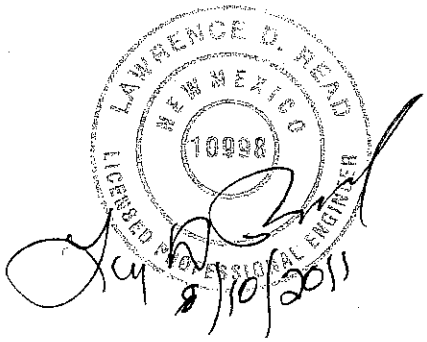
PRELIMINARY DRAINAGE REPORT

for

PARADISE RV PARK - PHASE I

ALBUQUERQUE, NEW MEXICO

June 2011
Revised August 2011



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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 it's 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.

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.

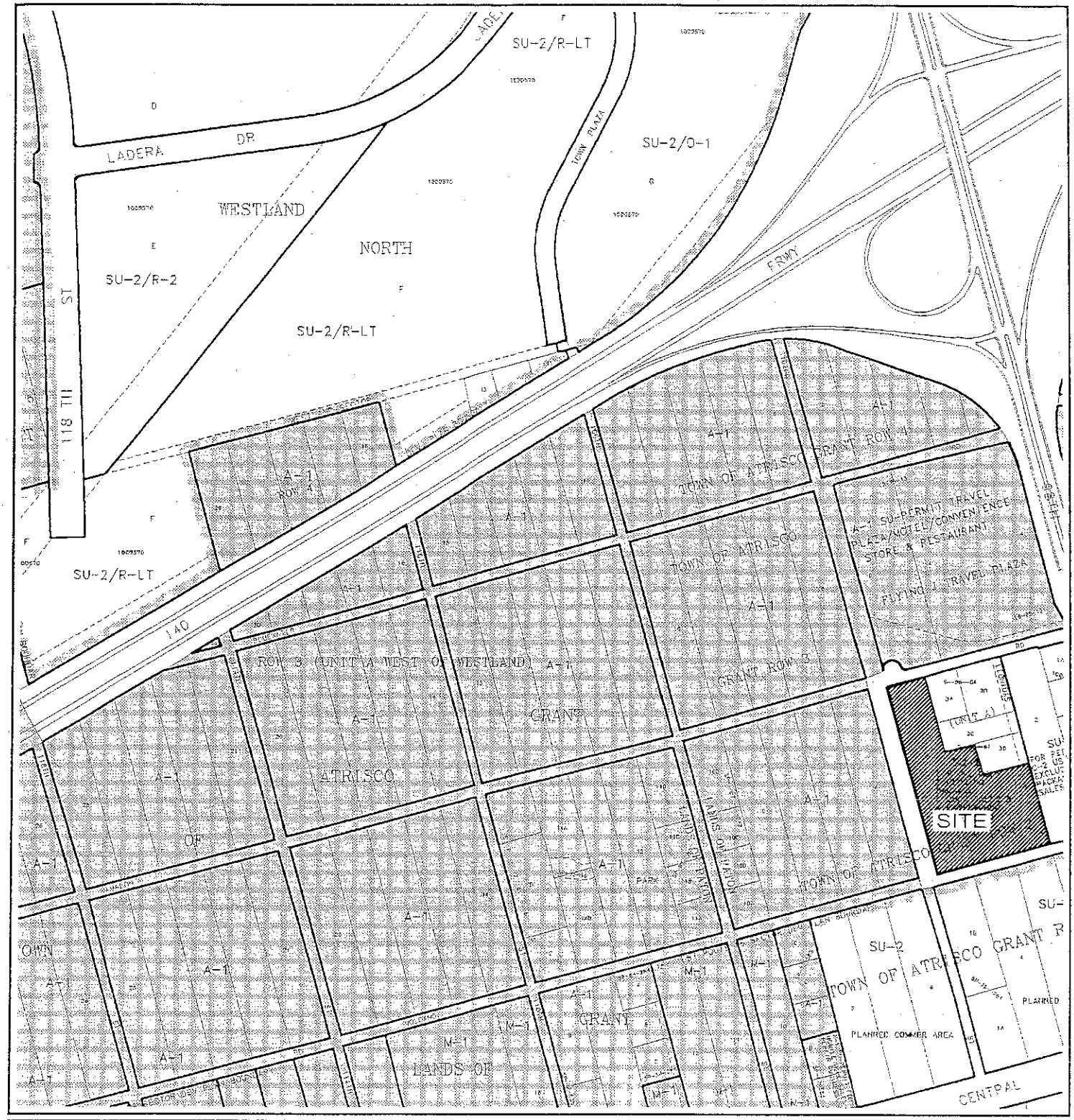
METHODOLOGY

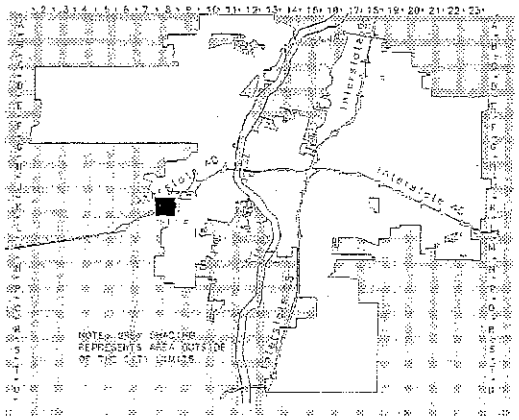
The hydrology for this project was analyzed using the 2009 release of the AHYMO-S4.01a computer modeling program as developed by Anderson Hydro. All procedures are in accordance with those shown in the January 1993 release of the City of Albuquerque Development Process Manual, Section 22.2.

The specific values used for this analysis are as follows:

-Precipitation Zone 1

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





CITY OF ALBUQUERQUE 1706 NEW MEXICO

GRAPHIC SCALE IN FEET

250 0 750 1000

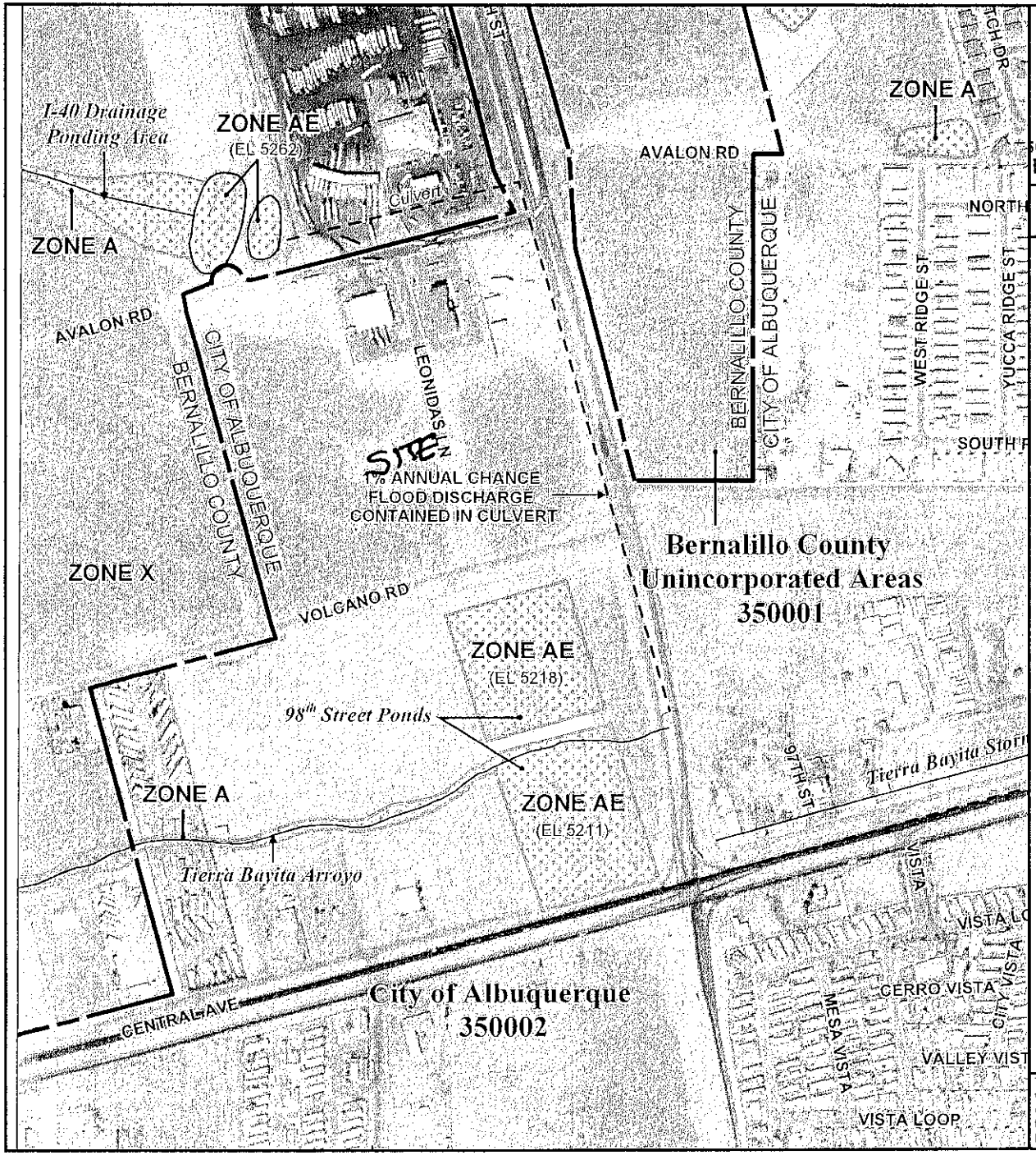
A Numerical Geographic Information System

PLANNING DEPARTMENT

Zone Atlas Page

K-8-Z

Map Amended through March 08, 2005



MAP SCALE 1" = 500'

-500 0 500 1000 FEET

NFIP 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 UNINCORPORATED AREAS	350001	0328	G

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.

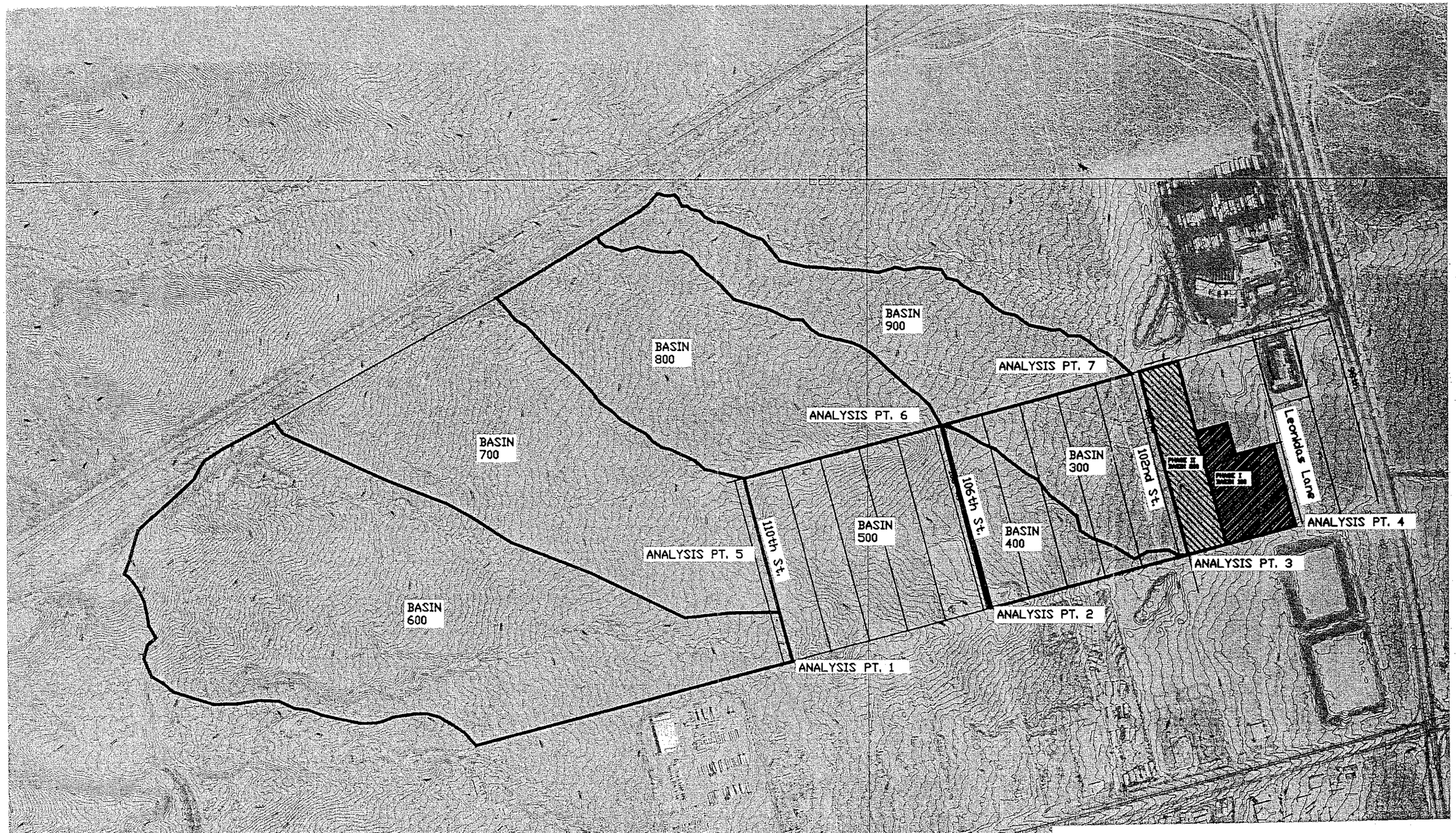
MAP NUMBER
35001C0328G

MAP REVISED
SEPTEMBER 26, 2008

Federal Emergency Management Agency

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     USER NO.= AHYMO_Temp_User:20122010
          INPUT FILE = C:\acad projects\Rizvy\RV Park - Avalon\input2.dat

START                TIME=0   PUNCH=0  PRINT LINES=-6
*S     COMPUTE 100 YR. 6 HR. HYDROGRAPHS FOR PARADISE RV PARK
*S     AHYMO INPUT.DAT     -    HYMO PER JAN 1993 DPM REVISIONS
*S  ------------------------------------------------------------------------
*S  ------------------------------------------------------------------------
RAINFALL             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
*S  ------------------------------------------------------------------------
*S  ------------------------------------------------------------------------
*S  COMPUTE RUNOFF FOR UNDEVELOPED CONDITIONS ON-SITE BASINS
*S  ------------------------------------------------------------------------
*S  BASIN 100 PHASE I
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      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000      0.0          0.900      0.0          1.800      2.3          2.700      0.2          3.600      0.0
     0.300      0.0          1.200      0.0          2.100      0.7          3.000      0.1          3.900      0.0
     0.600      0.0          1.500      7.9          2.400      0.4          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      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000      0.0          0.900      0.0          1.800      2.5          2.700      0.2          3.600      0.0
     0.300      0.0          1.200      0.0          2.100      0.7          3.000      0.1          3.900      0.0
     0.600      0.0          1.500      8.9          2.400      0.4          3.300      0.1          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  COMPUTE RUNOFF FROM UNDEVELOPED CONDITIONS OFF-SITE BASINS
*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      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000      0.0          1.500     12.1          3.000      0.8          4.500      0.1          6.000      0.0
     0.300      0.0          1.800     11.8          3.300      0.5          4.800      0.1          6.300      0.0
     0.600      0.0          2.100      3.9          3.600      0.4          5.100      0.1          6.600      0.0
     0.900      0.0          2.400      1.6          3.900      0.3          5.400      0.0          6.900      0.0
     1.200      0.0          2.700      1.1          4.200      0.2          5.700      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  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       FLOW          TIME       FLOW          TIME       FLOW          TIME       FLOW          TIME       FLOW
      HRS        CFS           HRS        CFS           HRS        CFS           HRS        CFS           HRS        CFS
     0.000       0.0          1.200       0.0          2.400       1.0          3.600       0.2          4.800       0.0
     0.300       0.0          1.500      13.2          2.700       0.6          3.900       0.1          5.100       0.0
     0.600       0.0          1.800       7.3          3.000       0.4          4.200       0.1          5.400       0.0
     0.900       0.0          2.100       1.8          3.300       0.2          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       FLOW          TIME       FLOW          TIME       FLOW          TIME       FLOW          TIME       FLOW
      HRS        CFS           HRS        CFS           HRS        CFS           HRS        CFS           HRS        CFS
     0.000       0.0          1.200       0.0          2.400       2.3          3.600       0.3          4.800       0.0
     0.300       0.0          1.500      33.8          2.700       1.4          3.900       0.2          5.100       0.0
     0.600       0.0          1.800      16.0          3.000       0.8          4.200       0.1          5.400       0.0
     0.900       0.0          2.100       4.0          3.300       0.5          4.500       0.1          5.700       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	TIME HRS	FLOW CFS
0.000	0.0	1.200	0.0	2.400	5.6	3.600	0.4	4.800	0.0
0.300	0.0	1.500	135.8	2.700	2.9	3.900	0.2	5.100	0.0
0.600	0.0	1.800	36.3	3.000	1.5	4.200	0.1	5.400	0.0
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	TIME HRS	FLOW CFS
0.000	0.0	3.000	5.5	6.000	0.6	9.000	0.1	12.000	0.0
0.300	0.0	3.300	3.3	6.300	0.5	9.300	0.1	12.300	0.0
0.600	0.0	3.600	2.4	6.600	0.5	9.600	0.1	12.600	0.0
0.900	0.0	3.900	2.0	6.900	0.4	9.900	0.1	12.900	0.0
1.200	0.0	4.200	1.7	7.200	0.3	10.200	0.1	13.200	0.0
1.500	6.9	4.500	1.4	7.500	0.3	10.500	0.1	13.500	0.0
1.800	25.1	4.800	1.2	7.800	0.2	10.800	0.0	13.800	0.0
2.100	23.0	5.100	1.0	8.100	0.2	11.100	0.0	14.100	0.0
2.400	14.7	5.400	0.9	8.400	0.2	11.400	0.0	14.400	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      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000      0.0          1.800     28.9          3.600      0.9          5.400      0.1          7.200      0.0
     0.300      0.0          2.100      9.4          3.900      0.6          5.700      0.1          7.500      0.0
     0.600      0.0          2.400      3.9          4.200      0.4          6.000      0.0
     0.900      0.0          2.700      2.7          4.500      0.3          6.300      0.0
     1.200      0.0          3.000      1.8          4.800      0.2          6.600      0.0
     1.500     30.8          3.300      1.3          5.100      0.1          6.900      0.0

    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      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000      0.0          2.100      9.5          4.200      0.5          6.300      0.1          8.400      0.0
     0.300      0.0          2.400      4.1          4.500      0.4          6.600      0.1          8.700      0.0
     0.600      0.0          2.700      2.1          4.800      0.3          6.900      0.0          9.000      0.0
     0.900      0.0          3.000      1.6          5.100      0.2          7.200      0.0
     1.200      0.0          3.300      1.2          5.400      0.2          7.500      0.0
     1.500     11.8          3.600      0.9          5.700      0.1          7.800      0.0
     1.800     20.4          3.900      0.7          6.000      0.1          8.100      0.0
```

```
    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  ------------------------------------------------------------------------
*S  COMPUTE RUNOFF FOR DEVELOPED CONDITIONS ON-SITE BASINS
*S  ------------------------------------------------------------------------
*S  BASIN 100 PHASE I
COMPUTE NM HYD       ID=11   HYD NO= 101.0   DA=0.00715 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 =    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      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
     HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
    0.000      0.0          1.500      15.5         3.000      0.1          4.500      0.0          6.000      0.0
    0.300      0.0          1.800       3.8         3.300      0.0          4.800      0.0          6.300      0.0
    0.600      0.0          2.100       1.0         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      0.6          2.700       0.1         4.200      0.0          5.700      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
*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      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000      0.0          1.500     17.3          3.000      0.1          4.500      0.0          6.000      0.0
     0.300      0.0          1.800      4.2          3.300      0.0          4.800      0.0          6.300      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  ------------------------------------------------------------------------
*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      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000      0.0          1.500     32.9          3.000      0.1          4.500      0.0          6.000      0.0
     0.300      0.0          1.800      8.0          3.300      0.0          4.800      0.0          6.300      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.


*S  ------------------------------------------------------------------------
*S
*S  ------------------------------------------------------------------------
*S  COMPUTE RUNOFF FROM DEVELOPED CONDITIONS OFF-SITE BASINS
*S  ------------------------------------------------------------------------
*S
*S  BASIN 300
*S  WITHIN BASIN 801.2 GREINER 1995
COMPUTE NM HYD      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      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000      0.0          1.800     26.8          3.600      0.3          5.400      0.2          7.200      0.0
     0.300      0.0          2.100      8.4          3.900      0.2          5.700      0.2          7.500      0.0
     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
*S  BASIN 400
*S  WITHIN BASIN 801.2 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          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  ------------------------------------------------------------------------
*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	TIME HRS	FLOW CFS
0.000	0.0	1.800	41.9	3.600	0.4	5.400	0.3	7.200	0.0
0.300	0.0	2.100	13.1	3.900	0.2	5.700	0.3	7.500	0.0
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  ------------------------------------------------------------------------
*S
*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	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.500	86.2	3.000	0.7	4.500	0.2	6.000	0.4
0.300	0.0	1.800	34.6	3.300	0.3	4.800	0.2	6.300	0.1
0.600	0.0	2.100	10.7	3.600	0.2	5.100	0.3	6.600	0.0
0.900	0.1	2.400	4.3	3.900	0.2	5.400	0.3	6.900	0.0
1.200	9.8	2.700	1.5	4.200	0.2	5.700	0.3	7.200	0.0

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
*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	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.500	288.9	3.000	1.2	4.500	0.5	6.000	1.0
0.300	0.0	1.800	80.3	3.300	0.6	4.800	0.6	6.300	0.1
0.600	0.0	2.100	23.6	3.600	0.4	5.100	0.7	6.600	0.0
0.900	0.9	2.400	9.2	3.900	0.4	5.400	0.8	6.900	0.0
1.200	29.6	2.700	2.9	4.200	0.4	5.700	0.9	7.200	0.0

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
*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      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000      0.0          2.400     33.4          4.800      1.4          7.200      0.2          9.600      0.0
     0.300      0.0          2.700     15.7          5.100      1.2          7.500      0.1          9.900      0.0
     0.600      0.0          3.000      8.8          5.400      1.0          7.800      0.1         10.200      0.0
     0.900      0.0          3.300      5.9          5.700      1.0          8.100      0.1         10.500      0.0
     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
*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	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.800	66.6	3.600	0.6	5.400	0.4	7.200	0.0
0.300	0.0	2.100	21.3	3.900	0.4	5.700	0.5	7.500	0.0
0.600	0.0	2.400	9.0	4.200	0.3	6.000	0.6	7.800	0.0
0.900	0.1	2.700	4.0	4.500	0.3	6.300	0.2		
1.200	10.7	3.000	2.0	4.800	0.4	6.600	0.1		
1.500	82.7	3.300	1.0	5.100	0.4	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
*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	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.800	56.7	3.600	0.9	5.400	0.3	7.200	0.0
0.300	0.0	2.100	20.6	3.900	0.6	5.700	0.3	7.500	0.0
0.600	0.0	2.400	8.4	4.200	0.4	6.000	0.4	7.800	0.0
0.900	0.0	2.700	4.3	4.500	0.3	6.300	0.2	8.100	0.0
1.200	4.3	3.000	2.4	4.800	0.3	6.600	0.1	8.400	0.0
1.500	33.2	3.300	1.4	5.100	0.3	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
0.000	0.0	2.100	23.5	4.200	1.1	6.300	0.1	8.400	0.0
0.300	0.0	2.400	10.0	4.500	0.8	6.600	0.1	8.700	0.0
0.600	0.0	2.700	6.1	4.800	0.6	6.900	0.1	9.000	0.0
0.900	0.0	3.000	4.3	5.100	0.4	7.200	0.0		
1.200	0.0	3.300	3.0	5.400	0.3	7.500	0.0		
1.500	63.6	3.600	2.2	5.700	0.2	7.800	0.0		
1.800	63.7	3.900	1.5	6.000	0.2	8.100	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
```

AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4) - Ver. S4.01a, Rel: 01a RUN DATE (MON/DAY/YR) =08/08/2011
INPUT FILE = C:\acad projects\Rizvy\RV Park - Avalon\input2.dat USER NO.= AHYMO_Temp_User:20122010

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
START										TIME=	0.00
*S	COMPUTE 100 YR. 6 HR. HYDROGRAPHS FOR PARADISE RV PARK										
*S	AHYMO INPUT.DAT - HYMO PER JAN 1993 DPM REVISIONS										
*S	----------										
*S	----------										
RAINFALL	TYPE= 1 NOAA 14									RAIN6=	2.200
*S	----------										
*S	----------										
*S	COMPUTE RUNOFF FOR UNDEVELOPED CONDITIONS ON-SITE BASINS										
*S	----------										
*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										
*S	----------										
*S											
*S	BASIN 300										
COMPUTE NM HYD	300.00	-	3	0.02320	17.56	0.795	0.64271	1.620	1.183	PER IMP=	0.00
*S											
*S	BASIN 400										
COMPUTE NM HYD	400.00	-	4	0.01680	15.73	0.576	0.64271	1.560	1.463	PER IMP=	0.00
*S											
*S	BASIN 500										
COMPUTE NM HYD	500.00	-	5	0.03930	39.01	1.347	0.64271	1.560	1.551	PER IMP=	0.00
*S											
*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
*S											
*S	BASIN 700										
COMPUTE NM HYD	700.00	-	7	0.07440	26.08	2.550	0.64271	1.890	0.548	PER IMP=	0.00
*S											
*S	BASIN 800										
COMPUTE NM HYD	800.00	-	8	0.05700	43.83	1.954	0.64271	1.620	1.202	PER IMP=	0.00
*S											
*S	BASIN 900										
COMPUTE NM HYD	900.00	-	9	0.03890	22.62	1.333	0.64271	1.680	0.909	PER IMP=	0.00
*S	----------										
*S	COMPUTE RUNOFF FOR DEVELOPED CONDITIONS ON-SITE BASINS										
*S	----------										
*S	BASIN 100 PHASE I										

```
COMPUTE NM HYD       101.00   -    11       0.00715       15.75       0.472      1.23690    1.530    3.441 PER IMP=  19.00
*S
*S  BASIN 200 PHASE II
COMPUTE NM HYD       201.00   -    12       0.00798       17.57       0.526      1.23690    1.530    3.441 PER IMP=  19.00
*S  ------------------------------------------------------------------------------
*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  ------------------------------------------------------------------------------
*S
*S  ------------------------------------------------------------------------------
*S  COMPUTE RUNOFF FROM DEVELOPED CONDITIONS OFF-SITE BASINS
*S  ------------------------------------------------------------------------------
*S
*S  BASIN 300
*S  WITHIN BASIN 801.2 GREINER 1995
COMPUTE NM HYD       301.00   -    13       0.02320       45.61       1.963      1.58678    1.620    3.072 PER IMP=  63.00
*S
*S  BASIN 400
*S  WITHIN BASIN 801.2 GREINER 1996
COMPUTE NM HYD       401.00   -    14       0.01680       37.60       1.422      1.58678    1.560    3.497 PER IMP=  63.00
*S  ------------------------------------------------------------------------------
*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	NOTATION
*S										
*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										
*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										
*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										
*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										
*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----------										
*S	RUNOFF TO TEMPORARY POND ON PHASE II SITE									
*S----------										
ADD HYD	202.00	2& 3	21	0.03118	25.55	1.069	0.64270	1.590	1.280	
ADD HYD	201.00	21& 8	22	0.08818	68.81	3.023	0.64270	1.590	1.219	
ADD HYD	203.00	22& 9	23	0.12708	89.98	4.356	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 $t_c = R_{min} > t_p = 0.13$ Hrs

Basin 200 - Phase 2 Use $t_c = R_{min} > t_p = 0.13$ Hrs

Basin 300 - $\Delta elev = 44'$ $L = 1478$ $S = 0.0298$

$t_c = (L/V) / 3600$

$V = 10 * K * \sqrt{S}$ $K = 0.7$

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

$t_c = (1478 / 1.21) / 3600 = 0.339$ Hrs

$t_p = 2/3\ t_c = 0.224$ Hrs

Basin 400 $\Delta elev = 46'$ $L = 1250$ $S = 0.0368$

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

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

$t_p = 2/3\ t_c = 0.173$ Hrs

Basin 500 $\Delta elev = 34'$ $L = 1085$ $S = 0.0313$

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

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

$t_p = 2/3\ t_c = 0.16$ Hrs

PROJECT: _____ LARRY READ & ASSOCIATES, Inc. CALCULATIONS
Civil Engineers
DATE: _____ By: _____ Pg: ___ of ___

Basin 600 $\Delta elev = 180'$ $L = 3515$ $S = 0.050$

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

$tc = (3515/6.71)/3600$ 0.148

$tp = 2/3\, tc =$ 0.096 Rs − Use 0.13 Rw

Basin 700 $\Delta elev = 138'$ $L = 2712$ $S = 0.051$

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

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

$tp = 2/3\, tc =$ 0.50 Rw

Basin 800 $\Delta elev = 102'$ $L = 2416$ $S = 0.042$

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

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

$tp = 2/3\, tc =$ 0.216 Rw

Basin 900 $\Delta elev = 96'$ $L = 2914$ $S = 0.033$

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

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

$tp = 2/3\, tc =$ 0.293 Rw

100

200

300 — 0.0232 sq mi

400 — 0.0168 sq mi

500 — 0.0393 sq mi

600 0.1191 sq mi

700 0.0744 sq mi

800 0.0570 sq mi

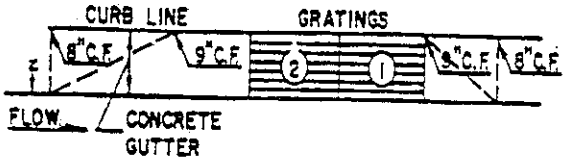
900 0.0389 sq mi

APPENDIX C

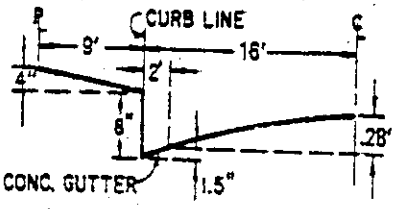
Storm Drain Analysis

LEONIDAS LANE

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



GRATING & GUTTER PLAN



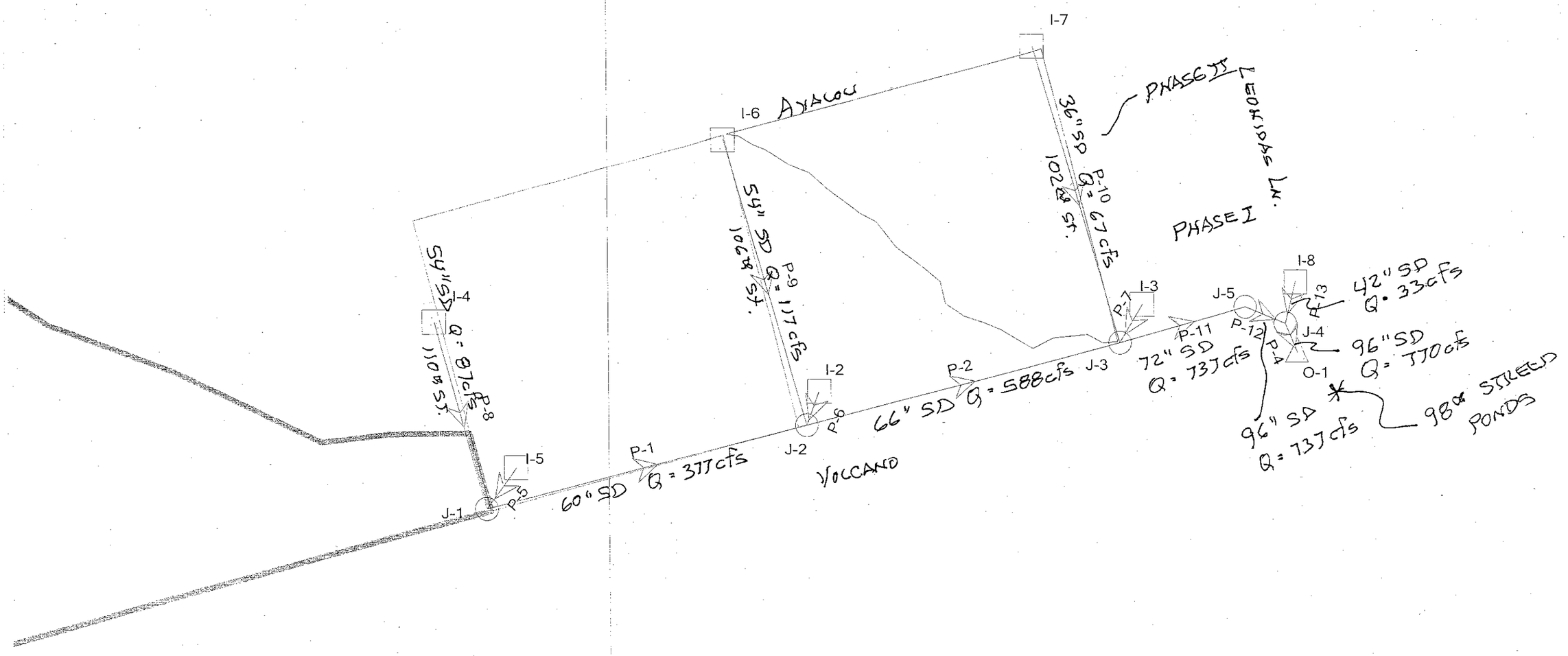
TYPICAL HALF STREET SECTION
(ABOVE BASIN)

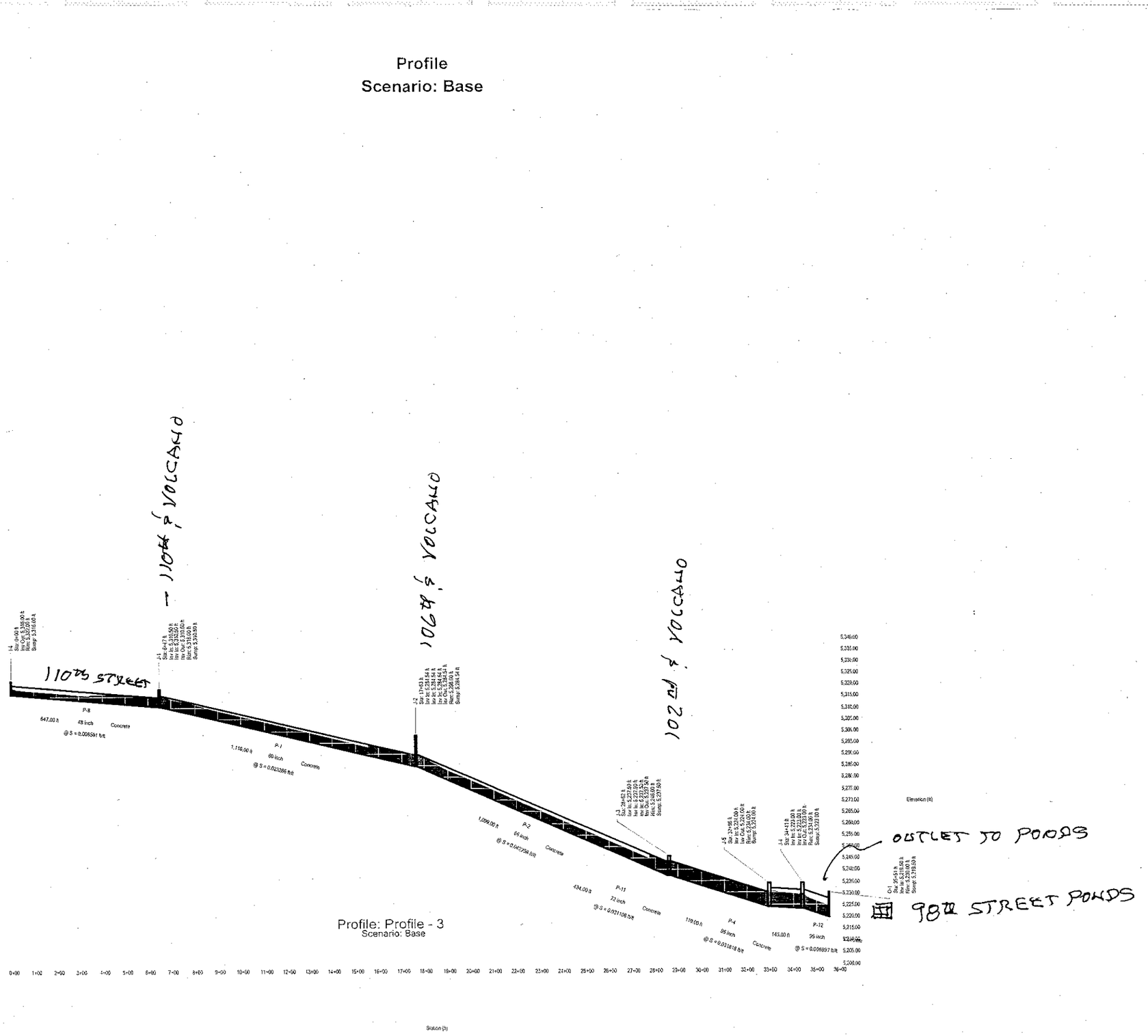
D = DEPTH OF FLOW (FT.) ABOVE NORMAL GUTTER GRADE

18.5 cfs

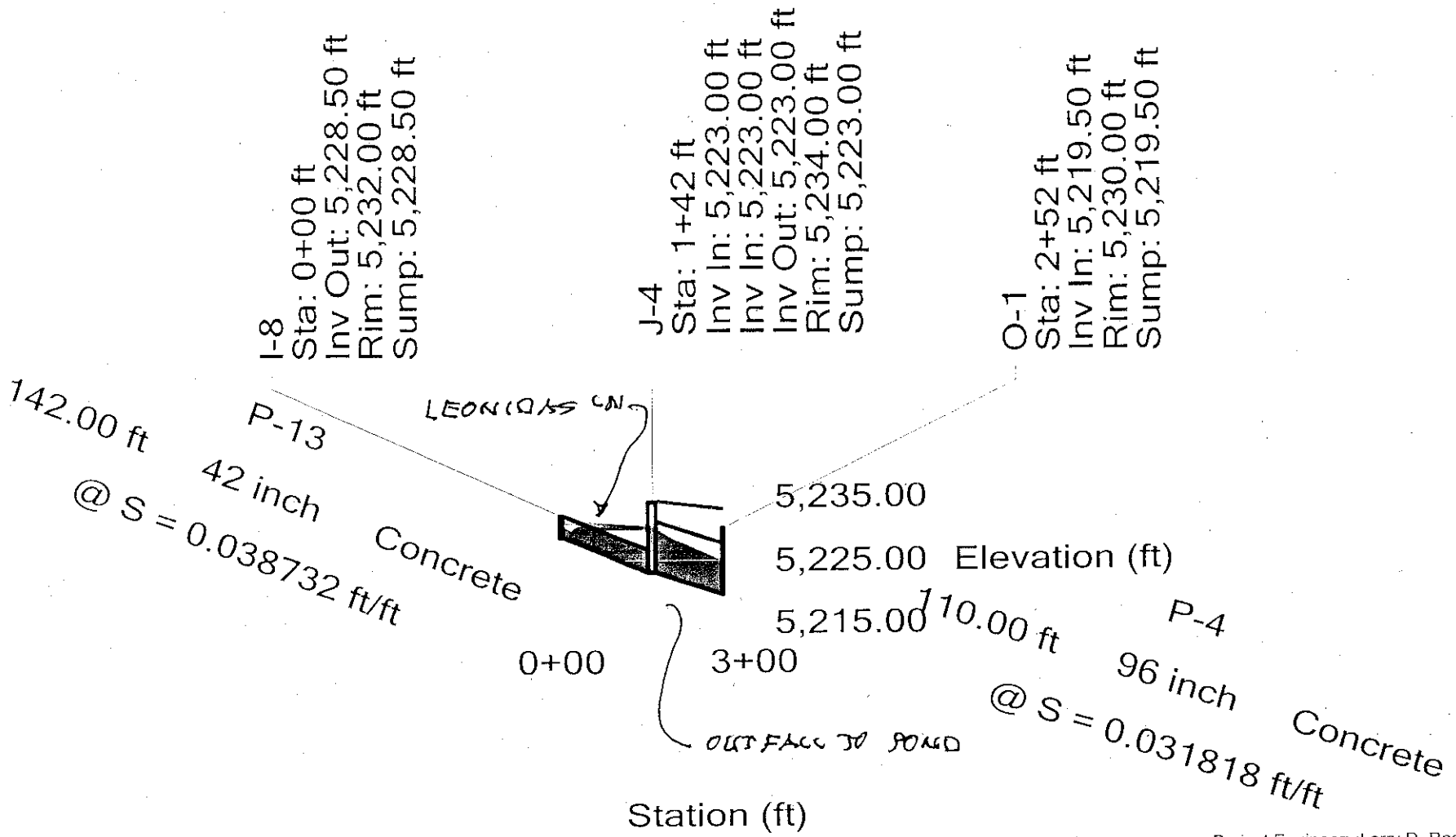
PLATE 22.3 D-6

Roadway S = 1.7% Avg.
Q int. ≈ 18.5 cfs ⇒ 2 double "C"
Clogging = 50% - Use 4 double "C"

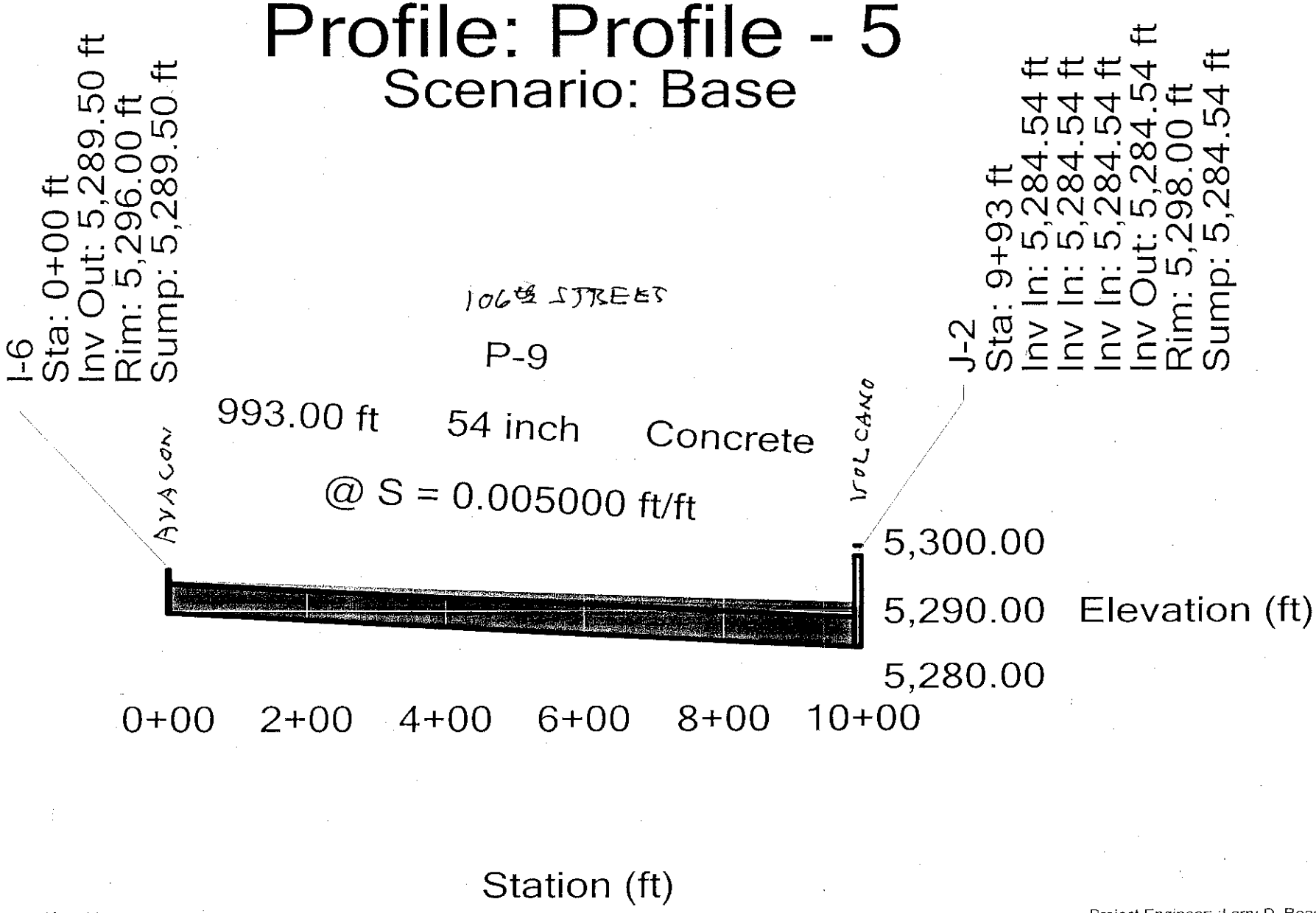



110TH STREET
P-8
647.00 ft
48 inch
Concrete
@ S = 0.008591 ft/ft
P-1
1,116.00 ft
60 inch
Concrete
@ S = 0.023286 ft/ft
P-2
1,056.00 ft
66 inch
Concrete
@ S = 0.007258 ft/ft
P-11
434.00 ft
72 inch
Concrete
@ S = 0.031106 ft/ft
P-4
119.00 ft
96 inch
Concrete
@ S = 0.031818 ft/ft
P-12
145.00 ft
96 inch
@ S = 0.006897 ft/ft
OUTLET TO PONDS
98TH STREET PONDS
Profile: Profile - 3
Scenario: Base
Elevation (ft)
Station (ft)

Profile: Profile - 4
Scenario: Base

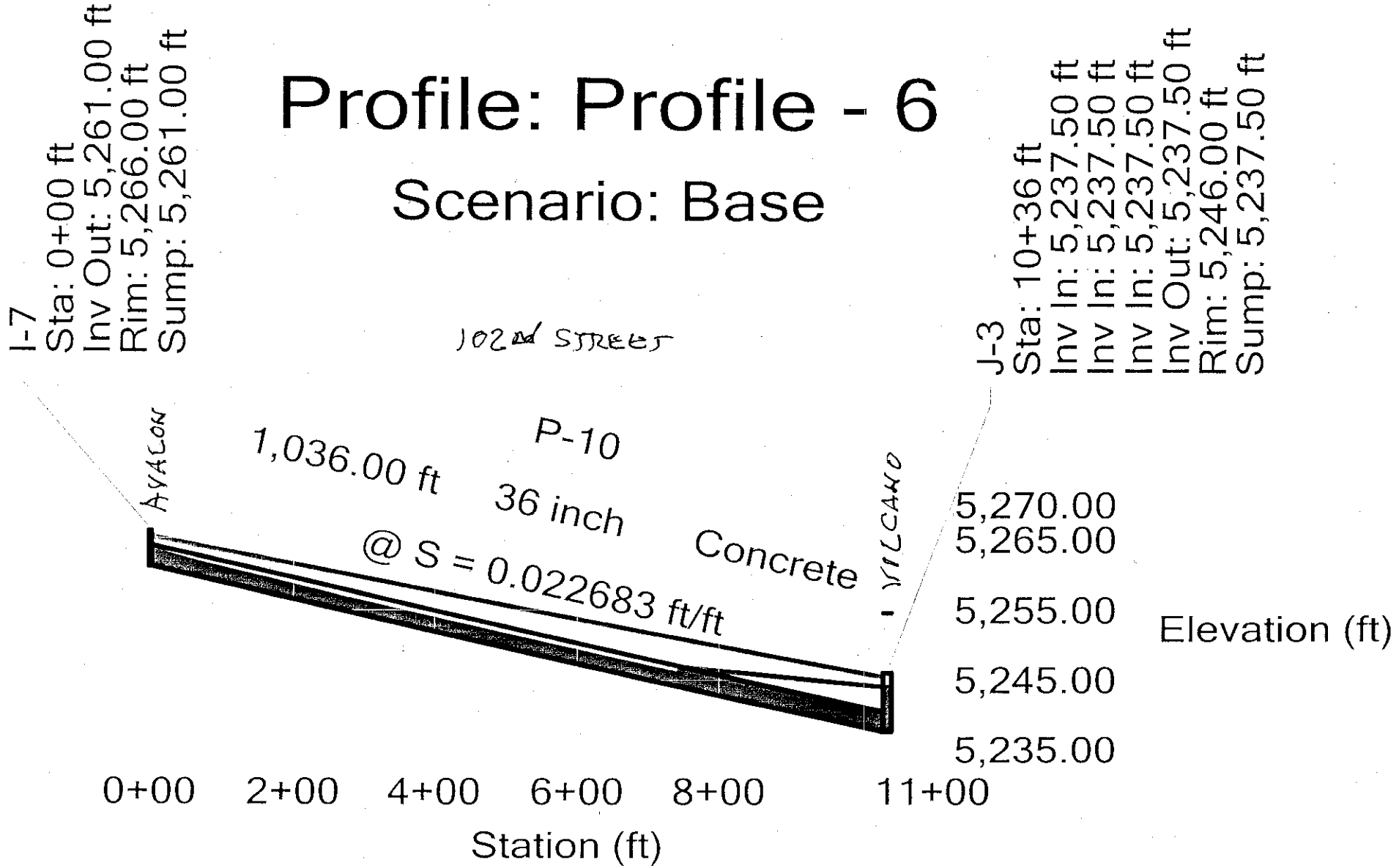


Profile: Profile - 5
Scenario: Base



Profile: Profile - 6

Scenario: Base



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	,626.84	31.92	5,223.00	5,219.50	0.031818
P-1	J-1	J-2	,116.00	60 inch	397.24	23.02	5,310.50	5,284.54	0.023266
P-2	J-2	J-3	,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	,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

Larry Read & Associates
Haestad Methods Solution Center Watertown, CT 06795 USA +1-203-755-1666

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

APPENDIX D

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

PARADISE RV PARK
BASIN COMPARISON
SCALE 1":800'

LEGEND
THIS REPORT
GREINER 1995

Greiner June 1995

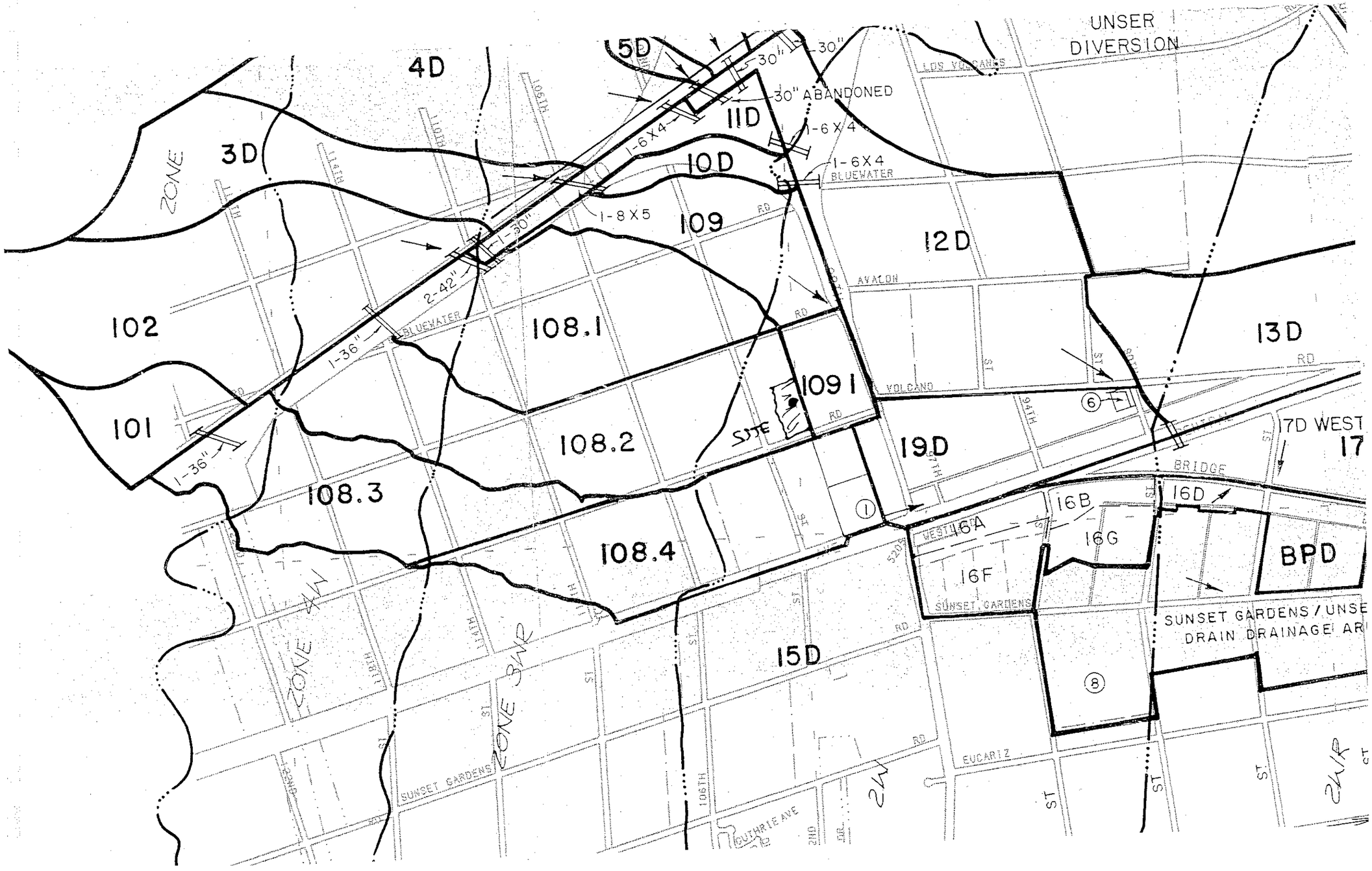
Tables showing undeveloped and developed contributing basins and their characteristics are shown below.

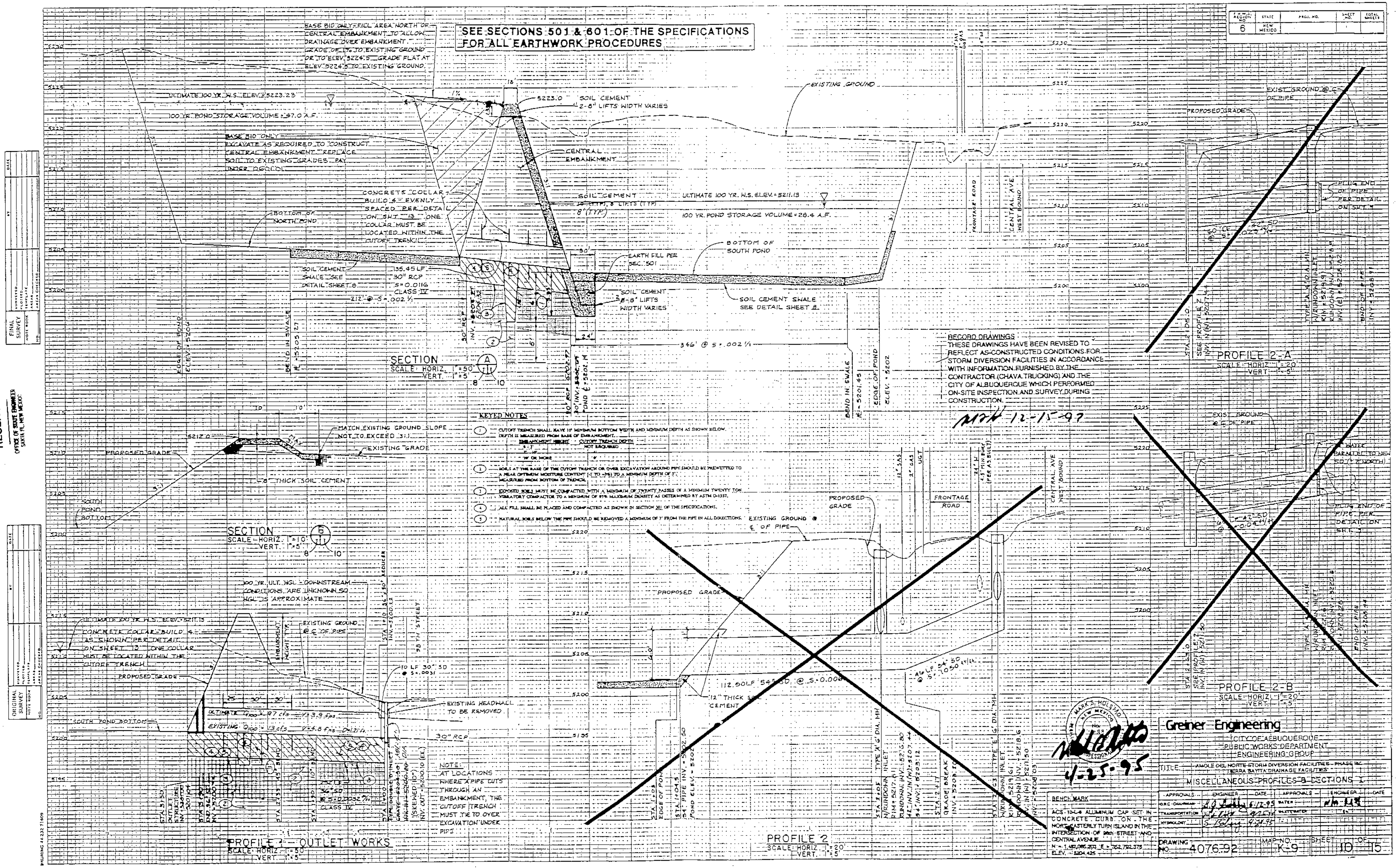
ULTIMATE DEVELOPMENT BASIN INFORMATION						
Basin	Area (Sq. Mi.)	Time of Concentration (hours)	Ultimate Land Treatment			
			A	B	C	D
			(percent)			
101	0.0260	0.20	0	100*	0	0
102	0.2810	0.30	15	30*	24	31
108.1	0.1713	0.20	0	17	13	70
108.2	0.1710	0.24	0	18	19	63
108.3	0.1478	0.26	0	21	22	57
108.4	0.1426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


4D
5D
3D
ZONE
11D
10D
109
108.1
108.2
108.3
108.4
102
101
1091
19D
12D
13D
15D
UNSER
DIVERSION
1-30"
1-30" ABANDONED
1-6X4
1-6X4
BLUEWATER
1-8X5
2-42"
1-36"
1-36"
SITE
AVALON
VOLCANO
17D WEST
17
BRIDGE
16D
16B
16G
16A
16F
BPD
SUNSET GARDENS
SUNSET GARDENS / UNSE
DRAIN DRAINAGE AR
ZONE 1W
ZONE 3W
EUCARIZ
SUNSET GARDENS
RD
ST
LOS VOLCANES


SEE SECTIONS 501 & 601 OF THE SPECIFICATIONS FOR ALL EARTHWORK PROCEDURES
BASE BID ONLY - FILL AREA NORTH OF CENTRAL EMBANKMENT TO ALLOW DRAINAGE OVER EMBANKMENT. GRADE OF 1% TO EXISTING GROUND OR TO ELEV. 5224.5 GRADE FLAT AT ELEV. 5224.5 TO EXISTING GROUND.
ULTIMATE 100 YR. W.S. ELEV = 5223.23
100 YR. POND STORAGE VOLUME = 47.0 A.F.
BASE BID ONLY EXCAVATE AS REQUIRED TO CONSTRUCT CENTRAL EMBANKMENT. REPLACE SOIL TO EXISTING GRADES. PAY UNDER
5223.0
SOIL CEMENT 2-8" LIFTS WIDTH VARIES
CENTRAL EMBANKMENT
EXISTING GROUND
CONCRETE COLLAR - BUILD 4 EVENLY SPACED PER DETAIL ON SHT. 13. ONE COLLAR MUST BE LOCATED WITHIN THE CUTOFF TRENCH.
BOTTOM OF NORTH POND
SOIL CEMENT 8" (TYP)
ULTIMATE 100 YR. W.S. ELEV. = 5211.13
100 YR. POND STORAGE VOLUME = 28.4 A.F.
BOTTOM OF SOUTH POND
EARTH FILL PER SEC. 501
SOIL CEMENT SWALE SEE DETAIL SHEET 8
135.45 LF 30" RCP S = 0.0116 CLASS IV
212' @ S = .002 ¼
SOIL CEMENT 2-8" LIFTS WIDTH VARIES
SOIL CEMENT SWALE SEE DETAIL SHEET 8
346' @ S = .002 ¼
EDGE OF POND ELEV. = 5206
BEND IN SWALE = 5205.27
BEND IN SWALE = 5201.45
EDGE OF POND ELEV. = 5202
FRONTAGE ROAD
CENTRAL AVE. WEST BOUND
SECTION A
SCALE: HORIZ. 1" = 50' VERT. 1" = 5'
RECORD DRAWINGS
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS FOR STORM DIVERSION FACILITIES IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CHAVA TRUCKING) AND THE CITY OF ALBUQUERQUE WHICH PERFORMED ON-SITE INSPECTION AND SURVEY DURING CONSTRUCTION.
MSH 12-15-97
KEYED NOTES
1 CUTOFF TRENCH SHALL HAVE 10' MINIMUM BOTTOM WIDTH AND MINIMUM DEPTH AS SHOWN BELOW. DEPTH IS MEASURED FROM BASE OF EMBANKMENT.
EMBANKMENT HEIGHT / CUTOFF TRENCH DEPTH
NOT REQUIRED
10' OR MORE
2 SOILS AT THE BASE OF THE CUTOFF TRENCH OR OVER EXCAVATION AROUND PIPE SHOULD BE PREWETTED TO A NEAR OPTIMUM MOISTURE CONTENT (-1 TO +3%) TO A MINIMUM DEPTH OF 3', MEASURED FROM BOTTOM OF TRENCH.
3 EXPOSED SOILS MUST BE COMPACTED WITH A MINIMUM OF TWENTY PASSES OF A MINIMUM TWENTY TON VIBRATORY COMPACTOR TO A MINIMUM OF 95% MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557.
4 ALL FILL SHALL BE PLACED AND COMPACTED AS SHOWN IN SECTION 301 OF THE SPECIFICATIONS.
5 NATURAL SOILS BELOW THE PIPE SHOULD BE REMOVED A MINIMUM OF 3' FROM THE PIPE IN ALL DIRECTIONS.
PROFILE 2-A
SCALE: HORIZ. 1" = 20' VERT. 1" = 5'
EXIST. GROUND @ ℄ OF PIPE
PROPOSED GRADE
PLUG END OF PIPE PER DETAIL ON SHT. 9
MATCH EXISTING GROUND SLOPE NOT TO EXCEED 3:1
5212.0
PROPOSED GRADE
EXISTING GRADE
8" THICK SOIL CEMENT
SOUTH POND BOTTOM
SECTION B
SCALE - HORIZ. 1" = 10' VERT. 1" = 5'
100 YR. ULT. HGL - DOWNSTREAM CONDITIONS ARE UNKNOWN SO HGL IS APPROXIMATE
ULTIMATE 100 YR. W.S. ELEV. = 5211.13
CONCRETE COLLAR - BUILD 4 AS SHOWN PER DETAIL ON SHEET 13. ONE COLLAR MUST BE LOCATED WITHIN THE CUTOFF TRENCH.
PROPOSED GRADE
EXISTING GROUND @ ℄ OF PIPE
98 TH STREET
10 LF 30" SD @ S = .0031
EXISTING HEADWALL TO BE REMOVED
ULTIMATE Q100 = 97 cfs V = 3.9 fps
EXISTING Q100 = 13 cfs V = 4.8 fps
SOUTH POND BOTTOM
30" RCP
NOTE: AT LOCATIONS WHERE A PIPE CUTS THROUGH AN EMBANKMENT, THE CUTOFF TRENCH MUST TIE TO OVER EXCAVATION UNDER PIPE
PROFILE 2 - OUTLET WORKS
SCALE: HORIZ. 1" = 50' VERT. 1" = 5'
EXISTING GROUND @ ℄ OF PIPE
PROPOSED GRADE
112.50 LF 54" SD @ S = 0.008
12" THICK SOIL CEMENT
PROFILE 2
SCALE: HORIZ. 1" = 20' VERT. 1" = 5'
PROFILE 2-B
SCALE: HORIZ. 1" = 20' VERT. 1" = 5'
RECEIVED
OFFICE OF STATE ENGINEER SANTA FE, NEW MEXICO
FINAL SURVEY
ORIGINAL SURVEY
6 NEW MEXICO
Greiner Engineering
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP
TITLE: AMOLE DEL NORTE STORM DIVERSION FACILITIES - PHASE IIC TIERRA BAYITA DRAINAGE FACILITIES
MISCELLANEOUS PROFILES & SECTIONS I
BENCH MARK
ACS 10-L4 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE
N = 1,482,085.203 E = 352,792.375
ELEV. = 5204.425
4-25-95
DRAWING NO. 4076.92
MAP NO. K-9
SHEET 10 OF 15

APPENDIX E

Amole Hubbell Drainage Management Plan
Amole Channel Drainage Basin Map


SNOW VISTA BASIN
105
100
CENTRAL
130
120
SUNSET
110
POND 3E
SNOW VISTA BASIN
150
SPLIT #120
160
10TH ST
POND 4E
140
LUCARIA
305
300
114TH ST
170
POND 2E
POND 3E
330
230
320
CONNEMARA
POND 10E
CONNEMARA
310
420
340
ANDALUSIAN
351
352
POND 12E
TEAL RD
353
352
354
AMOLE BASIN
N
600' 300' 0 600' 1200'
SCALE: 1" = 600'
374

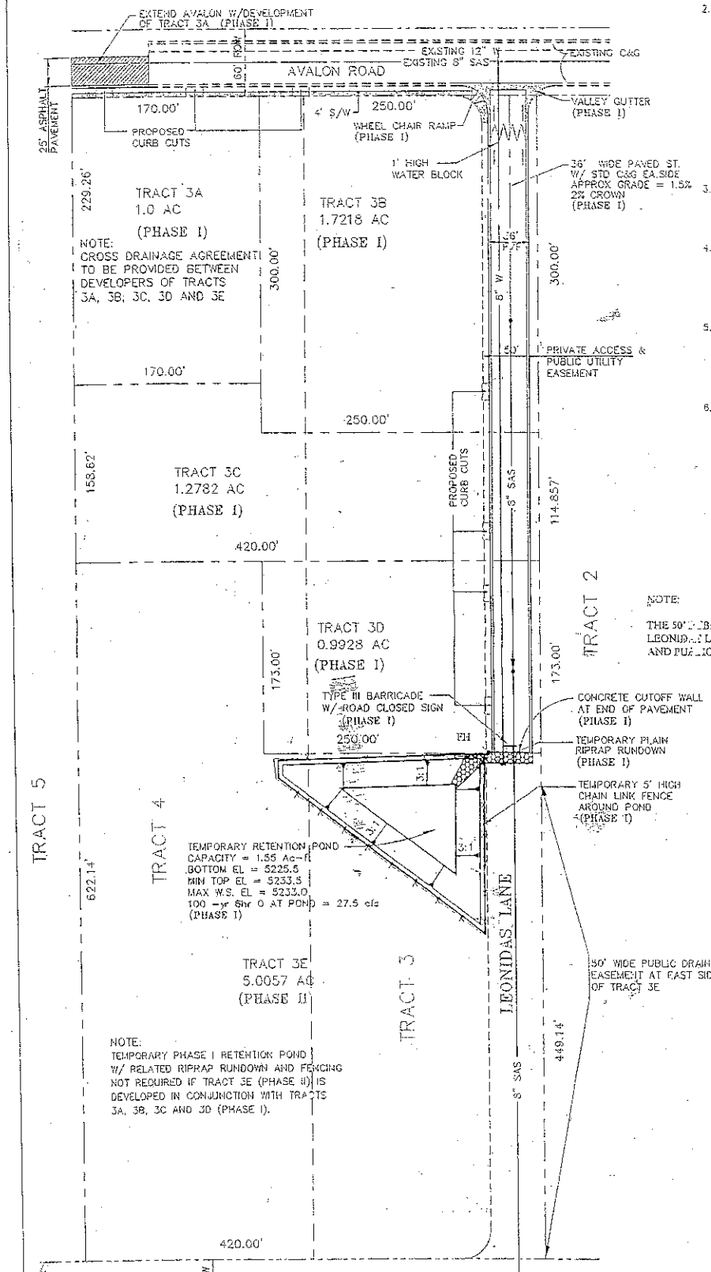
APPENDIX F

Ray Macy Developement Plan 1998

SITE PLAN NOTES:

1. 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–MOTEL OR OTHER ACCEPTABLE C-2 USE.
   TRACT 3D–TRUCK WASH, CAR WASH OR OTHER ACCEPTABLE C-2 USE.
   TRACT 3E–RV CAMPGROUND OR OTHER ACCEPTABLE C-2 USE.
2. 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 30' 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.
3. MAXIMUM BUILDING HEIGHT
   BUILDINGS WILL NOT EXCEED 26' IN HEIGHT EXCEPT IN ACCORDANCE WITH SECTION 14-16-2-15(C) OF THE ZONING CODE.
4. 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.
5. MAXIMUM TOTAL DWELLING UNITS
   TRACT 3A NOT APPLICABLE
   TRACT 3B NOT APPLICABLE
   TRACT 3C NOT APPLICABLE
   TRACT 3D NOT APPLICABLE
   TRACT 3E NOT APPLICABLE
6. 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

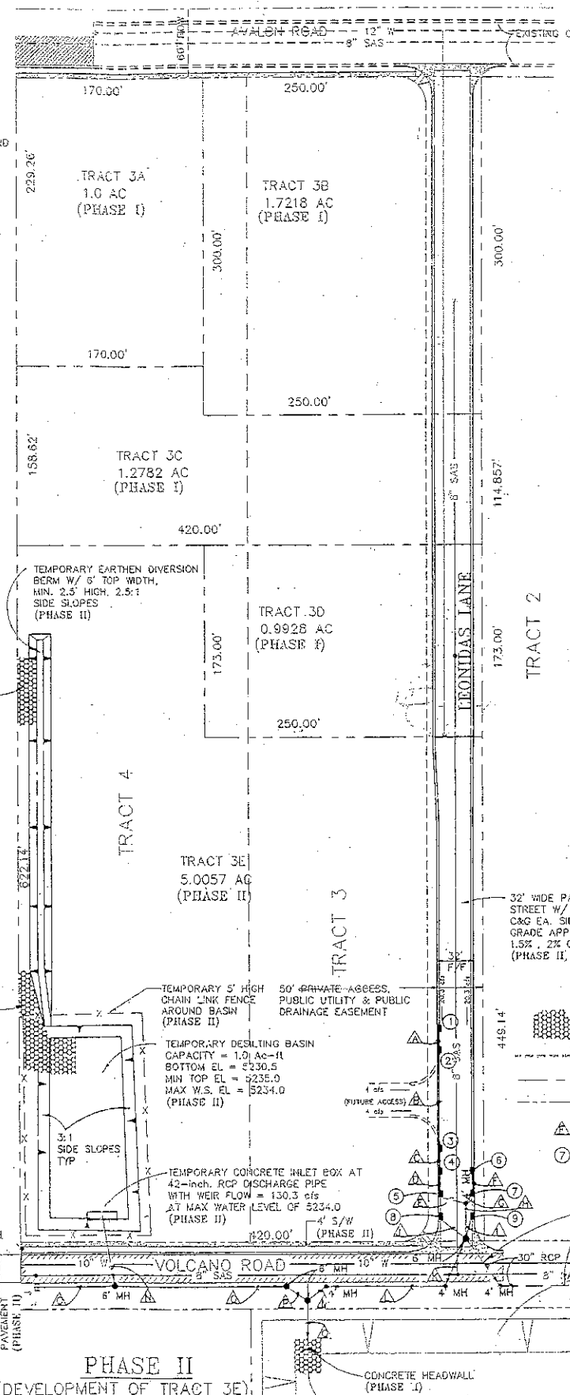


PIPE SEGMENT	DIA	Q (cfs)
A	18	7.3
B	21	14.9
C	24	22.5
D	24	29.0
E	27	33.4
F	18	8.5
G	18	9.9
H	30	43.3
I	18	2.5
J	18	2.5
K	30	48.3
L	33	48.3
M	30	48.3
N	42	130.3
O	66	350
P	66	350
Q	96	350

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

PHASE I STORM DRAINS AND INLETS

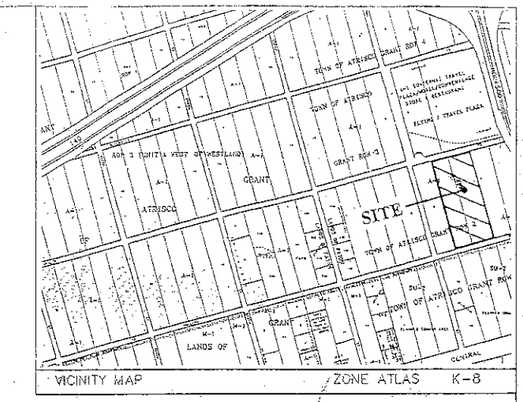
PHASE I
(DEVELOPMENT OF TRACTS 3A,3B,3C & 3D)



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.

PHASE II
(DEVELOPMENT OF TRACT 3E)

SCALE 1"=60'
0 60 120
30 90



CONDITIONS OF Z-97-83/AX-97-5

1. 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.
2. 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.
3. 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.
4. 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.
5. FUTURE SITE PLANS FOR BUILDING PERMITS SHALL BE DELEGATED TO THE DEVELOPMENT REVIEW BOARD FOR PUBLIC HEARING.
6. NO OFF STREET PREMISE SIGNS SHALL BE PERMITTED.
7. BUILDING DESIGNS AND MATERIALS SHALL BE ARCHITECTURALLY COMPATIBLE.
8. NO STANDARD GENERIC FRANCISE DESIGN BUILDINGS SHALL BE PERMITTED. DESIGN SHALL BE INNOVATED AND CONTEXTUAL TO SOUTHWESTERN ARCHITECTURE PER THE WESTSIDE STRATGIC PLAN.

Development Review Board Member Approval

Transportation Development	5-12-98 Date
Utility Development	5.12.98 Date
Parks & General Services	5-12-98 Date
City Engineer/AMAFCA	9-29-98 Date
DRB Chairman	9/29/98 Date

LEGEND
- RIPRAP
- DRAINAGE BASIN BOUNDRY
- STREET ℄
- PROPERTY BOUNDRY
- STORM DRAIN SEGMENT I.D.
- STORM INLET NUMBER I.D.

RAYMOND W. HACH NEW MEXICO 9414 REGISTERED PROFESSIONAL ENGINEER 4/20/98

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