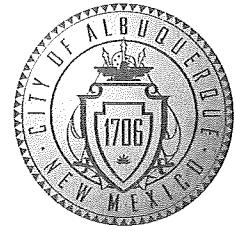


CITY OF ALBUQUERQUE



August 19, 2011

Lawrence D. Read, P.E.
Larry Read & Associates, Inc
2430 Midtown Pl NE Suite C
Albuquerque, NM 87107

Re: Paradise RV – Phase 1 Preliminary Drainage Report
Engineer's Stamp date 8-10-11 (K08/D003)

Dear Mr. Read,

Based upon the information provided in your submittal received 8-10-11 and the e-mail received 8-16-11, the above referenced report and e-mail are approved for Site Plan for Building Permit action by the DRB.

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

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Sincerely,

Curtis A. Cherne, P.E.
Principal Engineer, Planning Dept.
Development and Building Services

Copy: file

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: Paradise RV Park

DRB #: 1008830

EPC#: _____

ZONE MAP/DRG. FILE #: K-8/D003

WORK ORDER#: _____

LEGAL DESCRIPTION: Lot 3E, Town of Atrisco Grant, Row 2, Unit A

CITY ADDRESS: _____

ENGINEERING FIRM: Larry Read & Associates, Inc.

ADDRESS: 2430 Midtown Pl. NE Suite C

CITY, STATE: Albuquerque, NM

CONTACT: Larry Read

PHONE: 237-8421

ZIP CODE: 87107

OWNER: Adil Rizvi

ADDRESS: 4001 Juan Tabo Blvd. NE

CITY, STATE: Albuquerque, NM

CONTACT: Adil Rizvi

PHONE: 315-6484

ZIP CODE: 87111

ARCHITECT: _____

ADDRESS: _____

CITY, STATE: _____

CONTACT: _____

PHONE: _____

ZIP CODE: _____

SURVEYOR: _____

ADDRESS: _____

CITY, STATE: _____

CONTACT: _____

PHONE: _____

ZIP CODE: _____

CONTRACTOR: _____

ADDRESS: _____

CITY, STATE: _____

CONTACT: _____

PHONE: _____

ZIP CODE: _____

CHECK TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL, **REQUIRES TCL or equal**
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☒ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEERS CERTIFICATION (TCL)
- ☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

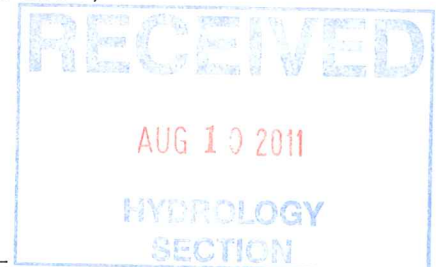
- ☐ SIA / FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☒ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY (PERM.)
- ☐ CERTIFICATE OF OCCUPANCY (TEMP.)
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☒ YES
- ☐ NO
- ☐ COPY PROVIDED

DATE SUBMITTED: 11 August 2011

BY: Larry D. Read, P.E.



Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.

Cherne, Curtis

Part of Drainage Report

From: Larry Read [lread@readengineering.com]

Sent: Tuesday, August 16, 2011 12:02 PM

To: Cherne, Curtis

Cc: 'Adil R'

Subject: Paradise RV Park

Curtis

I added Basin 950 which includes the truck wash and Leonidas Lane. The total area is 4.2 acres and I modeled it using A=0%, B=8%, C=7%. And D=85%. The total discharge is 22.6 cfs.

Putting that into the storm drain model, the pipe from the south corner of the truck wash south to Volcano Rd will be a 24" storm drain (sized as gravity flow – HGL is at the crown of the pipe). The distance is 600'.

The 42" from Volcano/Leonidas Lane intersection to the pond has sufficient additional capacity for the extra 22.6 cfs so that size is still valid.

If you have any questions, please let me know.

Larry D. Read, P.E.
Larry Read & Associates, Inc.
2430 Midtown Place, N.E.
Suite C
Albuquerque, New Mexico

Voice (505) 237-8421
Fax (505) 237-8422

8/16/2011

Cherne, Curtis

From: Penttila, Roland V.
Sent: Thursday, August 04, 2011 2:40 PM
To: Cherne, Curtis
Cc: Eisenberg, Jame J.
Subject: Re: Amole Del Norte Dam

After reviewing both the developer's plan to install a new inflow storm drain into the northwest corner of the Amole Del Norte system and checking this plan against the master plan of drainage that created the Amole Del Norte Dam, the two are essentially the same. Therefore, in my opinion this new installation is in accordance with the original design plans for this facility and is acceptable to the Engineering Division Stormwater Management Section.

It will be DMD's responsibility after construction to notify the Office of the State Engineer, Dam Safety Bureau that this work has been completed.

Roland Penttila, P.E.

**Manager, Storm Drainage Design Section
Engineering Division, City of Albuquerque
505-768-2778**

www.keeptheriogrande.org

"SCOOP THE POOP"

8-5-11 mts w/ Larry Reed



PARADISE RV PARK
BASIN COMPARISON
SCALE 1":800'

LEGEND
— THIS REPORT
— GREINER 1995

Greiner June 1995

Tables showing undeveloped and developed contributing basins and their characteristics are shown below.

ULTIMATE DEVELOPMENT BASIN INFORMATION						
Basin	Area (Sq. Mi.)	Time of Concentration (hours)	Ultimate Land Treatment			
			A	B	C	D
(percent)						
101	0.0260	0.20	0	100*	0	0
102	0.2810	0.30	15	30*	24	31
108.1	0.1713	0.20	0	17	13	70
108.2	0.1710	0.24	0	18	19	63
108.3	0.1478	0.26	0	21	22	57
108.4	0.1426	0.20	0	15	15	70
109	0.0720	0.21	0	5	13	82
109.1	0.0495	0.20	0	3	12	85**

* Undeveloped land with slopes steeper than 10%.

** Land treatments based on preliminary construction plans.

EXISTING BASIN INFORMATION						
Basin	Area (Sq. Mi.)	Time of Concentration (hours)	Existing Land Treatment			
			A	B	C	D
(percent)						
101	0.0260	0.20	0	100*	0	0
102	0.2810	0.30	15	30*	24	31
108.1	0.1467	0.20	98	0	0	2
108.2	0.1631	0.20	98	0	0	2
108.3	0.1942	0.32	75	0	15	10
108.4	0.0644	0.20	55	0	30	15
109	0.1803	0.29	95	0	0	5

PRELIMINARY DRAINAGE REPORT

for

PARADISE RV PARK - PHASE I

ALBUQUERQUE, NEW MEXICO

June 2011

Revised August 2011



Prepared by
Larry D. Read, P.E.
2430 Midtown Place, NE
Suite C
Albuquerque, New Mexico 87107
(505) 237-8421

PRELIMINARY DRAINAGE REPORT

for

PARADISE RV PARK - PHASE I

ALBUQUERQUE, NEW MEXICO

June, 2011

Revise August 2011

LOCATION & DESCRIPTION

The proposed Phase I site is approximately a 4.61 acre parcel located north of Volcano Road NE and west of Leonidas Lane NW as shown on the Vicinity Map. The 'L' shaped parcel is proposed to provide 66 RV parking spaces (for rent) and a community center/office building. Phase II of this development will be west of the Phase I development (on Lot 5) and adjacent to the future 102nd Street NW.

EXISTING DRAINAGE

The existing slope is from northwest to southeast at approximately 2.5 to 3% slopes. The drainage scheme is predominantly shallow sheet flow with minor rivulets starting to form as the flows concentrate in the lower sections of the drainage basins.

Previous preliminary designs (prepared by Raymond Macy, PE in 1998 Appendix F) placed a retention basin at the south end of the constructed portion of Leonidas Lane. This pond not only holds the runoff from Leonidas Lane south of Avalon but also the runoff from a small arroyo that, in the undeveloped state, collects runoff from Basin 300 and Basin 900.

In addition to this small pond, a two cell, regional pond (98th Street Pond) was built on the south side of Volcano south of this site . The pond was built as part of the Amole del Norte Storm Diversion Facilities, Tierra Bayita Project as designed by Greiner Engineering (COA Project # 407692) in 1995. Most of the runoff from this project site and Basins 300 thru 900 will ultimately be directed to this pond via storm drains.

Currently the runoff generated on site sheet flow to the east southeast where it crosses Leonidas Lane generally toward the Amole del Norte ponds discussed above. There currently is no infrastructure is Volcano Road.

In order to reconcile the drainage basin boundaries and hydrologic analyses in this report to previous drainage master plans, we compared the basins to those presented in both the Amole Channel "Future Developed Conditions" Drainage Basin Map prepared by Mark Goodwin & Associates in 2004 (Appendix E) and the Amole Hubbell Drainage Management Plan prepared by Greiner Engineering in 1995 (Appendix D). In the case of the Mark Goodwin report (Appendix E), the western boundary of Basin 600 in this report matched very closely. In the case of the Greiner report, all Basins in this report very closely match Greiner's (Appendix D) except they are cut off at Interstate 40 due to the construction of the I-40 pond system which eliminated contributory runoff from north of I-40. See the Drainage Basin Comparison Map in Appendix D.

The land treatment percentages used in this report were extracted from the Greiner report (March 1995). Using the Goodwin (7-3-04) report, the land treatment percentages used were based on the existing A-1 zoning changing to RA-1 (residential agricultural) with a density of 2 du/acre (Figure II-1 and Table II-4). These land treatment percentages seem appropriate for the proposed zoning.

PROPOSED CONDITIONS

The proposed drainage scheme for Phase I of the Paradise RV Park generally follows the existing direction. The runoff is conveyed in the proposed gravel and paved streets in a northwest to southeast direction. The proposed development intends to complete construction of Leonidas Lane from its current termination at the north side of this site south of connect to Volcano Road at the southeast corner of this site. A proposed inlet system where the south access to the RV Park meets Leonidas Lane will intercept most of the runoff generated onsite and convey it to the Amole del Norte ponds south of Volcano Road and this site. The intent is to direct the developed runoff from this site into the landscape areas along Leonidas Lane to allow some infiltration before the flow overtop the curb and are intercepted in the proposed inlet system in Leonidas Lane.

Since the existing onsite pond will no longer be needed to handle flows from Leonidas Lane once the road is completed, we propose to relocate to the northwest (in the Phase II area - Parcel 5) along the small arroyo flowline to intercept offsite flows before they enter the Phase I development area.

Due to large runoff generated offsite, a storm drain system is anticipated to collect the runoff and convey it to the Amole del Norte ponds to the south of this site. Although the full routing of this system is beyond the scope of this report, a portion of the storm drain system will undoubtedly be required in Volcano Road along the southern boundary of this site. As such, this report has located and sized a trunk storm drain line in Volcano Road from the future 110th Street to the Amole del Norte ponds based on the drainage basins shown on the Drainage Basin Map. In addition, it has modeled north/south sections of future storm drains in 102nd, 106th, and 100th Streets between Volcano and Avalon. *110th*

FLOODPLAIN STATUS

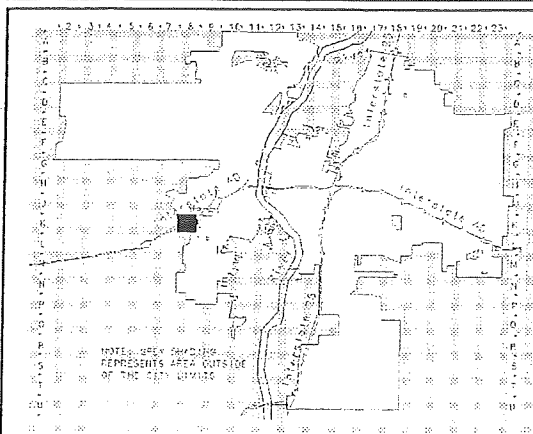
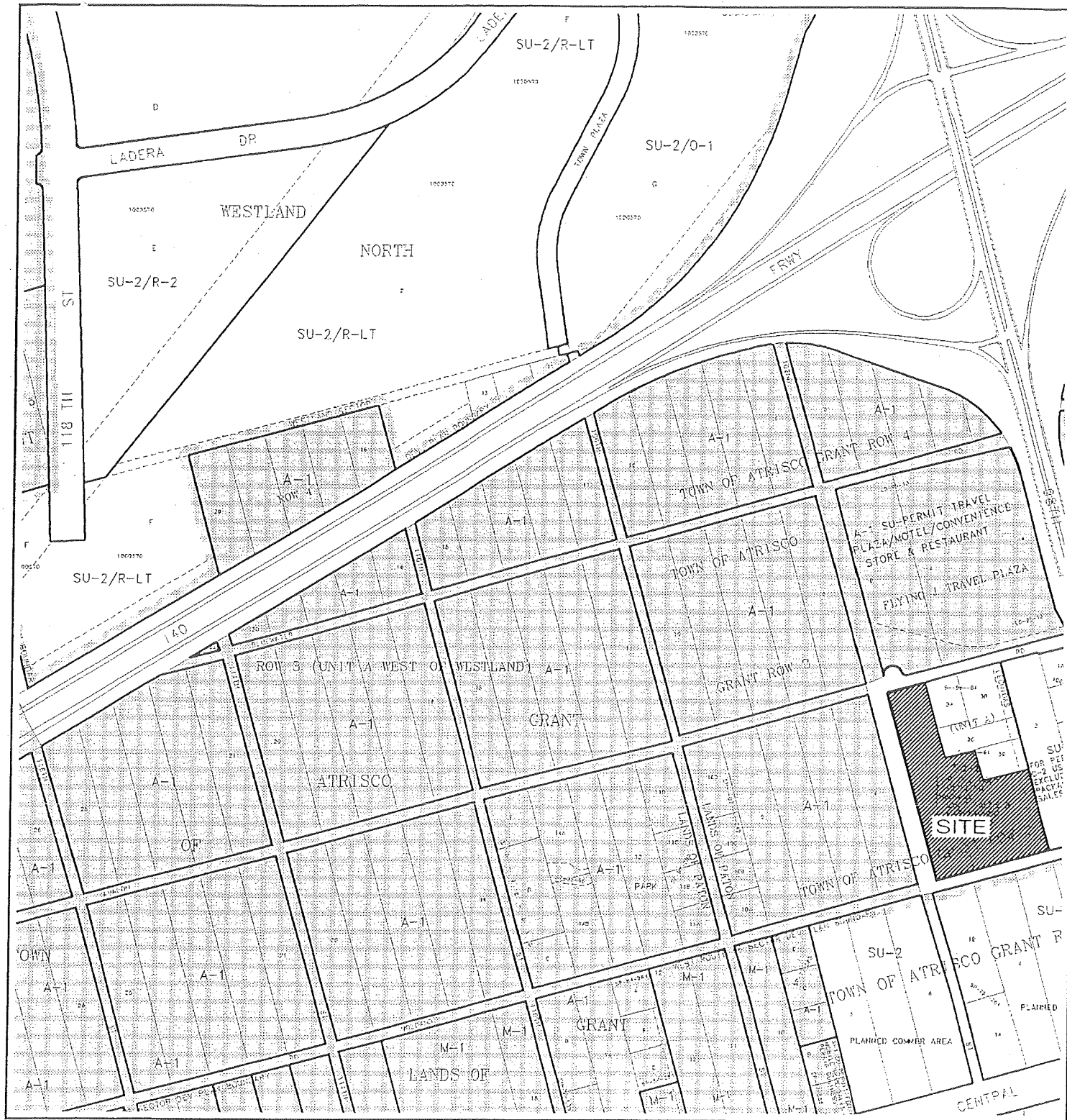
This project, as shown on FEMA Flood Insurance Rate Map Panel 35001C0328 G, September 26, 2008, shows that this site is in a Zone X, areas of 100-year flooding with average depths of less than 1 foot or with drainage areas of less than 1 square mile.

METHODOLOGY

The hydrology for this project was analyzed using the 2009 release of the AHYMO-S4.01a computer modeling program as developed by Anderson Hydro. All procedures are in accordance with those shown in the January 1993 release of the City of Albuquerque Development Process Manual, Section 22.2.

The specific values used for this analysis are as follows:

- Precipitation Zone 1
- Design Storm 100-year, 6-hour duration
i = 2.20 inches



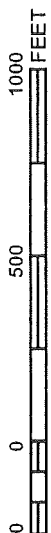
Zone Atlas Page

K-8-Z

Map Amended through March 08, 2005

A lbuquerque **G** eographic **I** nformation **S** ystem
PLANNING DEPARTMENT
© Copyright 2004

MAP SCALE 1" = 500'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0328G

FIRM

FLOOD INSURANCE RATE MAP
BERNALILLO COUNTY,
NEW MEXICO
AND INCORPORATED AREAS

PANEL 328 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE CITY OF	350002	0328	G
BERNALILLO COUNTY	350001	0328	G
UNINCORPORATED AREAS			

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

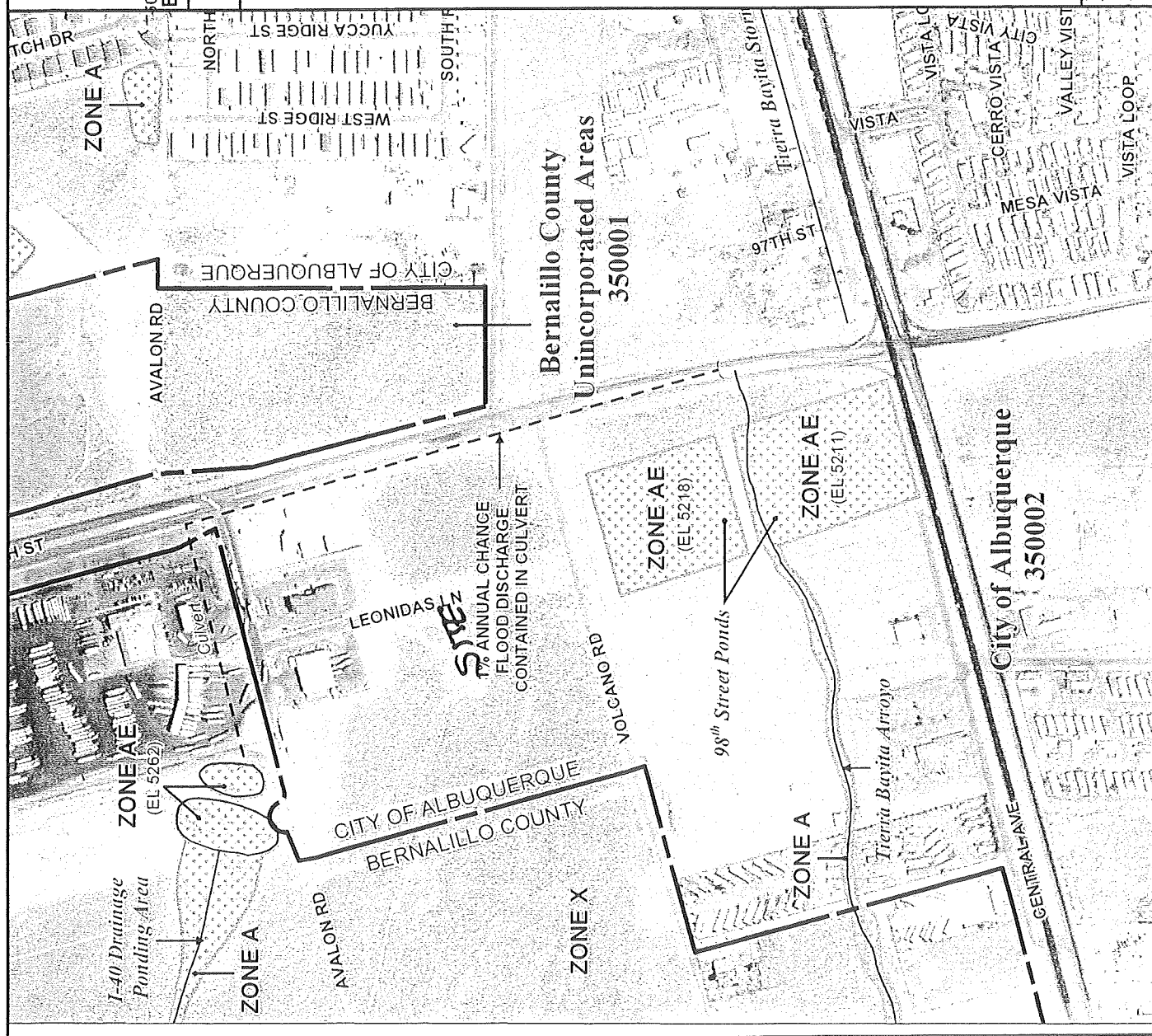


MAP NUMBER
35001C0328G

MAP REVISED
SEPTEMBER 26, 2008

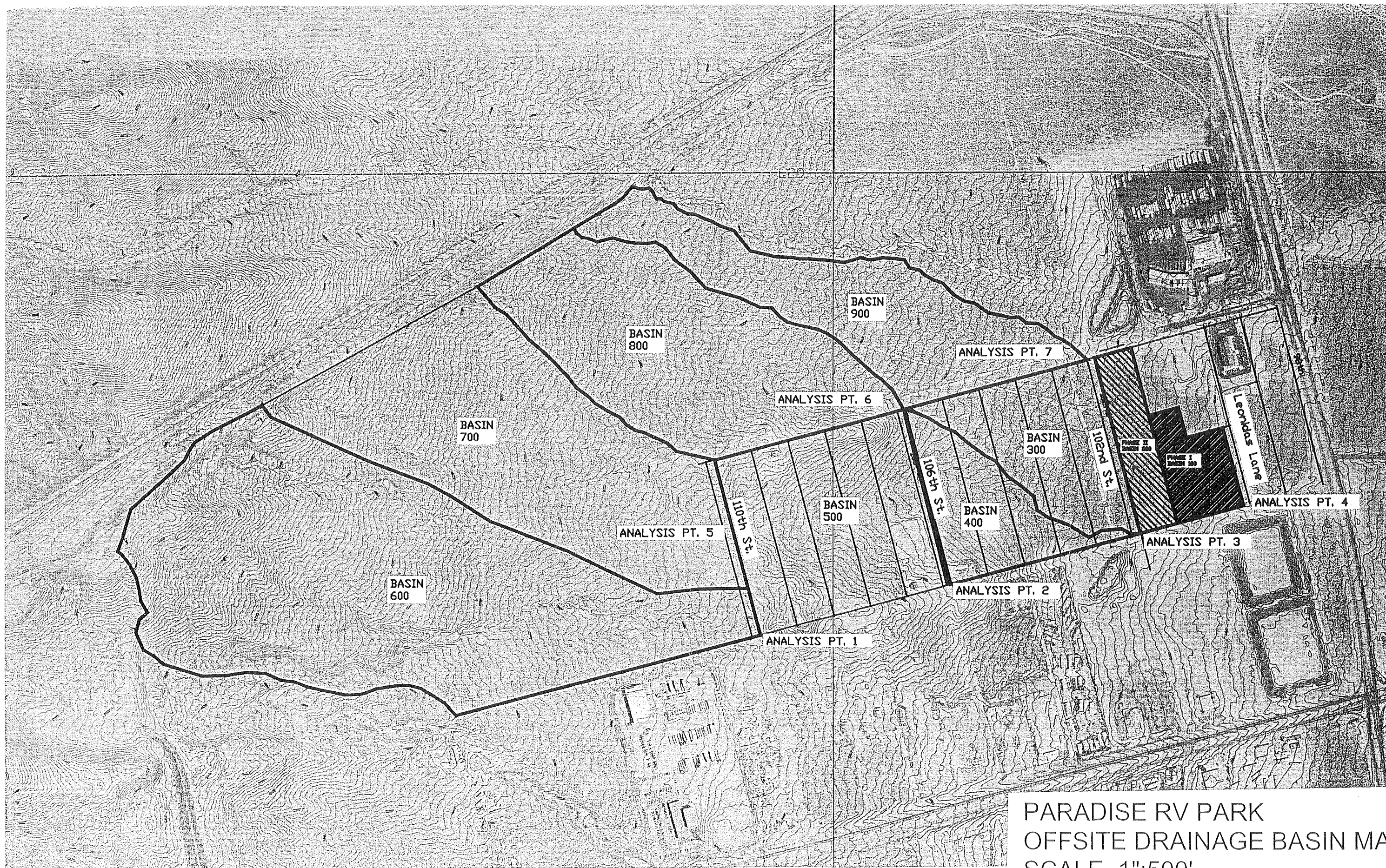
Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



APPENDIX A

Drainage Basin Map



PARADISE RV PARK
OFFSITE DRAINAGE BASIN MAP
SCALE 1":500'

APPENDIX B

AHYMO Analysis

AHYMO PROGRAM (AHYMO-S4)

- Version: S4.01a - Rel: 01a

RUN DATE (MON/DAY/YR) = 08/08/2011
 START TIME (HR:MIN:SEC) = 12:12:51
 INPUT FILE = C:\acad projects\Rizvy\RV Park - Avalon\input2.dat

USER NO. = AHYMO Temp User:20122010
 HYMO PER JAN 1993 DPM REVISIONS

TIME=0 PUNCH=0 PRINT LINES=-6
 COMPUTE 100 YR. 6 HR. HYDROGRAPHS FOR PARADISE RV PARK
 AHYMO INPUT.DAT - HYMO PER JAN 1993 DPM REVISIONS

TYPE=-1 RAIN QUAR=0 RAIN ONE=1.87 RAIN SIX=2.20
 RAIN DAY=2.66 DT=0.03

6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
 DT = 0.030000 HOURS END TIME = 6.000000 HOURS

COMPUTE RUNOFF FOR UNDEVELOPED CONDITIONS ON-SITE BASINS

COMPUTE NM HYD

ID=1 HYD NO= 100.0 DA=0.00715 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0 TP=-.13
 RAIN=-1

K = 0.159632HR TP = 0.130000HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899626
 UNIT PEAK = 15.045 CFS UNIT VOLUME = 0.9987 B = 273.54 P60 = 1.8700
 AREA = 0.007150 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=1 CODE=10

PARTIAL HYDROGRAPH 100.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	0.900	0.0	2.700	0.2
0.300	0.0	1.200	0.0	3.000	0.1
0.600	0.0	1.500	7.9	3.300	0.1
				4.200	0.0

RUNOFF VOLUME = 0.64271 INCHES = 0.2451 ACRE-FEET
 PEAK DISCHARGE RATE = 8.35 CFS AT 1.530 HOURS BASIN AREA = 0.0072 SQ. MI.

*S BASIN 200 PHASE II
 COMPUTE NM HYD

ID=2 HYD NO= 200.0 DA=0.00798 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0 TP=-.13
 RAIN=-1

K = 0.159632HR TP = 0.130000HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899626
 UNIT PEAK = 16.791 CFS UNIT VOLUME = 0.9988 B = 273.54 P60 = 1.8700
 AREA = 0.007980 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=2 CODE=10

PARTIAL HYDROGRAPH 200.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	0.900	0.0	1.800	2.5	2.700	0.2
0.300	0.0	1.200	0.0	2.100	0.7	3.000	0.1
0.600	0.0	1.500	8.9	2.400	0.4	3.300	0.1

TIME FLOW
HRS CFS
3.600 0.0
3.900 0.0
4.200 0.0

RUNOFF VOLUME = 0.64271 INCHES = 0.2735 ACRE-FEET
PEAK DISCHARGE RATE = 9.31 CFS AT 1.530 HOURS BASIN AREA = 0.0080 SQ. MI.

*S
*S
*S
*S

*S COMPUTE RUNOFF FROM UNDEVELOPED CONDITIONS OFF-SITE BASINS
*S
*S
*S

*S BASIN 300
COMPUTE NM HYD

ID=3 HYD NO= 300.0 DA=0.0232 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0 TP=-.22
RAIN=-1

K = 0.270146HR TP = 0.220000HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899626
UNIT PEAK = 28.846 CFS UNIT VOLUME = 0.9994 B = 273.54 P60 = 1.8700
AREA = 0.023200 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=3 CODE=10

HYDROGRAPH FROM AREA 300.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.500	12.1	3.000	0.8	4.500	0.1
0.300	0.0	1.800	11.8	3.300	0.5	4.800	0.1
0.600	0.0	2.100	3.9	3.600	0.4	5.100	0.1
0.900	0.0	2.400	1.6	3.900	0.3	5.400	0.0
1.200	0.0	2.700	1.1	4.200	0.2	5.700	0.0

TIME FLOW
HRS CFS
6.000 0.0
6.300 0.0
6.600 0.0
6.900 0.0

RUNOFF VOLUME = 0.64271 INCHES = 0.7952 ACRE-FEET
PEAK DISCHARGE RATE = 17.56 CFS AT 1.620 HOURS BASIN AREA = 0.0232 SQ. MI.

*S
*S

*S BASIN 400
COMPUTE NM HYD

ID=4 HYD NO= 400.0 DA=0.0168 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0 TP=-.171
RAIN=-1

K = 0.209977HR TP = 0.171000HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899626
 UNIT PEAK = .26.874 CFS UNIT VOLUME = 0.9993 B = 273.54 P60 = 1.8700
 AREA = 0.016800 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=4 CODE=10

HYDROGRAPH FROM AREA 400.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.200	0.0	3.600	0.2
0.300	0.0	1.500	13.2	3.900	0.1
0.600	0.0	1.800	7.3	4.200	0.1
0.900	0.0	2.100	1.8	4.500	0.0

RUNOFF VOLUME = 0.64271 INCHES = 0.5759 ACRE-Feet
 PEAK DISCHARGE RATE = 15.73 CFS AT 1.560 HOURS BASIN AREA = 0.0168 SQ. MI.

*S
 *S BASIN 500
 COMPUTE NM HYD

ID=5 HYD NO= 500.0 DA=0.0393 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0 TP=-.16
 RAIN=-1

K = 0.196470HR TP = 0.160000HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899626
 UNIT PEAK = 67.188 CFS UNIT VOLUME = 0.9997 B = 273.54 P60 = 1.8700
 AREA = 0.039300 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=5 CODE=10

OUTFLOW HYDROGRAPH RESERVOIR 500.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.200	0.0	3.600	0.3
0.300	0.0	1.500	33.8	3.900	0.2
0.600	0.0	1.800	16.0	4.200	0.1
0.900	0.0	2.100	4.0	4.500	0.0

RUNOFF VOLUME = 0.64271 INCHES = 1.3471 ACRE-Feet
 PEAK DISCHARGE RATE = 39.01 CFS AT 1.560 HOURS BASIN AREA = 0.0393 SQ. MI.

*S
 *S BASIN 600
 COMPUTE NM HYD

ID=6 HYD NO= 600.0 DA=0.1191 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0 TP=-.13
 RAIN=-1

K = 0.153027HR TP = 0.130000HR K/TP RATIO = 1.177133 SHAPE CONSTANT, N = 3.014069
 UNIT PEAK = 259.25 CFS UNIT VOLUME = 0.9999 B = 282.97 P60 = 1.8700
 AREA = 0.119100 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=6 CODE=10

HYDROGRAPH FROM AREA 600.00							
TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.200	0.0	2.400	5.6	3.600	0.4
0.300	0.0	1.500	135.8	2.700	2.9	3.900	0.2
0.600	0.0	1.800	36.3	3.000	1.5	4.200	0.1
0.900	0.0	2.100	10.8	3.300	0.8	4.500	0.1

RUNOFF VOLUME = 0.64271 INCHES = 4.0824 ACRE-FEET
 PEAK DISCHARGE RATE = 142.64 CFS AT 1.530 HOURS BASIN AREA = 0.1191 SQ. MI.

*S
 *S BASIN 700
 COMPUTE NM HYD

ID=7 HYD NO= 700.0 DA=0.0744 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0 TP=-.50
 RAIN=-1

K = 0.608627HR TP = 0.500000HR K/TP RATIO = 1.217254 SHAPE CONSTANT, N = 2.922704
 UNIT PEAK = 40.989 CFS UNIT VOLUME = 0.9996 B = 275.46 P60 = 1.8700
 AREA = 0.074400 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=7 CODE=10

HYDROGRAPH FROM AREA 700.00							
TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	3.000	5.5	6.000	0.6	9.000	0.1
0.300	0.0	3.300	3.3	6.300	0.5	9.300	0.1
0.600	0.0	3.600	2.4	6.600	0.5	9.600	0.1
0.900	0.0	3.900	2.0	6.900	0.4	9.900	0.1
1.200	0.0	4.200	1.7	7.200	0.3	10.200	0.1
1.500	6.9	4.500	1.4	7.500	0.3	10.500	0.1
1.800	25.1	4.800	1.2	7.800	0.2	10.800	0.0
2.100	23.0	5.100	1.0	8.100	0.2	11.100	0.0
2.400	14.7	5.400	0.9	8.400	0.2	11.400	0.0
2.700	9.0	5.700	0.7	8.700	0.1	11.700	0.0

RUNOFF VOLUME = 0.64271 INCHES = 2.5502 ACRE-FEET
 PEAK DISCHARGE RATE = 26.08 CFS AT 1.890 HOURS BASIN AREA = 0.0744 SQ. MI.

*S
*S BASIN 800
COMPUTE NM HYD

ID=8 HYD NO= 800.0 DA=0.0570 SQ MI
PER A=100 PER B=0PER C=0 PER D=0 TP=-.216
RAIN=-1

K = 0.265234HR TP = 0.216000HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899626
UNIT PEAK = 72.184 CFS UNIT VOLUME = 0.9997 B = 273.54 P60 = 1.8700
AREA = 0.057000 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=8 CODE=10

HYDROGRAPH FROM AREA 800.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.800	28.9	3.600	0.9
0.300	0.0	2.100	9.4	3.900	0.6
0.600	0.0	2.400	3.9	4.200	0.4
0.900	0.0	2.700	2.7	4.500	0.3
1.200	0.0	3.000	1.8	4.800	0.2
1.500	30.8	3.300	1.3	5.100	0.1

RUNOFF VOLUME = 0.64271 INCHES = 1.9538 ACRE-FEET
PEAK DISCHARGE RATE = 43.83 CFS AT 1.620 HOURS BASIN AREA = 0.0570 SQ. MI.

*S
*S BASIN 900
COMPUTE NM HYD

ID=9 HYD NO= 900.0 DA=0.0389 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0 TP=-.293
RAIN=-1

K = 0.359785HR TP = 0.293000HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899626
UNIT PEAK = 36.316 CFS UNIT VOLUME = 0.9996 B = 273.54 P60 = 1.8700
AREA = 0.038900 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=9 CODE=10

HYDROGRAPH FROM AREA 900.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	2.100	9.5	4.200	0.5
0.300	0.0	2.400	4.1	4.500	0.4
0.600	0.0	2.700	2.1	4.800	0.3
0.900	0.0	3.000	1.6	5.100	0.2
1.200	0.0	3.300	1.2	5.400	0.2
1.500	11.8	3.600	0.9	5.700	0.1
1.800	20.4	3.900	0.7	6.000	0.1

RUNOFF VOLUME = 0.64271 INCHES = 1.3334 ACRE-FEET
PEAK DISCHARGE RATE = 22.62 CFS AT 1.680 HOURS BASIN AREA = 0.0389 SQ. MI.

*S COMPUTE RUNOFF FOR DEVELOPED CONDITIONS ON-SITE BASINS

*S BASIN 100 PHASE I
COMPUTE NM HYD ID=11 HYD NO= 101.0 DA=0.00715 SQ MI = 4,586.6
PER A=0 PER B=5 PER C=76 PER D=19 TP=-.13
RAIN=-1

K = 0.070850HR TP = 0.130000HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 5.4996 CFS UNIT VOLUME = 0.9980 B = 526.28 P60 = 1.8700
AREA = 0.001359 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

K = 0.104758HR TP = 0.130000HR K/TP RATIO = 0.805834 SHAPE CONSTANT, N = 4.441710
UNIT PEAK = 17.090 CFS UNIT VOLUME = 0.9994 B = 383.62 P60 = 1.8700
AREA = 0.005792 SQ MI IA = 0.35926 INCHES INF = 0.85593 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=11 CODE=10

PARTIAL HYDROGRAPH 101.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.500	15.5	3.000	0.1
0.300	0.0	1.800	3.8	3.300	0.0
0.600	0.0	2.100	1.0	3.600	0.0
0.900	0.0	2.400	0.4	3.900	0.0
1.200	0.6	2.700	0.1	4.200	0.0

RUNOFF VOLUME = 1.23690 INCHES = 0.4717 ACRE-FEET
PEAK DISCHARGE RATE = 15.75 CFS AT 1.530 HOURS BASIN AREA = 0.0072 SQ. MI.

*S BASIN 200 PHASE II
COMPUTE NM HYD ID=12 HYD NO= 201.0 DA=0.00798 SQ MI
PER A=0 PER B=5 PER C=76 PER D=19 TP=-.13
RAIN=-1

K = 0.070850HR TP = 0.130000HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 6.1380 CFS UNIT VOLUME = 0.9983 B = 526.28 P60 = 1.8700
AREA = 0.001516 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

K = 0.104758HR TP = 0.130000HR K/TP RATIO = 0.805834 SHAPE CONSTANT, N = 4.441710
 UNIT PEAK = 19.074 CFS UNIT VOLUME = 0.9995 B = 383.62 P60 = 1.8700
 AREA = 0.006464 SQ MI IA = 0.35926 INCHES INF = 0.85593 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=12 CODE=10

PARTIAL HYDROGRAPH 201.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.500	17.3	3.000	0.1	4.500	0.0
0.300	0.0	1.800	4.2	3.300	0.0	4.800	0.0
0.600	0.0	2.100	1.1	3.600	0.0	5.100	0.0
0.900	0.0	2.400	0.4	3.900	0.0	5.400	0.0
1.200	0.7	2.700	0.1	4.200	0.0	5.700	0.0

RUNOFF VOLUME = 1.23690 INCHES = 0.5264 ACRE-FEET
 PEAK DISCHARGE RATE = 17.57 CFS AT 1.530 HOURS BASIN AREA = 0.0080 SQ. MI.

*S DEVELOPED FLOW TO LEONIDAS LANE
 *S ANALYSIS POINT 4
 *S

ADD HYD ID=24 HYD NO = 240 ID I = 11 ID II = 12
 PRINT HYD ID=24 CODE = 10

PARTIAL HYDROGRAPH 240.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.500	32.9	3.000	0.1	4.500	0.0
0.300	0.0	1.800	8.0	3.300	0.0	4.800	0.0
0.600	0.0	2.100	2.2	3.600	0.0	5.100	0.0
0.900	0.0	2.400	0.8	3.900	0.0	5.400	0.0
1.200	1.3	2.700	0.3	4.200	0.0	5.700	0.0

RUNOFF VOLUME = 1.23686 INCHES = 0.9981 ACRE-FEET
 PEAK DISCHARGE RATE = 33.32 CFS AT 1.530 HOURS BASIN AREA = 0.0151 SQ. MI.

15.757 17.57-33.32

*S
 *S
 *S COMPUTE RUNOFF FROM DEVELOPED CONDITIONS OFF-SITE BASINS
 *S

778 BASIN 300 108.2 3700

*S WITHIN BASIN 801.2 GREINER 1995
 COMPUTE NM HYD 109 ID=13 HYD NO= 301.0 DA=0.0232 SQ MI
 PER A=0 PER B=18 PER C=19 PER D=63 TP=-.22

RAIN=-1

K = 0.119900HR TP = 0.220000HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 34.964 CFS UNIT VOLUME = 0.9997 B = 526.28 P60 = 1.8700
AREA = 0.014616 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

K = 0.194897HR TP = 0.220000HR K/TP RATIO = 0.885895 SHAPE CONSTANT, N = 4.004627
UNIT PEAK = 13.870 CFS UNIT VOLUME = 0.9991 B = 355.48 P60 = 1.8700
AREA = 0.008584 SQ MI IA = 0.42297 INCHES INF = 1.03432 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=13 CODE=10

HYDROGRAPH FROM AREA 301.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.800	26.8	3.600	0.3	5.400	0.2
0.300	0.0	2.100	8.4	3.900	0.2	5.700	0.2
0.600	0.0	2.400	3.6	4.200	0.1	6.000	0.2
0.900	0.0	2.700	1.6	4.500	0.1	6.300	0.1
1.200	3.8	3.000	0.8	4.800	0.1	6.600	0.0
1.500	31.6	3.300	0.4	5.100	0.1	6.900	0.0

RUNOFF VOLUME = 1.58678 INCHES = 1.9634 ACRE-Feet
PEAK DISCHARGE RATE = 45.61 CFS AT 1.620 HOURS BASIN AREA = 0.0232 SQ. MI.

*S BASIN 400 700 1000
*S WITHIN BASIN 301.2 GREINER 1996
COMPUTE NM HYD ID=14 HYD NO= 401.0 DA=0.0168 SQ MI
PER A=0 PER B=18 PER C=19 PER D=63 TP=-.171
RAIN=-1

K = 0.093195HR TP = 0.171000HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 32.574 CFS UNIT VOLUME = 0.9997 B = 526.28 P60 = 1.8700
AREA = 0.010584 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

K = 0.151488HR TP = 0.171000HR K/TP RATIO = 0.885895 SHAPE CONSTANT, N = 4.004627
UNIT PEAK = 12.922 CFS UNIT VOLUME = 0.9990 B = 355.48 P60 = 1.8700
AREA = 0.006216 SQ MI IA = 0.42297 INCHES INF = 1.03432 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=14 CODE=10

HYDROGRAPH FROM AREA 401.00

TIME	FLOW	TIME	FLOW	TIME	FLOW
------	------	------	------	------	------

HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
0.000	0.0	1.500	32.7	3.000	0.3	4.500	0.1	6.000	0.2
0.300	0.0	1.800	15.1	3.300	0.2	4.800	0.1	6.300	0.0
0.600	0.0	2.100	4.7	3.600	0.1	5.100	0.1	6.600	0.0
0.900	0.0	2.400	1.9	3.900	0.1	5.400	0.1	6.900	0.0
1.200	3.7	2.700	0.7	4.200	0.1	5.700	0.1	7.200	0.0

RUNOFF VOLUME = 1.58678 INCHES = 1.4217 ACRE-FEET
 PEAK DISCHARGE RATE = 37.60 CFS AT 1.560 HOURS BASIN AREA = 0.0168 SQ. MI.

 *S DEVELOPED FLOW TO ANALYSIS POINT 3 BASINS 300 AND 400
 *S
 ADD HYD ID=25 HYD NO = 250 ID I = 13 ID II = 14
 PRINT HYD ID=25 CODE = 10

PARTIAL HYDROGRAPH 250.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.800	41.9	3.600	0.4	5.400	0.3
0.300	0.0	2.100	13.1	3.900	0.2	5.700	0.3
0.600	0.0	2.400	5.5	4.200	0.2	6.000	0.4
0.900	0.1	2.700	2.4	4.500	0.2	6.300	0.1
1.200	7.5	3.000	1.2	4.800	0.2	6.600	0.0
1.500	64.3	3.300	0.6	5.100	0.2	6.900	0.0

RUNOFF VOLUME = 1.58676 INCHES = 3.3851 ACRE-FEET
 PEAK DISCHARGE RATE = 81.71 CFS AT 1.590 HOURS BASIN AREA = 0.0400 SQ. MI.

 *S BASIN 500
 *S WITHIN BASIN 801.2 GREINER 1995
 COMPUTE NM HYD ID=15 HYD NO= 501.0 DA=0.0393 SQ MI
 PER A=0 PER B=3 PER C=30 PER D=67 TP=-.16
 RAIN=-1

K = 0.087200HR TP = 0.160000HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
 UNIT PEAK = 86.608 CFS UNIT VOLUME = 0.9999 B = 526.28 P60 = 1.8700
 AREA = 0.026331 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

K = 0.129814HR TP = 0.160000HR K/TP RATIO = 0.811334 SHAPE CONSTANT, N = 4.408176
 UNIT PEAK = 30.925 CFS UNIT VOLUME = 0.9996 B = 381.52 P60 = 1.8700
 AREA = 0.012969 SQ MI IA = 0.36364 INCHES INF = 0.86818 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=15 CODE=10

OUTFLOW HYDROGRAPH RESERVOIR 501.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.500	86.2	4.500	0.2
0.300	0.0	1.800	34.6	4.800	0.2
0.600	0.0	2.100	10.7	5.100	0.3
0.900	0.1	2.400	4.3	5.400	0.3
1.200	9.8	2.700	1.5	5.700	0.3

RUNOFF VOLUME = 1.65978 INCHES = 3.4789 ACRE-Feet
 PEAK DISCHARGE RATE = 94.30 CFS AT 1.560 HOURS BASIN AREA = 0.0393 SQ. MI.

*S BASIN 600
 *S IS BASIN 801.3 GREINER 1995
 COMPUTE NM HYD
 ID=16 HYD NO= 601.0 DA=0.1191 SQ MI
 PER A=0 PER B=21 PER C=22 PER D=57 TP=-.13
 RAIN=-1

K = 0.071786HR TP = 0.130000HR K/TP RATIO = 0.552203 SHAPE CONSTANT, N = 6.988081
 UNIT PEAK = 271.91 CFS UNIT VOLUME = 1.000 B = 520.69 P60 = 1.8700
 AREA = 0.067887 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

K = 0.113773HR TP = 0.130000HR K/TP RATIO = 0.875175 SHAPE CONSTANT, N = 4.057445
 UNIT PEAK = 141.42 CFS UNIT VOLUME = 1.000 B = 358.98 P60 = 1.8700
 AREA = 0.051213 SQ MI IA = 0.42326 INCHES INF = 1.03512 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=16 CODE=10

HYDROGRAPH FROM AREA 601.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.500	288.9	4.500	0.5
0.300	0.0	1.800	80.3	4.800	0.6
0.600	0.0	2.100	23.6	5.100	0.7
0.900	0.9	2.400	9.2	5.400	0.8
1.200	29.6	2.700	2.9	5.700	0.9

RUNOFF VOLUME = 1.52689 INCHES = 9.6987 ACRE-Feet
 PEAK DISCHARGE RATE = 290.28 CFS AT 1.530 HOURS BASIN AREA = 0.1191 SQ. MI.

*S BASIN 700
 *S WITHIN BASIN 108.2 GREINER 1995

COMPUTE NM HYD

ID=17 HYD NO= 701.0 DA=0.0744 SQ MI
PER A=0 PER B=18 PER C=19 PER D=63 TP=-.50
RAIN=-1

K = 0.273257HR TP = 0.500000HR K/TP RATIO = 0.546515 SHAPE CONSTANT, N = 7.081213
UNIT PEAK = 49.224 CFS UNIT VOLUME = 0.9998 B = 525.09 P60 = 1.8700
AREA = 0.046872 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

K = 0.441787HR TP = 0.500000HR K/TP RATIO = 0.883574 SHAPE CONSTANT, N = 4.016033
UNIT PEAK = 19.613 CFS UNIT VOLUME = 0.9993 B = 356.24 P60 = 1.8700
AREA = 0.027528 SQ MI IA = 0.42297 INCHES INF = 1.03432 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=17 CODE=10

HYDROGRAPH FROM AREA 701.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	2.400	33.4	4.800	1.4	7.200	0.2
0.300	0.0	2.700	15.7	5.100	1.2	7.500	0.1
0.600	0.0	3.000	8.8	5.400	1.0	7.800	0.1
0.900	0.0	3.300	5.9	5.700	1.0	8.100	0.1
1.200	1.6	3.600	4.2	6.000	0.9	8.400	0.0
1.500	18.9	3.900	3.1	6.300	0.8	8.700	0.0
1.800	80.6	4.200	2.3	6.600	0.5	9.000	0.0
2.100	69.5	4.500	1.8	6.900	0.3	9.300	0.0

RUNOFF VOLUME = 1.58678 INCHES = 6.2963 ACRE-FEET
PEAK DISCHARGE RATE = 87.05 CFS AT 1.890 HOURS BASIN AREA = 0.0744 SQ. MI.

*S BASIN 800
*S WITHIN BASIN 108.1 GREINER 1995
COMPUTE NM HYD

ID=18 HYD NO= 801.0 DA=0.0570 SQ MI
PER A=0 PER B=17 PER C=13 PER D=70 TP=-.216
RAIN=-1

K = 0.117720HR TP = 0.216000HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 97.215 CFS UNIT VOLUME = 0.9998 B = 526.28 P60 = 1.8700
AREA = 0.039900 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

K = 0.194618HR TP = 0.216000HR K/TP RATIO = 0.901008 SHAPE CONSTANT, N = 3.933025
UNIT PEAK = 27.763 CFS UNIT VOLUME = 0.9996 B = 350.68 P60 = 1.8700
AREA = 0.017100 SQ MI IA = 0.43500 INCHES INF = 1.06800 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=18 CODE=10

HYDROGRAPH FROM AREA 801.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.800	66.6	5.400	0.4
0.300	0.0	2.100	21.3	5.700	0.5
0.600	0.0	2.400	9.0	6.000	0.6
0.900	0.1	2.700	4.0	6.300	0.2
1.200	10.7	3.000	2.0	6.600	0.1
1.500	82.7	3.300	1.0	6.900	0.0

RUNOFF VOLUME = 1.65042 INCHES = 5.0173 ACRE-FEET
 PEAK DISCHARGE RATE = 116.45 CFS AT 1.620 HOURS BASIN AREA = 0.0570 SQ. MI.

*S BASIN 900
 *S WITHIN BASIN 108.1 GREINER 1995
 COMPUTE NM HYD ID=19 HYD NO= 901.0 DA=0.0389 SQ MI
 PER A=0 PER B=17 PER C=13 PER D=70 TP=-.293
 RAIN=-1

K = 0.159685HR TP = 0.293000HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
 UNIT PEAK = 48.909 CFS UNIT VOLUME = 0.9998 B = 526.28 P60 = 1.8700
 AREA = 0.027230 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

K = 0.263995HR TP = 0.293000HR K/TP RATIO = 0.901008 SHAPE CONSTANT, N = 3.933025
 UNIT PEAK = 13.968 CFS UNIT VOLUME = 0.9990 B = 350.68 P60 = 1.8700
 AREA = 0.011670 SQ MI IA = 0.43500 INCHES INF = 1.06800 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.030000

PRINT HYD ID=19 CODE=10

HYDROGRAPH FROM AREA 901.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.800	56.7	5.400	0.3
0.300	0.0	2.100	20.6	5.700	0.3
0.600	0.0	2.400	8.4	6.000	0.4
0.900	0.0	2.700	4.3	6.300	0.2
1.200	4.3	3.000	2.4	6.600	0.1
1.500	33.2	3.300	1.4	6.900	0.0

RUNOFF VOLUME = 1.65042 INCHES = 3.4241 ACRE-FEET
 PEAK DISCHARGE RATE = 67.22 CFS AT 1.680 HOURS BASIN AREA = 0.0389 SQ. MI.

*S

*S-----
 *S-----
 *S RUNOFF TO TEMPORARY POND ON PHASE II SITE
 *S-----

ADD HYD ID=21 HYD NO = 202 ID I = 2 ID II = 3
 ADD HYD ID=22 HYD NO = 201 ID I = 21 ID II = 8
 ADD HYD ID=23 HYD NO = 203 ID I = 22 ID II = 9
 PRINT HYD ID=23 CODE = 10

PARTIAL HYDROGRAPH 203.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	2.100	23.5	4.200	1.1	6.300	0.1	8.400	0.0	10.500	0.1	12.600	0.1	14.700	0.0	16.800	0.0
0.300	0.0	2.400	10.0	4.500	0.8	6.600	0.1	8.700	0.0	10.800	0.1	12.900	0.1	15.000	0.0	17.100	0.0
0.600	0.0	2.700	6.1	4.800	0.6	6.900	0.1	9.000	0.0	11.100	0.0	13.200	0.0	15.300	0.0	17.400	0.0
0.900	0.0	3.000	4.3	5.100	0.4	7.200	0.0	9.300	0.0	11.400	0.0	13.500	0.0	15.600	0.0	17.700	0.0
1.200	0.0	3.300	3.0	5.400	0.3	7.500	0.0	9.600	0.0	11.700	0.0	13.800	0.0	15.900	0.0	18.000	0.0
1.500	63.6	3.600	2.2	5.700	0.2	7.800	0.0	9.900	0.0	12.000	0.0	14.100	0.0	16.200	0.0	18.300	0.0
1.800	63.7	3.900	1.5	6.000	0.2	8.100	0.0	10.200	0.0	12.300	0.0	14.400	0.0	16.500	0.0	18.600	0.0

RUNOFF VOLUME = 0.64270 INCHES = 4.3560 ACRE-FEET
 PEAK DISCHARGE RATE = 89.98 CFS AT 1.620 HOURS BASIN AREA = 0.1271 SQ. MI.

*S-----
 FINISH
 NORMAL PROGRAM FINISH
 END TIME (HR:MIN:SEC) = 12:12:51

```

- Ver. S4.01a, Rel: 01a
  RUN DATE (MON/DAY/YR) =08/08/2011
  USER NO.= AHYMO Temp User::20122010

  AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4)
  INPUT FILE = C:\acad projects\Rizvy\RV Park - Avalon\input2.dat

```

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

```
START
TIME= 0.00
```

*S COMPUTE 100 YR. 6 HR. HYDROGRAPHS FOR PARADISE RV PARK
 *S AHYMO INPUT.DAT - HYMO PER JAN 1993 DPM REVISIONS

```

+ $ -----
+ $ -----
RAINFALL TYPE= 1 NOAA 14

```

RAIN6= 2.200

3
2
* S COMPUTE RUNOFF FOR UNDEVELOPED CONDITIONS ON-SITE BASINS

*S BASIN 100 PHASE I

COMPUTE NM HYD	100.00	-	1	0.00715	8.35	0.245	0.64271	1.530	1.824	PER IMP=	0.00
----------------	--------	---	---	---------	------	-------	---------	-------	-------	----------	------

* S BASIN 200 PHASE II

COMPUTE NM HYD	200.00	-	2	0.00798	9.31	0.274	0.64271	1.530	1.824 PER IMP=	0.00
----------------	--------	---	---	---------	------	-------	---------	-------	----------------	------

* S
* S
* S COMPUTE RUNOFF FROM UNDEVELOPED CONDITIONS OFF-SITE BASINS

BASIN 300

COMPUTE NM HYD	300.00	-	3	0.02320	17.56	0.795	0.64271	1.620	1.183	PER TMP=	0.00
----------------	--------	---	---	---------	-------	-------	---------	-------	-------	----------	------

54

*S BASIN 400

COMPUTE NM HYD

S BASIN 500
COMPLETE NM HYD

	\$	-	39.01	1.347	0.64271	1.360	1.531 PER IMP#	0.00
CREDIT BALANCE			300.00					
+ \$								

*S BASIN 600

COMPUTE NM HYD	600.00	-	6	0.11910	142.64	4.082	0.64271	1.530	1.871 PER IMP=	0.00
----------------	--------	---	---	---------	--------	-------	---------	-------	----------------	------

508

[illegible]+S
COMPUTE NM HYL

* S BASIN 800

COMPUTE NM HYD	800.00	-	8	0.05700
*S				
*S BASIN 900				

3 EASTN 500
COMPUTE NM HYD

*S	COMPUTE NM HYD	101.00	-	11		0.00715	15.75	0.472	1.23690	1.530	3.441	PER IMP=	19.00
*S BASIN 200 PHASE II													
*S	COMPUTE NM HYD	201.00	-	12		0.00798	17.57	0.526	1.23690	1.530	3.441	PER IMP=	19.00
*S DEVELOPED FLOW TO LEONIDAS LANE													
*S	ANALYSIS POINT 4												
*S	ADD HYD	240.00	11&12	24		0.01513	33.32	0.998	1.23686	1.530	3.441		
*S COMPUTE RUNOFF FROM DEVELOPED CONDITIONS OFF-SITE BASINS													
*S WITHIN BASIN 801.2 GREINER 1995													
*S	COMPUTE NM HYD	301.00	-	13		0.02320	45.61	1.963	1.58678	1.620	3.072	PER IMP=	63.00
*S BASIN 400													
*S	WITHIN BASIN 801.2 GREINER 1996												
*S	COMPUTE NM HYD	401.00	-	14		0.01680	37.60	1.422	1.58678	1.560	3.497	PER IMP=	63.00
*S DEVELOPED FLOW TO ANALYSIS POINT 3 BASINS 300 AND 400													
*S	ADD HYD	250.00	13&14	25		0.04000	81.71	3.385	1.58676	1.590	3.192		
*S													

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
*S	BASIN 500									
*S	WITHIN BASIN 801.2 GREINER 1995									
COMPUTE NM HYD	501.00	-	15	0.03930	94.30	3.479	1.65978	1.560	3.749 PER IMP=	67.00
*S	BASIN 600									
*S	IS BASIN 801.3 GREINER 1995									
COMPUTE NM HYD	601.00	-	16	0.11910	290.28	9.699	1.52689	1.530	3.808 PER IMP=	57.00
*S	BASIN 700									
*S	WITHIN BASIN 108.2 GREINER 1995									
COMPUTE NM HYD	701.00	-	17	0.07440	87.05	6.296	1.58678	1.890	1.828 PER IMP=	63.00
*S	BASIN 800									
*S	WITHIN BASIN 108.1 GREINER 1995									
COMPUTE NM HYD	801.00	-	18	0.05700	116.45	5.017	1.65042	1.620	3.192 PER IMP=	70.00
*S	BASIN 900									
*S	WITHIN BASIN 108.1 GREINER 1995									
COMPUTE NM HYD	901.00	-	19	0.03890	67.22	3.424	1.65042	1.680	2.700 PER IMP=	70.00
*S	-----									
*S	-----									
*S	RUNOFF TO TEMPORARY POND ON PHASE II SITE									
*S	-----									
ADD HYD	202.00	26	3	21	0.03118	25.55	0.64270	1.590	1.280	
ADD HYD	201.00	21&	8	22	0.08818	68.81	0.64270	1.590	1.219	
ADD HYD	203.00	22&	9	23	0.12708	89.98	0.64270	1.620	1.106	
*S	-----									
FINISH										

PROJECT: _____

LARRY READ & ASSOCIATES, Inc. CALCULATIONS

Civil Engineers

DATE: _____

By: _____ Pg: ____ of ____

Basin 100 - Phase 1 Use $t_c = 12 \text{ min} > t_p = 0.13 \text{ hrs}$ Basin 200 - Phase 2 Use $t_c = 12 \text{ min} > t_p = 0.13 \text{ hrs}$ Basin 300 - $\Delta e/cv = 44'$ $L = 1478$ $S = 0.0298$

$$t_c = (L/v) / 3600$$

$$v = 10 * K * \sqrt{S} \quad K = 0.7$$

$$v = 10 * 0.7 * \sqrt{0.0298} = 1.21$$

$$t_c = (1478 / 1.21) / 3600 = 0.339 \text{ hrs}$$

$$t_p = 2/3 t_c = 0.224 \text{ hrs}$$

Basin 400 $\Delta e/cv = 46'$ $L = 1250$ $S = 0.0368$

$$v = 10 * 0.7 * \sqrt{0.0368} = 1.34$$

$$t_c = (1250 / 1.34) / 3600 = 0.259$$

$$t_p = 2/3 t_c = 0.171 \text{ hrs}$$

Basin 500 $\Delta e/cv = 34'$ $L = 1085$ $S = 0.0313$

$$v = 10 * 0.7 * \sqrt{0.0313} = 1.24$$

$$t_c = (1085 / 1.24) / 3600 = 0.243$$

$$t_p = 2/3 t_c = 0.16 \text{ hrs}$$

PROJECT: _____

LARRY READ & ASSOCIATES, Inc. CALCULATIONS

Civil Engineers

DATE: _____

By: _____ Pg: _____ of _____

$$\text{Basin 600 } \Delta \text{ elev} = 180' \quad L = 3575 \quad S = 0.050$$

$$V = 10 * 3 * \sqrt{0.050} = 6.71$$

$$t_c = (3575 / 6.71) / 3600 = 0.148$$

$$t_p = 2/3 t_c = 0.096 \text{ hr} - 1 \text{ sec } 0.13 \text{ hr}$$

$$\text{Basin 700 } \Delta \text{ elev} = 138' \quad L = 2712 \quad S = 0.051$$

$$V = 10 * 1 * \sqrt{0.051} = 2.26$$

$$t_c = (2712 / 2.26) / 3600 = 0.753$$

$$t_p = 2/3 t_c = 0.50 \text{ hr}$$

$$\text{Basin 800 } \Delta \text{ elev} = 102' \quad L = 2416 \quad S = 0.042$$

$$V = 10 * 1 * \sqrt{0.042} = 2.05$$

$$t_c = (2416 / 2.05) / 3600 = 0.327$$

$$t_p = 2/3 t_c = 0.216 \text{ hr}$$

$$\text{Basin 900 } \Delta \text{ elev} = 96' \quad L = 2914 \quad S = 0.033$$

$$V = 10 * 1 * \sqrt{0.033} = 1.82$$

$$t_c = (2914 / 1.82) / 3600 = 0.445$$

$$t_p = 2/3 t_c = 0.293 \text{ hr}$$

PROJECT: _____

LARRY READ & ASSOCIATES, Inc. CALCULATIONS
Civil Engineers

DATE: _____

By: _____ Pg: _____ of _____

100

200

300 - 0.0232 $\frac{\text{sf}}{\text{mi}}$

400 - 0.0368 $\frac{\text{sf}}{\text{mi}}$

500 - 0.0393 $\frac{\text{sf}}{\text{mi}}$

600 0.1191 $\frac{\text{sf}}{\text{mi}}$

700 0.0744 $\frac{\text{sf}}{\text{mi}}$

800 0.0570 $\frac{\text{sf}}{\text{mi}}$

900 0.0389 $\frac{\text{sf}}{\text{mi}}$

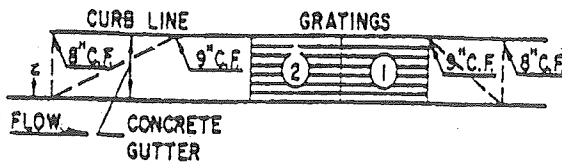
APPENDIX C

Storm Drain Analysis

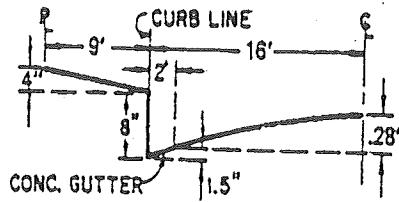
LEONIDAS LAKE

Chapter 22 - Drainage, Flood Control and Erosion Control

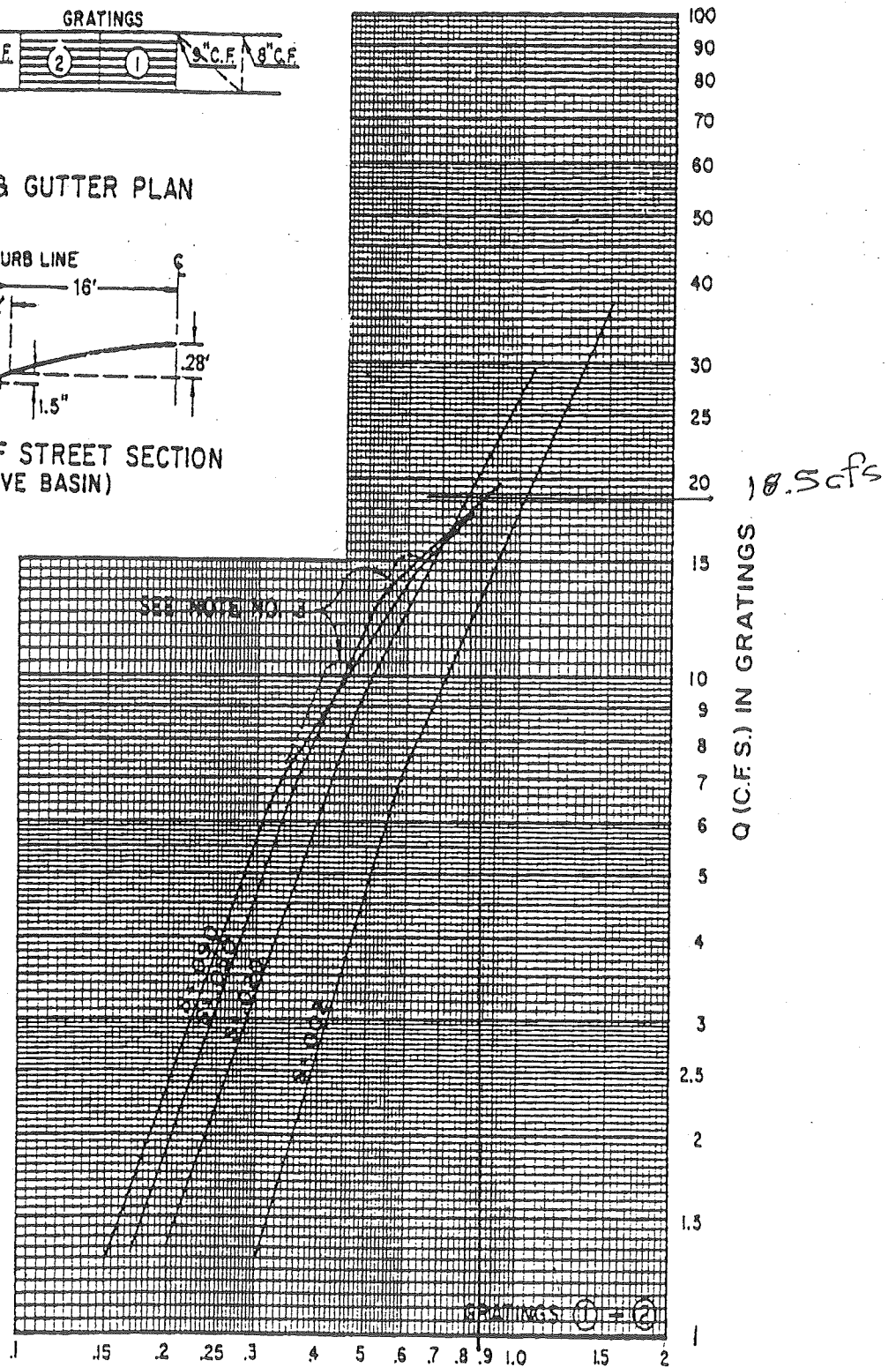
GRATING CAPACITIES FOR TYPE DOUBLE "C," AND "D"



GRATING & GUTTER PLAN



TYPICAL HALF STREET SECTION
(ABOVE BASIN)

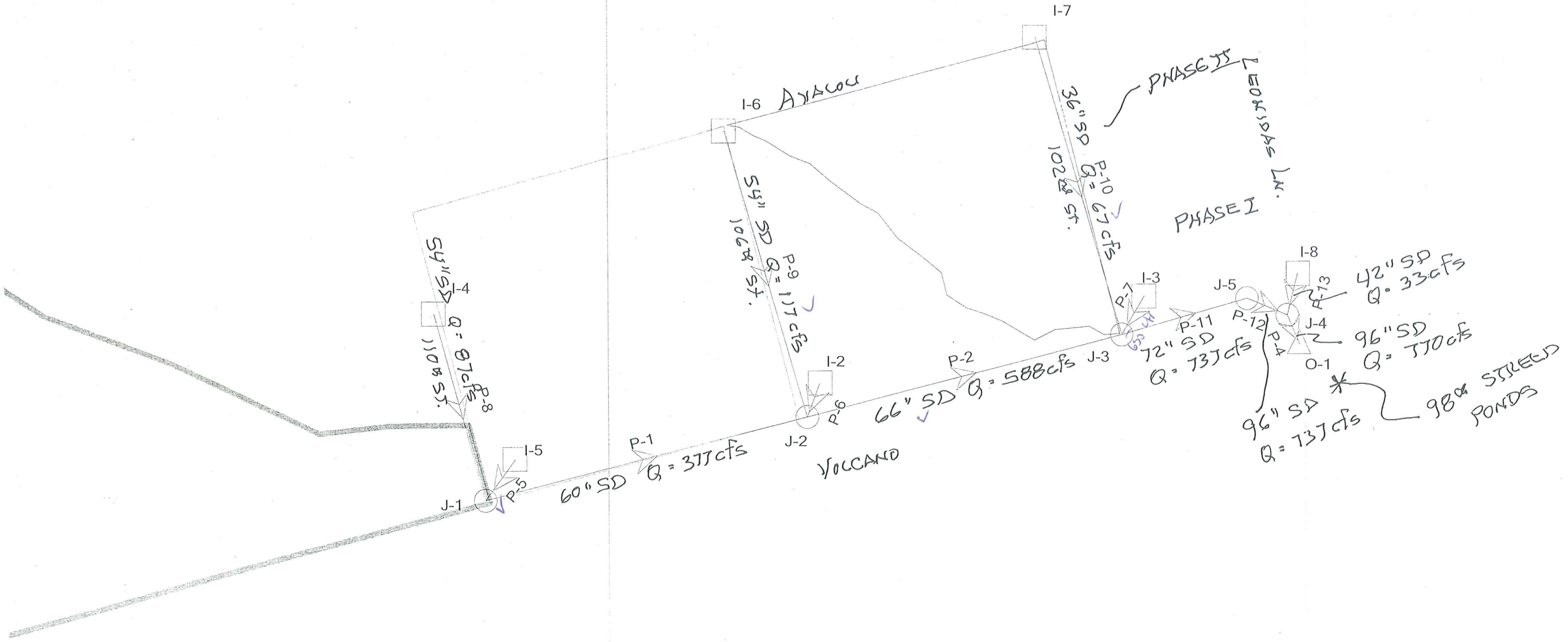


D = DEPTH OF FLOW (FT.) ABOVE NORMAL GUTTER GRADE

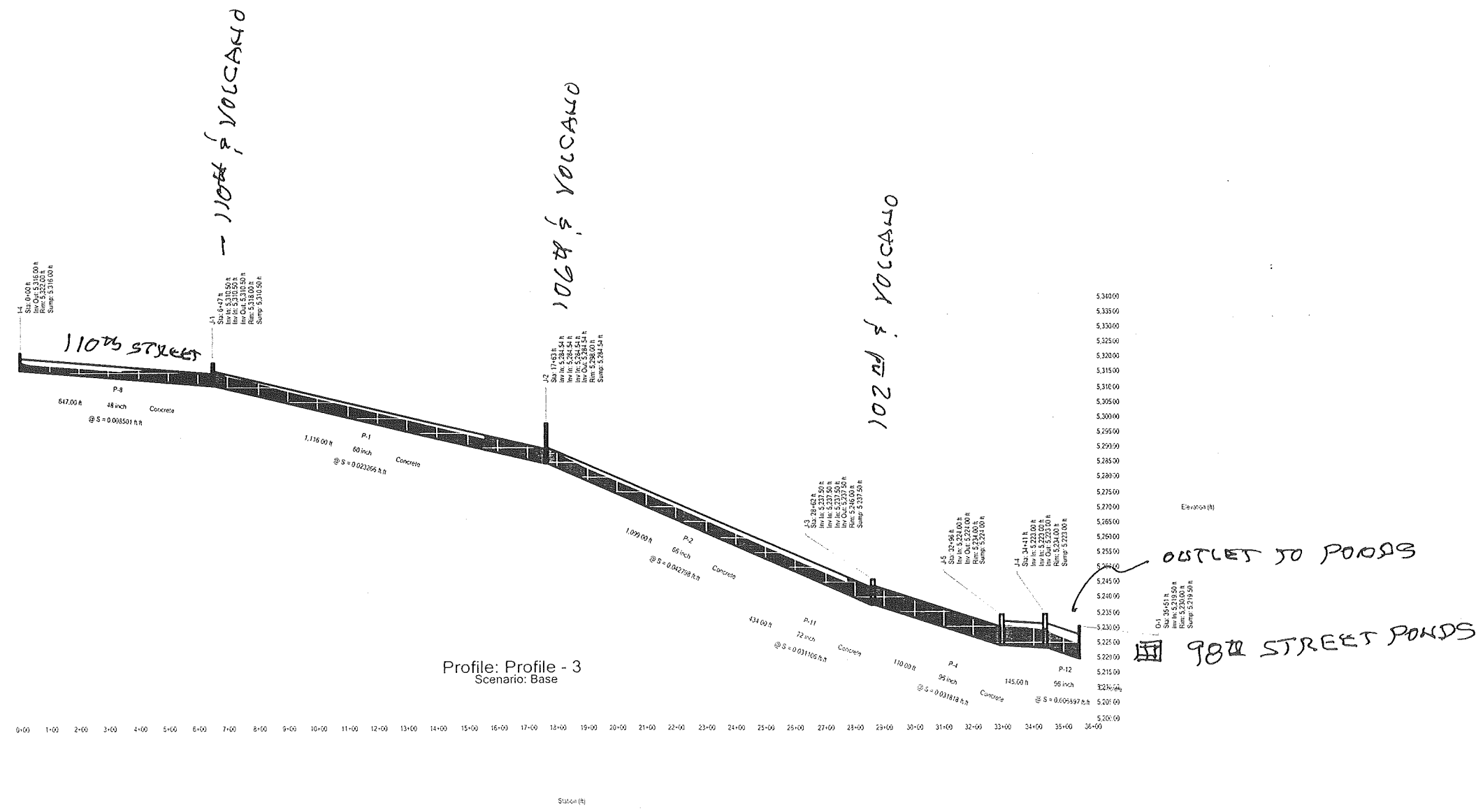
PLATE 22.3 D-6

Roadway $S = 1.7\%$ avg.
 $Q_{int.} \approx 18.5 \text{ cfs} \Rightarrow 2 \text{ double "C"}$
 Clogging $\approx 50\%$ - Use 4 double "C"

Scenario: Base



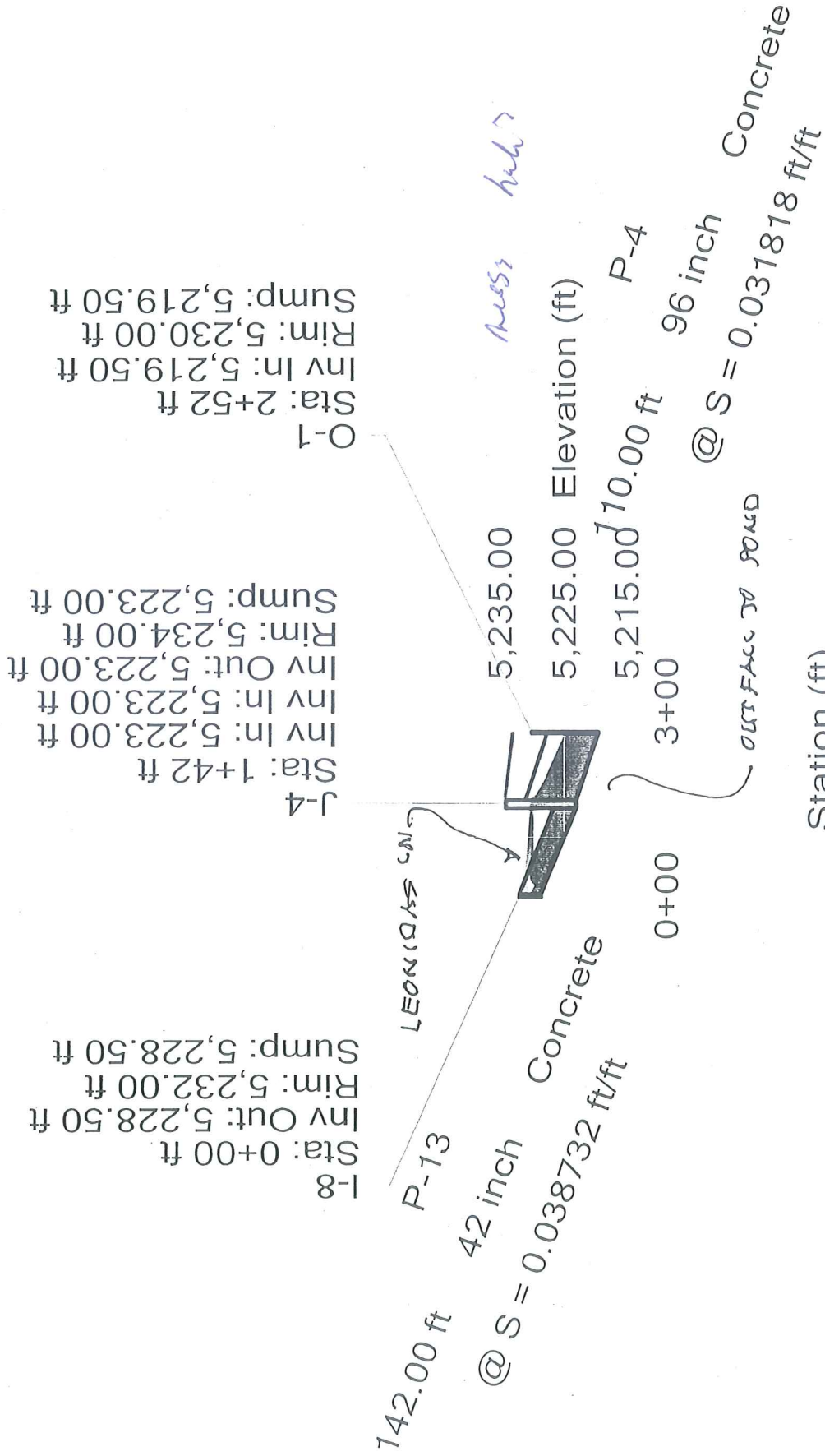
Profile
Scenario: Base



Profile
Scenario: Base

Profile: Profile - 4

Scenario: Base



Profile
Scenario: Base

Profile: Profile - 5

Scenario: Base

I-6
Sta: 0+00 ft
Inv Out: 5,289.50 ft
Rim: 5,296.00 ft
Sump: 5,289.50 ft

106th STREET

P-9

993.00 ft 54 inch Concrete

@ S = 0.005000 ft/ft

AVACAN

106th STREET

J-2

Sta: 9+93 ft
Inv In: 5,284.54 ft
Inv In: 5,284.54 ft
Inv In: 5,284.54 ft
Inv Out: 5,284.54 ft
Rim: 5,298.00 ft
Sump: 5,284.54 ft

5,300.00

5,290.00 Elevation (ft)

5,280.00

0+00 2+00 4+00 6+00 8+00 10+00

Station (ft)

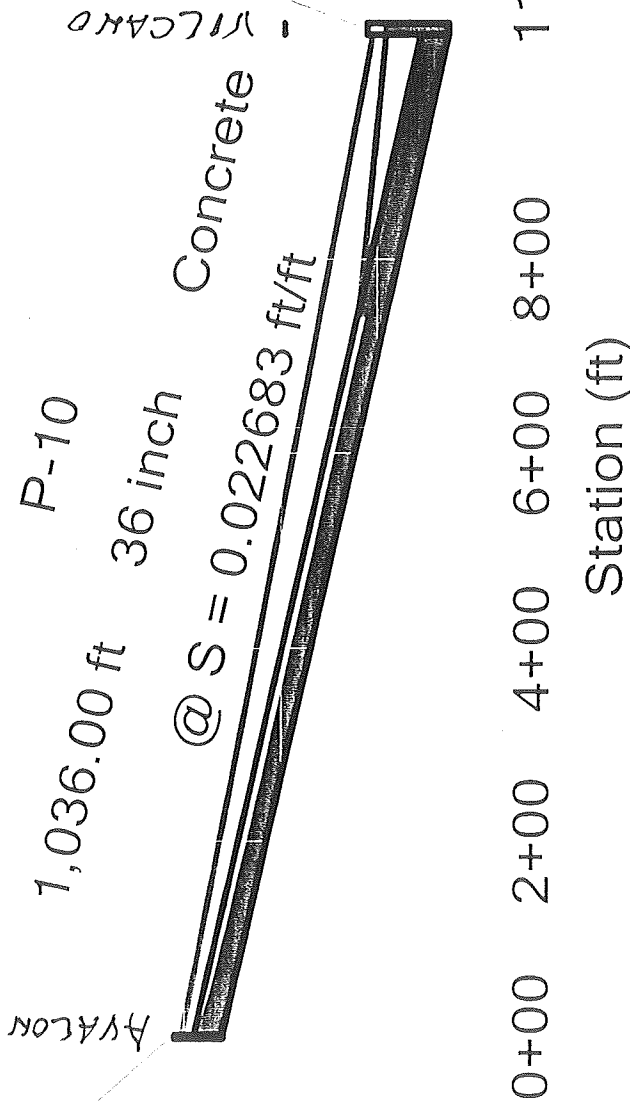
Profile: Profile - 6

Scenario: Base

I-7
Sta: 0+00 ft
Inv Out: 5,261.00 ft
Rim: 5,266.00 ft
Sump: 5,261.00 ft

J-3
Sta: 10+36 ft
Inv In: 5,237.50 ft
Inv In: 5,237.50 ft
Inv In: 5,237.50 ft
Inv Out: 5,237.50 ft
Rim: 5,246.00 ft
Sump: 5,237.50 ft

102nd STREET



5,270.00
5,265.00
5,255.00
5,245.00
5,235.00

Elevation (ft)

Scenario: Base

Combined Pipe\Node Report

Label	Up. Node	Dn. Node	L (ft)	Size	Q Full (cfs)	Avg. v (ft/s)	Up. Invert (ft)	Dn. Invert (ft)	S (ft/ft)
P-4	J-4	O-1	110.00	96 inch	1,626.84	31.92	5,223.00	5,219.50	0.031818
P-1	J-1	J-2	1,116.00	60 inch	397.24	23.02	5,310.50	5,284.54	0.023266
P-2	J-2	J-3	1,099.00	66 inch	694.67	32.80	5,284.54	5,237.50	0.042798
P-5	I-5	J-1	170.00	60 inch	410.56	22.67	5,313.00	5,310.50	0.014706
P-6	I-2	J-2	115.00	48 inch	475.74	29.48	5,292.00	5,284.54	0.064913
P-7	I-3	J-3	149.00	48 inch	186.05	6.50	5,240.00	5,237.50	0.016779
P-8	I-4	J-1	647.00	48 inch	132.43	11.25	5,316.00	5,310.50	0.008501
P-9	I-6	J-2	993.00	54 inch	139.04	9.79	5,289.50	5,284.54	0.005000
P-10	I-7	J-3	1,036.00	36 inch	100.45	15.23	5,261.00	5,237.50	0.022683
P-11	J-3	J-5	434.00	72 inch	746.90	26.07	5,237.50	5,224.00	0.031106
P-12	J-5	J-4	145.00	96 inch	757.40	17.17	5,224.00	5,223.00	0.006897
P-13	I-8	J-4	142.00	42 inch	197.99	15.26	5,228.50	5,223.00	0.038732

Scenario: Base

Node Report

Label	Known Flow (cfs)	Total System Flow (cfs)	Ground Elevation (ft)	Rim Elevation (ft)	Hydraulic Grade Line In (ft)	Hydraulic Grade Line Out (ft)	Local Intensity (in/hr)	Local Rational Flow (cfs)
O-1		770.10	5,230.00	5,230.00	5,223.00	5,223.00		
J-4		770.10	5,234.00	5,234.00	5,229.95	5,229.95		
J-5		737.10	5,234.00	5,234.00	5,230.83	5,230.83		
J-1		377.40	5,318.00	5,318.00	5,315.36	5,315.36		
J-2		588.20	5,298.00	5,298.00	5,289.96	5,289.96		
J-3		737.10	5,246.00	5,246.00	5,243.98	5,243.98		
I-5	290.30	290.30	5,320.00	5,320.00	5,317.63	5,317.63	0.00	0.00
I-2	94.30	94.30	5,298.00	5,298.00	5,294.94	5,294.94	0.00	0.00
I-3	81.70	81.70	5,246.00	5,246.00	5,244.46	5,244.46	0.00	0.00
I-4	87.10	87.10	5,322.00	5,322.00	5,318.83	5,318.83	0.00	0.00
I-6	116.50	116.50	5,296.00	5,296.00	5,293.02	5,293.02	0.00	0.00
I-7	67.20	67.20	5,266.00	5,266.00	5,263.62	5,263.62	0.00	0.00
I-8	33.00	33.00	5,232.00	5,232.00	5,230.28	5,230.28	0.00	0.00

Scenario: Base

Pipe Report

Label	Upstream Node	Downstream Node	Total System Flow (cfs)	Length (ft)	Constructed Slope (ft/ft)	Section Size	Mannings n	Full Capacity (cfs)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Upstream Ground Elevation (ft)	Downstream Ground Elevation (ft)	Upstream Cover (ft)	Downstream Cover (ft)	Hydraulic Grade Line In (ft)	Hydraulic Grade Line Out (ft)	Description	Velocity In (ft/s)
P-4	J-4	O-1	770.10	110.00	0.031818	96 inch	0.013	1,626.84	5,223.00	5,219.50	5,234.00	5,230.00	3.00	2.50	5,229.95	5,224.47		16.61
P-1	J-1	J-2	377.40	1,116.00	0.023266	60 inch	0.013	397.24	5,310.50	5,284.54	5,318.00	5,298.00	2.50	8.47	5,315.36	5,289.96		19.38
P-2	J-2	J-3	588.20	1,099.00	0.042798	66 inch	0.013	694.67	5,284.54	5,237.50	5,298.00	5,246.00	7.97	3.00	5,289.96	5,243.98		24.82
P-5	I-5	J-1	290.30	170.00	0.014706	60 inch	0.010	410.56	5,313.00	5,310.50	5,320.00	5,318.00	2.00	2.50	5,317.63	5,315.36		15.29
P-6	I-2	J-2	94.30	115.00	0.064913	48 inch	0.010	475.74	5,292.00	5,284.54	5,298.00	5,298.00	2.00	9.47	5,294.94	5,289.96		9.51
P-7	I-3	J-3	81.70	149.00	0.016779	48 inch	0.013	186.05	5,240.00	5,237.50	5,246.00	5,246.00	2.00	4.50	5,244.46	5,243.98		6.50
P-8	I-4	J-1	87.10	647.00	0.008501	48 inch	0.013	132.43	5,316.00	5,310.50	5,322.00	5,318.00	2.00	3.50	5,318.83	5,315.36		9.17
P-9	I-6	J-2	116.50	993.00	0.005000	54 inch	0.013	139.04	5,289.50	5,284.54	5,296.00	5,298.00	2.00	8.97	5,293.02	5,289.96		8.73
P-10	I-7	J-3	67.20	1,036.00	0.022683	36 inch	0.013	100.45	5,261.00	5,237.50	5,266.00	5,246.00	2.00	5.50	5,263.62	5,243.98		10.27
P-11	J-3	J-5	737.10	434.00	0.031106	72 inch	0.013	746.90	5,237.50	5,224.00	5,246.00	5,234.00	2.50	4.00	5,243.98	5,230.83		26.07
P-12	J-5	J-4	737.10	145.00	0.006897	96 inch	0.013	757.40	5,224.00	5,223.00	5,234.00	5,234.00	2.00	3.00	5,230.83	5,229.95		16.13
P-13	I-8	J-4	33.00	142.00	0.038732	42 inch	0.013	197.99	5,228.50	5,223.00	5,232.00	5,234.00	0.00	7.50	5,230.28	5,229.95		6.72

P-14

APPENDIX D

*Amole del Norte Diversion Facilities
Tierra Bayita Drainage Facilities
Greiner Engineering 1995*



PARADISE RV PARK
BASIN COMPARISON
SCALE 1":800'

LEGEND
— THIS REPORT
— GREINER 1995

Greiner June 1995

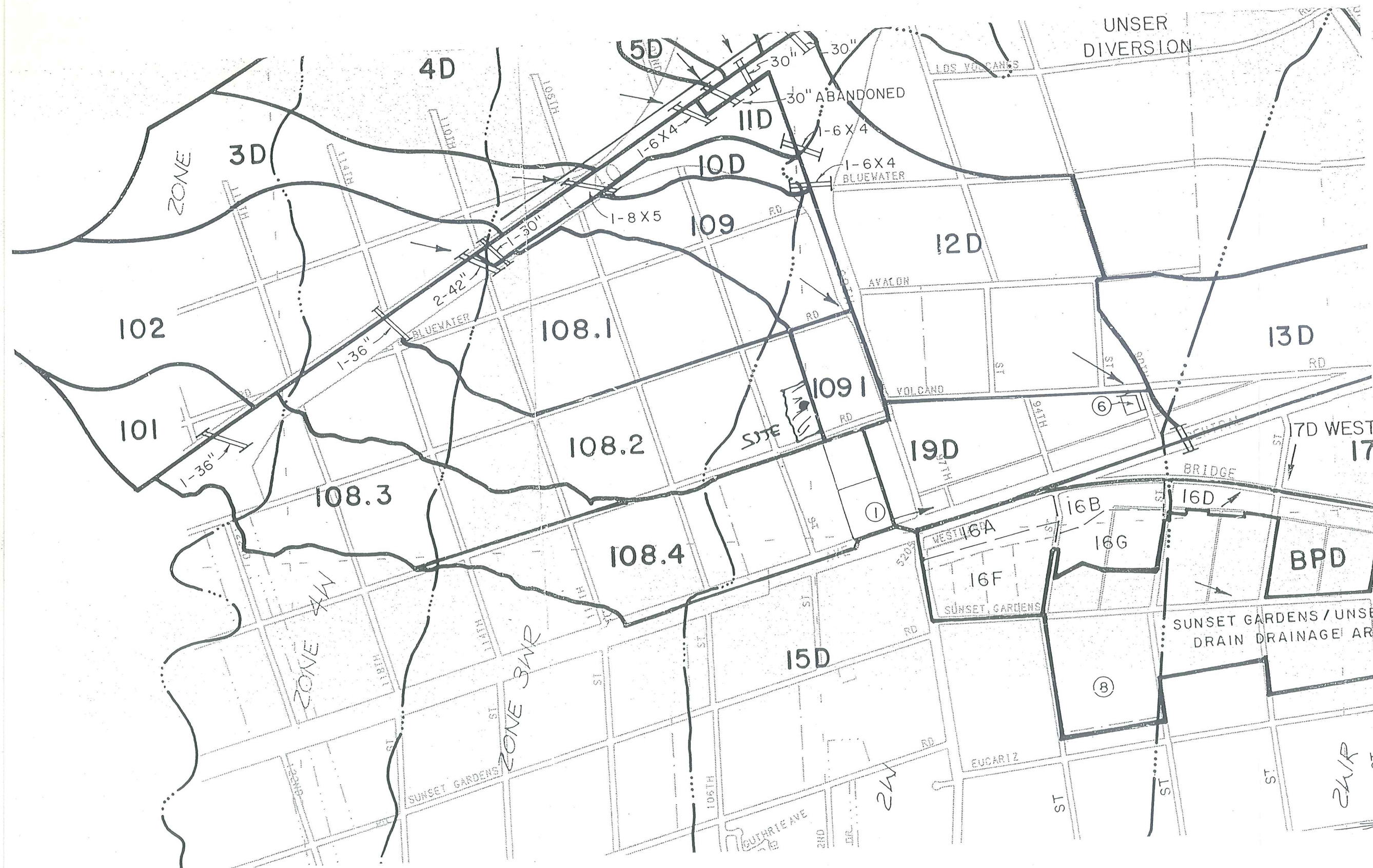
Tables showing undeveloped and developed contributing basins and their characteristics are shown below.

ULTIMATE DEVELOPMENT BASIN INFORMATION						
Basin	Area (Sq. Mi.)	Time of Concentration (hours)	Ultimate Land Treatment			
			A	B	C	D
(percent)						
101	0.0260	0.20	0	100*	0	0
102	0.2810	0.30	15	30*	24	31
108.1	0.1713	0.20	0	17	13	70
108.2	0.1710	0.24	0	18	19	63
108.3	0.1478	0.26	0	21	22	57
108.4	0.1426	0.20	0	15	15	70
109	0.0720	0.21	0	5	13	82
109.1	0.0495	0.20	0	3	12	85**

* Undeveloped land with slopes steeper than 10%.

** Land treatments based on preliminary construction plans.

EXISTING BASIN INFORMATION						
Basin	Area (Sq. Mi.)	Time of Concentration (hours)	Existing Land Treatment			
			A	B	C	D
(percent)						
101	0.0260	0.20	0	100*	0	0
102	0.2810	0.30	15	30*	24	31
108.1	0.1467	0.20	98	0	0	2
108.2	0.1631	0.20	98	0	0	2
108.3	0.1942	0.32	75	0	15	10
108.4	0.0644	0.20	55	0	30	15
109	0.1803	0.29	95	0	0	5



651,479 A2
15AL

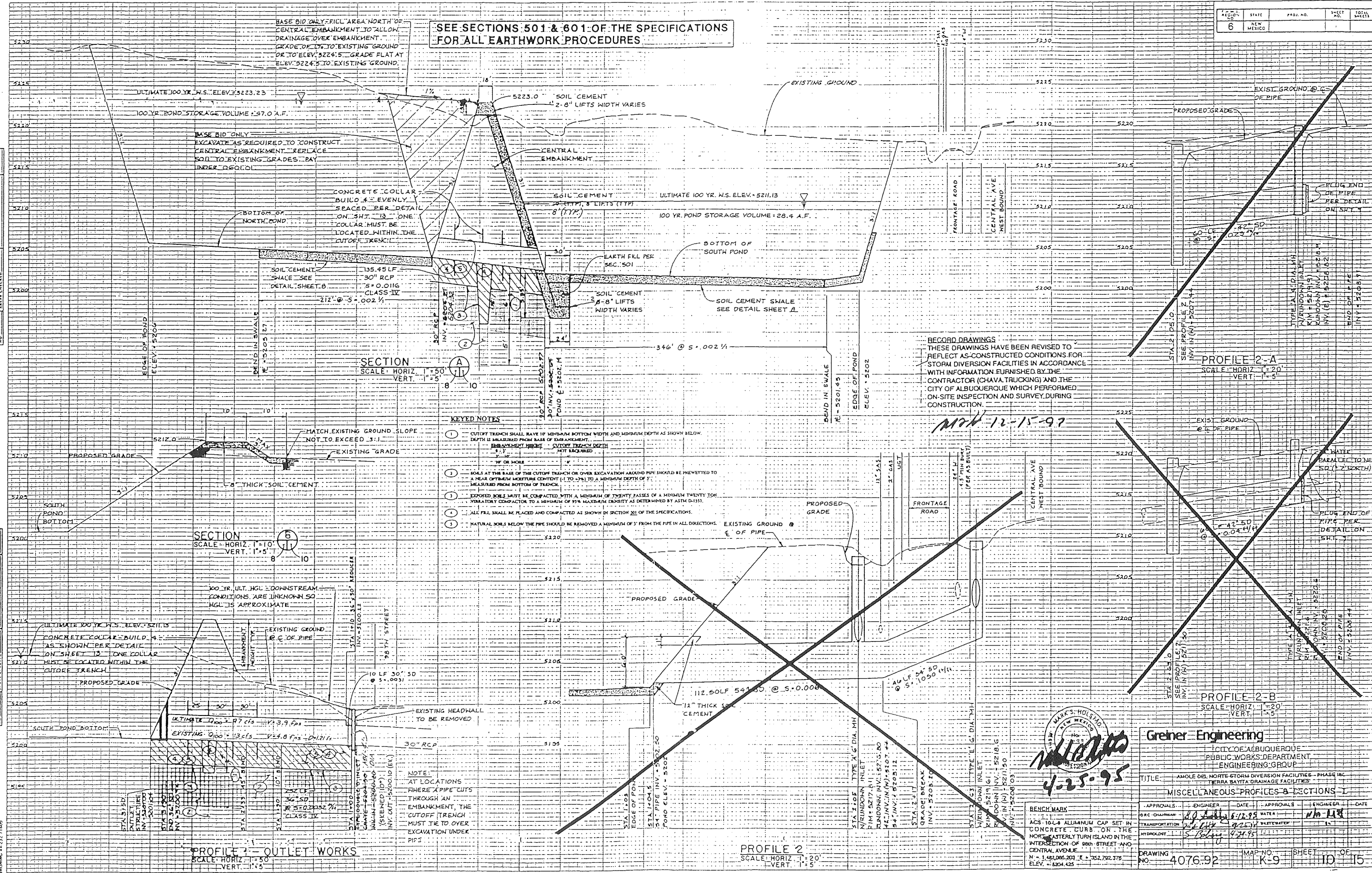
REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO			

SEE SECTIONS 501 & 601 OF THE SPECIFICATIONS FOR ALL EARTHWORK PROCEDURES

DATE	BY	REVISION

DATE	BY	REVISION

RECEIVED
OFFICE OF STATE ENGINEER
SANTA FE, NEW MEXICO



4.25.95

Greiner Engineering
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: AMOLE DEL NORTE STORM DIVERSION FACILITIES - PHASE I
TERRA BATTA DRAINAGE FACILITIES

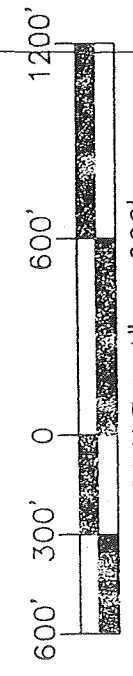
MISCELLANEOUS PROFILES & SECTIONS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DR. CHAMBERLAIN	8.0.2005	8/2/05	WATER	WATER	8/2/05
TRANSPORTATION	8/2/05	8/2/05	WATER	WATER	8/2/05
HYDROLOGY	8/2/05	8/2/05	WATER	WATER	8/2/05

DRAWING NO. 4076.92 MAP NO. K-9 SHEET 15 OF 15

APPENDIX E

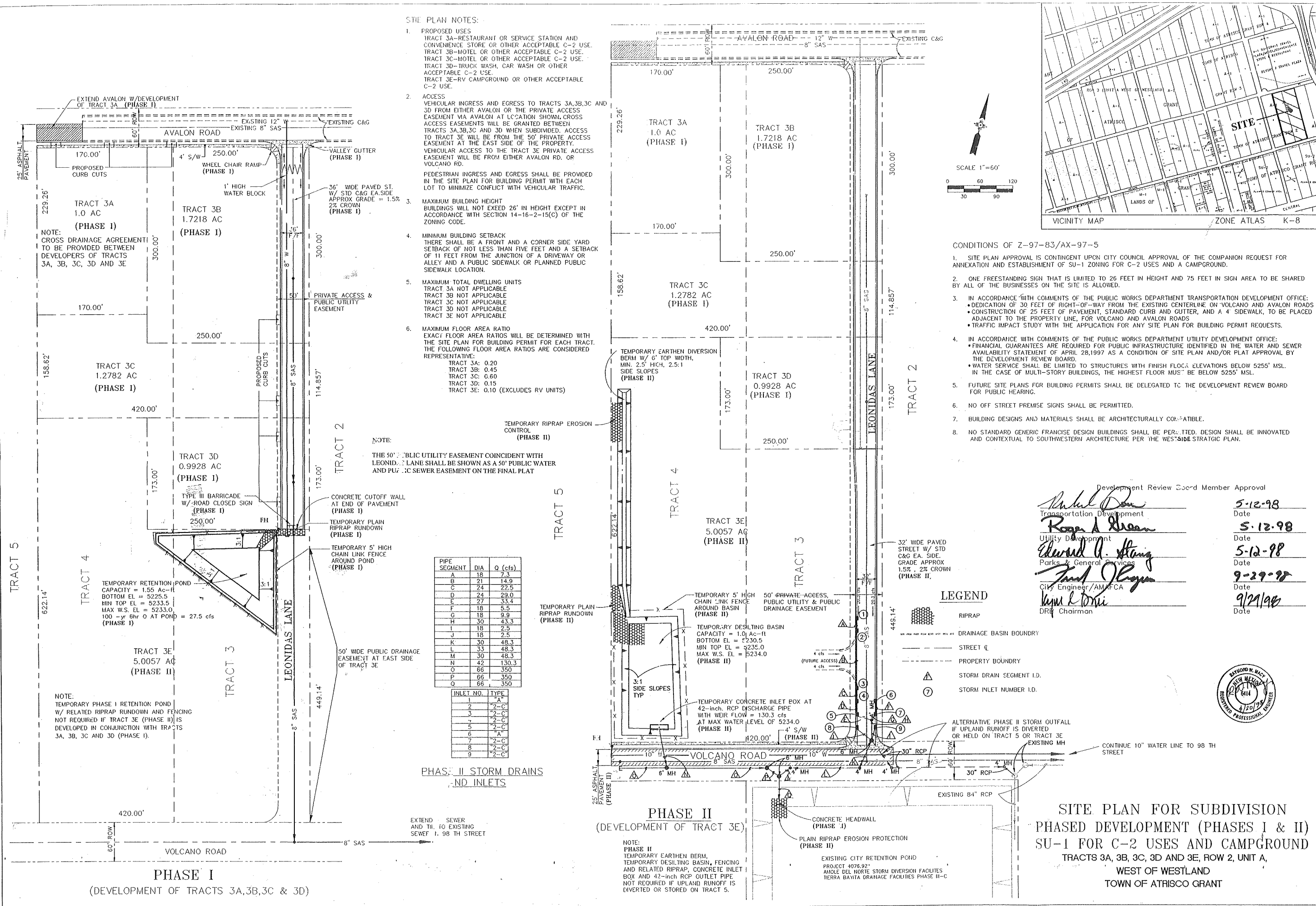
Amole Hubbell Drainage Management Plan
Amole Channel Drainage Basin Map



SCALE: 1" = 600'

APPENDIX F

*Ray Macy Developement Plan
1998*



- SITE PLAN NOTES:**
- PROPOSED USES
TRACT 3A-RESTAURANT OR SERVICE STATION AND CONVENIENCE STORE OR OTHER ACCEPTABLE C-2 USE.
TRACT 3B-MOTEL OR OTHER ACCEPTABLE C-2 USE.
TRACT 3C-TRUCK WASH, CAR WASH OR OTHER ACCEPTABLE C-2 USE.
TRACT 3E-RV CAMPGROUND OR OTHER ACCEPTABLE C-2 USE.
 - ACCESS
VEHICULAR INGRESS AND EGRESS TO TRACTS 3A, 3B, 3C AND 3D FROM EITHER AVALON OR THE PRIVATE ACCESS EASEMENT VIA AVALON AT LOCATION SHOWN. CROSS ACCESS EASEMENTS WILL BE GRANTED BETWEEN TRACTS 3A, 3B, 3C AND 3D WHEN SUBDIVIDED. ACCESS TO TRACT 3E WILL BE FROM THE 50' PRIVATE ACCESS EASEMENT AT THE EAST SIDE OF THE PROPERTY. VEHICULAR ACCESS TO THE TRACT 3E PRIVATE ACCESS EASEMENT WILL BE FROM EITHER AVALON RD. OR VOLCANO RD.
PEDESTRIAN INGRESS AND EGRESS SHALL BE PROVIDED IN THE SITE PLAN FOR BUILDING PERMIT WITH EACH LOT TO MINIMIZE CONFLICT WITH VEHICULAR TRAFFIC.
 - MAXIMUM BUILDING HEIGHT
BUILDINGS WILL NOT EXCEED 26' IN HEIGHT EXCEPT IN ACCORDANCE WITH SECTION 14-16-2-15(C) OF THE ZONING CODE.
 - MINIMUM BUILDING SETBACK
THERE SHALL BE A FRONT AND A CORNER SIDE YARD SETBACK OF NOT LESS THAN FIVE FEET AND A SETBACK OF 11 FEET FROM THE JUNCTION OF A DRIVEWAY OR ALLEY AND A PUBLIC SIDEWALK OR PLANNED PUBLIC SIDEWALK LOCATION.
 - MAXIMUM TOTAL DWELLING UNITS
TRACT 3A NOT APPLICABLE
TRACT 3B NOT APPLICABLE
TRACT 3C NOT APPLICABLE
TRACT 3D NOT APPLICABLE
TRACT 3E NOT APPLICABLE
 - MAXIMUM FLOOR AREA RATIO
EXACT FLOOR AREA RATIOS WILL BE DETERMINED WITH THE SITE PLAN FOR BUILDING PERMIT FOR EACH TRACT. THE FOLLOWING FLOOR AREA RATIOS ARE CONSIDERED REPRESENTATIVE:
TRACT 3A: 0.20
TRACT 3B: 0.45
TRACT 3C: 0.60
TRACT 3D: 0.15
TRACT 3E: 0.10 (EXCLUDES RV UNITS)

NOTE:
THE 50' PUBLIC UTILITY EASEMENT COINCIDENT WITH LEONIDAS LANE SHALL BE SHOWN AS A 50' PUBLIC WATER AND PUBLIC SEWER EASEMENT ON THE FINAL PLAT

PIPE SEGMENT	DIA	Q (cfs)
A	18	7.3
B	21	14.9
C	24	22.5
D	24	29.0
E	27	33.4
F	18	9.9
G	18	9.9
H	30	43.3
I	18	2.5
J	18	2.5
K	30	48.3
L	30	48.3
M	30	48.3
N	42	130.3
O	66	350
P	66	350
Q	66	350

INLET NO.	TYPE
1	A
2	2-C
3	2-C
4	2-C
5	2-C
6	A
7	2-C
8	2-C
9	2-C

PHASE II STORM DRAINS AND INLETS

EXTEND SEWER AND TIE TO EXISTING SEWER 1.98 TH STREET

PHASE II (DEVELOPMENT OF TRACT 3E)

NOTE:
PHASE II
TEMPORARY EARTHEN BERM, TEMPORARY DESILTING BASIN, FENCING AND RELATED RIPRAP, CONCRETE INLET BOX AND 42-INCH RCP OUTLET PIPE NOT REQUIRED IF UPLAND RUNOFF IS DIVERTED OR STORED ON TRACT 5.

LEGEND

- RIPRAP
- DRAINAGE BASIN BOUNDARY
- STREET C
- PROPERTY BOUNDARY
- STORM DRAIN SEGMENT I.D.
- STORM INLET NUMBER I.D.

ALTERNATIVE PHASE II STORM OUTFALL IF UPLAND RUNOFF IS DIVERTED OR HELD ON TRACT 5 OR TRACT 3E

SITE PLAN FOR SUBDIVISION PHASED DEVELOPMENT (PHASES I & II) SU-1 FOR C-2 USES AND CAMPGROUND TRACTS 3A, 3B, 3C, 3D AND 3E, ROW 2, UNIT A, WEST OF WESTLAND TOWN OF ATRISCO GRANT

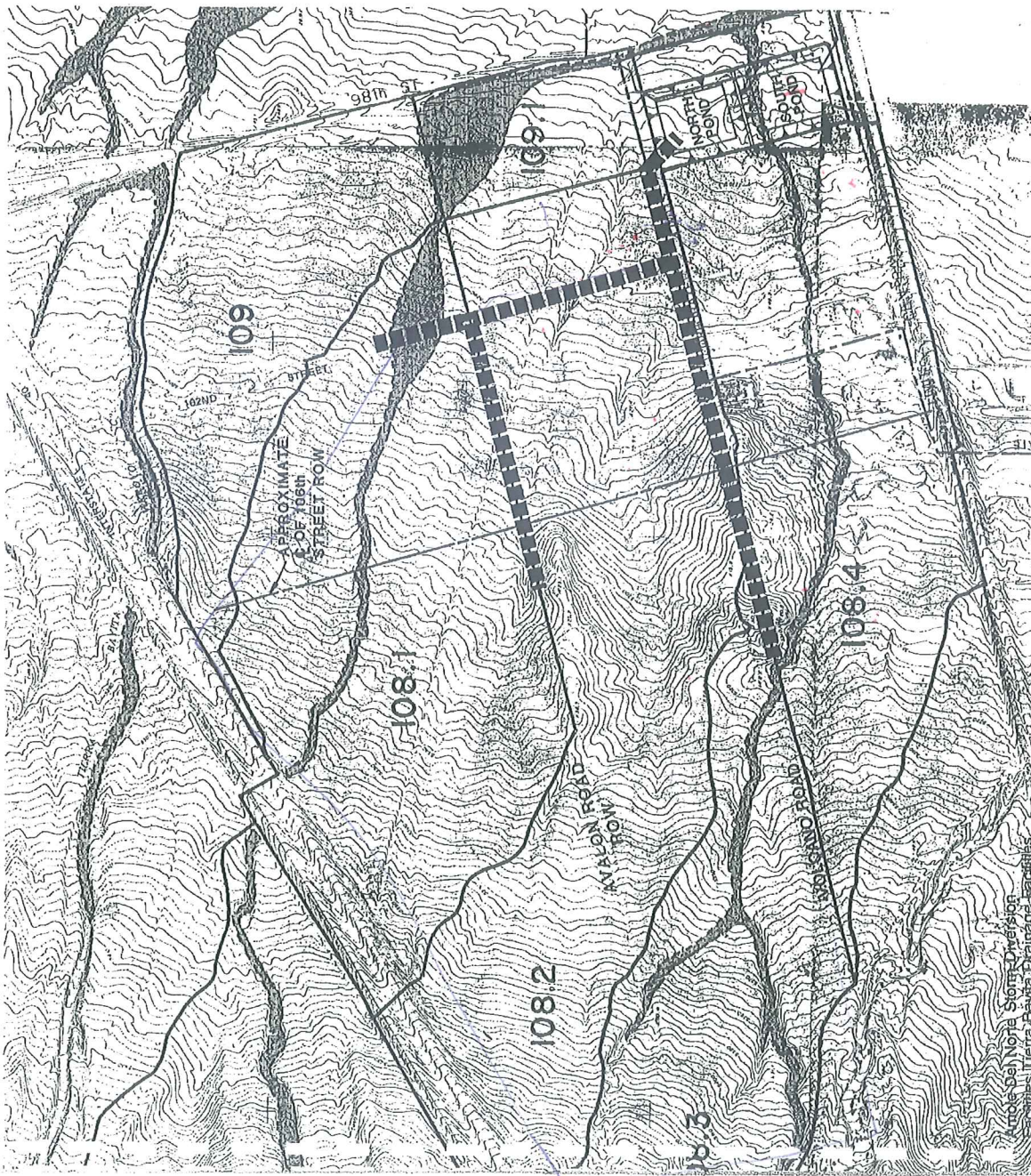
SCALE 1"=60'

- CONDITIONS OF Z-97-83/AX-97-5**
- SITE PLAN APPROVAL IS CONTINGENT UPON CITY COUNCIL APPROVAL OF THE COMPANION REQUEST FOR ANNEXATION AND ESTABLISHMENT OF SU-1 ZONING FOR C-2 USES AND A CAMPGROUND.
 - ONE FREESTANDING SIGN THAT IS LIMITED TO 26 FEET IN HEIGHT AND 75 FEET IN SIGN AREA TO BE SHARED BY ALL OF THE BUSINESSES ON THE SITE IS ALLOWED.
 - IN ACCORDANCE WITH COMMENTS OF THE PUBLIC WORKS DEPARTMENT TRANSPORTATION DEVELOPMENT OFFICE:
 - DEDICATION OF 30 FEET OF RIGHT-OF-WAY FROM THE EXISTING CENTERLINE ON VOLCANO AND AVALON ROADS
 - CONSTRUCTION OF 25 FEET OF PAVEMENT, STANDARD CURB AND GUTTER, AND A 4' SIDEWALK, TO BE PLACED ADJACENT TO THE PROPERTY LINE, FOR VOLCANO AND AVALON ROADS
 - TRAFFIC IMPACT STUDY WITH THE APPLICATION FOR ANY SITE PLAN FOR BUILDING PERMIT REQUESTS.
 - IN ACCORDANCE WITH COMMENTS OF THE PUBLIC WORKS DEPARTMENT UTILITY DEVELOPMENT OFFICE:
 - FINANCIAL GUARANTEES ARE REQUIRED FOR PUBLIC INFRASTRUCTURE IDENTIFIED IN THE WATER AND SEWER AVAILABILITY STATEMENT OF APRIL 28, 1997 AS A CONDITION OF SITE PLAN AND/OR PLAT APPROVAL BY THE DEVELOPMENT REVIEW BOARD.
 - WATER SERVICE SHALL BE LIMITED TO STRUCTURES WITH FINISH FLOOR ELEVATIONS BELOW 5255' MSL. IN THE CASE OF MULTI-STORY BUILDINGS, THE HIGHEST FLOOR MUST BE BELOW 5255' MSL.
 - FUTURE SITE PLANS FOR BUILDING PERMITS SHALL BE DELEGATED TO THE DEVELOPMENT REVIEW BOARD FOR PUBLIC HEARING.
 - NO OFF STREET PREMISE SIGNS SHALL BE PERMITTED.
 - BUILDING DESIGNS AND MATERIALS SHALL BE ARCHITECTURALLY COORDINATE.
 - NO STANDARD GENERIC FRANCHISE DESIGN BUILDINGS SHALL BE PERMITTED. DESIGN SHALL BE INNOVATED AND CONTEXTUAL TO SOUTHWESTERN ARCHITECTURE PER THE WESTSIDE STRATEGIC PLAN.

Development Review Board Member Approval
Michael Don
Transportation Development
Roger A. Green
Utility Development
Edward A. Haring
Parks & General Services
Paul J. Hagan
City Engineer/AM/CA
Kim L. Dini
DRB Chairman

5-12-98
Date
5-12-98
Date
5-12-98
Date
9-29-98
Date
9/29/98
Date





NORTH

SCALE: 1" 500'

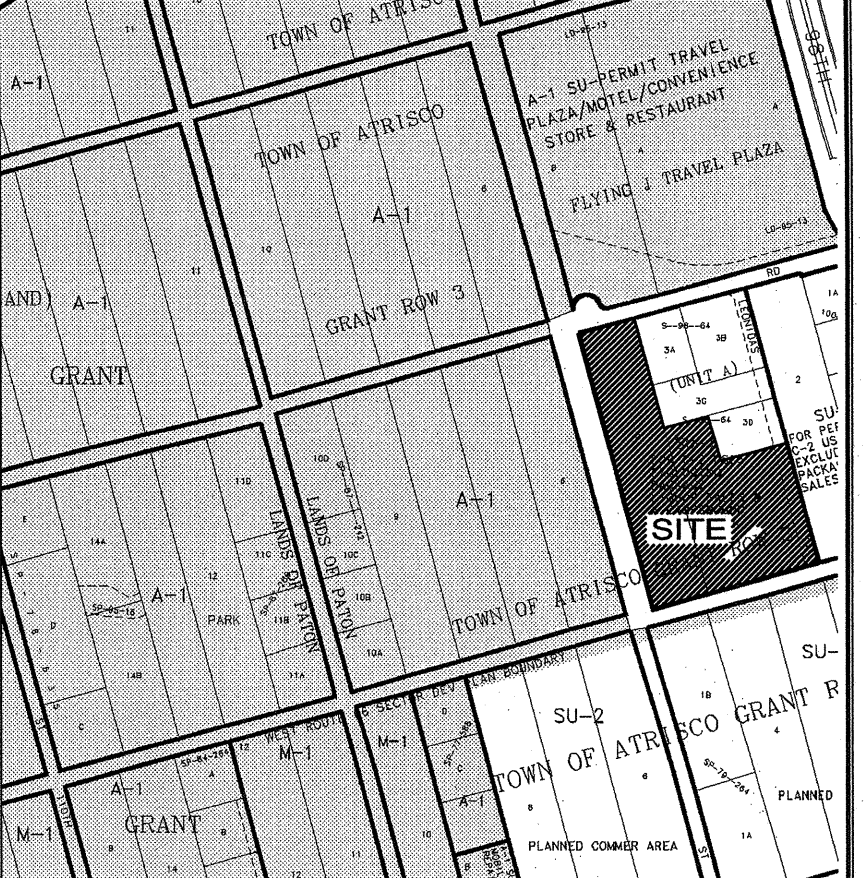
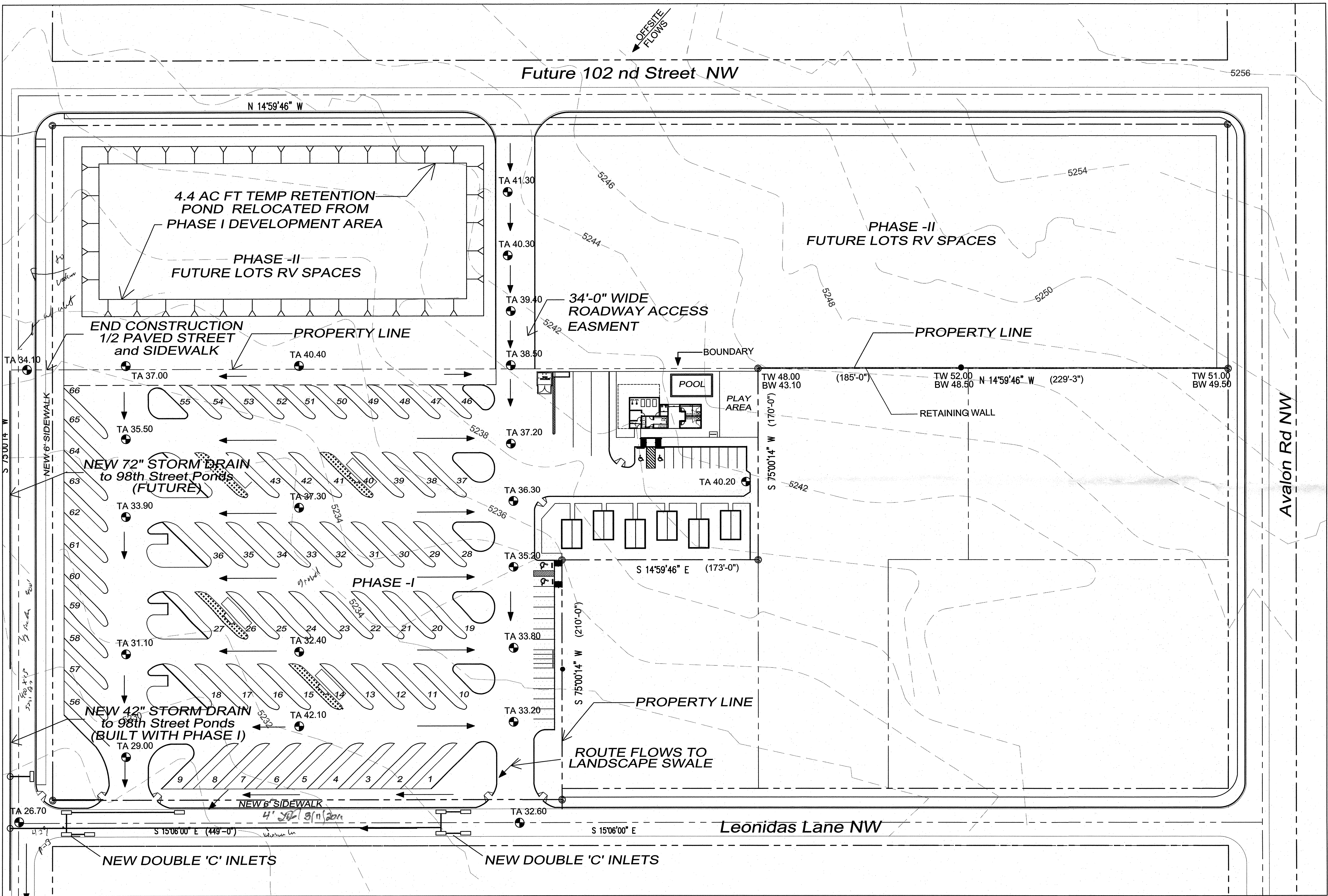
LEGEND

- BASIN BOUNDARY (ULTIMATE)
- 109 BASIN IDENTIFICATION
- FUTURE STORM DRAIN TRUNK LINES-ASSUMED FOR DESIGN (DESIGNED FOR Q100)

FUTURE STORM DRAIN LAYOUT

EXHIBIT 2

Green 1995



VICINITY MAP ZONE ATLAS K-8

- KEYED NOTES**
- LEGEND**
- PROPERTY LINE
 - TW - TOP OF WALL
 - BW - BOTTOM OF WALL
 - PROPOSED DIRECTION OF FLOW
 - SPOT ELEVATION (5245)
 - EXISTING CONTOUR LINE
 - RETAINING WALL
 - PROPOSED CURB + GUTTER



CONCEPTUAL GRADING PLAN

Afra Construction & Design
2501 Yale Blvd, Suite 102
Albuquerque, New Mexico 87106
Tel: 505.242.1745
Fax: 505.242.1737

Paradise RV Park
Avalon Rd/ Leonidas Ln, NW
Albuquerque, NM 87120

REV	DATE	DESCRIPTION	APVD
1			
2			
3			
4			

C-01

05.05.2011

RECEIVED
AUG 13 2011
HYDROLOGY
SECTION



The **H**ENSLEY **E**NGINEERING **G**ROUP

April 24, 2015

Rita Harmon
Hydrology Development
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

Re: K08D003 – Paradise RV Park Phase I Grading Plan for Building Permit

The revised Grading Plan and supplementary Drainage Report for the above site is attached. We are requesting a review of the attached plan in support of the Building Permit of Paradise RV Park Phase I. The site is “TRACT 3E, ROWA, UNIT A, WEST OF WESTLAND - TOWN OF ATRISCO GRANT” and is located on Volcano Road and Leonidas Lane. The plan and report address the previous comments that have been reviewed.

By dividing into separate sections, offsite basin analysis followed by the site specifics, I believe the report is more easily followed.

Please contact me at 410-1622 or via email if you have any questions or comments.

Sincerely,

Ron E. Hensley P.E.
ron@thegroup.cc

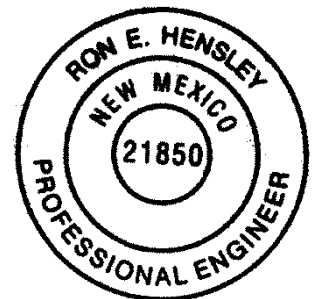
DRAINAGE REPORT
FOR
PARADISE RV PARK PHASE I
ALBUQUERQUE, NM
April 2015

Prepared By



The HENSLEY ENGINEERING GROUP

Ron E. Hensley P.E.
300 Branding Iron Road S.E.
Rio Rancho, NM 87124



Ron E. Hensley
4/24/15

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EXHIBIT A Paradise RV Park Phase I - Grading and Drainage Plan

I. INTRODUCTION & PROJECT DESCRIPTION

This report is submitted as support for Paradise RV Park Site Plan and Building Permit. As depicted on Figure 1 Zone Atlas Page K-8 below, the project is a RV Park located at Volcano Rd. and Leonidas Ave.

The project site is within the boundaries of the Amole Hubbell Drainage area. The Amole Hubbell Drainage Master Plan provides the basis for the developed conditions of the area. A two cell pond made up of Pond NE2 and Pond NE3 receives the area's runoff. Proposed conditions and development have added a sub-surface storm drainage system to collect runoff and convey it to basin ponds to prevent excessive street flow.

The runoff from the site will be directed to the depressed landscape areas along the site boundaries and routed to an inlet at the southeast corner of the site. Offsite runoffs to the northwest will be routed to the temporary retention pond west of the site. Offsite runoffs to the west will continue in the existing condition until development requires improvements.

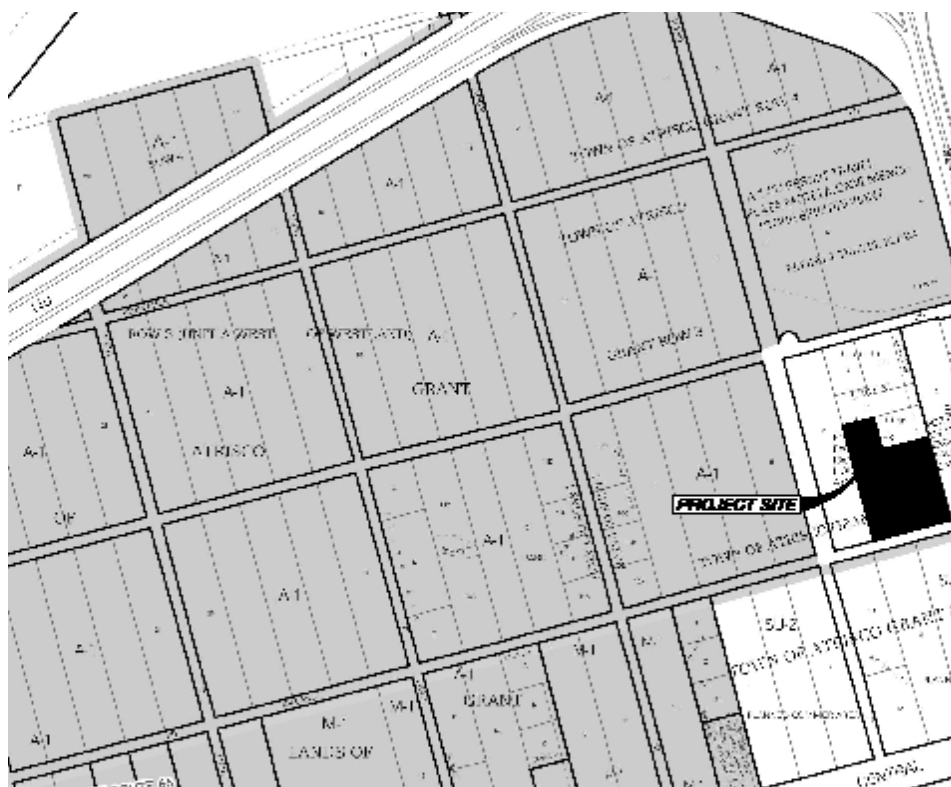


Figure 1 Zone Atlas Page K-8

Legal Description

Tract 3E, ROW A, UNIT A, West of Westland, Town of Atrisco Grant

Flood Zone

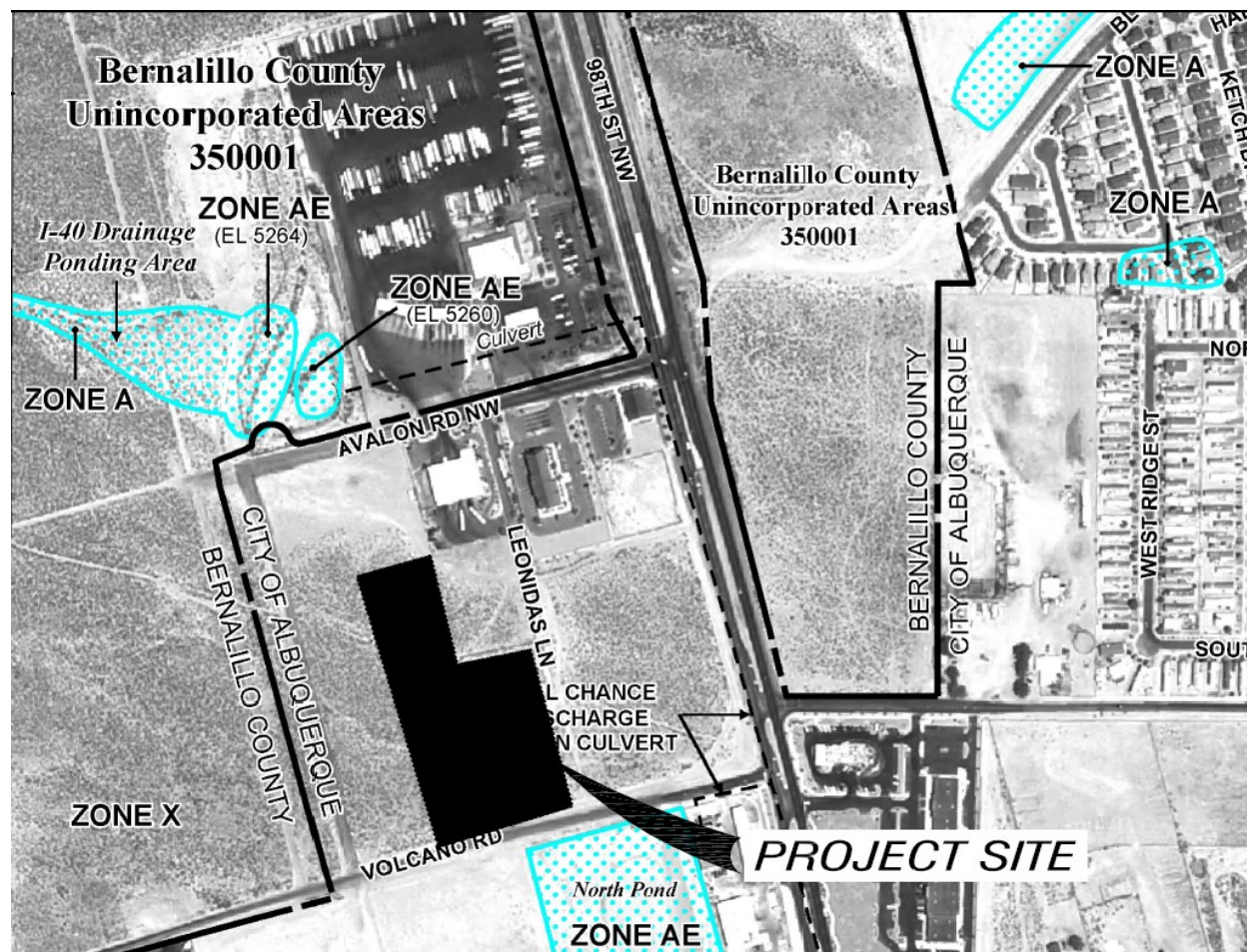


Figure 2 - FEMA's FIRM 35001C0328H

This project, as shown on Figure 2 - FEMA's FIRM 35001C0328H, dated August 16, 2012 is not within a designated 100-year floodplain.

Previous Studies

The "Amole-Hubbell Drainage Master Plan", dated May 2013, (Appendix A) is a drainage master plan for the area that established the drainage infrastructure and design runoff in the vicinity of the site for the allowable developed flows to and from the City's 98th Street Ponds. This study will be the basis for establishing the allowable discharge from this area.

A conceptual analysis of the site was completed under "Drainage Report for Paradise RV Park – Phase I", by Larry D. Read P.E., dated October 15, 2013 for Site Plan approval.

Methodology

The drainage plan presented in this report has been prepared in accordance with the City of Albuquerque Drainage Ordinances and Chapter 22 of the Development Process Manual (DPM). Hydrology for the 100-yr 24-hr duration storm was used as the design storm for this analysis for volume calculations and the 100-yr 6-hr duration storm was used for peak flow calculations. The site is within zone 1 as identified in the city of

Albuquerque Development Process Manual, Section 22.2 for rainfall intensity and quantified utilizing AHYMO 97 software.

Rainfall intensities per this report are as follows:

Zone	P_{60}	P_{360}	P_{1440}
1	1.87	2.20	2.66

The proposed storm drain systems included in this report were modeled using hydrology, topographic and planimetric data obtained in the design. The hydraulic analysis for this report was performed to determine capacities and HGL utilizing Hydraflow software.

II. BASIN ANALYSIS

The site is located within the area included in the Amole-Hubbell Drainage Master Plan area. The specific area within the plan is designated as the “98th & Central Basin. The basin boundaries and nomenclature contained in that plan have been continued in this report. The analyses contained in this report address the three conditions of development proposed for the site. The analysis of the existing conditions provides a baseline for the development of future conditions. The interim condition analysis demonstrates the conditions after diversions of existing flows, but prior to construction of upstream drainage infrastructure. The final conditions provide an analysis of proposed conditions that adhere to the Master Plan. The “98th & Central Basin” is approximately 0.81 sq. mi. This sub-area is generally bounded on the east by 98th Street and north by I-40, while on the south by Central Avenue and the west by the Powerline Channel. A two cell City pond receives the area’s runoff.

Existing Conditions

The land uses in 98th & Central Area are platted undeveloped, industrial, commercial, and low density residential. Without the conveyance infrastructure in place, developed and undeveloped lots experience large amounts of cross-lot drainage. There is only one storm drain system in the sub-area, beginning near the intersection of Volcano Road and 98th Street and runs through Pond 2 with outlet into Pond 3. Since the majority of the sub-area is not conveyed via a sub-surface drainage system, large amounts of runoff spill into the pond. The two-cell pond outlets into a storm drain system located in the Tierra Bayita Area, which ultimately connects to the Tierra Bayita Channel.

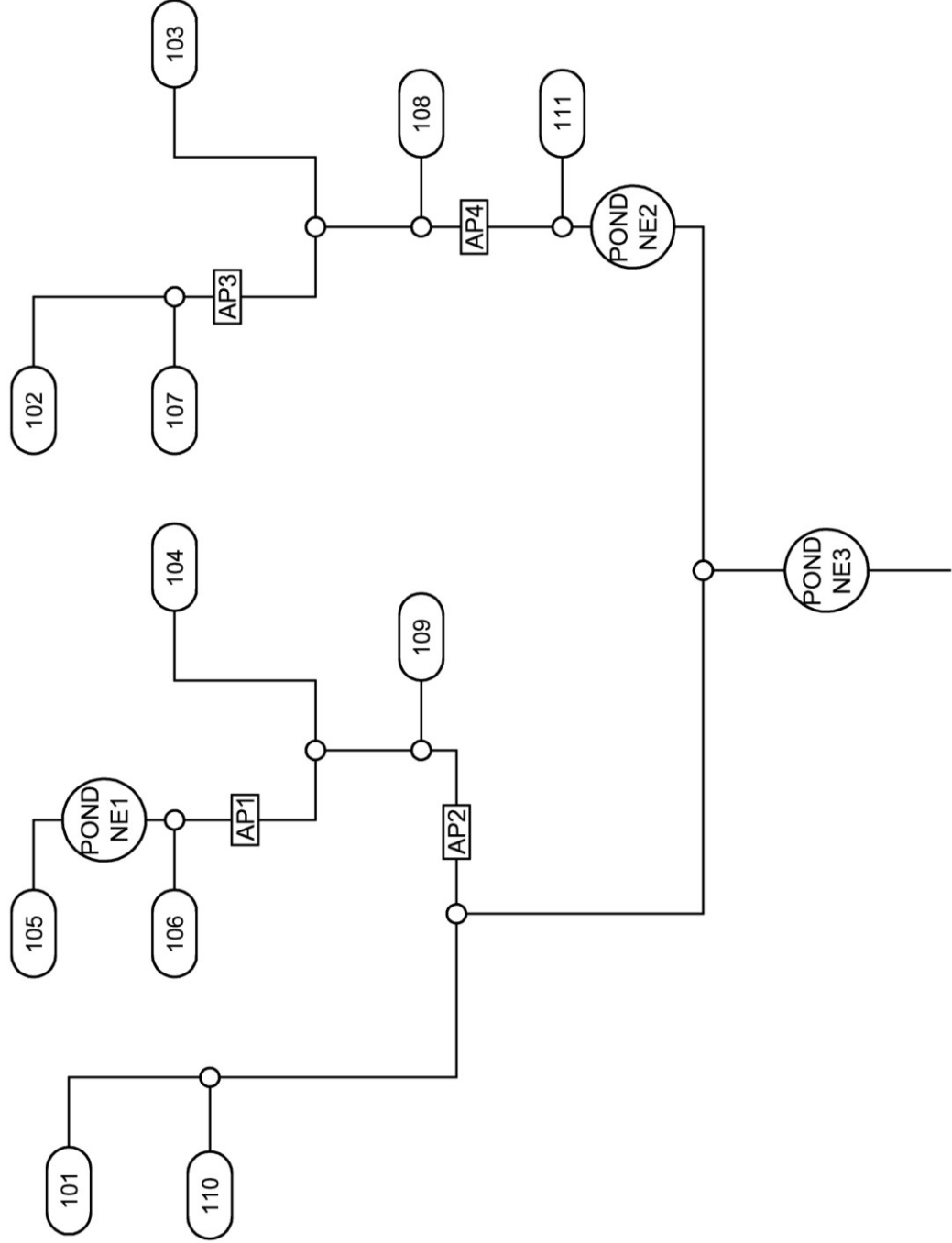
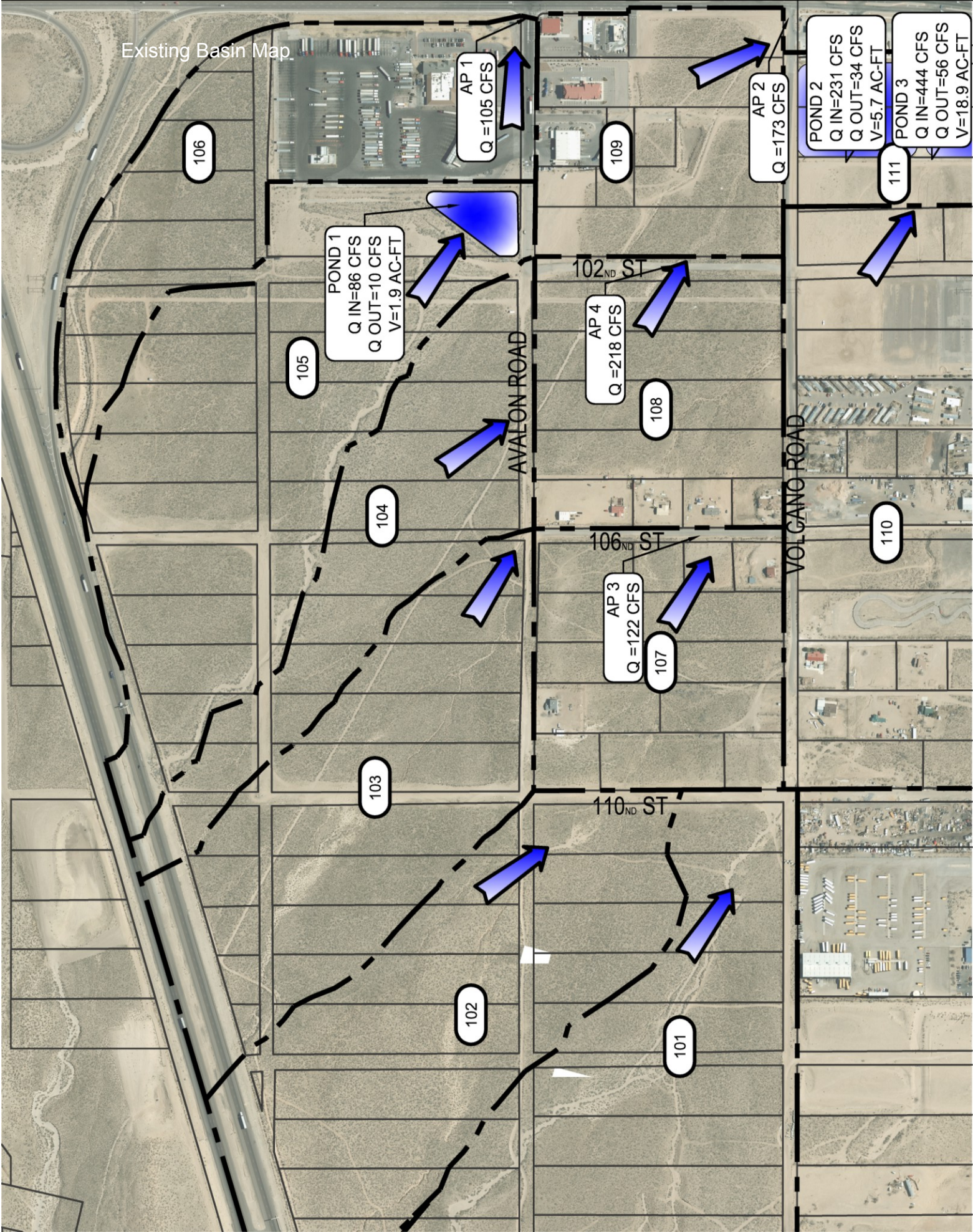
Hydrology

The analysis for the 100-yr 6-hr & 24-hr duration storm was done using AHYMO 97 software. The land treatments reflect existing conditions of the basins and routing depicted on the following page. A summary of the result is listed below and the AHYMO files are detailed in Appendix B.

Basin	Area	Land Treatment	Yield	Q_{100-6}	V_{100-24}
--------------	-------------	-----------------------	--------------	-------------------------------	--------------------------------

DRAINAGE REPORT - PARADISE RV PARK PHASE I

	(ac.)	A	B	C	D	(cfs/ac.)	(cfs)	(cfs)
101	92.93	79	8	8	5	1.48	137.69	4.787
102	48.67	79	8	8	5	1.71	82.97	2.507
103	41.22	79	8	8	5	1.68	69.26	2.124
104	26.86	79	8	8	5	1.47	39.56	1.384
105	54.01	79	8	8	5	1.59	85.72	2.782
106	36.74	36	6	6	52	2.82	103.63	4.736
107	27.68	70	12	12	6	1.82	50.42	1.550
108	28.94	67	13	13	7	1.87	54.07	1.665
109	27.75	65	7	8	20	2.15	59.57	2.100
110	83.10	22	11	21	46	2.49	206.63	10.522
111	15.08	79	8	8	5	1.14	17.18	0.777



EXISTING BASIN MAP & ROUTING

Interim Conditions

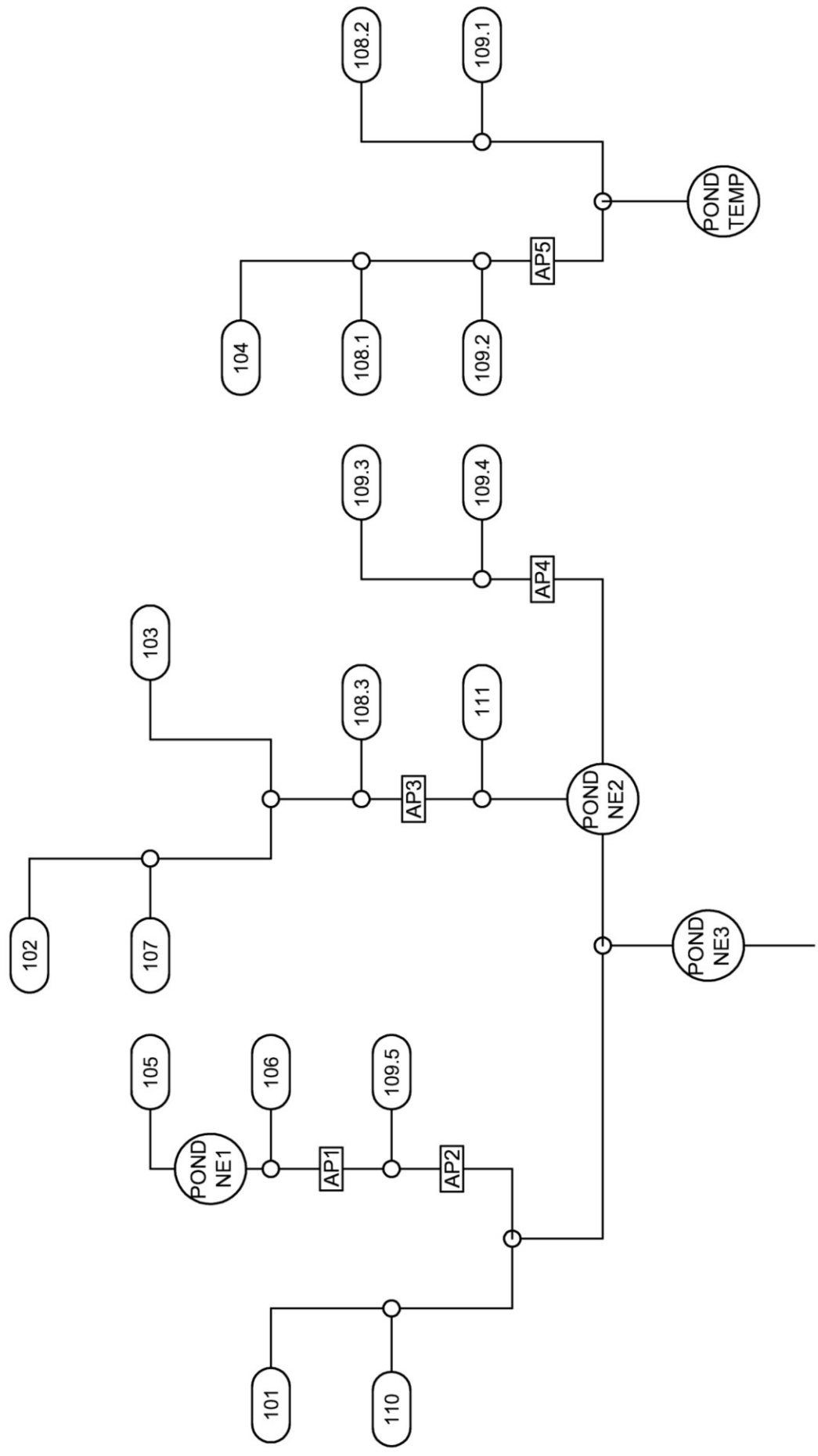
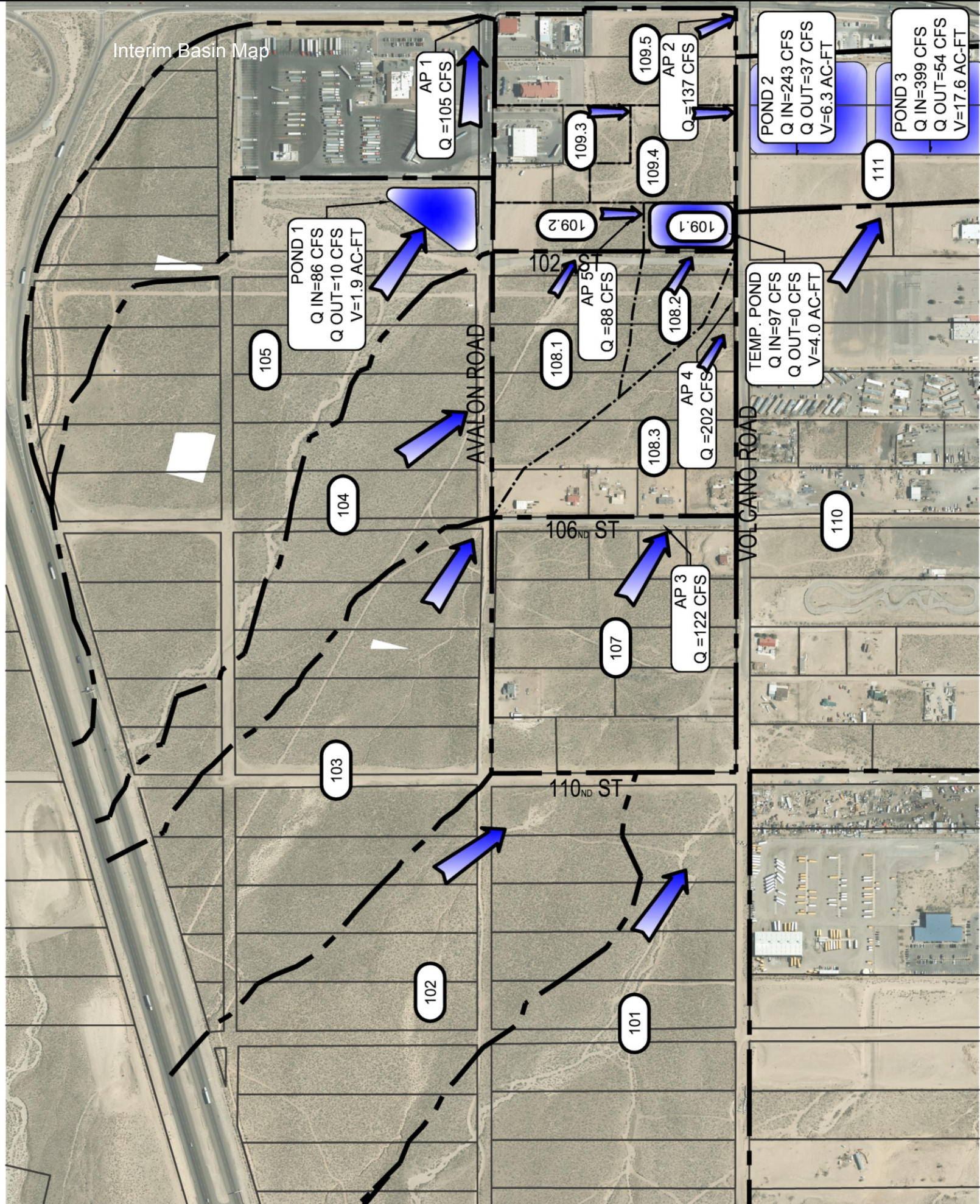
The interim condition provides analyses for the basin modifications due to the development of the Paradise RV Site. The existing conditions will be modified with the following:

- Modification of sub-basin boundaries and runoff due to the proposed development.
- Due to the development of the site, sub-basins upstream from the site will be routed to a retention pond located on the adjacent tract to the west..
- The storm drain discharge to the City pond will be constructed with an extension of a trunk into the development.

Hydrology

The analysis for the 100-yr 6-hr & 24-hr duration storm was done using AHYMO 97 software. The land treatments reflect existing and the proposed interim conditions of the basins and routing depicted on the following page. In the event that development of the drainage area is developed without drainage improvement, the land treatments for the sub-basins routed to the retention pond have been modified to allow for a development density of 1 DU/AC as per current county zoning. The land treatments in sub-basin109 have increased impervious area treatment to allow for variances in development. A summary of the result is listed below and the AHYMO files are detailed in the Appendix B.

Basin	Area (ac.)	Land Treatment				Yield (cfs/ac.)	Q ₁₀₀₋₆ (cfs)	V ₁₀₀₋₂₄ (cfs)
		A	B	C	D			
101	92.93	79	8	8	5	1.48	137.69	4.787
102	48.67	79	8	8	5	1.71	82.97	2.507
103	41.22	79	8	8	5	1.68	69.26	2.124
104	26.86	37	8	38	17	2.54	68.30	2.267
105	54.01	79	8	8	5	1.59	85.72	2.782
106	36.74	36	6	6	52	2.82	103.63	4.736
107	27.68	70	12	12	6	1.82	50.42	1.550
108.1	11.35	37	8	38	17	2.54	28.96	0.958
108.2	3.67	37	8	38	17	2.55	9.34	0.309
108.3	13.93	67	13	13	7	1.87	26.03	0.801
109.1	3.11	0	0	100	0	2.98	9.26	0.265
109.2	1.87	0	0	95	5	3.14	5.86	0.175
109.3	5.80	0	0	20	80	4.32	25.06	1.064
109.4	4.47	0	0	20	80	4.32	21.66	0.920
109.5	9.78	65	7	8	20	3.16	30.85	1.243
110	83.10	22	11	21	46	2.49	206.63	10.522
111	15.08	79	8	8	5	3.79	17.18	0.777



INTERIM BASIN MAP & ROUTING

Proposed Conditions

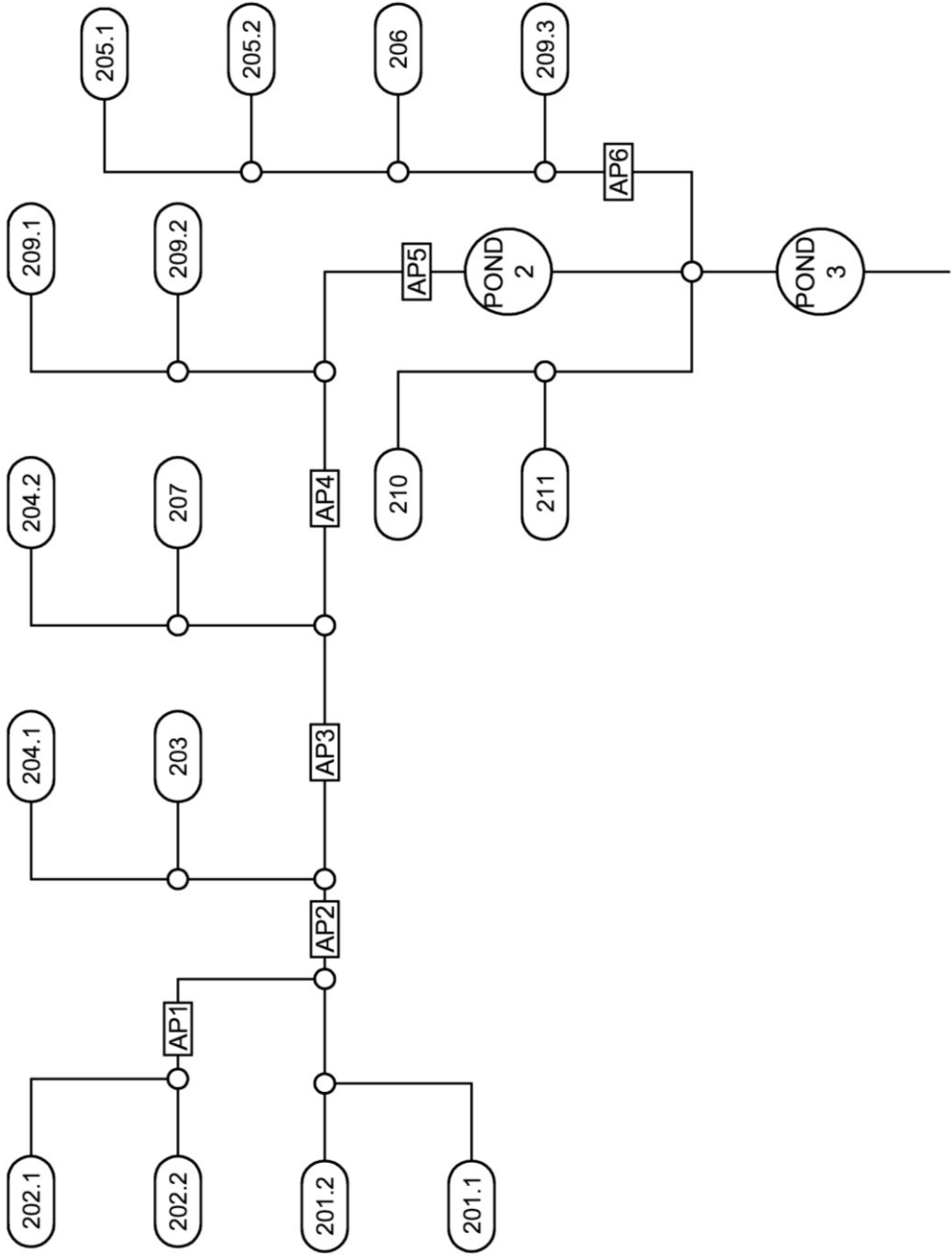
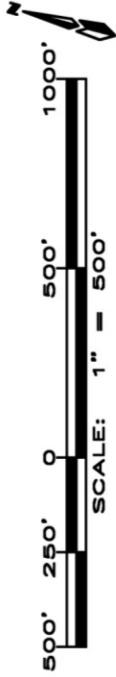
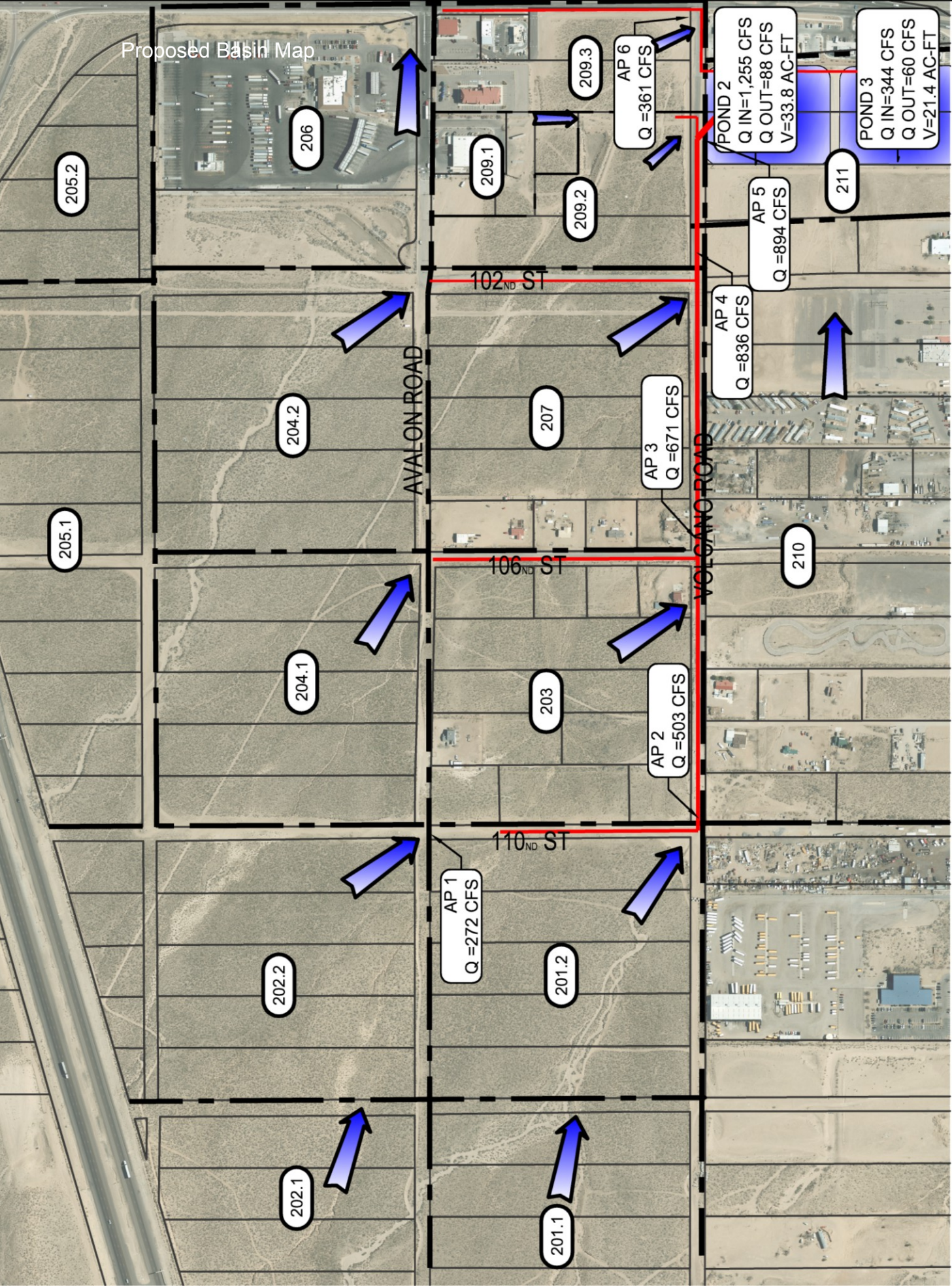
The proposed condition provides analyses for the basin modifications due to the extension of storm drain into the basin. The interim conditions will be modified with the following:

- Modification of sub-basin boundaries and runoff due to future development.
- The runoff analysis includes storm drain extension.

Hydrology

The analysis for the 100-yr 6-hr & 24-hr duration storm was done using AHYMO 97 software. The land treatments reflect existing and the proposed conditions of the basins and routing depicted on the following page. Unless current development is of higher density, the land treatments for the undeveloped sub-basins have been modified to allow for a development density of 1 DU/AC as per current county zoning. The land treatments in other sub-basins will remain equivalent to the interim condition. A summary of the result is listed below and the AHYMO files are detailed in the Appendix.

Basin	Area (ac.)	Land Treatment				Yield (cfs/ac.)	Q ₁₀₀₋₆ (cfs)	V ₁₀₀₋₂₄ (cfs)
		A	B	C	D			
201.1	54.16	0	41	42	17	2.94	159.29	5.154
201.2	27.83	0	41	42	17	2.94	116.22	3.767
202.1	54.01	0	41	42	17	2.94	158.84	5.139
202.2	39.58	0	41	42	17	2.94	116.22	3.767
203	32.93	0	41	42	17	2.94	96.68	3.133
204.1	27.72	0	41	42	17	2.94	81.41	2.638
204.2	29.22	0	41	42	17	2.94	85.80	2.781
205.1	47.77	0	41	42	17	2.94	140.38	4.546
205.2	38.64	0	41	42	17	2.94	113.62	3.688
206	28.15	0	15	16	69	4.00	112.51	4.653
207	32.89	0	41	42	17	2.94	96.57	3.130
209.1	5.80	0	0	20	80	4.32	25.06	1.064
209.2	10.00	0	0	20	80	4.32	43.14	1.832
209.3	11.95	0	0	20	80	3.16	37.69	1.519
210	83.10	0	20	21	59	2.93	243.06	12.612
211	15.08	16	5	21	58	2.76	41.54	2.201



FINAL BASIN MAP & ROUTING

III. SITE & DRAINAGE IMPROVEMENT ANALYSES

Existing Conditions

The proposed site is 4.5 acres located on the north side of Volcano Road. west of Leonidas Lane as seen on the Figure 1 Zone Atlas Page . The site is currently undeveloped and has an approved site plan for an RV Park. There is a developed site to the north. This site has a drainage pattern that is generally southward with surface discharge to Volcano Road. There is an existing temporary retention pond on the site that will be relocated south of the site.

Hydrology

The analysis for the 100-yr 6-hr & 24-hr duration storm was done using AHYMO 97 software. See the analysis in Section II. BASIN ANALYSIS, Existing Conditions. That analysis establishes the allowable discharge from the site.

Phase 1 “Interim” Conditions

The proposed development is an RV park to be developed in two phases. The site will be developed for Phase I with a single structure and RV parking. As shown on Exhibit A: Grading and Drainage Plan, “Interim” condition developed runoff from the site and adjacent development to the north is routed to the proposed storm drain. Existing runoff from upstream undeveloped basins is intercepted by the proposed temporary retention pond.

Hydrology

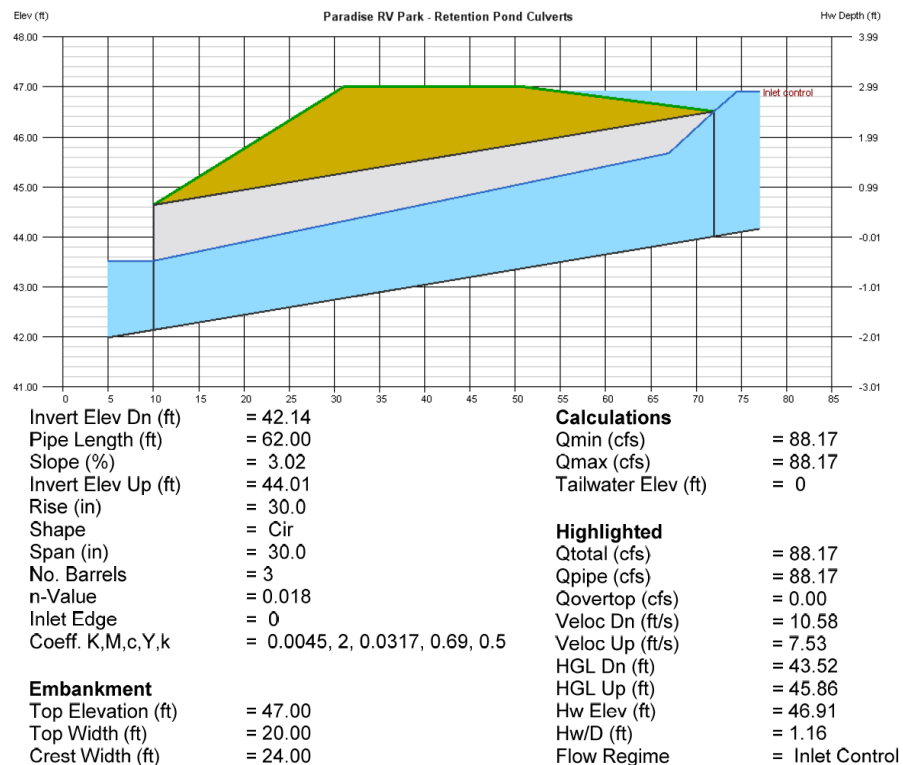
The analysis for the 100-yr 24-hr duration storm was done using AHYMO 97 software. See the analysis in Section II. BASIN ANALYSIS, Interim Conditions. That analysis establishes the offsite flows impacting the site and the allowable site runoff. The following analysis of the drainage depicted on Exhibit A, Grading & Drainage Plan for Phase I, for interim site condition provides the discharge due to the specific site improvements of Phase I and Volcano Road storm drain. The runoff analysis includes off-site sub-basin 106 a theoretical row basin for the future developed ROW condition assumption. The runoff from sub-basin 106 will be intercepted by inlets in Volcano Road. The assumptions included accurately describe the “interim” conditions of the project. A summary of the result is listed below and detailed in the Appendix B.

Basin	Area (ac.)	Land Treatment				Yield (cfs/ac.)	Q ₁₀₀₋₆ (cfs)	V ₁₀₀₋₂₄ (cfs)
		A	B	C	D			
100	0.55	0	0	10	90	4.25	2.34	0.101
101	1.14	0	3	5	92	4.24	4.83	0.211
102	1.43	0	0	85	15	3.11	4.44	0.142
103	1.66	0	0	85	15	3.04	5.04	0.160
104	0.09	0	0	100	0	2.11	0.19	0.005
105	0.15	0	0	100	0	2.08	0.32	0.009
106	3.15	0	0	10	90	4.23	13.33	0.581

Hydraulics

The runoff from the site and the existing development to the north (sub-basin 209.1) will be directed to a storm drain in Leonidas Lane combined with site runoff then discharged to the storm drain in Volcano Road. The storm drain discharges to the existing City pond south of Volcano Road. The street hydraulics and storm drain analyses are addressed in the following section, Phase II "Proposed" Conditions.

The runoff from the undeveloped upstream basins (basins 104, 108.2, 108.3, 109.1 and 109.2) that directly flow to the site are to be contained in a temporary retention pond south of the developed site with the installation of culverts to intercept and direct the flow. As shown below, the culverts have the capacity to convey the flows indicated.



The proposed retention pond volume is adequate to accommodate the 100 year 10 day storm per DPM equation a-9.

$$\text{For 10-day storms: } V_{10\text{DAYS}} = V_{360} + A_D * (P_{10\text{DAYS}} - P_{360}) / 12 \text{ in/ft} \quad (\text{a-9})$$

$$V_{10\text{DAYS}} = 3.987 \text{ AC.FT.} = 3.714 \text{ AC.FT.} + 7.12 \text{ AC} * (2.66 - 2.20) \text{ in.} / 12 \text{ in/ft}$$

The additional upstream basins that flow to the City pond will be maintained in their current state and point of discharge to the City pond.

Phase II “Proposed” Conditions

The proposed development is an RV park to be developed in two phases. The development of Phase II RV parking will represent the final condition. The interim conditions will be modified with the following:

- Elimination of the temporary retention pond.
- Combine site to single sub-basin.
- Development of the roadway and storm drain in 102nd Street.

Hydrology

The analysis for the 100-yr 6-hr & 24-hr duration storm was done using AHYMO 97 software. See the analysis in Section II. BASIN ANALYSIS, Existing Conditions. That analysis establishes the ultimate flow conditions and the allowable discharge from the site. The analysis for the Phase II proposed site condition provides the discharge due to the specific site improvements of Phase II.

Basin	Area (ac.)	Land Treatment				Yield (cfs/ac.)	Q ₁₀₀ (cfs)	V ₁₀₀ (cfs)
		A	B	C	D			
100	0.55	0	0	10	90	4.25	2.34	0.101
101	1.14	0	3	5	92	4.24	4.83	0.211
102	1.43	0	0	85	15	3.11	4.44	0.142
103	1.66	0	0	85	15	3.04	5.04	0.160
104	0.09	0	0	100	0	2.11	0.19	0.005
105	0.15	0	0	100	0	2.08	0.32	0.009
106	3.15	0	0	10	90	4.23	13.33	0.581
107 (109.1+109.2)	4.98	0	0	85	15	3.06	15.45	0.497

Hydraulics

As shown on the following page, the curb openings and street sections of have the capacity to convey the flows indicated, and the analysis of the developed storm drain flows are summarized in the following pages:

Curb Openings - Wier



2' Opening

Depth (ft)	Q (cfs)	Area (sqft)	Veloc (ft/s)	Cw (ft)	TopWidth (ft)
0.50	2.36	1.00	2.35	3.33	2.00

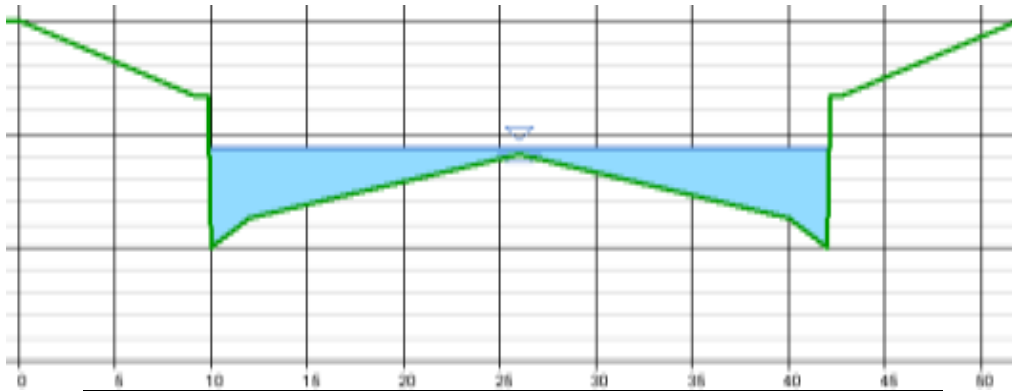
4' Opening

Depth (ft)	Q (cfs)	Area (sqft)	Veloc (ft/s)	Cw (ft)	TopWidth (ft)
0.50	4.70	2.00	2.35	3.33	4.00

8' Opening

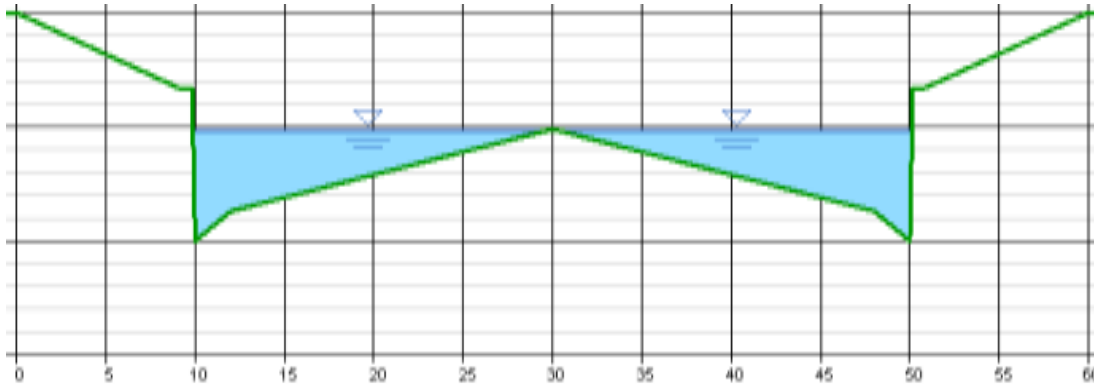
Depth (ft)	Q (cfs)	Area (sqft)	Veloc (ft/s)	Cw (ft)	TopWidth (ft)
0.50	9.42	4.00	2.35	3.33	8.00

Leonidas Lane



Depth (ft)	Q (cfs)	Area (sqft)	Veloc (ft/s)	Wp (ft)	Yc (ft)	TopWidth (ft)	Energy (ft)
0.44	25.66	6.31	4.07	92.92	0.52	32.22	0.70

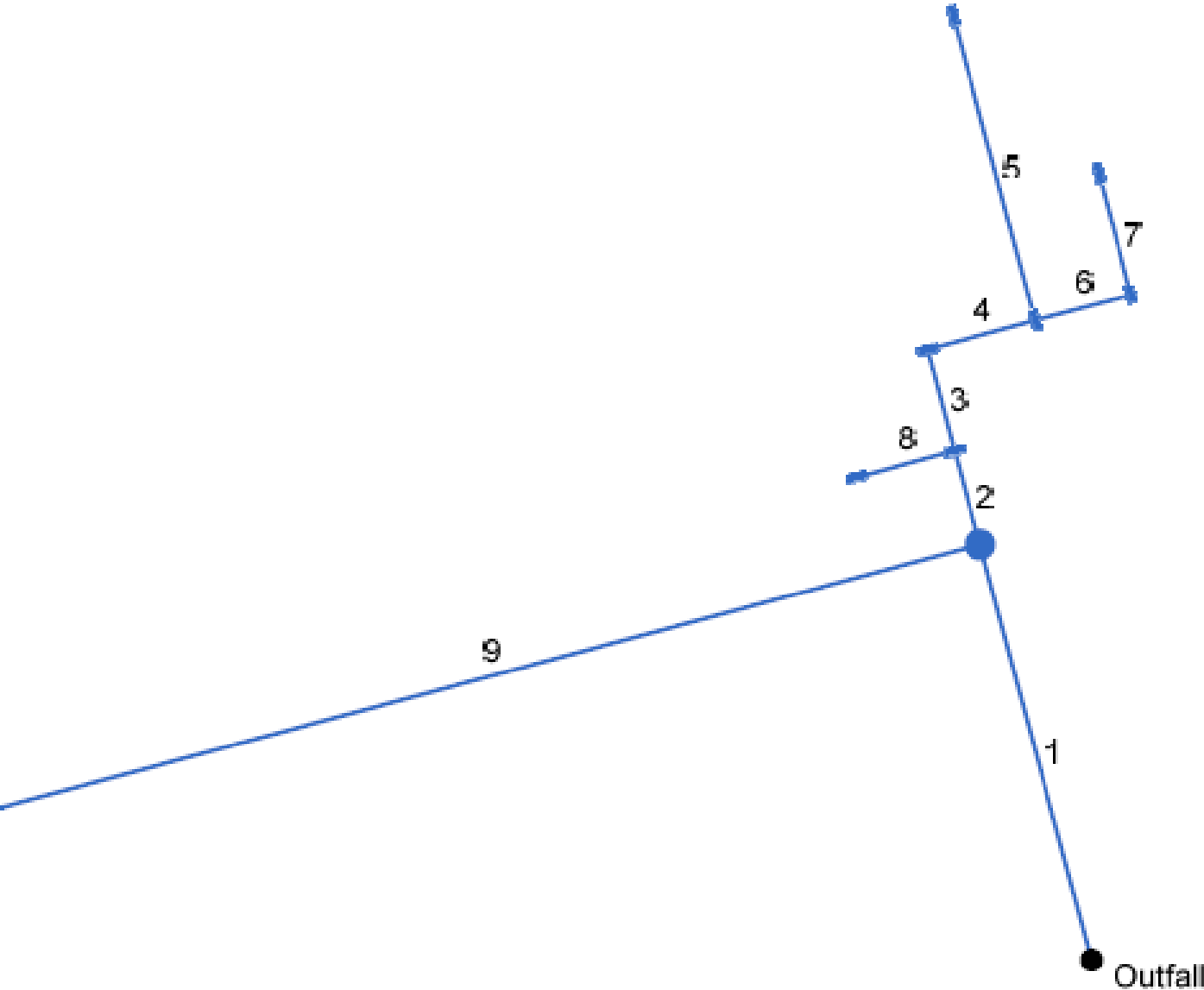
Volcano Road



Depth (ft)	Q (cfs)	Area (sqft)	Veloc (ft/s)	Wp (ft)	Yc (ft)	TopWidth (ft)	Energy (ft)
0.48	33.80	7.84	4.31	40.01	0.57	39.24	0.77

DRAINAGE REPORT - PARADISE RV PARK PHASE I

Storm Drain Layout



DRAINAGE REPORT - PARADISE RV PARK PHASE I

Storm Drain Summary

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	Pipe - (1)	979.7	102	Cir	127.31	5206.00	5207.91	1.500	5213.66	5215.54	n/a	5225.19 i	End	Manhole
2	Pipe - (2)	85.70	42	Cir	28.75	5212.91	5221.86	31.129	5225.19	5225.36	n/a	5226.82 i	1	Combination
3	Pipe - (4)	68.80	36	Cir	31.10	5222.36	5222.83	1.512	5226.82*	5227.10*	n/a	5228.16 i	2	Grate
4	Pipe - (5)	25.66	24	Cir	32.95	5223.83	5224.49	2.003	5228.16*	5228.52*	1.56	5230.08	3	Combination
5	Pipe - (6)	12.83	18	Cir	93.41	5224.99	5229.95	5.310	5230.08	5231.30	n/a	5233.00 i	4	Combination
6	Pipe - (7)	12.83	24	Cir	29.50	5224.99	5226.23	4.203	5230.08*	5230.16*	0.39	5230.55	4	Combination
7	Pipe - (8)	12.83	18	Cir	36.98	5226.83	5228.47	4.435	5230.55*	5231.02*	n/a	5231.35 i	6	Combination
8	Pipe - (3)	16.90	18	Cir	30.00	5223.86	5228.29	14.767	5226.82	5229.73	n/a	5232.81 i	2	Combination
9	Pipe - (10)	894.0	72	Cir	300.00	5210.41	5220.91	3.500	5225.19*	5238.57*	15.54	5254.11	1	None
Project File: FINAL.stm									Number of lines: 9			Run Date: 4/22/2015		
NOTES: Return period = 100 Yrs. ; *Surcharged (HGL above crown). ; i - Inlet control.														

Storm Drain Inlets

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	SD MH 1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
2	CB 2	0.00	7.26	7.26	0.00	Comb	8.0	9.67	0.00	5.00	2.00	0.030	2.00	0.063	0.020	0.013	0.30	10.80	0.37	10.07	2.0	Off
3	CB 7	43.14*	0.00	43.14	0.00	Grate	0.0	0.00	9.81	5.00	2.00	Sag	10.00	0.250	0.250	0.013	1.37	5.47	1.37	5.47	0.0	2
4	CB 3	0.00	4.64	3.41	1.23	Comb	8.0	6.50	0.00	5.00	2.00	0.017	2.00	0.063	0.020	0.013	0.29	10.05	0.35	9.27	2.0	Off
5	CB 5	12.83*	0.00	8.19	4.64	Comb	8.0	9.67	0.00	5.00	2.00	0.017	2.00	0.063	0.020	0.013	0.39	15.30	0.46	14.77	2.0	4
6	CB 4	0.00	4.64	3.41	1.23	Comb	8.0	6.50	0.00	5.00	2.00	0.017	2.00	0.063	0.020	0.013	0.29	10.05	0.35	9.27	2.0	Off
7	CB 6	12.83*	0.00	8.19	4.64	Comb	8.0	9.67	0.00	5.00	2.00	0.017	2.00	0.063	0.020	0.013	0.39	15.30	0.46	14.77	2.0	6
8	CB 1	16.90*	0.00	9.64	7.26	Comb	8.0	9.67	0.00	5.00	2.00	0.030	2.00	0.063	0.020	0.013	0.39	15.25	0.46	14.72	2.0	2
9	Null Structure	894.00*	0.00	0.00	894.00	None	0.0	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off

Project File: FINAL.stm

Number of lines: 9

Run Date: 4/22/2015

NOTES: Inlet N-Values = 0.016; Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = 100 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

IV. GRADING PLAN

The Grading and Drainage Plan included in VIII. EXHIBITS, depicts the developed grading and drainage characteristics of the area affected by Phase I of the project. The plan demonstrates that the runoff from the site is directed to appropriate points of discharge and the proposed facilities are adequate to accommodate the flows impacted by the site.

V. CONCLUSION

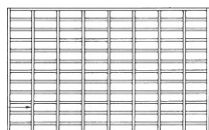
As, shown, the capacity of the proposed infrastructure is adequate to accommodate the runoff from the site as described. The Grading plan and Drainage Plan included in VIII. EXHIBITS, provides support of the Building Permit and construction of the infrastructure improvements. The flow is contained within the street sections and the downstream drainage infrastructure has adequate capacity to accept the runoff.

VI. Appendix A



VII. Appendix B – Standard Calculations

Grate Opening COA STD. DWG 2220



Grate Length	Grate Width	Grate Area	Bar Area	Orifice Area
30"	25"	6.77	1.86	4.91

Standard Equations

Inlet Capacity

Hydraflow Storm Sewers uses methods presented by HEC-22. The interception capacity of combination inlets on grade is essentially equal to that of the grate alone. Hydraflow Storm Sewers computes this capacity by neglecting the curb. The interception capacity of grate inlets on grade is computed using the following equations, as specified in HEC-22:

$$E = R_f E_o + R_s (1 - E_o)$$

Where:

E = Efficiency of the grate

R_f = Ratio of intercepted frontal flow to total gutter flow=1

E_o = Ratio of frontal flow to total gutter flow

R_s = Side flow interception efficiency

$$R_s = \frac{1}{1 + \left(\frac{K_c V^{1.8}}{S_x L^{2.3}} \right)}$$

Where:

K_c = 0.15

V = Velocity of flow in the gutter in ft/s

L = Grate length in ft

Culvert Flow

Per the HDS-5 method, the following inlet control equations are used. If H_w is above the pipe crown, the submerged equation is used. Otherwise the unsubmerged equation is used.

Submerged

$$H_w = D \times \left[c \left(\frac{Q}{A \sqrt{D}} \right)^2 + Y - .5S \right]$$

Where:

H_w = Headwater depth above invert

D = Line Rise, ft

Q = Flow rate, cfs

A = Full cross-sectional area of pipe, sqft

A = Full cross-sectional area of pipe, sqft

K, M, c, Y = Coefficients based on edge configurations

S = Line slope, ft/ft

Submerged

$$H_w = D \times \left[K \left(\frac{Q}{A \sqrt{D}} \right)^M \right]$$

DRAINAGE REPORT - PARADISE RV PARK PHASE I

Existing Hydrology

AHYMO Summary

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -
INPUT FILE = F:\Adil\RV\DRAINAGE\1\EXISTI~3.TXT

- VERSION: 1997.02c

RUN DATE (MON/DAY/YR) =04/21/2015
USER NO.= AHYMO-I-9702c01000Q29-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
*S	PARADISE RV PARK										
*S	Drainage Basin Analysis										
*S	"EXISTING" CONDITION MODEL										
START											TIME= .00
LOCATION				ALBUQUERQUE							
*S	RAINFALL FROM NOAA COA DEVELOPMENT PROCESS MANUAL										
*S	*****										
*S	100 YEAR 24HR STORM										
RAINFALL	TYPE= 2										RAIN24= 2.660
SEDIMENT BULK											PK BF = 1.06
COMPUTE NM HYD	101.00	-	1	.14521	137.69	4.787	.61811	1.567	1.482		PER IMP= 5.00
ROUTE MCUNGE	101RT	1	2	.14521	133.62	4.746	.61278	1.767	1.438		CCODE = .1
COMPUTE NM HYD	110.00	-	1	.12985	206.63	10.522	1.51932	1.600	2.486		PER IMP= 45.90
ADD HYD	110SUM	2& 1	10	.27506	284.08	15.268	1.04074	1.700	1.614		
COMPUTE NM HYD	105.00	-	1	.08439	85.72	2.782	.61814	1.533	1.587		PER IMP= 5.00
ROUTE RESERVOIR	POND1	1	2	.08439	10.34	2.766	.61464	2.033	.191		AC-FT= 1.940
ROUTE MCUNGE	POND1RT	2	1	.08439	10.34	2.766	.61455	2.067	.191		CCODE = .2
COMPUTE NM HYD	106.00	-	2	.05741	103.63	4.736	1.54671	1.533	2.820		PER IMP= 51.45
ADD HYD	106SUM	1& 2	1	.14180	105.28	7.502	.99195	1.533	1.160		
*S	AP1										
ROUTE MCUNGE	106SUMRT	1	20	.14180	105.27	7.498	.99147	1.567	1.160		CCODE = .2
COMPUTE NM HYD	104.00	-	1	.04197	39.56	1.384	.61813	1.533	1.473		PER IMP= 5.00
ROUTE MCUNGE	104RT	1	21	.04197	38.77	1.375	.61414	1.700	1.443		CCODE = .1
ADD HYD	109SUMA	20&21	1	.18377	127.26	8.873	.90530	1.600	1.082		
COMPUTE NM HYD	109.00	-	2	.04336	59.57	2.100	.90820	1.500	2.146		PER IMP= 19.50
ADD HYD	109SUMB	1& 2	20	.22713	173.04	10.973	.90585	1.600	1.190		
*S	AP2										
ADD HYD	POND3SUMA	10&20	10	.50219	426.30	26.241	.97973	1.667	1.326		
COMPUTE NM HYD	102.00	-	1	.07604	82.97	2.507	.61817	1.533	1.705		PER IMP= 5.00
ROUTE MCUNGE	102RT	1	2	.07604	82.06	2.496	.61537	1.600	1.686		CCODE = .1
COMPUTE NM HYD	107.00	-	1	.04325	50.42	1.550	.67185	1.533	1.821		PER IMP= 6.40
ADD HYD	107SUM	2& 1	1	.11929	122.36	4.045	.63585	1.600	1.603		
*S	AP3										
ROUTE MCUNGE	107RT	1	2	.11929	121.16	4.031	.63362	1.667	1.587		CCODE = .1

DRAINAGE REPORT - PARADISE RV PARK PHASE I

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	103.00	-	1	.06441	69.26	2.124	.61817	1.533	1.680	PER IMP= 5.00
ROUTE MCUNGE	103RT	1	3	.06441	68.08	2.112	.61469	1.633	1.652	CCODE = .1
ADD HYD	108SUMA	2& 3	1	.18370	187.40	6.143	.62698	1.667	1.594	
COMPUTE NM HYD	108.00	-	2	.04522	54.07	1.665	.69041	1.533	1.868	PER IMP= 6.80
ADD HYD	108SUMB	1& 2	1	.22892	217.61	7.808	.63951	1.667	1.485	
*S AP4										
ROUTE MCUNGE	108SUMBRT	1	2	.22892	215.76	7.786	.63775	1.700	1.473	CCODE = .1
COMPUTE NM HYD	111.00	-	1	.02356	17.18	.777	.61803	1.600	1.139	PER IMP= 5.00
ADD HYD	111SUM	2& 1	1	.25248	230.64	8.563	.63591	1.700	1.427	
ROUTE RESERVOIR	POND2	1	30	.25248	34.28	8.543	.63446	2.167	.212	AC-FT= 5.700
ADD HYD	POND3SUMB	10&30	1	.75467	443.76	34.784	.86422	1.700	.919	
ROUTE RESERVOIR	BASIN	1	30	.75467	56.26	33.678	.83675	2.833	.116	AC-FT= 18.866

DRAINAGE REPORT - PARADISE RV PARK PHASE I

AHYMO Input

```

*S  PARADISE RV PARK
*S  Drainage Basin Analysis
*S  "EXISTING" CONDITION MODEL
*
START          TIME=0.0  PUNCH CODE=0  PRINT CODE=0
LOCATION        ALBUQUERQUE
*
*S  RAINFALL FROM NOAA COA DEVELOPMENT PROCESS MANUAL
*S  *****
*S  100 YEAR 24HR STORM
RAINFALL              TYPE=2
                      QUARTER=1.46 IN
                      HOUR=   1.87 IN
                      SIX HR=  2.20 IN
                      DAY=    2.66 IN   DT=0.033333
*
*
****Adding Sediment Bulk Factor to all Basins
SEDIMENT BULKCODE=1 BULK FACTOR=1.06
*
*
*** Sub-BASIN 101 ****
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                      NK=1  ISLOPE=1
                      LENGTH=3653 FT  SLOPE=0.048  K=0.7
COMPUTE NM HYD          ID=1  HYD NO=101  DA=0.14521 SQ MI
                      PER A=79 PER B=8  PER C=8  PER D=5
                      TP=0.0  MASSRAIN=-1
*
PRINT HYD              ID=1  CODE=1
*
*
****Route HYD 101 to Sub-Basin 110
COMPUTE RATING CURVE    CID=1  VS NO=1  NO SEGS=1
                      MIN ELEV=100 FT  MAX ELEV=105 FT
                      CH SLP=0.030  FP SLP=0.01  N=0.030
                      DIST=20 FT

                      DIST  ELEV
                      0 105
                      10  100
                      15  100
                      20  105
*
ROUTE MCUNGE           ID=2  HYD NO=101RT  INFLOW ID=1
                      DT=0  HR  LENGTH=3110 FT
                      NS=0  SLOPE=0.030  MATCODE=0
*
PRINT HYD              ID=2  CODE=1
*
*
*** Sub-BASIN 110 ****
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                      NK=1  ISLOPE=1
                      LENGTH=3483 FT  SLOPE=0.026  K=0.7

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

COMPUTE NM HYD ID=1 HYD NO=110 DA=0.12985 SQ MI
 PER A=22.1 PER B=11 PER C=21 PER D=45.9
 TP=0.0 MASSRAIN=-1

*

PRINT HYD ID=1 CODE=1

*

*

* Total Flow from Basin (101Rt + 110)

ADD HYD ID=10 HYD NO=110SUM ID I=2 ID II=1

PRINT HYD ID=10 CODE=1

*

*

*

*

*** Sub-BASIN 105 ***

*

COMPUTE LT TP LCODE=1 UPLAND/LAG TIME METHOD
 NK=1 ISLOPE=1
 LENGTH=2509 FT SLOPE=0.037 K=0.7
 COMPUTE NM HYD ID=1 HYD NO=105 DA=0.08439 SQ MI
 PER A=79 PER B=8 PER C=8 PER D=5
 TP=0.0 MASSRAIN=-1

*

PRINT HYD ID=1 CODE=1

*

*

****Route Hyd 105 through Pond1

*

ROUTE RESERVOIR	ID=2	HYD NO=POND1	INFLOW ID=1	CODE=10
OUTFLOW (CFS)		STORAGE (AC FT)		ELEV
0		0		5260
5		1.061		5262
14		2.542		5264

*

*

****Route HYD POND1 to Sub-Basin 106

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
 MIN ELEV=100 FT MAX ELEV=105 FT
 CH SLP=0.026 FP SLP=0.01 N=0.017
 DIST=20 FT

DIST	ELEV
0	105
10	100
15	100
20	105

*

ROUTE MCUNGE ID=1 HYD NO=POND1RT INFLOW ID=2
 DT=0 HR LENGTH=780 FT
 NS=0 SLOPE=0.026

*

PRINT HYD ID=1 CODE=1

*

*

*** Sub-BASIN 106 ***

*

COMPUTE LT TP LCODE=1 UPLAND/LAG TIME METHOD
 NK=1 ISLOPE=1
 LENGTH=2718 FT SLOPE=0.032 K=0.7

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

COMPUTE NM HYD          ID=2  HYD NO=106  DA=0.05741 SQ MI
                          PER A=35.8 PER B=6.4  PER C=6.4  PER D=51.5
                          TP=0.0  MASSRAIN=-1

*
PRINT HYD               ID=2  CODE=1
*
*
* Total Flow from Basin (POND1RT + 106)
ADD HYD                 ID=1  HYD NO=106SUM ID I=1  ID II=2
PRINT HYD               ID=1  CODE=1
*
*S AP1
*
****Route HYD 106SUM to Sub-Basin 109 Through a Pipe
COMPUTE RATING CURVE    CID=1  VS NO=1 CODE=-1  SLP=0.013
                          DIA=42 IN  N=0.013
*
ROUTE MCUNGE            ID=20  HYD NO=106SUMRT  INFLOW ID=1
                          DT=0 HR  LENGTH=1240 FT
                          NS=0  SLOPE=0.013
*
PRINT HYD               ID=20  CODE=1
*
*****
*
*** Sub-BASIN 104 ***
*
COMPUTE LT TP           LCODE=1  UPLAND/LAG TIME METHOD
                          NK=1  ISLOPE=1
                          LENGTH=2803 FT  SLOPE=0.036  K=0.7
COMPUTE NM HYD          ID=1  HYD NO=104  DA=0.04197 SQ MI
                          PER A=79 PER B=8  PER C=8  PER D=5
                          TP=0.0  MASSRAIN=-1
*
PRINT HYD               ID=1  CODE=1
*
*
****Route HYD 104 to Sub-Basin 109
COMPUTE RATING CURVE    CID=1  VS NO=1 NO SEGS=1
                          MIN ELEV=100 FT MAX ELEV=105 FT
                          CH SLP=0.030  FP SLP=0.01  N=0.030
                          DIST=20 FT

                          DIST  ELEV
                          0 105
                          10 100
                          15 100
                          20 105
*
ROUTE MCUNGE            ID=21  HYD NO=104RT  INFLOW ID=1
                          DT=0 HR  LENGTH=1410 FT
                          NS=0  SLOPE=0.030
*
PRINT HYD               ID=21  CODE=1
*
*
* Total Flow from Basin (106SUMRT + 104RT)
ADD HYD                 ID=1  HYD NO=109SUMA ID I=20  ID II=21
PRINT HYD               ID=1  CODE=1
*

```


DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

*
*** Sub-BASIN 109 ****
*
COMPUTE LT TP          LCODE=1    UPLAND/LAG TIME METHOD
                        NK=1      ISLOPE=1
                        LENGTH=1407 FT    SLOPE=0.030    K=0.7
COMPUTE NM HYD          ID=2    HYD NO=109    DA=0.04336 SQ MI
                        PER A=65.5 PER B=7.5    PER C=7.5    PER D=19.5
                        TP=0.0    MASSRAIN=-1

*
PRINT HYD              ID=2    CODE=1
*
*
* Total Flow from Basin (109SUMA + 109)
ADD HYD                ID=20    HYD NO=109SUMB ID I=1    ID II=2
PRINT HYD              ID=20    CODE=1
*
*S AP2
*
*
* Total Flow from Basin (110SUM + 109SUMB)
ADD HYD                ID=10    HYD NO=POND3SUMA ID I=10    ID II=20
PRINT HYD              ID=10    CODE=1
*
*
*****
*
*
*** Sub-BASIN 102 ****
*
COMPUTE LT TP          LCODE=1    UPLAND/LAG TIME METHOD
                        NK=1      ISLOPE=1
                        LENGTH=2025 FT    SLOPE=0.048    K=0.7
COMPUTE NM HYD          ID=1    HYD NO=102    DA=0.07604 SQ MI
                        PER A=79 PER B=8    PER C=8    PER D=5
                        TP=0.0    MASSRAIN=-1

*
PRINT HYD              ID=1    CODE=1
*
*
****Route HYD 102 to Sub-Basin 107
COMPUTE RATING CURVE    CID=1 VS NO=1 NO SEGS=1
                        MIN ELEV=100 FT MAX ELEV=105 FT
                        CH SLP=0.033 FP SLP=0.01 N=0.030
                        DIST=20 FT

                        DIST  ELEV
                        0 105
                        10 100
                        15 100
                        20 105

*
ROUTE MCUNGE           ID=2    HYD NO=102RT    INFLOW ID=1
                        DT=0 HR    LENGTH=1100 FT
                        NS=0    SLOPE=0.033

*
PRINT HYD              ID=2    CODE=1
*
*
*** Sub-BASIN 107 ****

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

*
COMPUTE LT TP          LCODE=1    UPLAND/LAG TIME METHOD
                        NK=1      ISLOPE=1
                        LENGTH=1285 FT    SLOPE=0.037    K=0.7
COMPUTE NM HYD          ID=1      HYD NO=107    DA=0.04325 SQ MI
                        PER A=70.3 PER B=11.6    PER C=11.7    PER D=6.4
                        TP=0.0    MASSRAIN=-1

*
PRINT HYD              ID=1      CODE=1
*
*
* Total Flow from Basin (102RT + 107)
ADD HYD                ID=1      HYD NO=107SUM ID I=2    ID II=1
PRINT HYD              ID=1      CODE=1
*
*S AP3
*
****Route HYD 107SUM to Sub-Basin 108
COMPUTE RATING CURVE    CID=1 VS NO=1 NO SEGS=1
                        MIN ELEV=100 FT MAX ELEV=105 FT
                        CH SLP=0.029    FP SLP=0.01 N=0.030
                        DIST=20 FT

                        DIST  ELEV
                        0 105
                        10 100
                        15 100
                        20 105

*
ROUTE MCUNGE           ID=2      HYD NO=107RT    INFLOW ID=1
                        DT=0 HR    LENGTH=1300 FT
                        NS=0      SLOPE=0.029

*
PRINT HYD              ID=2      CODE=1
*
*
*** Sub-BASIN 103 ****
*
COMPUTE LT TP          LCODE=1    UPLAND/LAG TIME METHOD
                        NK=1      ISLOPE=1
                        LENGTH=2330 FT    SLOPE=0.041    K=0.7
COMPUTE NM HYD          ID=1      HYD NO=103    DA=0.06441 SQ MI
                        PER A=79 PER B=8    PER C=8    PER D=5
                        TP=0.0    MASSRAIN=-1

*
PRINT HYD              ID=1      CODE=1
*
*
****Route HYD 103 to Sub-Basin 108
COMPUTE RATING CURVE    CID=1 VS NO=1 NO SEGS=1
                        MIN ELEV=100 FT MAX ELEV=105 FT
                        CH SLP=0.031    FP SLP=0.01 N=0.030
                        DIST=20 FT

                        DIST  ELEV
                        0 105
                        10 100
                        15 100
                        20 105

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

ROUTE MCUNGE          ID=3  HYD NO=103RT  INFLOW ID=1
                        DT=0  HR   LENGTH=1490 FT
                        NS=0  SLOPE=0.031

*
PRINT HYD              ID=3    CODE=1
*
*
* Total Flow from Basin (107RT + 103RT)
ADD HYD                ID=1  HYD NO=108SUMA ID I=2  ID II=3
PRINT HYD              ID=1    CODE=1
*
*
*** Sub-BASIN 108 ****
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                        NK=1    ISLOPE=1
                        LENGTH=1486 FT  SLOPE=0.030  K=0.7
COMPUTE NM HYD         ID=2  HYD NO=108  DA=0.04522 SQ MI
                        PER A=66.9 PER B=13.1 PER C=13.2 PER D=6.8
                        TP=0.0  MASSRAIN=-1

*
PRINT HYD              ID=2    CODE=1
*
*
* Total Flow from Basin (108SUMA + 108)
ADD HYD                ID=1  HYD NO=108SUMB ID I=1  ID II=2
PRINT HYD              ID=1    CODE=1
*
*S AP4
*
****Route HYD 108SUMB to Sub-Basin 111
COMPUTE RATING CURVE  CID=1 VS NO=1 NO SEGS=1
                        MIN ELEV=100 FT MAX ELEV=105 FT
                        CH SLP=0.023  FP SLP=0.005 N=0.030
                        DIST=20 FT

                        DIST  ELEV
                        0 105
                        10 100
                        15 100
                        20 105

*
ROUTE MCUNGE          ID=2  HYD NO=108SUMBRT  INFLOW ID=1
                        DT=0  HR   LENGTH=610 FT
                        NS=0  SLOPE=0.023

*
PRINT HYD              ID=2    CODE=1
*
*
** Sub-BASIN 111 ****
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                        NK=1    ISLOPE=1
                        LENGTH=936 FT  SLOPE=0.005  K=0.7
COMPUTE NM HYD         ID=1  HYD NO=111  DA=0.02356 SQ MI
                        PER A=79 PER B=8 PER C=8 PER D=5
                        TP=0.0  MASSRAIN=-1

*
PRINT HYD              ID=1    CODE=1
*

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

*
* Total Flow from Basin (POND2SUMA + 111)
ADD HYD          ID=1  HYD NO=111SUM ID I=2    ID II=1
PRINT HYD        ID=1    CODE=1
*
*
****Route Hyd 111SUM through Pond2
*
ROUTE RESERVOIR          ID=30  HYD NO=POND2  INFLOW ID=1  CODE=10
      OUTFLOW (CFS)    STORAGE (AC FT)    ELEV
      0                0                5204.21
      3                0.287            5205
      13               1.532            5206
      25               3.486            5207
      42               7.543            5209
      52              11.939            5211
      64              16.689            5213
      72              21.805            5215
      80              27.301            5217
      88              33.189            5219
      90              39.483            5221
      91              46.197            5223
      968             49.715            5224
      2615            53.343            5225
      4809            57.082            5226
*
*
* Total Flow from Basin (POND3SUMA + Pond2)
ADD HYD          ID=1  HYD NO=POND3SUMB ID I=10    ID II=30
PRINT HYD        ID=1    CODE=1
*
*
****Route Hyd POND3SUMB through Pond3
*
ROUTE RESERVOIR          ID=30  HYD NO=BASIN  INFLOW ID=1  CODE=10
      OUTFLOW (CFS)    STORAGE (AC FT)    ELEV
      0                0                5201
      5                0.934            5202
      6                3.359            5203
      27               6.08            5204
      43              11.813            5206
      55              17.946            5208
      64              24.492            5210
      72              31.465            5212
      1137             35.115            5213
      3122             38.877            5214
      7217             44.733            5215.5
*
Finish

```


DRAINAGE REPORT - PARADISE RV PARK PHASE I

Interim Hydrology

AHYMO Summary

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -
INPUT FILE = F:\Adil\RV\DRAINA~1\INTERI~2.TXT

- VERSION: 1997.02c

RUN DATE (MON/DAY/YR) =04/21/2015
USER NO.= AHYMO-I-9702c01000Q29-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
*S	PARADISE RV PARK									
*S	Drainage Basin Analysis									
*S	"INTERIM" CONDITION MODEL									
START										TIME= .00
LOCATION				ALBUQUERQUE						
*S	RAINFALL FROM COA DEVELOPMENT PROCESS MANUAL									
*S	*****									
*S	100 YEAR 24HR STORM									
RAINFALL TYPE= 2									RAIN24= 2.660	
SEDIMENT BULK									PK BF = 1.06	
COMPUTE NM HYD	101.00	-	1	.14521	137.69	4.787	.61811	1.567	1.482 PER IMP= 5.00	
ROUTE MCUNGE	101RT	1	2	.14521	133.62	4.746	.61278	1.767	1.438 CCODE = .1	
COMPUTE NM HYD	110.00	-	1	.12985	206.63	10.522	1.51932	1.600	2.486 PER IMP= 45.90	
ADD HYD	110SUM	2& 1	10	.27506	284.08	15.268	1.04074	1.700	1.614	
COMPUTE NM HYD	105.00	-	1	.08439	85.72	2.782	.61814	1.533	1.587 PER IMP= 5.00	
ROUTE RESERVOIR	POND1	1	2	.08439	10.34	2.766	.61464	2.033	.191 AC-FT= 1.940	
ROUTE MCUNGE	POND1RT	2	1	.08439	10.34	2.766	.61455	2.067	.191 CCODE = .2	
COMPUTE NM HYD	106.00	-	2	.05741	103.63	4.736	1.54671	1.533	2.820 PER IMP= 51.45	
ADD HYD	106SUM	1& 2	1	.14180	105.28	7.502	.99195	1.533	1.160	
*S AP1										
ROUTE MCUNGE	106SUMRT	1	20	.14180	105.27	7.498	.99147	1.567	1.160 CCODE = .2	
COMPUTE NM HYD	109.50	-	2	.01867	37.69	1.519	1.52571	1.500	3.155 PER IMP= 50.00	
ADD HYD	109SUMA	20& 2	20	.16047	137.40	9.017	1.05363	1.567	1.338	
*S AP2										
COMPUTE NM HYD	104.00	-	1	.04197	68.30	2.267	1.01260	1.500	2.543 PER IMP= 17.00	
ROUTE MCUNGE	104RT	1	2	.04197	67.05	2.255	1.00745	1.633	2.496 CCODE = .1	
COMPUTE NM HYD	108.10	-	1	.01773	28.86	.958	1.01261	1.500	2.544 PER IMP= 17.00	
ADD HYD	108SUMA	1& 2	1	.05970	86.11	3.213	1.00898	1.600	2.254	
ROUTE MCUNGE	108.1RT	1	2	.05970	85.56	3.204	1.00613	1.700	2.239 CCODE = .1	
COMPUTE NM HYD	109.20	-	1	.00292	5.86	.175	1.12564	1.500	3.136 PER IMP= 5.00	
ADD HYD	109SUMA	1& 2	2	.06262	88.17	3.379	1.01170	1.700	2.200	
*S AP5										
COMPUTE NM HYD	108.20	-	1	.00573	9.34	.309	1.01262	1.500	2.547 PER IMP= 17.00	

DRAINAGE REPORT - PARADISE RV PARK PHASE I

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
ADD HYD	109SUMB	1& 2	2	.06835	92.50	3.688	1.01178	1.700	2.115	
COMPUTE NM HYD	109.10	-	1	.00486	9.26	.265	1.02347	1.500	2.977	PER IMP= .00
ADD HYD	POND	1& 2	1	.07321	96.64	3.954	1.01255	1.700	2.063	
*S TEMP. POND										
COMPUTE NM HYD	109.30	-	1	.00907	25.06	1.064	2.19950	1.500	4.317	PER IMP= 80.00
ROUTE MCUNGE	109.3RT	1	2	.00907	24.83	1.064	2.19871	1.533	4.278	CCODE = .2
COMPUTE NM HYD	109.40	-	1	.00784	21.66	.920	2.19951	1.500	4.317	PER IMP= 80.00
ADD HYD	109SUMC	1& 2	2	.01691	46.15	1.983	2.19908	1.500	4.264	
ROUTE MCUNGE	POND2SUMA	2	21	.01691	46.03	1.983	2.19869	1.533	4.253	CCODE = .2
*S TO STORM DRAIN										
COMPUTE NM HYD	102.00	-	1	.07604	82.97	2.507	.61817	1.533	1.705	PER IMP= 5.00
ROUTE MCUNGE	102RT	1	2	.07604	82.06	2.496	.61537	1.600	1.686	CCODE = .1
COMPUTE NM HYD	107.00	-	1	.04325	50.42	1.550	.67185	1.533	1.821	PER IMP= 6.40
ADD HYD	107SUM	2& 1	1	.11929	122.36	4.045	.63585	1.600	1.603	
*S AP3										
ROUTE MCUNGE	107RT	1	2	.11929	121.16	4.031	.63362	1.667	1.587	CCODE = .1
COMPUTE NM HYD	103.00	-	1	.06441	69.26	2.124	.61817	1.533	1.680	PER IMP= 5.00
ROUTE MCUNGE	103RT	1	3	.06441	68.08	2.112	.61469	1.633	1.652	CCODE = .1
ADD HYD	108SUMA	2& 3	1	.18370	187.40	6.143	.62698	1.667	1.594	
COMPUTE NM HYD	108.30	-	2	.02176	26.03	.801	.69041	1.533	1.869	PER IMP= 6.80
ADD HYD	108SUMB	1& 2	1	.20546	201.94	6.944	.63370	1.667	1.536	
*S AP4										
ROUTE MCUNGE	108SUMBRT	1	2	.20546	201.23	6.943	.63359	1.667	1.530	CCODE = .2
COMPUTE NM HYD	111.00	-	1	.02356	17.18	.777	.61803	1.600	1.139	PER IMP= 5.00
ADD HYD	POND2SUMB	2& 1	1	.22902	217.33	7.719	.63199	1.667	1.483	
ADD HYD	POND2SUM	21& 1	1	.24593	242.57	9.702	.73971	1.667	1.541	
ROUTE RESERVOIR	POND2	1	30	.24593	36.83	9.666	.73696	2.167	.234	AC-FT= 6.310
ADD HYD	POND3SUMA	10&20	10	.43553	375.45	24.285	1.04549	1.667	1.347	
ADD HYD	POND3SUMB	10&30	10	.68146	399.38	33.951	.93415	1.700	.916	
ROUTE RESERVOIR	POND3	10	30	.68146	54.31	32.732	.90062	2.900	.125	AC-FT= 17.594
FINISH										

DRAINAGE REPORT - PARADISE RV PARK PHASE I

AHYMO Input

```

*S PARADISE RV PARK
*S Drainage Basin Analysis
*S "INTERIM" CONDITION MODEL
*
START                TIME=0.0  PUNCH CODE=0  PRINT CODE=0
LOCATION              ALBUQUERQUE
*
*S RAINFALL FROM COA DEVELOPMENT PROCESS MANUAL
*S *****
*S 100 YEAR 24HR STORM
RAINFALL              TYPE=2
                      QUARTER=1.46 IN
                      HOUR= 1.87 IN
                      SIX HR= 2.20 IN
                      DAY= 2.66 IN    DT=0.033333
*
*
****Adding Sediment Bulk Factor to all Basins
SEDIMENT BULKCODE=1 BULK FACTOR=1.06
*
*
*** Sub-BASIN 101 ****
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                      NK=1  ISLOPE=1
                      LENGTH=3653 FT  SLOPE=0.048  K=0.7
COMPUTE NM HYD          ID=1  HYD NO=101  DA=0.14521 SQ MI
                      PER A=79 PER B=8  PER C=8  PER D=5
                      TP=0.0  MASSRAIN=-1
*
PRINT HYD              ID=1  CODE=1
*
*
****Route HYD 101 to Sub-Basin 110
COMPUTE RATING CURVE    CID=1  VS NO=1  NO SEGS=1
                      MIN ELEV=100 FT  MAX ELEV=105 FT
                      CH SLP=0.030  FP SLP=0.01  N=0.030
                      DIST=20 FT

                      DIST  ELEV
                      0 105
                      10 100
                      15 100
                      20 105
*
ROUTE MCUNGE           ID=2  HYD NO=101RT  INFLOW ID=1
                      DT=0  HR  LENGTH=3110 FT
                      NS=0  SLOPE=0.030
*
PRINT HYD              ID=2  CODE=1
*
*
*** Sub-BASIN 110 ****
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                      NK=1  ISLOPE=1
                      LENGTH=3483 FT  SLOPE=0.026  K=0.7
COMPUTE NM HYD          ID=1  HYD NO=110  DA=0.12985 SQ MI

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

PER A=22.1 PER B=11 PER C=21 PER D=45.9
TP=0.0 MASSRAIN=-1

*

PRINT HYD ID=1 CODE=1

*

*

* Total Flow from Basin (101Rt + 110)

ADD HYD ID=10 HYD NO=110SUM ID I=2 ID II=1

PRINT HYD ID=10 CODE=1

*

*

*

*

*** Sub-BASIN 105 ***

*

COMPUTE LT TP LCODE=1 UPLAND/LAG TIME METHOD

NK=1 ISLOPE=1

LENGTH=2509 FT SLOPE=0.037 K=0.7

COMPUTE NM HYD ID=1 HYD NO=105 DA=0.08439 SQ MI

PER A=79 PER B=8 PER C=8 PER D=5

TP=0.0 MASSRAIN=-1

*

PRINT HYD ID=1 CODE=1

*

*

****Route Hyd 105 through Pond1

*

ROUTE RESERVOIR ID=2 HYD NO=POND1 INFLOW ID=1 CODE=10

OUTFLOW (CFS)	STORAGE (AC FT)	ELEV
0	0	5260
5	1.061	5262
14	2.542	5264

*

*

****Route HYD POND1 to Sub-Basin 106

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1

MIN ELEV=100 FT MAX ELEV=105 FT

CH SLP=0.026 FP SLP=0.01 N=0.017

DIST=20 FT

DIST	ELEV
0	105
10	100
15	100
20	105

*

ROUTE MCUNGE ID=1 HYD NO=POND1RT INFLOW ID=2

DT=0 HR LENGTH=780 FT

NS=0 SLOPE=0.026

*

PRINT HYD ID=1 CODE=1

*

*

*** Sub-BASIN 106 ***

*

COMPUTE LT TP LCODE=1 UPLAND/LAG TIME METHOD

NK=1 ISLOPE=1

LENGTH=2718 FT SLOPE=0.032 K=0.7

COMPUTE NM HYD ID=2 HYD NO=106 DA=0.05741 SQ MI

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

PER A=35.8 PER B=6.4 PER C=6.4 PER D=51.5
TP=0.0 MASSRAIN=-1
*
PRINT HYD ID=2 CODE=1
*
*
* Total Flow from Basin (POND1RT + 106)
ADD HYD ID=1 HYD NO=106SUM ID I=1 ID II=2
PRINT HYD ID=1 CODE=1
*
*S AP1
*
****Route HYD 106SUM to Sub-Basin 109 Through a Pipe
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.013
DIA=42 IN N=0.013
*
ROUTE MCUNGE ID=20 HYD NO=106SUMRT INFLOW ID=1
DT=0 HR LENGTH=1240 FT
NS=0 SLOPE=0.013
*
PRINT HYD ID=20 CODE=1
*
*
*** Sub-BASIN 109.5 ****
*
COMPUTE LT TP LCODE=1 UPLAND/LAG TIME METHOD
NK=1 ISLOPE=1
LENGTH=1367 FT SLOPE=0.030 K=0.7
COMPUTE NM HYD ID=2 HYD NO=109.5 DA=0.01867 SQ MI
PER A=35 PER B=7.5 PER C=7.5 PER D=50
TP=0.0 MASSRAIN=-1
*
PRINT HYD ID=2 CODE=1
*
*
* Total Flow from Basin (106SUMRT + 109.5)
ADD HYD ID=20 HYD NO=109SUMA ID I=20 ID II=2
PRINT HYD ID=20 CODE=1
*
*S AP2
*
*
*****
*** Sub-BASIN 104 ****
*
COMPUTE LT TP LCODE=1 UPLAND/LAG TIME METHOD
NK=1 ISLOPE=1
LENGTH=1952 FT SLOPE=0.036 K=0.7
COMPUTE NM HYD ID=1 HYD NO=104 DA=0.04197 SQ MI
PER A=37 PER B=8 PER C=38 PER D=17
TP=0.0 MASSRAIN=-1
*
PRINT HYD ID=1 CODE=1
*
*
****Route HYD 104 to Sub-Basin 108.1
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
MIN ELEV=100 FT MAX ELEV=105 FT
CH SLP=0.030 FP SLP=0.01 N=0.030
DIST=20 FT

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

DIST  ELEV
      0 105
      10 100
      15 100
      20 105
*
ROUTE MCUNGE      ID=2  HYD NO=104RT  INFLOW ID=1
DT=0  HR  LENGTH=1410 FT
NS=0  SLOPE=0.030
*
PRINT HYD          ID=2  CODE=1
*
*
*** Sub-BASIN 108.1 ***
*
COMPUTE LT TP      LCODE=1  UPLAND/LAG TIME METHOD
NK=1  ISLOPE=1
LENGTH=720 FT  SLOPE=0.030  K=0.7
COMPUTE NM HYD      ID=1  HYD NO=108.1  DA=0.01773 SQ MI
PER A=37 PER B=8  PER C=38  PER D=17
TP=0.0  MASSRAIN=-1
*
PRINT HYD          ID=1  CODE=1
*
*
* Total Flow from Basin (104RT + 108.1)
ADD HYD            ID=1  HYD NO=108SUMA ID I=1  ID II=2
PRINT HYD          ID=1  CODE=1
*
*
****Route HYD 108SUMA to Sub-Basin 109.2
COMPUTE RATING CURVE  CID=1 VS NO=1 NO SEGS=1
MIN ELEV=100 FT MAX ELEV=105 FT
CH SLP=0.033  FP SLP=0.01 N=0.030
DIST=20 FT

DIST  ELEV
      0 105
      10 100
      15 100
      20 105
*
ROUTE MCUNGE      ID=2  HYD NO=108.1RT  INFLOW ID=1
DT=0  HR  LENGTH=1100 FT
NS=0  SLOPE=0.033
*
PRINT HYD          ID=2  CODE=1
*
*
*** Sub-BASIN 109.2 ***
*
COMPUTE LT TP      LCODE=1  UPLAND/LAG TIME METHOD
NK=1  ISLOPE=1
LENGTH=275 FT  SLOPE=0.030  K=0.7
COMPUTE NM HYD      ID=1  HYD NO=109.2  DA=0.00292 SQ MI
PER A=0 PER B=0  PER C=95  PER D=5
TP=0.0  MASSRAIN=-1
*
PRINT HYD          ID=1  CODE=1

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

*
*
* Total Flow from Basin (108.1RT + 109.2)
ADD HYD          ID=2  HYD NO=109SUMA ID I=1  ID II=2
PRINT HYD        ID=2  CODE=1
*
*S AP5
*
*
*** Sub-BASIN 108.2 ****
*
COMPUTE LT TP      LCODE=1  UPLAND/LAG TIME METHOD
                  NK=1  ISLOPE=1
                  LENGTH=370 FT  SLOPE=0.030  K=0.7
COMPUTE NM HYD     ID=1  HYD NO=108.2  DA=0.00573 SQ MI
                  PER A=37 PER B=8  PER C=38  PER D=17
                  TP=0.0  MASSRAIN=-1
*
PRINT HYD          ID=1  CODE=1
*
*
* Total Flow from Basin (109SUMA + 108.2)
ADD HYD          ID=2  HYD NO=109SUMB ID I=1  ID II=2
PRINT HYD        ID=2  CODE=1
*
*** Sub-BASIN 109.1 ****
*
COMPUTE NM HYD     ID=1  HYD NO=109.1  DA=0.00486 SQ MI
                  PER A=0 PER B=8  PER C=100  PER D=0
                  TP=0.0  MASSRAIN=-1
*
* Total Flow from Basin (109SUMA + 109.1)
ADD HYD          ID=1  HYD NO=POND ID I=1  ID II=2
PRINT HYD        ID=1  CODE=1
*
*S TEMP. POND
*****
*** Sub-BASIN 109.3 ****
*
COMPUTE NM HYD     ID=1  HYD NO=109.3  DA=0.00907 SQ MI
                  PER A=0 PER B=0  PER C=20  PER D=80
                  TP=0.0  MASSRAIN=-1
*
PRINT HYD          ID=1  CODE=1
*
*
****Route HYD 109.4 to Sub-Basin 109.3
COMPUTE RATING CURVE  CID=1 VS NO=1 NO SEGS=1
                  MIN ELEV=100 FT MAX ELEV=105 FT
                  CH SLP=0.033  FP SLP=0.01 N=0.017
                  DIST=20 FT

                  DIST  ELEV
                      0 105
                      10 100
                      15 100
                      20 105
*
ROUTE MCUNGE      ID=2  HYD NO=109.3RT  INFLOW ID=1
                  DT=0 HR  LENGTH=436 FT

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

      NS=0  SLOPE=0.033
*
PRINT HYD          ID=2  CODE=1
*
*** Sub-BASIN 109.4 ***
*
COMPUTE NM HYD          ID=1  HYD NO=109.4  DA=0.00784 SQ MI
                        PER A=0 PER B=0  PER C=20  PER D=80
                        TP=0.0  MASSRAIN=-1
*
PRINT HYD          ID=1  CODE=1
*
*
* Total Flow from Basin (109.3RT + 109.4)
ADD HYD          ID=2  HYD NO=109SUMC ID I=1  ID II=2
PRINT HYD          ID=2  CODE=1
*
****Route HYD 109SUMC to Sub-Basin 111 Through a Pipe
COMPUTE RATING CURVE  CID=1  VS NO=1 CODE=-1  SLP=0.013
                        DIA=36 IN  N=0.013
*
ROUTE MCUNGE          ID=21  HYD NO=POND2SUMA  INFLOW ID=2
                        DT=0 HR  LENGTH=300 FT
                        NS=0  SLOPE=0.013
*
PRINT HYD          ID=21  CODE=1
*
*
*S TO STORM DRAIN
*
*
*****
*** Sub-BASIN 102 ***
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                        NK=1  ISLOPE=1
                        LENGTH=2025 FT  SLOPE=0.048  K=0.7
COMPUTE NM HYD          ID=1  HYD NO=102  DA=0.07604 SQ MI
                        PER A=79 PER B=8  PER C=8  PER D=5
                        TP=0.0  MASSRAIN=-1
*
PRINT HYD          ID=1  CODE=1
*
*
****Route HYD 102 to Sub-Basin 107
COMPUTE RATING CURVE  CID=1 VS NO=1 NO SEGS=1
                        MIN ELEV=100 FT MAX ELEV=105 FT
                        CH SLP=0.033  FP SLP=0.01 N=0.030
                        DIST=20 FT

                        DIST  ELEV
                          0 105
                          10 100
                          15 100
                          20 105
*
ROUTE MCUNGE          ID=2  HYD NO=102RT  INFLOW ID=1
                        DT=0 HR  LENGTH=1100 FT
                        NS=0  SLOPE=0.033
*

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

PRINT HYD                      ID=2    CODE=1
*
*
*** Sub-BASIN 107 ****
*
COMPUTE LT TP                  LCODE=1    UPLAND/LAG TIME METHOD
                                NK=1      ISLOPE=1
                                LENGTH=1285 FT    SLOPE=0.037    K=0.7
COMPUTE NM HYD                 ID=1      HYD NO=107    DA=0.04325 SQ MI
                                PER A=70.3 PER B=11.6 PER C=11.7 PER D=6.4
                                TP=0.0    MASSRAIN=-1
*
PRINT HYD                      ID=1      CODE=1
*
*
* Total Flow from Basin (102RT + 107)
ADD HYD                        ID=1      HYD NO=107SUM ID I=2    ID II=1
PRINT HYD                      ID=1      CODE=1
*
*S AP3
*
****Route HYD 107SUM to Sub-Basin 108.3
COMPUTE RATING CURVE          CID=1 VS NO=1 NO SEGS=1
                                MIN ELEV=100 FT MAX ELEV=105 FT
                                CH SLP=0.029 FP SLP=0.01 N=0.030
                                DIST=20 FT

                                DIST  ELEV
                                    0 105
                                    10 100
                                    15 100
                                    20 105
*
ROUTE MCUNGE                  ID=2      HYD NO=107RT    INFLOW ID=1
                                DT=0 HR    LENGTH=1300 FT
                                NS=0      SLOPE=0.029
*
PRINT HYD                      ID=2      CODE=1
*
*
*** Sub-BASIN NE103 ****
*
COMPUTE LT TP                  LCODE=1    UPLAND/LAG TIME METHOD
                                NK=1      ISLOPE=1
                                LENGTH=2330 FT    SLOPE=0.041    K=0.7
COMPUTE NM HYD                 ID=1      HYD NO=103    DA=0.06441 SQ MI
                                PER A=79 PER B=8 PER C=8 PER D=5
                                TP=0.0    MASSRAIN=-1
*
PRINT HYD                      ID=1      CODE=1
*
*
****Route HYD 103 to Sub-Basin 108.3
COMPUTE RATING CURVE          CID=1 VS NO=1 NO SEGS=1
                                MIN ELEV=100 FT MAX ELEV=105 FT
                                CH SLP=0.031 FP SLP=0.01 N=0.030
                                DIST=20 FT

                                DIST  ELEV
                                    0 105

```


DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

10      100
15      100
20      105
*
ROUTE MCUNGE      ID=3  HYD NO=103RT  INFLOW ID=1
                  DT=0  HR  LENGTH=1490 FT
                  NS=0  SLOPE=0.031
*
PRINT HYD          ID=3  CODE=1
*
*
* Total Flow from Basin (107RT + 103RT)
ADD HYD            ID=1  HYD NO=108SUMA ID I=2  ID II=3
PRINT HYD          ID=1  CODE=1
*
*
*** Sub-BASIN 108.3 ****
*
COMPUTE LT TP      LCODE=1  UPLAND/LAG TIME METHOD
                  NK=1  ISLOPE=1
                  LENGTH=1486 FT  SLOPE=0.030  K=0.7
COMPUTE NM HYD     ID=2  HYD NO=108.3  DA=0.02176 SQ MI
                  PER A=66.9 PER B=13.1 PER C=13.2 PER D=6.8
                  TP=0.0  MASSRAIN=-1
*
PRINT HYD          ID=2  CODE=1
*
*
* Total Flow from Basin (108SUMA + 108)
ADD HYD            ID=1  HYD NO=108SUMB ID I=1  ID II=2
PRINT HYD          ID=1  CODE=1
*
*S AP4
*
***Route HYD 108SUMB to Sub-Basin 111
COMPUTE RATING CURVE  CID=1 VS NO=1 NO SEGS=1
                  MIN ELEV=100 FT MAX ELEV=105 FT
                  CH SLP=0.023  FP SLP=0.005 N=0.030
                  DIST=20 FT

                  DIST  ELEV
                  0 105
                  10 100
                  15 100
                  20 105
*
ROUTE MCUNGE      ID=2  HYD NO=108SUMBRT  INFLOW ID=1
                  DT=0  HR  LENGTH=610 FT
                  NS=0  SLOPE=0.023
*
PRINT HYD          ID=2  CODE=1
*
*
** Sub-BASIN 111 ****
*
COMPUTE LT TP      LCODE=1  UPLAND/LAG TIME METHOD
                  NK=1  ISLOPE=1
                  LENGTH=936 FT  SLOPE=0.005  K=0.7
COMPUTE NM HYD     ID=1  HYD NO=111  DA=0.02356 SQ MI
                  PER A=79 PER B=8 PER C=8 PER D=5

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

TP=0.0    MASSRAIN=-1

*
PRINT HYD          ID=1    CODE=1
*
*
* Total Flow from Basin (108SUMBRT + 111)
ADD HYD            ID=1    HYD NO=POND2SUMB ID I=2    ID II=1
PRINT HYD          ID=1    CODE=1
*
*
* Total Flow from Basin (POND2SUMA + POND2SUMB)
ADD HYD            ID=1    HYD NO=POND2SUM ID I=21    ID II=1
PRINT HYD          ID=1    CODE=1
*
*
****Route Hyd 111SUM through Pond2
*
ROUTE RESERVOIR      ID=30  HYD NO=POND2  INFLOW ID=1  CODE=10
      OUTFLOW (CFS)  STORAGE (AC FT)  ELEV
      0              0              5204.21
      3              0.287          5205
      13             1.532          5206
      25             3.486          5207
      42             7.543          5209
      52            11.939          5211
      64            16.689          5213
      72            21.805          5215
      80            27.301          5217
      88            33.189          5219
      90            39.483          5221
      91            46.197          5223
      968           49.715          5224
      2615          53.343          5225
      4809          57.082          5226

* Total Flow from Basin (110SUM + 109SUMA)
ADD HYD            ID=10  HYD NO=POND3SUMA ID I=10    ID II=20
PRINT HYD          ID=10  CODE=1
*
*
* Total Flow from Basin (POND3SUMA + POND2)
ADD HYD            ID=10  HYD NO=POND3SUMB ID I=10    ID II=30
PRINT HYD          ID=10  CODE=1
*
****Route Hyd PONDNE3SUMB through PondNE3
*
ROUTE RESERVOIR      ID=30  HYD NO=POND3  INFLOW ID=10  CODE=10
      OUTFLOW (CFS)  STORAGE (AC FT)  ELEV
      0              0              5201
      5              0.934          5202
      6              3.359          5203
      27             6.08           5204
      43            11.813          5206
      55            17.946          5208
      64            24.492          5210
      72            31.465          5212
      1137           35.115          5213
      3122           38.877          5214
      7217           44.733          5215.5

FINISH

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

Proposed Hydrology**AHYMO Summary**

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -
 INPUT FILE = F:\Adil\RV\DRAINA-1\FINAL9-1.TXT

- VERSION: 1997.02c

RUN DATE (MON/DAY/YR) =04/21/2015
 USER NO.= AHYMO-I-9702c01000Q29-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	
*S PARADISE RV PARK											
*S Drainage Basin Analysis											
*S "PROPOSED" CONDITION MODEL											
START										TIME=	.00
LOCATION										ALBUQUERQUE	
*S RAINFALL FROM COA DEVELOPMENT PROCESS MANUAL											
*S*****											
*S 100 YEAR 24HR STORM											
RAINFALL TYPE= 2										RAIN24=	2.660
SEDIMENT BULK										PK BF =	1.06
COMPUTE NM HYD	202.10	-	1	.08439	158.84	5.139	1.14191	1.500	2.941	PER IMP= 17.00	
ROUTE MCUNGE	202.1RT	1	2	.08439	158.13	5.131	1.14003	1.533	2.928	CCODE = .1	
COMPUTE NM HYD	202.20	-	1	.06185	116.22	3.767	1.14191	1.500	2.936	PER IMP= 17.00	
ADD HYD	202.2SUM	2& 1	1	.14624	271.93	8.898	1.14082	1.533	2.905		
*S AP1											
ROUTE MCUNGE	202.2SUMRT	1	3	.14624	269.90	8.896	1.14060	1.533	2.884	CCODE = .2	
COMPUTE NM HYD	201.10	-	1	.08463	159.29	5.154	1.14191	1.500	2.941	PER IMP= 17.00	
ROUTE MCUNGE	201.1RT	1	2	.08463	158.65	5.146	1.14017	1.533	2.929	CCODE = .1	
COMPUTE NM HYD	201.20	-	1	.04349	81.73	2.649	1.14191	1.500	2.936	PER IMP= 17.00	
ADD HYD	201.2SUMA	2& 1	1	.12812	238.68	7.795	1.14076	1.533	2.911		
ADD HYD	201.2SUMB	1& 3	1	.27436	508.58	16.691	1.14068	1.533	2.896		
ROUTE MCUNGE	201.2SUMBRT	1	3	.27436	502.72	16.690	1.14062	1.533	2.863	CCODE = .2	
*S AP2											
COMPUTE NM HYD	204.10	-	1	.04332	81.41	2.638	1.14191	1.500	2.936	PER IMP= 17.00	
ROUTE MCUNGE	204.1RT	1	2	.04332	80.46	2.630	1.13826	1.567	2.902	CCODE = .1	
COMPUTE NM HYD	203.00	-	1	.05145	96.68	3.133	1.14191	1.500	2.936	PER IMP= 17.00	
ADD HYD	203SUMA	2& 1	1	.09477	170.20	5.763	1.14024	1.533	2.806		
ADD HYD	203SUMB	1& 3	1	.36913	672.93	22.453	1.14052	1.533	2.848		
ROUTE MCUNGE	203SUMBRT	1	3	.36913	671.39	22.441	1.13987	1.567	2.842	CCODE = .2	
*S AP3											
COMPUTE NM HYD	204.20	-	1	.04566	85.80	2.781	1.14191	1.500	2.936	PER IMP= 17.00	
ROUTE MCUNGE	204.2RT	1	2	.04566	84.76	2.772	1.13818	1.567	2.901	CCODE = .1	
COMPUTE NM HYD	207.00	-	1	.05139	96.57	3.130	1.14191	1.500	2.936	PER IMP= 17.00	

DRAINAGE REPORT - PARADISE RV PARK PHASE I

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
ADD HYD	207SUMA	2& 1	1	.09705	174.26	5.901	1.14015	1.533	2.806	
ADD HYD	207SUMB	3& 1	1	.46618	840.87	28.342	1.13993	1.567	2.818	
ROUTE MCUNGE	207SUMBRT	1	3	.46618	836.43	28.340	1.13985	1.567	2.803	CCODE = .2
*S AP4										
COMPUTE NM HYD	209.10	-	1	.00907	25.06	1.064	2.19950	1.500	4.317	PER IMP= 80.00
ROUTE MCUNGE	209.1RT	1	2	.00907	24.72	1.064	2.19898	1.500	4.259	CCODE = .2
COMPUTE NM HYD	209.20	-	1	.01562	43.14	1.832	2.19950	1.500	4.316	PER IMP= 80.00
ADD HYD	209.2SUMA	2& 1	1	.02469	67.87	2.896	2.19931	1.500	4.295	
ROUTE MCUNGE	209.2SUMART	2	1	.02469	67.87	2.896	2.19931	1.500	4.295	CCODE = .0
ADD HYD	209.2SUMC	3& 1	20	.49087	894.00	31.236	1.19314	1.567	2.846	
*S AP5										
COMPUTE NM HYD	205.10	-	1	.07464	140.38	4.546	1.14191	1.500	2.939	PER IMP= 17.00
ROUTE MCUNGE	205.1RT	1	2	.07464	139.41	4.535	1.13922	1.567	2.918	CCODE = .1
COMPUTE NM HYD	205.20	-	1	.06038	113.62	3.688	1.14515	1.500	2.940	PER IMP= 17.20
ADD HYD	205.2SUM	1& 2	1	.13502	239.82	8.223	1.14187	1.533	2.775	
ROUTE MCUNGE	205.2SUMRT	1	2	.13502	239.62	8.209	1.14002	1.567	2.773	CCODE = .1
COMPUTE NM HYD	206.00	-	1	.04398	112.51	4.653	1.98378	1.500	3.997	PER IMP= 69.03
ADD HYD	206SUM	2& 1	1	.17900	333.60	12.862	1.34733	1.567	2.912	
ROUTE MCUNGE	206SUMRT	1	2	.17900	330.70	12.849	1.34596	1.600	2.887	CCODE = .1
COMPUTE NM HYD	209.30	-	1	.01867	37.69	1.519	1.52571	1.500	3.155	PER IMP= 50.00
ADD HYD	209.3SUMA	2& 1	3	.19767	361.08	14.369	1.36294	1.567	2.854	
*S AP6										
COMPUTE NM HYD	210.00	-	1	.12985	243.06	12.612	1.82119	1.600	2.925	PER IMP= 59.00
ROUTE MCUNGE	210RT	1	2	.12985	242.01	12.599	1.81923	1.600	2.912	CCODE = .1
COMPUTE NM HYD	211.00	-	1	.02356	41.54	2.201	1.75187	1.600	2.755	PER IMP= 58.00
ADD HYD	POND3SUMA	2& 1	30	.15341	283.56	14.800	1.80889	1.600	2.888	
ADD HYD	POND2SUMA	3&20	10	.68854	1255.08	45.605	1.24189	1.567	2.848	
ROUTE RESERVOIR	POND2	10	20	.68854	88.19	45.379	1.23574	2.267	.200	AC-FT= 33.802
ADD HYD	POND3SUMB	30&20	10	.84195	343.75	60.179	1.34018	1.600	.638	
ROUTE RESERVOIR	POND3	10	1	.84195	59.70	57.136	1.27240	5.933	.111	AC-FT= 21.361
FINISH										

DRAINAGE REPORT - PARADISE RV PARK PHASE I

AHYMO Input

```

*S  PARADISE RV PARK
*S  Drainage Basin Analysis
*S  "PROPOSED" CONDITION MODEL
*
START          TIME=0.0  PUNCH CODE=0  PRINT CODE=0
LOCATION        ALBUQUERQUE
*
*S  RAINFALL FROM COA DEVELOPMENT PROCESS MANUAL
*S  *****
*S  100 YEAR 24HR STORM
START          TIME=0.0  PUNCH CODE=0  PRINT CODE=0
LOCATION        ALBUQUERQUE
*
RAINFALL              TYPE=2
                      QUARTER=1.46 IN
                      HOUR=   1.87 IN
                      SIX HR=  2.20 IN
                      DAY=    2.66 IN   DT=0.033333
*
*
****Adding Sediment Bulk Factor to all Basins
SEDIMENT BULK CODE=1 BULK FACTOR=1.06
*
*
*** Sub-BASIN 202.1 ****
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                      NK=3  ISLOPE=1
                      LENGTH=400 FT  SLOPE=0.053  K=0.7
                      LENGTH=1600 FT  SLOPE=0.056  K=2.0
                      LENGTH=440 FT  SLOPE=0.039  K=3.0
COMPUTE NM HYD          ID=1  HYD NO=202.1  DA=0.08439 SQ MI
                      PER A=0  PER B=41  PER C=42  PER D=17
                      TP=0.0  MASSRAIN=-1
*
PRINT HYD              ID=1  CODE=1
*
*
****Route HYD 202.1 to Sub-Basin 202.2
COMPUTE RATING CURVE    CID=1  VS NO=1  NO SEGS=1
                      MIN ELEV=100 FT  MAX ELEV=105 FT
                      CH SLP=0.005  FP SLP=0.02  N=0.013
                      DIST=20 FT

                      DIST  ELEV
                      0      105
                      10     100
                      15     100
                      20     105
*
ROUTE MCUNGE           ID=2  HYD NO=202.1RT  INFLOW ID=1
                      DT=0  HR  LENGTH=1080 FT
                      NS=0  SLOPE=0.005
*
PRINT HYD              ID=2  CODE=1
*
*
*** Sub-BASIN 202.2 ****

```


DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                        NK=3    ISLOPE=1
                        LENGTH=400 FT  SLOPE=0.050  K=0.7
                        LENGTH=1100 FT  SLOPE=0.039  K=2.0
                        LENGTH=170 FT   SLOPE=0.029  K=3.0
COMPUTE NM HYD         ID=1    HYD NO=202.2  DA=0.06185 SQ MI
                        PER A=0 PER B=41  PER C=42  PER D=17
                        TP=0.0  MASSRAIN=-1

*
PRINT HYD              ID=1    CODE=1
*
*
* Total Flow from Basin (202.1RT + 202.2)
ADD HYD                ID=1    HYD NO=202.2SUM ID I=2    ID II=1
PRINT HYD              ID=1    CODE=1
*
*S AP1
*
*
****Route HYD 202.2SUM to Sub-Basin 201.2 Through a Pipe
COMPUTE RATING CURVE  CID=1    VS NO=1 CODE=-1  SLP=0.02
                        DIA=54 IN  N=0.013

*
ROUTE MCUNGE           ID=3    HYD NO=202.2SUMRT  INFLOW ID=1
                        DT=0 HR  LENGTH=1043 FT
                        NS=0    SLOPE=0.02

*
PRINT HYD              ID=3    CODE=1
*
*
*****
*** Sub-BASIN 201.1 ***
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                        NK=2    ISLOPE=1
                        LENGTH=280 FT  SLOPE=0.096  K=0.7
                        LENGTH=2145 FT  SLOPE=0.038  K=2.0
COMPUTE NM HYD         ID=1    HYD NO=201.1  DA=0.08463 SQ MI
                        PER A=0 PER B=41  PER C=42  PER D=17
                        TP=0.0  MASSRAIN=-1

*
PRINT HYD              ID=1    CODE=1
*
*
****Route HYD 201.1 to Sub-Basin 201.2
COMPUTE RATING CURVE  CID=1    VS NO=1 NO SEGS=1
                        MIN ELEV=100 FT MAX ELEV=105 FT
                        CH SLP=0.005  FP SLP=0.02 N=0.013
                        DIST=20 FT

                        DIST  ELEV
                        0      105
                        10     100
                        15     100
                        20     105

*
ROUTE MCUNGE           ID=2    HYD NO=201.1RT  INFLOW ID=1
                        DT=0 HR  LENGTH=1175 FT
                        NS=0    SLOPE=0.005

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

*
PRINT HYD                      ID=2    CODE=1
*
*
*** Sub-BASIN 201.2 ****
*
COMPUTE LT TP                  LCODE=1    UPLAND/LAG TIME METHOD
                                NK=2      ISLOPE=1
                                LENGTH=220 FT    SLOPE=0.050    K=0.7
                                LENGTH=965 FT    SLOPE=0.041    K=2.0
COMPUTE NM HYD                 ID=1      HYD NO=201.2    DA=0.04349 SQ MI
                                PER A=0 PER B=41 PER C=42 PER D=17
                                TP=0.0    MASSRAIN=-1
*
PRINT HYD                      ID=1      CODE=1
*
*
* Total Flow from Basin (201.1RT + 201.2)
ADD HYD                        ID=1      HYD NO=201.2SUMA ID I=2    ID II=1
PRINT HYD                      ID=1      CODE=1
*
*
* Total Flow from Basin (201.2SUMA + 202.2SUMRT)
ADD HYD                        ID=1      HYD NO=201.2SUMB ID I=1    ID II=3
PRINT HYD                      ID=1      CODE=1
*
*
****Route HYD 201.2SUMB to Sub-Basin 203 Through a Pipe
COMPUTE RATING CURVE          CID=1    VS NO=1 CODE=-1    SLP=0.03
                                DIA=66 IN    N=0.013
*
ROUTE MCUNGE                  ID=3      HYD NO=201.2SUMBRT    INFLOW ID=1
                                DT=0 HR    LENGTH=1175 FT
                                NS=0      SLOPE=0.03
*
PRINT HYD                      ID=3      CODE=1
*
*S AP2
*
*****
*
*** Sub-BASIN 204.1 ****
*
COMPUTE LT TP                  LCODE=1    UPLAND/LAG TIME METHOD
                                NK=1      ISLOPE=1
                                LENGTH=310 FT    SLOPE=0.039    K=0.7
                                LENGTH=730 FT    SLOPE=0.033    K=2.0
COMPUTE NM HYD                 ID=1      HYD NO=204.1    DA=0.04332 SQ MI
                                PER A=0 PER B=41 PER C=42 PER D=17
                                TP=0.0    MASSRAIN=-1
*
PRINT HYD                      ID=1      CODE=1
*
*
****Route HYD 204.1 to Sub-Basin 203 Through a Pipe
COMPUTE RATING CURVE          CID=1    VS NO=1 CODE=-1    SLP=0.023
                                DIA=54 IN    N=0.013
*
ROUTE MCUNGE                  ID=2      HYD NO=204.1RT    INFLOW ID=1

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

DT=0 HR  LENGTH=1100 FT
NS=0  SLOPE=0.023

*
PRINT HYD          ID=2  CODE=1
*
*
*** Sub-BASIN 203 ****
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                        NK=1  ISLOPE=1
                        LENGTH=310 FT  SLOPE=0.039  K=0.7
                        LENGTH=1230 FT  SLOPE=0.033  K=2.0
COMPUTE NM HYD          ID=1  HYD NO=203  DA=0.05145 SQ MI
                        PER A=0 PER B=41  PER C=42  PER D=17
                        TP=0.0  MASSRAIN=-1

*
PRINT HYD          ID=1  CODE=1
*
*
* Total Flow from Basin (204.1RT + 203)
ADD HYD          ID=1  HYD NO=203SUMA ID I=2  ID II=1
PRINT HYD          ID=1  CODE=1
*
*
* Total Flow from Basin (203SUMA + 201.2SUMRT)
ADD HYD          ID=1  HYD NO=203SUMB ID I=1  ID II=3
PRINT HYD          ID=1  CODE=1
*
*
****Route HYD 203SUMB to Sub-Basin 207 Through a Pipe
COMPUTE RATING CURVE  CID=1  VS NO=1 CODE=-1  SLP=0.035
                        DIA=66 IN  N=0.013

*
ROUTE MCUNGE          ID=3  HYD NO=203SUMBRT  INFLOW ID=1
                        DT=0 HR  LENGTH=1175 FT
                        NS=0  SLOPE=0.035

*
PRINT HYD          ID=3  CODE=1
*
*S AP3
*
*****
*** Sub-BASIN 204.2 ****
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                        NK=1  ISLOPE=1
                        LENGTH=310 FT  SLOPE=0.039  K=0.7
                        LENGTH=1230 FT  SLOPE=0.033  K=2.0
COMPUTE NM HYD          ID=1  HYD NO=204.2  DA=0.04566 SQ MI
                        PER A=0 PER B=41  PER C=42  PER D=17
                        TP=0.0  MASSRAIN=-1

*
PRINT HYD          ID=1  CODE=1
*
*
****Route HYD 204.2 to Sub-Basin 207 Through a Pipe
COMPUTE RATING CURVE  CID=1  VS NO=1 CODE=-1  SLP=0.023
                        DIA=54 IN  N=0.013
*

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

ROUTE MCUNGE          ID=2  HYD NO=204.2RT  INFLOW ID=1
                        DT=0  HR  LENGTH=1100 FT
                        NS=0  SLOPE=0.023

*
PRINT HYD              ID=2    CODE=1
*
*
*** Sub-BASIN 207 ****
*
COMPUTE LT TP          LCODE=1  UPLAND/LAG TIME METHOD
                        NK=1    ISLOPE=1
                        LENGTH=310 FT  SLOPE=0.039  K=0.7
                        LENGTH=1230 FT  SLOPE=0.033  K=2.0
COMPUTE NM HYD         ID=1    HYD NO=207  DA=0.05139 SQ MI
                        PER A=0  PER B=41  PER C=42  PER D=17
                        TP=0.0  MASSRAIN=-1

*
PRINT HYD              ID=1    CODE=1
*
*
* Total Flow from Basin (204.2RT + 207)
ADD HYD                ID=1  HYD NO=207SUMA ID I=2  ID II=1
PRINT HYD              ID=1    CODE=1
*
*
* Total Flow from Basin (203SUMBRT + 207SUMA)
ADD HYD                ID=1  HYD NO=207SUMB ID I=3  ID II=1
PRINT HYD              ID=1    CODE=1
*
*
****Route HYD 207SUMB to Sub-Basin 209.2 Through a Pipe
COMPUTE RATING CURVE  CID=1  VS NO=1 CODE=-1  SLP=0.038
                        DIA=72 IN  N=0.013

*
ROUTE MCUNGE          ID=3  HYD NO=207SUMBRT  INFLOW ID=1
                        DT=0  HR  LENGTH=1695 FT
                        NS=0  SLOPE=0.038

*
PRINT HYD              ID=3    CODE=1
*
*S AP4
*
*
*****
*** Sub-BASIN 209.1 ****
*
COMPUTE NM HYD         ID=1    HYD NO=209.1  DA=0.00907 SQ MI
                        PER A=0  PER B=0  PER C=20  PER D=80
                        TP=0.0  MASSRAIN=-1

*
PRINT HYD              ID=1    CODE=1
*
*
****Route HYD 209.1 to Sub-Basin 209.2
COMPUTE RATING CURVE  CID=1  VS NO=1 NO SEGS=1
                        MIN ELEV=100 FT MAX ELEV=105 FT
                        CH SLP=0.005  FP SLP=0.02 N=0.013
                        DIST=20 FT

                        DIST  ELEV

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

          0      105
        10      100
        15      100
        20      105
*
ROUTE MCUNGE      ID=2  HYD NO=209.1RT  INFLOW ID=1
                  DT=0  HR  LENGTH=500 FT
                  NS=0  SLOPE=0.005
*
*** Sub-BASIN 209.2 ****
*
COMPUTE NM HYD      ID=1  HYD NO=209.2  DA=0.01562 SQ MI
                  PER A=0 PER B=0 PER C=20 PER D=80
                  TP=0.0  MASSRAIN=-1
*
PRINT HYD          ID=1  CODE=1
*
*
* Total Flow from Basin (209.1RT + 209.2)
ADD HYD          ID=1  HYD NO=209.2SUMA ID I=2  ID II=1
PRINT HYD          ID=1  CODE=1
*
*
****Route HYD 209.2SUMA to Sub-Basin 209.2SUMB Through a Pipe
COMPUTE RATING CURVE      CID=1  VS NO=1 CODE=-1  SLP=0.03
                          DIA=42 IN  N=0.013
*
ROUTE MCUNGE      ID=1  HYD NO=209.2SUMART  INFLOW ID=1
                  DT=0  HR  LENGTH=150 FT
                  NS=0  SLOPE=0.03
*
PRINT HYD          ID=1  CODE=1
*
*
* Total Flow from Basin (207SUMBRT + 209.2SUMART)
ADD HYD          ID=20  HYD NO=209.2SUMC ID I=3  ID II=1
PRINT HYD          ID=20  CODE=1
*
*S AP5
*
*****
*** Sub-BASIN 205.1 ****
*
COMPUTE LT TP      LCODE=1  UPLAND/LAG TIME METHOD
                  NK=2  ISLOPE=1
                  LENGTH=500 FT  SLOPE=0.040  K=0.7
                  LENGTH=870 FT  SLOPE=0.037  K=2.0
COMPUTE NM HYD      ID=1  HYD NO=205.1  DA=0.07464 SQ MI
                  PER A=0 PER B=41 PER C=42 PER D=17
                  TP=0.0  MASSRAIN=-1
*
PRINT HYD          ID=1  CODE=1
*
*
****Route HYD 205.2SUM to Sub-Basin 206
COMPUTE RATING CURVE      CID=1 VS NO=1 NO SEGS=1
                          MIN ELEV=100 FT MAX ELEV=105 FT
                          CH SLP=0.030  FP SLP=0.02 N=0.013
                          DIST=20 FT

```


DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

DIST  ELEV
      0    105
    10    100
    15    100
    20    105
*
ROUTE MCUNGE      ID=2  HYD NO=205.1RT  INFLOW ID=1
DT=0  HR  LENGTH=1185 FT
NS=0  SLOPE=0.030
*
PRINT HYD          ID=2  CODE=1
*
*
*** Sub-BASIN 205.2 ****
*
COMPUTE LT TP      LCODE=1  UPLAND/LAG TIME METHOD
                   NK=3    ISLOPE=1
                   LENGTH=425 FT  SLOPE=0.049  K=0.7
LENGTH=840 FT  SLOPE=0.021  K=2.0
LENGTH=440 FT  SLOPE=0.023  K=3.0
COMPUTE NM HYD      ID=1  HYD NO=205.2  DA=0.06038 SQ MI
PER A=0 PER B=40.9 PER C=41.9 PER D=17.2
TP=0.0  MASSRAIN=-1
*
PRINT HYD          ID=1  CODE=1
*
*
* Total Flow from Basin (205.1sumRT + 205.2)
ADD HYD              ID=1  HYD NO=205.2SUM ID I=1  ID II=2
PRINT HYD              ID=1  CODE=1
*
*
****Route HYD 205.2SUM to Sub-Basin 206
COMPUTE RATING CURVE  CID=1 VS NO=1 NO SEGS=1
MIN ELEV=100 FT MAX ELEV=105 FT
CH SLP=0.005  FP SLP=0.02 N=0.013
DIST=20 FT

DIST  ELEV
      0    105
    10    100
    15    100
    20    105
*
ROUTE MCUNGE      ID=2  HYD NO=205.2SUMRT  INFLOW ID=1
DT=0  HR  LENGTH=1075 FT
NS=0  SLOPE=0.005
*
PRINT HYD          ID=2  CODE=1
*
*
*** Sub-BASIN 206 ****
*
COMPUTE LT TP      LCODE=1  UPLAND/LAG TIME METHOD
                   NK=2    ISLOPE=1
                   LENGTH=445 FT  SLOPE=0.040  K=0.7
LENGTH=880 FT  SLOPE=0.020  K=3.0
COMPUTE NM HYD      ID=1  HYD NO=206  DA=0.04398 SQ MI
PER A=0.1 PER B=15.3 PER C=15.6 PER D=69.1

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

TP=0.0    MASSRAIN=-1

*
PRINT HYD          ID=1    CODE=1
*
*
* Total Flow from Basin (205.2SUMRt+ 206)
ADD HYD            ID=1    HYD NO=206SUM ID I=2    ID II=1
PRINT HYD          ID=1    CODE=1
*
*
****Route HYD 206SUM to Sub-Basin 209.3 Through a Pipe
COMPUTE RATING CURVE    CID=1    VS NO=1 CODE=-1    SLP=0.03
                        DIA=54 IN    N=0.013
*
ROUTE MCUNGE        ID=2    HYD NO=206SUMRT    INFLOW ID=1
DT=0 HR    LENGTH=1240 FT
NS=0    SLOPE=0.03
*
PRINT HYD          ID=2    CODE=1
*
*
*** Sub-BASIN 209.3 ****
*
COMPUTE LT TP        LCODE=1    UPLAND/LAG TIME METHOD
                        NK=1    ISLOPE=1
                        LENGTH=675 FT    SLOPE=0.030    K=0.7
COMPUTE NM HYD        ID=1    HYD NO=209.3    DA=0.01867 SQ MI
                        PER A=35 PER B=7.5    PER C=7.5    PER D=50
                        TP=0.0    MASSRAIN=-1
*
PRINT HYD          ID=1    CODE=1
*
*
* Total Flow from Basin (206SUMRT + 209.3)
ADD HYD            ID=3    HYD NO=209.3SUMA ID I=2    ID II=1
PRINT HYD          ID=3    CODE=1
*
*S AP6
*
*****
*** Sub-BASIN 210 ****
*
COMPUTE LT TP        LCODE=1    UPLAND/LAG TIME METHOD
                        NK=1    ISLOPE=1
                        LENGTH=3483 FT    SLOPE=0.026    K=0.7
COMPUTE NM HYD        ID=1    HYD NO=210    DA=0.12985 SQ MI
                        PER A=0 PER B=20    PER C=21    PER D=59
                        TP=0.0    MASSRAIN=-1
*
PRINT HYD          ID=1    CODE=1
*
*
****Route HYD 210 to Sub-Basin 211
COMPUTE RATING CURVE    CID=1 VS NO=1 NO SEGS=1
                        MIN ELEV=100 FT MAX ELEV=105 FT
                        CH SLP=0.005    FP SLP=0.02 N=0.013
                        DIST=20 FT

DIST    ELEV

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

          0      105
        10      100
        15      100
        20      105
*
ROUTE MCUNGE      ID=2  HYD NO=210RT  INFLOW ID=1
                  DT=0  HR  LENGTH=450 FT
                  NS=0  SLOPE=0.005
*
PRINT HYD          ID=2  CODE=1
*
*
*** Sub-BASIN 211 ****
*
COMPUTE LT TP      LCODE=1  UPLAND/LAG TIME METHOD
                  NK=1  ISLOPE=1
                  LENGTH=936 FT  SLOPE=0.005  K=0.7
COMPUTE NM HYD      ID=1  HYD NO=211  DA=0.02356 SQ MI
                  PER A=16 PER B=5  PER C=21  PER D=58
                  TP=0.0  MASSRAIN=-1
*
PRINT HYD          ID=1  CODE=1
*
*
* Total Flow from Basin (210RT + 211)
ADD HYD            ID=30  HYD NO=POND3SUMA ID I=2  ID II=1
PRINT HYD          ID=30  CODE=1
*
*
* Total Flow from Basin (209.3SUMA + 209.2SUMC)
ADD HYD            ID=10  HYD NO=POND2SUMA ID I=3  ID II=20
PRINT HYD          ID=10  CODE=1
*
*
****Route Hyd POND2SUMA through Pond2
*
ROUTE RESERVOIR      ID=20  HYD NO=POND2  INFLOW ID=10  CODE=1
OUTFLOW (CFS)  STORAGE (AC FT)  ELEV
0              0              5204.21
3              0.287          5205
13             1.532          5206
25             3.486          5207
42             7.543          5209
52            11.939          5211
64            16.689          5213
72            21.805          5215
80            27.301          5217
88            33.189          5219
90            39.483          5221
91            46.197          5223
968           49.715          5224
2615          53.343          5225
4809          57.082          5226
*
*****
* Total Flow from Basin (POND3SUMB + POND2)
ADD HYD            ID=10  HYD NO=POND3SUMB ID I=30  ID II=20
PRINT HYD          ID=10  CODE=1
*
*

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

****Route Hyd POND3SUMB through Pond3

*

ROUTE RESERVOIR	ID=1 OUTFLOW (CFS)	HYD NO=POND3 STORAGE (AC FT)	INFLOW ID=10 ELEV	CODE=1
	0	0	5201	
	5	0.934	5202	
	6	3.359	5203	
	27	6.08	5204	
	43	11.813	5206	
	55	17.946	5208	
	64	24.492	5210	
	72	31.465	5212	
	1137	35.115	5213	
	3122	38.877	5214	
	7217	44.733	5215.5	

*

FINISH

Site Hydrology & Drainage Improvement Calculations

AHYMO Interim Summary

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -
 INPUT FILE = F:\Adil\RV\DRAINA~1\INEFBC~1.TXT

- VERSION: 1997.02c

RUN DATE (MON/DAY/YR) =04/23/2015
 USER NO.= AHYMO-I-9702c01000Q29-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
*S	PARADISE RV PARK									
*S	Drainage Basin Analysis									
*S	"INTERIM SITE" CONDITION MODEL									
START										TIME= .00
LOCATION										
	ALBUQUERQUE									
*S	RAINFALL FROM COA DEVELOPMENT PROCESS MANUAL									
*S	*****									
*S	100 YEAR 24HR STORM									
START										TIME= .00
LOCATION										
	ALBUQUERQUE									
RAINFALL TYPE= 2										RAIN24= 2.660
COMPUTE NM HYD	209.10	-	1	.00907	23.64	1.004	2.07500	1.500	4.073	PER IMP= 80.00
ROUTE MCUNGE	209.1RT	1	2	.00907	23.31	1.004	2.07451	1.500	4.016	CCODE = .2
COMPUTE NM HYD	100.00	-	1	.00086	2.34	.101	2.21015	1.500	4.251	PER IMP= 90.00
ADD HYD	100SUM	2& 1	10	.00993	25.66	1.105	2.08627	1.500	4.037	
*S AP1										
COMPUTE NM HYD	101.00	-	1	.00178	4.83	.211	2.22612	1.500	4.238	PER IMP= 92.00
ROUTE MCUNGE	101RT	1	2	.00178	4.79	.211	2.22546	1.500	4.203	CCODE = .2
COMPUTE NM HYD	104.00	-	1	.00014	.19	.005	.66738	1.533	2.109	PER IMP= .00
ADD HYD	104SUMA	2& 1	1	.00192	4.98	.216	2.11037	1.500	4.048	
COMPUTE NM HYD	102.00	-	2	.00223	4.44	.142	1.19701	1.500	3.110	PER IMP= 15.00
ADD HYD	104SUMB	2& 1	3	.00415	9.42	.359	1.62003	1.500	3.544	
*S AP2										
COMPUTE NM HYD	103.00	-	1	.00259	5.04	.160	1.16350	1.500	3.044	PER IMP= 14.15
COMPUTE NM HYD	105.00	-	2	.00024	.32	.009	.66738	1.533	2.075	PER IMP= .00
ADD HYD	105SUMA	2& 1	1	.00283	5.36	.169	1.12117	1.500	2.960	
ADD HYD	105SUMB	3& 1	1	.00698	14.77	.528	1.41796	1.500	3.308	
*S AP3										
ADD HYD	105SUMB	10& 1	1	.01691	40.43	1.633	1.81045	1.500	3.736	
*S AP4										
COMPUTE NM HYD	106.00	-	2	.00493	13.33	.581	2.21009	1.500	4.225	PER IMP= 90.00
ADD HYD	105SUMA	2& 1	1	.02184	53.76	2.214	1.90066	1.500	3.846	
FINISH										

AHYMO Final Summary

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -
 INPUT FILE = F:\Adil\RV\DRAINA~1\PROPOS~1.TXT

- VERSION: 1997.02c

RUN DATE (MON/DAY/YR) =04/23/2015
 USER NO.= AHYMO-I-9702c01000Q29-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
*S PARADISE RV PARK										
*S Drainage Basin Analysis										
*S "FINAL SITE" CONDITION MODEL										
START										TIME= .00
LOCATION			ALBUQUERQUE							
*S RAINFALL FROM COA DEVELOPMENT PROCESS MANUAL										
*S*****										
*S 100 YEAR 24HR STORM										
START										TIME= .00
LOCATION			ALBUQUERQUE							
RAINFALL TYPE= 2										RAIN24= 2.660
COMPUTE NM HYD	209.10	-	1	.00907	23.64	1.004	2.07500	1.500	4.073	PER IMP= 80.00
ROUTE MCUNGE	209.1RT	1	2	.00907	23.31	1.004	2.07451	1.500	4.016	CCODE = .2
COMPUTE NM HYD	100.00	-	1	.00086	2.34	.101	2.21015	1.500	4.251	PER IMP= 90.00
ADD HYD	100SUM	2& 1	10	.00993	25.66	1.105	2.08627	1.500	4.037	
*S AP1										
COMPUTE NM HYD	101.00	-	1	.00178	4.83	.211	2.22612	1.500	4.238	PER IMP= 92.00
ROUTE MCUNGE	101RT	1	2	.00178	4.79	.211	2.22546	1.500	4.203	CCODE = .2
COMPUTE NM HYD	104.00	-	1	.00014	.19	.005	.66738	1.533	2.109	PER IMP= .00
ADD HYD	104SUMA	2& 1	1	.00192	4.98	.216	2.11037	1.500	4.048	
COMPUTE NM HYD	102.00	-	2	.00223	4.44	.142	1.19701	1.500	3.110	PER IMP= 15.00
ADD HYD	104SUMB	2& 1	3	.00415	9.42	.359	1.62003	1.500	3.544	
*S AP2										
COMPUTE NM HYD	103.00	-	1	.00259	5.04	.160	1.16350	1.500	3.044	PER IMP= 14.15
COMPUTE NM HYD	105.00	-	2	.00024	.32	.009	.66738	1.533	2.075	PER IMP= .00
ADD HYD	105SUMA	2& 1	1	.00283	5.36	.169	1.12117	1.500	2.960	
COMPUTE NM HYD	107.00	-	2	.00778	15.45	.497	1.19700	1.500	3.102	PER IMP= 15.00
ADD HYD	105SUMB	2& 1	1	.01061	20.80	.666	1.17679	1.500	3.064	
ADD HYD	105SUMC	3& 1	1	.01476	30.22	1.024	1.30148	1.500	3.199	
*S AP3										
ADD HYD	105SUMC	10& 1	1	.02469	55.88	2.129	1.61715	1.500	3.536	
*S AP4										
COMPUTE NM HYD	106.00	-	2	.00493	13.33	.581	2.21009	1.500	4.225	PER IMP= 90.00
ADD HYD	105SUMA	2& 1	1	.02962	69.21	2.711	1.71584	1.500	3.651	
FINISH										

AHYMO Interim Input

```

*S  PARADISE RV PARK
*S  Drainage Basin Analysis
*S  "PROPOSED SITE" CONDITION MODEL
*
START          TIME=0.0  PUNCH CODE=0  PRINT CODE=0
LOCATION        ALBUQUERQUE
*
*S RAINFALL FROM COA DEVELOPMENT PROCESS MANUAL
*S*****
*S  100 YEAR 24HR STORM
START          TIME=0.0  PUNCH CODE=0  PRINT CODE=0
LOCATION        ALBUQUERQUE
*
RAINFALL              TYPE=2
                     QUARTER=1.46 IN
                     HOUR=   1.87 IN
                     SIX HR=  2.20 IN
                     DAY=    2.66 IN   DT=0.033333
*
*
*** Sub-BASIN 209.1 ****
*
COMPUTE NM HYD      ID=1  HYD NO=209.1  DA=0.00907 SQ MI
                     PER A=0 PER B=0  PER C=20 PER D=80
                     TP=0.0  MASSRAIN=-1
*
PRINT HYD           ID=1 CODE=1
*
*
****Route HYD 209.1 to Sub-Basin 100
COMPUTE RATING CURVE      CID=1 VS NO=1 NO SEGS=1
                     MIN ELEV=100 FT MAX ELEV=105 FT
                     CH SLP=0.005  FP SLP=0.02 N=0.013
                     DIST=20 FT

                     DIST  ELEV
                           0    105
                     10    100
                     15    100
                     20    105
*
ROUTE MCUNGE        ID=2  HYD NO=209.1RT  INFLOW ID=1
                     DT=0  HR  LENGTH=500 FT
                     NS=0  SLOPE=0.005
*
*** Sub-BASIN 100 ****
*
COMPUTE NM HYD      ID=1 HYD NO=100 DA=0.000861 SQ MI
                     PER A=0 PER B=0 PER C=10 PER D=90
                     TP=-0.1333 HR MASS RAIN=-1
*
PRINT HYD           ID=1 CODE=1
*
*
* Total Flow from Basin (109.1T + 100)
ADD HYD              ID=10  HYD NO=100SUM ID I=2  ID II=1
PRINT HYD            ID=10  CODE=1
*
*S AP1
*
*
*****
*** Sub-BASIN 101 ****
*
COMPUTE NM HYD      ID=1 HYD NO=101 DA=0.001781 SQ MI
                     PER A=0 PER B=3 PER C=5 PER D=92

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

TP=-0.1333 HR MASS RAIN=-1
*
PRINT HYD          ID=1 CODE=1
*
*
****Route HYD 101 to Sub-Basin 104
COMPUTE RATING CURVE      CID=1 VS NO=1 NO SEGS=1
MIN ELEV=100 FT MAX ELEV=105 FT
CH SLP=0.005  FP SLP=0.02 N=0.013
DIST=20 FT

DIST  ELEV
      0    105
10    100
15    100
20    105
*
ROUTE MCUNGE        ID=2  HYD NO=101RT  INFLOW ID=1
DT=0 HR  LENGTH=300 FT
NS=0  SLOPE=0.005
*
*** Sub-BASIN 104 ****
*
COMPUTE NM HYD      ID=1 HYD NO=104 DA=0.000142 SQ MI
PER A=0 PER B=100 PER C=0 PER D=0
TP=-0.1333 HR MASS RAIN=-1
*
PRINT HYD          ID=1 CODE=1
*
* Total Flow from Basin (101RT + 104)
ADD HYD              ID=1  HYD NO=104SUMA ID I=2  ID II=1
PRINT HYD            ID=1  CODE=1
*
*
*** Sub-BASIN 102 ****
*
COMPUTE NM HYD      ID=2 HYD NO=102 DA=0.002229 SQ MI
PER A=0 PER B=0 PER C=85 PER D=15
TP=-0.1333 HR MASS RAIN=-1
*
PRINT HYD          ID=2 CODE=1
*
* Total Flow from Basin (104SUMA + 102)
ADD HYD              ID=3  HYD NO=104SUMB ID I=2  ID II=1
PRINT HYD            ID=3  CODE=1
*
*S AP2
*
*****
*** Sub-BASIN 103 ****
COMPUTE NM HYD      ID=1 HYD NO=103 DA=0.002586 SQ MI
PER A=0 PER B=6 PER C=85 PER D=15
TP=-0.1333 HR MASS RAIN=-1
*
PRINT HYD          ID=1 CODE=1
*
*** Sub-BASIN 105 ****
*
COMPUTE NM HYD      ID=2 HYD NO=105 DA=0.000241 SQ MI
PER A=0 PER B=100 PER C=0 PER D=0
TP=-0.1333 HR MASS RAIN=-1
*
PRINT HYD          ID=2 CODE=1
*
* Total Flow from Basin (103 + 105)
ADD HYD              ID=1  HYD NO=105SUMA ID I=2  ID II=1

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

PRINT HYD                ID=1    CODE=1
*
* Total Flow from Site (104SUMB + 105SUM)
ADD HYD                  ID=1    HYD NO=105SUMB ID I=3    ID II=1
PRINT HYD                ID=1    CODE=1
*
*S AP3
*
* Total Flow to Storm Drain (100SUM + 105SUMb)
ADD HYD                  ID=1    HYD NO=105SUMB ID I=10    ID II=1
PRINT HYD                ID=1    CODE=1
*
*S AP4
*
*****
*
*** Sub-BASIN 106 ****
*
COMPUTE NM HYD           ID=2 HYD NO=106 DA=0.00493 SQ MI
                        PER A=0 PER B=0 PER C=10 PER D=90
                        TP=-0.1333 HR MASS RAIN=-1
*
PRINT HYD                ID=2 CODE=1
*
* Total Flow from Basin (105SUMB + 106)
ADD HYD                  ID=1    HYD NO=105SUMA ID I=2    ID II=1
PRINT HYD                ID=1    CODE=1
*
FINISH

```

AHYMO Final Input

```

*S  PARADISE RV PARK
*S  Drainage Basin Analysis
*S  "FINAL SITE" CONDITION MODEL
*
START          TIME=0.0  PUNCH CODE=0  PRINT CODE=0
LOCATION        ALBUQUERQUE
*
*S RAINFALL FROM COA DEVELOPMENT PROCESS MANUAL
*S*****
*S  100 YEAR 24HR STORM
START          TIME=0.0  PUNCH CODE=0  PRINT CODE=0
LOCATION        ALBUQUERQUE
*
RAINFALL              TYPE=2
                     QUARTER=1.46 IN
                     HOUR=   1.87 IN
                     SIX HR=  2.20 IN
                     DAY=    2.66 IN   DT=0.033333
*
*
*** Sub-BASIN 209.1 ****
*
COMPUTE NM HYD      ID=1   HYD NO=209.1   DA=0.00907 SQ MI
                     PER A=0 PER B=0   PER C=20 PER D=80
                     TP=0.0   MASSRAIN=-1
*
PRINT HYD           ID=1 CODE=1
*
*
****Route HYD 209.1 to Sub-Basin 100
COMPUTE RATING CURVE      CID=1 VS NO=1 NO SEGS=1
                     MIN ELEV=100 FT MAX ELEV=105 FT
                     CH SLP=0.005  FP SLP=0.02 N=0.013
                     DIST=20 FT

                     DIST  ELEV
                          0    105
                     10    100
                     15    100
                     20    105
*
ROUTE MCUNGE        ID=2   HYD NO=209.1RT  INFLOW ID=1
                     DT=0  HR  LENGTH=500 FT
                     NS=0  SLOPE=0.005
*
*** Sub-BASIN 100 ****
*
COMPUTE NM HYD      ID=1 HYD NO=100 DA=0.000861 SQ MI
                     PER A=0 PER B=0 PER C=10 PER D=90
                     TP=-0.1333 HR MASS RAIN=-1
*
PRINT HYD           ID=1 CODE=1
*
*
* Total Flow from Basin (109.1T + 100)
ADD HYD              ID=10  HYD NO=100SUM ID I=2   ID II=1
PRINT HYD            ID=10   CODE=1
*
*S AP1
*
*
*****
*** Sub-BASIN 101 ****
*
COMPUTE NM HYD      ID=1 HYD NO=101 DA=0.001781 SQ MI
                     PER A=0 PER B=3 PER C=5 PER D=92

```

DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

TP=-0.1333 HR MASS RAIN=-1

*
PRINT HYD          ID=1 CODE=1
*
*
****Route HYD 101 to Sub-Basin 104
COMPUTE RATING CURVE      CID=1 VS NO=1 NO SEGS=1
MIN ELEV=100 FT MAX ELEV=105 FT
CH SLP=0.005  FP SLP=0.02 N=0.013
DIST=20 FT

DIST  ELEV
      0    105
10    100
15    100
20    105

*
ROUTE MCUNGE        ID=2  HYD NO=101RT  INFLOW ID=1
DT=0 HR  LENGTH=300 FT
NS=0  SLOPE=0.005

*
*** Sub-BASIN 104 ****
*
COMPUTE NM HYD      ID=1 HYD NO=104 DA=0.000142 SQ MI
PER A=0 PER B=100 PER C=0 PER D=0
TP=-0.1333 HR MASS RAIN=-1

*
PRINT HYD          ID=1 CODE=1
*
* Total Flow from Basin (101RT + 104)
ADD HYD            ID=1  HYD NO=104SUMA ID I=2  ID II=1
PRINT HYD          ID=1  CODE=1
*
*
*** Sub-BASIN 102 ****
*
COMPUTE NM HYD      ID=2 HYD NO=102 DA=0.002229 SQ MI
PER A=0 PER B=0 PER C=85 PER D=15
TP=-0.1333 HR MASS RAIN=-1

*
PRINT HYD          ID=2 CODE=1
*
* Total Flow from Basin (104SUMA + 102)
ADD HYD            ID=3  HYD NO=104SUMB ID I=2  ID II=1
PRINT HYD          ID=3  CODE=1
*
*S AP2
*
*****
*** Sub-BASIN 103 ****
COMPUTE NM HYD      ID=1 HYD NO=103 DA=0.002586 SQ MI
PER A=0 PER B=6 PER C=85 PER D=15
TP=-0.1333 HR MASS RAIN=-1

*
PRINT HYD          ID=1 CODE=1
*
*** Sub-BASIN 105 ****
*
COMPUTE NM HYD      ID=2 HYD NO=105 DA=0.000241 SQ MI
PER A=0 PER B=100 PER C=0 PER D=0
TP=-0.1333 HR MASS RAIN=-1

*
PRINT HYD          ID=2 CODE=1
*
* Total Flow from Basin (103 + 105)
ADD HYD            ID=1  HYD NO=105SUMA ID I=2  ID II=1

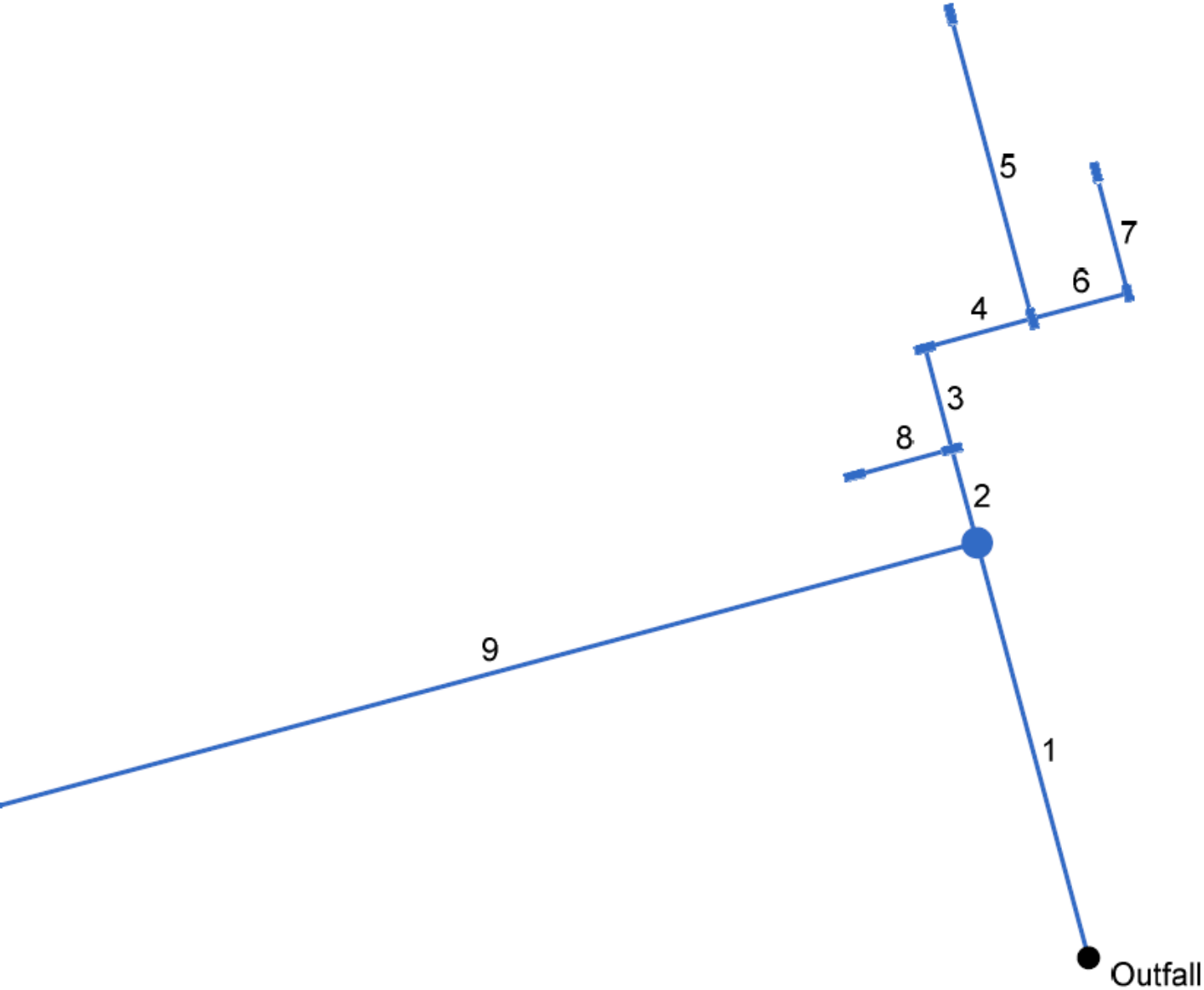
```


DRAINAGE REPORT - PARADISE RV PARK PHASE I

```

PRINT HYD                ID=1    CODE=1
*
*** Sub-BASIN 107 ****
*
*
COMPUTE NM HYD           ID=2 HYD NO=107 DA=0.00778 SQ MI
                           PER A=0 PER B=0 PER C=85 PER D=15
                           TP=-0.1333 HR MASS RAIN=-1
*
PRINT HYD                ID=2 CODE=1
*
* Total Flow from Site (105SUMA + 107)
ADD HYD                  ID=1    HYD NO=105SUMB ID I=2    ID II=1
PRINT HYD                ID=1    CODE=1
*
* Total Flow from Site (104SUMB + 105SUM)
ADD HYD                  ID=1    HYD NO=105SUMC ID I=3    ID II=1
PRINT HYD                ID=1    CODE=1
*
*S AP3
*
* Total Flow to Storm Drain (100SUM + 105SUMb)
ADD HYD                  ID=1    HYD NO=105SUMC ID I=10    ID II=1
PRINT HYD                ID=1    CODE=1
*
*S AP4
*
*****
*
*** Sub-BASIN 106 ****
*
*
COMPUTE NM HYD           ID=2 HYD NO=106 DA=0.00493 SQ MI
                           PER A=0 PER B=0 PER C=10 PER D=90
                           TP=-0.1333 HR MASS RAIN=-1
*
PRINT HYD                ID=2 CODE=1
*
* Total Flow from Basin (105SUMB + 106)
ADD HYD                  ID=1    HYD NO=105SUMA ID I=2    ID II=1
PRINT HYD                ID=1    CODE=1
*
FINISH

```



Hydraulic Grade Line Computations

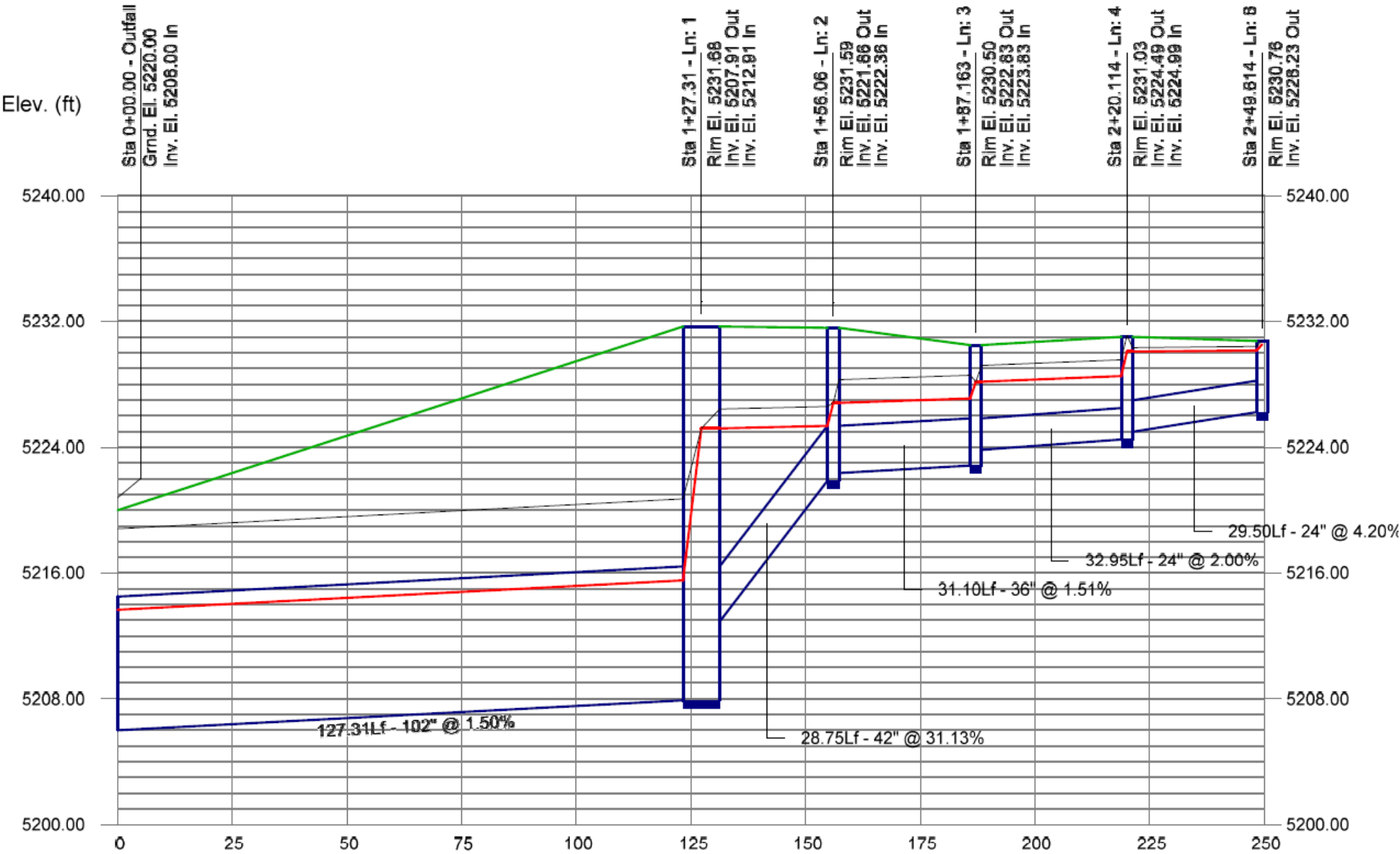
Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	102	979.7	5206.00	5213.66	7.66	53.69	18.20	5.15	5218.81	n/a	127.31	5207.91	5215.54	7.63**	53.69	18.25	5.18	5220.72i	n/a	n/a	-3.268	1.00	n/a
2	42	85.70	5212.91	5225.19	3.50	9.62	8.91	1.23	5226.43	n/a	28.75	5221.86	5225.36	3.50	9.62	8.91	1.23	5226.59i	n/a	n/a	-1.069	1.50	n/a
3	36	68.80	5222.36	5226.82	3.00	7.07	9.74	1.47	5228.29	n/a	31.10	5222.83	5227.10	3.00	7.07	9.73	1.47	5228.57i	n/a	n/a	-1.191	1.50	n/a
4	24	25.66	5223.83	5228.16	2.00	3.14	8.17	1.04	5229.20	1.097	32.95	5224.49	5228.52	2.00	3.14	8.17	1.04	5229.56	1.097	1.097	0.361	1.50	1.56
5	18	12.83	5224.99	5230.08	1.50	1.67	7.26	0.82	5230.90	n/a	93.41	5229.95	5231.30	1.35**	1.67	7.66	0.91	5232.21i	n/a	n/a	0.400	1.00	n/a
6	24	12.83	5224.99	5230.08	2.00	3.14	4.08	0.26	5230.34	0.274	29.50	5226.23	5230.16	2.00	3.14	4.08	0.26	5230.42	0.274	0.274	0.081	1.50	0.39
7	18	12.83	5226.83	5230.55	1.50	1.77	7.26	0.82	5231.37	n/a	36.98	5228.47	5231.02	1.50	1.77	7.26	0.82	5231.84i	n/a	n/a	-0.349	1.00	n/a
8	18	16.90	5223.86	5226.82	1.50	1.74	9.57	1.42	5228.24	n/a	30.00	5228.29	5229.73 j	1.44**	1.74	9.69	1.46	5231.19i	n/a	n/a	1.490	1.00	n/a
9	72	894.0	5210.41	5225.19	6.00	28.27	31.62	15.55	5240.74	4.457	300.00	5220.91	5238.57	6.00	28.27	31.62	15.54	5254.11	4.455	4.456	13.37	1.00	15.54

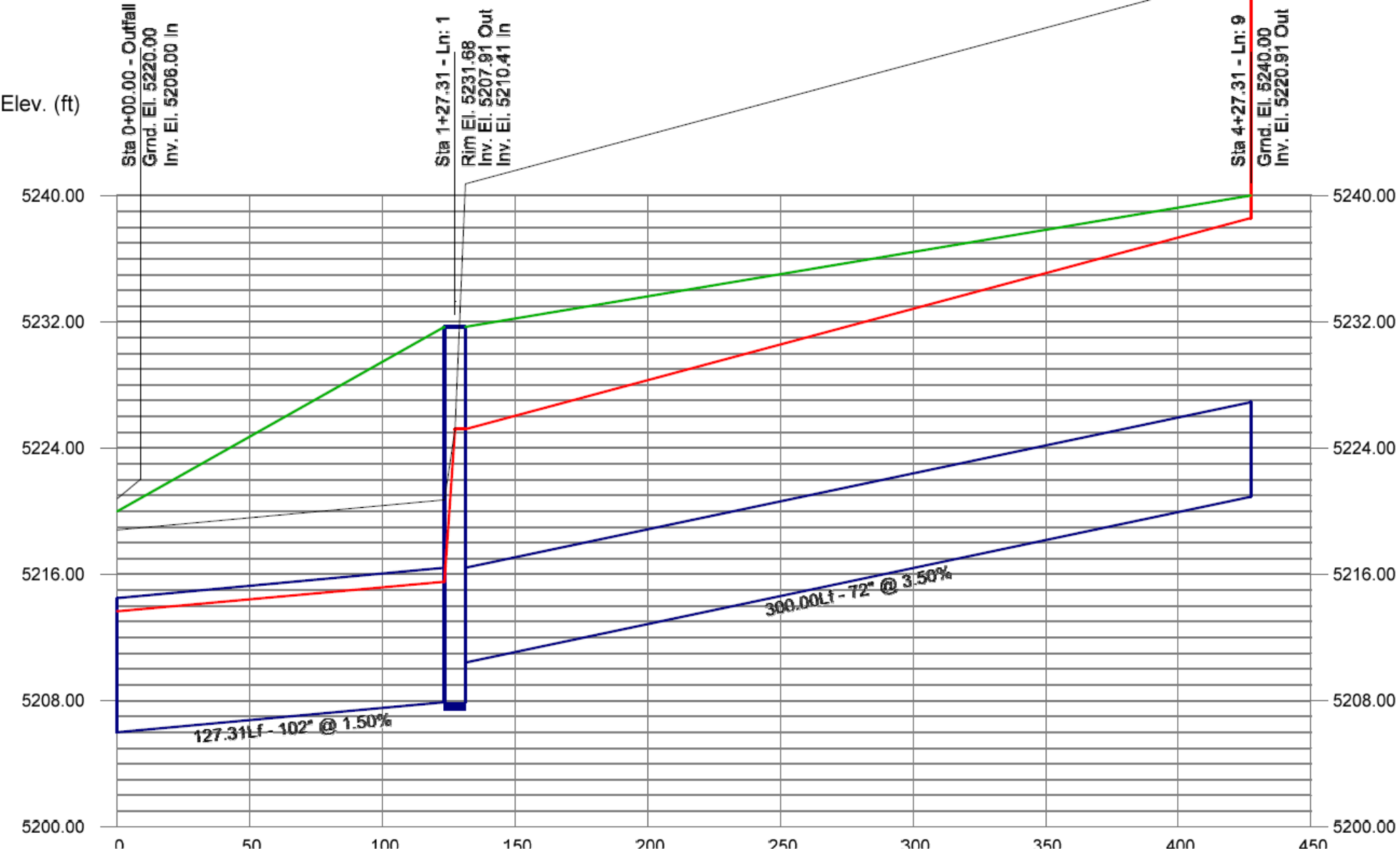
Project File: FINAL.stm

Number of lines: 9

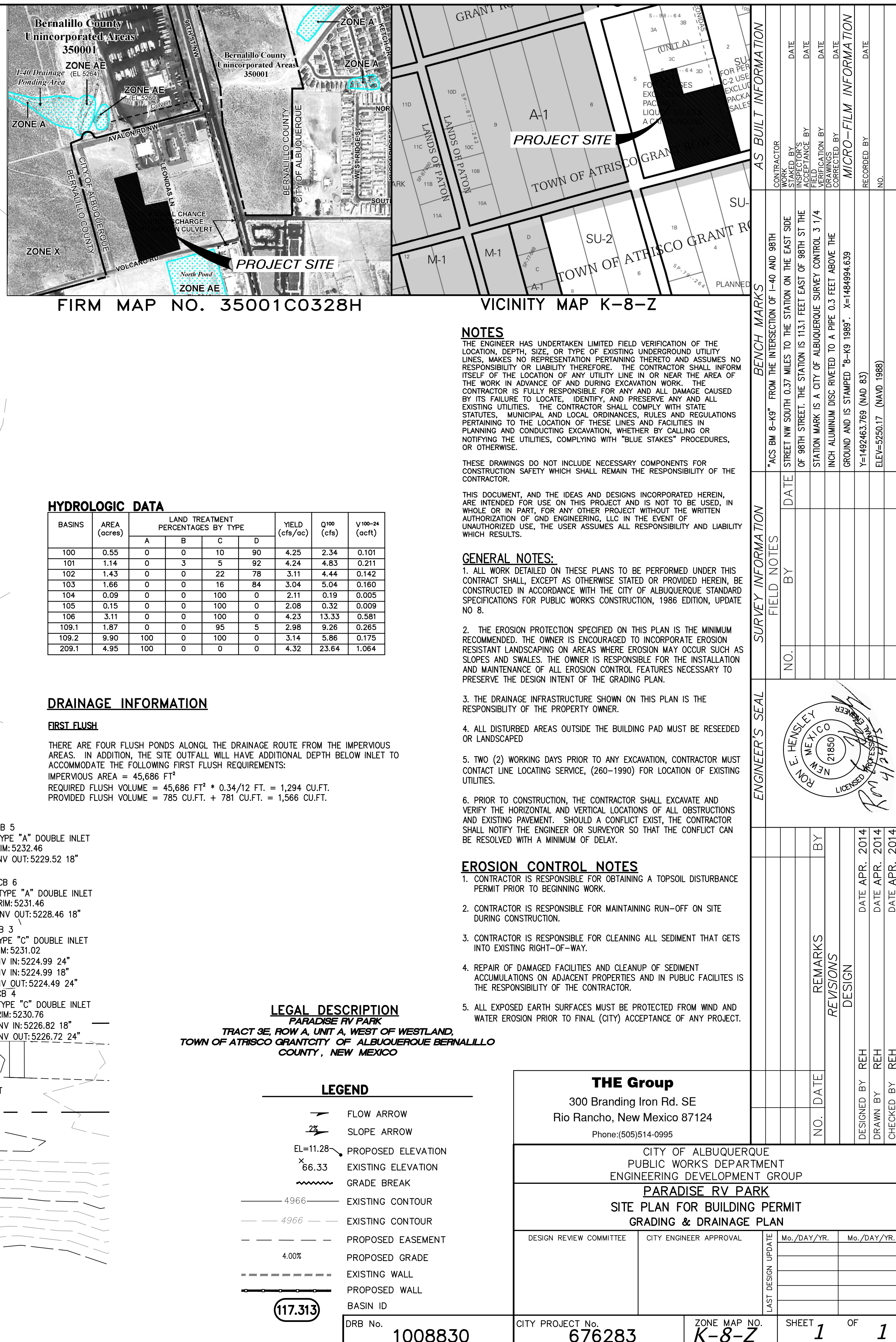
Run Date: 4/22/2015

Notes: ; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box





VIII. EXHIBITS



HYDROLOGIC DATA								
BASINS	AREA (acres)	LAND TREATMENT PERCENTAGES BY TYPE				YIELD (cfs/ac)	Q ¹⁰⁰ (cfs)	V ¹⁰⁰⁻²⁴ (acft)
		A	B	C	D			
100	0.55	0	0	10	90	4.25	2.34	0.101
101	1.14	0	3	5	92	4.24	4.83	0.21
102	1.43	0	0	22	78	3.11	4.44	0.142
103	1.66	0	0	16	84	3.04	5.04	0.160
104	0.09	0	0	100	0	2.11	0.19	0.005
105	0.15	0	0	100	0	2.08	0.32	0.009
106	3.11	0	0	100	0	4.23	13.33	0.581
109.1	1.87	0	0	95	5	2.98	9.26	0.265
109.2	9.90	100	0	100	0	3.14	5.86	0.175
209.1	4.95	100	0	0	0	4.32	23.64	1.064

DRAINAGE INFORMATION

FIRST FLUSH

THERE ARE FOUR FLUSH PONDS ALONG THE DRAINAGE ROUTE FROM THE IMPERVIOUS AREAS. IN ADDITION, THE SITE OUTFALL WILL HAVE ADDITIONAL DEPTH BELOW INLET TO ACCOMMODATE THE FOLLOWING FIRST FLUSH REQUIREMENTS:

IMPERVIOUS AREA = 45,686 FT²

REQUIRED FLUSH VOLUME = 45,686 FT² * 0.34/12 FT. = 1,294 CU.FT.

PROVIDED FLUSH VOLUME = 785 CU.FT. + 781 CU.FT. = 1,566 CU.FT.

CB 5
 TYPE "A" DOUBLE INLET
 RIM: 5232.46
 INV OUT: 5229.52 18"

 CB 6
 TYPE "A" DOUBLE INLET
 RIM: 5231.46
 INV OUT: 5228.46 18"

 CB 3
 TYPE "C" DOUBLE INLET
 RIM: 5231.02
 INV IN: 5224.99 24"
 INV IN: 5224.99 18"
 INV OUT: 5224.49 24"

 CB 4
 TYPE "C" DOUBLE INLET
 RIM: 5230.76
 INV IN: 5226.82 18"
 INV OUT: 5226.72 24"

 LET

LEGAL DESCRIPTION

PARADISE RV PARK
TRACT 3E, ROW A, UNIT A, WEST OF WESTLAND,
TOWN OF ATRISCO GRANTCITY OF ALBUQUERQUE BERNALILLO
COUNTY, NEW MEXICO

LEGEND	
	FLOW ARROW
	SLOPE ARROW
EL=11.28 x 66.33	PROPOSED ELEVATION EXISTING ELEVATION
	GRADE BREAK
 4966	EXISTING CONTOUR
 4966	EXISTING CONTOUR
	PROPOSED EASEMENT
4.00%	PROPOSED GRADE
	EXISTING WALL
	PROPOSED WALL
	BASIN ID
DPP No. _____	

[illegible]

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING DEVELOPMENT GROUP
<u>PARADISE RV PARK</u> SITE PLAN FOR BUILDING PERMIT GRADING & DRAINAGE PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	Mo./DAY/YR.	Mo./DAY/YR.
CITY PROJECT No.	ZONE MAP NO.	SHEET	OF	
676283	K-8-Z	1	1	