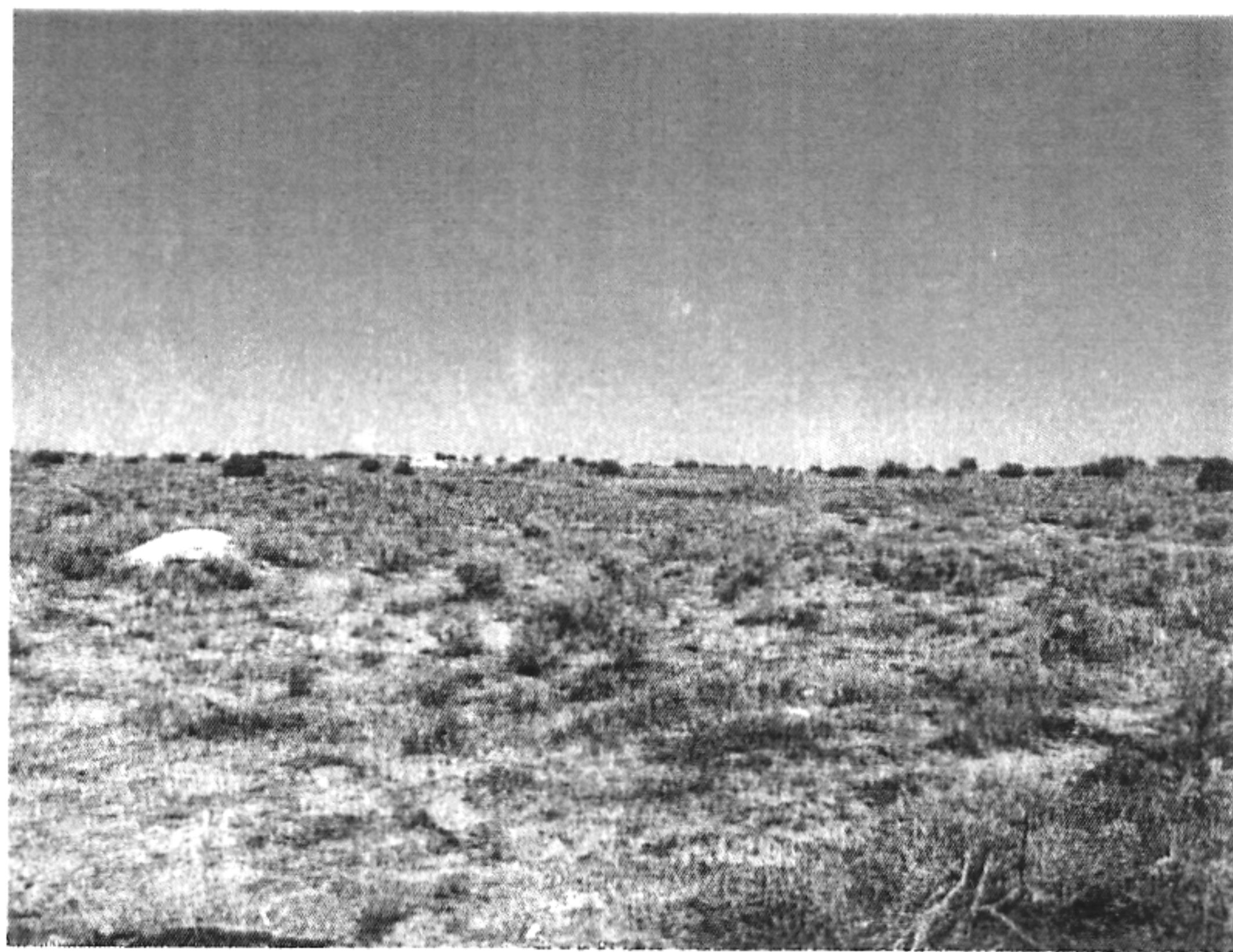


Drainage Report

for

LA CUENTISTA SUBDIVISION



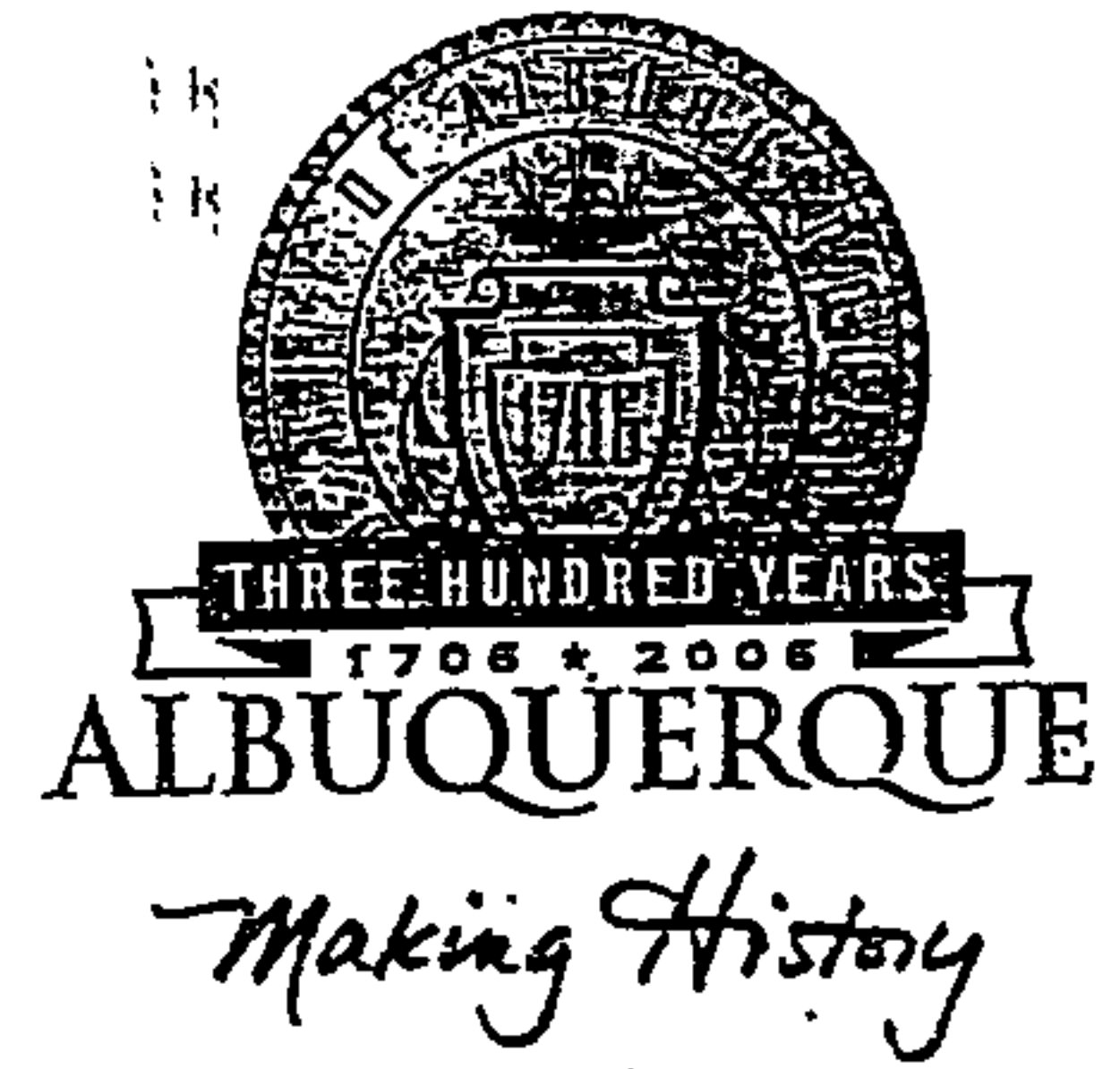
Prepared by:

Wilson & Company, Inc.
2600 The American Road, SE, Suite 100
Rio Rancho, Mexico 87124
(505) 898-8021

WILSON
& COMPANY

November 2003
WCI File No: X121001501

CITY OF ALBUQUERQUE



December 20, 2004

Dan Aguirre, PE
Wilson & Company
2600 American Rd, SE, Ste. 100
Rio Rancho, NM 87124

Re: La Cuentista Subdivision Unit 1 Revised Grading Plan
Engineer Stamp 12-7-04 (D10/D2)

Dear Mr. Aguirre,

Based upon information provided in your submittal dated 12-7-04, the above referenced plan is approved for Amended Preliminary Plat action by the DRB. Once that board has approved the plan, please provide a mylar copy for my signature in order to obtain a Grading Permit. This is now the plan that must be certified for release of the SIA.

P.O. Box 1293

Albuquerque

New Mexico 87103

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. Refer to the attachment that is provided with this letter for details. If you have any questions please feel free to call the Municipal Development Department, Hydrology section at 768-3654 (Charles Caruso).

If you have any questions, you can contact me at 924-3986.

www.cabq.gov

Sincerely,

A handwritten signature in cursive script that reads "Bradley L. Bingham".

Bradley L. Bingham, PE
Principal Engineer, Planning Dept.
Development and Building Services

C: Chuck Caruso, CoA
file

copy

CITY OF ALBUQUERQUE



RECEIVED
OCT 04 2006

WILSON & COMPANY, INC
RIO RANCHO, NM

October 3, 2006

Dan Aguirre, PE
Wilson & Company
2600 American Rd, SE, Ste. 100
Rio Rancho, NM 87124

**Re: La Cuentista Subdivision Unit 1 and 1B Revised Grading Plans
Engineer Stamp 8-22-06 (D10/D2)**

Dear Mr. Aguirre,

Based upon information provided in your submittal dated 8-23-06, the above referenced plans are approved as amended. This plan should be certified for both Unit 1 and Unit 1B release of the SIA.

P.O. Box 1293

If you have any questions, you can contact me at 924-3986.

Albuquerque

New Mexico 87103

www.cabq.gov

Sincerely,

Bradley L. Bingham, PE
Principal Engineer, Planning Dept.
Development and Building Services

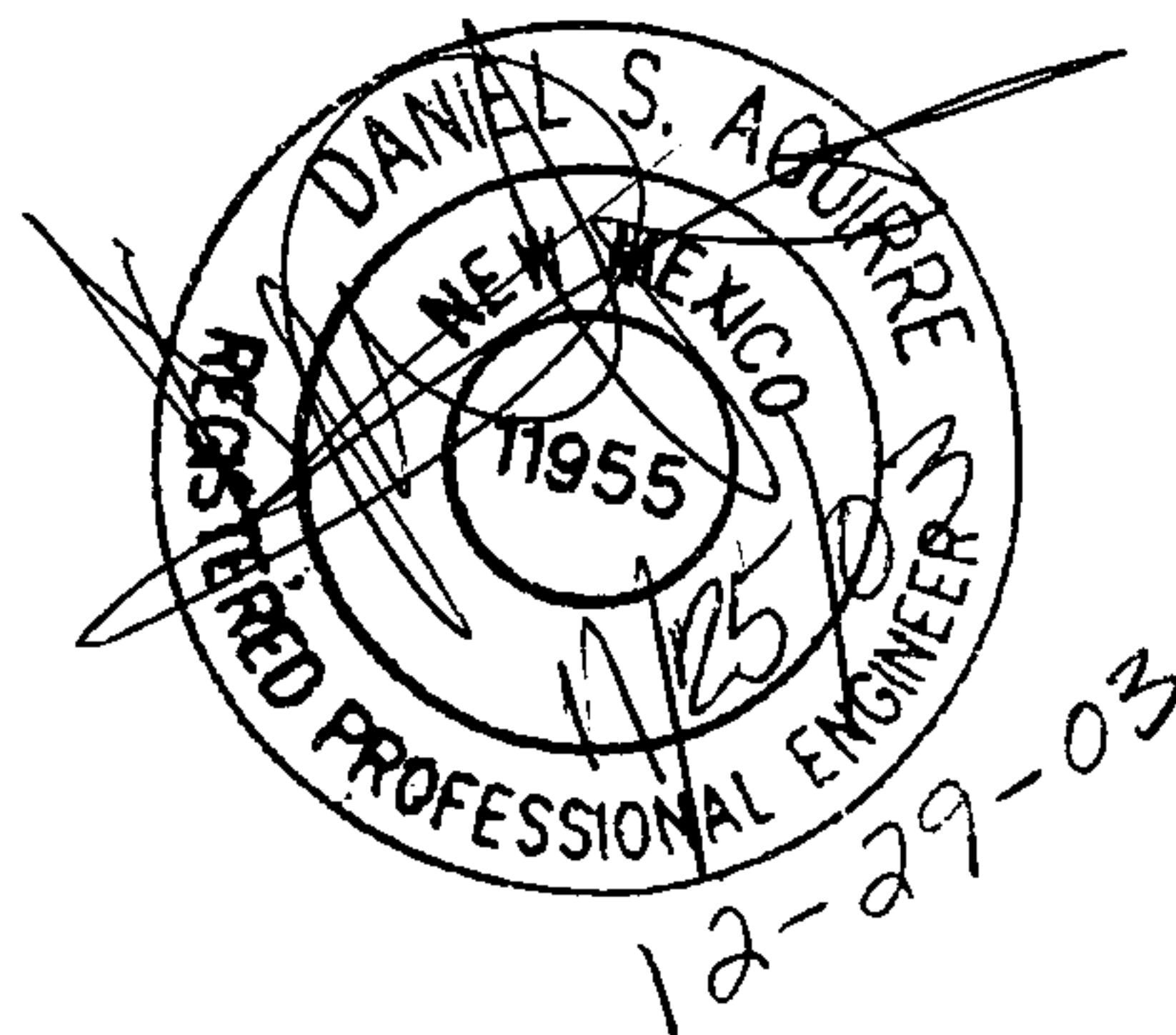
C: file

Drainage Report

for

LA CUENTISTA SUBDIVISION

Prepared by:



Daniel S. Aguirre, PE
NM #11955

Wilson & Company, Inc.
2600 The American Road, SE, Suite 100
Rio Rancho, Mexico 87124
(505) 898-8021

November 2003
WCI File No: X121001501

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Appendix B – Hydrologic Models	
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Plate 2 – Fully Developed Conditions Basin Boundary Map	
Plate 3 - Unit 1 Basin Boundary Map	
Plate 4 – Petroglyph National Monument Point of Discharge Map	
Plate 5 – Grading & Drainage Plan: Unit 1	

Summary

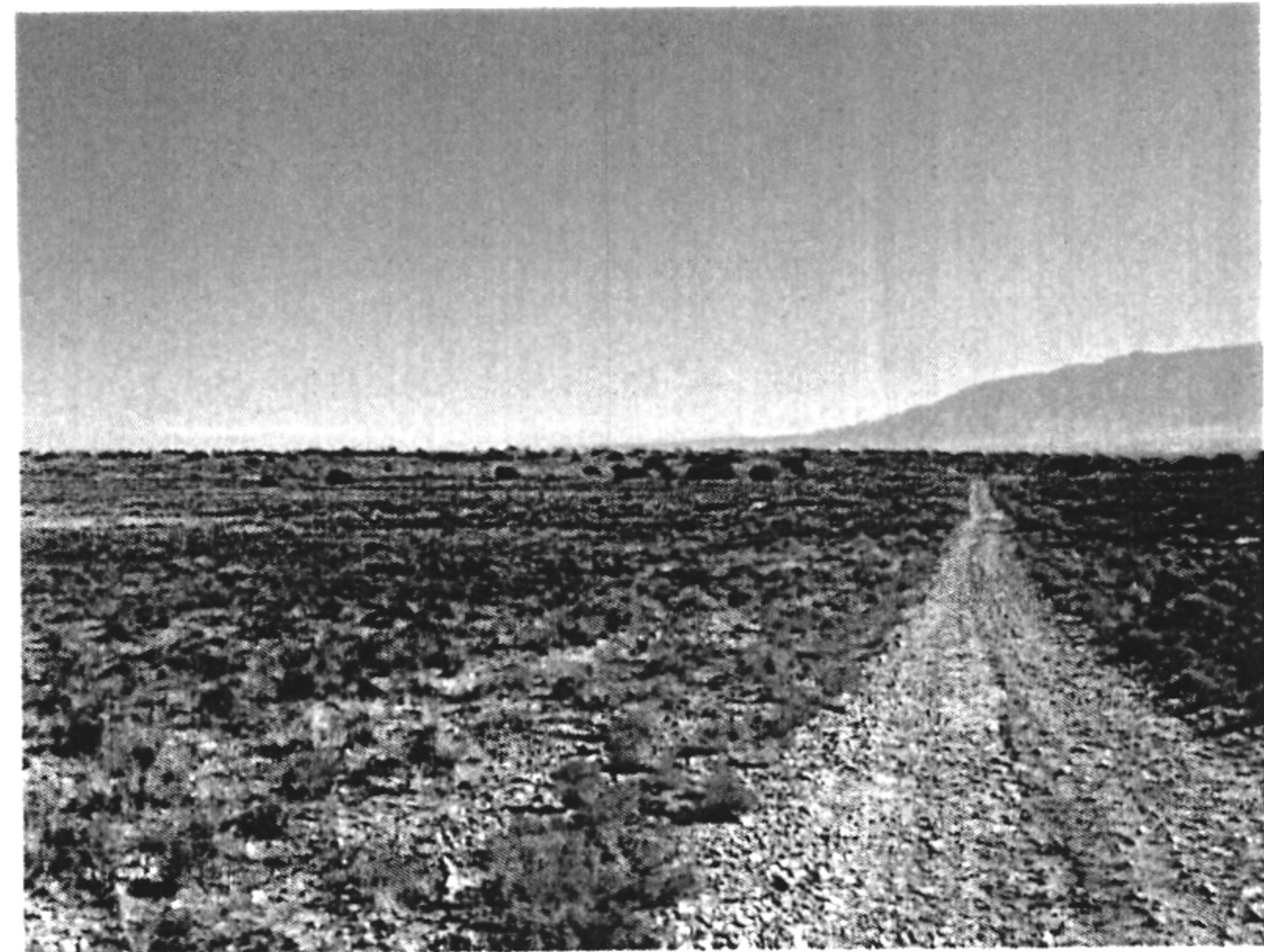
The proposed La Cuentista subdivision will provide needed infrastructure improvements to support residential development of 243 acres within City of Albuquerque City Council District No. 1 (See Project Location Map - Page 4). La Cuentista is located west of the intersection of Taylor Ranch Drive and Calle Norteña, is zoned R-1, and is replatted from portions of Volcano Cliffs Subdivision, Units 20, 21, 23 and 27.

The northern boundary of La Cuentista is adjacent to the Town of Alameda Grant and the east and southeast boundary is shared with Petroglyph National Monument.

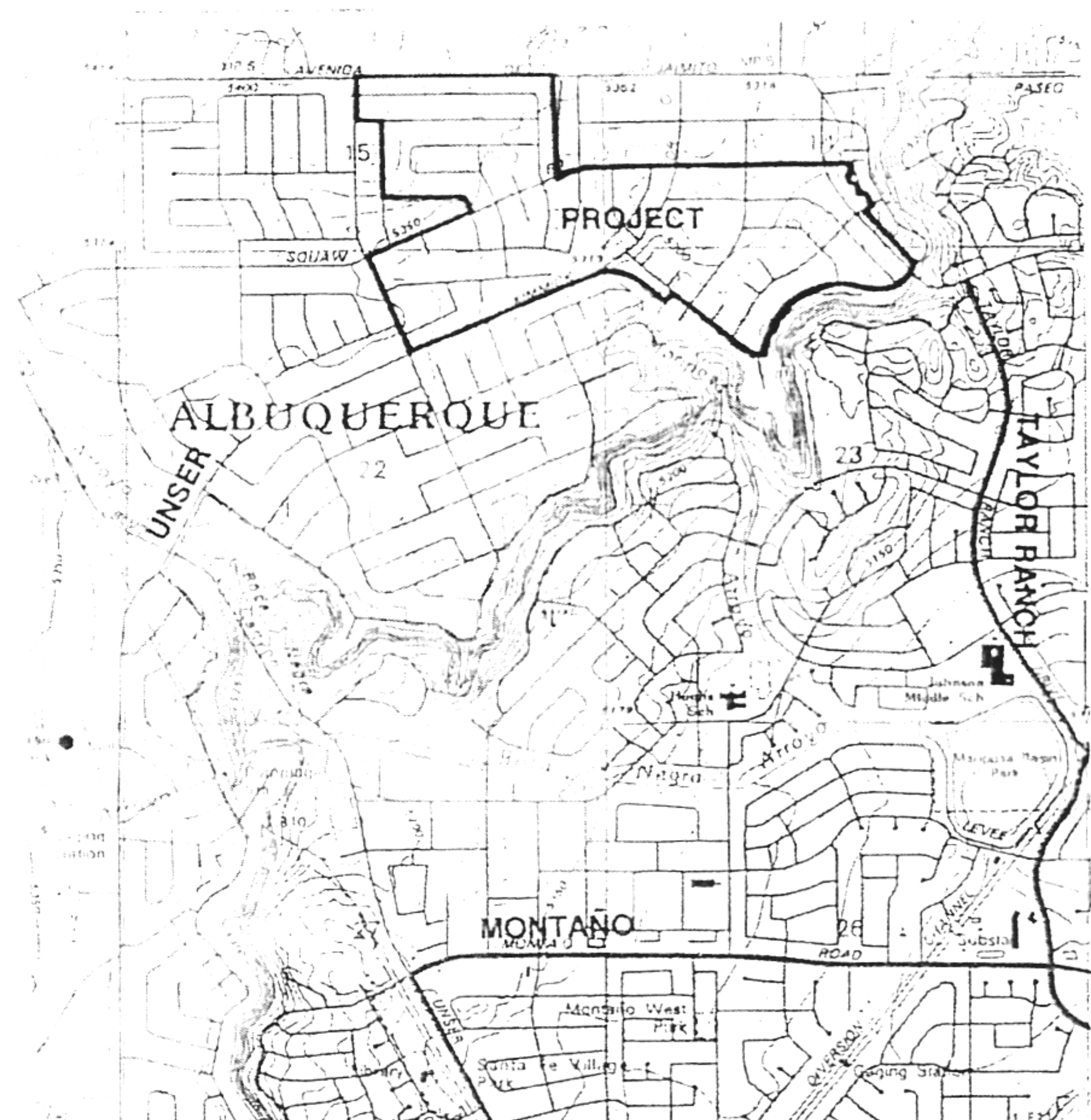
The south and west sides of La Cuentista are generally bounded by Kimmick Drive (formerly Unser Boulevard) and Uracca Street respectively. Vehicle access to the site is via Unser Boulevard/Kimmick Drive, northeast from the intersection of Atrisco, 81st Street and Universe Boulevard, at the top of the volcanic escarpment. Non-vehicular access to the site may be taken from the west end of Calle Norteña, through Petroglyph National Monument. The 106' wide Calle Norteña right-of-way as described by the original plat now extends through Petroglyph National Monument.

The site is vegetated with native grasses and shrubs (see photo). Site terrain slopes generally down from northwest to southeast at approximately 3 percent. The terrain is marked by surface outcroppings of volcanic rock, and gravel roads. The site itself and surrounding lands are not developed, and show no obvious signs of being disturbed, with the exception of the roughly graded gravel roads.

La Cuentista will replat the existing lots into a subdivision using cluster housing and mixed-use development consistent with "new urbanism" development concepts. The proposed subdivision will include pedestrian corridors and public and private open space. Most of the newly designated roadways in the project will be paved. The sanitary sewer system including main lines and services to individual lots will be installed and will use a vacuum system due to adverse grades and underlying basalt. The water system, including main lines and individual lot service connections, utilizes the water pump station at the City well site on 81st Street constructed through the City's SAD 227 project. Individual lot grading will be a part of this project. Required drainage improvements for the project will be designed and constructed as approved by the COA Hydrology Department as subsequent Units are developed.



Kimmick Drive looking northwest across the site



**FIGURE 1: LOCATION MAP
Zone Atlas C10, C11, D10, and D11**

Drainage

In 1997, BRASHER & LORENZ, Inc., secured approval of their drainage master plan for the La Cuentista Development. The following site description borrows from the approved report.

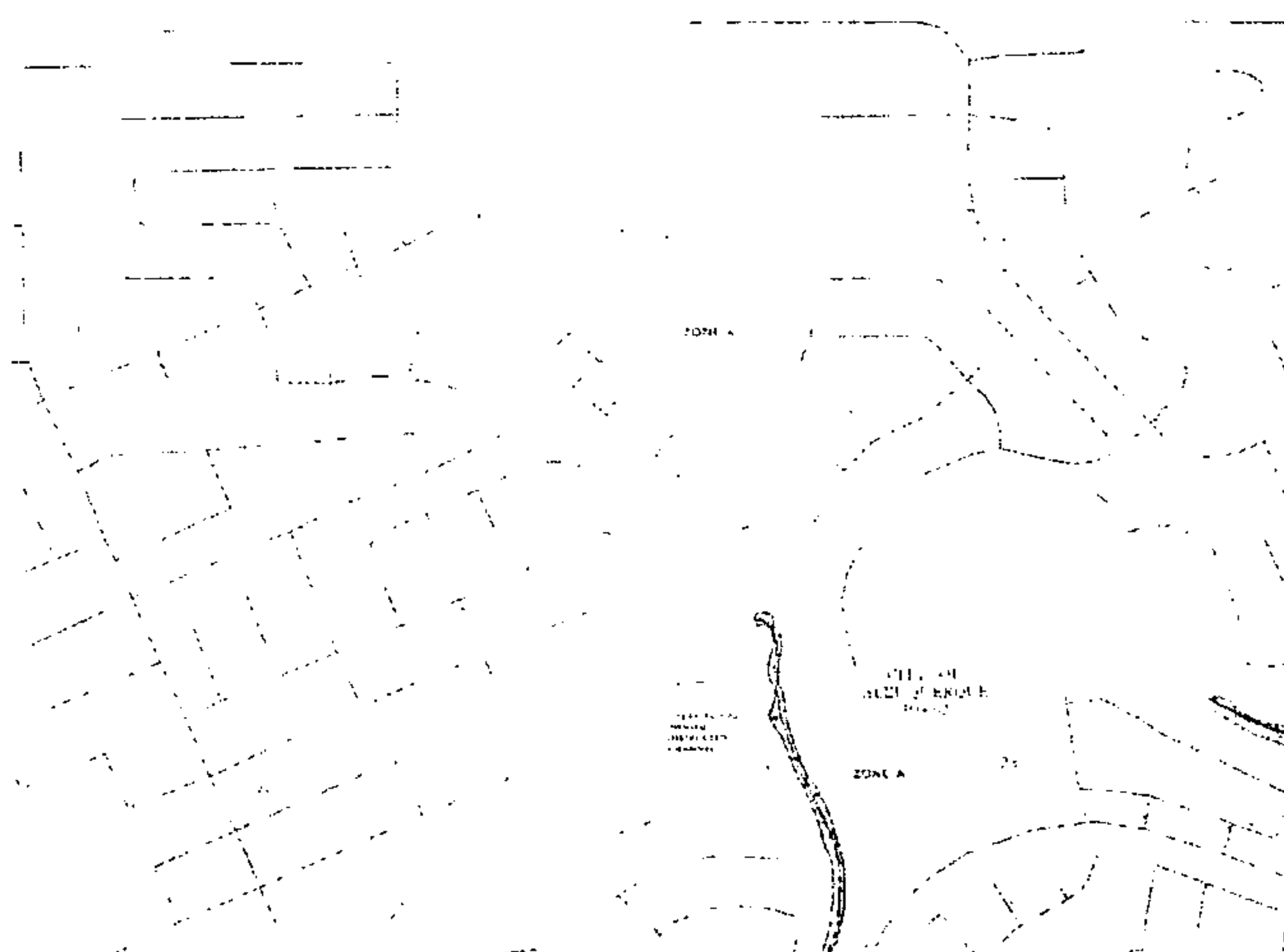
Existing Conditions: Soils on the site consist mainly of Alameda Sandy Loam (see Soils Map). The soil surface on Albuquerque's west mesa is generally level to undulating and mainly lies atop old basalt flows. Storm water runoff is characterized as medium; the hazard of blowing soil is moderate, and the hazard of water erosion is considered slight. Plant life covers approximately 15% of the soil surface supported by the soil and an annual precipitation of 7-10 inches/year. Approximately 35% of the groundcover is black gramma grass and Apache-plume is the dominant shrub.

The site is impacted by off-site flows originating in undeveloped upstream land northwest of the site. There is evidence of historic flow in several broad shallow arroyos crossing the site. In the late 1970's, an effort to protect new residential developments downstream from the effects of sheet and concentrated storm water flow resulted in construction of a short reach of rip-rap channel along the southeast boundary of the site. The riprap channels and discharges flows to Calle Norteña and the Mariposa Arroyo. These concentrated flows drain east down Calle Norteña for approximately ½ mile where they are picked up by the underground storm drain system in Golf Course Road. The storm drain in turn discharges into the Mariposa Arroyo and flows are conveyed to the Mariposa Basin. In certain areas of the site, storm water runoff does not concentrate, and historically, runoff sheet-flows east across Petroglyph National Monument.

A 200' grid of soil borings was completed in 1996 to determine the depth from the surface to the basalt rock table. The results indicated the depth of topsoil above basalt varies from none (exposed basalt) to at least 18 feet in thickness. The results also indicate that the topsoil thickness is greatest in the southwestern quarter of the site and diminishes toward the east. The density of the volcanic outcroppings does not appear to vary significantly with the depth of the soil.



SOILS MAP
SCS SOIL SURVEY OF BERNALILLO
COUNTY, NM MAP 20



Flood Plain Panel 112 of 325

Plate 1 defines the Existing Conditions Basin boundaries. Existing Basins 101 through 107 historically flow across Petroglyph National Monument and discharge to the Mariposa Channel. Basin 108 discharges into Petroglyph National Monument and is also conveyed to the Mariposa Channel. Basin 109 currently discharges across Petroglyph National Monument and down Calle Norteña in the Piedras Marcadas watershed. Section 22.2, Hydrology, of the DPM, was followed in the analysis of a 100-year 6-hour storm event to determine peak discharge values.

The following tables show the Existing Basin hydrologic summaries and flows at the Analysis Points. The Basin Boundaries and Analysis Points are shown on Plate 1.

Table 1: Summary of Existing Flows		
Basin	Area (acres)	100_{year} 6_{hour} Peak Flow (Q₁₀₀) cfs
101	168.96	85
102	216.32	137
103	9.60	8.4
104	24.32	29
105	131.84	112
106	11.02	14
107	39.68	37
108	8.80	11
109	77.44	78

Table 2: Summary of Analysis Points - Existing	
Analysis Point	100_{year} 6_{hour} Peak Flow (Q₁₀₀) cfs
1	90
2	96
3	238
4	268
5	78

Analysis point 4 and 5 indicate the flows leaving the property. Analysis point 4 is the discharge across Petroglyph National Monument to the Mariposa Arroyo. Analysis point 5 is the existing flow across Petroglyph National Monument at Calle Norteña.

Master Plan Proposed Improvement. As shown on Plate 2 the proposed development includes various densities of residential properties. The City of Albuquerque Open Space Division has agreed to allow flows to be released into Petroglyph National Monument at a controlled rate equal to that of the Existing Conditions model that represents contributing basins as 100% land treatment type "A". The agreement is contained in Appendix A, and the discharge points are shown on Plate 4. The limitations in downstream conveyance capacity and the shallow rock condition prohibit extensive earthwork and mass grading for the project. To minimize rock excavation and disturbance to the natural terrain the site will be graded to match existing grades as close as possible. Capacity limitations dictate that detention ponds and conveyance channels be constructed for each phase of construction in order to detain runoff for release at controlled flow rates. The model of Fully Developed Conditions assumes that Unser Boulevard is in place and offsite flows from the northwest are diverted around the site. Only offsite flows from areas east of Unser

Boulevard and south of Paseo Del Norte will contribute. Using the limited discharge from the site we assume the off-site basins will be held to undeveloped flows based on 100% land treatment Type "A". Because of the detention required by the site, a 100-year 24-hour storm event was analyzed following Section 22.2, Hydrology, of the City's DPM.

The basins of the Fully Developed model are shown on Plate 2 and peak flows resulting from modeling the Fully Developed basins are shown in the following table:

Table 3: Summary of Fully Developed Flows		
Basin	Area (acres)	100_{year}-24_{hour} Peak Flow (Q₁₀₀) cfs
201	22.1	82.1
202	35.0	143.7
203	1.2	4.1
204	5.0	16.4
205	8.8	28.7
206	4.6	14.4
207	2.4	8.2
208	8.5	21.2
209	3.6	12.3
210	2.6	8.0
211	6.2	20.5
212	3.3	9.8
213	40.2	129.3
214	55.1	176.6
215	34.5	110.8
301	43.7	186.7
302	37.3	143.7
303	43.0	184.8
304	69.0	100.3

Using the proposed Master Plan layout and the limited discharge rates we have identified 8 detention ponds for the ultimate build out. If the ownership for Basins 301 and 302 are combined it may be possible to eliminate Pond #5. During the analysis we eliminated proposed ponds #2 and #3. Discharge from the site into Petroglyph National Monument is from Ponds #4 and #8 and the Mariposa Channel/ Basin and from the site into Calle Norteña and the Piedras Marcadas from Pond #10. The remaining discharge to the Petroglyph National Monument is from proposed pond #7 which is part of the proposed SAD 228 and is not part of this project. The discharge from each basin is shown in the table below:

Table 4: Summary of Discharge Points – Fully Developed		
Pond #		100_{year} 6_{hour} Peak Flow (Q₁₀₀) cfs
4		106
8		119
7		30 (40 Allowable)-
Total discharge to Petroglyph NM		255 cfs
10	Calle Norteña/ Piedras Marcadas	15

Unit 1 Proposed Improvement. As shown on Plate 3 Unit 1 of the proposed development includes residential properties in the southeastern portion of the site. There is one of the proposed detention basins located within Unit 1 (Pond #4). This pond will be constructed to hold flows from the existing offsite basins and the developed flows from Unit 1 with a total discharge of 106 cfs for the interim conditions.

The flows for the interim basins are shown in the following table:

Table 5: Summary of Proposed Flows - Unit 1		
Basin	Area (acres)	100_{year}-24_{hour} Peak Flow (Q₁₀₀)
101	169.0	85.9
102	216.3	135.8
103	43.5	56.1
104	8.3	10.7
105	6.4	8.23
106	21.8	28.0
106A	6.4	8.2
107	32.0	41.1
108	39.7	51.1
109	3.2	4.1
110	19.8	25.6
111	77.4	102.9
201	22.1	82.1
202	35.0	143.7
203	1.2	4.1
204	5.0	16.4
205	8.8	28.7
206	4.6	14.4
207	2.4	8.2
208	8.5	21.2
209	3.6	12.3
210	2.6	8.0
211	6.2	20.5
212	3.3	9.8
213	40.2	129.3
214	55.1	176.6
215	34.5	110.8

Conclusion

The development of Unit 1 has been analyzed in this report. The project will be held to the limited discharge as defined in the agreement found in Exhibit A. On site detention will be utilized to control the discharge from the site. The facilities being built with Unit 1 will be constructed to the size and requirements of the fully developed site conditions. All developed areas in Unit 1 will be conveyed to the pond north of Kimmick Drive. The flows will then be metered through a water quality standpipe. The standpipe will be designed to remove floatables from the discharge. A structure will be designed at the outlet to spread the flow and minimize erosion downstream of the discharge point to the Petroglyph National Monument. The system will be designed to convey existing offsite flows through the site. Off site drainage basins will be required to detain developed flows as development occurs.

APPENDIX A

WILSON & COMPANY

2600 The American Road SE
Suite 100
Rio Rancho, New Mexico 87124
(505) 898-8021
(505) 898-8501 Fax

Memo

Albuquerque
Arlington
Colorado Springs
Denver
Fort Worth
Houston
Kansas City
Lenexa
Omaha
Pasadena
Phoenix
Rio Rancho
Salina
San Bernardino
Wichita

From: Daniel S. Aguirre, P.E.

To: Matthew Schmader, PhD

Date: 11/10/03

Copies To: Francis Pavich, Fred Aguirre, Richard Duarte, Loren Mienz
Kristine Susco

Project No.: X1210015

Task: 83

Subject: **Ultimate Discharge to Petroglyph National Monument at the
Mariposa Channel**

Phase 01

Matt,

Based on our meeting and site review we believe the following agreement represents the best interest of all parties and will minimize impacts to the Petroglyph National Monument (PNM).

Whereas the Mariposa Arroyo currently discharges through the PNM and is conveyed to the Mariposa Basin via a channel down stream of the PNM. And:

Whereas cutting off all flows to the Channel through the PNM would damage vegetation in the current small canyon and impoundment area. And:

Whereas it would be desirable to not construct manmade structures within the monument boundary.

It is agreed that the following items be satisfied prior to approval of final plans for discharging through the park to the Mariposa Channel.

1. The discharge rate to the Mariposa shall be held to the historic/existing conditions flow rates based on using the AHYMO computer program and using a land treatment of 100% Type A. This will provide the lowest discharge for this area. The total discharge through the PNM would be 270 cfs based on this restriction. See Plate 1 for existing conditions.
2. In order to minimize the impacts to the monument the total discharge will be divided into a minimum of 3 points of discharge. This will minimize the flow rate, velocity, and volume at any concentrated point. The discharge points will be selected based on current topography as shown on Plate 4.
3. No structures will be constructed within the monument boundary unless specifically identified and agreed to by COA Open Space, COA Hydrology and the developer of the adjacent properties.
4. A Drainage Management Plan will be prepared showing the discharge points and flow rates. This plan will be submitted for approval by COA hydrology. Upon approval of the flow rates identified design plans will be prepared based on the approved flow rates.

Memo PNM flow rate.dot

5. Design Plans will be prepared and submitted for approval through the City Design Review Committee.

You signatures below will acknowledge our agreement on the terms of required for the discharge points to the Mariposa Arroyo.

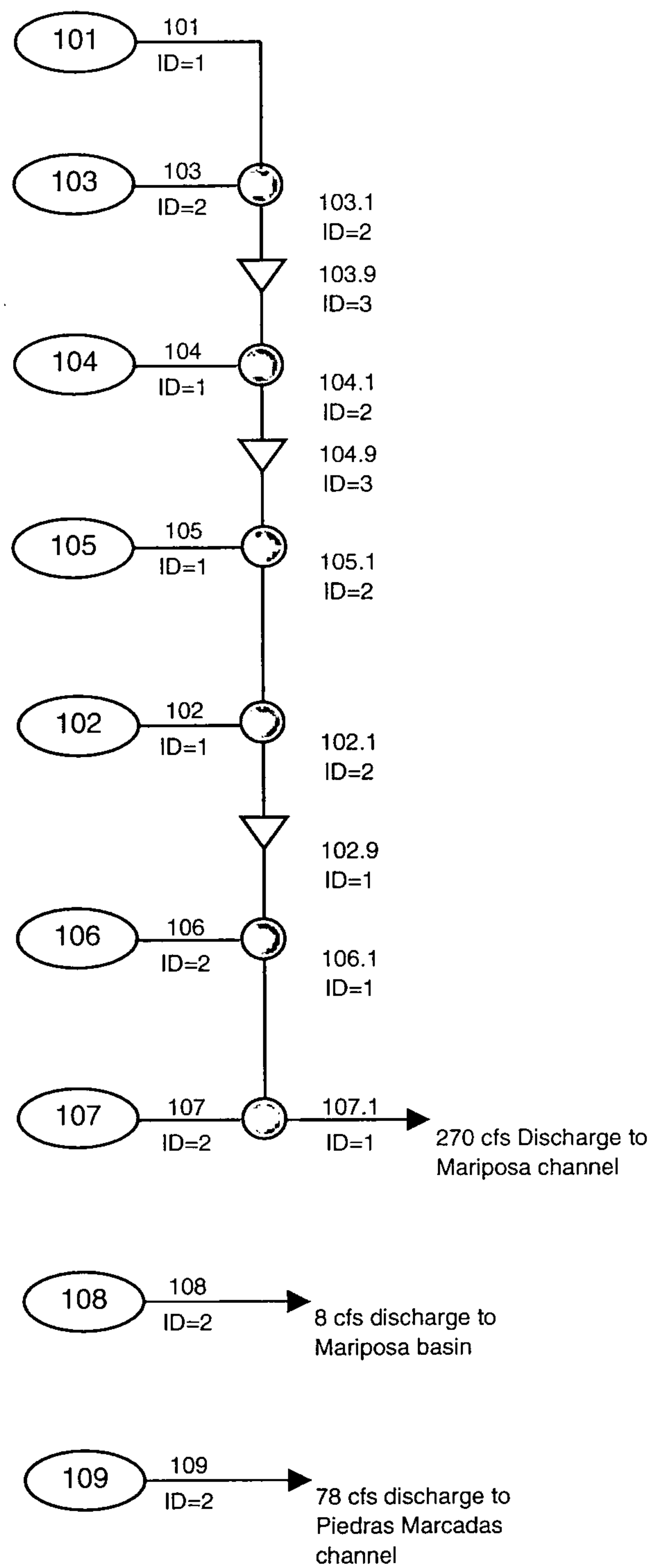
Frances Pavich, President
Legacy Sustainable Development, LLC.

Matthew Schmader, PhD
Assistant Superintendent
City of Albuquerque, Open Space

Fred Aguirre, P.E.
City Engineer
City of Albuquerque,
Development and Building Services Division

APPENDIX B

La Cuentista; Hydrologic Model Diagram: Existing Conditions



KEY



AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -
 INPUT FILE = c:\AHYMO\Existing\ex100yr.dat

AHYMO.SUM

- VERSION: 1997.02c

RUN DATE (MON/DAY/YR) =11/19/2003
 USER NO.= AHYMO-C-9803c01UNMLIB-AH

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= 1											RAIN6= 2.200
COMPUTE NM HYD	101.00	-	1	.26400	85.19	6.184	.43922	1.800	.504		PER IMP= .00
COMPUTE NM HYD	103.00	-	2	.01500	8.44	.351	.43922	1.600	.879		PER IMP= .00
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ADD HYD	103.10	1& 2	2	.27900	90.13	6.536	.43922	1.800	.505		
*S*** ROUTE BASINS 101 AND 103 THRU BASIN 104											
ROUTE MCUNGE	103.90	2	3	.27900	89.89	6.528	.43872	1.900	.503		CCODE = .1
COMPUTE NM HYD	104.00	-	1	.03800	28.61	.890	.43922	1.533	1.177		PER IMP= .00
*S*ADD BASIN 104 - ANALYSIS POINT 2											
ADD HYD	104.10	1& 3	2	.31700	95.58	7.418	.43878	1.867	.471		
*S*** ROUTE BASINS 101, 103 AND 104 THRU BASIN 105											
ROUTE MCUNGE	104.90	2	3	.31700	94.62	7.398	.43760	2.333	.466		CCODE = .1
COMPUTE NM HYD	105.00	-	1	.20600	111.59	4.826	.43922	1.633	.846		PER IMP= .00
*S*ADD BASIN 105											
ADD HYD	105.10	3& 1	2	.52300	111.59	12.224	.43824	1.633	.333		
COMPUTE NM HYD	102.00	-	1	.33800	136.61	7.918	.43922	1.733	.631		PER IMP= .00
*S*ADD BASIN 102 - ANALYSIS POINT 3											
ADD HYD	102.10	2& 1	2	.86100	238.32	20.142	.43862	1.667	.432		
*S*** ROUTE BASINS 101, 102, 103, 104, AND 105 THRU BASIN 106											
ROUTE MCUNGE	102.90	2	1	.86100	238.14	20.155	.43891	1.767	.432		CCODE = .2
COMPUTE NM HYD	106.00	-	2	.02000	16.60	.469	.43922	1.533	1.297		PER IMP= .00
ADD HYD	106.10	1& 2	1	.88100	243.75	20.623	.43892	1.733	.432		
COMPUTE NM HYD	107.00	-	2	.06200	37.13	1.452	.43922	1.567	.936		PER IMP= .00
ADD HYD	107.10	1& 2	1	.94300	269.32	22.076	.43894	1.733	.446		
COMPUTE NM HYD	108.00	-	2	.01000	8.30	.234	.43922	1.533	1.297		PER IMP= .00
COMPUTE NM HYD	109.00	-	2	.12100	77.58	2.834	.43922	1.567	1.002		PER IMP= .00
FINISH											

*** LA CUENTISTA SUBDIVISION PHASE I ***
 *** UNDEVELOPED CONDITIONS RUNOFF MODEL ***

 *** DESIGN STORM IS THE 100 YEAR - 6 HOUR STORM

 *** COA DPM TYPE 1, 6 HOUR STORM WITH A PEAK INTENSITY AT 1.4 HOURS

START TIME = 0

 *** COMPUTING RAINFALL ***

 RAINFALL TYPE = 1

RAIN QUARTER = 0.00 INCHES

RAIN ONE HOUR = 1.87
 RAIN SIX HOUR = 2.20
 DT = 0.03333 HOURS

 *** COMPUTING TP FOR BASIN EX-101 ***

COMPUTE LT TP LCODE=1 NK=5 ISLOPE=0
 LENGTH=400 FT SLOPE=0.006 K=0.7
 LENGTH=1600 FT SLOPE=0.006 K=2
 LENGTH=1225 FT SLOPE=0.006 K=3
 LENGTH=2640 FT SLOPE=0.019 K=3
 LENGTH=1180 FT SLOPE=0.019 K=3
 KN=0.033 CENTROID DISTANCE=4190

*** COMPUTING HYD FOR BASIN EX-101

COMPUTE NM HYD ID=1 HYDNO=101 DA=0.264 SQ MI
 PERCENT A=100 B=0 C=0 D=0
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PRINT HYD ID=1 CODE=5

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 LENGTH=1400 FT SLOPE=0.013 K=2

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 TP=0.0 HOURS MASSRAIN=-1

PRINT HYD ID=2 CODE=5

 *S*ADD BASINS 101 AND 103 - ANALYSIS POINT 1

ADD HYD ID=2 HYD=103.1 ID=1 ID=2

PRINT HYD ID=2 CODE=1

 *S*** ROUTE BASINS 101 AND 103 THRU BASIN 104

COMPUTE RATING CURVE CID=1 VS NO=1 SEGS=1 MIN ELEV=5335.5 MAX ELEV=5336
 CH SLP=0.015 FP SLP=0.015 N=0.03 DIST=250
 DIST ELEV DIST ELEV
 0 5336 100 5335.5

140 5335.5 250 ex100yr.dat
5336

ROUTE MCUNGE ID=3 HYD NO= 103.9 INFLOW ID=2
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PRINT HYD ID=3 CODE=5

*** COMPUTING TP FOR BASIN EX-104

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LENGTH=1025 FT SLOPE=0.018 K=2

*** COMPUTING HYD FOR BASIN EX-104

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PERCENT A=100 B=0 C=0 D=0
TP=0.0 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

*S*ADD BASIN 104 - ANALYSIS POINT 2

ADD HYD ID=2 HYD=104.1 ID=1 ID=3

PRINT HYD ID=2 CODE=1

*S*** ROUTE BASINS 101, 103 AND 104 THRU BASIN 105

COMPUTE RATING CURVE CID=1 VS NO=1 SEGS=1 MIN ELEV=5307 MAX ELEV=5307.5
CH SLP=0.016 FP SLP=0.016 N=0.03 DIST=250
DIST ELEV DIST ELEV
0 5307.5 100 5307
140 5307 250 5307.50

ROUTE MCUNGE ID=3 HYD NO= 104.9 INFLOW ID=2
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PRINT HYD ID=3 CODE=5

*** COMPUTING TP FOR BASIN EX-105

COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
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LENGTH=1600 FT SLOPE=0.026 K=2
LENGTH=2200 FT SLOPE=0.026 K=3
KN=0.033 CENTROID DISTANCE=1508

*** COMPUTING HYD FOR BASIN EX-105

COMPUTE NM HYD ID=1 HYDNO=105 DA=0.206 SQ MI
PERCENT A=100 B=0 C=0 D=0
TP=0.0 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

*S*ADD BASIN 105

ADD HYD ID=2 HYD=105.1 ID=3 ID=1

PRINT HYD ID=2 CODE=1

*** COMPUTING TP FOR BASIN EX-102

COMPUTE LT TP LCODE=1 NK=4 ISLOPE=0
LENGTH=400 FT SLOPE=0.017 K=0.7
LENGTH=1600 FT SLOPE=0.017 K=2

ex100yr.dat
LENGTH=3375 FT SLOPE=0.017 K=3
LENGTH=2260 FT SLOPE=0.016 K=3
KN=0.033 CENTROID DISTANCE=3097

*** COMPUTING HYD FOR BASIN EX-102

COMPUTE NM HYD ID=1 HYDNO=102 DA=0.338 SQ MI
PERCENT A=100 B=0 C=0 D=0
TP=0.0 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

*S*ADD BASIN 102 - ANALYSIS POINT 3

ADD HYD ID=2 HYD=102.1 ID=2 ID=1

PRINT HYD ID=2 CODE=1

*S*** ROUTE BASINS 101, 102, 103, 104, AND 105 THRU BASIN 106

COMPUTE RATING CURVE CID=1 VS NO=1 SEGS=1 MIN ELEV=5288.5 MAX ELEV=5289
CH SLP=0.02 FP SLP=0.02 N=0.03 DIST=100
DIST ELEV DIST ELEV
0 5289 40 5288.5
60 5288.5 100 5289

ROUTE MCUNGE ID=1 HYD NO= 102.9 INFLOW ID=2
DT=0.0 L=1135 FT NS=0 SLOPE=0.020
PRINT HYD ID=1 CODE=5

*** COMPUTING TP FOR BASIN EX-106

COMPUTE LT TP LCODE=1 NK=2 ISLOPE=0
LENGTH=400 FT SLOPE=0.020 K=0.7
LENGTH=680 FT SLOPE=0.020 K=2

*** COMPUTING HYD FOR BASIN EX-106

COMPUTE NM HYD ID=2 HYDNO=106 DA=0.02 SQ MI
PERCENT A=100 B=0 C=0 D=0
TP=0.0 HOURS MASSRAIN=-1

PRINT HYD ID=2 CODE=5

*ADD BASIN 106

ADD HYD ID=1 HYD=106.1 ID=1 ID=2

PRINT HYD ID=1 CODE=1

*** COMPUTING TP FOR BASIN EX-107

COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
LENGTH=400 FT SLOPE=0.026 K=0.7
LENGTH=1600 FT SLOPE=0.026 K=2
LENGTH=900 FT SLOPE=0.026 K=2

*** COMPUTING HYD FOR BASIN EX-107

COMPUTE NM HYD ID=2 HYDNO=107 DA=0.062 SQ MI
PERCENT A=100 B=0 C=0 D=0
TP=0.0 HOURS MASSRAIN=-1

PRINT HYD ID=2 CODE=5

*ADD BASIN 107 - ANALYSIS POINT 4

ADD HYD ID=1 HYD=107.1 ID=1 ID=2

PRINT HYD ID=1 CODE=1

*** COMPUTING TP FOR BASIN EX-108

COMPUTE LT TP LCODE=1 NK=2 ISLOPE=0
LENGTH=400 FT SLOPE=0.020 K=0.7
LENGTH=500 FT SLOPE=0.020 K=2

*** COMPUTING HYD FOR BASIN EX-108

COMPUTE NM HYD ID=2 HYDNO=108 DA=0.01 SQ MI
PERCENT A=100 B=0 C=0 D=0
TP=0.0 HOURS MASSRAIN=-1

PRINT HYD ID=2 CODE=5

*** COMPUTING TP FOR BASIN EX-109

COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
LENGTH=400 FT SLOPE=0.029 K=0.7
LENGTH=1600 FT SLOPE=0.029 K=2
LENGTH=1000 FT SLOPE=0.029 K=3

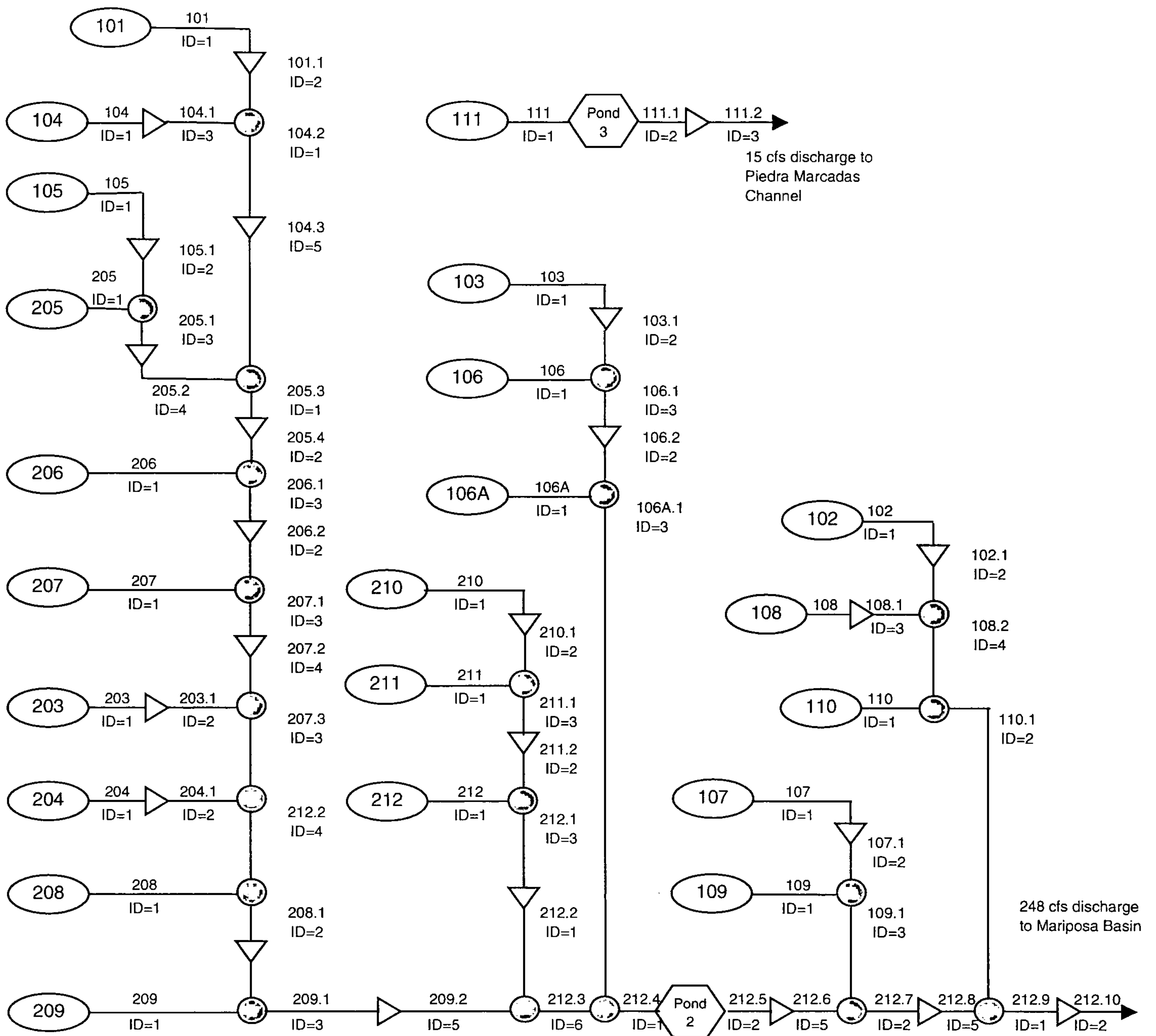
*** COMPUTING HYD FOR BASIN EX-109

COMPUTE NM HYD ID=2 HYDNO=109 DA=0.121 SQ MI
PERCENT A=100 B=0 C=0 D=0
TP=0.0 HOURS MASSRAIN=-1

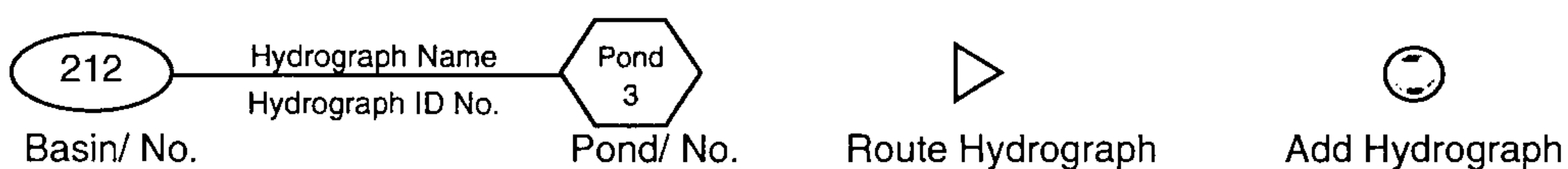
PRINT HYD ID=2 CODE=5

FINISH

La Cuentista; Hydrologic Model Diagram: Unit 1- Interim Conditions



KEY



AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -
INPUT FILE = c:\AHYMO\Phase1\Phase_1.dat

AHYMO.SUM

- VERSION: 1997.02c

RUN DATE (MON/DAY/YR) =11/19/2003
USER NO.= AHYMO-C-9803c01UNMLIB-AH

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
S 1- COMPUTING RAINFALL						***				RAIN24= 2.660
RAINFALL TYPE= 2										
S 2- COMPUTE TP FOR OFFSITE BASIN EX-101 (from Ex Model)										
S 3- Compute HYD for BASIN EX-101										
COMPUTE NM HYD	101.00	-	1	.26400	85.86	6.186	.43936	1.800	.508	PER IMP= .00
S 4- Route BASIN 101 (85cfs) in channel through BASIN 208 to jct w/104 in 20										
ROUTE MCUNGE	101.10	1	2	.26400	85.86	6.188	.43948	1.800	.508	CCODE = .2
S 5- COMPUTE TP FOR OFFSITE BASIN EX-104										
S 6- Compute HYD for BASIN EX-104										
COMPUTE NM HYD	104.00	-	1	.01300	10.70	.305	.43936	1.500	1.286	PER IMP= .00
S 7- Route BASIN 104 (11cfs) in channel through BASIN 208 to jct w/ 101 in										
ROUTE MCUNGE	104.10	1	3	.01300	10.44	.301	.43428	1.600	1.255	CCODE = .1
S 8- Add BASINS 101.1 AND 104.1										
ADD HYD	104.20	2& 3	1	.27700	90.29	6.489	.43923	1.800	.509	
S 9- Route 104.2 in channel through BASIN 208 & add to 205.1										
ROUTE MCUNGE	104.30	1	5	.27700	89.96	6.483	.43880	1.800	.507	CCODE = .1
S 10- COMPUTE TP FOR OFFSITE BASIN EX-105										
S 11- Compute HYD for BASIN EX-105										
COMPUTE NM HYD	105.00	-	1	.01000	8.23	.234	.43936	1.500	1.286	PER IMP= .00
S 12- Route 105 (8.3cfs) through BASIN 205 to jct w/ 205										
ROUTE MCUNGE	105.10	1	2	.01000	7.95	.238	.44606	1.550	1.242	CCODE = .2
S 13- COMPUTE TP FOR BASIN 205 (Let tp= 0.133= Min.)						***				
S 14- Compute HYD for BASIN 205 (assume 4 DU/Acre=> 42%D, use 45%D)										
COMPUTE NM HYD	205.00	-	1	.01400	28.74	1.133	1.51708	1.500	3.207	PER IMP= 45.00
S 15- Add BASINS 105 and 205,										
ADD HYD	205.10	2& 1	3	.02400	36.44	1.371	1.07078	1.500	2.372	
S 16- Route 205.1 through CHANNEL to confluence w/ BASIN 104.3 (see #15) ***										
ROUTE MCUNGE	205.20	3	4	.02400	36.44	1.371	1.07078	1.500	2.372	CCODE = .0
S 17- Add BASINS 104.3 (see #15) and 205.2,										
ADD HYD	205.30	5& 4	1	.30100	101.66	7.853	.48919	1.800	.528	
S 18- Route BASIN 205.3 through CHANNEL to confluence w/ BASIN 206										
ROUTE MCUNGE	205.40	1	2	.30100	100.93	7.853	.48921	1.800	.524	CCODE = .2
S 19- COMPUTE TP FOR BASIN 206 (Let tp= 0.133= Min.)						***				
S 20- COMPUTE HYD FOR BASIN 206 (assume 4 DU/Acre=> 42%D, use 45%D)										
COMPUTE NM HYD	206.00	-	1	.00700	14.38	.566	1.51708	1.500	3.209	PER IMP= 45.00
S 21- ADD BASINS 205.4 (see #34) and 206										
ADD HYD	206.10	2& 1	3	.30800	105.56	8.420	.51257	1.750	.536	
S 22- Route BASIN 206.1 through CHANNEL to intercept w/ BASIN 207										
ROUTE MCUNGE	206.20	3	2	.30800	105.53	8.414	.51221	1.800	.535	CCODE = .1
S 23- COMPUTE TP FOR BASIN 207 (Let tp= 0.133= Min.)						***				
S 24- COMPUTE HYD FOR BASIN 207 (actual 3.7DU/acre, assume 4 DU/Acre=>)										
COMPUTE NM HYD	207.00	-	1	.00400	8.22	.324	1.51708	1.500	3.212	PER IMP= 45.00
S 25- ADD BASINS 206.2 AND 207										
ADD HYD	207.10	2& 1	3	.31200	108.09	8.737	.52509	1.800	.541	
S 26- Route BASIN 207.1 through CHANNEL to Pond 1, hold (ID= 5) to add to										
ROUTE MCUNGE	207.20	3	4	.31200	108.09	8.737	.52509	1.800	.541	CCODE = .0
S 27- Compute TP for BASIN 203 (let TP= 0.133= Min.)						***				
S 28- COMPUTE HYD FOR BASIN 203 (2.5 DU/acre, use D=45)										

AHYMO.SUM

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 = 2	NOTATION
COMPUTE NM HYD	203.00	-	1	.00200	4.12	.162	1.51708	1.500	3.218	PER IMP=	45.00
S 29-	Route 203 Through BASIN 208 to POND 1 in 208										
ROUTE MCUNGE	203.10	1	2	.00200	4.07	.162	1.51825	1.500	3.177	CCODE =	.2
S 30-	ADD BASINS 207.2 and 203.1 before POND 1										
ADD HYD	207.30	4& 2	3	.31400	109.61	8.899	.53141	1.800	.545		
S 31-	Compute TP for BASIN 204 (Let tp= 0.133= Min.)					***					
COMPUTE NM HYD	204.00	-	1	.00800	16.43	.647	1.51708	1.500	3.209	PER IMP=	45.00
S 33-	Route 204 through BASIN 208, add to 207 & 208 at POND 1					***					
ROUTE MCUNGE	204.10	1	2	.00800	15.97	.647	1.51721	1.550	3.118	CCODE =	.2
S 34-	ADD BASINS 207.3 and 204.1 before POND 1										
ADD HYD	207.40	3& 2	4	.32200	115.32	9.547	.55590	1.800	.560		
S 35-	COMPUTE TP FOR BASIN 208 (Let tp= 0.133= Min.)					***					
COMPUTE NM HYD	208.00	-	1	.01300	21.22	.725	1.04601	1.500	2.550	PER IMP=	20.00
S 37-	ADD BASINS 207.4 and 208 before POND 1										
ADD HYD	208.10	4& 1	2	.33500	121.07	10.272	.57492	1.800	.565		
S 38-	ROUTE BASIN 208.1 THROUGH POND 1 Pond Characteristics per FulDvp model										
S	discharge 51.27cfs through 28" orifice plate										
S 39-	Route outflow from POND 1 (208.2) through channel to intercept w/ BASI										
ROUTE MCUNGE	208.30	2	3	.33500	121.06	10.261	.57431	1.800	.565	CCODE =	.1
S 40-	Compute TP for BASIN 209 (Let tp=0.133= Min.)					***					
S 41-	Compute HYD for BASIN 209 (3.86du/acre=> 41%D, use 45%D)										
COMPUTE NM HYD	209.00	-	1	.00600	12.33	.485	1.51708	1.500	3.210	PER IMP=	45.00
S 42-	Add outflow from POND 1 routed through channel (208.3) and 209										
ADD HYD	209.10	3& 1	2	.34100	124.90	10.746	.59089	1.800	.572		
S 43-	Route 209.1 through channel to confluence w/ 212 & 106A at Pomnd 2.										
ROUTE MCUNGE	209.20	2	5	.34100	124.62	10.722	.58954	1.900	.571	CCODE =	.1
S 44-	COMPUTE TP FOR BASIN 210 (let tp=0.133= Min.)					***					
S 45-	COMPUTE HYD FOR BASIN P-210 (3.0 DU/acre=> 35%D, use 40%D)										
COMPUTE NM HYD	210.00	-	1	.00400	8.04	.308	1.44459	1.500	3.141	PER IMP=	40.00
S 46-	Route BASIN 210 down Kimmick to confluence w/ 211										
ROUTE MCUNGE	210.10	1	2	.00400	7.70	.307	1.43829	1.700	3.007	CCODE =	.1
S 47-	Compute TP for BASIN P-211 (let tp=0.133= Min.)					***					
S 48-	COMPUTE HYD FOR BASIN P-211 (3.7 DU/acre=> 40%D, use 45%D)										
COMPUTE NM HYD	211.00	-	1	.01000	20.53	.809	1.51708	1.500	3.208	PER IMP=	45.00
S 49-	ADD BASINS 210.1 AND 211										
ADD HYD	211.10	2& 1	3	.01400	21.74	1.116	1.49450	1.500	2.426		
S 50-	Route 211.1 down Kimmick to confluence w/ 212										
ROUTE MCUNGE	211.20	3	2	.01400	21.70	1.117	1.49631	1.600	2.422	CCODE =	.2
S 51-	COMPUTE TP FOR BASIN P-212 (Let TP=0.133= Min.)					***					
S 52-	Computing HYD for BASIN 212 (2.5 DU/acre=> 30%D, use 35%D)										
COMPUTE NM HYD	212.00	-	1	.00500	9.81	.366	1.37175	1.500	3.066	PER IMP=	35.00
S 53-	ADD BASINS 211.2 AND 212										
ADD HYD	212.10	2& 1	3	.01900	30.34	1.483	1.46347	1.550	2.495		
S 54	ROUTE 212.1 down Kimmick in 24"x 1,325' RCP to outlet structure before										
ROUTE	212.20	3	1	.01900	29.44	1.445	1.42569	1.584	2.421		
S 55-	Add 209.2, and 212.2. Add to 106A.3 at Pond 2.										
ADD HYD	212.30	5& 1	6	.36000	140.62	12.067	.62851	1.815	.610		
S 56-	Compute TP for BASIN EX-103 (use min TP= 0.133)										
S 57-	Compute HYD for BASIN EX-103										
COMPUTE NM HYD	103.00	-	1	.06800	56.09	1.593	.43936	1.500	1.289	PER IMP=	.00
S 58-	Route 103 (56cfs peak) in channel through Basin 106 (ID=7), add to										

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 = 3 NOTATION
ROUTE MCUNGE	103.10	1	2	.06800						
S 59- Compute TP for BASIN EX-106										
AHYMO.SUM 55.18 1.578 .43519 1.650 1.268 CCODE = .1										
S 60- Compute HYD for BASIN EX-106	COMPUTE NM HYD	106.00	- 1	.03400	27.97	.797	.43936	1.500	1.285	PER IMP= .00
S 61- Add BASINS 103.1 and 106.	ADD HYD	106.10	2& 1 3	.10200	72.27	2.375	.43657	1.650	1.107	
S 62- Route 106.1 in channel through Basin 106A	ROUTE MCUNGE	106.20	3 2	.10200	72.27	2.375	.43657	1.650	1.107	CCODE = .0
S 63- Compute TP for BASIN EX-106A										
S 64- Compute HYD for BASIN EX-106A	COMPUTE NM HYD	106.00	- 1	.01000	8.23	.234	.43936	1.500	1.286	PER IMP= .00
S 65- Add BASINS 106.2 and 106A.	ADD HYD	106A.1	2& 1 3	.11200	77.30	2.609	.43682	1.650	1.078	
S 66- Add BASINS 212.3 and 106A.1	ADD HYD	212.40	6& 3 1	.47200	199.29	14.678	.58308	1.683	.660	
S 67- Route 212.4 through Pond 2 (Fully Developed Pond 4)	ROUTE RESERVOIR	POND.212.5	1 2	.47200	91.90	14.670	.58276	2.277	.304	AC-FT= 5.274
S 68- Route 212.5 (Outflow from Pond 2) through 48" pipe across Kimmick to o	ROUTE MCUNGE	212.60	2 5	.47200	91.90	14.670	.58276	2.277	.304	CCODE = .0
S 69- Compute TP for BASIN EX-107 (Let tp= 0.133= Min.)	COMPUTE NM HYD	107.00	- 1	.05000	41.12	1.172	.43936	1.500	1.285	PER IMP= .00
S 71- Route 107 in channel through Basin 109, hold (ID= 9) to add to 109	ROUTE MCUNGE	106.10	1 2	.05000	40.99	1.168	.43800	1.550	1.281	CCODE = .1
S 72- Compute TP for BASIN EX-109										
S 73- Computing HYD for BASIN EX-109	COMPUTE NM HYD	109.00	- 1	.00500	4.13	.117	.43936	1.500	1.290	PER IMP= .00
S 74- Add BASINS 107 and 109.	ADD HYD	109.10	2& 1 3	.05500	45.00	1.285	.43811	1.550	1.278	
S 75- Add outflow from Pond 2 (212.6) and 109.1.	ADD HYD	212.70	5& 3 2	.52700	94.56	15.956	.56769	2.244	.280	
S 76- Route 212.7 in channel through Basin 110, add to 110.1	ROUTE MCUNGE	212.80	2 5	.52700	94.55	15.955	.56766	2.310	.280	CCODE = .2
S 77- Compute TP for BASIN EX-102										
S 78- Compute HYD for BASIN EX-102,	COMPUTE NM HYD	102.00	- 1	.33800	135.81	7.920	.43936	1.750	.628	PER IMP= .00
S 79- Route 102 (136cfs) in channel through BASIN 110, add to 108.	ROUTE MCUNGE	102.10	1 2	.33800	135.45	7.898	.43810	1.800	.626	CCODE = .1
S 80- COMPUTE TP FOR BASIN EX-108										
S 81- Computing HYD for BASIN EX-108	COMPUTE NM HYD	212.00	- 1	.06200	51.13	1.453	.43936	1.500	1.289	PER IMP= .00
S 82- Route 108.1 in channel through Basin 110, add to 102	ROUTE MCUNGE	106.10	1 3	.06200	50.82	1.459	.44115	1.550	1.281	CCODE = .2
S 83- Add 102.1 and 108.1	ADD HYD	108.20	2& 3 4	.40000	152.42	9.356	.43857	1.750	.595	
S 84- Compute TP for BASIN EX-110										
S 85- Computing HYD for BASIN EX-110	COMPUTE NM HYD	110.00	- 1	.03100	25.57	.726	.43936	1.500	1.289	PER IMP= .00
S 86- Add 108.2 and 110.	ADD HYD	110.10	4& 1 2	.43100	160.93	10.083	.43863	1.750	.583	
S 87- Add 212.8 and 110.1	ADD HYD	212.90	5& 2 1	.95800	248.28	26.035	.50957	1.749	.405	

AHYMO.SUM

S 88- Route 212.9 in channel to outlet at escarpment
 ROUTE MCUNGE 212.10 1 2 .95800 247.74 26.035 *** .50956 1.749 .404 CCODE = .2

S 89- COMPUTE TP FOR BASIN EX-111

0

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 = 4	NOTATION
S 90- Computing HYD for BASIN EX-111	COMPUTE NM HYD 111.00	-	1	.12100	102.87	2.835	.43936	1.500	1.328	PER IMP=	.00
S 91- Route 111 through Pond 3, hold to 15cfs discharge	ROUTE RESERVOIR POND.111.1	1	2	.12100	35.30	2.835	.43936	1.750	.456	AC-FT=	1.359
S 92- Route 111.1 in channel to outlet at escarpment	ROUTE MCUNGE 111.20	2	3	.12100	35.30	2.835	.43936	1.750	.456	CCODE =	.0
FINISH											

11/14/03***

*** LA CUENTISTA SUBDIVISION UNIT I

*** UNIT 1 CONDITIONS RUNOFF MODEL

*** ** ** ** **

*** DESIGN STORM IS THE 100 YEAR - 24 HOUR STORM

*** COA DPM TYPE 2, 24 HOUR STORM WITH A PEAK INTENSITY AT 1.4 HOURS

*** ** ** ** * * * * *

START TIME = 0

*** ** ** ** * * * * *

S 1- COMPUTING RAINFALL

RAINFALL TYPE = 2

RAIN QUARTER = 0.00 INCHES

RAIN ONE = 1.87

RAIN SIX = 2.20

RAIN DAY = 2.66

DT = 0.05 HOURS

*** ** ** ** * * * * *

S 2- COMPUTE TP FOR OFFSITE BASIN EX-101 (from Ex Model)

COMPUTE LT TP

LCODE=1 NK=5 ISLOPE=0

LENGTH=400 FT SLOPE=0.006 K=0.7

LENGTH=1600 FT SLOPE=0.006 K=2

LENGTH=1225 FT SLOPE=0.006 K=3

LENGTH=2640 FT SLOPE=0.019 K=3

LENGTH=680 FT SLOPE=0.019 K=3

KN=0.033 CENTROID DISTANCE=3940

*** ** ** ** * * * * *

S 3- Compute HYD for BASIN EX-101

COMPUTE NM HYD

ID=1

HYDNO=101 DA=0.264 SQ MI

PERCENT A=100 B=00 C=00 D=00

TP=0.0 HOURS MASSRAIN=-1

PRINT HYD

ID=1

CODE=5

*PUNCH HYD

ID=1

*** ** ** ** * * * * *

S 4- Route BASIN 101 (85cfs) in channel through BASIN 208 to jct w/104 in 208.

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5

CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST ELEV DIST ELEV

0 5 1 5

16 0 26 0

41 5 42 5

ROUTE MCUNGE

ID=2

HYD NO= 101.1 INFLOW ID=1

DT=0.0 L=250 FT NS=0 SLOPE=0.02

PRINT HYD

ID=2

CODE=5

*** ** ** ** * * * * *

S 5- COMPUTE TP FOR OFFSITE BASIN EX-104

COMPUTE LT TP

LCODE=1 NK=2 ISLOPE=0

LENGTH=400 FT SLOPE=0.013 K=0.7

LENGTH=600 FT SLOPE=0.013 K=3

*** ** ** ** * * * * *

S 6- Compute HYD for BASIN EX-104

COMPUTE NM HYD

ID=1

HYDNO=104 DA=0.013 SQ MI

PERCENT A=100 B=0 C=0 D=0

TP=0.0 HOURS MASSRAIN=-1

PRINT HYD

ID=1

CODE=5

*PUNCH HYD

ID=1

*** ** ** ** * * * * *

S 7- Route BASIN 104 (11cfs) in channel through BASIN 208 to jct w/ 101 in 208.

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5

CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST ELEV DIST ELEV

0 5 1 5

16 0 26 0

41 5 42 5

ROUTE MCUNGE

ID=3

HYD NO= 104.1 INFLOW ID=1

Phase_1.dat

DT=0.0 L=250 FT NS=0 SLOPE=0.02

PRINT HYD

ID=3 CODE=5

S 8- Add BASINS 101.1 AND 104.1

ADD HYD ID=1 HYD=104.2 ID=2 ID=3

PRINT HYD

ID=1 CODE=1

S 9- Route 104.2 in channel through BASIN 208 & add to 205.1

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5

CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST ELEV DIST ELEV

0 5 1 5

16 0 26 0

41 5 42 5

ROUTE MCUNGE

ID=5 HYD NO= 104.3 INFLOW ID=1

DT=0.0 L=400 FT NS=0 SLOPE=0.02

PRINT HYD

ID=5 CODE=5

S 10- COMPUTE TP FOR OFFSITE BASIN EX-105

COMPUTE LT TP

LCODE=1 NK=2 ISLOPE=0

LENGTH=200 FT SLOPE=0.013 K=0.7

LENGTH=400 FT SLOPE=0.013 K=2

S 11- Compute HYD for BASIN EX-105

COMPUTE NM HYD

ID=1 HYDNO=105 DA=0.010 SQ MI
PERCENT A=100 B=0 C=0 D=0
TP=0.0 HOURS MASSRAIN=-1

PRINT HYD

ID=1 CODE=5

*PUNCH HYD

ID=1

S 12- Route 105 (8.3cfs) through BASIN 205 to jct w/ 205

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5

CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST ELEV DIST ELEV

0 5 1 5

16 0 26 0

41 5 42 5

ROUTE MCUNGE

ID=2 HYD NO= 105.1 INFLOW ID=1

DT=0.0 L=250 FT NS=0 SLOPE=0.02

PRINT HYD

ID=2 CODE=5

S 13- COMPUTE TP FOR BASIN 205 (Let tp= 0.133= Min.)

*COMPUTE LT TP

LCODE=1 NK=3 ISLOPE=0

LENGTH=100 FT SLOPE=0.02 K=0.7

LENGTH=0 FT SLOPE=0.02 K=2

LENGTH=1250 FT SLOPE=0.02 K=3

S 14- Compute HYD for BASIN 205 (assume 4 DU/Acre=> 42%D, use 45%D)

COMPUTE NM HYD

ID=1 HYDNO=205 DA=0.014 SQ MI
PERCENT A=10 B=15 C=30 D=45
TP=0.133 HOURS MASSRAIN=-1

PRINT HYD

ID=1 CODE=5

S 15- Add BASINS 105 and 205,

ADD HYD

ID=3 HYD=205.1 ID=2 ID=1

PRINT HYD

ID=3 CODE=1

S 16- Route 205.1 through CHANNEL to confluence w/ BASIN 104.3 (see #15) ***

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST	ELEV	DIST	ELEV
0	5	1	5
16	0	26	0
41	5	42	5

ROUTE MCUNGE ID=4 HYD NO= 205.2 INFLOW ID=3
 DT=0.0 L=150 FT NS=0 SLOPE=0.02

PRINT HYD ID=4 CODE=5

 S 17- Add BASINS 104.3 (see #15) and 205.2,

ADD HYD ID=1 HYD=205.3 ID=5 ID=4

PRINT HYD ID=1 CODE=1

S 18- Route BASIN 205.3 through CHANNEL to confluence w/ BASIN 206

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST	ELEV	DIST	ELEV
0	5	1	5
16	0	26	0
41	5	42	5

ROUTE MCUNGE ID=2 HYD NO= 205.4 INFLOW ID=1

DT=0.0 L=400 FT NS=0 SLOPE=0.02

PRINT HYD ID=2 CODE=5

S 19- COMPUTE TP FOR BASIN 206 (Let tp= 0.133= Min.)

*COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 * LENGTH=100 FT SLOPE=0.02 K=0.7
 * LENGTH=0 FT SLOPE=0.02 K=2
 * LENGTH=700 FT SLOPE=0.02 K=3

S 20- COMPUTE HYD FOR BASIN 206 (assume 4 DU/Acre=> 42%D, use 45%D)

COMPUTE NM HYD ID=1 HYDNO=206 DA=0.007 SQ MI
 PERCENT A=10 B=15 C=30 D=45
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

S 21- ADD BASINS 205.4 (see #34) and 206

ADD HYD ID=3 HYD=206.1 ID=2 ID=1

PRINT HYD ID=3 CODE=1

S 22- Route BASIN 206.1 through CHANNEL to intercept w/ BASIN 207

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST	ELEV	DIST	ELEV
0	5	1	5
16	0	26	0
41	5	42	5

ROUTE MCUNGE ID=2 HYD NO= 206.2 INFLOW ID=3

DT=0.0 L=400 FT NS=0 SLOPE=0.02

PRINT HYD ID=2 CODE=5

S 23- COMPUTE TP FOR BASIN 207 (Let tp= 0.133= Min.)

*COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 * LENGTH=100 FT SLOPE=0.02 K=0.7
 * LENGTH=0 FT SLOPE=0.02 K=2
 * LENGTH=350 FT SLOPE=0.02 K=3

Phase_1.dat

S 24- COMPUTE HYD FOR BASIN 207 (actual 3.7DU/acre, assume 4 DU/Acre=>
 * 42%D, use 45%D)
 COMPUTE NM HYD ID=1 HYDNO=207 DA=0.004 SQ MI
 PERCENT A=10 B=15 C=30 D=45
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

S 25- ADD BASINS 206.2 AND 207

ADD HYD ID=3 HYD=207.1 ID=2 ID=1

PRINT HYD ID=3 CODE=1

S 26- Route BASIN 207.1 through CHANNEL to Pond 1, hold (ID= 5) to add to
 * BASIN 208 at Pond 1

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST	ELEV	DIST	ELEV
0	5	1	5
16	0	26	0
41	5	42	5

ROUTE MCUNGE ID=4 HYD NO= 207.2 INFLOW ID=3
 DT=0.0 L=200 FT NS=0 SLOPE=0.02

PRINT HYD ID=4 CODE=5

S 27- Compute TP for BASIN 203 (let TP= 0.133= Min.)

*COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 * LENGTH=100 FT SLOPE=0.02 K=0.7
 * LENGTH=0 FT SLOPE=0.02 K=2
 * LENGTH=200 FT SLOPE=0.02 K=3

S 28- COMPUTE HYD FOR BASIN 203 (2.5 DU/acre, use D=45)
 COMPUTE NM HYD ID=1 HYDNO=203 DA=0.002 SQ MI
 PERCENT A=10 B=15 C=30 D=45
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

S 29- Route 203 Through BASIN 208 to POND 1 in 208
 *** add to 204 , 207 & 208 before POND 1

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST	ELEV	DIST	ELEV
0	5	1	5
16	0	26	0
41	5	42	5

ROUTE MCUNGE ID=2 HYD NO= 203.1 INFLOW ID=1
 DT=0.0 L=350 FT NS=0 SLOPE=0.02

PRINT HYD ID=2 CODE=5

S 30- ADD BASINS 207.2 and 203.1 before POND 1

ADD HYD ID=3 HYD=207.3 ID=4 ID=2
 PRINT HYD ID=3 CODE=1

S 31- Compute TP for BASIN 204 (Let tp= 0.133= Min.)

*COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 * LENGTH=100 FT SLOPE=0.02 K=0.7
 * LENGTH=0 FT SLOPE=0.02 K=2
 * LENGTH=650 FT SLOPE=0.02 K=3

*** 32- Compute HYD for BASIN 204 (actual 3.3DU/acre, assume 4 DU/Acre=>
 42%D, use 45%D)

 COMPUTE NM HYD ID=1 HYDNO=204 DA=0.008 SQ MI
 PERCENT A=10 B=15 C=30 D=45
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

S 33- Route 204 through BASIN 208, add to 207 & 208 at POND 1
 #46)

at POND 1 (see

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
 DIST ELEV DIST ELEV
 0 5 1 5
 16 0 26 0
 41 5 42 5

ROUTE MCUNGE ID=2 HYD NO= 204.1 INFLOW ID=1
 DT=0.0 L=400 FT NS=0 SLOPE=0.02
 PRINT HYD ID=2 CODE=5

 S 34- ADD BASINS 207.3 and 204.1 before POND 1

ADD HYD ID=4 HYD=207.4 ID=3 ID=2
 PRINT HYD ID=4 CODE=1

 S 35- COMPUTE TP FOR BASIN 208 (Let tp= 0.133= Min.)
 *COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 * LENGTH=100 FT SLOPE=0.02 K=0.7
 * LENGTH=0 FT SLOPE=0.02 K=2
 * LENGTH=1250 FT SLOPE=0.02 K=3

*** 36- COMPUTE HYD FOR BASIN 208 (actual 0.4DU/acre=> 10%D, use 20%D)
 COMPUTE NM HYD ID=1 HYDNO=208 DA=0.013 SQ MI
 PERCENT A=10 B=50 C=20 D=20
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5
 *PUNCH HYD ID=1

 S 37- ADD BASINS 207.4 and 208 before POND 1

ADD HYD ID=2 HYD=208.1 ID=4 ID=1
 PRINT HYD ID=2 CODE=1
 *PUNCH HYD ID=2

S 38- Route 208.1 through POND 1 (Characteristics per Pond 2 FulDvlpd model)
 S discharge 51.27cfs through 28" orifice plate

*ROUTE RESERVOIR ID=1 HYD=POND.208.2 INFLOWID=2 CODE=5
 * OUTFLOW(CFS) STORAGE(AC-FT) ELEV(FT)
 *
 * 0 0 0
 * 14.80 0.255 0.5
 * 20.93 0.521 1
 * 25.64 0.797 1.5
 * 29.60 1.084 2
 * 33.10 1.381 2.5
 * 36.26 1.690 3
 * 39.16 2.011 3.5
 * 41.86 2.343 4
 * 44.40 2.687 4.5
 * 46.81 3.043 5
 * 49.09 3.411 5.5
 * 51.27 3.792 6
 * 51.27 4.185 6.5
 * 51.27 4.591 7

*PRINT HYD ID=1 CODE=1

S 39- Route outflow from POND 1 (208.2) through channel to intercept w/ BASIN 209

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST	ELEV	DIST	ELEV
0	5	1	5
16	0	26	0
41	5	42	5

ROUTE MCUNGE ID=3 HYD NO= 208.3 INFLOW ID=2
 DT=0.0 L=250 FT NS=0 SLOPE=0.02
 PRINT HYD ID=3 CODE=5

 S 40- Compute TP for BASIN 209 (Let tp=0.133= Min.) ***

*COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 * LENGTH=100 FT SLOPE=0.02 K=0.7
 * LENGTH=0 FT SLOPE=0.02 K=2
 * LENGTH=1250 FT SLOPE=0.02 K=3

S 41- Compute HYD for BASIN 209 (3.86du/acre=> 41%D, use 45%D)
 COMPUTE NM HYD ID=1 HYDNO=209 DA=0.006 SQ MI
 PERCENT A=10 B=15 C=30 D=45
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5
 *PUNCH HYD ID=1

S 42- Add outflow from POND 1 routed through channel (208.3) and 209

ADD HYD ID=2 HYD=209.1 ID=3 ID=1

PRINT HYD ID=2 CODE=1

S 43- Route 209.1 through channel to confluence w/ 212 & 106A at Pomnd 2.
 * Hold (ID= 5) to add to 212.2

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST	ELEV	DIST	ELEV
0	5	1	5
16	0	26	0
41	5	42	5

ROUTE MCUNGE ID=5 HYD NO= 209.2 INFLOW ID=2
 DT=0.0 L=1335 FT NS=0 SLOPE=0.02
 PRINT HYD ID=5 CODE=5

S 44- COMPUTE TP FOR BASIN 210 (let tp=0.133= Min.) ***

*COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 * LENGTH=100 FT SLOPE=0.02 K=0.7
 * LENGTH=0 FT SLOPE=0.02 K=2
 * LENGTH=250 FT SLOPE=0.02 K=3

S 45- COMPUTE HYD FOR BASIN P-210 (3.0 DU/acre=> 35%D, use 40%D)
 COMPUTE NM HYD ID=1 HYDNO=210 DA=0.004 SQ MI
 PERCENT A=10 B=15 C=35 D=40
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

S 46- Route BASIN 210 down Kimmick to confluence w/ 211

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0.33 MAX ELEV=1
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=28.4

DIST	ELEV	DIST	ELEV	DIST	ELEV
0	1	0.2	0.33	14.2	0.61
28.2	0.33	28.4	1		

ROUTE MCUNGE ID=2 HYD NO= 210.1 INFLOW ID=1
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DT=0.0 L=575 FT NS=0 SLOPE=0.02

PRINT HYD

ID=2 CODE=5

S 47- Compute TP for BASIN P-211 (let tp=0.133= Min.)

*COMPUTE LT TP

LCODE=1 NK=3 ISLOPE=0
LENGTH=100 FT SLOPE=0.02 K=0.7
LENGTH=0 FT SLOPE=0.02 K=2
LENGTH=1250 FT SLOPE=0.02 K=3

S 48- COMPUTE HYD FOR BASIN P-211 (3.7 DU/acre=> 40%D, use 45%D)

COMPUTE NM HYD

ID=1 HYDNO=211 DA=0.010 SQ MI
PERCENT A=10 B=15 C=30 D=45
TP=0.133 HOURS MASSRAIN=-1

PRINT HYD

ID=1 CODE=5

S 49- ADD BASINS 210.1 AND 211

ADD HYD

ID=3 HYD=211.1 ID=2 ID=1

PRINT HYD

ID=3 CODE=1

S 50- Route 211.1 down Kimmick to confluence w/ 212

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0.33 MAX ELEV=1

CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=29.2

DIST	ELEV	DIST	ELEV
0.8	1	1	0.33
15	0.61	29	0.33
29.2	1		

ROUTE MCUNGE

ID=2 HYD NO= 211.2 INFLOW ID=3

DT=0.0 L=800 FT NS=0 SLOPE=0.02

PRINT HYD

ID=2 CODE=5

S 51- COMPUTE TP FOR BASIN P-212 (Let TP=0.133= Min.)

*COMPUTE LT TP

LCODE=1 NK=3 ISLOPE=0
LENGTH=100 FT SLOPE=0.02 K=0.7
LENGTH=0 FT SLOPE=0.02 K=2
LENGTH=300 FT SLOPE=0.02 K=3

S 52- Computing HYD for BASIN 212 (2.5 DU/acre=> 30%D, use 35%D)

COMPUTE NM HYD

ID=1 HYDNO=212 DA=0.005 SQ MI
PERCENT A=10 B=15 C=40 D=35
TP=0.133 HOURS MASSRAIN=-1

PRINT HYD

ID=1 CODE=5

S 53- ADD BASINS 211.2 AND 212

ADD HYD

ID=3 HYD=212.1 ID=2 ID=1

PRINT HYD

ID=3 CODE=1

*PUNCH HYD

ID=3

S 54 ROUTE 212.1 down Kimmick in 24"x 1,325' RCP to outlet structure before

* Pond 2

COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.020

DIA=2.0 FT N=0.013

COMPUTE TRAVEL TIME ID=1 REACH=1 NO VS=1 L=1325 SLP=0.020

ROUTE

ID=1 HYD NO= 212.2 INFLOW ID=3 DT=0.033

PRINT HYD

ID=1 CODE=5

S 55- Add 209.2, and 212.2. Add to 106A.3 at Pond 2.

ADD HYD

ID=6 HYD=212.3 ID=5 ID=1

PRINT HYD

ID=6 CODE=1

*PUNCH HYD

ID=6

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S 56- Compute TP for BASIN EX-103 (use min TP= 0.133)

COMPUTE LT TP
 LCODE=1 NK=3 ISLOPE=0
 LENGTH=400 FT SLOPE=0.017 K=0.7
 LENGTH=0 FT SLOPE=0.017 K=2
 LENGTH=900 FT SLOPE=0.017 K=3
 KN=0.033 CENTROID DISTANCE=850

S 57- Compute HYD for BASIN EX-103

COMPUTE NM HYD ID=1 HYDNO=103 DA=0.068 SQ MI
 PERCENT A=100 B=0 C=0 D=0
 TP=0.0 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

*PUNCH HYD ID=1

S 58- Route 103 (56cfs peak) in channel through Basin 106 (ID=7), add to
 106 at POND 2 (see #21)

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST	ELEV	DIST	ELEV
0	5	1	5
16	0	26	0
41	5	42	5

ROUTE MCUNGE ID=2 HYD NO= 103.1 INFLOW ID=1
 DT=0.0 L=1335 FT NS=0 SLOPE=0.02
 PRINT HYD ID=2 CODE=5

S 59- Compute TP for BASIN EX-106

COMPUTE LT TP
 LCODE=1 NK=2 ISLOPE=0
 LENGTH=400 FT SLOPE=0.017 K=0.7
 LENGTH=1000 FT SLOPE=0.017 K=3

S 60- Compute HYD for BASIN EX-106

COMPUTE NM HYD ID=1 HYDNO=106 DA=0.034 SQ MI
 PERCENT A=100 B=0 C=0 D=0
 TP=0.0 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

*PUNCH HYD ID=1

S 61- Add BASINS 103.1 and 106.

ADD HYD ID=3 HYD=106.1 ID=2 ID=1

PRINT HYD ID=3 CODE=1

S 62- Route 106.1 in channel through Basin 106A

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST	ELEV	DIST	ELEV
0	5	1	5
16	0	26	0
41	5	42	5

ROUTE MCUNGE ID=2 HYD NO= 106.2 INFLOW ID=3
 DT=0.0 L=100 FT NS=0 SLOPE=0.02

PRINT HYD ID=2 CODE=5

S 63- Compute TP for BASIN EX-106A

COMPUTE LT TP
 LCODE=1 NK=2 ISLOPE=0
 LENGTH=400 FT SLOPE=0.017 K=0.7
 LENGTH=1000 FT SLOPE=0.017 K=3

S 64- Compute HYD for BASIN EX-106A

COMPUTE NM HYD ID=1 HYDNO=106A DA=0.010 SQ MI
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PERCENT A=100 B=0 C=0 D=0
TP=0.0 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5
*PUNCH HYD ID=1

S 65- Add BASINS 106.2 and 106A.

ADD HYD ID=3 HYD=106A.1 ID=2 ID=1

PRINT HYD ID=3 CODE=1

S 66- Add BASINS 212.3 and 106A.1

ADD HYD ID=1 HYD=212.4 ID=6 ID=3

PRINT HYD ID=1 CODE=1
PUNCH HYD ID=1

S 67- Route 212.4 through Pond 2 (Characteristics per Pond 4 FulDvlpd model)
ROUTE RESERVOIR ID=2 HYD=POND.212.5 INFLOWID=1 CODE=5
OUTFLOW(CFS) STORAGE(AC-FT) ELEV(FT)

0	0	0
34.91	0.709	0.5
49.37	1.434	1
60.46	2.178	1.5
69.82	2.938	2
78.06	3.717	2.5
85.51	4.514	3
92.36	5.329	3.5
98.73	6.162	4
104.72	7.014	4.5
110.39	7.885	5
115.78	8.775	5.5
120.92	9.684	6
120.92	10.613	6.5
120.92	11.516	7

PRINT HYD ID=2 CODE=1

S 68- Route 212.5 (Outflow from Pond 2) through 48" pipe across Kimmick to outlet
*
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=-1 SLP=0.03
DIAM=4.0 N=0.013

ROUTE MCUNGE ID=5 HYD NO= 212.6 INFLOW ID=2
DT=0.0 L=200 FT NS=0 SLOPE=0.02
PRINT HYD ID=5 CODE=5

S 69- Compute TP for BASIN EX-107 (Let tp= 0.133= Min.) ***
*COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
LENGTH=100 FT SLOPE=0.02 K=0.7
LENGTH=0 FT SLOPE=0.02 K=2
LENGTH=1250 FT SLOPE=0.02 K=3

*** 70- COMPUTE HYD FOR BASIN EX-107
COMPUTE NM HYD ID=1 HYDNO=107 DA=0.05 SQ MI
PERCENT A=100 B=00 C=00 D=00
TP=0 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5
*PUNCH HYD ID=1

S 71- Route 107 in channel through Basin 109, hold (ID= 9) to add to 109
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
DIST ELEV DIST ELEV
0 5 1 5

16 0
41 526 0
42 5

ROUTE MCUNGE ID=2 HYD NO= 106.1 INFLOW ID=1
DT=0.0 L=400 FT NS=0 SLOPE=0.02

PRINT HYD ID=2 CODE=5

S 72- Compute TP for BASIN EX-109 ***

COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
LENGTH=100 FT SLOPE=0.02 K=0.7
LENGTH=0 FT SLOPE=0.02 K=2
LENGTH=850 FT SLOPE=0.02 K=3

S 73- Computing HYD for BASIN EX-109
COMPUTE NM HYD ID=1 HYDNO=109 DA=0.005 SQ MI
PERCENT A=100 B=00 C=00 D=00
TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

S 74- Add BASINS 107 and 109.

ADD HYD ID=3 HYD=109.1 ID=2 ID=1

PRINT HYD ID=3 CODE=1

S 75- Add outflow from Pond 2 (212.6) and 109.1.

ADD HYD ID=2 HYD=212.7 ID=5 ID=3

PRINT HYD ID=2 CODE=1

S 76- Route 212.7 in channel through Basin 110, add to 110.1

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
DIST ELEV DIST ELEV
0 5 1 5
16 0 26 0
41 5 42 5

ROUTE MCUNGE ID=5 HYD NO= 212.8 INFLOW ID=2
DT=0.0 L=1335 FT NS=0 SLOPE=0.02

PRINT HYD ID=5 CODE=5

S 77- Compute TP for BASIN EX-102

COMPUTE LT TP LCODE=1 NK=4 ISLOPE=0
LENGTH=400 FT SLOPE=0.017 K=0.7
LENGTH=1600 FT SLOPE=0.017 K=2
LENGTH=3375 FT SLOPE=0.017 K=3
LENGTH=2260 FT SLOPE=0.016 K=3

KN=0.033 CENTROID DISTANCE=3097

S 78- Compute HYD for BASIN EX-102,
COMPUTE NM HYD ID=1 HYDNO=102 DA=0.338 SQ MI
PERCENT A=100 B=0 C=0 D=0
TP=0.0 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

*PUNCH HYD ID=1

S 79- Route 102 (136cfs) in channel through BASIN 110, add to 108.

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
DIST ELEV DIST ELEV
0 5 1 5
16 0 26 0
41 5 42 5

ROUTE MCUNGE ID=2 HYD NO= 102.1 INFLOW ID=1
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DT=0.0 L=800 FT NS=0 SLOPE=0.02

PRINT HYD

ID=2 CODE=5

S 80- COMPUTE TP FOR BASIN EX-108

*COMPUTE LT TP

LCODE=1 NK=3 ISLOPE=0
LENGTH=100 FT SLOPE=0.02 K=0.7
LENGTH=0 FT SLOPE=0.02 K=2
LENGTH=2250 FT SLOPE=0.02 K=3

S 81- Computing HYD for BASIN EX-108

COMPUTE NM HYD ID=1 HYDNO=212 DA=0.062 SQ MI
PERCENT A=100 B=00 C=00 D=00
TP=0.133 HOURS MASSRAIN=-1

PRINT HYD

ID=1 CODE=5

S 82- Route 108.1 in channel through Basin 110, add to 102

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5

CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST	ELEV	DIST	ELEV
0	5	1	5
16	0	26	0
41	5	42	5

ROUTE MCUNGE

ID=3 HYD NO= 106.1 INFLOW ID=1

DT=0.0 L=750 FT NS=0 SLOPE=0.02

PRINT HYD

ID=3 CODE=5

S 83- Add 102.1 and 108.1

ADD HYD ID=4 HYD=108.2 ID=2 ID=3

PRINT HYD

ID=4 CODE=1

*PUNCH HYD

ID=4

S 84- Compute TP for BASIN EX-110

COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
LENGTH=100 FT SLOPE=0.02 K=0.7
LENGTH=0 FT SLOPE=0.02 K=2
LENGTH=1250 FT SLOPE=0.02 K=3

S 85- Computing HYD for BASIN EX-110

COMPUTE NM HYD ID=1 HYDNO=110 DA=0.031 SQ MI
PERCENT A=100 B=00 C=00 D=00
TP=0.133 HOURS MASSRAIN=-1

PRINT HYD

ID=1 CODE=5

S 86- Add 108.2 and 110.

ADD HYD ID=2 HYD=110.1 ID=4 ID=1

PRINT HYD

ID=2 CODE=1

*PUNCH HYD

ID=2

S 87- Add 212.8 and 110.1

ADD HYD ID=1 HYD=212.9 ID=5 ID=2

PRINT HYD

ID=1 CODE=1

*PUNCH HYD

ID=1

S 88- Route 212.9 in channel to outlet at escarpment

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5

CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42

DIST	ELEV	DIST	ELEV
0	5	1	5
16	0	26	0


```
ROUTE MCUNGE          ID=2  HYD NO= 212.10  INFLOW ID=1
                      DT=0.0 L=750 FT NS=0 SLOPE=0.02
PRINT HYD             ID=2      CODE=5
*****
*S* 89- COMPUTE TP FOR BASIN EX-111
*COMPUTE LT TP        LCODE=1 NK=3    ISLOPE=0
                      LENGTH=100 FT   SLOPE=0.02      K=0.7
*                      LENGTH=0 FT    SLOPE=0.02      K=2
*                      LENGTH=1250 FT SLOPE=0.02      K=3
*****
```

```
*S* 90- Computing HYD for BASIN EX-111
COMPUTE NM HYD        ID=1      HYDNO=111  DA=0.121 SQ MI
                      PERCENT A=100 B=00 C=00 D=00
                      TP=0.133 HOURS  MASSRAIN=-1
```

```
PRINT HYD             ID=1      CODE=5
*PUNCH HYD            ID=1
*****
*S* 91- Route 111 through Pond 3, hold to 15cfs discharge
ROUTE RESERVOIR        ID=2  HYD=POND.111.1  INFLOWID=1  CODE=5
                      OUTFLOW(CFS)  STORAGE(AC-FT)  ELEV(FT)

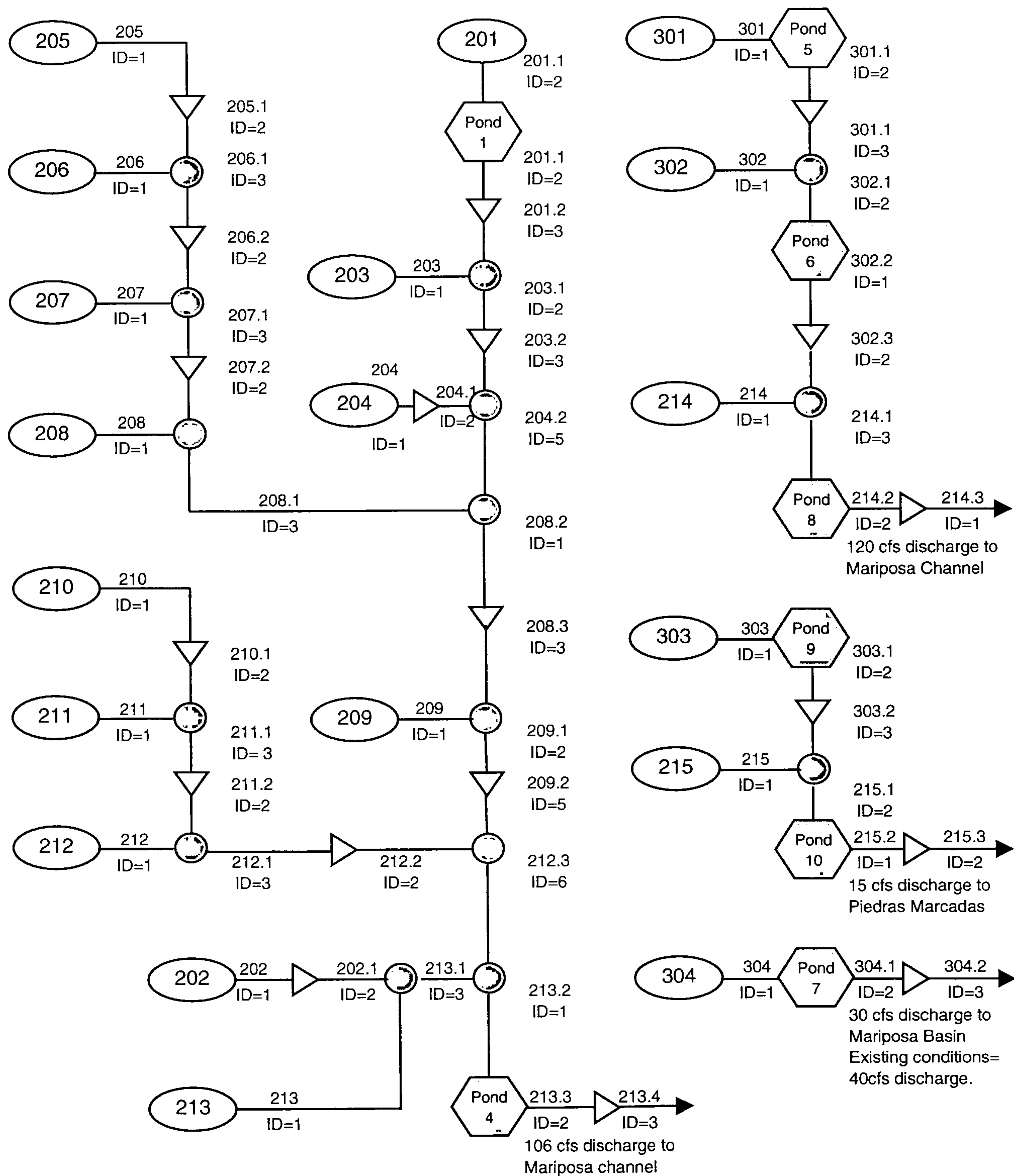
                      0              0              0
                      18.14          0.341          0.5
                      25.66          0.694          1
                      31.42          1.059          1.5
                      36.29          1.436          2
                      40.57          1.826          2.5
                      44.44          2.229          3
                      48.00          2.645          3.5
                      51.32          3.074          4
                      54.43          3.517          4.5
                      57.37          3.973          5
                      60.17          4.443          5.5
                      62.85          4.927          6
                      62.85          5.425          6.5
                      62.85          5.938          7
```

```
PRINT HYD             ID=2      CODE=1
*****
*S* 92- Route 111.1 in channel to outlet at escarpment
COMPUTE RATING CURVE  CID=1  VS NO=1  NO SEGS=1  MIN ELEV=0  MAX ELEV=5
                      CH SLP=0.02  FP SLP=0.02  N=0.035  DIST=42
                      DIST  ELEV      DIST  ELEV
                      0      5         1      5
                      16     0         26     0
                      41     5         42     5
```

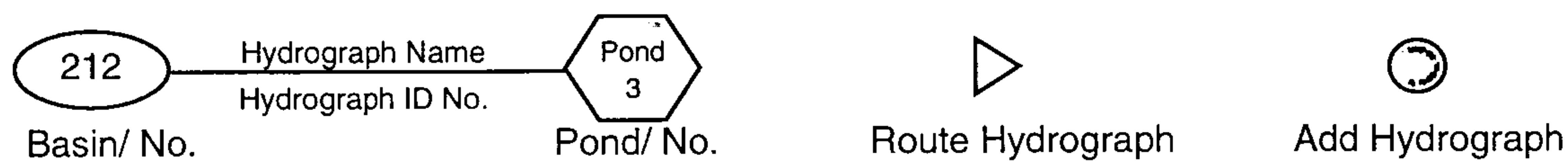
```
ROUTE MCUNGE          ID=3  HYD NO= 111.2  INFLOW ID=2
                      DT=0.0 L=150 FT NS=0 SLOPE=0.02
PRINT HYD             ID=3      CODE=5
*****
*****
```

FINISH

La Cuentista; Hydrologic Model Diagram: Fully Developed Conditions



KEY



AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -
INPUT FILE = c:\AHYMO\Fu\DV\p\P100_24.dat

AHYMO.SUM

- VERSION: 1997.02c

RUN DATE (MON/DAY/YR) =11/24/2003
USER NO.= AHYMO-C-9803c01UNMLIB-AH

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
S 1- COMPUTING RAINFALL						***					
RAINFALL TYPE= 2											RAIN24= 2.660
S 2- COMPUTE TP FOR BASIN 201 (let TP= 0.133= Min.)						***					
S 3- COMPUTE HYD FOR BASIN 201 (assume 4 DU/Acre=> 42%D, use 45%D)											
COMPUTE NM HYD	201.00	-	1	.04000	82.08	3.236	1.51708	1.500	3.206	PER IMP=	45.00
S 4- Route BASIN 201 through POND 1 (0.5/0.25AC surf/btm, 1.65AF stor. cap)											
S discharge 15cfs through 15" orifice plate into channel											
ROUTE RESERVOIR	POND.201.1	1	2	.04000	14.16	3.236	1.51707	2.050	.553	AC-FT=	1.732
S 5- Route outflow from POND 1 (201) in channel through 203 & add to 203 &											
ROUTE MCUNGE	201.20	2	3	.04000	14.17	3.237	1.51723	2.100	.553	CCODE =	.2
S 6- COMPUTE TP FOR BASIN 203 (let TP= 0.133= Min.)						***					
S 7- COMPUTE HYD FOR BASIN 203 (2.5 DU/acre, use D=45)											
COMPUTE NM HYD	203.00	-	1	.00200	4.12	.162	1.51708	1.500	3.218	PER IMP=	45.00
S 8- Add 201.2 (ID=3) and 203 (ID=1)											
ADD HYD	203.10	3& 1	2	.04200	14.89	3.399	1.51720	1.900	.554		
S 9- Route 203.1 Through BASIN 208 to POND 2 add to 204 at POND 2											
ROUTE MCUNGE	203.20	2	3	.04200	14.89	3.398	1.51700	1.950	.554	CCODE =	.1
S 10- COMPUTE TP FOR BASIN 204 (Let tp= 0.133= Min.)						***					
COMPUTE NM HYD	204.00	-	1	.00800	16.43	.647	1.51708	1.500	3.209	PER IMP=	45.00
S 12- Route 204 through BASIN 208 to POND 2,											
ROUTE MCUNGE	204.10	1	2	.00800	15.97	.647	1.51721	1.550	3.118	CCODE =	.2
S 13- Add 203.2 and 204.1 Hold (ID=5) to add to 208 (#48)											
ADD HYD	204.20	3& 2	5	.05000	25.34	4.045	1.51701	1.600	.792		
S 14- COMPUTE TP FOR BASIN 205 (Let tp= 0.133= Min.)						***					
S 15- COMPUTE HYD FOR BASIN 205 (assume 4 DU/Acre=> 42%D, use 45%D)											
COMPUTE NM HYD	205.00	-	1	.01400	28.74	1.133	1.51708	1.500	3.207	PER IMP=	45.00
S 16- ROUTE BASIN 205 THROUGH CHANNEL TO CONFLUENCE w/ BASIN 206											
ROUTE MCUNGE	205.10	1	2	.01400	28.00	1.133	1.51719	1.500	3.125	CCODE =	.2
S 17- COMPUTE TP FOR BASIN 206 (Let tp= 0.133= Min.)						***					
S 18- COMPUTE HYD FOR BASIN 206 (assume 4 DU/Acre=> 42%D, use 45%D)											
COMPUTE NM HYD	206.00	-	1	.00700	14.38	.566	1.51708	1.500	3.209	PER IMP=	45.00
S 19- ADD BASINS 205 AND 206											
ADD HYD	206.10	1& 2	3	.02100	42.38	1.699	1.51711	1.500	3.153		
S 20- Route BASIN 206.1 through CHANNEL to intercept w/ BASIN 207											
ROUTE MCUNGE	206.20	3	2	.02100	42.16	1.697	1.51473	1.550	3.137	CCODE =	.1
S 21- COMPUTE TP FOR BASIN 207 (Let tp= 0.133= Min.)						***					
S 22- COMPUTE HYD FOR BASIN 207 (actual 3.7DU/acre, assume 4 DU/Acre=>											
COMPUTE NM HYD	207.00	-	1	.00400	8.22	.324	1.51708	1.500	3.212	PER IMP=	45.00
S 23- ADD BASINS 206.2 AND 207											
ADD HYD	207.10	2& 1	3	.02500	49.51	2.020	1.51507	1.550	3.094		
S 24- Route BASIN 207.1 through CHANNEL to intercept w/ BASIN 208											
ROUTE MCUNGE	207.20	3	2	.02500	49.32	2.021	1.51559	1.550	3.082	CCODE =	.2
S 25- COMPUTE TP FOR BASIN 208 (Let tp= 0.133= Min.)						***					
COMPUTE NM HYD	208.00	-	1	.01400	22.85	.781	1.04602	1.500	2.550	PER IMP=	20.00
S 27- ADD BASINS 207.2(#44) and 208 before POND 2											
ADD HYD	208.10	1& 2	3	.03900	70.26	2.802	1.34700	1.550	2.815		
S 28- ADD BASINS 204.2 AND 208.1 before POND 2											
ADD HYD	208.20	5& 3	1	.08900	95.57	6.847	1.44251	1.550	1.678		

S 28-

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 = 2 NOTATION
S 29-	ROUTE BASIN 208.3 THROUGH POND 2,									
S	discharge 36 cfs through 24" pipe/ orifice plate									
S 30-	Route 208.2 through channel to intercept w/ BASIN 209									
ROUTE MCUNGE	208.30	1	3	.08900	91.62	6.827	1.43832	1.700	1.609	CCODE = .1
S 31-	Compute TP for BASIN P-209 (Let tp=0.133= Min.)					***				
S 32-	Compute HYD for BASIN 209 (3.86du/acre=> 41%D, use 45%D)									
COMPUTE NM HYD	209.00	-	1	.00600	12.33	.485	1.51708	1.500	3.210	PER IMP= 45.00
S 33-	Add outflow from POND 2 routed through channel (208.3) and 209 (12cfs)									
ADD HYD	209.10	3& 1	2	.09500	97.12	7.313	1.44328	1.700	1.597	
S 34-	Route 209.1 through channel to confluence w/ 212.2 (BASIN 202/POND 3)									
ROUTE MCUNGE	209.20	2	5	.09500	96.92	7.315	1.44366	1.750	1.594	CCODE = .2
S 35-	COMPUTE TP FOR BASIN 210 (let tp=0.133= Min.)					***				
S 36-	COMPUTE HYD FOR BASIN 210 (3.0 DU/acre=> 35%D, use 40%D)									
COMPUTE NM HYD	210.00	-	1	.00400	8.04	.308	1.44459	1.500	3.141	PER IMP= 40.00
S 37-	Route BASIN 210 down Kimmick to confluence w/ 211									
ROUTE MCUNGE	210.10	1	2	.00400	7.70	.307	1.43829	1.700	3.007	CCODE = .1
S 38-	Compute TP for BASIN 211 (let tp=0.133= Min.)					***				
S 39-	COMPUTE HYD FOR BASIN 211 (3.7 DU/acre=> 40%D, use 45%D)									
COMPUTE NM HYD	211.00	-	1	.01000	20.53	.809	1.51708	1.500	3.208	PER IMP= 45.00
S 40-	ADD BASINS 210.1 AND 211									
ADD HYD	211.10	2& 1	3	.01400	21.74	1.116	1.49450	1.500	2.426	
S 41-	Route 211.1 down Kimmick to confluence w/ 212									
ROUTE MCUNGE	211.20	3	2	.01400	21.70	1.117	1.49631	1.600	2.422	CCODE = .2
S 42-	COMPUTE TP FOR BASIN 212 (Let TP=0.133= Min.)					***				
S 43-	Computing HYD for BASIN 212 (2.5 DU/acre=> 30%D, use 35%D)									
COMPUTE NM HYD	212.00	-	1	.00500	9.81	.366	1.37175	1.500	3.066	PER IMP= 35.00
S 44-	ADD BASINS 211.2 AND 212									
ADD HYD	212.10	2& 1	3	.01900	30.34	1.483	1.46347	1.550	2.495	
S 45	ROUTE 212.1 down Kimmick in 24"x 1,325' RCP to outlet & confluence w/									
ROUTE	212.20	3	2	.01900	29.44	1.445	1.42569	1.584	2.421	
S 46-	ADD BASINS 209.2 AND 212.2									
ADD HYD	212.30	5& 2	6	.11400	119.81	8.559	1.40773	1.716	1.642	
S 47-	COMPUTE TP FOR BASIN 202 (set tp= 0.133= Min.)					***				
COMPUTE NM HYD	202.00	-	1	.07000	143.66	5.664	1.51708	1.500	3.207	PER IMP= 45.00
S 49-	Route BASIN 202 Through POND 3 (0.77/0.5AC surf/btm, 3.50AF stor. cap)									
S	discharge 15.21cfs through 15" orifice plate into channel									
S 50-	Route BASIN 202 in channel through BASIN									
ROUTE MCUNGE	202.10	1	2	.07000	140.08	5.648	1.51285	1.600	3.127	CCODE = .1
S 51-	Compute TP for BASIN 213 (Let tp=0.133= Min.)					***				
S 52-	COMPUTE HYD FOR BASIN 213 (3.86du/acre=> 41%D, use 45%D)									
COMPUTE NM HYD	213.00	-	1	.06300	129.28	5.097	1.51708	1.500	3.206	PER IMP= 45.00
S 53-	Add 202.1 and 213									
ADD HYD	213.10	2& 1	3	.13300	242.87	10.745	1.51485	1.550	2.853	
S 54-	Add 212.3 and 213.1									
ADD HYD	213.20	6& 3	1	.24700	303.77	19.035	1.44500	1.584	1.922	
S 55-	Route BASIN 213.2 through POND 4, 2.0/1.5AC surf/bottom, 9.7AF stor.									
ROUTE RESERVOIR	POND.213.3	1	2	.24700	105.88	19.006	1.44279	2.046	.670	AC-FT= 7.193
S 56-	Route 213.2 (Outflow from POND 4) through 48 "pipe to discharge South									
ROUTE MCUNGE	213.40	2	3	.24700	105.88	19.006	1.44279	2.046	.670	CCODE = .0
S 57-	Compute TP for OFFSITE BASIN 304 (Let TP= 0.133 hrs= min.)					***				

S 58- Compute HYD for BASIN 304 (ex.platting 2.33+/- DU/Acre => 35%D, use 40
 S BASIN 304 @ 100% A: Historical flow area= 0.05 sq mi, flow= 41.24cfs

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 = 3 NOTATION
COMPUTE NM HYD	304.00	-	1	.05000	100.34	3.852	1.44459	1.500	3.136	PER IMP= 40.00
S 59-	Route 304 through POND 7 (H=4.0', 0.40/0.25AC surf/bottom, 1.14AF stor cap.). 304 historical: 100% A; area= 0.05 sq mi; flow= 41.24cfs;									
S	discharge through 28" orifice plate into 30' RCP									
ROUTE RESERVOIR	POND.304.1	1	2	.05000	29.77	3.852	1.44459	1.800	.930	AC-FT= 1.623
S 60-	Route outflow from POND 7 (BASIN 304) through									
ROUTE MCUNGE	304.20	2	3	.05000	29.77	3.852	1.44458	1.800	.930	CCODE = .0
S 61-	COMPUTE TP FOR OFFSITE BASIN 301 (SET tp= MIN 0.133 HRS ***									
S 62-	COMPUTE HYD FOR BASIN 301, (assume platted to 5 DU/ACRE, %D=50)									
COMPUTE NM HYD	301.00	-	1	.08900	186.73	7.547	1.59006	1.500	3.278	PER IMP= 50.00
S 63-	Route 301 through POND 5 (0.30/0.52ac surface/bottom, 2.20AF stor req									
S	Historical flow Basin 301 (100% A)= 74.42CFS use 75+/- thru 34" orifice plat									
ROUTE RESERVOIR	POND.301.1	1	2	.08900	74.69	7.547	1.59006	1.750	1.311	AC-FT= 2.355
S 64-	Route POND 5 outflow (BASIN 301) through BASIN 302 via 36"x 1800'RCP									
S	(24'/1800'= 0.15 slp) Add to basin 302 at pond 6, (#8)									
ROUTE MCUNGE	301.20	2	3	.08900	74.61	7.537	1.58791	1.800	1.310	CCODE = .1
S 65-	COMPUTE TP FOR BASIN 302 (LET tp= 0.133 MIN) ***									
S 66-	COMPUTE HYD FOR BASIN 302 (assume replat to 4 DU/AC, D=42%, use 45%)									
S	Historical flow (100% A)= 57.95CFS									
COMPUTE NM HYD	302.00	-	1	.07000	143.66	5.664	1.51708	1.500	3.207	PER IMP= 45.00
S 67-	ADD BASINS 301.2 (ROUTED THROUGH 302) AND 302									
ADD HYD	302.10	3&1	2	.15900	181.35	13.201	1.55672	1.500	1.782	
S 68-	ROUTE 302.1 through POND 6 (0.2/0.4AC surf/bottom, 1.5AF stor cap)									
S	Historical flow- 100% A (Basin 301= 74.42)+(Basin 302= 57.95)= 132.37CF									
S	discharge through 48" RCP w/ 45" orifice plate									
ROUTE RESERVOIR	POND.302.2	2	1	.15900	127.00	13.201	1.55672	1.750	1.248	AC-FT= { 1.542
S 69-	Route outflow from POND 6 (BASIN 301 & 302) down Kimmick through									
S	48"x 1,150'RCP (22/1150= 1.9% slp) to Pinos Verde SD & Pond 8,									
S	Hold (ID= 5) to add to 214 at Pond 8.									
ROUTE MCUNGE	302.30	1	2	.15900	126.92	13.203	1.55690	1.800	1.247	CCODE = .2
S 70-	COMPUTE TP FOR BASIN 214 (Let tp= 0.133= Min.) ***									
S 71-	COMPUTE HYD FOR BASIN 214									
COMPUTE NM HYD	214.00	-	1	.08600	176.58	6.958	1.51708	1.500	3.208	PER IMP= 45.00
S 72-	ADD BASINS 302.3 AND 214									
ADD HYD	214.10	2&1	3	.24500	261.13	20.161	1.54292	1.550	1.665	
S 73-	Route BASIN 214.1 through POND 8 (1.3/0.9AC surf/btm, 6.4 AF stor.cap.									
ROUTE RESERVOIR	POND.214.2	3	2	.24500	118.75	20.161	1.54292	2.200	.757	AC-FT= 6.180
S 74-	ROUTE 214.2 to discharge before escarpment									
ROUTE	214.30	2	1	.24500	118.71	19.599	1.49989	2.211	.757	
S 75-	COMPUTE TP FOR BASIN 303 (let TP= 0.133 hrs= min) ***									
S 76-	COMPUTE HYD FOR BASIN 303 (assume replat to 4 DU/AC, D=42%, use 45%)									
S	BASIN 303 Historical flow (100% A)= 75.29CFS									
COMPUTE NM HYD	303.00	-	1	.09000	184.81	7.282	1.51708	1.500	3.209	PER IMP= 45.00
S 77-	ROUTE 303 THROUGH POND 9 (0.3/0.52AC surface/bottom, 2.11AF stor. cap.									
S	303 Hist. flow= 75.29CFS, discharge through 36" RCP w/ 34" orifice pla									
ROUTE RESERVOIR	POND.303.1	1	2	.09000	74.10	7.282	1.51708	1.750	1.286	AC-FT= 2.308
S 78-	Route outflow from POND 9 (BASIN 303.1) through 36"x 2000'RCP									
ROUTE MCUNGE	303.20	2	3	.09000	74.04	7.275	1.51552	1.800	1.285	CCODE = .1
S 79-	COMPUTE TP FOR BASIN 215 (Let tp= 0.133 Min.) ***									

AHYMO.SUM

S 80- COMPUTE HYD FOR BASIN 215
 COMPUTE NM HYD 215.00 - 1 .05400 110.81 4.369 1.51708 1.500 3.206 PER IMP= 45.00
 S 81- ADD BASINS 303.2 AND 215

□

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 = 4 NOTATION
ADD HYD	215.10	3& 1	2	.14400	147.63	11.644	1.51610	1.550	1.602	
S 82- Route	BASIN 215.1 through POND 10 (1.6/1.2AC surf/btm, 8.4AF stor.cap.									
ROUTE RESERVOIR	POND.215.3	2	1	.14400	15.02	11.640	1.51562	2.750	.163	AC-FT= <u>8.158</u> 1
S 83- ROUTE	215.2 TO Piedras Marcadas Arroyo through 24" RCP									
ROUTE	215.30	1	2	.14400	15.02'	11.207	1.45929	2.739	.163	
FINISH										

*** LA CUENTISTA SUBDIVISION (FullDvp\P100_24.dat) ***
 *** FULLY DEVELOPED CONDITIONS RUNOFF MODEL ***
 *** DESIGN STORM IS THE 100 YEAR - 24 HOUR STORM ***
 *** COA DPM TYPE 2, 24 HOUR STORM WITH A PEAK INTENSITY AT 1.4 HOURS ***

START TIME = 0

 S 1- COMPUTING RAINFALL
 RAINFALL TYPE = 2

RAIN QUARTER = 0.00 INCHES

RAIN ONE = 1.87
 RAIN SIX = 2.20
 RAIN DAY = 2.66
 DT = 0.05 HOURS

 S 2- COMPUTE TP FOR BASIN 201 (let TP= 0.133= Min.) ***

*COMPUTE LT TP
 * LCODE=1 NK=3 ISLOPE=0
 * LENGTH=250 FT SLOPE=0.01 K=0.7
 * LENGTH=0 FT SLOPE=0.02 K=2
 * LENGTH=1250 FT SLOPE=0.02 K=3

S 3- COMPUTE HYD FOR BASIN 201 (assume 4 DU/Acre=> 42%D, use 45%D)
 COMPUTE NM HYD ID=1 HYDNO=201 DA=0.04 SQ MI
 PERCENT A=10 B=15 C=30 D=45
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5
 *PUNCH HYD ID=1

S 4- Route BASIN 201 through POND 1 (0.5/0.25AC surf/btm, 1.65AF stor. cap)
 S discharge 15cfs through 15" orifice plate into channel

ROUTE RESERVOIR ID=2 HYD=POND.201.1 INFLOWID=1 CODE=5
 OUTFLOW(CFS) STORAGE(AC-FT) ELEV(FT)

0	0	0
4.39	0.129	0.5
6.21	0.265	1
7.60	0.408	1.5
8.78	0.560	2
9.82	0.719	2.5
10.75	0.887	3
11.62	1.063	3.5
12.42	1.248	4
13.17	1.441	4.5
13.88	1.644	5
14.56	1.856	5.5
15.21	2.077	6
15.21	2.308	6.5
15.21	2.549	7

PRINT HYD ID=2 CODE=1

 S 5- Route outflow from POND 1 (201) in channel through 203 & add to 203 &
 *** 208 at POND 2.

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
 DIST ELEV DIST ELEV
 0 5 1 5
 16 0 26 0
 41 5 42 5

ROUTE MCUNGE ID=3 HYD NO= 201.2 INFLOW ID=2
 DT=0.0 L=1335 FT NS=0 SLOPE=0.02
 PRINT HYD ID=3 CODE=5

 S 6- COMPUTE TP FOR BASIN 203 (let TP= 0.133= Min.) ***
 *COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 Page 1

P100_24.dat

```
*          LENGTH=100 FT    SLOPE=0.02    K=0.7
*          LENGTH=0 FT     SLOPE=0.02    K=2
*          LENGTH=200 FT    SLOPE=0.02    K=3
```

```
*S*  7- COMPUTE HYD FOR BASIN 203 (2.5 DU/acre, use D=45)
COMPUTE NM HYD      ID=1      HYDNO=203  DA=0.002  SQ MI
                        PERCENT A=10 B=15 C=30 D=45
                        TP=0.133 HOURS  MASSRAIN=-1
```

```
PRINT HYD          ID=1      CODE=5
*****
```

```
*S*  8- Add 201.2 (ID=3) and 203 (ID=1)
```

```
ADD HYD          ID=2      HYD=203.1      ID=3      ID=1
PRINT HYD        ID=2      CODE=1
```

```
*PUNCH HYD          ID=2
*****
```

```
*S*  9- Route 203.1 Through BASIN 208 to POND 2 add to 204 at POND 2
```

```
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
DIST ELEV      DIST ELEV
DIST ELEV      DIST ELEV
  0  5          1  5
 16  0         26  0
 41  5         42  5
```

```
ROUTE MCUNGE      ID=3 HYD NO= 203.2 INFLOW ID=2
DT=0.0 L=300 FT NS=0 SLOPE=0.02
PRINT HYD          ID=3      CODE=5
```

```
*****
*S*  10- COMPUTE TP FOR BASIN 204 (Let tp= 0.133= Min.)
*COMPUTE LT TP      LCODE=1 NK=3      ISLOPE=0
*          LENGTH=100 FT    SLOPE=0.02    K=0.7
*          LENGTH=0 FT     SLOPE=0.02    K=2
*          LENGTH=650 FT    SLOPE=0.02    K=3
*****
```

```
***  11- COMPUTE HYD FOR BASIN 204 (actual 3.3DU/acre, assume 4 DU/Acre=>
***          42%D, use 45%D)
COMPUTE NM HYD      ID=1      HYDNO=204  DA=0.008 SQ MI
                        PERCENT A=10 B=15 C=30 D=45
                        TP=0.133 HOURS  MASSRAIN=-1
```

```
PRINT HYD          ID=1      CODE=5
*****
```

```
*S*  12- Route 204 through BASIN 208 to POND 2,
```

```
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
DIST ELEV      DIST ELEV
DIST ELEV      DIST ELEV
  0  5          1  5
 16  0         26  0
 41  5         42  5
```

```
ROUTE MCUNGE      ID=2 HYD NO= 204.1 INFLOW ID=1
DT=0.0 L=400 FT NS=0 SLOPE=0.02
PRINT HYD          ID=2      CODE=5
```

```
*S*  13- Add 203.2 and 204.1 HoId (ID=5) to add to 208 (#48)
***          at POND 2
```

```
ADD HYD          ID=5      HYD=204.2      ID=3      ID=2
PRINT HYD        ID=5      CODE=1
```

```
*PUNCH HYD          ID=5
*****
```



```

***
*S* 14- COMPUTE TP FOR BASIN 205 (Let tp= 0.133= Min.)
*COMPUTE LT TP          LCODE=1 NK=3    ISLOPE=0
*                      LENGTH=100 FT    SLOPE=0.02    K=0.7
*                      LENGTH=0 FT      SLOPE=0.02    K=2
*                      LENGTH=1250 FT   SLOPE=0.02    K=3

```

```

*S* 15- COMPUTE HYD FOR BASIN 205 (assume 4 DU/Acre=> 42%D, use 45%D)
COMPUTE NM HYD          ID=1          HYDNO=205  DA=0.014 SQ MI
                        PERCENT A=10 B=15 C=30 D=45
                        TP=0.133 HOURS  MASSRAIN=-1

```

```

PRINT HYD              ID=1          CODE=5
*****

```

```

*S* 16- ROUTE BASIN 205 THROUGH CHANNEL TO CONFLUENCE W/ BASIN 206
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
DIST ELEV          DIST ELEV
DIST ELEV          DIST ELEV
  0   5             1   5
 16   0            26   0
 41   5            42   5

```

```

ROUTE MCUNGE          ID=2  HYD NO= 205.1  INFLOW ID=1
DT=0.0 L=400 FT NS=0 SLOPE=0.02

```

```

PRINT HYD              ID=2          CODE=5
*****

```

```

***
*S* 17- COMPUTE TP FOR BASIN 206 (Let tp= 0.133= Min.)
*COMPUTE LT TP          LCODE=1 NK=3    ISLOPE=0
*                      LENGTH=100 FT    SLOPE=0.02    K=0.7
*                      LENGTH=0 FT      SLOPE=0.02    K=2
*                      LENGTH=700 FT    SLOPE=0.02    K=3

```

```

*S* 18- COMPUTE HYD FOR BASIN 206 (assume 4 DU/Acre=> 42%D, use 45%D)
COMPUTE NM HYD          ID=1          HYDNO=206  DA=0.007 SQ MI
                        PERCENT A=10 B=15 C=30 D=45
                        TP=0.133 HOURS  MASSRAIN=-1

```

```

PRINT HYD              ID=1          CODE=5
*****

```

```

*S* 19- ADD BASINS 205 AND 206

```

```

ADD HYD                ID=3  HYD=206.1  ID=1  ID=2
PRINT HYD              ID=3  CODE=1

```

```

*S* 20- Route BASIN 206.1 through CHANNEL to intercept w/ BASIN 207

```

```

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
DIST ELEV          DIST ELEV
DIST ELEV          DIST ELEV
  0   5             1   5
 16   0            26   0
 41   5            42   5

```

```

ROUTE MCUNGE          ID=2  HYD NO= 206.2  INFLOW ID=3
DT=0.0 L=400 FT NS=0 SLOPE=0.02

```

```

PRINT HYD              ID=2          CODE=5
*****

```

```

*****

```

```

*S* 21- COMPUTE TP FOR BASIN 207 (Let tp= 0.133= Min.)
*COMPUTE LT TP          LCODE=1 NK=3    ISLOPE=0
*                      LENGTH=100 FT    SLOPE=0.02    K=0.7
*                      LENGTH=0 FT      SLOPE=0.02    K=2
*                      LENGTH=350 FT    SLOPE=0.02    K=3

```

```

*S* 22- COMPUTE HYD FOR BASIN 207 (actual 3.7DU/acre, assume 4 DU/Acre=>
42%D, use 45%D)

```


COMPUTE NM HYD ID=1 HYDNO=207 DA=0.004 SQ MI
 PERCENT A=10 B=15 C=30 D=45
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

 S 23- ADD BASINS 206.2 AND 207

ADD HYD ID=3 HYD=207.1 ID=2 ID=1

PRINT HYD ID=3 CODE=1

 S 24- Route BASIN 207.1 through CHANNEL to intercept w/ BASIN 208

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
 CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
 DIST ELEV DIST ELEV
 DIST ELEV DIST ELEV
 0 5 1 5
 16 0 26 0
 41 5 42 5

ROUTE MCUNGE ID=2 HYD NO= 207.2 INFLOW ID=3
 DT=0.0 L=200 FT NS=0 SLOPE=0.02

PRINT HYD ID=2 CODE=5

 S 25- COMPUTE TP FOR BASIN 208 (Let tp= 0.133= Min.)
 *COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 * LENGTH=100 FT SLOPE=0.02 K=0.7
 * LENGTH=0 FT SLOPE=0.02 K=2
 * LENGTH=1250 FT SLOPE=0.02 K=3

*** 26- COMPUTE HYD FOR BASIN 208 (actual 0.4DU/acre=> 10%D, use 20%D)
 COMPUTE NM HYD ID=1 HYDNO=208 DA=0.014 SQ MI
 PERCENT A=10 B=50 C=20 D=20
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

*PUNCH HYD ID=1

 S 27- ADD BASINS 207.2(#44) and 208 before POND 2

ADD HYD ID=3 HYD=208.1 ID=1 ID=2

PRINT HYD ID=3 CODE=1

 S 28- ADD BASINS 204.2 AND 208.1 before POND 2

ADD HYD ID=1 HYD=208.2 ID=5 ID=3

PRINT HYD ID=1 CODE=1

 S 28-

S 29- ROUTE BASIN 208.3 THROUGH POND 2
 S discharge 36 cfs through 24" pipe/ orifice plate

*ROUTE RESERVOIR ID=2 HYD=POND.208.X INFLOWID=1 CODE=5
 * OUTFLOW(CFS) STORAGE(AC-FT) ELEV(FT)

	0	0	0
	10.87	0.103	0.5
	15.38	0.213	1
	18.84	0.330	1.5
	21.75	0.454	2
	24.32	0.585	2.5
	26.64	0.723	3
	28.77	0.869	3.5
	30.76	1.023	4
	32.62	1.186	4.5
	34.39	1.356	5
	36.07	1.535	5.5
	37.67	1.723	6
	37.67	1.919	6.5
	51.27	4.591	7


```

*
*PRINT HYD                      ID=2    CODE=1
*****
*S* 30- Route 208.2 through channel to intercept w/ BASIN 209
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
DIST ELEV      DIST ELEV
  0   5         1   5
 16   0        26   0
 41   5        42   5

ROUTE MCUNGE                    ID=3  HYD NO= 208.3  INFLOW ID=1
DT=0.0 L=1335 FT NS=0 SLOPE=0.02
PRINT HYD                      ID=3    CODE=5
*****
*S* 31- Compute TP for BASIN P-209 (Let tp=0.133= Min.) ***

*COMPUTE LT TP                  LCODE=1 NK=3    ISLOPE=0
*                               LENGTH=100 FT   SLOPE=0.02    K=0.7
*                               LENGTH=0 FT      SLOPE=0.02    K=2
*                               LENGTH=1250 FT   SLOPE=0.02    K=3
*****

*S* 32- Compute HYD for BASIN 209 (3.86du/acre=> 41%D, use 45%D)
COMPUTE NM HYD                  ID=1          HYDNO=209 DA=0.006 SQ MI
PERCENT A=10 B=15 C=30 D=45
TP=0.133 HOURS MASSRAIN=-1

PRINT HYD                      ID=1    CODE=5
*PUNCH HYD                     ID=1
*****
*S* 33- Add outflow from POND 2 routed through channel (208.3) and 209 (12cfs)

ADD HYD                        ID=2    HYD=209.1    ID=3    ID=1

PRINT HYD                      ID=2    CODE=1
*****
*S* 34- Route 209.1 through channel to confluence w/ 212.2 (BASIN 202/POND 3
*                               ID=9) see #30
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0 MAX ELEV=5
CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=42
DIST ELEV      DIST ELEV
  0   5         1   5
 16   0        26   0
 41   5        42   5

ROUTE MCUNGE                    ID=5  HYD NO= 209.2  INFLOW ID=2
DT=0.0 L=1335 FT NS=0 SLOPE=0.02
PRINT HYD                      ID=5    CODE=5
*****
*S* 35- COMPUTE TP FOR BASIN 210 (let tp=0.133= Min.) ***

*COMPUTE LT TP                  LCODE=1 NK=3    ISLOPE=0
*                               LENGTH=100 FT   SLOPE=0.02    K=0.7
*                               LENGTH=0 FT      SLOPE=0.02    K=2
*                               LENGTH=250 FT   SLOPE=0.02    K=3
*****

*S* 36- COMPUTE HYD FOR BASIN 210 (3.0 DU/acre=> 35%D, use 40%D)
COMPUTE NM HYD                  ID=1          HYDNO=210 DA=0.004 SQ MI
PERCENT A=10 B=15 C=35 D=40
TP=0.133 HOURS MASSRAIN=-1

PRINT HYD                      ID=1    CODE=5
*****
*S* 37- Route BASIN 210 down Kimmick to confluence w/ 211

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0.33 MAX ELEV=1
CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=28.4
DIST ELEV      DIST ELEV      DIST ELEV
  0   1         0.2   0.33     14.2   0.61
Page 5

```


28.2 0.33 28.4 1 P100_24.dat

ROUTE MCUNGE ID=2 HYD NO= 210.1 INFLOW ID=1
DT=0.0 L=575 FT NS=0 SLOPE=0.02

PRINT HYD ID=2 CODE=5

S 38- Compute TP for BASIN 211 (let tp=0.133= Min.) ****

*COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
* LENGTH=100 FT SLOPE=0.02 K=0.7
* LENGTH=0 FT SLOPE=0.02 K=2
* LENGTH=1250 FT SLOPE=0.02 K=3

S 39- COMPUTE HYD FOR BASIN 211 (3.7 DU/acre=> 40%D, use 45%D)

COMPUTE NM HYD ID=1 HYDNO=211 DA=0.010 SQ MI
PERCENT A=10 B=15 C=30 D=45
TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

S 40- ADD BASINS 210.1 AND 211

ADD HYD ID=3 HYD=211.1 ID=2 ID=1

PRINT HYD ID=3 CODE=1

S 41- Route 211.1 down Kimmick to confluence w/ 212

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1 MIN ELEV=0.33 MAX ELEV=1
CH SLP=0.02 FP SLP=0.02 N=0.035 DIST=29.2
DIST ELEV DIST ELEV
0.8 1 1 0.33
15 0.61 29 0.33
29.2 1

ROUTE MCUNGE ID=2 HYD NO= 211.2 INFLOW ID=3

DT=0.0 L=800 FT NS=0 SLOPE=0.02

PRINT HYD ID=2 CODE=5

S 42- COMPUTE TP FOR BASIN 212 (Let TP=0.133= Min.) ****

*COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
* LENGTH=100 FT SLOPE=0.02 K=0.7
* LENGTH=0 FT SLOPE=0.02 K=2
* LENGTH=300 FT SLOPE=0.02 K=3

S 43- Computing HYD for BASIN 212 (2.5 DU/acre=> 30%D, use 35%D)

COMPUTE NM HYD ID=1 HYDNO=212 DA=0.005 SQ MI
PERCENT A=10 B=15 C=40 D=35
TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

S 44- ADD BASINS 211.2 AND 212

ADD HYD ID=3 HYD=212.1 ID=2 ID=1

PRINT HYD ID=3 CODE=1

*PUNCH HYD ID=3

S 45 ROUTE 212.1 down Kimmick in 24"x 1,325' RCP to outlet & confluence w/
* 209.3 & 213 at Pond 4

COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.020
DIA=2.0 FT N=0.013

COMPUTE TRAVEL TIME ID=2 REACH=1 NO VS=1 L=1325 SLP=0.020

ROUTE ID=2 HYD NO= 212.2 INFLOW ID=3 DT=0.033

PRINT HYD ID=2 CODE=5

S 46- ADD BASINS 209.2 AND 212.2

ADD HYD ID=6 HYD=212.3 ID=5 ID=2

PRINT HYD ID=6 CODE=1

*PUNCH HYD ID=6

```

***
*S* 47- COMPUTE TP FOR BASIN 202 (set tp= 0.133= Min.)
*COMPUTE LT TP          LCODE=1 NK=3    ISLOPE=0
*                        LENGTH=100 FT   SLOPE=0.02      K=0.7
*                        LENGTH=0 FT     SLOPE=0.02      K=2
*                        LENGTH=3500 FT  SLOPE=0.02      K=3

```

```

*****

```

```

*** 48- COMPUTE HYD FOR BASIN 202 (assume 4 DU/Acre=> 42%D, use 45%D)
COMPUTE NM HYD          ID=1          HYDNO=202  DA=0.07  SQ MI
                        PERCENT A=10 B=15 C=30 D=45
                        TP=0.133 HOURS  MASSRAIN=-1

```

```

PRINT HYD              ID=1          CODE=5

```

```

*PUNCH HYD            ID=1

```

```

*****

```

```

*S* 49- Route BASIN 202 Through POND 3 (0.77/0.5AC surf/btm, 3.50AF stor. cap.)
*S*      discharge 15.21cfs through 15" orifice plate into channel

```

```

*ROUTE RESERVOIR      ID=2 HYD=POND.202.1  INFLOWID=1  CODE=5
*                        OUTFLOW(CFS)      STORAGE(AC-FT)  ELEV(FT)

```

	0	0	0
	4.39	0.255	0.5
	6.21	0.521	1
	7.60	0.797	1.5
	8.78	1.084	2
	9.82	1.381	2.5
	10.75	1.690	3
	11.62	2.011	3.5
	12.42	2.343	4
	13.17	2.687	4.5
	13.88	3.043	5
	14.56	3.411	5.5
	15.21	3.792	6
	15.21	4.185	6.5
	15.21	4.591	7

```

*PRINT HYD            ID=2          CODE=1

```

```

*****

```

```

*S* 50- Route BASIN 202 in channel through BASIN
***      213 to add to 213 & 209.____ @ POND 4. (see #56)

```

```

COMPUTE RATING CURVE  CID=1  VS NO=1  NO SEGS=1  MIN ELEV=0  MAX ELEV=5
CH SLP=0.02  FP SLP=0.02  N=0.035  DIST=42
DIST  ELEV      DIST  ELEV
DIST  ELEV      DIST  ELEV
0      5          1      5
16     0          26     0
41     5          42     5

```

```

ROUTE MCUNGE          ID=2  HYD NO= 202.1  INFLOW ID=1
DT=0.0  L=1335 FT NS=0  SLOPE=0.02
PRINT HYD             ID=2          CODE=5

```

```

*****

```

```

*S* 51- Compute TP for BASIN 213 (Let tp=0.133= Min.)
*COMPUTE LT TP          LCODE=1 NK=3    ISLOPE=0
*                        LENGTH=100 FT   SLOPE=0.02      K=0.7
*                        LENGTH=0 FT     SLOPE=0.02      K=2
*                        LENGTH=1250 FT  SLOPE=0.02      K=3

```

```

*****

```

```

*S* 52- COMPUTE HYD FOR BASIN 213 (3.86du/acre=> 41%D, use 45%D)
COMPUTE NM HYD          ID=1          HYDNO=213  DA=0.063  SQ MI
                        PERCENT A=10 B=15 C=30 D=45
                        TP=0.133 HOURS  MASSRAIN=-1

```

```

PRINT HYD              ID=1          CODE=5

```

```

*PUNCH HYD            ID=1

```

```

*****

```


S 53- Add 202.1 and 213

ADD HYD ID=3 HYD=213.1 ID=2 ID=1
 PRINT HYD ID=3 CODE=1
 *PUNCH HYD ID=3

 S 54- Add 212.3 and 213.1

ADD HYD ID=1 HYD=213.2 ID=6 ID=3
 PRINT HYD ID=1 CODE=1
 *PUNCH HYD ID=1

S 55- Route BASIN 213.2 through POND 4, 2.0/1.5AC surf/bottom, 9.7AF stor.
 * hold to 120cfs through 41" orifice plate into 48" RCP.

ROUTE RESERVOIR ID=2 HYD=POND.213.3 INFLOWID=1 CODE=5
 OUTFLOW(CFS) STORAGE(AC-FT) ELEV(FT)

0	0	0
34.91	0.709	0.5
49.37	1.434	1
60.46	2.178	1.5
69.82	2.938	2
78.06	3.717	2.5
85.51	4.514	3
92.36	5.329	3.5
98.73	6.162	4
104.72	7.014	4.5
110.39	7.885	5
115.78	8.775	5.5
120.92	9.684	6
120.92	10.613	6.5
120.92	11.516	7

PRINT HYD ID=2 CODE=1

S 56- Route 213.2 (Outflow from POND 4) through 48 "pipe to discharge South
 * side of Kimmick in Drainage Easement betw Units 22 & 23.

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=-1 SLP=0.03
 DIAM=4.0 N=0.013

ROUTE MCUNGE ID=3 HYD NO= 213.4 INFLOW ID=2
 DT=0.0 L=200 FT NS=0 SLOPE=0.02
 PRINT HYD ID=3 CODE=5

S 57- Compute TP for OFFSITE BASIN 304 (Let TP= 0.133 hrs= min.)

*COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 * LENGTH=100 FT SLOPE=0.020 K=0.7
 * LENGTH=3500 FT SLOPE=0.020 K=3

S 58- Compute HYD for BASIN 304 (ex.platting 2.33+/- DU/Acre => 35%D, use 40%

S BASIN 304 @ 100% A: Historical flow area= 0.05 sq mi, flow= 41.24cfs
 COMPUTE NM HYD ID=1 HYDNO=304 DA=0.05 SQ MI
 PERCENT A=10 B=15 C=35 D=40
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5
 *PUNCH HYD ID=1

S 59- Route 304 through POND 7 (H=4.0', 0.40/0.25AC surf/bottom, 1.14AF stor.

S cap.). 304 historical: 100% A; area= 0.05 sq mi; flow= 41.24cfs;

S discharge through 28" orifice plate into 30' RCP

ROUTE RESERVOIR ID=2 HYD=POND.304.1 INFLOWID=1 CODE=5
 OUTFLOW(CFS) STORAGE(AC-FT) ELEV(FT)

0	0	0
---	---	---

p100_24.dat

14.80	0.381	0.5
20.93	0.775	1
25.64	1.182	1.5
29.60	1.602	2
33.10	2.035	2.5
36.26	2.482	3
39.16	2.942	3.5
41.86	3.416	4
41.86	3.904	4.5
41.86	4.407	5

PRINT HYD ID=2 CODE=1

 S 60- Route outflow from POND 7 (BASIN 304) through
 *** 30"x 150'RCP (2.7'/150'= 2% slp) to discharge before escarpment, ***
 *

COMPUTE RATING CURVE CID=1 VALLEY SECTION NO=1 CODE=-1 SLOPE=0.025
 PIPE DIA=30 N=0.013

*
 ROUTE MCUNGE ID=3 HYD NO= 304.2 INFLOW ID=2
 DT=0.0 L=150 FT NS=0 SLOPE=0.02

PRINT HYD ID=3 CODE=5

 S 61- COMPUTE TP FOR OFFSITE BASIN 301 (SET tp= MIN 0.133 HRS

 *COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 * LENGTH=250 FT SLOPE=0.01 K=0.7
 * LENGTH=2500 FT SLOPE=0.02 K=3

S 62- COMPUTE HYD FOR BASIN 301, (assume platted to 5 DU/ACRE, %D=50)

COMPUTE NM HYD ID=1 HYDNO=301 DA=0.089 SQ MI
 PERCENT A=10 B=15 C=25 D=50
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5

*PUNCH HYD ID=1

 S 63- Route 301 through POND 5 (0.30/0.52ac surface/bottom, 2.20AF stor req'd)
 S Historical flow Basin 301 (100% A)= 74.42CFS use 75+/- thru 34" orifice plate
 ROUTE RESERVOIR ID=2 HYD=POND.301.1 INFLOWID=1 CODE=5

OUTFLOW(CFS) STORAGE(AC-FT) ELEV(FT)

0	0	0
21.82	0.154	0.5
30.86	0.316	1
37.80	0.486	1.5
43.65	0.665	2
48.80	0.853	2.5
53.46	1.049	3
57.74	1.255	3.5
61.73	1.470	4
65.47	1.694	4.5
69.02	1.928	5
72.38	2.172	5.5
75.60	2.427	6

PRINT HYD ID=2 CODE=1

 S 64- Route POND 5 outflow (BASIN 301) through BASIN 302 via 36"x 1800'RCP
 S (24'/1800'= 0.15 slp) Add to basin 302 at pond 6, (#8)

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=-1 SLP=0.015
 DIAM=3.0 N=0.013

ROUTE MCUNGE ID=3 HYD NO= 301.2 INFLOW ID=2
 DT=0.0 L=1800 FT NS=0 SLOPE=0.015

PRINT HYD ID=3 CODE=5

 S 65- COMPUTE TP FOR BASIN 302 (LET tp= 0.133 MIN)

 *COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
 Page 9


```

*          LENGTH=100 FT  SLOPE=0.02      K=0.7
*          LENGTH=1700 FT SLOPE=0.02      K=3
* * * * *

```

```

*S* 66- COMPUTE HYD FOR BASIN 302 (assume replat to 4 DU/Ac, D=42%, use 45%)
*S* Historical flow (100% A)= 57.95CFS
COMPUTE NM HYD      ID=1      HYDNO=302  DA=0.07  SQ MI
                        PERCENT A=10 B=15 C=30 D=45
                        TP=0.133 HOURS  MASSRAIN=-1

```

```

PRINT HYD          ID=1      CODE=5

```

```

*S* 67- ADD BASINS 301.2 (ROUTED THROUGH 302) AND 302

```

```

ADD HYD          ID=2      HYD=302.1      ID=3      ID=1
PRINT HYD        ID=2      CODE=1
*PUNCH HYD       ID=2

```

```

* * * * *
*S* 68- ROUTE 302.1 through POND 6 (0.2/0.4AC surf/bottom, 1.5AF stor cap)
*S* Historical flow- 100% A (Basin 301= 74.42)+(Basin 302= 57.95)= 132.37CFS
*S* discharge through 48" RCP w/ 45" orifice plate
ROUTE RESERVOIR  ID=1 HYD=POND.302.2  INFLOWID=2  CODE=5
                  OUTFLOW(CFS)  STORAGE(AC-FT)  ELEV(FT)
                  0              0              0
                  38.23          0.103          0.5
                  54.07          0.213          1.0
                  66.22          0.330          1.5
                  76.46          0.454          2.0
                  85.49          0.585          2.5
                  93.65          0.723          3.0
                  101.15         0.869          3.5
                  108.13         1.023          4.0
                  114.69         1.186          4.5
                  120.90         1.356          5.0
                  126.80         1.535          5.5
                  132.43         1.723          6.0
                  132.43         1.919          6.5
                  132.43         2.125          7.0

```

```

PRINT HYD          ID=1      CODE=1
* * * * *
*S* 69- Route outflow from POND 6 (BASIN 301 & 302) down Kimmick through
*S* 48"x 1,150'RCP (22/1150= 1.9% slp) to Pinos Verde SD & Pond 8,
*S* Hold (ID= 5) to add to 214 at Pond 8.

```

```

COMPUTE RATING CURVE  CID=1  VS NO=1  NO SEGS=-1  SLP=0.02
                        DIAM=4.0  N=0.013

```

```

ROUTE MCUNGE        ID=2  HYD NO= 302.3  INFLOW ID=1
                        DT=0.0 L=2250 FT NS=0 SLOPE=0.020

```

```

PRINT HYD          ID=2      CODE=5
* * * * *
*S* 70- COMPUTE TP FOR BASIN 214 (Let tp= 0.133= Min.)

```

```

*COMPUTE LT TP      LCODE=1 NK=3      ISLOPE=0
*                  LENGTH=100 FT      SLOPE=0.02      K=0.7
*                  LENGTH=0 FT        SLOPE=0.02      K=2
*                  LENGTH=1250 FT     SLOPE=0.02      K=3

```

```

*S* 71- COMPUTE HYD FOR BASIN 214
COMPUTE NM HYD      ID=1      HYDNO=214  DA=0.086 SQ MI
                        PERCENT A=10 B=15 C=30 D=45
                        TP=0.133 HOURS  MASSRAIN=-1

```

```

PRINT HYD          ID=1      CODE=5

```

```

*S* 72- ADD BASINS 302.3 AND 214

```

```

ADD HYD          ID=3      HYD=214.1      ID=2      ID=1
PRINT HYD        ID=3      CODE=1
PUNCH HYD       ID=3

```

```

* * * * *

```


S 73- Route BASIN 214.1 through POND 8 (1.3/0.9AC surf/btm, 6.4 AF stor.cap.)
 ROUTE RESERVOIR ID=2 HYD=POND.214.2 INFLOWID=3 CODE=5
 OUTFLOW(CFS) STORAGE(AC-FT) ELEV(FT)

0	0	0
34.91	0.457	0.5
49.37	0.928	1
60.46	1.412	1.5
69.82	1.911	2
78.06	2.425	2.5
85.51	2.953	3
92.36	3.496	3.5
98.73	4.054	4
104.72	4.628	4.5
110.39	5.216	5
115.78	5.821	5.5
120.92	6.442	6
120.92	7.078	6.5
120.92	7.731	7

PRINT HYD ID=2 CODE=1

S 74- ROUTE 214.2 to discharge before escarpment
 COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.020
 DIA=4.0 FT N=0.013

COMPUTE TRAVEL TIME ID=1 REACH=1 NO VS=1 L=1325 SLP=0.020

ROUTE ID=1 HYD NO= 214.3 INFLOW ID=2 DT=0.033
 PRINT HYD ID=1 CODE=5

S 75- COMPUTE TP FOR BASIN 303 (let TP= 0.133 hrs= min) ***
 *COMPUTE LT TP LCODE=1 NK=2 ISLOPE=0
 * LENGTH=100 FT SLOPE=0.02 K=0.7
 * LENGTH=0 FT SLOPE=0.02 K=2
 * LENGTH=2000 FT SLOPE=0.02 K=3

S 76- COMPUTE HYD FOR BASIN 303 (assume replat to 4 DU/AC, D=42%, use 45%)
 S BASIN 303 Historical flow (100% A)= 75.29CFS
 COMPUTE NM HYD ID=1 HYDNO=303 DA=0.09 SQ MI
 PERCENT A=10 B=15 C=30 D=45
 TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5
 *PUNCH HYD ID=1

 S 77- ROUTE 303 THROUGH POND 9 (0.3/0.52AC surface/bottom, 2.11AF stor. cap.)
 S 303 Hist. flow= 75.29CFS, discharge through 36" RCP w/ 34" orifice plate
 ROUTE RESERVOIR ID=2 HYD=POND.303.1 INFLOWID=1 CODE=5

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
0	0	0
21.82	0.154	0.5
30.86	0.316	1
37.80	0.486	1.5
43.65	0.665	2
48.80	0.853	2.5
53.46	1.049	3
57.74	1.255	3.5
61.73	1.470	4
65.47	1.694	4.5
69.02	1.928	5
72.38	2.172	5.5
75.60	2.427	6
75.60	2.691	6.5
75.60	2.966	7

PRINT HYD ID=2 CODE=1

 S 78- Route outflow from POND 9 (BASIN 303.1) through 36"x 2000'RCP
 *** (60/2000=3% slp) through BASIN 214, Hold (ID= 6) to add to flow from
 *** BASIN 215 & flow routed from POND 6 (ID= 5) to flow into POND 10 #83

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=-1 SLP=0.03
DIAM=3.0 N=0.013

ROUTE MCUNGE ID=3 HYD NO= 303.2 INFLOW ID=2
DT=0.0 L=2000 FT NS=0 SLOPE=0.02
PRINT HYD ID=3 CODE=5

S 79- COMPUTE TP FOR BASIN 215 (Let tp= 0.133 Min.) ***
*COMPUTE LT TP LCODE=1 NK=3 ISLOPE=0
* LENGTH=100 FT SLOPE=0.02 K=0.7
* LENGTH=0 FT SLOPE=0.02 K=2
* LENGTH=1250 FT SLOPE=0.02 K=3

S 80- COMPUTE HYD FOR BASIN 215
COMPUTE NM HYD ID=1 HYDNO=215 DA=0.054 SQ MI
PERCENT A=10 B=15 C=30 D=45
TP=0.133 HOURS MASSRAIN=-1

PRINT HYD ID=1 CODE=5
*PUNCH HYD ID=1

S 81- ADD BASINS 303.2 AND 215

ADD HYD ID=2 HYD=215.1 ID=3 ID=1
PRINT HYD ID=2 CODE=1
*PUNCH HYD ID=2

S 82- Route BASIN 215.1 through POND 10 (1.6/1.2AC surf/btm, 8.4AF stor.cap.)
ROUTE RESERVOIR ID=1 HYD=POND.215.3 INFLOWID=2 CODE=5

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
0	0	0
4.39	0.608	0.5
6.21	1.232	1
7.60	1.872	1.5
8.78	2.528	2
9.82	3.201	2.5
10.75	3.891	3
11.62	4.598	3.5
12.42	5.322	4
13.17	6.063	4.5
13.88	6.822	5
14.56	7.599	5.5
15.21	8.393	6
15.21	9.206	6.5
15.21	10.038	7

PRINT HYD ID=1 CODE=1

S 83- ROUTE 215.2 TO Piedras Marcadas Arroyo through 24" RCP
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.020
DIA=2.0 FT N=0.013

COMPUTE TRAVEL TIME ID=2 REACH=1 NO VS=1 L=150 SLP=0.020

ROUTE ID=2 HYD NO= 215.3 INFLOW ID=1 DT=0.033
PRINT HYD ID=2 CODE=5

FINISH

Worksheet
Worksheet for Trapezoidal Channel

Project Description

Worksheet	Channel Upstream of I
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data

Mannings Coeffic	0.015
Slope	005000 ft/ft
Left Side Slope	2.00 H : V
Right Side Slope	2.00 H : V
Bottom Width	10.00 ft
Discharge	304.00 cfs

Results

Depth	2.20 ft
Flow Area	31.7 ft ²
Wetted Perim	19.85 ft
Top Width	18.81 ft
Critical Depth	2.56 ft
Critical Slope	0.002853 ft/ft
Velocity	9.58 ft/s
Velocity Head	1.43 ft
Specific Energ	3.63 ft
Froude Numb	1.30
Flow Type	supercritical

Cross Section

Cross Section for Trapezoidal Channel

Project Description

Worksheet	Channel Upstream of b
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data

Mannings Coeff	0.015
Slope	005000 ft/ft
Depth	2.20 ft
Left Side Slope	2.00 H : V
Right Side Slope	2.00 H : V
Bottom Width	10.00 ft
Discharge	304.00 cfs

