO SUBBASIN 502)
*S ROUTE 508.0 THROUGH 502.0
ROUTE MCUNGE            508.80   1    6       .02590      62.86        2.875      2.08108     1.650     3.792 CCODE =      .1
COMPUTE NM HYD          502.00   -    1       .06295     111.88        3.766      1.12163     1.500     2.777 PER IMP=  10.00
*S COMBINE RP 508.0 WITH 502.0 AS 502.91
*S (502.91=FLOW AT LOWELL BETWEEN SAN RAFAEL AND DEL REY)
ADD HYD                 502.91  1& 6  12       .08885     145.37        6.640      1.40130     1.550     2.556
COMPUTE NM HYD          502.10   -    1       .07500     133.93        4.487      1.12163     1.500     2.790 PER IMP=  10.00
*S (502.1=FLOW AT LOWELL IN NORTH 1/2 OF BLOCK BETWEEN DEL REY AND SANTA MONICA)
*S COMBINE 502.91 WITH 502.1 AS 502.92
*S (502.92=COMBINED FLOW IN ARROYO JUNCTION W.OF LOWELL BETWEEN
*S DEL REY AND SAN RAFAEL)
ADD HYD                 502.92 12& 1  13       .16385     270.43       11.127      1.27328     1.500     2.579
*S ROUTE 502.92 THROUGH 502.3
ROUTE MCUNGE            502.80   13   6       .16385     270.12       11.102      1.27040     1.550     2.576 CCODE =      .1
COMPUTE NM HYD          502.20   -    1       .03390      52.21        2.028      1.12163     1.550     2.407 PER IMP=  10.00
*S (502.2=FLOW AT LOWELL IN SOUTH 1/2 OF BLOCK BETWEEN DEL REY AND SANTA MONICA)
*S ROUTE 502.2 THROUGH 502.3
ROUTE MCUNGE            502.81    1   7       .03390      50.68        2.010      1.11157     1.600     2.336 CCODE =      .1
*S COMBINE 502.81 WITH 502.80 AS 502.93
ADD HYD                 502.93  6& 7  12       .19775     315.10       13.111      1.24316     1.550     2.490
COMPUTE NM HYD          502.30   -    1       .03950      70.20        2.363      1.12163     1.500     2.777 PER IMP=  10.00
*S COMBINE 502.3 WITH 502.93 AS 502.99
*S (502.99=FLOW TO PINO DIVERSION DROP STRUCTURE)
ADD HYD                 502.99 12& 1  13       .23725     380.20       15.474      1.22293     1.550     2.504
*S ************************************************************
COMPUTE NM HYD          503.00   -    1       .05610      98.61        3.356      1.12163     1.500     2.746 PER IMP=  10.00
*S (503.0=FLOW AT BROWNING BETWEEN DEL REY AND SANTA MONICA)
COMPUTE NM HYD          503.10   -    2       .02200      37.19        1.316      1.12163     1.500     2.641 PER IMP=  10.00
*S (503.1=FLOW AT BROWNING AT BETWEEN SAN RAFAEL AND DEL REY)
*S COMBIINE 503.0 AND 503.1 AS 503.91
ADD HYD                 503.91  1& 2  12       .07810     135.79        4.672      1.12162     1.500     2.717
*S (503.91=FLOW AT ARROYO JUNCTION W. OF BROWNING BETWEEN DEL REY
*S AND SANTA MONICA)
*S ROUTE 503.91 THROUGH 503.2
ROUTE MCUNGE            503.81   12   7       .07810     125.63        4.616      1.10819     1.650     2.513 CCODE =      .1
RAINFALL  TYPE= 2                                                                                          RAIN24=   3.200
COMPUTE NM HYD          503.20   -    1       .04940      84.27        2.800      1.06288     1.500     2.665 PER IMP=  10.00
*S COMBIINE 503.2 AND 503.91 AS 503.99
*S (503.99=FLOW AT EUBANK BETWEEN DEL REY AND SANTA MONICA)
ADD HYD                 503.99  7& 1  20       .12750     176.74        7.416      1.09063     1.600     2.166
*S ************************************************************
*S MISCELLANEOUS BASINS THAT FLOW TO EAST SIDE OF EUBANK
COMPUTE NM HYD          504.00   -    1       .03720      63.46        2.109      1.06288     1.500     2.666 PER IMP=  10.00
*S (504.0=FLOW AT EUBANK NORTH OF CORONADO BELOW SAN FRANCISCO)
COMPUTE NM HYD          505.00   -    2       .02870      48.96        1.627      1.06288     1.500     2.666 PER IMP=  10.00
*S (505.0=FLOW AT EUBANK FROM SMALL SUBBASIN THAT STRADDLES SAN RAFAEL)
COMPUTE NM HYD          506.00   -    3       .04840      58.52        2.744      1.06288     1.600     1.889 PER IMP=  10.00
*S (506.0=FLOW AT EUBANK NORTH OF SAN ANTONIO SOUTH OF SANTA MONICA)
COMPUTE NM HYD          507.00   -    4       .00890      15.20         .505      1.06288     1.500     2.668 PER IMP=  10.00
*S (507.0=FLOW AT EUBANK NORTH OF SAN FRANCISCO BELOW S. DOMINGO
*S BACA WATERSHED DIVIDE)
                                FROM  TO                    PEAK        RUNOFF                TIME TO    CFS      PAGE =   3
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                    HYDROGRAPH   ID   ID        AREA     DISCHARGE     VOLUME     RUNOFF    PEAK     PER
COMMAND        IDENTIFICATION   NO.  NO.      (SQ MI)     (CFS)       (AC-FT)   (INCHES)  (HOURS)   ACRE      NOTATION

COMPUTE NM HYD        509.00   -    5        .02590       66.74       2.793     2.02208    1.500    4.026 PER IMP=  50.00
*S (509.0=SANDIA HEIGHTS SOUTH UNITS 21 & 23 SD OUTFALL TO PINO DAM)
*S
*S ***************************************************************
*S HYDROGRAPHS AT QUINTESSENCE STORM DRAINS (EUBANK)
*S COMBINE 507.0 WITH 504.00 AT CORONADO AND EUBANK
ADD HYD               511.90  1& 4  12        .04610       78.66       2.613     1.06287    1.500    2.666
*S ROUTE 511.90 THROUGH CHANNEL ON EAST SIDE OF EUBANK
*S (511.80=FLOW TO MH#4 AT CORONADO AND EUBANK)
ROUTE MCUNGE          511.80   12    7        .04610       76.64       2.623     1.06691    1.550    2.598 CCODE =      .2
*S
*S (511.91= FLOW TO MH#3 AT SAN RAFAEL)
ADD HYD               511.91  2& 7  13        .07480      124.96       4.250     1.06535    1.500    2.610
*S (511.92=FLOW TO MH#2 AT SANTA MONICA)
ADD HYD               511.92 13&11  21        .17802      239.31      10.204     1.07471    1.550    2.100
*S (511.99=FLOW AT OUTFALL WEST OF EUBANK AT SANTA MONICA)
ADD HYD               511.99 21&20  22        .30552      401.48      17.620     1.08135    1.600    2.053
*S END OF ANALYSIS OF N. PINO WATERSHED EAST OF TRAMWAY
*S*********************************************************************
*S*********************************************************************
*S         MAIN PINO ARROYO
*S         EXISTING CONDITIONS, 100-YR RETURN PERIOD, 24-HR STORM
*S*********************************************************************
*S         BEGIN MAIN PINO ARROYO BASINS
*S*******************************************************************
RAINFALL  TYPE= 2                                                                                   RAIN24=   4.100
COMPUTE NM HYD        510.00   -    1       3.17800     3292.83     228.752     1.34962    1.833    1.619 PER IMP=    .00
*S  ROUTE 510.0 THRU 510.2 (PA-1 THRU BASIN PA-16)
ROUTE MCUNGE          510.80    1    6       3.17800     3278.95     228.382     1.34744    1.900    1.612 CCODE =      .1
COMPUTE NM HYD        510.10   -    1        .46400      869.97      33.399     1.34962    1.567    2.930 PER IMP=    .00
*S   ROUTE 510.1 THRU 510.2 (PA-2 THROUGH BASIN PA-15)
ROUTE MCUNGE          510.81    1    5        .46400      852.72      33.322     1.34652    1.633    2.871 CCODE =      .1
*S ADD 510.81 AND 510.80
ADD HYD               510.90  6& 5  11       3.64200     3701.81     261.704     1.34732    1.866    1.588
*S   ROUTE 510.90 THRU 510.2
ROUTE MCUNGE          510.82   11    7       3.64200     3696.06     261.540     1.34648    1.900    1.586 CCODE =      .1
COMPUTE NM HYD        510.20   -    1        .27000      448.49      12.184      .84608    1.500    2.595 PER IMP=    .00
*S    ADD 510.9 AND 510.2 (ROUTED PA-1 TO PA-16)
ADD HYD               510.91  1& 7  12       3.91200     3745.17     273.724     1.31194    1.900    1.496
*S   ROUTE SUM OF 510.0 TO 510.2 THRU 510.3(PA-1 & PA-16 THROUGH BASIN PA-17)
ROUTE MCUNGE          510.83   12    7       3.91200     3723.21     273.118     1.30904    2.000    1.487 CCODE =      .1
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.650
COMPUTE NM HYD        510.30   -    1        .27800      513.58      15.171     1.02326    1.500    2.887 PER IMP=   6.00
*S SEPARATE 510.3 (PA-17) INTO NORTH AND SOUTH DRAINAGE
DIVIDE HYD            510.3N    1   11        .16124      297.88       8.799     1.02326    1.500    2.887
                      510.3S  AND   12        .11676      215.70       6.372     1.02326    1.500    2.887
*S SEPARATE 510.3S INTO A (FLOW TO S. EAGLE RIDGE DR.) AND B (FLOW TO CV-D23-47)
DIVIDE HYD           510.3SA   12   13        .06422      118.64       3.505     1.02326    1.500    2.887
                     510.3SB  AND   14        .05254       97.07       2.867     1.02326    1.500    2.887
*S ADD FLOW TO CV-D23-47 BACK TO P17N (DS FROM N. EAGLE RIDGE DR.)
ADD HYD               510.3N 14&11  11        .21378      394.94      11.667     1.02326    1.500    2.887
*S    TOTAL DRAINAGE AT END OF BASIN 510.3 (PA-17) IN MAIN ARROYO
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COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	510.92	11& 7	11	4.12578	3762.44	284.812	1.29435	2.000	1.425	
*S SEPARATE 510.3SA(P17A) INTO FLOW TO 510.3SC (CV-D23-49) AND 510.3SD (DS-D23-1										
DIVIDE HYD	510.3SC	13	14	.04559	84.23	2.488	1.02326	1.500	2.887	
	510.3SD	AND	15	.01862	34.40	1.016	1.02326	1.500	2.887	
*S ADD FLOW DS FROM EAGLE ROCK PLACE										
ADD HYD	510.93	14&15	14	.06422	118.64	3.505	1.02326	1.500	2.887	
*S ROUTE 510.93(P17C&D) THROUGH NATURAL CHANNEL TO CONF. W/MAIN PINO										
ROUTE MCUNGE	510.84	14	7	.06422	111.75	3.448	1.00673	1.667	2.719	CCODE = .1
*S ROUTE SUMS 510.92(PA-1 THRU PA-17) THROUGH BASIN 510.4(PA-19)										
ROUTE MCUNGE	510.85	11	8	4.12578	3741.54	284.503	1.29295	2.100	1.417	CCODE = .1
COMPUTE NM HYD	510.40	-	1	.22100	447.07	15.323	1.30000	1.500	3.161	PER IMP= 16.00
*S ADD ROUTED FLOWS TO 510.4										
ADD HYD	510.94	1& 8	19	4.34678	3784.61	299.826	1.29331	2.100	1.360	
*S 510.99=TOTAL MAIN PINO FLOW AT TRAMWAY LANE										
ADD HYD	510.99	19& 7	20	4.41100	3800.09	303.274	1.28914	2.100	1.346	
FINISH										

PINO SYS. FUTURE COND. 10-YR

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AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994          RUN DATE (MON/DAY/YR) =10/19/1998
INPUT FILE = pino10.fut                                                                   USER NO.= RSTECHNM.STE

                                FROM  TO                    PEAK        RUNOFF                TIME TO   CFS      PAGE =   1
                   HYDROGRAPH   ID    ID        AREA      DISCHARGE     VOLUME     RUNOFF     PEAK     PER
COMMAND          IDENTIFICATION NO.  NO.      (SQ MI)      (CFS)       (AC-FT)   (INCHES)   (HOURS)   ACRE      NOTATION

*S*************************************************************************
*S          NORTH PINO ARROYO (N. OF SAN ANTONIO DR.) AND MAIN PINO ARROYO
*S          FUTURE CONDITIONS, 10-YR RETURN PERIOD, 24-HR STORM
*S*************************************************************************
START                                                                                                   TIME=       .00
*S BEGIN ANALYSIS OF N. PINO WATERSHED EAST OF TRAMWAY
*S SUBBASIN 500.0=(FLOW E. OF TRAMWAY N.OF POND N.OF SAN RAFAEL)
RAINFALL  TYPE= 2                                                                                       RAIN24=   2.330
COMPUTE NM HYD       500.00   -    1        .06350       81.38       3.327      .98243    1.500    2.003 PER IMP=  35.00
COMPUTE NM HYD       500.10   -    2        .05490       65.77       2.877      .98243    1.500    1.872 PER IMP=  35.00
COMPUTE NM HYD       500.20   -    3        .05080       65.11       2.662      .98243    1.500    2.003 PER IMP=  35.00
*S ROUTE 500.1 THROUGH 500.2 - (NATURAL CHANNEL WEST OF QUAIL RUN LOOP)
ROUTE MCUNGE         500.82   2    7        .05490       65.38       2.876      .98225    1.500    1.861 CCODE =     .2
*S COMBINE ROUTED 500.1 WITH 500.2 AT AP 500.91
*S (FLOW E. OF TRAMWAY COLLECTED AT POND NORTH OF SAN RAFAEL)
ADD HYD              500.91  3& 7  11        .10570      130.49       5.538      .98233    1.500    1.929
*S DEVELOP HYDROGRAPH 500.3
*S (FLOW E. OF TRAMWAY BETWEEN SAN RAFAEL AND QUAIL RUN COURT)
COMPUTE NM HYD       500.30   -    2        .05320       60.29       2.787      .98243    1.550    1.771 PER IMP=  35.00
*S DEVELOP HYDROGRAPH 500.4
*S (FLOW E. OF TRAMWAY NEAR QUAIL RUN COURT)
COMPUTE NM HYD       500.40   -    3        .02090       26.79       1.095      .98243    1.500    2.003 PER IMP=  35.00
*S COMBINE FLOWS TO ESTIMATE CONTRIBUTION STORM DRAIN AND PINO DAM
*S (500.94=COMBINED FLOW AT POND N. OF SAN RAFAEL)
ADD HYD              500.94 11& 1  12        .16920      211.87       8.865      .98236    1.500    1.957
*S (500.95=COMBINED FLOW AT TRAMWAY BETWEEN SAN RAFAEL AND QUAIL RUN COURT)
ADD HYD              500.95 12& 2  13        .22240      271.54      11.652      .98238    1.500    1.908
*S (500.96 = ESTIMATED FLOW TO DAM)
ADD HYD              500.96 13& 3  19        .24330      298.34      12.747      .98238    1.500    1.916
*S END OF ANALYSIS OF WATERSHED EAST OF TRAMWAY
*S ************************************************************************
*S BEGIN ANALYSIS OF WATERSHED WEST OF TRAMWAY
RAINFALL  TYPE= 2                                                                                       RAIN24=   2.200
COMPUTE NM HYD       501.00   -    1        .01392       16.22        .534      .71903    1.500    1.821 PER IMP=  17.00
*S (SUBBASIN 501.0=FLOW AT LOWELL STREET BETWEEN CORONADO AND SAN RAFAEL)
*S ROUTE 501.0 THROUGH 501.1
ROUTE MCUNGE         501.80   1    6        .01392       15.75        .525      .70690    1.700    1.768 CCODE =     .2
COMPUTE NM HYD       501.10   -    2        .03920       45.66       1.503      .71903    1.500    1.820 PER IMP=  17.00
*S COMBINE 501.80 WITH 501.1 AS 501.91
*S (501.91=FLOW AT BROWNING BETWEEN CORONADO AND SAN RAFAEL)
ADD HYD              501.91  6& 2  11        .05312       47.89       2.028      .71583    1.500    1.409
*S ROUTE 501.91 THROUGH 501.2
ROUTE MCUNGE         501.81  11    6        .05312       47.24       2.030      .71669    1.650    1.390 CCODE =     .2
RAINFALL  TYPE= 2                                                                                       RAIN24=   2.130
COMPUTE NM HYD       501.20   -    2        .05010       55.26       1.815      .67932    1.500    1.723 PER IMP=  17.00
*S COMBINE 501.81 WITH 501.2 AS 501.99
*S (501.99=FLOW AT EUBANK BETWEEN SAN RAFAEL AND DEL REY)
ADD HYD              501.99  6& 2  11        .10322       97.15       3.846      .69854    1.550    1.471
*S ************************************************************************
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                          FROM  TO                    PEAK        RUNOFF                TIME TO   CFS
              HYDROGRAPH   ID   ID        AREA      DISCHARGE     VOLUME     RUNOFF      PEAK    PER
COMMAND     IDENTIFICATION NO.  NO.      (SQ MI)     (CFS)       (AC-FT)   (INCHES)    (HOURS)  ACRE      NOTATION

RAINFALL  TYPE= 2                                                                                   RAIN24=   2.200
COMPUTE NM HYD       508.00   -    1      .02590      41.79       1.696     1.22766     1.500   2.521 PER IMP=  50.00
*S (508.0=INFLOW FROM SANDIA HEIGHTS SOUTH UNITS 23 AND 24 TO SUBBASIN 502)
*S ROUTE 508.0 THROUGH 502.0
ROUTE MCUNGE         508.80   1    6      .02590      41.60       1.692     1.22485     1.550   2.510 CCODE =     .2
COMPUTE NM HYD       502.00   -    1      .06295      73.32       2.414      .71903     1.500   1.820 PER IMP=  17.00
*S COMBINE RP 508.0 WITH 502.0 AS 502.91
*S (502.91=FLOW AT LOWELL BETWEEN SAN RAFAEL AND DEL REY)
ADD HYD              502.91  1& 6  12      .08885     108.57       4.106      .86647     1.550   1.909
COMPUTE NM HYD       502.10   -    1      .07500      87.34       2.876      .71903     1.500   1.820 PER IMP=  17.00
*S (502.1=FLOW AT LOWELL IN NORTH 1/2 OF BLOCK BETWEEN DEL REY AND SANTA MONICA)
*S COMBINE 502.91 WITH 502.1 AS 502.92
*S (502.92=COMBINED FLOW IN ARROYO JUNCTION W.OF LOWELL BETWEEN
*S DEL REY AND SAN RAFAEL)
ADD HYD              502.92 12& 1  13      .16385     188.37       6.982      .79898     1.550   1.796
*S ROUTE 502.92 THROUGH 502.3
ROUTE MCUNGE         502.80   13   6      .16385     180.16       6.957      .79614     1.550   1.718 CCODE =     .2
COMPUTE NM HYD       502.20   -    1      .03390      34.32       1.300      .71903     1.550   1.582 PER IMP=  17.00
*S (502.2=FLOW AT LOWELL IN SOUTH 1/2 OF BLOCK BETWEEN DEL REY AND SANTA MONICA)
*S ROUTE 502.2 THROUGH 502.3
ROUTE MCUNGE         502.81    1   7      .03390      33.21       1.291      .71400     1.600   1.531 CCODE =     .1
*S COMBINE 502.81 WITH 502.80 AS 502.93
ADD HYD              502.93  6& 7  12      .19775     211.56       8.248      .78206     1.600   1.672
COMPUTE NM HYD       502.30   -    1      .03950      46.01       1.515      .71903     1.500   1.820 PER IMP=  17.00
*S COMBINE 502.3 WITH 502.93 AS 502.99
*S (502.99=FLOW TO PINO DIVERSION DROP STRUCTURE)
ADD HYD              502.99 12& 1  13      .23725     251.11       9.763      .77156     1.550   1.654
*S ************************************************************
COMPUTE NM HYD       503.00   -    1      .05610      64.65       2.151      .71903     1.500   1.801 PER IMP=  17.00
*S (503.0=FLOW AT BROWNING BETWEEN DEL REY AND SANTA MONICA)
COMPUTE NM HYD       503.10   -    2      .02200      24.37        .844      .71903     1.500   1.731 PER IMP=  17.00
*S (503.1=FLOW AT BROWNING AT BETWEEN SAN RAFAEL AND DEL REY)
*S COMBIINE 503.0 AND 503.1 AS 503.91
ADD HYD              503.91  1& 2  12      .07810      89.02       2.995      .71902     1.500   1.781
*S (503.91=FLOW AT ARROYO JUNCTION W. OF BROWNING BETWEEN DEL REY
*S AND SANTA MONICA)
*S ROUTE 503.91 THROUGH 503.2
ROUTE MCUNGE         503.81   12   7      .07810      78.79       2.959      .71035     1.700   1.576 CCODE =     .1
RAINFALL  TYPE= 2                                                                                   RAIN24=   2.130
COMPUTE NM HYD       503.20   -    1      .04940      54.49       1.790      .67932     1.500   1.723 PER IMP=  17.00
*S COMBINE 503.2 AND 503.91 AS 503.99
*S (503.99=FLOW AT EUBANK BETWEEN DEL REY AND SANTA MONICA)
ADD HYD              503.99  7& 1  20      .12750     104.94       4.749      .69832     1.650   1.286
*S ************************************************************
*S MISCELLANEOUS BASINS THAT FLOW TO EAST SIDE OF EUBANK
COMPUTE NM HYD       504.00   -    1      .03720      41.03       1.348      .67932     1.500   1.724 PER IMP=  17.00
*S (504.0=FLOW AT EUBANK NORTH OF CORONADO BELOW SAN FRANCISCO)
COMPUTE NM HYD       505.00   -    2      .02870      31.66       1.040      .67932     1.500   1.724 PER IMP=  17.00
*S (505.0=FLOW AT EUBANK FROM SMALL SUBBASIN THAT STRADDLES SAN RAFAEL)
COMPUTE NM HYD       506.00   -    3      .04840      38.27       1.754      .67932     1.600   1.235 PER IMP=  17.00
*S (506.0=FLOW AT EUBANK NORTH OF SAN ANTONIO SOUTH OF SANTA MONICA)
COMPUTE NM HYD       509.00   -    5      .02590      40.32       1.626     1.17709     1.500   2.432 PER IMP=  50.00
*S (509.0=SANDIA HEIGHTS SOUTH UNITS 21 & 23 SD OUTFALL TO PINO DAM)
*S ************************************************************
*S HYDROGRAPHS AT QUINTESSENCE STORM DRAINS
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*S ROUTE 504.0 THROUGH CHANNEL ON EAST SIDE OF EUBANK
*S (511.80=FLOW TO MH#4 AT CORONADO AND EUBANK)
                                FROM  TO                    PEAK        RUNOFF                TIME TO   CFS      PAGE =   3
                   HYDROGRAPH    ID   ID        AREA     DISCHARGE     VOLUME      RUNOFF      PEAK    PER
COMMAND          IDENTIFICATION  NO.  NO.     (SQ MI)      (CFS)       (AC-FT)    (INCHES)   (HOURS)  ACRE     NOTATION

ROUTE MCUNGE          511.80      1    7       .03720       40.32       1.352      .68146     1.550   1.693 CCODE =      .2
*S
*S (510.91= FLOW TO MH#3 AT SAN RAFAEL)
ADD HYD               511.91  2& 7  13        .06590       70.39       2.392      .68051     1.500   1.669
*S (511.92=FLOW TO MH#2 AT SANTA MONICA)
ADD HYD               511.92 13&11  21        .16912      166.53       6.237      .69152     1.550   1.539
*S (511.99=FLOW AT OUTFALL WEST OF EUBANK AT SANTA MONICA)
ADD HYD               511.99 21&20  22        .29662      247.35      10.986      .69444     1.550   1.303
*S END OF ANALYSIS OF N. PINO WATERSHED EAST OF TRAMWAY
*S*************************************************************************
*S          MAIN PINO ARROYO
*S          FUTURE CONDITIONS, 10-YR RETURN PERIOD, 24-HR STORM
*S          BEGIN MAIN PINO ARROYO BASINS
*S*************************************************************************
RAINFALL  TYPE= 2                                                                                   RAIN24=   2.730
COMPUTE NM HYD        510.00   -    1       3.17800     1561.97     112.465      .66354     1.833    .768 PER IMP=    .00
*S  ROUTE 510.0 THRU 510.2 (PA-1 THRU BASIN PA-16)
ROUTE MCUNGE          510.80   1    6       3.17800     1553.85     112.342      .66281     1.900    .764 CCODE =      .1
COMPUTE NM HYD        510.10   -    1        .46400      447.72      16.420      .66354     1.567   1.508 PER IMP=    .00
*S   ROUTE 510.1 THRU 510.2 (PA-2 THROUGH BASIN PA-15)
ROUTE MCUNGE          510.81   1    5        .46400      445.82      16.434      .66408     1.633   1.501 CCODE =      .2
*S ADD 510.81 AND 510.80
ADD HYD               510.90  6& 5  11       3.64200     1734.23     128.776      .66297     1.833    .744
*S   ROUTE 510.90 THRU 510.2
ROUTE MCUNGE          510.82  11    7       3.64200     1729.21     128.746      .66282     1.900    .742 CCODE =      .1
COMPUTE NM HYD        510.20   -    1        .27000      170.53       4.494      .31211     1.500    .987 PER IMP=    .00
*S    ADD 510.9 AND 510.2 (ROUTED PA-1 TO PA-16)
ADD HYD               510.91  1& 7  12       3.91200     1748.06     133.240      .63861     1.900    .698
*S   ROUTE SUM OF 510.0 TO 510.2 THRU 510.3(PA-1 & PA-16 THROUGH BASIN PA-17)
ROUTE MCUNGE          510.83  12    7       3.91200     1735.44     132.731      .63617     2.033    .693 CCODE =      .1
RAINFALL  TYPE= 2                                                                                   RAIN24=   2.420
COMPUTE NM HYD        510.30   -    1        .27800      209.94       6.322      .42637     1.500   1.180 PER IMP=   6.00
*S SEPARATE 510.3 (PA-17) INTO NORTH AND SOUTH DRAINAGE
DIVIDE HYD            510.3N   1   11        .16124      121.77       3.667      .42637     1.500   1.180
                      510.3S  AND  12        .11676       88.18       2.655      .42637     1.500   1.180
*S SEPARATE 510.3S INTO A (FLOW TO S. EAGLE RIDGE DR.) AND B (FLOW TO CV-D23-47)
DIVIDE HYD            510.3SA  12   13        .06422       48.50       1.460      .42637     1.500   1.180
                      510.3SB  AND  14        .05254       39.68       1.195      .42637     1.500   1.180
*S ADD FLOW TO CV-D23-47 BACK TO P17N (DS FROM N. EAGLE RIDGE DR.)
ADD HYD               510.3N 14&11  11        .21378      161.44       4.861      .42636     1.500   1.180
*S    TOTAL DRAINAGE AT END OF BASIN 510.3 (PA-17) IN MAIN ARROYO
ADD HYD               510.92 11& 7  11       4.12578     1752.12     137.606      .62536     2.033    .664
*S SEPARATE 510.3SA(P17A) INTO FLOW TO 510.3SC (CV-D23-49) AND 510.3SD (DS-D23-1
DIVIDE HYD            510.3SC  13   14        .04559       34.43       1.037      .42636     1.500   1.180
                      510.3SD  AND  15        .01862       14.06        .423      .42636     1.500   1.180
*S ADD FLOW DS FROM EAGLE ROCK PLACE
ADD HYD               510.93 14&15  14        .06422       48.50       1.460      .42637     1.500   1.180
*S ROUTE 510.93(P17C&D) THROUGH NATURAL CHANNEL TO CONF. W/MAIN PINO
ROUTE MCUNGE          510.84  14    7        .06422       41.91       1.433      .41834     1.767   1.020 CCODE =      .1
*S    ROUTE SUMS 510.92(PA-1 THRU PA-17) THROUGH BASIN 510.4(PA-19)
ROUTE MCUNGE          510.85  11    8       4.12578     1742.34     137.278      .62387     2.133    .660 CCODE =      .1
COMPUTE NM HYD        510.40   -    1        .22100      283.91      11.632      .98685     1.500   2.007 PER IMP=  35.00
*S    ADD ROUTED FLOWS TO 510.4
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COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	510.94	1& 8	19	4.34678	1774.33	148.910	.64233	2.133	.638	
*S 510.99=TOTAL MAIN PINO FLOW AT TRAMWAY LANE										
ADD HYD	510.99	19& 7	20	4.41100	1782.68	150.342	.63907	2.133	.631	
FINISH										

PINO SYS. FUTURE COND. 100-YR

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AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994          RUN DATE (MON/DAY/YR) =10/19/1998
INPUT FILE = pino100.fut                                                                   USER NO.= RSTECHNM.STE

                                FROM  TO                      PEAK        RUNOFF                TIME TO    CFS      PAGE =   1
                   HYDROGRAPH   ID    ID        AREA       DISCHARGE      VOLUME      RUNOFF      PEAK     PER
COMMAND          IDENTIFICATION NO.  NO.      (SQ MI)       (CFS)        (AC-FT)    (INCHES)    (HOURS)   ACRE      NOTATION

*S*************************************************************************
*S          NORTH PINO ARROYO (N. OF SAN ANTONIO DR. AND MAIN PINO ARROYO
*S          FUTURE CONDITIONS, 100-YR RETURN PERIOD, 24-HR STORM
*S*************************************************************************
START                                                                                                   TIME=       .00
*S BEGIN ANALYSIS OF N. PINO WATERSHED EAST OF TRAMWAY (N. OF MAIN PINO)
*S SUBBASIN 500.0=(FLOW E. OF TRAMWAY N.OF POND N.OF SAN RAFAEL)
RAINFALL  TYPE= 2                                                                                       RAIN24=   3.500
COMPUTE NM HYD        500.00   -     1        .06350       145.38       6.026      1.77931     1.500    3.577 PER IMP=  35.00
COMPUTE NM HYD        500.10   -     2        .05490       118.02       5.210      1.77931     1.500    3.359 PER IMP=  35.00
COMPUTE NM HYD        500.20   -     3        .05080       116.28       4.821      1.77931     1.500    3.577 PER IMP=  35.00
*S ROUTE 500.1 THROUGH 500.2 - (NATURAL CHANNEL WEST OF QUAIL RUN LOOP)
ROUTE MCUNGE          500.82   2     7        .05490       117.38       5.209      1.77898     1.500    3.341 CCODE =     .2
*S COMBINE ROUTED 500.1 WITH 500.2 AT AP 500.91
*S (FLOW E. OF TRAMWAY COLLECTED AT POND NORTH OF SAN RAFAEL)
ADD HYD               500.91  3& 7  11        .10570       233.66      10.030      1.77913     1.500    3.454
*S DEVELOP HYDROGRAPH 500.3
*S (FLOW E. OF TRAMWAY BETWEEN SAN RAFAEL AND QUAIL RUN COURT)
COMPUTE NM HYD        500.30   -     2        .05320       108.06       5.048      1.77931     1.550    3.174 PER IMP=  35.00
*S DEVELOP HYDROGRAPH 500.4
*S (FLOW E. OF TRAMWAY NEAR QUAIL RUN COURT)
COMPUTE NM HYD        500.40   -     3        .02090        47.85       1.983      1.77931     1.500    3.577 PER IMP=  35.00
*S COMBINE FLOWS TO ESTIMATE CONTRIBUTION STORM DRAIN AND PINO DAM
*S (500.94=COMBINED FLOW AT POND N. OF SAN RAFAEL)
ADD HYD               500.94 11& 1  12        .16920       379.04      16.055      1.77920     1.500    3.500
*S (500.95=COMBINED FLOW AT TRAMWAY BETWEEN SAN RAFAEL AND QUAIL RUN COURT)
ADD HYD               500.95 12& 2  13        .22240       486.50      21.104      1.77922     1.500    3.418
*S (500.96 = ESTIMATED FLOW TO DAM)
ADD HYD               500.96 13& 3  19        .24330       534.36      23.087      1.77923     1.500    3.432
*S END OF ANALYSIS OF WATERSHED EAST OF TRAMWAY
*S ********************************************************************
*S BEGIN ANALYSIS OF WATERSHED WEST OF TRAMWAY
RAINFALL  TYPE= 2                                                                                       RAIN24=   3.300
COMPUTE NM HYD        501.00   -     1        .01392        29.99       1.067      1.43773     1.500    3.367 PER IMP=  17.00
*S (SUBBASIN 501.0=FLOW AT LOWELL STREET BETWEEN CORONADO AND SAN RAFAEL)
*S ROUTE 501.0 THROUGH 501.1
ROUTE MCUNGE          501.80   1     6        .01392        27.74       1.045      1.40707     1.650    3.113 CCODE =     .1
COMPUTE NM HYD        501.10   -     2        .03920        84.43       3.006      1.43773     1.500    3.365 PER IMP=  17.00
*S COMBINE 501.80 WITH 501.1 AS 501.91
*S (501.91=FLOW AT BROWNING BETWEEN CORONADO AND SAN RAFAEL)
ADD HYD               501.91  6& 2  11        .05312        88.83       4.050      1.42968     1.500    2.613
*S ROUTE 501.91 THROUGH 501.2
ROUTE MCUNGE          501.81  11    6        .05312        86.72       4.012      1.41607     1.700    2.551 CCODE =     .1
RAINFALL  TYPE= 2                                                                                       RAIN24=   3.200
COMPUTE NM HYD        501.20   -     2        .05010       104.03       3.661      1.37021     1.500    3.245 PER IMP=  17.00
*S COMBINE 501.81 WITH 501.2 AS 501.99
*S (501.99=FLOW AT EUBANK BETWEEN SAN RAFAEL AND DEL REY)
ADD HYD               501.99  6& 2  11        .10322       151.70       7.673      1.39380     1.600    2.296
*S ********************************************************************
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                          FROM  TO                    PEAK        RUNOFF                TIME TO   CFS
              HYDROGRAPH   ID   ID        AREA     DISCHARGE     VOLUME      RUNOFF      PEAK    PER
COMMAND     IDENTIFICATION NO.  NO.      (SQ MI)     (CFS)       (AC-FT)    (INCHES)   (HOURS)  ACRE     NOTATION

RAINFALL  TYPE= 2                                                                                   RAIN24=   3.300
COMPUTE NM HYD       508.00   -    1      .02590      68.75       2.903      2.10174     1.500   4.147 PER IMP=  50.00
*S (508.0=INFLOW FROM SANDIA HEIGHTS SOUTH UNITS 23 AND 24 TO SUBBASIN 502)
*S ROUTE 508.0 THROUGH 502.0
ROUTE MCUNGE         508.80   1    6      .02590      62.86       2.875      2.08108     1.650   3.792 CCODE =      .1
COMPUTE NM HYD       502.00   -    1      .06295     135.59       4.827      1.43773     1.500   3.366 PER IMP=  17.00
*S COMBINE RP 508.0 WITH 502.0 AS 502.91
*S (502.91=FLOW AT LOWELL BETWEEN SAN RAFAEL AND DEL REY)
ADD HYD              502.91  1& 6  12      .08885     165.36       7.702      1.62526     1.550   2.908
COMPUTE NM HYD       502.10   -    1      .07500     162.06       5.751      1.43773     1.500   3.376 PER IMP=  17.00
*S (502.1=FLOW AT LOWELL IN NORTH 1/2 OF BLOCK BETWEEN DEL REY AND SANTA MONICA)
*S COMBINE 502.91 WITH 502.1 AS 502.92
*S (502.92=COMBINED FLOW IN ARROYO JUNCTION W.OF LOWELL BETWEEN
*S DEL REY AND SAN RAFAEL)
ADD HYD              502.92 12& 1  13      .16385     322.27      13.452      1.53942     1.500   3.073
*S ROUTE 502.92 THROUGH 502.3
ROUTE MCUNGE         502.80   13   6      .16385     319.44      13.432      1.53710     1.550   3.046 CCODE =      .1
COMPUTE NM HYD       502.20   -    1      .03390      63.93       2.599      1.43773     1.550   2.947 PER IMP=  17.00
*S (502.2=FLOW AT LOWELL IN SOUTH 1/2 OF BLOCK BETWEEN DEL REY AND SANTA MONICA)
*S ROUTE 502.2 THROUGH 502.3
ROUTE MCUNGE         502.81    1   7      .03390      62.31       2.596      1.43576     1.600   2.872 CCODE =      .1
*S COMBINE 502.81 WITH 502.80 AS 502.93
ADD HYD              502.93  6& 7  12      .19775     376.26      16.028      1.51973     1.550   2.973
COMPUTE NM HYD       502.30   -    1      .03950      85.08       3.029      1.43773     1.500   3.365 PER IMP=  17.00
*S COMBINE 502.3 WITH 502.93 AS 502.99
*S (502.99=FLOW TO PINO DIVERSION DROP STRUCTURE)
ADD HYD              502.99 12& 1  13      .23725     453.90      19.057      1.50607     1.550   2.989
*S ************************************************************
COMPUTE NM HYD       503.00   -    1      .05610     120.82       4.302      1.43773     1.500   3.365 PER IMP=  17.00
*S (503.0=FLOW AT BROWNING BETWEEN DEL REY AND SANTA MONICA)
COMPUTE NM HYD       503.10   -    2      .02200      45.41       1.687      1.43773     1.500   3.225 PER IMP=  17.00
*S (503.1=FLOW AT BROWNING AT BETWEEN SAN RAFAEL AND DEL REY)
*S COMBIINE 503.0 AND 503.1 AS 503.91
ADD HYD              503.91  1& 2  12      .07810     166.23       5.989      1.43772     1.500   3.326
*S (503.91=FLOW AT ARROYO JUNCTION W. OF BROWNING BETWEEN DEL REY
*S AND SANTA MONICA)
*S ROUTE 503.91 THROUGH 503.2
ROUTE MCUNGE         503.81   12   7      .07810     163.66       5.970      1.43321     1.600   3.274 CCODE =      .2
RAINFALL  TYPE= 2                                                                                   RAIN24=   3.200
COMPUTE NM HYD       503.20   -    1      .04940     102.58       3.610      1.37021     1.500   3.245 PER IMP=  17.00
*S COMBINE 503.2 AND 503.91 AS 503.99
*S (503.99=FLOW AT EUBANK BETWEEN DEL REY AND SANTA MONICA)
ADD HYD              503.99  7& 1  20      .12750     254.92       9.580      1.40879     1.550   3.124
*S ************************************************************
*S MISCELLANEOUS BASINS THAT FLOW TO EAST SIDE OF EUBANK
COMPUTE NM HYD       504.00   -    1      .03720      77.25       2.718      1.37021     1.500   3.245 PER IMP=  17.00
*S (504.0=FLOW AT EUBANK NORTH OF CORONADO BELOW SAN FRANCISCO)
COMPUTE NM HYD       505.00   -    2      .02870      59.60       2.097      1.37021     1.500   3.245 PER IMP=  17.00
*S (505.0=FLOW AT EUBANK FROM SMALL SUBBASIN THAT STRADDLES SAN RAFAEL)
COMPUTE NM HYD       506.00   -    3      .04840      73.61       3.537      1.37021     1.600   2.376 PER IMP=  17.00
*S (506.0=FLOW AT EUBANK NORTH OF SAN ANTONIO SOUTH OF SANTA MONICA)
COMPUTE NM HYD       509.00   -    5      .02590      66.74       2.793      2.02208     1.500   4.026 PER IMP=  50.00
*S (509.0=SANDIA HEIGHTS SOUTH UNITS 21 & 23 SD OUTFALL TO PINO DAM)
*S ************************************************************
*S HYDROGRAPHS AT QUINTESSENCE STORM DRAINS
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*S ROUTE 504.0 THROUGH CHANNEL ON EAST SIDE OF EUBANK
*S (511.80=FLOW TO MH#4 AT CORONADO AND EUBANK)
                                FROM  TO                    PEAK        RUNOFF                TIME TO   CFS      PAGE =   3
                   HYDROGRAPH   ID    ID        AREA     DISCHARGE     VOLUME      RUNOFF      PEAK    PER
COMMAND          IDENTIFICATION NO.   NO.     (SQ MI)     (CFS)       (AC-FT)    (INCHES)   (HOURS)   ACRE     NOTATION

ROUTE MCUNGE          511.80     1     7       .03720       74.98       2.722     1.37175     1.500   3.149 CCODE =      .2
*S
*S (511.91= FLOW TO MH#3 AT SAN RAFAEL)
ADD HYD               511.91  2& 7  13        .06590      134.58       4.819     1.37107     1.500   3.191
*S (511.92=FLOW TO MH#2 AT SANTA MONICA)
ADD HYD               511.92 13&11  21        .16912      275.04      12.492     1.38494     1.550   2.541
*S (511.99=FLOW AT OUTFALL WEST OF EUBANK AT SANTA MONICA)
ADD HYD               511.99 21&20  22        .29662      529.96      22.072     1.39519     1.550   2.792
*S END OF ANALYSIS OF N. PINO WATERSHED EAST OF TRAMWAY
*S*************************************************************************
*S          MAIN PINO ARROYO
*S          FUTURE CONDITIONS, 100-YR RETURN PERIOD, 24-HR STORM
*S*************************************************************************
*S          BEGIN MAIN PINO ARROYO BASINS
RAINFALL  TYPE= 2                                                                                  RAIN24=   4.100
COMPUTE NM HYD        510.00     -     1      3.17800     3292.83     228.752     1.34962     1.833   1.619 PER IMP=    .00
*S  ROUTE 510.0 THRU 510.2 (PA-1 THRU BASIN PA-16)
ROUTE MCUNGE          510.80     1     6      3.17800     3278.95     228.382     1.34744     1.900   1.612 CCODE =      .1
COMPUTE NM HYD        510.10     -     1       .46400      869.97      33.399     1.34962     1.567   2.930 PER IMP=    .00
*S   ROUTE 510.1 THRU 510.2 (PA-2 THROUGH BASIN PA-15)
ROUTE MCUNGE          510.81     1     5       .46400      852.72      33.322     1.34652     1.633   2.871 CCODE =      .1
*S ADD 510.81 AND 510.80
ADD HYD               510.90  6& 5  11      3.64200     3701.81     261.704     1.34732     1.866   1.588
*S   ROUTE 510.90 THRU 510.2
ROUTE MCUNGE          510.82    11     7      3.64200     3696.06     261.540     1.34648     1.900   1.586 CCODE =      .1
COMPUTE NM HYD        510.20     -     1       .27000      448.49      12.184      .84608     1.500   2.595 PER IMP=    .00
*S    ADD 510.9 AND 510.2 (ROUTED PA-1 TO PA-16)
ADD HYD               510.91  1& 7  12      3.91200     3745.17     273.724     1.31194     1.900   1.496
*S   ROUTE SUM OF 510.0 TO 510.2 THRU 510.3(PA-1 & PA-16 THROUGH BASIN PA-17)
ROUTE MCUNGE          510.83    12     7      3.91200     3723.21     273.118     1.30904     2.000   1.487 CCODE =      .1
RAINFALL  TYPE= 2                                                                                  RAIN24=   3.650
COMPUTE NM HYD        510.30     -     1       .27800      513.58      15.171     1.02326     1.500   2.887 PER IMP=   6.00
*S SEPARATE 510.3 (PA-17) INTO NORTH AND SOUTH DRAINAGE
DIVIDE HYD            510.3N     1    11       .16124      297.88       8.799     1.02326     1.500   2.887
                      510.3S   AND    12       .11676      215.70       6.372     1.02326     1.500   2.887
*S SEPARATE 510.3S INTO A (FLOW TO S. EAGLE RIDGE DR.) AND B (FLOW TO CV-D23-47)
DIVIDE HYD            510.3SA   12    13       .06422      118.64       3.505     1.02326     1.500   2.887
                      510.3SB  AND    14       .05254       97.07       2.867     1.02326     1.500   2.887
*S ADD FLOW TO CV-D23-47 BACK TO P17N (DS FROM N. EAGLE RIDGE DR.)
ADD HYD               510.3N 14&11  11       .21378      394.94      11.667     1.02326     1.500   2.887
*S    TOTAL DRAINAGE AT END OF BASIN 510.3 (PA-17) IN MAIN ARROYO
ADD HYD               510.92 11& 7  11      4.12578     3762.44     284.812     1.29435     2.000   1.425
*S SEPARATE 510.3SA(P17A) INTO FLOW TO 510.3SC (CV-D23-49) AND 510.3SD (DS-D23-1
DIVIDE HYD            510.3SC   13    14       .04559       84.23       2.488     1.02326     1.500   2.887
                      510.3SD  AND    15       .01862       34.40       1.016     1.02326     1.500   2.887
*S ADD FLOW DS FROM EAGLE ROCK PLACE
ADD HYD               510.93 14&15  14       .06422      118.64       3.505     1.02326     1.500   2.887
*S ROUTE 510.93(P17C&D) THROUGH NATURAL CHANNEL TO CONF. W/MAIN PINO
ROUTE MCUNGE          510.84    14     7       .06422      111.75       3.448     1.00673     1.667   2.719 CCODE =      .1
*S    ROUTE SUMS 510.92(PA-1 THRU PA-17) THROUGH BASIN 510.4(PA-19)
ROUTE MCUNGE          510.85    11     8      4.12578     3741.54     284.503     1.29295     2.100   1.417 CCODE =      .1
COMPUTE NM HYD        510.40     -     1       .22100      530.73      21.147     1.79410     1.500   3.752 PER IMP=  35.00
*S    ADD ROUTED FLOWS TO 510.4
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COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	510.94	1& 8	19	4.34678	3806.63	305.650	1.31843	2.067	1.368	
*S 510.99=TOTAL MAIN PINO FLOW AT TRAMWAY LANE										
ADD HYD	510.99	19& 7	20	4.41100	3824.12	309.098	1.31389	2.067	1.355	
FINISH										