WILSON &COMPANY

6611 Gulton Court, N.E.
Albuquerque, New Mexico 87109
P.O. Box 3548 87190
505-345-5345

353.08.01 Lib.
North Coors DMP between Calabacillas & Alameda, Revision to Wilson & Company
Wilson & Company, 1992

IS

Albuquerque
Colorado Springs
Kansas City
Phoenix
Tulsa, Kansas
Wichita

11 September 1992

Return to:
AMAFCA
2600 Prospect Avenue NE
Albuquerque NM 87107

MICRO-FILMED

Mr. Cliff Anderson, P.E.
Drainage Engineer
AMAFCA
2600 Prospect NE
Albuquerque, NM 87107

Re: Revision to the North Coors Drainage Management Plan (NCDMP)
WCEA File: 92-527A

N/W CALAB. & ALAMEDA

Dear Cliff:

Submitted herein for your review and comment is the preliminary revision to the NCDMP for the Calabacillas Outlet Project. The revisions to the NCDMP include basin boundaries, basin areas, percent impervious, time of concentration, and corrections to the ponds to match the approved drainage reports for the various developed properties discharging to the drain. A summary of the revisions and report reference is given below. These changes will be discussed in our upcoming meeting on 16 September 1992.

Revisions and Drainage Report References:

Basin 1.1.3: The basin identification was changed per the Alameda Drainage report prepared by Wilson & Company, 1991.

Basin 3.1.1: The basin area was changed per the Riverwalk Marketplace Drainage Report prepared by Bohannan-Huston, Inc. 1989.

Basin 4.2.2: The basin has two discharges to the drain per the approved drainage report for Tract C-2, Black Ranch prepared by Bohannan-Huston, Inc 1989. The discharges convey drainage from existing/future ponds.

Basin 4.1.1: The basin area was modified to reflect the drainage from the Oasis Golf Course Development discharging to the Alameda West shopping center system.

Basin 4.1.3: The basin area was modified to reflect the conditions of the approved drainage report for the Riverwalk Marketplace as previously mentioned.

Basin 5.1.1: The basin area was modified per the SAD 223 and Cottonwood Mall Drainage report prepared by Chuck Easterling & Associates, 1992, and Bohannan-Huston, Inc, 1992, respectively.

Basin 5.1.2: Same as previous revision.

Basin 5.1.3: Same as previous revision.

Basin 5.2.1: Same as previous revision.

Basin 5.1.4: Basin area revised to reflect addition of Oasis Golf Course drainage to the system.

Basin 6.1.4: Basin area and discharge to the drain revised per the approved Windmill Estates Drainage Report.

The AHYMO491 version of the program was used for this revision. Although there is only a slight difference in the total flow reaching the concrete diversion channel at Station 556+42.9, the changes in the peak flowrates for various basin have significantly changed.

Some of the items that I would like to discuss with you at our meeting include the base flow corrections for irrigation flows, changes in the peak discharge rates of basins and the ponds, and additions/revisions necessary for approval.

Please do not hesitate to contact me if you have any questions of comments.

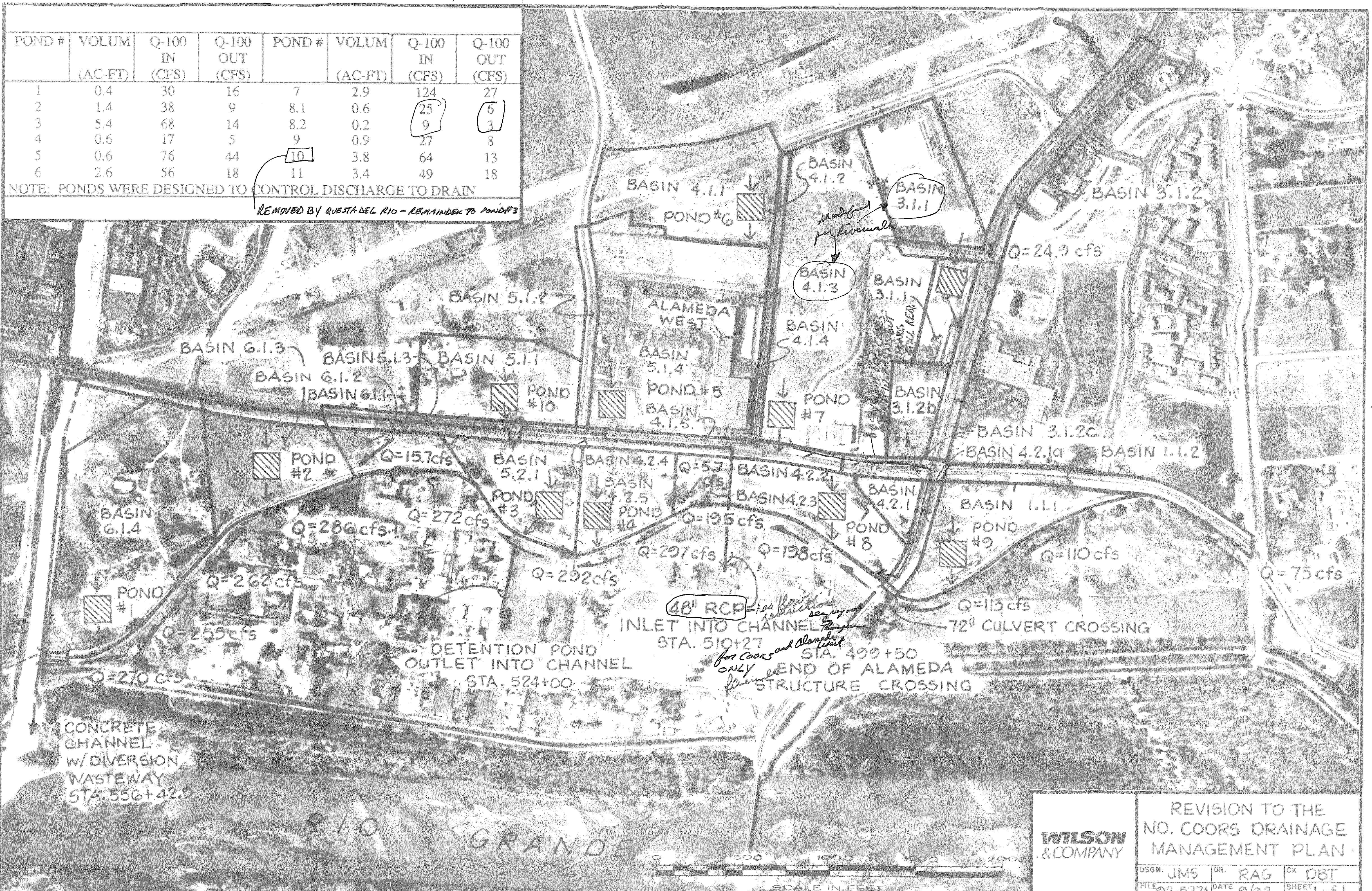
WILSON & COMPANY

John M. Stomp, E.I.T.

POND #	VOLUM (AC-FT)	Q-100 IN (CFS)	Q-100 OUT (CFS)	POND #	VOLUM (AC-FT)	Q-100 IN (CFS)	Q-100 OUT (CFS)
1	0.4	30	16	7	2.9	124	27
2	1.4	38	9	8.1	0.6	25	6
3	5.4	68	14	8.2	0.2	9	3
4	0.6	17	5	9	0.9	27	8
5	0.6	76	44	10	3.8	64	13
6	2.6	56	18	11	3.4	49	18

NOTE: PONDS WERE DESIGNED TO CONTROL DISCHARGE TO DRAIN

REMOVED BY QUESTA DEL RIO - REMAINDER TO POND #3



WILSON & COMPANY

REVISION TO THE NO. COORS DRAINAGE MANAGEMENT PLAN

DSGN. JMS	DR. RAG	CK. DBT
FILE 92-527A	DATE 9/92	SHEET 1 of 1

CALAB. TO ALAMEDA

48" limited to 36 cfs according to Riverwalk report

AHYMO SUMMARY TABLE (AHYMO491) - AMAFCA VERSION OF HYMO - APRIL, 1991 RUN DATE (MON/DAY/YR) =09/11/1992

INPUT FILE = CALAB.DAT USER NO.= WILSONNM.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
RAINFALL TYPE= 1										RAIN6= 2.200
COMPUTE NM HYD	301.00	-	1	.01450	40.56	1.520	1.96545	1.499	4.371	PER IMP= 100.00
STORE HYD	102.00	-	2	.00100	75.00	322.314	6043.39100	.000	117.187	
ADD HYD	302.00	1& 2	1	.01550	115.56	125.569	151.89840	1.499	11.649	
ROUTE	1.00	1	2	.01550	109.59	124.802	150.97050	1.533	11.048	
STORE HYD	102.10	-	1	.00010	75.00	.613	114.92760	.000	1171.875	
ADD HYD	302.10	1& 2	1	.01560	109.59	125.415	150.73930	1.533	10.977	
COMPUTE NM HYD	103.10	-	2	.01060	26.63	.972	1.71882	1.499	3.925	PER IMP= 81.00
ROUTE RESERVOIR	503.10	2	3	.01060	8.00	.972	1.71879	1.865	1.179	AC-FT= .450
ADD HYD	303.10	3& 1	1	.02620	116.18	126.261	90.35889	1.532	6.928	
ROUTE	2.00	1	2	.02620	112.67	125.913	90.10929	1.533	6.719	
STORE HYD	103.30	-	1	.00010	1.00	.015	2.89256	.333	15.625	
ADD HYD	303.20	1& 2	1	.02630	112.67	125.929	89.77849	1.533	6.694	
ROUTE	3.00	1	2	.02630	112.55	125.913	89.76717	1.533	6.687	
STORE HYD	104.10	-	1	.00010	5.60	.046	8.67760	.167	87.500	
ADD HYD	304.30	1& 2	10	.02640	112.55	125.959	89.45921	1.533	6.661	
COMPUTE NM HYD	800.00	-	1	.01830	48.56	1.776	1.81978	1.499	4.147	PER IMP= 85.00
ROUTE RESERVOIR	801.00	1	3	.01830	17.48	1.776	1.81976	1.798	1.493	AC-FT= .703
COMPUTE NM HYD	802.00	-	1	.00890	24.90	.933	1.96545	1.499	4.371	PER IMP= 100.00
ADD HYD	803.00	1& 3	3	.02720	37.50	2.709	1.86742	1.532	2.154	
ROUTE	804.00	3	2	.02720	30.83	2.709	1.86744	1.598	1.771	
COMPUTE NM HYD	805.00	-	1	.00540	13.71	.566	1.96545	1.532	3.966	PER IMP= 100.00
ADD HYD	806.00	1& 2	1	.03260	43.11	3.275	1.88364	1.565	2.066	
COMPUTE NM HYD	806.00	-	2	.00650	16.56	.609	1.75808	1.499	3.980	PER IMP= 85.00
ADD HYD	807.00	1& 2	1	.03910	57.03	3.884	1.86277	1.532	2.279	
ROUTE	808.00	1	2	.03910	57.00	3.884	1.86264	1.551	2.278	
COMPUTE NM HYD	809.00	-	1	.00500	13.50	.504	1.88914	1.499	4.219	PER IMP= 95.00
ADD HYD	810.00	1& 2	1	.04410	68.91	4.388	1.86561	1.551	2.441	
ROUTE	811.00	1	2	.04410	69.05	4.388	1.86562	1.551	2.446	
COMPUTE NM HYD	812.00	-	1	.00550	14.57	.538	1.83565	1.499	4.139	PER IMP= 90.00
COMPUTE NM HYD	813.00	-	3	.00170	4.76	.178	1.96545	1.499	4.378	PER IMP= 100.00
ADD HYD	814.00	3& 1	1	.00720	19.33	.717	1.86622	1.499	4.195	
ADD HYD	815.00	2& 1	1	.05130	86.12	5.104	1.86567	1.551	2.623	
ROUTE	816.00	1	2	.05130	85.52	5.104	1.86554	1.532	2.605	
ROUTE	817.00	2	1	.05130	84.89	5.104	1.86554	1.533	2.585	
ADD HYD	308.30	10& 1	1	.07770	197.44	131.063	31.62721	1.533	3.970	
ROUTE	308.31	1	2	.07770	190.18	130.722	31.54496	1.565	3.824	
COMPUTE NM HYD	309.10	-	4	.00980	25.21	.926	1.77074	1.499	4.019	PER IMP= 85.00
ROUTE RESERVOIR	509.10	4	5	.00980	5.55	.925	1.77030	2.031	.885	AC-FT= .555
ADD HYD	309.20	1& 5	5	.08750	200.28	131.919	28.26833	1.532	3.576	
ROUTE	6.10	5	1	.08750	191.89	131.583	28.19637	1.565	3.427	
COMPUTE NM HYD	309.10	-	2	.00340	8.76	.321	1.77074	1.499	4.024	PER IMP= 85.00
ROUTE RESERVOIR	509.10	2	3	.00340	3.11	.321	1.77057	1.798	1.427	AC-FT= .154
ADD HYD	509.12	3& 1	6	.09090	194.13	131.904	27.20791	1.565	3.337	
STORE HYD	109.30	-	1	.00010	32.00	.246	46.04811	.100	500.000	
ADD HYD	309.30	1& 6	3	.09100	194.13	132.280	27.25555	1.567	3.333	
COMPUTE NM HYD	310.10	-	4	.02630	55.29	2.211	1.57603	1.532	3.285	PER IMP= 70.00
ROUTE RESERVOIR	510.10	4	6	.02630	17.76	2.211	1.57602	1.898	1.055	AC-FT= .997
COMPUTE NM HYD	311.10	-	5	.01920	53.71	2.013	1.96545	1.499	4.371	PER IMP= 100.00

ADD HYD	311.20	6& 5	6	.04550	64.94	4.223	1.74033	1.499	2.230	
ROUTE	8.00	6	5	.04550	59.89	4.223	1.74034	1.567	2.057	
COMPUTE NM HYD	312.10	-	4	.04820	123.92	4.552	1.77074	1.499	4.017	PER IMP= 85.00
ROUTE RESERVOIR	512.10	4	6	.04820	26.91	4.552	1.77074	2.031	.872	AC-FT= 2.609
ADD HYD	312.20	6& 5	6	.09370	79.85	8.771	1.75512	1.565	1.331	
COMPUTE NM HYD	313.10	-	4	.00380	10.64	.398	1.96545	1.499	4.373	PER IMP= 100.00
ADD HYD	313.20	6& 4	5	.09750	88.63	9.169	1.76331	1.565	1.420	
COMPUTE NM HYD	314.10	-	6	.00330	9.24	.346	1.96545	1.499	4.374	PER IMP= 100.00
ADD HYD	314.20	5& 6	4	.10080	96.25	9.515	1.76992	1.565	1.492	
ROUTE	9.00	4	5	.10080	96.41	9.515	1.76992	1.567	1.494	
ADD HYD	314.30	3& 5	6	.19180	290.54	141.795	13.86165	1.567	2.367	
COMPUTE NM HYD	315.10	-	3	.00230	6.44	.241	1.96545	1.499	4.376	PER IMP= 100.00
ROUTE	10.00	3	4	.00230	6.31	.241	1.96556	1.533	4.285	
ADD HYD	11.00	4& 6	4	.19410	296.17	142.036	13.72068	1.567	2.384	
ROUTE	400.00	4	6	.19410	288.38	141.747	13.69272	1.565	2.321	
COMPUTE NM HYD	316.10	-	5	.00200	5.16	.189	1.77074	1.499	4.029	PER IMP= 85.00
ADD HYD	316.20	6& 5	3	.19610	292.68	141.936	13.57115	1.565	2.332	
ROUTE	11.00	3	5	.19610	288.10	141.902	13.56788	1.567	2.296	
STORE HYD	116.30	-	1	.00010	28.80	.130	24.43159	.100	450.000	
ADD HYD	316.40	1& 5	3	.19620	288.10	142.033	13.57345	1.567	2.294	
COMPUTE NM HYD	317.10	-	4	.00640	16.47	.504	1.77074	1.499	4.020	PER IMP= 85.00
ROUTE RESERVOIR	517.10	4	5	.00640	4.41	.604	1.77070	1.931	1.076	AC-FT= .302
ADD HYD	317.20	3& 5	5	.20260	291.85	142.639	13.20081	1.567	2.251	
ROUTE	12.00	5	6	.20260	270.55	142.234	13.16333	1.600	2.087	
STORE HYD	117.30	-	1	.00010	31.50	.256	47.98508	.133	492.187	
ADD HYD	317.30	1& 6	3	.20270	270.55	142.490	13.18051	1.600	2.086	
COMPUTE NM HYD	318.10	-	4	.01920	41.19	1.813	1.77074	1.565	3.352	PER IMP= 85.00
COMPUTE NM HYD	319.10	-	5	.00440	10.29	.461	1.96545	1.565	3.656	PER IMP= 100.00
ADD HYD	319.20	4& 5	6	.02360	51.48	2.274	1.80701	1.565	3.409	
COMPUTE NM HYD	320.10	-	5	.00660	13.51	.692	1.96545	1.632	3.198	PER IMP= 100.00
ADD HYD	320.20	5& 6	4	.03020	63.82	2.966	1.84162	1.565	3.302	
ROUTE RESERVOIR	520.10	4	5	.03020	12.98	2.961	1.83868	2.198	.672	AC-FT= 1.824
COMPUTE NM HYD	321.10	-	2	.02950	75.85	2.786	1.77074	1.499	4.017	PER IMP= 85.00
ROUTE RESERVOIR	521.10	2	4	.02950	44.02	2.786	1.77073	1.632	2.332	AC-FT= 1.402
ROUTE	13.00	4	6	.02950	43.63	2.786	1.77074	1.667	2.311	
ADD HYD	321.20	5& 6	4	.05970	54.18	5.745	1.80423	1.698	1.418	
COMPUTE NM HYD	322.10	-	5	.01050	26.22	.955	1.70584	1.499	3.901	PER IMP= 80.00
ADD HYD	322.20	4& 5	6	.07020	68.22	6.700	1.78951	1.632	1.518	
ROUTE RESERVOIR	522.10	6	5	.07020	14.15	6.034	1.61172	2.797	.315	AC-FT= 3.740
ADD HYD	322.30	3& 5	4	.27290	271.93	148.530	10.20501	1.600	1.557	
ROUTE	14.00	4	5	.27290	264.06	148.304	10.18948	1.633	1.512	
STORE HYD	122.30	-	1	.00010	11.10	.137	25.67124	.167	173.438	
ADD HYD	322.40	1& 5	3	.27300	264.06	148.442	10.19517	1.633	1.511	
COMPUTE NM HYD	323.10	-	4	.00560	12.83	.587	1.96545	1.565	3.579	PER IMP= 100.00
COMPUTE NM HYD	324.10	-	5	.00610	15.70	.576	1.77074	1.499	4.021	PER IMP= 85.00
ADD HYD	324.20	4& 5	6	.01170	27.14	1.163	1.86388	1.532	3.625	
ADD HYD	324.30	3& 6	4	.28470	285.05	149.505	9.85286	1.600	1.570	
ROUTE	15.00	4	5	.28470	252.59	148.522	9.78148	1.767	1.386	
STORE HYD	124.30	-	1	.00010	73.30	.710	133.17030	.100	1145.313	
ADD HYD	324.40	1& 5	3	.28480	252.59	149.233	9.82482	1.767	1.386	
COMPUTE NM HYD	325.10	-	4	.01560	37.77	1.365	1.64093	1.499	3.783	PER IMP= 75.00
ROUTE RESERVOIR	525.10	4	5	.01560	9.09	1.365	1.64092	1.965	.910	AC-FT= .728
ADD HYD	325.20	3& 5	5	.30040	261.45	150.599	9.39989	1.767	1.360	
ROUTE	16.00	5	6	.30040	254.84	150.093	9.36835	1.867	1.326	
STORE HYD	125.30	-	1	.00010	45.00	.474	88.95580	.100	703.125	
ADD HYD	325.30	1& 6	3	.30050	254.84	150.568	9.39483	1.867	1.325	

COMPUTE NM HYD	326.10	-	4	.01540	29.49	.914	1.11320	1.499	2.992	PER IMP= 20.00
ROUTE RESERVOIR	526.10	4	5	.01540	15.27	.914	1.11318	1.665	1.549	AC-FT= .295
ADD HYD	326.20	3& 5	5	.31590	269.18	151.483	8.99116	1.833	1.331	
ROUTE	17.00	5	6	.31590	267.07	151.288	8.97958	1.867	1.321	
STORE HYD	126.30	-	1	.00010	75.00	1.147	215.02900	.000	1171.875	
ADD HYD	326.30	1& 6	3	.31600	267.07	152.435	9.04479	1.867	1.321	

```
   AHYMO PROGRAM (AHYMO491) - AMAFCA VERSION OF HYMO - APRIL, 1991
        RUN DATE (MON/DAY/YR) = 09/11/1992
        START TIME (HR:MIN:SEC) = 09:10:08     USER NO.= WILSONNM.I01
        INPUT FILE = CALAB.DAT

START              TIME=0.0
*
*                   REVISED NORTH COORS DRAINAGE MANAGEMENT PLAN

RAINFALL           TYPE=1  RAIN QUARTER=0.0  RAIN ONE=1.87
                   RAIN SIX=2.2  RAIN DAY=2.66  DT=0.0333

             COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
             DT =    .033300 HOURS       END TIME =     5.994000 HOURS
                .0000  .0016  .0033  .0050  .0067  .0085  .0103
                .0121  .0140  .0160  .0180  .0200  .0221  .0243
                .0265  .0288  .0312  .0336  .0361  .0387  .0414
                .0442  .0471  .0501  .0533  .0566  .0600  .0636
                .0674  .0714  .0757  .0808  .0863  .0922  .1044
                .1323  .1754  .2374  .3221  .4335  .5756  .7527
                .9690 1.1767 1.2619 1.3336 1.3972 1.4551 1.5084
               1.5579 1.6041 1.6474 1.6881 1.7266 1.7629 1.7973
               1.8298 1.8607 1.8900 1.9178 1.9442 1.9515 1.9573
               1.9627 1.9680 1.9729 1.9777 1.9823 1.9867 1.9909
               1.9950 1.9990 2.0029 2.0066 2.0102 2.0137 2.0172
               2.0205 2.0238 2.0269 2.0300 2.0331 2.0360 2.0389
               2.0418 2.0446 2.0473 2.0500 2.0526 2.0552 2.0578
               2.0603 2.0627 2.0651 2.0675 2.0698 2.0721 2.0744
               2.0766 2.0788 2.0810 2.0832 2.0853 2.0873 2.0894
               2.0914 2.0934 2.0954 2.0974 2.0993 2.1012 2.1031
               2.1050 2.1068 2.1086 2.1104 2.1122 2.1140 2.1157
               2.1174 2.1191 2.1208 2.1225 2.1242 2.1258 2.1274
               2.1290 2.1306 2.1322 2.1338 2.1353 2.1369 2.1384
               2.1399 2.1414 2.1429 2.1444 2.1459 2.1473 2.1487
               2.1502 2.1516 2.1530 2.1544 2.1558 2.1571 2.1585
               2.1599 2.1612 2.1625 2.1639 2.1652 2.1665 2.1678
               2.1691 2.1703 2.1716 2.1729 2.1741 2.1754 2.1766
               2.1778 2.1791 2.1803 2.1815 2.1827 2.1839 2.1850
               2.1862 2.1874 2.1886 2.1897 2.1909 2.1920 2.1931
               2.1943 2.1954 2.1965 2.1976 2.1987 2.1998

*
*   RUNOFF HYDROGRAPH FOR AREA 1.1.2
*
COMPUTE NM HYD     ID=1  HYD=101  DA=0.0145 PER A=0
                   PER B=0  PER C=0  PER D=100  TP=-0.133333
                   MASSRAIN=-1

   K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   57.233    CFS   UNIT VOLUME =    .9991      B =   526.28      P60 = 1.8700
   AREA =      .014500 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=1 CODE=1
```

HYDROGRAPH FROM AREA 301.00

RUNOFF VOLUME = 1.96545 INCHES = 1.5199 ACRE-FEET
PEAK DISCHARGE RATE = 40.56 CFS AT 1.499 HOURS BASIN AREA = .0145 SQ. MI.

```
*
*   SET IRRIGATION FLOW IN THE CORRALES ACEQUIA TO 75 CFS
*
STORE HYD            ID=2  HYD=102  INC=4.0  AREA=0.001
                     FLOWRATES=75 75 75 75 75 75 75 75 75 75 75 75 75
PRINT HYD            ID=2  CODE=1
```

PARTIAL HYDROGRAPH 102.00

RUNOFF VOLUME = 6043.39100 INCHES = 322.3122 ACRE-FEET
PEAK DISCHARGE RATE = 75.00 CFS AT .000 HOURS BASIN AREA = .0010 SQ. MI.

```
*
*   ADD AREA 1.1.2 TO BASE FLOWS
*
ADD HYD              ID=1  HYD=302 ID=1  ID=2
PRINT HYD            ID=1  CODE=1
```

HYDROGRAPH FROM AREA 302.00

RUNOFF VOLUME = 151.89840 INCHES = 125.5686 ACRE-FEET
PEAK DISCHARGE RATE = 115.56 CFS AT 1.499 HOURS BASIN AREA = .0155 SQ. MI.

```
*
*   ROUTE DOWN CORRALES ACEQUIA TO DISCHARGE POINT OF 1.1.1
*
COMPUTE RATING CURVE  ID=1  VS NO=2.1  NO SEG=2  MIN ELEV=101.15
                      MAX ELEV=104  CONC SLOPE=0.0005 SLOPE=0.0005
                      N=0.013  DIST=12 N=-0.013  DIST=32
                      DIST   ELEV    DIST    ELEV    DIST    ELEV
                       0     106.0    12     100      20     100
                       32    106.0
```

RATING CURVE VALLEY SECTION 2.1

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
101.15	.0	.0
101.30	13.8	36.1
101.45	15.8	44.0
101.60	17.9	52.6
101.75	20.1	62.1

101.90	22.4	72.3
102.05	24.8	83.3
102.20	27.3	95.1
102.35	29.8	107.8
102.50	32.5	121.3
102.65	35.2	135.6
102.80	38.1	150.9
102.95	41.0	167.0
103.10	44.0	184.0
103.25	47.1	201.9
103.40	50.3	220.8
103.55	53.6	240.6
103.70	57.0	261.4
103.85	60.4	283.1
104.00	64.0	305.9

COMPUTE TRAVEL TIME ID=2 REACH=1 NO VS=1 L=970 SLP=0.0005

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.150	13.780	36.11	.1028
.300	15.805	43.99	.0968
.450	17.920	52.64	.0917
.600	20.125	62.06	.0874
.750	22.420	72.27	.0836
.900	24.805	83.29	.0802
1.050	27.280	95.12	.0773
1.200	29.845	107.77	.0746
1.350	32.500	121.27	.0722
1.500	35.245	135.63	.0700
1.650	38.080	150.86	.0680
1.800	41.005	166.97	.0662
1.950	44.020	183.99	.0645
2.100	47.125	201.93	.0629
2.250	50.321	220.79	.0614
2.400	53.606	240.61	.0600
2.550	56.981	261.39	.0587
2.700	60.446	283.15	.0575
2.850	64.001	305.90	.0564

ROUTE ID=2 HYD=1 INFLOW ID=1 DT=0.03333333

PRINT HYD ID=2 CODE=1

OUTFLOW HYDROGRAPH REACH 1.00

RUNOFF VOLUME = 150.97050 INCHES = 124.8015 ACRE-FEET
PEAK DISCHARGE RATE = 109.59 CFS AT 1.533 HOURS BASIN AREA = .0155 SQ. MI.

*

* BASE FLOW CORRECTION

*

```
STORE HYD            ID=1  HYD=102.1  INC=0.0333333  AREA=0.0001
                     FLOWRATES=75  49.5  23.1  17  12.5  9.5  7.4 5.8  4.6
                     3.7  3  2.4  1.9  1.6  1.3  1  0.8  0.7  0.6 0.4  0.4
                     0.3
*
ADD HYD              ID=1  HYD=302.1  ID=1  ID=2
*   AREA 1.1.2 AND BASE FLOW CORRECTED
PRINT HYD            ID=1  CODE=1

                                   HYDROGRAPH FROM AREA   302.10


    RUNOFF VOLUME =   150.73930 INCHES     =     125.4143 ACRE-FEET
    PEAK DISCHARGE RATE =     109.59 CFS  AT   1.533 HOURS   BASIN AREA =   .0156 SQ. MI.



*
*   COMPUTE HYD FOR AREA 1.1.1
*
COMPUTE NM HYD       ID=2  HYD=103.1  DA=0.0106  PER A=0
                     PER B=19  PER C=0  PER D=81  TP=-0.13333333
                     MASSRAIN=-1

    K =   .072667HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   33.890    CFS   UNIT VOLUME =    .9990      B =   526.28      P60 = 1.8700
    AREA =      .008586 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .131025HR    TP =   .133333HR    K/TP RATIO =   .982685     SHAPE CONSTANT, N =  3.593450
    UNIT PEAK =   4.9407    CFS   UNIT VOLUME =    .9975      B =   327.09      P60 = 1.8700
    AREA =      .002014 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=2  CODE=1

                                PARTIAL HYDROGRAPH   103.10


    RUNOFF VOLUME =     1.71882 INCHES     =        .9717 ACRE-FEET
    PEAK DISCHARGE RATE =      26.63 CFS  AT   1.499 HOURS   BASIN AREA =   .0106 SQ. MI.



*
*   ROUTE THROUGH THE POND (POND # 9, SEE DRAINAGE MAP)
*
ROUTE RESERVOIR      ID=3  HYD=503.1  INFLOW ID=2  CODE=10
                     OUTFLOW   STORAGE    ELEV
                      (CFS)    (AC-FT)    (FT)
                        0.0       0.0       0.0
                        4.7      0.16       0.5
                        6.5      0.27       1.0
                        8.0      0.45       1.5
                        9.1      0.64       2.0
```

```
                    10.0      0.90      2.5

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

   TIME      INFLOW    ELEV      VOLUME    OUTFLOW
   (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

     .00       .00       .00       .000       .00
     .33       .00       .00       .000       .00
     .67       .00       .00       .000       .00
    1.00       .00       .00       .000       .00
    1.33      7.36       .10       .032       .95
    1.67     13.65      1.39       .410      7.67
    2.00      6.22      1.47       .440      7.91
    2.33      1.35      1.15       .325      6.96
    2.66       .56       .60       .181      5.05
    3.00       .30       .28       .089      2.60
    3.33       .20       .14       .044      1.29
    3.66       .16       .07       .023       .67
    4.00       .14       .04       .013       .38
    4.33       .14       .03       .008       .24
    4.66       .14       .02       .006       .18
    5.00       .14       .02       .005       .16
    5.33       .15       .02       .005       .15
    5.66       .16       .02       .005       .16
    5.99       .17       .02       .006       .16
    6.33       .02       .01       .004       .11
    6.66       .00       .01       .002       .06
    6.99       .00       .00       .001       .03
    7.33       .00       .00       .000       .01
    7.66       .00       .00       .000       .01
    7.99       .00       .00       .000       .00
 PEAK DISCHARGE =       7.996 CFS - PEAK OCCURS AT HOUR    1.86
 MAXIMUM WATER SURFACE ELEVATION =       1.499
 MAXIMUM STORAGE =         .4495 AC-FT      INCREMENTAL TIME=     .033300HRS

PRINT HYD             ID=3  CODE=1

                              OUTFLOW HYDROGRAPH RESERVOIR   503.10


    RUNOFF VOLUME =     1.71879 INCHES     =        .9717 ACRE-FEET
    PEAK DISCHARGE RATE =       8.00 CFS  AT   1.865 HOURS   BASIN AREA =   .0106 SQ. MI.



*
*   ADD AREAS 1.1.1 TO ACEQUIA FLOWS
*
ADD HYD               ID=1  HYD=303.1  ID=3  ID=1
PRINT HYD             ID=1  CODE=1

                                    HYDROGRAPH FROM AREA   303.10


    RUNOFF VOLUME =    90.35889 INCHES     =     126.2607 ACRE-FEET
```

PEAK DISCHARGE RATE = 116.18 CFS AT 1.532 HOURS BASIN AREA = .0262 SQ. MI.

```
*
*  ROUTE DOWN CORRALES ACEQUIA TO DISCHARGE POINT
*  OF ALAMEDA STORM DRAIN ON THE SOUTHERN END OF
*  THE 72-INCH CULVERT CROSSING
*
COMPUTE TRAVEL TIME   ID=2  REACH=2  NO VS=1  L=580  SLP=0.0005
```

TRAVEL TIME TABLE

REACH= 2.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.150	13.780	36.11	.0615
.300	15.805	43.99	.0579
.450	17.920	52.64	.0548
.600	20.125	62.06	.0522
.750	22.420	72.27	.0500
.900	24.805	83.29	.0480
1.050	27.280	95.12	.0462
1.200	29.845	107.77	.0446
1.350	32.500	121.27	.0432
1.500	35.245	135.63	.0419
1.650	38.080	150.86	.0407
1.800	41.005	166.97	.0396
1.950	44.020	183.99	.0385
2.100	47.125	201.93	.0376
2.250	50.321	220.79	.0367
2.400	53.606	240.61	.0359
2.550	56.981	261.39	.0351
2.700	60.446	283.15	.0344
2.850	64.001	305.90	.0337

```
ROUTE              ID=2  HYD=2  INFLOW ID=1  DT=0.033333
PRINT HYD          ID=2  CODE=1
```

OUTFLOW HYDROGRAPH REACH 2.00

RUNOFF VOLUME = 90.10929 INCHES = 125.9119 ACRE-FEET
PEAK DISCHARGE RATE = 112.67 CFS AT 1.533 HOURS BASIN AREA = .0262 SQ. MI.

```
*
*  BASE FLOW CORRECTION
*
STORE HYD          ID=1  HYD=103.3  INC=0.0333333  AREA=0.0001
                   FLOWRATES=0.1  0.1  0.1  0.1  0.1  0.1  0.1 0.1  0.1
                   0.1  1  0.8  0.6  0.5  0.3  0.3  0.3  0.2 0.1  0.1
                   0.1  0.1  0.1  0.1
ADD HYD            ID=1  HYD=303.2  ID=1  ID=2
PRINT HYD          ID=1  CODE=1
```

HYDROGRAPH FROM AREA 303.20

RUNOFF VOLUME = 89.77849 INCHES = 125.9285 ACRE-FEET
PEAK DISCHARGE RATE = 112.67 CFS AT 1.533 HOURS BASIN AREA = .0263 SQ. MI.

*
* ROUTE THE FLOWS UNDER ALAMEDA ROAD IN 72-INCH CULVERT
* TO BE INSTALLED BY NMSHTD PROJECT - SPRING 1993
*
COMPUTE RATING CURVE ID=1 VS NO=3 CODE=-1 SLP=0.005 DIA=6 N=0.013

RATING CURVE PIPE SECTION 3.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.31	.6	1.6
.63	1.6	6.8
.94	2.8	15.9
1.25	4.3	28.5
1.56	5.9	44.5
1.88	7.6	63.5
2.19	9.3	85.1
2.50	11.2	108.8
2.81	13.0	134.1
3.13	14.9	160.5
3.44	16.8	187.4
3.75	18.6	214.1
4.06	20.4	240.0
4.38	22.1	264.2
4.69	23.7	285.9
5.00	25.2	303.9
5.32	26.5	316.8
5.63	27.5	322.1
6.00	28.3	322.1

COMPUTE TRAVEL TIME ID=2 REACH=3 NO VS=1 L=175 SLP=0.005

TRAVEL TIME TABLE
REACH= 3.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.313	.562	1.57	.0174
.625	1.564	6.82	.0111
.938	2.824	15.85	.0087
1.251	4.271	28.51	.0073
1.563	5.859	44.52	.0064
1.876	7.554	63.52	.0058
2.189	9.329	85.10	.0053
2.501	11.159	108.80	.0050
2.814	13.022	134.12	.0047

```
                        3.127     14.897     160.52      .0045
                        3.439     16.764     187.40      .0043
                        3.752     18.601     214.12      .0042
                        4.065     20.388     239.99      .0041
                        4.377     22.101     264.21      .0041
                        4.690     23.712     285.89      .0040
                        5.003     25.189     303.93      .0040
                        5.315     26.489     316.83      .0041
                        5.628     27.547     322.14      .0042
                        6.000     28.274     322.14      .0043
ROUTE            ID=2  HYD=3  INFLOW ID=1  DT=0.0333333
PRINT HYD        ID=2  CODE=1

                                OUTFLOW HYDROGRAPH REACH     3.00


    RUNOFF VOLUME =    89.76717 INCHES     =     125.9126 ACRE-FEET
    PEAK DISCHARGE RATE =     112.55 CFS  AT   1.533 HOURS   BASIN AREA =   .0263 SQ. MI.



*
*   BASE FLOW CORRECTION
*
STORE HYD        ID=1  HYD=104.1  INC=0.033333 AREA=0.0001
                 FLOWRATES=0.1  0.1  0.1  0.1  2.7  5.6  2.1 2.8
                 1.4  1.5  0.1  0.1  0.1
PRINT HYD        ID=1  CODE=1

                             PARTIAL HYDROGRAPH   104.10


    RUNOFF VOLUME =     8.67760 INCHES     =        .0463 ACRE-FEET
    PEAK DISCHARGE RATE =       5.60 CFS  AT    .167 HOURS   BASIN AREA =   .0001 SQ. MI.



ADD HYD          ID=10  HYD=304.3  ID=1  ID=2
PRINT HYD        ID=10  CODE=1

                                HYDROGRAPH FROM AREA   304.30


    RUNOFF VOLUME =    89.45921 INCHES     =     125.9578 ACRE-FEET
    PEAK DISCHARGE RATE =     112.55 CFS  AT   1.533 HOURS   BASIN AREA =   .0264 SQ. MI.



*
*******************************************************************************
*   AREA INCLUDED IN THE ALAMEDA DRAINAGE REPORT - WILSON & CO. - 1991
*******************************************************************************
*
*   FOLLOWING VALUES (IMP. AREAS AND DRAINAGE BASIN BOUNDARIES) WERE
*   OBTAINED FROM RIVERWALK REPORT - BOHANNAN-HUSTON, INC. - 1989
*
```

```
*   AREA 3.1.1 (REVISED PER RIVERWALK REPORT)
*
COMPUTE NM HYD        ID=1  HYD=800  DA=0.0183  PER A=0
                      PER B=0  PER C=15  PER D=85  TP=-0.1333333
                      MASSRAIN=-1

    K =   .072667HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   61.397    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 1.8700
    AREA =      .015555 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .105893HR    TP =   .133333HR    K/TP RATIO =   .794199     SHAPE CONSTANT, N =  4.514851
    UNIT PEAK =   7.9909    CFS   UNIT VOLUME =    .9988       B =   388.14      P60 = 1.8700
    AREA =      .002745 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD             ID=1  CODE=1

                                    HYDROGRAPH FROM AREA   800.00


    RUNOFF VOLUME =     1.81978 INCHES     =       1.7761 ACRE-FEET
    PEAK DISCHARGE RATE =      48.56 CFS  AT   1.499 HOURS   BASIN AREA =   .0183 SQ. MI.



*
*    ROUTE THROUGH A POND (POND #11, SEE DRAINAGE MAP)
*
ROUTE RESERVOIR       ID=3  HYD NO=801  INFLOW ID=1  CODE=10
                      OUTFLOW     STORAGE    ELEV
                       (CFS)      (AC-FT)    (FT)
                        0.0         0.00      0.0
                        6.0         0.06      0.6
                       16.1         0.59      1.2
                       22.2         1.09      1.8
                       26.9         1.71      2.4
                       30.4         2.51      3.0
                       33.4         3.44      3.6

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

    TIME      INFLOW    ELEV      VOLUME    OUTFLOW
    (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

      .00       .00       .00       .000       .00
      .33       .00       .00       .000       .00
      .67       .00       .00       .000       .00
     1.00       .00       .00       .000       .00
     1.33     13.59       .47       .047      4.71
     1.67     24.75      1.30       .671     17.09
     2.00     11.49      1.27       .651     16.84
     2.33      2.44       .99       .404     12.56
     2.66      1.00       .72       .168      8.06
     3.00       .53       .26       .026      2.57
```

```
    3.33        .35        .05        .005        .52
    3.66        .28        .03        .003        .31
    4.00        .26        .03        .003        .27
    4.33        .25        .02        .002        .25
    4.66        .25        .02        .002        .25
    5.00        .26        .03        .003        .25
    5.33        .27        .03        .003        .27
    5.66        .29        .03        .003        .29
    5.99        .32        .03        .003        .31
    6.33        .04        .01        .001        .11
    6.66        .01        .00        .000        .02
    6.99        .00        .00        .000        .00
 PEAK DISCHARGE =       17.481 CFS - PEAK OCCURS AT HOUR    1.80
 MAXIMUM WATER SURFACE ELEVATION =        1.336
 MAXIMUM STORAGE =         .7032 AC-FT      INCREMENTAL TIME=     .033300HRS

PRINT HYD            ID=3  CODE=1

                                    HYDROGRAPH FROM AREA   801.00


    RUNOFF VOLUME =     1.81976 INCHES     =       1.7761 ACRE-FEET
    PEAK DISCHARGE RATE =      17.48 CFS  AT   1.798 HOURS   BASIN AREA =   .0183 SQ. MI.



*
*    AREA 3.1.2 (NW 528 AND RIVERWALK ROADWAY ENTRANCES)
*
COMPUTE NM HYD       ID=1  HYD=802  DA=0.0089  PER A=0
                     PER B=0  PER C=0  PER D=100  TP=-0.133333
                     RAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   35.129    CFS   UNIT VOLUME =    .9990      B =   526.28      P60 = 1.8700
    AREA =      .008900 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=1  CODE=1

                                    HYDROGRAPH FROM AREA   802.00


    RUNOFF VOLUME =     1.96545 INCHES     =        .9329 ACRE-FEET
    PEAK DISCHARGE RATE =      24.90 CFS  AT   1.499 HOURS   BASIN AREA =   .0089 SQ. MI.



*
*    ADD HYDS 3.1.1 AND 3.1.2
*
ADD HYD              ID=3  HYD=803  ID=1  ID=3
PRINT HYD            ID=3  CODE=3

                                    HYDROGRAPH FROM AREA   803.00
```

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.499	36.8	2.997	2.9	4.495	.4	5.994	.5
.100	.0	1.598	33.4	3.097	1.6	4.595	.4	6.094	.4
.200	.0	1.698	28.6	3.197	1.1	4.695	.4	6.194	.3
.300	.0	1.798	26.4	3.297	.8	4.795	.4	6.294	.1
.400	.0	1.898	24.7	3.397	.6	4.895	.4	6.394	.1
.500	.0	1.998	23.0	3.497	.5	4.995	.4	6.493	.1
.599	.0	2.098	20.7	3.596	.5	5.095	.4	6.593	.0
.699	.0	2.198	17.1	3.696	.5	5.195	.4	6.693	.0
.799	.0	2.298	14.6	3.796	.4	5.295	.4	6.793	.0
.899	.0	2.398	12.6	3.896	.4	5.395	.4	6.893	.0
.999	.0	2.498	10.9	3.996	.4	5.494	.4	6.993	.0
1.099	.0	2.597	9.5	4.096	.4	5.594	.4	7.093	.0
1.199	.5	2.697	8.2	4.196	.4	5.694	.5	7.193	.0
1.299	7.7	2.797	7.1	4.296	.4	5.794	.5		
1.399	21.5	2.897	5.5	4.396	.4	5.894	.5		

RUNOFF VOLUME = 1.86742 INCHES = 2.7090 ACRE-FEET
PEAK DISCHARGE RATE = 37.50 CFS AT 1.532 HOURS BASIN AREA = .0272 SQ. MI.

```
*
*   ROUTE DOWN NW 528 IN OPEN CHANNEL IN ACCORDANCE WITH
*   THE NORTH COORS DRAINAGE MANAGEMENT PLAN
*
COMPUTE RATING CURVE  ID=1  VS NO=1  NO SEG=1  MIN ELEV=100  MAX ELEV=104.0
                      SLOPE=0.0033  FP SLOPE=0.0033  N=0.03 DIST=18.0
                      DIST   ELEV     DIST   ELEV     DIST   ELEV
                      0.0    104.0    8.0    100.0    10.0   100.0
                      18.0   104.0
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
100.00	.0	.0
100.21	.5	.5
100.42	1.2	1.6
100.63	2.1	3.3
100.84	3.1	5.8
101.05	4.3	9.2
101.26	5.7	13.4
101.47	7.3	18.6
101.68	9.0	24.8
101.89	11.0	32.2
102.11	13.1	40.7
102.32	15.4	50.5
102.53	17.8	61.6
102.74	20.5	74.1
102.95	23.3	88.0
103.16	26.3	103.4
103.37	29.4	120.4
103.58	32.8	139.0
103.79	36.3	159.3

```
                                104.00      40.0     181.3
COMPUTE TRAVEL TIME   ID=2  REACH=1  NO VS=1  L=1200  FT SLP=0.0033

                          TRAVEL TIME TABLE
                                       REACH=  1.0

                          WATER       AVERAGE     FLOW        TRAVEL
                          DEPTH       AREA        RATE        TIME
                          FEET        SQ.FT.      CFS         HRS
                             .211        .510         .45       .3769
                             .421       1.197        1.55       .2568
                             .632       2.061        3.33       .2065
                             .842       3.102        5.84       .1771
                            1.053       4.321        9.17       .1570
                            1.263       5.717       13.40       .1422
                            1.474       7.291       18.60       .1307
                            1.684       9.041       24.84       .1213
                            1.895      10.969       32.19       .1136
                            2.105      13.075       40.73       .1070
                            2.316      15.357       50.51       .1013
                            2.526      17.817       61.62       .0964
                            2.737      20.454       74.10       .0920
                            2.947      23.269       88.02       .0881
                            3.158      26.260      103.44       .0846
                            3.368      29.429      120.43       .0815
                            3.579      32.775      139.04       .0786
                            3.789      36.299      159.33       .0759
                            4.000      40.000      181.35       .0735
ROUTE               ID=2  HYD NO=804  INFLOW ID=3  DT=0.0333
PRINT HYD           ID=2  CODE=1

                                HYDROGRAPH FROM AREA   804.00


    RUNOFF VOLUME =     1.86744 INCHES     =       2.7090 ACRE-FEET
    PEAK DISCHARGE RATE =      30.83 CFS  AT   1.598 HOURS   BASIN AREA =   .0272 SQ. MI.



*
*    COMPUTE THE NM 528 ROADWAY FLOWS BASIN 3.1.2 TO THE
*    INLETS AT STA 8+58 ALAMEDA BOULEVARD PROJECT
*    (SEE ALAMEDA ROADWAY CONSTRUCTION SHEET 3-28)
*
*    BASIN 3.1.2a (SEE DRAINAGE MAP)
*
COMPUTE NM HYD        ID=1  HYD=805  DA=0.0054  PER A=0
                      PER B=0  PER C=0  PER D=100  TP=-0.166667
                      MASSRAIN=-1

    K =   .090834HR    TP =   .166667HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   17.051    CFS   UNIT VOLUME =    .9996       B =   526.28      P60 = 1.8700
    AREA =      .005400 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD             ID=1  CODE=1
```

HYDROGRAPH FROM AREA 805.00

RUNOFF VOLUME = 1.96545 INCHES = .5660 ACRE-FEET
PEAK DISCHARGE RATE = 13.71 CFS AT 1.532 HOURS BASIN AREA = .0054 SQ. MI.

```
*
*   ADD THE HYDROGRAPHS ROADWAY FLOWS AND BASINS 3.1.1 AND 3.1.2
*
ADD HYD             ID=1  HYD=806
                    ID=1  ID=2
PRINT HYD           ID=1  CODE=1
```

HYDROGRAPH FROM AREA 806.00

RUNOFF VOLUME = 1.88364 INCHES = 3.2750 ACRE-FEET
PEAK DISCHARGE RATE = 43.11 CFS AT 1.565 HOURS BASIN AREA = .0326 SQ. MI.

```
*
*   COMPUTE THE HYDROGRAPH FOR THE DEVELOPMENTS ON THE SOUTHWEST
*   CORNER COORS/NM 528 INTERSECTION (THE AREA WAS SUBTRACTED FROM
*   AREA 4.1.3 AS SHOWN IN NCDMP REV. 1989)
*
*   BASIN 3.1.2b (BASIN X1 IN ALAMEDA DRAINAGE REPORT)

COMPUTE NM HYD      ID=2  HYD=806  DA=0.0065  PER A=5
                    PER B=10  PER C=0  PER D=85  TP=-0.13333
                    MASSRAIN=-1
```

K = .072665HR TP = .133330HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 21.808 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.8700
AREA = .005525 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

K = .141921HR TP = .133330HR K/TP RATIO = 1.064435 SHAPE CONSTANT, N = 3.317659
UNIT PEAK = 2.2433 CFS UNIT VOLUME = .9939 B = 306.77 P60 = 1.8700
AREA = .000975 SQ MI IA = .55000 INCHES INF = 1.39000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

```
PRINT HYD           ID=2  CODE=1
```

HYDROGRAPH FROM AREA 806.00

RUNOFF VOLUME = 1.75808 INCHES = .6095 ACRE-FEET
PEAK DISCHARGE RATE = 16.56 CFS AT 1.499 HOURS BASIN AREA = .0065 SQ. MI.

```
*
*    ADD HYDS FROM X1 AND 3.1.1 THRU 3.1.3
*
ADD HYD              ID=1  HYD=807  ID=1  ID=2
PRINT HYD            ID=1  CODE=10
```

HYDROGRAPH FROM AREA 807.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.998	32.6	3.996	.8	5.994	.7	7.992	.0
.333	.0	2.331	18.2	4.329	.6	6.327	.4	8.325	.0
.666	.0	2.664	11.0	4.662	.6	6.660	.2	8.658	.0
.999	.0	2.997	5.6	4.995	.6	6.993	.1		
1.332	10.8	3.330	1.9	5.328	.6	7.326	.0		
1.665	47.7	3.663	1.1	5.661	.6	7.659	.0		

RUNOFF VOLUME = 1.86277 INCHES = 3.8845 ACRE-FEET
PEAK DISCHARGE RATE = 57.03 CFS AT 1.532 HOURS BASIN AREA = .0391 SQ. MI.

```
*
*    ROUTE THE FLOWS IN THE ALAMEDA STORM SEWER
*    FROM INLETS AT STATION (8+58 +/-)
*
COMPUTE RATING CURVE  ID=1  VS NO=1 NO SEG=-1 SLP=0.015  DIA=3  N=0.013
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.16	.1	.4
.31	.4	1.9
.47	.7	4.3
.63	1.1	7.8
.78	1.5	12.1
.94	1.9	17.3
1.09	2.3	23.2
1.25	2.8	29.7
1.41	3.3	36.6
1.56	3.7	43.8
1.72	4.2	51.1
1.88	4.7	58.4
2.03	5.1	65.5
2.19	5.5	72.1
2.35	5.9	78.0
2.50	6.3	82.9
2.66	6.6	86.4
2.81	6.9	87.9
3.00	7.1	87.9

```
COMPUTE TRAVEL TIME   ID=2  REACH=1  NO VS=1 L=300  SLP=0.015
```

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.156	.140	.43	.0273
.313	.391	1.86	.0175
.469	.706	4.32	.0136
.625	1.068	7.78	.0114
.782	1.465	12.14	.0101
.938	1.889	17.33	.0091
1.094	2.332	23.21	.0084
1.251	2.790	29.68	.0078
1.407	3.255	36.59	.0074
1.563	3.724	43.79	.0071
1.720	4.191	51.12	.0068
1.876	4.650	58.41	.0066
2.032	5.097	65.46	.0065
2.189	5.525	72.07	.0064
2.345	5.928	77.99	.0063
2.501	6.297	82.91	.0063
2.658	6.622	86.43	.0064
2.814	6.887	87.87	.0065
3.000	7.069	87.87	.0067

```
ROUTE              ID=2  HYD=808 INFLOW ID=1  DT=0.033
PRINT HYD          ID=2  CODE=1
```

HYDROGRAPH FROM AREA 808.00

RUNOFF VOLUME = 1.86264 INCHES = 3.8842 ACRE-FEET
PEAK DISCHARGE RATE = 57.00 CFS AT 1.551 HOURS BASIN AREA = .0391 SQ. MI.

```
*
*   COMPUTE THE FLOWS GENERATED IN COORS FROM THE HIGHPOINT
*   SOUTH TO BE COLLECTED AT STA 12+00 +/-
*
*   BASIN 3.1.2c (BASIN Y1 IN ALAMEDA DRAINAGE REPORT)
*
COMPUTE NM HYD     ID=1  HYD=809  DA=0.005  PER A=5
                   PER B=0  PER C=0  PER D=95  TP=-0.13333
                   MASSRAIN=-1
```

K = .072665HR TP = .133330HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 18.749 CFS UNIT VOLUME = .9987 B = 526.28 P60 = 1.8700
AREA = .004750 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

K = .163721HR TP = .133330HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899761
UNIT PEAK = .51291 CFS UNIT VOLUME = .9716 B = 273.54 P60 = 1.8700
AREA = .000250 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

```
PRINT HYD          ID=1  CODE=1
```

HYDROGRAPH FROM AREA 809.00

RUNOFF VOLUME = 1.88914 INCHES = .5038 ACRE-FEET
PEAK DISCHARGE RATE = 13.50 CFS AT 1.499 HOURS BASIN AREA = .0050 SQ. MI.

```
*
*   ADD THE FLOWS TO THE FLOWS IN THE STORM SEWER
*   COLLECTED AT STA 8+58 +/-
*
ADD HYD             ID=1  HYD=810 ID=1  ID=2
PRINT HYD           ID=1  CODE=1
```

HYDROGRAPH FROM AREA 810.00

RUNOFF VOLUME = 1.86561 INCHES = 4.3879 ACRE-FEET
PEAK DISCHARGE RATE = 68.91 CFS AT 1.551 HOURS BASIN AREA = .0441 SQ. MI.

```
*
*   ROUTE THE FLOWS TO THE NEXT SERIES OF INLETS AT STA 17+00 +/-
*
COMPUTE RATING CURVE  ID=1  NO VS=1  NO SEG=-1 SLP=0.015  DIA=3  N=0.013
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.16	.1	.4
.31	.4	1.9
.47	.7	4.3
.63	1.1	7.8
.78	1.5	12.1
.94	1.9	17.3
1.09	2.3	23.2
1.25	2.8	29.7
1.41	3.3	36.6
1.56	3.7	43.8
1.72	4.2	51.1
1.88	4.7	58.4
2.03	5.1	65.5
2.19	5.5	72.1
2.35	5.9	78.0
2.50	6.3	82.9
2.66	6.6	86.4
2.81	6.9	87.9
3.00	7.1	87.9

```
COMPUTE TRAVEL TIME   ID=2  REACH=1  VS NO=1 L=500  SLP=0.015
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.156	.140	.43	.0455
.313	.391	1.86	.0292
.469	.706	4.32	.0227
.625	1.068	7.78	.0191
.782	1.465	12.14	.0168
.938	1.889	17.33	.0151
1.094	2.332	23.21	.0140
1.251	2.790	29.68	.0131
1.407	3.255	36.59	.0124
1.563	3.724	43.79	.0118
1.720	4.191	51.12	.0114
1.876	4.650	58.41	.0111
2.032	5.097	65.46	.0108
2.189	5.525	72.07	.0106
2.345	5.928	77.99	.0106
2.501	6.297	82.91	.0105
2.658	6.622	86.43	.0106
2.814	6.887	87.87	.0109
3.000	7.069	87.87	.0112

```
ROUTE              ID=2  HYD=811 INFLOW ID=1  DT=0.033
PRINT HYD          ID=2  CODE=1
```

HYDROGRAPH FROM AREA 811.00

RUNOFF VOLUME = 1.86562 INCHES = 4.3879 ACRE-FEET
PEAK DISCHARGE RATE = 69.05 CFS AT 1.551 HOURS BASIN AREA = .0441 SQ. MI.

```
*
*   COMPUTE THE FLOWS FROM THE DEVELOPMENTS LOCATED ON THE
*   SOUTHEAST CORNER OF THE INTERSECTION OF COORS AND NM 528
*
*   BASIN 4.2.1 (BASIN X2 IN ALAMEDA DRAINAGE REPORT)
*
COMPUTE NM HYD     ID=1  HYD=812  DA=0.0055  PER A=0
                   PER B=10  PER C=0  PER D=90  TP=-0.133333
                   MASSRAIN=-1
```

K = .072666HR TP = .133333HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 19.538 CFS UNIT VOLUME = .9987 B = 526.28 P60 = 1.8700
AREA = .004950 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

K = .131024HR TP = .133333HR K/TP RATIO = .982685 SHAPE CONSTANT, N = 3.593452
UNIT PEAK = 1.3492 CFS UNIT VOLUME = .9902 B = 327.09 P60 = 1.8700
AREA = .000550 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

```
PRINT HYD            ID=1  CODE=1

                                    HYDROGRAPH FROM AREA   812.00


    RUNOFF VOLUME =     1.83565 INCHES     =        .5385 ACRE-FEET
    PEAK DISCHARGE RATE =      14.57 CFS  AT   1.499 HOURS   BASIN AREA =   .0055 SQ. MI.



*
*    COMPUTE THE ROADWAY FLOWS GENERATED IN THE ROADWAY BETWEEN THE
*    INLETS AT STA 12+00 AND STA 17+00
*
*    BASIN 4.2.1a (COMBINED ROADWAY BASINS X3 AND X4
*    IN ALAMEDA DRAINAGE REPORT)
*
COMPUTE NM HYD       ID=3  HYD=813  DA=0.0017  PER A=0
                     PER B=0  PER C=0  PER D=100  TP=-0.1333
                     MASSRAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   6.7117    CFS   UNIT VOLUME =    .9975      B =   526.28      P60 = 1.8700
    AREA =      .001700 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT -   .033300

PRINT HYD            ID=3  CODE=1

                                    HYDROGRAPH FROM AREA   813.00


    RUNOFF VOLUME =     1.96545 INCHES     =        .1782 ACRE-FEET
    PEAK DISCHARGE RATE =       4.76 CFS  AT   1.499 HOURS   BASIN AREA =   .0017 SQ. MI.



*
*    ADD THE HYDROGRAPHS FROM THE DEVELOPMENT AND THE ROADWAY
*    TO BE COLLECTED AT STA 17+00 +/-
*
ADD HYD              ID=1  HYD=814 ID=3  ID=1
PRINT HYD            ID=1  CODE=1

                                    HYDROGRAPH FROM AREA   814.00


    RUNOFF VOLUME =     1.86622 INCHES     =        .7166 ACRE-FEET
    PEAK DISCHARGE RATE =      19.33 CFS  AT   1.499 HOURS   BASIN AREA =   .0072 SQ. MI.



*
*    ADD THE HYDROGRAPHS FROM THE SURFACE FLOWS TO THE
*    FLOWS IN THE PROPOSED STORM SEWER
*
ADD HYD              ID=1  HYD=815 ID=2  ID=1
```

PRINT HYD ID=1 CODE=1

HYDROGRAPH FROM AREA 815.00

RUNOFF VOLUME = 1.86567 INCHES = 5.1044 ACRE-FEET
PEAK DISCHARGE RATE = 86.12 CFS AT 1.551 HOURS BASIN AREA = .0513 SQ. MI.

*
* ROUTE THE FLOWS IN THE STORM SEWER TO
* DISCHARGE IN THE CORRALES ACEQUIA
*
COMPUTE RATING CURVE ID=1 NO VS=1 NO SEG=-1 SLP=0.01 DIA=3.5 N=0.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.18	.2	.5
.36	.5	2.3
.55	1.0	5.3
.73	1.5	9.6
.91	2.0	15.0
1.09	2.6	21.3
1.28	3.2	28.6
1.46	3.8	36.6
1.64	4.4	45.1
1.82	5.1	53.9
2.01	5.7	63.0
2.19	6.3	71.9
2.37	6.9	80.6
2.55	7.5	88.8
2.74	8.1	96.0
2.92	8.6	102.1
3.10	9.0	106.4
3.28	9.4	108.2
3.50	9.6	108.2

COMPUTE TRAVEL TIME ID=2 REACH=1 VS NO=1 L=120 SLP=0.01

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.182	.191	.53	.0121
.365	.532	2.29	.0077
.547	.961	5.33	.0060
.730	1.453	9.58	.0051
.912	1.994	14.96	.0044
1.094	2.571	21.34	.0040
1.277	3.175	28.59	.0037
1.459	3.797	36.55	.0035

1.641	4.431	45.06	.0033
1.824	5.069	53.93	.0031
2.006	5.704	62.96	.0030
2.189	6.330	71.94	.0029
2.371	6.938	80.63	.0029
2.553	7.520	88.77	.0028
2.736	8.069	96.05	.0028
2.918	8.571	102.11	.0028
3.101	9.014	106.44	.0028
3.283	9.374	108.23	.0029
3.500	9.621	108.23	.0030

ROUTE ID=2 HYD=816 INFLOW ID=1 DT=0.0333
PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA 816.00

RUNOFF VOLUME = 1.86554 INCHES = 5.1041 ACRE-FEET
PEAK DISCHARGE RATE = 85.52 CFS AT 1.532 HOURS BASIN AREA = .0513 SQ. MI.

*
* ROUTE THE FLOWS IN THE PROPOSED 60-INCH RCP AT SLOPE=0.001
* TO OBTAIN CONTROLLED HYDRAULIC JUMP IN PIPE SECTION
*
COMPUTE RATING CURVE ID=1 NO VS=1 NO SEG=-1 SLP=0.001 DIA=5 N=0.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.26	.4	.4
.52	1.1	1.9
.78	2.0	4.4
1.04	3.0	7.8
1.30	4.1	12.2
1.56	5.2	17.5
1.82	6.5	23.4
2.08	7.7	29.9
2.35	9.0	36.9
2.61	10.3	44.1
2.87	11.6	51.5
3.13	12.9	58.9
3.39	14.2	66.0
3.65	15.3	72.7
3.91	16.5	78.6
4.17	17.5	83.6
4.43	18.4	87.1
4.69	19.1	88.6
5.00	19.6	88.6

COMPUTE TRAVEL TIME ID=1 REACH=1 VS NO=1 L=82 SLP=0.001

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.261	.390	.43	.0206
.521	1.086	1.88	.0132
.782	1.961	4.36	.0102
1.042	2.966	7.84	.0086
1.303	4.069	12.24	.0076
1.563	5.246	17.47	.0068
1.824	6.479	23.40	.0063
2.084	7.749	29.92	.0059
2.345	9.043	36.89	.0056
2.606	10.345	44.15	.0053
2.866	11.641	51.54	.0051
3.127	12.918	58.89	.0050
3.387	14.159	66.00	.0049
3.648	15.348	72.66	.0048
3.908	16.467	78.63	.0048
4.169	17.492	83.59	.0048
4.429	18.395	87.14	.0048
4.690	19.130	88.59	.0049
5.000	19.635	88.59	.0050

```
ROUTE              ID=1  HYD=817  INFLOW ID=2  DT=0.03333
PRINT HYD          ID=1  CODE=1
```

HYDROGRAPH FROM AREA 817.00

RUNOFF VOLUME = 1.86554 INCHES = 5.1041 ACRE-FEET
PEAK DISCHARGE RATE = 84.89 CFS AT 1.533 HOURS BASIN AREA = .0513 SQ. MI.

```
*
*   ADD FLOWS FROM ALAMEDA PROJECT TO FLOWS IN CORRALES ACEQUIA
*
ADD HYD            ID=1  HYD=308.3  ID=10  ID=1
PRINT HYD          ID=1  CODE=1
```

HYDROGRAPH FROM AREA 308.30

RUNOFF VOLUME = 31.62721 INCHES = 131.0623 ACRE-FEET
PEAK DISCHARGE RATE = 197.44 CFS AT 1.533 HOURS BASIN AREA = .0777 SQ. MI.

```
*
********** END OF ALAMEDA ROADWAY DRAINAGE ANALYSIS **********
*
*   ROUTE THE FLOWS FROM 72-INCH ALAMEDA STRUCTURE TO THE
*   FIRST OUTLET OF BASIN 4.2.2 (STA 501+20)
*
COMPUTE RATING CURVE  ID=1  VS NO=1  NO SEG=1  MIN ELEV=100  MAX ELEV=108.0
                      SLOPE=0.0005  FP SLOPE=0.0005  N=0.016 DIST=29.2
```

DIST	ELEV	DIST	ELEV	DIST	ELEV
0.0	108.0	9.6	100.0	19.6	100.0
29.2.0	108.0				

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
100.00	.0	.0
100.42	4.4	4.9
100.84	9.3	15.7
101.26	14.5	31.1
101.68	20.2	50.8
102.11	26.4	74.6
102.53	32.9	102.7
102.95	39.9	134.9
103.37	47.3	171.4
103.79	55.1	212.2
104.21	63.4	257.6
104.63	72.1	307.4
105.05	81.2	362.0
105.47	90.7	421.4
105.89	100.6	485.7
106.32	111.0	555.0
106.74	121.8	629.5
107.16	133.1	709.2
107.58	144.7	794.4
108.00	156.8	885.1

COMPUTE TRAVEL TIME ID=2 REACH=8 NO VS=1 L=470 FT SLP=0.0005

TRAVEL TIME TABLE

REACH= 8.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.421	4.423	4.91	.1176
.842	9.272	15.67	.0773
1.263	14.546	31.07	.0611
1.684	20.246	50.76	.0521
2.105	26.371	74.63	.0461
2.526	32.922	102.66	.0419
2.947	39.898	134.89	.0386
3.368	47.299	171.39	.0360
3.789	55.127	212.24	.0339
4.211	63.379	257.56	.0321
4.632	72.057	307.44	.0306
5.053	81.161	362.01	.0293
5.474	90.690	421.37	.0281
5.895	100.644	485.66	.0271
6.316	111.024	554.98	.0261
6.737	121.830	629.46	.0253
7.158	133.061	709.22	.0245
7.579	144.717	794.38	.0238
8.000	156.799	885.06	.0231

ROUTE ID=2 HYD NO=308.31 INFLOW ID=1 DT=0.0333

```
PRINT HYD            ID=2  CODE=1

                                    HYDROGRAPH FROM AREA   308.31


   RUNOFF VOLUME =    31.54496 INCHES     =     130.7215 ACRE-FEET
   PEAK DISCHARGE RATE =     190.18 CFS  AT   1.565 HOURS   BASIN AREA =   .0777 SQ. MI.



*
*   COMPUTE HYDROGRAPH FROM AREA 4.2.2 - VALUES OBTAINED
*   FROM TRACT C-2 DRAINAGE REPORT - BOHANNAN-HUSTON INC.- 1989
*   TRACT C-2 HAS 2-OUTLETS TO CORRALES MAIN CANAL
*
COMPUTE NM HYD       ID=4 HYD NO=309.1 DA=0.0098 PER A=0
                     PER B=15  PER C=0  PER D=85 TP=-0.13333 RAIN=-1

   K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   32.880    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 1.8700
   AREA =      .008330 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .131021HR    TP =   .133330HR    K/TP RATIO =   .982685     SHAPE CONSTANT, N =  3.593450
   UNIT PEAK =   3.6062    CFS   UNIT VOLUME =    .9967       B =   327.09      P60 = 1.8700
   AREA =      .001470 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=4 CODE=1

                                    HYDROGRAPH FROM AREA   309.10


   RUNOFF VOLUME =     1.77074 INCHES     =        .9255 ACRE-FEET
   PEAK DISCHARGE RATE =      25.21 CFS  AT   1.499 HOURS   BASIN AREA =   .0098 SQ. MI.



*
*   ROUTE THROUGH A POND (POND #8.1, SEE DRAINAGE MAP)
*
ROUTE RESERVOIR      ID=5  HYD NO=509.1  INFLOW ID=4 CODE=10
                     OUTFLOW(CFS)  STORAGE(AC-FT) DEPTH(FT)
                      0.0          0.0           0.0
                      1.0          0.19          0.5
                      3.0          0.28          1.0
                      4.0          0.40          1.5
                      5.0          0.50          2.0
                      6.0          0.60          2.5

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

   TIME      INFLOW    ELEV      VOLUME    OUTFLOW
   (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)
```

.00	.00	.00	.000	.00
.33	.00	.00	.000	.00
.67	.00	.00	.000	.00
1.00	.00	.00	.000	.00
1.33	7.13	.09	.034	.18
1.67	12.89	1.82	.463	4.63
2.00	5.98	2.27	.555	5.55
2.33	1.29	1.98	.496	4.96
2.66	.54	1.48	.396	3.97
3.00	.28	1.12	.308	3.23
3.33	.18	.77	.239	2.09
3.66	.15	.55	.199	1.21
4.00	.14	.46	.176	.92
4.33	.13	.41	.155	.82
4.66	.13	.36	.138	.73
5.00	.14	.32	.123	.65
5.33	.15	.29	.110	.58
5.66	.16	.26	.099	.52
5.99	.17	.24	.090	.47
6.33	.02	.21	.080	.42
6.66	.00	.18	.069	.36
6.99	.00	.16	.060	.32
7.33	.00	.14	.052	.27
7.66	.00	.12	.045	.24
7.99	.00	.10	.039	.20
8.33	.00	.09	.034	.18
8.66	.00	.08	.029	.15
8.99	.00	.07	.025	.13
9.32	.00	.06	.022	.11
9.66	.00	.05	.019	.10
9.99	.00	.04	.016	.09
10.32	.00	.04	.014	.07
10.66	.00	.03	.012	.06
10.99	.00	.03	.011	.06
11.32	.00	.02	.009	.05
11.66	.00	.02	.008	.04
11.99	.00	.02	.007	.04
12.32	.00	.02	.006	.03
12.65	.00	.01	.005	.03
12.99	.00	.01	.004	.02
13.32	.00	.01	.004	.02
13.65	.00	.01	.003	.02
13.99	.00	.01	.003	.02
14.32	.00	.01	.002	.01
14.65	.00	.01	.002	.01
14.99	.00	.00	.002	.01
15.32	.00	.00	.002	.01
15.65	.00	.00	.001	.01
15.98	.00	.00	.001	.01
16.32	.00	.00	.001	.01
16.65	.00	.00	.001	.00

PEAK DISCHARGE = 5.554 CFS - PEAK OCCURS AT HOUR 2.03
MAXIMUM WATER SURFACE ELEVATION = 2.277
MAXIMUM STORAGE = .5554 AC-FT INCREMENTAL TIME= .033300HRS

PRINT HYD ID=5 CODE=1

OUTFLOW HYDROGRAPH RESERVOIR 509.10

RUNOFF VOLUME = 1.77030 INCHES = .9253 ACRE-FEET
PEAK DISCHARGE RATE = 5.55 CFS AT 2.031 HOURS BASIN AREA = .0098 SQ. MI.

```
*
*   ADD FLOWS TO FLOWS IN THE MAIN CHANNEL
*
ADD HYD            ID=5 HYD NO=309.2 ID=1 ID=5
PRINT HYD          ID=5 CODE=1
```

HYDROGRAPH FROM AREA 309.20

RUNOFF VOLUME = 28.26833 INCHES = 131.9181 ACRE-FEET
PEAK DISCHARGE RATE = 200.28 CFS AT 1.532 HOURS BASIN AREA = .0875 SQ. MI.

```
*
*   ROUTE THE FLOWS TO THE SECOND OUTLET (STA 510+00)
*   IN THE CORRALES ACEQUIA FROM TRACT C-2
*
COMPUTE TRAVEL TIME   ID=1  REACH=7  NO VS=1  L=580  FT SLP=0.0005
```

TRAVEL TIME TABLE
REACH= 7.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.421	4.423	4.91	.1451
.842	9.272	15.67	.0953
1.263	14.546	31.07	.0754
1.684	20.246	50.76	.0643
2.105	26.371	74.63	.0569
2.526	32.922	102.66	.0517
2.947	39.898	134.89	.0477
3.368	47.299	171.39	.0445
3.789	55.127	212.24	.0418
4.211	63.379	257.56	.0396
4.632	72.057	307.44	.0378
5.053	81.161	362.01	.0361
5.474	90.690	421.37	.0347
5.895	100.644	485.66	.0334
6.316	111.024	554.98	.0322
6.737	121.830	629.46	.0312
7.158	133.061	709.22	.0302
7.579	144.717	794.38	.0294
8.000	156.799	885.06	.0285

```
ROUTE              ID=1  HYD NO=6.1  INFLOW ID=5  DT=0.0333
PRINT HYD          ID=1  CODE=1
```

OUTFLOW HYDROGRAPH REACH 6.10

RUNOFF VOLUME = 28.19637 INCHES = 131.5823 ACRE-FEET
PEAK DISCHARGE RATE = 191.89 CFS AT 1.565 HOURS BASIN AREA = .0875 SQ. MI.

*
* COMPUTE HYDROGRAPH FOR REMAINING AREA OF 4.2.2
*
COMPUTE NM HYD ID=2 HYD NO=309.1 DA=0.0034 PER A=0
PER B=15 PER C=0 PER D=85 TP=-0.13333 RAIN=-1

K = .072665HR TP = .133330HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 11.407 CFS UNIT VOLUME = .9984 B = 526.28 P60 = 1.8700
AREA = .002890 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

K = .131021HR TP = .133330HR K/TP RATIO = .982685 SHAPE CONSTANT, N = 3.593450
UNIT PEAK = 1.2511 CFS UNIT VOLUME = .9893 B = 327.09 P60 = 1.8700
AREA = .000510 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA 309.10

RUNOFF VOLUME = 1.77074 INCHES = .3211 ACRE-FEET
PEAK DISCHARGE RATE = 8.76 CFS AT 1.499 HOURS BASIN AREA = .0034 SQ. MI.

*
* ROUTE THROUGH A POND (POND #8.2, SEE DRAINAGE MAP)
*
ROUTE RESERVOIR ID=3 HYD NO=509.1 INFLOW ID=2 CODE=10

OUTFLOW(CFS)	STORAGE(AC-FT)	DEPTH(FT)
0.0	0.0	0.0
0.5	0.08	0.5
1.5	0.10	1.0
2.5	0.13	1.5
3.5	0.17	2.0

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	.00	.000	.00
.33	.00	.00	.000	.00
.67	.00	.00	.000	.00
1.00	.00	.00	.000	.00

1.33	2.47	.07	.012	.07
1.67	4.48	1.72	.148	2.94
2.00	2.08	1.70	.146	2.90
2.33	.45	1.16	.109	1.82
2.66	.18	.60	.084	.70
3.00	.09	.46	.073	.46
3.33	.06	.40	.064	.40
3.66	.05	.34	.055	.34
4.00	.05	.30	.048	.30
4.33	.05	.26	.041	.26
4.66	.05	.22	.036	.22
5.00	.05	.20	.031	.20
5.33	.05	.17	.028	.17
5.66	.05	.15	.025	.15
5.99	.06	.14	.022	.14
6.33	.01	.12	.019	.12
6.66	.00	.10	.016	.10
6.99	.00	.09	.014	.09
7.33	.00	.07	.012	.07
7.66	.00	.06	.010	.06
7.99	.00	.05	.008	.05
8.33	.00	.04	.007	.04
8.66	.00	.04	.006	.04
8.99	.00	.03	.005	.03
9.32	.00	.03	.004	.03
9.66	.00	.02	.003	.02
9.99	.00	.02	.003	.02
10.32	.00	.02	.002	.02
10.66	.00	.01	.002	.01
10.99	.00	.01	.002	.01
11.32	.00	.01	.001	.01
11.66	.00	.01	.001	.01
11.99	.00	.01	.001	.01
12.32	.00	.01	.001	.01
12.65	.00	.00	.001	.00

PEAK DISCHARGE = 3.105 CFS - PEAK OCCURS AT HOUR 1.80
MAXIMUM WATER SURFACE ELEVATION = 1.803
MAXIMUM STORAGE = .1542 AC-FT INCREMENTAL TIME= .033300HRS

```
PRINT HYD          ID=3 CODE=1
```

OUTFLOW HYDROGRAPH RESERVOIR 509.10

RUNOFF VOLUME = 1.77057 INCHES = .3211 ACRE-FEET
PEAK DISCHARGE RATE = 3.11 CFS AT 1.798 HOURS BASIN AREA = .0034 SQ. MI.

```
*
*   ADD THE FLOWS TO THE FLOWS IN THE CANAL (STA 510+27)
*
ADD HYD            ID=6  HYD=509.12  ID=3  ID=1
PRINT HYD          ID=6  CODE=1
```

OUTFLOW HYDROGRAPH RESERVOIR 509.12

```
    RUNOFF VOLUME =    27.20791 INCHES     =     131.9031 ACRE-FEET
    PEAK DISCHARGE RATE =     194.13 CFS  AT   1.565 HOURS   BASIN AREA =   .0909 SQ. MI.



*
* BASE FLOW CORRECTION
*
STORE HYD           ID=1 HYD NO=109.3 INC=0.033333 AREA=0.0001 SQ MI
                    FLOW RATES=0.1 0.1 0.1 32.0 23.8 15.9 8.8 4.5 2.4
                    0.95 0.2 0.2 0.1
PRINT HYD           ID=1 CODE=1

                                PARTIAL HYDROGRAPH   109.30


    RUNOFF VOLUME =    46.04811 INCHES     =        .2456 ACRE-FEET
    PEAK DISCHARGE RATE =      32.00 CFS  AT    .100 HOURS   BASIN AREA =   .0001 SQ. MI.



*
ADD HYD             ID=3 HYD NO=309.3 ID=1 ID=6
*  AREAS 1.1.1 THRU 1.1.3, 3.1.1 THRU 3.1.3, 4.2.1 THRU 4.2.2 & BASE FLOW
*  CORRECTED AT THE CONFLUENCE WITH THE CORRALES MAIN CANAL
PRINT HYD           ID=3 CODE=1

                                    HYDROGRAPH FROM AREA   309.30


    RUNOFF VOLUME =    27.25555 INCHES     =     132.2794 ACRE-FEET
    PEAK DISCHARGE RATE =     194.13 CFS  AT   1.567 HOURS   BASIN AREA =   .0910 SQ. MI.



*
*   COMPUTE HYDROGRAPH FROM AREA 4.1.1 AREA=0.0263 SQ MI
*   (AREA CORRECTED FOR OASIS GOLF DEVELOPMENT AREA =0.00403)
*
COMPUTE NM HYD      ID=4   HYD NO= 310.1   DA=0.0263 SQ MI PER A=0
                    PER B=30  PER C=0  PER D=70 TP= -0.166667 RAIN=-1

    K =   .090834HR    TP =   .166667HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   58.132    CFS   UNIT VOLUME =    1.000      B =   526.28      P60 = 1.8700
    AREA =      .018410 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .163781HR    TP =   .166667HR    K/TP RATIO =   .982685     SHAPE CONSTANT, N =  3.593452
    UNIT PEAK =   15.484    CFS   UNIT VOLUME =    .9992      B =   327.09      P60 = 1.8700
    AREA =      .007890 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=4 CODE=1
```

HYDROGRAPH FROM AREA 310.10

RUNOFF VOLUME = 1.57603 INCHES = 2.2106 ACRE-FEET
PEAK DISCHARGE RATE = 55.29 CFS AT 1.532 HOURS BASIN AREA = .0263 SQ. MI.

*
* ROUTE THROUGH A POND (POND #6, SEE DRAINAGE MAP)
*
ROUTE RESERVOIR ID=6 HYD NO=510.1 INFLOW ID=4 CODE=10

OUTFLOW(CFS)	STORAGE(AC-FT)	DEPTH(FT)
0.0	0.0	0.0
10.5	0.32	0.5
14.3	0.58	1.0
17.4	0.93	1.5
19.6	1.34	2.0
21.6	1.87	2.5
23.9	2.61	3.0

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	.00	.000	.00
.33	.00	.00	.000	.00
.67	.00	.00	.000	.00
1.00	.00	.00	.000	.00
1.33	10.57	.06	.041	1.36
1.67	36.94	1.38	.843	16.63
2.00	15.02	1.57	.988	17.71
2.33	4.05	1.27	.768	15.96
2.66	1.74	.74	.447	12.35
3.00	.89	.33	.209	6.87
3.33	.54	.15	.097	3.18
3.66	.39	.07	.047	1.55
4.00	.33	.04	.025	.84
4.33	.30	.02	.016	.52
4.66	.30	.02	.012	.39
5.00	.30	.02	.010	.34
5.33	.32	.02	.010	.32
5.66	.34	.02	.010	.33
5.99	.37	.02	.011	.35
6.33	.06	.01	.008	.26
6.66	.02	.01	.004	.12
6.99	.00	.00	.002	.05
7.33	.00	.00	.001	.02
7.66	.00	.00	.000	.01
7.99	.00	.00	.000	.00

PEAK DISCHARGE = 17.761 CFS - PEAK OCCURS AT HOUR 1.90
MAXIMUM WATER SURFACE ELEVATION = 1.582
MAXIMUM STORAGE = .9973 AC-FT INCREMENTAL TIME= .033300HRS

```
PRINT HYD          ID=6 CODE=1

                              OUTFLOW HYDROGRAPH RESERVOIR   510.10


    RUNOFF VOLUME =     1.57602 INCHES     =       2.2106 ACRE-FEET
    PEAK DISCHARGE RATE =      17.76 CFS  AT   1.898 HOURS   BASIN AREA =   .0263 SQ. MI.



*
* COMPUTE HYDROGRAPH FROM AREA 4.1.2 AREA=0.0192 SQ MI 100% IMP
*
COMPUTE NM HYD     ID=5   HYD NO= 311.1   DA=0.0192 SQ MI PER A=0
                   PER B=0  PER C=0  PER D=100 TP= -0.133333 RAIN=-1

    K =  .072666HR    TP =  .133333HR    K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =  75.784    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 1.8700
    AREA =      .019200 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=5 CODE=1

                                   HYDROGRAPH FROM AREA   311.10


    RUNOFF VOLUME =     1.96545 INCHES     =       2.0126 ACRE-FEET
    PEAK DISCHARGE RATE =      53.71 CFS  AT   1.499 HOURS   BASIN AREA =   .0192 SQ. MI.



*
ADD HYD            ID=6 HYD NO=311.2 ID=6 ID=5
* AREA 4.1.1 & 4.1.2
PRINT HYD          ID=6 CODE=1

                                   HYDROGRAPH FROM AREA   311.20


    RUNOFF VOLUME =     1.74033 INCHES     =       4.2232 ACRE-FEET
    PEAK DISCHARGE RATE =      64.94 CFS  AT   1.499 HOURS   BASIN AREA =   .0455 SQ. MI.



*
* ROUTE ALONG 4.1.4 IN STREET
*
COMPUTE RATING CURVE ID=1 VS NO=6 SEG=1 MIN ELEV=100.0 MAX ELEV=100.87
                   CH SLOPE =0.0086 FP SLOPE=0.0086 N=0.017 DIST 32.0
                   DIST     ELEV    DIST     ELEV      DIST    ELEV
                   0.0      100.87   0.1     100.0      2.0    100.125
                   16.0     100.405  30.0    100.125    31.9   100.0
                   32.0     100.87

                                RATING CURVE VALLEY SECTION  6.0
                                   WATER     FLOW      FLOW
```

SURFACE ELEV	AREA SQ FT	RATE CFS
100.00	.0	.0
100.05	.0	.0
100.09	.1	.1
100.14	.3	.3
100.18	.6	.8
100.23	1.2	1.8
100.27	1.9	3.4
100.32	2.9	5.8
100.37	4.1	9.0
100.41	5.5	13.5
100.46	6.9	19.9
100.50	8.4	27.4
100.55	9.9	35.7
100.60	11.3	44.9
100.64	12.8	54.9
100.69	14.2	65.7
100.73	15.7	77.1
100.78	17.2	89.3
100.82	18.6	102.2
100.87	20.1	115.7

COMPUTE TRAVEL TIME ID=5 REACH NO=8 NO VS=1 L=1050 FT SLP=0.0086

TRAVEL TIME TABLE

REACH= 8.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.046	.032	.02	.4640
.092	.128	.13	.2923
.137	.294	.35	.2479
.183	.632	.81	.2268
.229	1.179	1.78	.1932
.275	1.936	3.38	.1669
.321	2.904	5.76	.1471
.366	4.082	9.02	.1320
.412	5.468	13.47	.1184
.458	6.928	19.95	.1013
.504	8.390	27.39	.0893
.549	9.851	35.73	.0804
.595	11.314	44.91	.0735
.641	12.776	54.90	.0679
.687	14.239	65.65	.0633
.733	15.703	77.14	.0594
.778	17.167	89.33	.0561
.824	18.632	102.20	.0532
.870	20.097	115.73	.0506

ROUTE ID=5 HYD NO=8 INFLOW ID=6 DT=0.033333

PRINT HYD ID=5 CODE=1

OUTFLOW HYDROGRAPH REACH 8.00

RUNOFF VOLUME = 1.74034 INCHES = 4.2232 ACRE-FEET

```
    PEAK DISCHARGE RATE =      59.89 CFS  AT   1.567 HOURS   BASIN AREA =   .0455 SQ. MI.


*
*   COMPUTE HYDROGRAPH FROM AREA 4.1.3 AREA=0.0482 - AREA
*   ADJUSTED FOR DEVELOPMENT ALONG NW528 AND ADDITIONAL
*   AREA FROM AREA 3.1.1 PER RIVERWALK REPORT
*
COMPUTE NM HYD      ID=4 HYD NO= 312.1 DA=0.0482 SQ MI PER A=0
                    PER B=15  PER C=0  PER D=85 TP= -0.1333333 RAIN=-1

    K =  .072667HR    TP =  .133333HR    K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =  161.71    CFS   UNIT VOLUME =    .9993       B =   526.28      P60 = 1.8700
    AREA =      .040970 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =  .131025HR    TP =  .133333HR    K/TP RATIO =  .982685     SHAPE CONSTANT, N =  3.593452
    UNIT PEAK =  17.736    CFS   UNIT VOLUME =    .9995       B =   327.09      P60 = 1.8700
    AREA =      .007230 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=4 CODE=1

                                    HYDROGRAPH FROM AREA   312.10


    RUNOFF VOLUME =     1.77074 INCHES     =       4.5520 ACRE-FEET
    PEAK DISCHARGE RATE =     123.92 CFS  AT   1.499 HOURS   BASIN AREA =   .0482 SQ. MI.


*
*   ROUTE THROUGH A POND (POND #7, SEE DRAINAGE MAP)
*
ROUTE RESERVOIR     ID=6  HYD NO=512.1  INFLOW ID=4 CODE=10
                    OUTFLOW(CFS)  STORAGE(AC-FT) DEPTH(FT)
                     0.0          0.0           0.0
                     6.0          0.45          0.5
                    13.0          0.80          1.0
                    17.0          1.20          1.5
                    20.0          1.70          2.0
                    25.0          2.10          2.5
                    28.0          2.90          3.0

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

    TIME      INFLOW    ELEV      VOLUME    OUTFLOW
    (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

      .00       .00       .00       .000       .00
      .33       .00       .00       .000       .00
      .67       .00       .00       .000       .00
     1.00       .00       .00       .000       .00
     1.33     35.04       .18       .164      2.19
```

```
     1.67      63.35      2.54      2.170     25.26
     2.00      29.41      2.82      2.605     26.89
     2.33       6.35      2.63      2.310     25.79
     2.66       2.64      2.08      1.768     20.85
     3.00       1.41      1.60      1.298     17.59
     3.33        .94      1.12       .893     13.93
     3.66        .76       .71       .598      8.97
     4.00        .67       .47       .423      5.64
     4.33        .65       .34       .308      4.11
     4.66        .66       .25       .229      3.05
     5.00        .68       .19       .174      2.32
     5.33        .72       .15       .137      1.82
     5.66        .77       .12       .112      1.49
     5.99        .83       .11       .096      1.28
     6.33        .09       .08       .076      1.01
     6.66        .02       .06       .053       .71
     6.99        .00       .04       .037       .50
     7.33        .00       .03       .026       .34
     7.66        .00       .02       .018       .24
     7.99        .00       .01       .012       .17
     8.33        .00       .01       .009       .11
     8.66        .00       .01       .006       .08
     8.99        .00       .00       .004       .06
     9.32        .00       .00       .003       .04
     9.66        .00       .00       .002       .03
     9.99        .00       .00       .001       .02
    10.32        .00       .00       .001       .01
    10.66        .00       .00       .001       .01
    10.99        .00       .00       .000       .01
    11.32        .00       .00       .000       .00
 PEAK DISCHARGE =       26.910 CFS - PEAK OCCURS AT HOUR    2.03
 MAXIMUM WATER SURFACE ELEVATION =        2.818
 MAXIMUM STORAGE =        2.6094 AC-FT      INCREMENTAL TIME=     .033300HRS

PRINT HYD          ID=6 CODE=1

                              OUTFLOW HYDROGRAPH RESERVOIR   512.10


    RUNOFF VOLUME =     1.77074 INCHES     =       4.5519 ACRE-FEET
    PEAK DISCHARGE RATE =      26.91 CFS  AT   2.031 HOURS   BASIN AREA =   .0482 SQ. MI.



*
ADD HYD            ID=6 HYD NO=312.2 ID=6 ID=5
* AREAS 4.1.1, 4.1.2 AND 4.1.3 COMBINED
PRINT HYD          ID=6 CODE=1

                                    HYDROGRAPH FROM AREA   312.20


    RUNOFF VOLUME =     1.75512 INCHES     =       8.7708 ACRE-FEET
    PEAK DISCHARGE RATE =      79.85 CFS  AT   1.565 HOURS   BASIN AREA =   .0937 SQ. MI.
```

```
*
* COMPUTE HYDROGRAPH FROM AREA 4.1.4 AREA=0.0038 SQ MI - 100% IMP
*
COMPUTE NM HYD      ID=4 HYD NO= 313.1 DA=0.0038 SQ MI PER A=0
                    PER B=0  PER C=0  PER D=100 TP=-0.133333 RAIN=-1

   K =  .072666HR    TP =  .133333HR   K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =  14.999    CFS   UNIT VOLUME =    .9986       B =  526.28      P60 = 1.8700
   AREA =      .003800 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=4 CODE=1

                                    HYDROGRAPH FROM AREA   313.10


   RUNOFF VOLUME =     1.96545 INCHES     =        .3983 ACRE-FEET
   PEAK DISCHARGE RATE =      10.64 CFS  AT   1.499 HOURS   BASIN AREA =   .0038 SQ. MI.



*
ADD HYD             ID=5 HYD NO=313.2 ID=6 ID=4
* AREAS 4.1.1 THRU 4.1.4 COMBINED
PRINT HYD           ID=5 CODE=1

                                    HYDROGRAPH FROM AREA   313.20


   RUNOFF VOLUME =     1.76331 INCHES     =       9.1692 ACRE-FEET
   PEAK DISCHARGE RATE =      88.63 CFS  AT   1.565 HOURS   BASIN AREA =   .0975 SQ. MI.



*
* COMPUTE HYDROGRAPH FROM AREA 4.1.5 AREA=0.0033 SQ MI - 100% IMP
*
COMPUTE NM HYD      ID=6 HYD NO= 314.1 DA=0.0033 SQ MI PER A=0
                    PER B=0  PER C=0  PER D=100 TP=-0.1333333 RAIN=-1

   K =  .072667HR    TP =  .133333HR    K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =  13.025    CFS   UNIT VOLUME =    .9985       B =  526.28      P60 = 1.8700
   AREA =      .003300 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=6 CODE=1

                                    HYDROGRAPH FROM AREA   314.10


   RUNOFF VOLUME =     1.96545 INCHES     =        .3459 ACRE-FEET
   PEAK DISCHARGE RATE =       9.24 CFS  AT   1.499 HOURS   BASIN AREA =   .0033 SQ. MI.
```

```
*
ADD HYD            ID=4 HYD NO=314.2 ID=5 ID=6
* AREAS 4.1.1 THRU 4.1.5 COMBINED
PRINT HYD          ID=4 CODE=1
```

HYDROGRAPH FROM AREA 314.20

RUNOFF VOLUME = 1.76992 INCHES = 9.5151 ACRE-FEET
PEAK DISCHARGE RATE = 96.25 CFS AT 1.565 HOURS BASIN AREA = .1008 SQ. MI.

```
*
*   ROUTE THROUGH PIPE TO THE WIDENED CORRALES MAIN CANAL
*
COMPUTE RATING CURVE ID=1 VS NO=7 CODE=-1 SLP=0.046 DIA=4.0 FT N=0.013
```

RATING CURVE PIPE SECTION 7.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
.00	.0	.0
.21	.2	1.6
.42	.7	7.0
.63	1.3	16.3
.83	1.9	29.3
1.04	2.6	45.8
1.25	3.4	65.3
1.46	4.1	87.5
1.67	5.0	111.9
1.88	5.8	138.0
2.08	6.6	165.1
2.29	7.5	192.8
2.50	8.3	220.3
2.71	9.1	246.9
2.92	9.8	271.8
3.13	10.5	294.1
3.34	11.2	312.7
3.54	11.8	325.9
3.75	12.2	331.4
4.00	12.6	331.4

```
COMPUTE TRAVEL TIME ID=5 REACH NO=9 NO VS=1 L=267 FT SLP=0.046
```

TRAVEL TIME TABLE
REACH= 9.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.208	.250	1.62	.0115
.417	.695	7.02	.0073
.625	1.255	16.31	.0057
.834	1.898	29.33	.0048
1.042	2.604	45.80	.0042
1.251	3.358	65.34	.0038

```
                          1.459      4.146      87.55      .0035
                          1.668      4.960     111.93      .0033
                          1.876      5.788     137.98      .0031
                          2.084      6.621     165.14      .0030
                          2.293      7.451     192.79      .0029
                          2.501      8.267     220.28      .0028
                          2.710      9.062     246.89      .0027
                          2.918      9.823     271.81      .0027
                          3.127     10.539     294.12      .0027
                          3.335     11.195     312.67      .0027
                          3.544     11.773     325.95      .0027
                          3.752     12.243     331.40      .0027
                          4.000     12.566     331.40      .0028
ROUTE           ID=5 HYD NO=9 INFLOW ID=4 DT=0.033333
PRINT HYD       ID=5 CODE=1

                                OUTFLOW HYDROGRAPH REACH     9.00


   RUNOFF VOLUME =     1.76992 INCHES     =       9.5150 ACRE-FEET
   PEAK DISCHARGE RATE =      96.41 CFS  AT   1.567 HOURS   BASIN AREA =   .1008 SQ. MI.



*
* ADD AREAS 4.1.1 THRU 4.1.5 TO FLOWS IN CORRALES ACEQUIA
*
ADD HYD         ID=6 HYD NO=314.3 ID=3 ID=5
* AREAS 1.1.1 THRU 1.1.3, 3.1.1 THRU 3.1.3,4.1.1 THRU 4.2.2 & BASE FLOWS
PRINT HYD       ID=6 CODE=1

                                HYDROGRAPH FROM AREA   314.30


   RUNOFF VOLUME =    13.86165 INCHES     =     141.7945 ACRE-FEET
   PEAK DISCHARGE RATE =     290.54 CFS  AT   1.567 HOURS   BASIN AREA =   .1918 SQ. MI.



*
* COMPUTE HYDROGRAPH FROM AREA 4.2.4 AREA=0.0023 SQ MI - 100% IMP
*
COMPUTE NM HYD  ID=3 HYD NO=315.1 DA=0.0023 SQ MI PER A=0
                PER B=0  PER C=0  PER D=100 TP=-0.133333 RAIN=-1

   K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   9.0783    CFS   UNIT VOLUME =    .9980       B =   526.28      P60 = 1.8700
   AREA =      .002300 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD       ID=3 CODE=1

                                HYDROGRAPH FROM AREA   315.10


   RUNOFF VOLUME =     1.96545 INCHES     =        .2411 ACRE-FEET
```

PEAK DISCHARGE RATE = 6.44 CFS AT 1.499 HOURS BASIN AREA = .0023 SQ. MI.

*
* ROUTE TO THE CORRALES MAIN CANAL IN CHANNEL AT 4.2.3
*
COMPUTE RATING CURVE ID=1 VS NO=8 NO SEG=1 MIN ELEV=100.0 MAX ELEV=101.0
SLOPE=0.04 SP SLOPE=0.04 N=0.030 DIST=14.0

DIST	ELEV	DIST	ELEV	DIST	ELEV
0.0	103.0	6.0	100.0	8.0	100.0
14.0	103.0				

RATING CURVE VALLEY SECTION 8.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
100.00	.0	.0
100.05	.1	.1
100.11	.2	.5
100.16	.4	1.0
100.21	.5	1.6
100.26	.7	2.3
100.32	.8	3.2
100.37	1.0	4.2
100.42	1.2	5.4
100.47	1.4	6.7
100.53	1.6	8.2
100.58	1.8	9.8
100.63	2.1	11.6
100.68	2.3	13.5
100.74	2.6	15.6
100.79	2.8	17.9
100.84	3.1	20.3
100.89	3.4	23.0
100.95	3.7	25.8
101.00	4.0	28.8

COMPUTE TRAVEL TIME ID=4 REACH NO=10 NO VS=1 L=280 FT SLOPE=0.04

TRAVEL TIME TABLE
REACH= 10.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.111	.15	.0582
.105	.233	.48	.0379
.158	.366	.95	.0298
.211	.510	1.57	.0253
.263	.665	2.32	.0223
.316	.831	3.21	.0201
.368	1.008	4.24	.0185
.421	1.197	5.41	.0172
.474	1.396	6.73	.0161
.526	1.607	8.19	.0153
.579	1.828	9.81	.0145

```
                          .632      2.061      11.58      .0138
                          .684      2.305      13.52      .0133
                          .737      2.560      15.62      .0127
                          .790      2.826      17.89      .0123
                          .842      3.103      20.34      .0119
                          .895      3.391      22.96      .0115
                          .947      3.690      25.76      .0111
                         1.000      4.000      28.76      .0108
ROUTE            ID=4 HYD NO=10 INFLOW ID=3 DT=0.033333
PRINT HYD        ID=4 CODE=1

                                OUTFLOW HYDROGRAPH REACH    10.00


   RUNOFF VOLUME =     1.96556 INCHES     =        .2411 ACRE-FEET
   PEAK DISCHARGE RATE =       6.31 CFS  AT   1.533 HOURS   BASIN AREA =   .0023 SQ. MI.



*
*   ADD TO THE FLOWS IN THE MAIN CANAL (STA 510+00)
*
ADD HYD          ID=4  HYD=11  ID=4  ID=6
*   AREA 4.2.4
PRINT HYD        ID=4  CODE=1

                                OUTFLOW HYDROGRAPH REACH    11.00


   RUNOFF VOLUME =    13.72068 INCHES     =     142.0356 ACRE-FEET
   PEAK DISCHARGE RATE =     296.17 CFS  AT   1.567 HOURS   BASIN AREA =   .1941 SQ. MI.



*
*   ROUTE TO THE OUTLET FROM BASIN 4.2.3 AT STA 513+15
*
COMPUTE RATING CURVE  RC=1  VS NO=1  NO SEG=1  MIN ELEV=100  MAX ELEV=108.0
                      SLOPE=0.0005  FP SLOPE=0.0005  N=0.016 DIST=29.2
                      DIST   ELEV     DIST   ELEV     DIST   ELEV
                      0.0    108.0    9.6    100.0    19.6   100.0
                      29.2.0   108.0

                              RATING CURVE VALLEY SECTION  1.0
                                 WATER      FLOW       FLOW
                                SURFACE     AREA       RATE
                                 ELEV       SQ FT      CFS
                                100.00        .0         .0
                                100.42       4.4        4.9
                                100.84       9.3       15.7
                                101.26      14.5       31.1
                                101.68      20.2       50.8
                                102.11      26.4       74.6
                                102.53      32.9      102.7
                                102.95      39.9      134.9
                                103.37      47.3      171.4
```

```
                                103.79      55.1     212.2
                                104.21      63.4     257.6
                                104.63      72.1     307.4
                                105.05      81.2     362.0
                                105.47      90.7     421.4
                                105.89     100.6     485.7
                                106.32     111.0     555.0
                                106.74     121.8     629.5
                                107.16     133.1     709.2
                                107.58     144.7     794.4
                                108.00     156.8     885.1
COMPUTE TRAVEL TIME   ID=6  REACH=12  NO VS=1  L=315  FT SLP=0.0005

                          TRAVEL TIME TABLE
                                       REACH= 12.0

                          WATER       AVERAGE     FLOW        TRAVEL
                          DEPTH       AREA        RATE        TIME
                          FEET        SQ.FT.      CFS         HRS
                             .421       4.423       4.91       .0788
                             .842       9.272      15.67       .0518
                            1.263      14.546      31.07       .0410
                            1.684      20.246      50.76       .0349
                            2.105      26.371      74.63       .0309
                            2.526      32.922     102.66       .0281
                            2.947      39.898     134.89       .0259
                            3.368      47.299     171.39       .0241
                            3.789      55.127     212.24       .0227
                            4.211      63.379     257.56       .0215
                            4.632      72.057     307.44       .0205
                            5.053      81.161     362.01       .0196
                            5.474      90.690     421.37       .0188
                            5.895     100.644     485.66       .0181
                            6.316     111.024     554.98       .0175
                            6.737     121.830     629.46       .0169
                            7.158     133.061     709.22       .0164
                            7.579     144.717     794.38       .0159
                            8.000     156.799     885.06       .0155
ROUTE               ID=6  HYD NO=400  INFLOW ID=4  DT=0.0333
PRINT HYD           ID=6  CODE=1

                                  HYDROGRAPH FROM AREA   400.00


    RUNOFF VOLUME =    13.69272 INCHES     =     141.7461 ACRE-FEET
    PEAK DISCHARGE RATE =     288.38 CFS  AT   1.565 HOURS   BASIN AREA =   .1941 SQ. MI.



*   COMPUTE HYDROGRAPH FROM AREA 4.2.3. AREA=0.002 - AREA
*   ADJUSTED PER SAD221 DRAINAGE REPORT
*
COMPUTE NM HYD      ID=5 HYD NO= 316.1 DA=0.002 SQ MI PER A=0
                    PER B=15  PER C=0  PER D=85 TP=-0.133333 RAIN=-1
```

```
    K =  .072666HR    TP =  .133333HR    K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =  6.7100    CFS   UNIT VOLUME =    .9975       B =  526.28      P60 = 1.8700
    AREA =      .001700 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =  .131024HR    TP =  .133333HR    K/TP RATIO =  .982685     SHAPE CONSTANT, N =  3.593452
    UNIT PEAK =  .73595    CFS   UNIT VOLUME =    .9820       B =  327.09      P60 = 1.8700
    AREA =      .000300 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=5 CODE=1

                                   HYDROGRAPH FROM AREA   316.10


    RUNOFF VOLUME =     1.77074 INCHES     =        .1889 ACRE-FEET
    PEAK DISCHARGE RATE =       5.16 CFS  AT   1.499 HOURS   BASIN AREA =   .0020 SQ. MI.



*
*   ADD FLOWS FROM 4.2.4 TO THE FLOWS IN THE CORRALES MAIN CANAL
*
ADD HYD            ID=3 HYD NO=316.2 ID=6 ID=5
* AREAS 1.1.1 THRU 1.1.3 THRU 3.1.3, 4.1.1 THRU 4.2.4 AND BASE FLOW
PRINT HYD          ID=3 CODE=1

                                   HYDROGRAPH FROM AREA   316.20


    RUNOFF VOLUME =    13.57115 INCHES     =     141.9353 ACRE-FEET
    PEAK DISCHARGE RATE =     292.68 CFS  AT   1.565 HOURS   BASIN AREA =   .1961 SQ. MI.



*
*   ROUTE IN THE CORRALES MAIN CANAL TO THE OUTLET POINT
*   OF 4.2.5 AT STA 515+10
*
COMPUTE RATING CURVE ID=1 VS NO=9 NO SEG=2 MIN ELEV=102.2
                MAX ELEV=105.05 SLOPE=0.0005 EARTH SLOPE=0.0005
                N=0.013 DIST=12.0 N=-0.013 DIST=32.0
                DIST    ELEV     DIST     ELEV      DIST     ELEV
                0.0     106.0    12.0     100.0     20.0     100.0
                32.0    106.0

                                RATING CURVE VALLEY SECTION  9.0
                                   WATER     FLOW      FLOW
                                  SURFACE    AREA      RATE
                                   ELEV      SQ FT     CFS
                                  102.20       .0        .0
                                  102.35      29.8      107.8
                                  102.50      32.5      121.3
                                  102.65      35.2      135.6
                                  102.80      38.1      150.9
```

102.95	41.0	167.0
103.10	44.0	184.0
103.25	47.1	201.9
103.40	50.3	220.8
103.55	53.6	240.6
103.70	57.0	261.4
103.85	60.4	283.1
104.00	64.0	305.9
104.15	67.6	329.7
104.30	71.4	354.4
104.45	75.2	380.3
104.60	79.1	407.2
104.75	83.1	435.1
104.90	87.2	464.1
105.05	91.4	494.3

COMPUTE TRAVEL TIME ID=5 REACH NO=11 NO VS=1 L=185 SLOPE=0.0005

TRAVEL TIME TABLE

REACH= 11.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.150	29.845	107.77	.0142
.300	32.500	121.27	.0138
.450	35.245	135.63	.0134
.600	38.080	150.86	.0130
.750	41.005	166.97	.0126
.900	44.020	183.99	.0123
1.050	47.125	201.92	.0120
1.200	50.320	220.79	.0117
1.350	53.605	240.61	.0114
1.500	56.980	261.39	.0112
1.650	60.445	283.15	.0110
1.800	64.000	305.90	.0108
1.950	67.645	329.66	.0105
2.100	71.380	354.45	.0103
2.250	75.206	380.27	.0102
2.400	79.121	407.15	.0100
2.550	83.126	435.11	.0098
2.700	87.221	464.14	.0097
2.850	91.406	494.28	.0095

ROUTE ID=5 HYD NO=11 INFLOW ID=3 DT=0.033333

PRINT HYD ID=5 CODE=1

OUTFLOW HYDROGRAPH REACH 11.00

RUNOFF VOLUME = 13.56788 INCHES = 141.9011 ACRE-FEET
PEAK DISCHARGE RATE = 288.10 CFS AT 1.567 HOURS BASIN AREA = .1961 SQ. MI.

*

* BASE FLOW CORRECTION

*

```
STORE HYD          ID=1 HYD NO=116.3 INC=0.033333 AREA=0.0001 SQ MI
                   FLOW RATES=0.1 0.1 0.1 28.8 9.5 4.7 2.1 1.0 0.5 0.3 0.1
PRINT HYD          ID=1 CODE=1

                                PARTIAL HYDROGRAPH   116.30


    RUNOFF VOLUME =    24.43159 INCHES     =        .1303 ACRE-FEET
    PEAK DISCHARGE RATE =      28.80 CFS  AT    .100 HOURS   BASIN AREA =   .0001 SQ. MI.



*
ADD HYD            ID=3 HYD NO=316.4 ID=1 ID=5
* AREA 1.1.1 THRU 1.1.3 3.1.1 THRU 3.1.3, 4.1.1 THRU 4.2.4 & BASE FLOW
PRINT HYD           ID=3 CODE=1

                                    HYDROGRAPH FROM AREA   316.40


    RUNOFF VOLUME =    13.57345 INCHES     =     142.0317 ACRE-FEET
    PEAK DISCHARGE RATE =     288.10 CFS  AT   1.567 HOURS   BASIN AREA =   .1962 SQ. MI.



*
*   COMPUTE HYDROGRAPH FROM AREA 4.2.5 AREA=0.0064 - AREA
*   ADJUSTED PER SAD223 DRAINAGE REPORT
*
COMPUTE NM HYD      ID=4   HYD NO= 317.1 DA=0.0064 SQ MI PER A=0
                    PER B=15  PER C=0  PER D=85 TP=-0.133333 RAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   21.472    CFS   UNIT VOLUME =    .9988       B =   526.28      P60 = 1.8700
    AREA =      .005440 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .131024HR    TP =   .133333HR    K/TP RATIO =   .982685     SHAPE CONSTANT, N =  3.593452
    UNIT PEAK =   2.3550    CFS   UNIT VOLUME =    .9943       B =   327.09      P60 = 1.8700
    AREA =      .000960 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=4 CODE=1

                                    HYDROGRAPH FROM AREA   317.10


    RUNOFF VOLUME =     1.77074 INCHES     =        .6044 ACRE-FEET
    PEAK DISCHARGE RATE =      16.47 CFS  AT   1.499 HOURS   BASIN AREA =   .0064 SQ. MI.



*
*   ROUTE THROUGH A POND (POND #4, SEE DRAINAGE MAP)
*
```

```
ROUTE RESERVOIR     ID=5  HYD NO=517.1  INFLOW ID=4 CODE=10
                   OUTFLOW(CFS)  STORAGE(AC-FT)  DEPTH(FT)
                    0.0          0.0            0.0
                    2.5          0.10           0.5
                    3.6          0.19           1.0
                    4.4          0.30           1.5
                    5.0          0.44           2.0
                    5.5          0.60           2.5

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

    TIME      INFLOW    ELEV      VOLUME    OUTFLOW
    (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

      .00       .00       .00       .000       .00
      .33       .00       .00       .000       .00
      .67       .00       .00       .000       .00
     1.00       .00       .00       .000       .00
     1.33      4.65       .10       .021       .52
     1.67      8.42      1.35       .266      4.16
     2.00      3.91      1.50       .301      4.40
     2.33       .84      1.24       .242      3.98
     2.66       .35       .82       .157      3.20
     3.00       .18       .44       .089      2.21
     3.33       .12       .24       .047      1.18
     3.66       .10       .13       .026       .65
     4.00       .09       .07       .015       .37
     4.33       .09       .05       .009       .23
     4.66       .09       .03       .006       .16
     5.00       .09       .02       .005       .12
     5.33       .10       .02       .004       .11
     5.66       .10       .02       .004       .10
     5.99       .11       .02       .004       .11
     6.33       .01       .02       .003       .08
     6.66       .00       .01       .002       .04
     6.99       .00       .00       .001       .02
     7.33       .00       .00       .000       .01
     7.66       .00       .00       .000       .01
     7.99       .00       .00       .000       .00
 PEAK DISCHARGE =        4.409 CFS - PEAK OCCURS AT HOUR    1.93
 MAXIMUM WATER SURFACE ELEVATION =        1.508
 MAXIMUM STORAGE =         .3022 AC-FT      INCREMENTAL TIME=     .033300HRS

PRINT HYD           ID=5 CODE=1

                              OUTFLOW HYDROGRAPH RESERVOIR   517.10


    RUNOFF VOLUME =     1.77070 INCHES     =        .6044 ACRE-FEET
    PEAK DISCHARGE RATE =       4.41 CFS  AT   1.931 HOURS   BASIN AREA =   .0064 SQ. MI.



*
* ADD 4.2.5 TO FLOWS IN THE MAIN CANAL AT STA 515+10
*
```

```
ADD HYD            ID=5 HYD NO=317.2 ID=3 ID=5
PRINT HYD          ID=5 CODE=1

                                  HYDROGRAPH FROM AREA   317.20


    RUNOFF VOLUME =    13.20081 INCHES     =     142.6383 ACRE-FEET
    PEAK DISCHARGE RATE =     291.85 CFS  AT   1.567 HOURS   BASIN AREA =   .2026 SQ. MI.



*
*   ROUTE IN THE CORRALES MAIN CANAL TO THE OUTLET
*   POINT OF 5.2.1 AT STA 523+50
*
COMPUTE TRAVEL TIME ID=6 REACH NO=12 NO VS=1 L=980 FT SLOPE=0.0005

                          TRAVEL TIME TABLE
                                    REACH= 12.0

                          WATER      AVERAGE     FLOW        TRAVEL
                          DEPTH      AREA        RATE        TIME
                          FEET       SQ.FT.      CFS         HRS
                             .150      29.845      107.77       .0754
                             .300      32.500      121.27       .0730
                             .450      35.245      135.63       .0707
                             .600      38.080      150.86       .0687
                             .750      41.005      166.97       .0669
                             .900      44.020      183.99       .0651
                            1.050      47.125      201.92       .0635
                            1.200      50.320      220.79       .0620
                            1.350      53.605      240.61       .0606
                            1.500      56.980      261.39       .0593
                            1.650      60.445      283.15       .0581
                            1.800      64.000      305.90       .0570
                            1.950      67.645      329.66       .0559
                            2.100      71.380      354.45       .0548
                            2.250      75.206      380.27       .0538
                            2.400      79.121      407.15       .0529
                            2.550      83.126      435.11       .0520
                            2.700      87.221      464.14       .0512
                            2.850      91.406      494.28       .0503
ROUTE              ID=6 HYD NO=12 INFLOW ID=5 DT=0.033333
PRINT HYD          ID=6 CODE=1

                                 OUTFLOW HYDROGRAPH REACH    12.00


    RUNOFF VOLUME =    13.16333 INCHES     =     142.2333 ACRE-FEET
    PEAK DISCHARGE RATE =     270.55 CFS  AT   1.600 HOURS   BASIN AREA =   .2026 SQ. MI.



*
* BASE FLOW CORRECTION
*
```

```
STORE HYD          ID=1 HYD NO=117.3 INC=0.033333 AREA=0.0001 SQ MI
                   FLOW RATES= 0.1 0.1 0.1 0.1 31.5 20.5 13.4 8.9 5.9 4.0
                   2.7 1.8 1.2 0.8 0.6 0.4 0.3 0.2 0.1 0.1 0.1
PRINT HYD          ID=1 CODE=1

                                PARTIAL HYDROGRAPH   117.30


   RUNOFF VOLUME =    47.98508 INCHES     =        .2559 ACRE-FEET
   PEAK DISCHARGE RATE =      31.50 CFS  AT    .133 HOURS   BASIN AREA =   .0001 SQ. MI.



*
ADD HYD            ID=3 HYD NO=317.3 ID=1 ID=6
* AREA 1.1.1 THRU 1.1.3, 3.1.1 THRU 3.1.3, 4.1.1 THRU 4.2.5
PRINT HYD          ID=3 CODE=1

                                HYDROGRAPH FROM AREA   317.30


   RUNOFF VOLUME =    13.18051 INCHES     =     142.4892 ACRE-FEET
   PEAK DISCHARGE RATE =     270.55 CFS  AT   1.600 HOURS   BASIN AREA =   .2027 SQ. MI.



*
*   COMPUTE HYDROGRAPH FROM AREA 5.1.1 AREA 0.0192 - AREA
*   ADJUSTED PER SAD223 AND COTTONWOOD MALL DRAINAGE REPORTS
*   AND INCLUDES MONTGOMERY WARDS AUTO
*
COMPUTE NM HYD     ID=4 HYD NO= 318.1 DA=0.0192 SQ MI PER A=0
                   PER B=15  PER C=0  PER D=85 TP=-0.1950 RAIN=-1

   K =  .106275HR    TP =  .195000HR    K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   44.045    CFS   UNIT VOLUME =    .9999       B =   526.28      P60 = 1.8700
   AREA =      .016320 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =  .191624HR    TP =  .195000HR    K/TP RATIO =  .982685     SHAPE CONSTANT, N =  3.593450
   UNIT PEAK =   4.8308    CFS   UNIT VOLUME =    .9970       B =   327.09      P60 = 1.8700
   AREA =      .002880 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=4 CODE=1

                                HYDROGRAPH FROM AREA   318.10


   RUNOFF VOLUME =     1.77074 INCHES     =       1.8132 ACRE-FEET
   PEAK DISCHARGE RATE =      41.19 CFS  AT   1.565 HOURS   BASIN AREA =   .0192 SQ. MI.



*
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```
*   COMPUTE HYDRGRAPH FROM AREA 5.1.2 AREA=0.0044 - AREA
*   ADJUSTED PER SAD223 AND COTTONWOOD MALL DRAINAGE REPORTS
*
COMPUTE NM HYD      ID=5 HYD NO= 319.1 DA=0.0044 SQ MI PER A=0
                    PER B=0  PER C=0  PER D=100 TP=-0.1975 RAIN=-1

    K =  .107638HR    TP =  .197500HR    K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =  11.725    CFS   UNIT VOLUME =   .9991       B =  526.28      P60 = 1.8700
    AREA =      .004400 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=5 CODE=1

                                    HYDROGRAPH FROM AREA   319.10


    RUNOFF VOLUME =     1.96545 INCHES     =        .4612 ACRE-FEET
    PEAK DISCHARGE RATE =      10.29 CFS  AT   1.565 HOURS   BASIN AREA =   .0044 SQ. MI.



*
ADD HYD             ID=6 HYD NO=319.2 ID=4 ID=5
* AREA 5.1.1 & 5.1.2 HYDROGRAPH
PRINT HYD           ID=6 CODE=1

                                    HYDROGRAPH FROM AREA   319.20


    RUNOFF VOLUME =     1.80701 INCHES     =       2.2744 ACRE-FEET
    PEAK DISCHARGE RATE =      51.48 CFS  AT   1.565 HOURS   BASIN AREA =   .0236 SQ. MI.



*
*   COMPUTER HYDROGRAPH FROM AREA 5.1.3 AREA =0.0033 - AREA
*   ADJUSTED PER SAD223 DRAINAGE REPORT
*
COMPUTE NM HYD      ID=5 HYD NO= 320.1 DA=0.0066 SQ MI PER A=0
                    PER B=0  PER C=0  PER D=100 TP= -0.2538 RAIN=-1

    K =  .138321HR    TP =  .253800HR    K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =  13.686    CFS   UNIT VOLUME =   .9990       B =  526.28      P60 = 1.8700
    AREA =      .006600 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=5 CODE=1

                                    HYDROGRAPH FROM AREA   320.10


    RUNOFF VOLUME =     1.96545 INCHES     =        .6918 ACRE-FEET
    PEAK DISCHARGE RATE =      13.51 CFS  AT   1.632 HOURS   BASIN AREA =   .0066 SQ. MI.
```

```
*
ADD HYD             ID=4 HYD NO=320.2 ID=5 ID=6
* AREA 5.1.1 THRU 5.1.3 HYDROGRAPH
PRINT HYD           ID=4 CODE=1

                                    HYDROGRAPH FROM AREA   320.20


    RUNOFF VOLUME =     1.84162 INCHES     =       2.9662 ACRE-FEET
    PEAK DISCHARGE RATE =      63.82 CFS  AT   1.565 HOURS   BASIN AREA =   .0302 SQ. MI.



*
*   ROUTE THROUGH BLACK ARROYO DETENTION POND LOCATED
*   IN DRAINAGE EASEMENT ON TRACT A-1 QUESTA DEL RIO
*   (POND #10, SEE DRAINAGE MAP)
*
ROUTE RESERVOIR     ID=5 HYD NO=520.1 INFLOW ID=4 CODE=10
                    OUTFLOW (CFS)   STORAGE(AC-FT)   ELEV(FT)
                        0.0             0.0          5019.65
                        0.1             0.042        5020.0
                        3.0             0.292        5021.0
                        8.0             0.683        5022.0
                       11.0             1.222        5023.0
                       13.3             1.920        5024.0
                       15.0             2.773        5025.0
                       16.5             3.788        5026.0

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

    TIME      INFLOW    ELEV      VOLUME    OUTFLOW
    (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

      .00       .00   5019.65       .000       .00
      .33       .00   5019.65       .000       .00
      .67       .00   5019.65       .000       .00
     1.00       .00   5019.65       .000       .00
     1.33      9.38   5019.96       .037       .09
     1.67     53.70   5022.80      1.114     10.40
     2.00     22.85   5023.73      1.730     12.67
     2.33      7.46   5023.82      1.792     12.88
     2.66      3.14   5023.51      1.578     12.17
     3.00      1.64   5023.14      1.318     11.32
     3.33       .95   5022.69      1.056     10.08
     3.66       .65   5022.25       .819      8.76
     4.09       .51   5021.82       .613      7.10
     4.33       .45   5021.43       .459      5.13
     4.66       .44   5021.15       .350      3.74
     5.00       .45   5020.93       .273      2.78
     5.33       .47   5020.71       .219      2.15
     5.66       .50   5020.55       .180      1.70
     5.99       .54   5020.44       .152      1.38
     6.33       .15   5020.35       .128      1.10
     6.66       .04   5020.25       .104       .82
     6.99       .02   5020.17       .085       .60
```

```
    7.33      .01   5020.12      .071      .44
    7.66      .00   5020.08      .061      .32
    7.99      .00   5020.05      .054      .23
    8.33      .00   5020.02      .048      .17
    8.66      .00   5020.01      .044      .12
    8.99      .00   5019.99      .041      .10
    9.32      .00   5019.97      .038      .09
    9.66      .00   5019.95      .036      .09
    9.99      .00   5019.93      .034      .08
   10.32      .00   5019.91      .032      .08
   10.66      .00   5019.90      .030      .07
   10.99      .00   5019.88      .028      .07
   11.32      .00   5019.87      .026      .06
   11.66      .00   5019.85      .024      .06
   11.99      .00   5019.84      .023      .05
   12.32      .00   5019.83      .021      .05
   12.65      .00   5019.82      .020      .05
   12.99      .00   5019.81      .019      .04
   13.32      .00   5019.80      .018      .04
   13.65      .00   5019.79      .016      .04
   13.99      .00   5019.78      .015      .04
   14.32      .00   5019.77      .014      .03
   14.65      .00   5019.76      .013      .03
   14.99      .00   5019.76      .013      .03
   15.32      .00   5019.75      .012      .03
   15.65      .00   5019.74      .011      .03
   15.98      .00   5019.74      .010      .02
   16.32      .00   5019.73      .010      .02
   16.65      .00   5019.73      .009      .02
   16.98      .00   5019.72      .009      .02
   17.32      .00   5019.72      .008      .02
   17.65      .00   5019.71      .007      .02
   17.98      .00   5019.71      .007      .02
   18.32      .00   5019.70      .007      .02
   18.65      .00   5019.70      .006      .01
   18.98      .00   5019.70      .006      .01
   19.31      .00   5019.69      .005      .01
   19.65      .00   5019.69      .005      .01
 PEAK DISCHARGE =       12.984 CFS - PEAK OCCURS AT HOUR    2.20
 MAXIMUM WATER SURFACE ELEVATION =     5023.863
 MAXIMUM STORAGE =        1.8241 AC-FT      INCREMENTAL TIME=     .033300HRS

* OUTFLOW FROM ALAMEDA WEST - WEST DETENTION DAM
PRINT HYD          ID=5 CODE=1

                          OUTFLOW HYDROGRAPH RESERVOIR   520.10


    RUNOFF VOLUME =     1.83868 INCHES     =       2.9615 ACRE-FEET
    PEAK DISCHARGE RATE =      12.98 CFS  AT   2.198 HOURS   BASIN AREA =   .0302 SQ. MI.



*
*   COMPUTE HYDROGRAPH FROM AREA 5.1.4  AREA=0.0295 - AREA
*   ADJUSTED FOR OASIS GOLF COURSE ADDITION
```

```
*
COMPUTE NM HYD      ID=2 HYD NO= 321.1 DA=0.0295 SQ MI PER A=0
                    PER B=15  PER C=0  PER D=85 TP=-0.133333 RAIN=-1

    K =  .072666HR    TP =  .133333HR    K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.196420
    UNIT PEAK =  98.973    CFS   UNIT VOLUME =   .9992       B =  526.28      P60 = 1.8700
    AREA =      .025075 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  .033300


    K =  .131024HR    TP =  .133333HR    K/TP RATIO =  .982685     SHAPE CONSTANT, N =  3.593452
    UNIT PEAK =  10.855    CFS   UNIT VOLUME =   .9991       B =  327.09      P60 = 1.8700
    AREA =      .004425 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  .033300

PRINT HYD           ID=2 CODE=1

                                        HYDROGRAPH FROM AREA   321.10


    RUNOFF VOLUME =     1.77074 INCHES     =       2.7860 ACRE-FEET
    PEAK DISCHARGE RATE =      75.85 CFS  AT   1.499 HOURS   BASIN AREA =   .0295 SQ. MI.



*
*   ROUTE THROUGH A SIMULATED UPSTREAM POND TO
*   REPRESENT EXISTING PONDS IN ALAMEDA WEST CENTER
*   (POND #5, SEE DRAINAGE MAP)
*
ROUTE RESERVOIR     ID=4  HYD NO=521.1  INFLOW ID=2 CODE=10
                    OUTFLOW(CFS)  STORAGE(AC-FT) ELEVATION(FT)
                     0.0          0.0            100.0
                     4.5          0.05           101.0
                    14.0          0.13           102.0
                    24.5          0.24           103.0
                    32.0          0.38           104.0
                    34.0          0.55           105.0
STORAGE-DISCHARGE TABLE EXCEEDED.

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

       TIME      INFLOW    ELEV      VOLUME    OUTFLOW
       (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

        .00        .00    100.00       .000       .00
        .33        .00    100.00       .000       .00
        .67        .00    100.00       .000       .00
       1.00        .00    100.00       .000       .00
       1.33      21.44    101.33       .077      7.66
***WARNING - OUTFLOW EXCEEDS RESERVOIR CAPACITY***
       1.67      38.78    109.83      1.372     43.67
       2.00      18.00    104.15       .405     32.30
       2.33       3.89    101.46       .087      8.84
       2.66       1.61    100.57       .028      2.55
       3.00        .86    100.26       .013      1.17
```

```
         3.33        .57    100.15       .008       .69
         3.66        .47    100.11       .006       .51
         4.00        .41    100.10       .005       .43
         4.33        .40    100.09       .004       .40
         4.66        .40    100.09       .004       .40
         5.00        .42    100.09       .005       .41
         5.33        .44    100.10       .005       .43
         5.66        .47    100.10       .005       .46
         5.99        .51    100.11       .006       .50
         6.33        .06    100.04       .002       .18
         6.66        .01    100.01       .000       .04
         6.99        .00    100.00       .000       .01
         7.33        .00    100.00       .000       .00
***WARNING - OUTFLOW EXCEEDS RESERVOIR CAPACITY***
     PEAK DISCHARGE =       44.019 CFS - PEAK OCCURS AT HOUR    1.63
     MAXIMUM WATER SURFACE ELEVATION =     110.010
     MAXIMUM STORAGE =       1.4017 AC-FT      INCREMENTAL TIME=     .033300HRS

    PRINT HYD          ID=4 CODE=1

                                OUTFLOW HYDROGRAPH RESERVOIR   521.10


       RUNOFF VOLUME =    1.77073 INCHES     =       2.7859 ACRE-FEET
       PEAK DISCHARGE RATE =     44.02 CFS  AT   1.632 HOURS   BASIN AREA =   .0295 SQ. MI.



    *
    *   ROUTE THROUGH EXISTING 27IN DIAM RCP TO POND
    *   LOCATED ON TRACT 14 (PARTITION OF BLACK RANCH)
    *
    COMPUTE RATING CURVE ID=1  VS NO=10 CODE=-1 SLP=0.010 DIAM=2.25 N=0.013

                                  RATING CURVE PIPE SECTION 10.0
                                     WATER      FLOW      FLOW
                                    SURFACE     AREA      RATE
                                     ELEV      SQ FT      CFS
                                       .00        .0        .0
                                       .12        .1        .2
                                       .23        .2        .7
                                       .35        .4       1.6
                                       .47        .6       2.9
                                       .59        .8       4.6
                                       .70       1.1       6.6
                                       .82       1.3       8.8
                                       .94       1.6      11.3
                                      1.06       1.8      13.9
                                      1.17       2.1      16.6
                                      1.29       2.4      19.4
                                      1.41       2.6      22.1
                                      1.52       2.9      24.8
                                      1.64       3.1      27.3
                                      1.76       3.3      29.6
                                      1.88       3.5      31.4
                                      1.99       3.7      32.8
```

```
                                    2.11        3.9       33.3
                                    2.25        4.0       33.3
 COMPUTE TRAVEL TIME ID=6 REACH NO=13 NO VS=1 L=827 FT  SLP=0.010

                          TRAVEL TIME TABLE
                                  REACH= 13.0

                          WATER       AVERAGE     FLOW        TRAVEL
                          DEPTH       AREA        RATE        TIME
                          FEET        SQ.FT.      CFS         HRS
                             .117        .079         .16       .1118
                             .235        .220         .71       .0716
                             .352        .397        1.64       .0556
                             .469        .601        2.95       .0468
                             .586        .824        4.60       .0411
                             .704       1.062        6.57       .0372
                             .821       1.312        8.80       .0342
                             .938       1.569       11.25       .0320
                            1.055       1.831       13.87       .0303
                            1.173       2.095       16.60       .0290
                            1.290       2.357       19.38       .0279
                            1.407       2.616       22.14       .0271
                            1.524       2.867       24.82       .0265
                            1.641       3.108       27.32       .0261
                            1.759       3.334       29.57       .0259
                            1.876       3.542       31.43       .0259
                            1.993       3.725       32.77       .0261
                            2.111       3.874       33.31       .0267
                            2.250       3.976       33.32       .0274
    ROUTE             ID=6  HYD NO=13  INFLOW ID=4  DT=0.033333
TRAVEL TIME TABLE EXCEEDED
    PRINT HYD         ID=6 CODE=10

                          OUTFLOW HYDROGRAPH REACH    13.00

      TIME     FLOW          TIME     FLOW          TIME     FLOW          TIME     FLOW          TIME     FLOW
       HRS      CFS           HRS      CFS           HRS      CFS           HRS      CFS           HRS      CFS
      .000       .0         1.667     43.6         3.333       .7         5.000       .4         6.667       .1
      .333       .0         2.000     32.7         3.667       .5         5.333       .4         7.000       .0
      .667       .0         2.333     10.1         4.000       .4         5.667       .5         7.333       .0
     1.000       .0         2.667      2.8         4.333       .4         6.000       .5
     1.333      4.6         3.000      1.3         4.667       .4         6.333       .3

     RUNOFF VOLUME =     1.77074 INCHES     =       2.7859 ACRE-FEET
     PEAK DISCHARGE RATE =      43.63 CFS  AT   1.667 HOURS   BASIN AREA =   .0295 SQ. MI.


*
* ADD 5.1.4 TO OUTFLOW FROM QUESTA DEL RIO DETENTION POND
*
ADD HYD           ID=4  HYD NO=321.2 ID=5 ID=6
PRINT HYD         ID=4  CODE=1

                          HYDROGRAPH FROM AREA   321.20
```

```
    RUNOFF VOLUME =     1.80423 INCHES     =       5.7446 ACRE-FEET
    PEAK DISCHARGE RATE =      54.18 CFS  AT   1.698 HOURS   BASIN AREA =   .0597 SQ. MI.



*
*   COMPUTE HYDROGRAPH FROM AREA 5.2.1 .AREA=0.0105 - AREA ADJUSTED
*   PER SAD223 DRAINAGE REPORT
*
COMPUTE NM HYD      ID=5  HYD NO= 322.1 DA=0.0105 SQ MI PER A=0
                    PER B=20  PER C=0  PER D=80 TP=-0.13333 RAIN=-1

    K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   33.156    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 1.8700
    AREA =      .008400 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .131021HR    TP =   .133330HR    K/TP RATIO =   .982685     SHAPE CONSTANT, N =  3.593450
    UNIT PEAK =   5.1518    CFS   UNIT VOLUME =    .9977       B =   327.09      P60 = 1.8700
    AREA =      .002100 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=5 CODE=1

                                    HYDROGRAPH FROM AREA   322.10


    RUNOFF VOLUME =     1.70584 INCHES     =        .9553 ACRE-FEET
    PEAK DISCHARGE RATE =      26.22 CFS  AT   1.499 HOURS   BASIN AREA =   .0105 SQ. MI.



*
* ADD 5.2.1 TO FLOWS WEST OF COORS
*
ADD HYD             ID=6  HYD NO=322.2 ID=4 ID=5
* AREAS 5.1.1 THRU 5.2.1 ENTERING EAST DETENTION POND (SHEET 7 OF 8)
PRINT HYD           ID=6 CODE=1

                                    HYDROGRAPH FROM AREA   322.20


    RUNOFF VOLUME =     1.78951 INCHES     =       6.6999 ACRE-FEET
    PEAK DISCHARGE RATE =      68.22 CFS  AT   1.532 HOURS   BASIN AREA =   .0702 SQ. MI.



*
*   ROUTE THROUGH EAST DETENTION POND ON BLACK RANCH
*   PROPERTY - ALAMEDA WEST WITH NEW 24IN RCP
*   (POND #3, SEE DRAINAGE MAP)
*
ROUTE RESERVOIR     ID=5  HYD NO=522.1  INFLOW ID=6 CODE=10
                    OUTFLOW(CFS)  STORAGE(AC-FT)  ELEVATION(FT)
```

0.0	0.0	5006.2
0.1	0.624	5007.0
2.3	1.422	5008.0
6.8	2.301	5009.0
12.3	3.260	5010.0
16.3	4.301	5011.0
19.3	5.423	5012.0

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	5006.20	.000	.00
.33	.00	5006.20	.000	.00
.67	.00	5006.20	.000	.00
1.00	.00	5006.20	.000	.00
1.33	11.89	5006.26	.049	.01
1.67	67.47	5008.03	1.451	2.45
2.00	51.51	5009.60	2.874	10.09
2.33	24.29	5010.33	3.604	13.62
2.66	15.51	5010.45	3.733	14.12
3.00	12.87	5010.45	3.730	14.11
3.33	11.01	5010.40	3.673	13.89
3.66	9.43	5010.30	3.576	13.52
4.00	7.68	5010.18	3.450	13.03
4.33	5.67	5010.02	3.282	12.38
4.66	4.28	5009.82	3.091	11.33
5.00	3.33	5009.62	2.898	10.22
5.33	2.72	5009.43	2.714	9.17
5.66	2.31	5009.25	2.544	8.19
5.99	2.04	5009.09	2.391	7.31
6.33	1.39	5008.94	2.249	6.53
6.66	.89	5008.78	2.109	5.82
6.99	.62	5008.63	1.979	5.15
7.33	.44	5008.50	1.860	4.54
7.66	.32	5008.38	1.753	4.00
7.99	.23	5008.27	1.658	3.51
8.33	.17	5008.17	1.573	3.07
8.66	.12	5008.09	1.498	2.69
8.99	.10	5008.01	1.431	2.35
9.32	.09	5007.94	1.372	2.16
9.66	.09	5007.87	1.317	2.01
9.99	.08	5007.80	1.266	1.87
10.32	.08	5007.75	1.219	1.74
10.66	.07	5007.69	1.175	1.62
10.99	.07	5007.64	1.133	1.50
11.32	.06	5007.59	1.095	1.40
11.66	.06	5007.55	1.060	1.30
11.99	.05	5007.50	1.027	1.21
12.32	.05	5007.47	.996	1.13
12.65	.05	5007.43	.968	1.05
12.99	.04	5007.40	.941	.97
13.32	.04	5007.37	.916	.91
13.65	.04	5007.34	.893	.84
13.99	.04	5007.31	.872	.78

```
   14.32      .03   5007.29      .852      .73
   14.65      .03   5007.26      .834      .68
   14.99      .03   5007.24      .817      .63
   15.32      .03   5007.22      .801      .59
   15.65      .03   5007.20      .786      .55
   15.98      .02   5007.19      .772      .51
   16.32      .02   5007.17      .759      .47
   16.65      .02   5007.15      .747      .44
   16.98      .02   5007.14      .736      .41
   17.32      .02   5007.13      .726      .38
   17.65      .02   5007.12      .716      .35
   17.98      .02   5007.10      .707      .33
   18.32      .02   5007.09      .699      .31
   18.65      .01   5007.08      .691      .29
   18.98      .01   5007.08      .684      .27
   19.31      .01   5007.07      .677      .25
   19.65      .01   5007.06      .671      .23
 PEAK DISCHARGE =      14.146 CFS - PEAK OCCURS AT HOUR    2.80
 MAXIMUM WATER SURFACE ELEVATION =    5010.461
 MAXIMUM STORAGE =       3.7404 AC-FT      INCREMENTAL TIME=     .033300HRS

* OUTFLOW FROM EAST DETENTION DAM - ALAMEDA WEST IN NEW 24IN RCP
PRINT HYD          ID=5  CODE=1

                              OUTFLOW HYDROGRAPH RESERVOIR   522.10


   RUNOFF VOLUME =     1.61172 INCHES     =       6.0342 ACRE-FEET
   PEAK DISCHARGE RATE =      14.15 CFS  AT   2.797 HOURS   BASIN AREA =   .0702 SQ. MI.



*
* ADD DETENTION POND OUTFLOW TO FLOWS IN THE CORRALES MAIN CANAL
*
ADD HYD            ID=4 HYD NO=322.3 ID=3 ID=5
PRINT HYD          ID=4 CODE=1

                                   HYDROGRAPH FROM AREA   322.30


   RUNOFF VOLUME =    10.20501 INCHES     =     148.5295 ACRE-FEET
   PEAK DISCHARGE RATE =     271.93 CFS  AT   1.600 HOURS   BASIN AREA =   .2729 SQ. MI.



*
*   ROUTE IN CORRALES MAIN CANAL TO OUTFLOW POINT
*   OF AREA 6.1.2 AT STA 527+25
*
COMPUTE RATING CURVE ID=1 VS NO=11 NO SEG=2 MIN ELEV=100 MAX ELEV=106.0
                  SLOPE=0.0005 EARTH SLOPE=0.0005 N=0.016 DIST=12.0
                  N=-0.016 DIST=32.0
                  DIST   ELEV      DIST   ELEV      DIST   ELEV
                  0.0    106.0     12.0   100.0     20.0   100.0
                  32.0   106.0
```

RATING CURVE VALLEY SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS
100.00	.0	.0
100.32	2.7	2.5
100.63	5.9	8.2
100.95	9.4	16.7
101.26	13.3	27.9
101.58	17.6	41.7
101.89	22.3	58.4
102.21	27.5	78.0
102.53	33.0	100.5
102.84	38.9	126.2
103.16	45.2	155.0
103.47	51.9	187.2
103.79	59.0	222.8
104.11	66.5	262.0
104.42	74.5	304.9
104.74	82.8	351.5
105.05	91.5	402.0
105.37	100.6	456.6
105.68	110.1	515.3
106.00	120.0	578.2

COMPUTE TRAVEL TIME ID=5 REACH NO=14 NO VS=1 L=375 FT SLP=0.0005

TRAVEL TIME TABLE

REACH= 14.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.316	2.726	2.51	.1132
.632	5.850	8.22	.0741
.947	9.374	16.69	.0585
1.263	13.296	27.86	.0497
1.579	17.618	41.74	.0440
1.895	22.338	58.42	.0398
2.211	27.457	77.98	.0367
2.526	32.975	100.53	.0342
2.842	38.892	126.17	.0321
3.158	45.208	155.02	.0304
3.474	51.922	187.20	.0289
3.789	59.036	222.82	.0276
4.105	66.548	262.00	.0265
4.421	74.459	304.85	.0254
4.737	82.770	351.49	.0245
5.053	91.479	402.04	.0237
5.368	100.587	456.60	.0229
5.684	110.094	515.29	.0223
6.000	119.999	578.23	.0216

ROUTE ID=5 HYD NO=14 INFLOW ID=4 DT=0.033333

PRINT HYD ID=5 CODE=1

OUTFLOW HYDROGRAPH REACH 14.00

```
    RUNOFF VOLUME =    10.18948 INCHES     =     148.3035 ACRE-FEET
    PEAK DISCHARGE RATE =     264.06 CFS  AT   1.633 HOURS   BASIN AREA =   .2729 SQ. MI.



*
* BASE FLOW CORRECTION
*
STORE HYD          ID=1  HYD NO=122.3 INC=0.033333  AREA=0.0001 SQ MI
                   FLOW RATES= 0.1 0.1 0.1 0.1 0.1 11.1 10.1 6.5 5.1 3.7 2.9
                     2.2 1.7 1.3 1.0 0.8 0.6 0.5 0.4 0.3 0.2 0.2 0.2
                     0.1 0.1 0.1 0.1
PRINT HYD          ID=1 CODE=1

                                PARTIAL HYDROGRAPH   122.30


    RUNOFF VOLUME =    25.67124 INCHES     =       .1369 ACRE-FEET
    PEAK DISCHARGE RATE =      11.10 CFS  AT    .167 HOURS   BASIN AREA =   .0001 SQ. MI.



*
ADD HYD            ID=3  HYD NO=322.4 ID=1 ID=5
* AREAS 1.1.1 THRU 1.1.3, 3.1.1 THRU 3.1.3, 4.1.1 THRU 4.2.5,
*      5.1.1 THRU 5.2.1, & BASE FLOW ABOVE OUTLET POINT OF 6.1.2
PRINT HYD          ID=3 CODE=1

                                     HYDROGRAPH FROM AREA   322.40


    RUNOFF VOLUME =    10.19517 INCHES     =     148.4407 ACRE-FEET
    PEAK DISCHARGE RATE =     264.06 CFS  AT   1.633 HOURS   BASIN AREA =   .2730 SQ. MI.



*
* COMPUTE HYDROGRAPH FROM AREA 6.1.1  AREA=0.0056 SQ MI - 100% IMP
*
COMPUTE NM HYD     ID=4 HYD NO= 323.1 DA=0.0056 SQ MI PER A=0
                   PER B=0  PER C=0  PER D=100 TP=-0.2049 RAIN=-1

    K =  .111671HR    TP =  .204900HR    K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   14.383    CFS   UNIT VOLUME =    .9992      B =   526.28      P60 = 1.8700
    AREA =      .005600 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=4 CODE=1

                                     HYDROGRAPH FROM AREA   323.10


    RUNOFF VOLUME =     1.96545 INCHES     =       .5870 ACRE-FEET
    PEAK DISCHARGE RATE =      12.83 CFS  AT   1.565 HOURS   BASIN AREA =   .0056 SQ. MI.
```

```
*
* COMPUTE HYDROGRAPH FROM AREA 6.1.2  AREA=0.0061 SQ MI - 85% IMP
*
COMPUTE NM HYD      ID=5 HYD NO= 324.1 DA=0.0061 SQ MI PER A=0
                    PER B=15  PER C=0  PER D=85 TP= -0.13333 RAIN=-1

   K =  .072665HR   TP =  .133330HR   K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =  20.466   CFS  UNIT VOLUME =   .9988      B =  526.28      P60 = 1.8700
   AREA =     .005185 SQ MI   IA =   .10000 INCHES   INF =   .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  .033300


   K =  .131021HR   TP =  .133330HR   K/TP RATIO =  .982685     SHAPE CONSTANT, N =  3.593450
   UNIT PEAK =  2.2447   CFS  UNIT VOLUME =   .9943      B =  327.09      P60 = 1.8700
   AREA =     .000915 SQ MI   IA =   .50000 INCHES   INF =  1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  .033300

PRINT HYD           ID=5 CODE=1

                                  HYDROGRAPH FROM AREA   324.10


   RUNOFF VOLUME =     1.77074 INCHES     =        .5761 ACRE-FEET
   PEAK DISCHARGE RATE =      15.70 CFS  AT   1.499 HOURS   BASIN AREA =   .0061 SQ. MI.



*
* ADD AREA 6.1.1 TO 6.1.2
*
ADD HYD             ID=6  HYD NO=324.2 ID=4 ID=5
PRINT HYD           ID=6  CODE=1

                                  HYDROGRAPH FROM AREA   324.20


   RUNOFF VOLUME =     1.86388 INCHES     =       1.1631 ACRE-FEET
   PEAK DISCHARGE RATE =      27.14 CFS  AT   1.532 HOURS   BASIN AREA =   .0117 SQ. MI.



*
* ADD 6.1.1 & 6.1.2 TO FLOW IN THE CORRALES MAIN CANAL
*
ADD HYD             ID=4 HYD NO=324.3 ID=3 ID=6
PRINT HYD           ID=4 CODE=1

                                  HYDROGRAPH FROM AREA   324.30


   RUNOFF VOLUME =     9.85286 INCHES     =     149.6050 ACRE-FEET
   PEAK DISCHARGE RATE =     286.06 CFS  AT   1.600 HOURS   BASIN AREA =   .2847 SQ. MI.
```

```
*
*   ROUTE IN CORRALES MAIN CANAL TO OUTFALL POINT
*   OF 6.1.3 AT STA 545+00
*
COMPUTE TRAVEL TIME ID=5  REACH NO=15  NO VS=1 L=1775 FT  SLP=0.0005
```

TRAVEL TIME TABLE

REACH= 15.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.316	2.726	2.51	.5357
.632	5.850	8.22	.3508
.947	9.374	16.69	.2768
1.263	13.296	27.86	.2353
1.579	17.618	41.74	.2081
1.895	22.338	58.42	.1885
2.211	27.457	77.98	.1736
2.526	32.975	100.53	.1617
2.842	38.892	126.17	.1520
3.158	45.208	155.02	.1438
3.474	51.922	187.20	.1368
3.789	59.036	222.82	.1306
4.105	66.548	262.00	.1252
4.421	74.459	304.85	.1204
4.737	82.770	351.49	.1161
5.053	91.479	402.04	.1122
5.368	100.587	456.60	.1086
5.684	110.094	515.29	.1053
6.000	119.999	578.23	.1023

```
ROUTE            ID=5  HYD NO=15  INFLOW ID=4 DT=0.033333
PRINT HYD        ID=5  CODE=1
```

OUTFLOW HYDROGRAPH REACH 15.00

RUNOFF VOLUME = 9.78148 INCHES = 148.5211 ACRE-FEET
PEAK DISCHARGE RATE = 252.59 CFS AT 1.767 HOURS BASIN AREA = .2847 SQ. MI.

```
*
* BASE FLOW CORRECTION
*
STORE HYD        ID=1  HYD NO=124.3 INC=0.033333 AREA=0.0001 SQ MI
                 FLOW RATES= 0.1 10.0 35.0 73.3 64.4 31.6 10.3 9.3 5.6
                 4.5 3.2 2.5 1.9 1.4 1.1 0.8 0.6 0.5 0.4 0.3 0.2 0.2
                 0.1 0.1 0.1 0.01 0.01 0.1 0.1 0.1
PRINT HYD        ID=1 CODE=1
```

PARTIAL HYDROGRAPH 124.30

```
   RUNOFF VOLUME =   133.17030 INCHES     =        .7102 ACRE-FEET
   PEAK DISCHARGE RATE =      73.30 CFS  AT     .100 HOURS   BASIN AREA =   .0001 SQ. MI.



*
ADD HYD            ID=3  HYD NO=324.4 ID=1 ID=5
* AREAS 1.1.1 THRU 1.1.3, 3.1.1 THRU 3.1.3, 4.1.1 THRU 4.2.5,
*      5.1.1 THRU 5.2.1, 6.1.1 THRU 6.1.2 & BASE FLOW ABOVE POINT 6.1.3
PRINT HYD          ID=3 CODE=1

                                    HYDROGRAPH FROM AREA   324.40


   RUNOFF VOLUME =     9.82482 INCHES     =     149.2316 ACRE-FEET
   PEAK DISCHARGE RATE =     252.59 CFS  AT   1.767 HOURS   BASIN AREA =   .2848 SQ. MI.



*
* COMPUTE HYDROGRAPH FROM AREA 6.1.3  AREA=0.0156 SQ MI - 75% IMP
*
COMPUTE NM HYD     ID=4   HYD NO= 325.1   DA=0.0156 SQ MI PER A=0
                   PER B=25  PER C=0  PER D=75 TP= -0.1333333 RAIN=-1

   K =   .072667HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   46.181    CFS   UNIT VOLUME =    .9991       B =   526.28      P60 = 1.8700
   AREA =      .011700 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .131025HR    TP =   .133333HR    K/TP RATIO =   .982685     SHAPE CONSTANT, N =  3.593452
   UNIT PEAK =   9.5673    CFS   UNIT VOLUME =    .9989       B =   327.09      P60 = 1.8700
   AREA =      .003900 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=4 CODE=1

                                    HYDROGRAPH FROM AREA   325.10


   RUNOFF VOLUME =     1.64093 INCHES     =       1.3652 ACRE-FEET
   PEAK DISCHARGE RATE =      37.77 CFS  AT   1.499 HOURS   BASIN AREA =   .0156 SQ. MI.



*
*  ROUTE THROUGH A POND (POND #2, SEE DRAINAGE MAP)
*
ROUTE RESERVOIR    ID=5  HYD NO=525.1  INFLOW ID=4 CODE=10
                   OUTFLOW(CFS)  STORAGE(AC-FT) DEPTH(FT)
                    0.0          0.0           0.0
                    5.1          0.23          0.5
                    7.4          0.45          1.0
                    9.1          0.73          1.5
                   10.2          1.04          2.0
```

```
                11.6          1.44          2.5

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

    TIME      INFLOW    ELEV      VOLUME    OUTFLOW
    (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

      .00       .00       .00       .000       .00
      .33       .00       .00       .000       .00
      .67       .00       .00       .000       .00
     1.00       .00       .00       .000       .00
     1.33     10.05       .10       .045      1.01
     1.67     19.44      1.31       .626      8.47
     2.00      8.62      1.50       .727      9.08
     2.33      1.90      1.29       .613      8.39
     2.66       .79       .96       .431      7.20
     3.00       .42       .60       .272      5.54
     3.33       .27       .34       .156      3.46
     3.66       .22       .19       .090      1.99
     4.00       .19       .11       .053      1.17
     4.33       .19       .07       .033       .72
     4.66       .19       .05       .022       .48
     5.00       .19       .03       .016       .35
     5.33       .21       .03       .013       .28
     5.66       .22       .02       .011       .25
     5.99       .24       .02       .011       .24
     6.33       .03       .02       .008       .18
     6.66       .01       .01       .005       .10
     6.99       .00       .01       .003       .06
     7.33       .00       .00       .001       .03
     7.66       .00       .00       .001       .02
     7.99       .00       .00       .000       .01
     8.33       .00       .00       .000       .01
     8.66       .00       .00       .000       .00
 PEAK DISCHARGE =        9.087 CFS - PEAK OCCURS AT HOUR    1.96
 MAXIMUM WATER SURFACE ELEVATION =        1.496
 MAXIMUM STORAGE =         .7278 AC-FT      INCREMENTAL TIME=     .033300HRS

PRINT HYD          ID=5 CODE=1

                              OUTFLOW HYDROGRAPH RESERVOIR   525.10


    RUNOFF VOLUME =     1.64092 INCHES     =       1.3652 ACRE-FEET
    PEAK DISCHARGE RATE =       9.09 CFS  AT   1.965 HOURS   BASIN AREA =   .0156 SQ. MI.



*
* ADD HYDROGRAPH 6.1.3 TO FLOWS IN THE CORRALES MAIN CANAL
ADD HYD            ID=5  HYD NO=325.2  ID=3 ID=5
PRINT HYD          ID=5 CODE=1

                                    HYDROGRAPH FROM AREA   325.20
```

RUNOFF VOLUME = 9.39989 INCHES = 150.5979 ACRE-FEET
PEAK DISCHARGE RATE = 261.45 CFS AT 1.767 HOURS BASIN AREA = .3004 SQ. MI.

*
* ROUTE IN THE CORRALES MAIN CANAL TO THE OUTFALL
* POINT OF 6.1.4 AT STA 553+25
*
COMPUTE TRAVEL TIME ID=6 REACH NO=16 NO VS=1 L=825 FT SLP=0.0005

TRAVEL TIME TABLE
REACH= 16.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.316	2.726	2.51	.2490
.632	5.850	8.22	.1630
.947	9.374	16.69	.1287
1.263	13.296	27.86	.1094
1.579	17.618	41.74	.0967
1.895	22.338	58.42	.0876
2.211	27.457	77.98	.0807
2.526	32.975	100.53	.0752
2.842	38.892	126.17	.0706
3.158	45.208	155.02	.0668
3.474	51.922	187.20	.0636
3.789	59.036	222.82	.0607
4.105	66.548	262.00	.0582
4.421	74.459	304.85	.0560
4.737	82.770	351.49	.0540
5.053	91.479	402.04	.0521
5.368	100.587	456.60	.0505
5.684	110.094	515.29	.0490
6.000	119.999	578.23	.0476

ROUTE ID=6 HYD NO=16 INFLOW ID=5 DT=0.033333
PRINT HYD ID=6 CODE=1

OUTFLOW HYDROGRAPH REACH 16.00

RUNOFF VOLUME = 9.36835 INCHES = 150.0925 ACRE-FEET
PEAK DISCHARGE RATE = 254.84 CFS AT 1.867 HOURS BASIN AREA = .3004 SQ. MI.

*
* BASE FLOW CORRECTION
*
STORE HYD ID=1 HYD NO=125.3 INC=0.033333 AREA=0.0001 SQ MI
FLOW RATES= 0.1 10.0 30.0 45.0 20.7 15.4 11.1 8.4 6.5
5.1 4.0 3.2 2.5 2.0 1.6 1.3 1.1 0.8 0.6 0.5 0.5 0.3
0.3 0.2 0.2 0.2 0.1 0.1 0.1 0.01 0.1 0.1 0.01 0.1
PRINT HYD ID=1 CODE=1

```
                                PARTIAL HYDROGRAPH   125.30

    RUNOFF VOLUME =    88.95580 INCHES     =        .4744 ACRE-FEET
    PEAK DISCHARGE RATE =      45.00 CFS  AT    .100 HOURS   BASIN AREA =   .0001 SQ. MI.


*
ADD HYD            ID=3  HYD NO=325.3 ID=1 ID=6
* AREAS 1.1.1 THRU 1.1.3, 3.1.1 THRU 3.1.3, 4.1.1 THRU 4.2.5,
*      5.1.1 THRU 5.2.1, 6.1.1 THRU 6.1.3 & BASE FLOW ABOVE POINT 6.1.4
PRINT HYD          ID=3 CODE=1

                                     HYDROGRAPH FROM AREA   325.30


    RUNOFF VOLUME =     9.39483 INCHES     =     150.5669 ACRE-FEET
    PEAK DISCHARGE RATE =     254.84 CFS  AT   1.867 HOURS   BASIN AREA =   .3005 SQ. MI.


*
*   COMPUTE HYDROGRAPH FROM AREA 6.1.4  AREA=0.0154 SQ MI - AREA
*   AND % TREATMENT TYPES ADJUSTED PER WINDMILL ESTATES DRAINAGE REPORT
*
COMPUTE NM HYD     ID=4 HYD NO=326.1 DA=0.0154 SQ MI PER A=0
                   PER B=20  PER C=60  PER D=20 TP=-0.1333333 RAIN=-1

    K =   .072667HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   12.157    CFS   UNIT VOLUME =    .9984       B =   526.28      P60 = 1.8700
    AREA =      .003080 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .112176HR    TP =   .133333HR    K/TP RATIO =   .841321     SHAPE CONSTANT, N =  4.235055
    UNIT PEAK =   34.239    CFS   UNIT VOLUME =    .9998       B =   370.55      P60 = 1.8700
    AREA =      .012320 SQ MI    IA =    .38750 INCHES    INF =    .93500 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=4 CODE=1

                                     HYDROGRAPH FROM AREA   326.10


    RUNOFF VOLUME =     1.11320 INCHES     =        .9143 ACRE-FEET
    PEAK DISCHARGE RATE =      29.49 CFS  AT   1.499 HOURS   BASIN AREA =   .0154 SQ. MI.


*
*  ROUTE THROUGH A POND (POND #1, SEE DRAINAGE MAP)
*
ROUTE RESERVOIR    ID=5  HYD NO=526.1  INFLOW ID=4 CODE=10
                   OUTFLOW(CFS)  STORAGE(AC-FT) DEPTH(FT)
                    0.0          0.0            0.0
```

```
                14.0          0.20          0.5
                16.0          0.35          1.0

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

   TIME      INFLOW    ELEV      VOLUME    OUTFLOW
   (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

     .00       .00       .00       .000       .00
     .33       .00       .00       .000       .00
     .67       .00       .00       .000       .00
    1.00       .00       .00       .000       .00
    1.33      3.71       .03       .012       .83
    1.67     15.73       .82       .295     15.27
    2.00      4.39       .36       .145     10.16
    2.33      1.15       .11       .045      3.12
    2.66       .44       .04       .014       .99
    3.00       .19       .01       .005       .37
    3.33       .10       .01       .002       .16
    3.66       .07       .00       .001       .09
    4.00       .05       .00       .001       .06
    4.33       .05       .00       .001       .05
    4.66       .05       .00       .001       .05
    5.00       .05       .00       .001       .05
    5.33       .05       .00       .001       .05
    5.66       .06       .00       .001       .06
    5.99       .06       .00       .001       .06
    6.33       .01       .00       .000       .03
    6.66       .00       .00       .000       .01
    6.99       .00       .00       .000       .00
 PEAK DISCHARGE =       15.267 CFS - PEAK OCCURS AT HOUR    1.67
 MAXIMUM WATER SURFACE ELEVATION =         .817
 MAXIMUM STORAGE =         .2950 AC-FT      INCREMENTAL TIME=     .033300HRS

PRINT HYD          ID=5 CODE=1

                              OUTFLOW HYDROGRAPH RESERVOIR   526.10


    RUNOFF VOLUME =     1.11318 INCHES     =        .9143 ACRE-FEET
    PEAK DISCHARGE RATE =      15.27 CFS  AT   1.665 HOURS   BASIN AREA =   .0154 SQ. MI.



*
* ADD 5.1.4 TO FLOW IN THE CORRALES MAIN CANAL
*
ADD HYD            ID=6  HYD NO=326.2 ID=3 ID=5
PRINT HYD          ID=5 CODE=1

                                    HYDROGRAPH FROM AREA   326.20


    RUNOFF VOLUME =     8.99116 INCHES     =     151.4821 ACRE-FEET
    PEAK DISCHARGE RATE =     269.18 CFS  AT   1.833 HOURS   BASIN AREA =   .3159 SQ. MI.
```

```
*
*   ROUTE IN CORRALES MAIN CANAL TO THE INLET OF THE DIVERSION
*   STRUCTURE AT STA 556+42.9
*
COMPUTE TRAVEL TIME ID=6  REACH NO=17  NO VS=1 L=317.9 FT SLP=0.0005
```

TRAVEL TIME TABLE

REACH= 17.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.316	2.726	2.51	.0959
.632	5.850	8.22	.0628
.947	9.374	16.69	.0496
1.263	13.296	27.86	.0421
1.579	17.618	41.74	.0373
1.895	22.338	58.42	.0338
2.211	27.457	77.98	.0311
2.526	32.975	100.53	.0290
2.842	38.892	126.17	.0272
3.158	45.208	155.02	.0258
3.474	51.922	187.20	.0245
3.789	59.036	222.82	.0234
4.105	66.548	262.00	.0224
4.421	74.459	304.85	.0216
4.737	82.770	351.49	.0208
5.053	91.479	402.04	.0201
5.368	100.587	456.60	.0195
5.684	110.094	515.29	.0189
6.000	119.999	578.23	.0183

```
ROUTE            ID=6  HYD NO=17  INFLOW ID=5 DT=0.033333
PRINT HYD        ID=6 CODE=10
```

OUTFLOW HYDROGRAPH REACH 17.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	4.000	108.5	8.000	79.6	12.000	76.3	16.000	75.5
.333	55.3	4.333	101.0	8.333	78.9	12.333	76.2	16.333	75.5
.667	67.2	4.667	96.4	8.667	78.4	12.667	76.1	16.667	75.5
1.000	72.3	5.000	93.3	9.000	77.9	13.000	76.1	17.000	75.4
1.333	79.8	5.333	91.0	9.333	77.5	13.333	76.0	17.333	75.4
1.667	249.7	5.667	89.3	9.667	77.3	13.667	75.9	17.666	75.4
2.000	261.8	6.000	88.0	10.000	77.1	14.000	75.8	18.000	75.3
2.333	223.2	6.333	86.4	10.333	76.9	14.333	75.8	18.333	75.3
2.667	187.6	6.667	84.5	10.667	76.8	14.667	75.7	18.666	75.3
3.000	159.9	7.000	82.7	11.000	76.7	15.000	75.7	19.000	75.3
3.333	137.6	7.333	81.4	11.333	76.5	15.333	75.6	19.333	75.3
3.667	120.3	7.667	80.4	11.667	76.4	15.667	75.6	19.666	75.2

RUNOFF VOLUME = 8.97958 INCHES = 151.2871 ACRE-FEET
PEAK DISCHARGE RATE = 267.07 CFS AT 1.867 HOURS BASIN AREA = .3159 SQ. MI.

```
*
* BASE FLOW CORRECTION
*
STORE HYD          ID=1  HYD NO=126.3  INC=0.033333  AREA=0.0001 SQ MI
                   FLOW RATES= 75.0 74.3 69.3 53.2 31.3 23.0 17.5 13.6 10.8
                   8.6 7.0 5.7 4.7 3.9 3.2 2.6 2.2 1.8 1.5 1.3 1.0 0.9
                   0.7 0.6 0.5 0.4 0.4 0.3 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.1
PRINT HYD          ID=1 CODE=1
```

PARTIAL HYDROGRAPH 126.30

RUNOFF VOLUME = 215.02900 INCHES = 1.1468 ACRE-FEET
PEAK DISCHARGE RATE = 75.00 CFS AT .000 HOURS BASIN AREA = .0001 SQ. MI.

```
*
ADD HYD            ID=3  HYD NO=326.3 ID=1 ID=6
* TOTAL OF ALL FLOWS TO THE DIVERSION STRUCTURE AT THE CALABACILLAS ARR.
PRINT HYD          ID=3 CODE=0
```

HYDROGRAPH FROM AREA 326.30

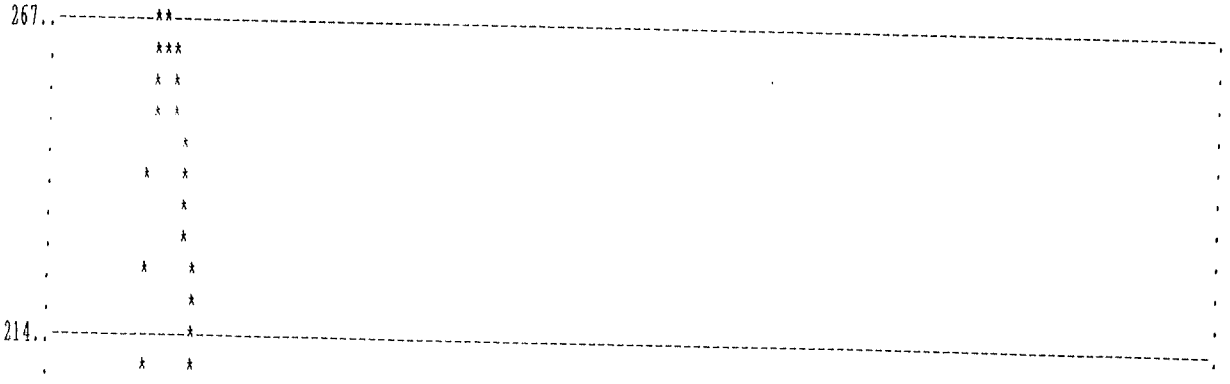
TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	75.0	4.000	108.5	8.000	79.6	12.000	76.3	16.000	75.5
.033	76.5	4.033	107.5	8.033	79.5	12.033	76.3	16.033	75.5
.067	88.6	4.067	106.7	8.067	79.4	12.067	76.3	16.066	75.5
.100	110.0	4.100	105.8	8.100	79.4	12.100	76.3	16.100	75.5
.133	97.0	4.133	105.0	8.133	79.3	12.133	76.3	16.133	75.5
.167	78.3	4.167	104.3	8.167	79.2	12.167	76.3	16.166	75.5
.200	65.4	4.200	103.6	8.200	79.2	12.200	76.3	16.200	75.5
.233	61.3	4.233	102.9	8.233	79.1	12.233	76.3	16.233	75.5
.267	62.7	4.267	102.2	8.267	79.0	12.267	76.2	16.266	75.5
.300	61.8	4.300	101.6	8.300	79.0	12.300	76.2	16.300	75.5
.333	62.3	4.333	101.0	8.333	78.9	12.333	76.2	16.333	75.5
.367	62.6	4.367	100.4	8.367	78.9	12.367	76.2	16.366	75.5
.400	62.9	4.400	99.9	8.400	78.8	12.400	76.2	16.400	75.5
.433	63.4	4.433	99.4	8.433	78.7	12.433	76.2	16.433	75.5
.467	64.0	4.467	98.9	8.467	78.7	12.467	76.2	16.466	75.5
.500	64.7	4.500	98.5	8.500	78.6	12.500	76.2	16.500	75.5
.533	65.5	4.533	98.0	8.533	78.6	12.533	76.2	16.533	75.5
.567	66.1	4.567	97.6	8.567	78.5	12.567	76.2	16.566	75.5
.600	66.8	4.600	97.2	8.600	78.5	12.600	76.2	16.600	75.5
.633	67.6	4.633	96.8	8.633	78.4	12.633	76.1	16.633	75.5
.667	68.2	4.667	96.4	8.667	78.4	12.667	76.1	16.666	75.5
.700	68.8	4.700	96.0	8.700	78.3	12.700	76.1	16.700	75.5
.733	69.3	4.733	95.7	8.733	78.3	12.733	76.1	16.733	75.5
.767	69.9	4.767	95.3	8.767	78.2	12.766	76.1	16.766	75.5
.800	70.3	4.800	95.0	8.800	78.2	12.800	76.1	16.800	75.5
.833	70.8	4.833	94.7	8.833	78.1	12.833	76.1	16.833	75.5
.867	71.2	4.867	94.4	8.867	78.1	12.866	76.1	16.866	75.4
.900	71.6	4.900	94.1	8.900	78.0	12.900	76.1	16.900	75.4

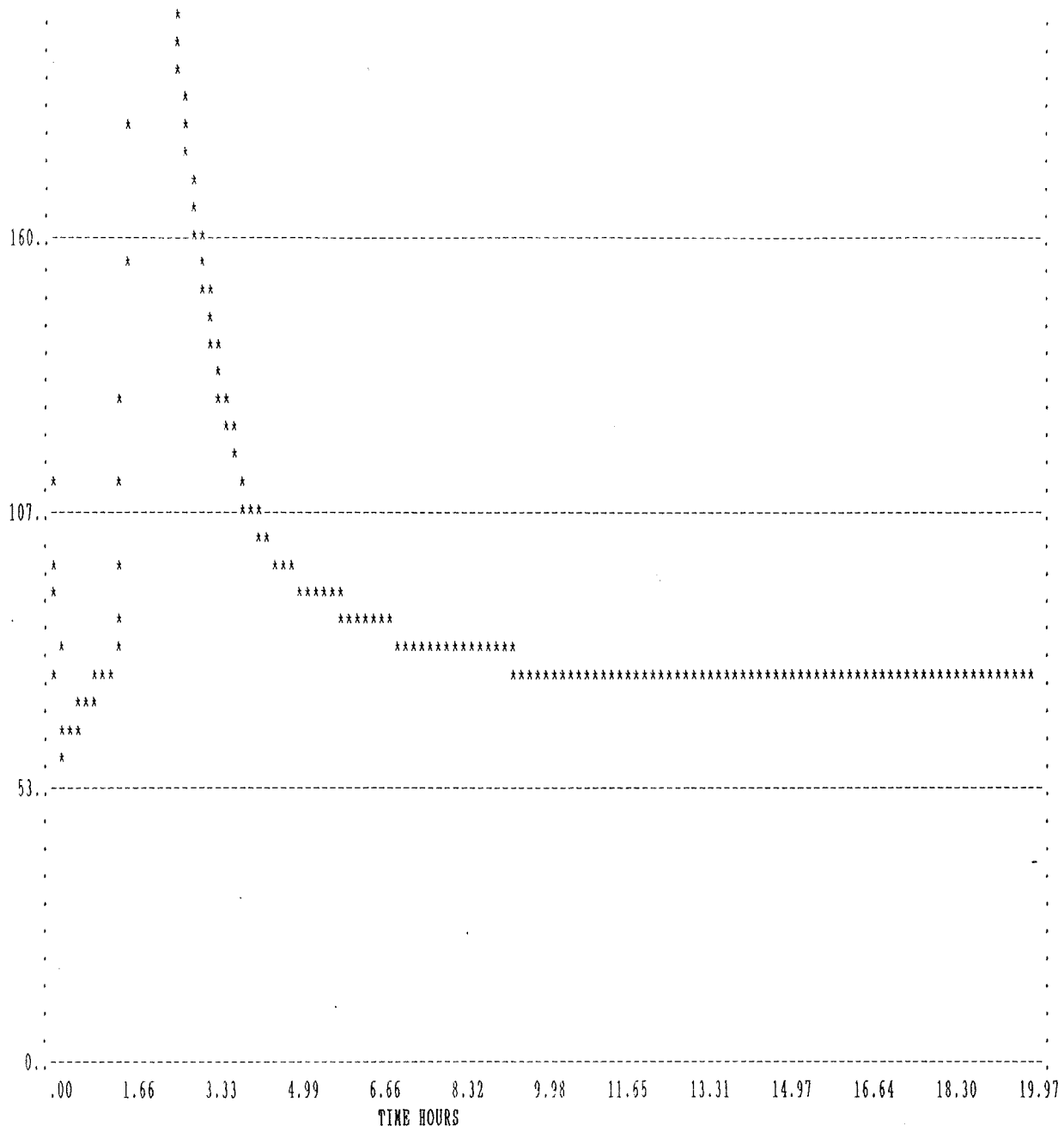
.933	71.9	4.933	93.8	8.933	78.0	12.933	76.1	16.933	75.4
.967	72.2	4.967	93.5	8.967	77.9	12.966	76.1	16.966	75.4
1.000	72.4	5.000	93.3	9.000	77.9	13.000	76.1	17.000	75.4
1.033	72.7	5.033	93.0	9.033	77.8	13.033	76.0	17.033	75.4
1.067	72.9	5.067	92.8	9.067	77.8	13.066	76.0	17.066	75.4
1.100	73.2	5.100	92.5	9.100	77.8	13.100	76.0	17.100	75.4
1.133	73.3	5.133	92.3	9.133	77.7	13.133	76.0	17.133	75.4
1.167	73.5	5.167	92.0	9.167	77.7	13.166	76.0	17.166	75.4
1.200	73.7	5.200	91.8	9.200	77.7	13.200	76.0	17.200	75.4
1.233	74.2	5.233	91.6	9.233	77.6	13.233	76.0	17.233	75.4
1.267	75.2	5.267	91.4	9.267	77.6	13.266	76.0	17.266	75.4
1.300	76.9	5.300	91.2	9.300	77.6	13.300	76.0	17.300	75.4
1.333	79.8	5.333	91.0	9.333	77.5	13.333	76.0	17.333	75.4
1.367	85.2	5.367	90.8	9.367	77.5	13.366	76.0	17.366	75.4
1.400	95.4	5.400	90.6	9.400	77.5	13.400	76.0	17.400	75.4
1.433	110.7	5.433	90.4	9.433	77.5	13.433	76.0	17.433	75.4
1.467	130.4	5.467	90.2	9.467	77.4	13.466	75.9	17.466	75.4
1.500	154.6	5.500	90.1	9.500	77.4	13.500	75.9	17.500	75.4
1.533	181.8	5.533	89.9	9.533	77.4	13.533	75.9	17.533	75.4
1.567	206.7	5.567	89.7	9.567	77.4	13.566	75.9	17.566	75.4
1.600	225.7	5.600	89.6	9.600	77.4	13.600	75.9	17.600	75.4
1.633	239.9	5.633	89.4	9.633	77.3	13.633	75.9	17.633	75.4
1.667	249.7	5.667	89.3	9.667	77.3	13.666	75.9	17.666	75.4
1.700	256.1	5.700	89.1	9.700	77.3	13.700	75.9	17.700	75.4
1.733	260.3	5.733	89.0	9.733	77.3	13.733	75.9	17.733	75.4
1.767	263.2	5.767	88.8	9.767	77.2	13.766	75.9	17.766	75.4
1.800	265.3	5.800	88.7	9.800	77.2	13.800	75.9	17.800	75.4
1.833	266.5	5.833	88.6	9.833	77.2	13.833	75.9	17.833	75.4
1.867	267.1	5.867	88.4	9.867	77.2	13.866	75.9	17.866	75.4
1.900	267.0	5.900	88.3	9.900	77.2	13.900	75.9	17.900	75.4
1.933	265.6	5.933	88.2	9.933	77.2	13.933	75.9	17.933	75.4
1.967	263.7	5.967	88.1	9.967	77.1	13.966	75.9	17.966	75.4
2.000	261.8	6.000	88.0	10.000	77.1	14.000	75.8	18.000	75.3
2.033	259.6	6.033	87.9	10.033	77.1	14.033	75.8	18.033	75.3
2.067	257.2	6.067	87.7	10.067	77.1	14.066	75.8	18.066	75.4
2.100	254.2	6.100	87.6	10.100	77.1	14.100	75.8	18.100	75.3
2.133	250.6	6.133	87.5	10.133	77.0	14.133	75.8	18.133	75.3
2.167	246.2	6.167	87.3	10.167	77.0	14.166	75.8	18.166	75.3
2.200	241.3	6.200	87.2	10.200	77.0	14.200	75.8	18.200	75.3
2.233	236.5	6.233	87.0	10.233	77.0	14.233	75.8	18.233	75.3
2.267	232.0	6.267	86.8	10.267	77.0	14.266	75.8	18.266	75.3
2.300	227.6	6.300	86.6	10.300	77.0	14.300	75.8	18.300	75.3
2.333	223.2	6.333	86.4	10.333	76.9	14.333	75.8	18.333	75.3
2.367	219.3	6.367	86.2	10.367	76.9	14.366	75.8	18.366	75.3
2.400	215.6	6.400	86.0	10.400	76.9	14.400	75.8	18.400	75.3
2.433	211.8	6.433	85.8	10.433	76.9	14.433	75.8	18.433	75.3
2.467	208.2	6.467	85.6	10.467	76.9	14.466	75.8	18.466	75.3
2.500	204.6	6.500	85.4	10.500	76.9	14.500	75.8	18.500	75.3
2.533	201.1	6.533	85.2	10.533	76.9	14.533	75.7	18.533	75.3
2.567	197.7	6.567	85.0	10.567	76.8	14.566	75.7	18.566	75.3
2.600	194.4	6.600	84.8	10.600	76.8	14.600	75.7	18.600	75.3
2.633	191.0	6.633	84.6	10.633	76.8	14.633	75.7	18.633	75.3
2.667	187.6	6.667	84.5	10.667	76.8	14.666	75.7	18.666	75.3
2.700	184.4	6.700	84.3	10.700	76.8	14.700	75.7	18.700	75.3
2.733	181.4	6.733	84.1	10.733	76.8	14.733	75.7	18.733	75.3
2.767	178.5	6.767	83.9	10.767	76.8	14.766	75.7	18.766	75.3

2.800	175.6	6.800	83.7	10.800	76.7	14.800	75.7	18.800	75.3
2.833	172.8	6.833	83.6	10.833	76.7	14.833	75.7	18.833	75.3
2.867	170.1	6.867	83.4	10.867	76.7	14.866	75.7	18.866	75.3
2.900	167.5	6.900	83.2	10.900	76.7	14.900	75.7	18.900	75.3
2.933	164.9	6.933	83.1	10.933	76.7	14.933	75.7	18.933	75.3
2.967	162.4	6.967	82.9	10.967	76.7	14.966	75.7	18.966	75.3
3.000	159.9	7.000	82.7	11.000	76.7	15.000	75.7	19.000	75.3
3.033	157.3	7.033	82.6	11.033	76.7	15.033	75.7	19.033	75.3
3.067	154.7	7.067	82.4	11.067	76.6	15.066	75.7	19.066	75.3
3.100	152.4	7.100	82.3	11.100	76.6	15.100	75.7	19.100	75.3
3.133	150.1	7.133	82.2	11.133	76.6	15.133	75.7	19.133	75.3
3.167	147.7	7.167	82.0	11.167	76.6	15.166	75.7	19.166	75.3
3.200	145.5	7.200	81.9	11.200	76.6	15.200	75.6	19.200	75.3
3.233	143.3	7.233	81.8	11.233	76.6	15.233	75.6	19.233	75.3
3.267	141.3	7.267	81.6	11.267	76.6	15.266	75.6	19.266	75.3
3.300	139.4	7.300	81.5	11.300	76.6	15.300	75.6	19.300	75.3
3.333	137.6	7.333	81.4	11.333	76.5	15.333	75.6	19.333	75.3
3.367	135.8	7.367	81.3	11.367	76.5	15.366	75.6	19.366	75.3
3.400	134.0	7.400	81.2	11.400	76.5	15.400	75.6	19.400	75.3
3.433	132.1	7.433	81.1	11.433	76.5	15.433	75.6	19.433	75.3
3.467	130.3	7.467	81.0	11.467	76.5	15.466	75.6	19.466	75.3
3.500	128.4	7.500	80.8	11.500	76.5	15.500	75.6	19.500	75.3
3.533	126.6	7.533	80.7	11.533	76.5	15.533	75.6	19.533	75.3
3.567	124.8	7.567	80.6	11.567	76.5	15.566	75.6	19.566	75.2
3.600	123.3	7.600	80.6	11.600	76.5	15.600	75.6	19.600	75.2
3.633	121.7	7.633	80.5	11.633	76.4	15.633	75.6	19.633	75.2
3.667	120.3	7.667	80.4	11.667	76.4	15.666	75.6	19.666	75.2
3.700	118.8	7.700	80.3	11.700	76.4	15.700	75.6	19.700	75.3
3.733	117.5	7.733	80.2	11.733	76.4	15.733	75.6	19.733	75.2
3.767	116.2	7.767	80.1	11.767	76.4	15.766	75.6	19.766	75.2
3.800	114.9	7.800	80.0	11.800	76.4	15.800	75.6	19.800	75.2
3.833	113.7	7.833	79.9	11.833	76.4	15.833	75.6	19.833	75.2
3.867	112.6	7.867	79.9	11.867	76.4	15.866	75.6	19.866	75.2
3.900	111.5	7.900	79.8	11.900	76.4	15.900	75.6	19.900	75.2
3.933	110.4	7.933	79.7	11.933	76.3	15.933	75.5	19.933	75.2
3.967	109.4	7.967	79.6	11.967	76.3	15.966	75.5	19.966	74.3

RUNOFF VOLUME = 9.04479 INCHES = 152.4339 ACRE-FEET
PEAK DISCHARGE RATE = 267.07 CFS AT 1.867 HOURS BASIN AREA = .3160 SQ. MI.

PLOT HYD ID=3
FLOW RATE (CFS)





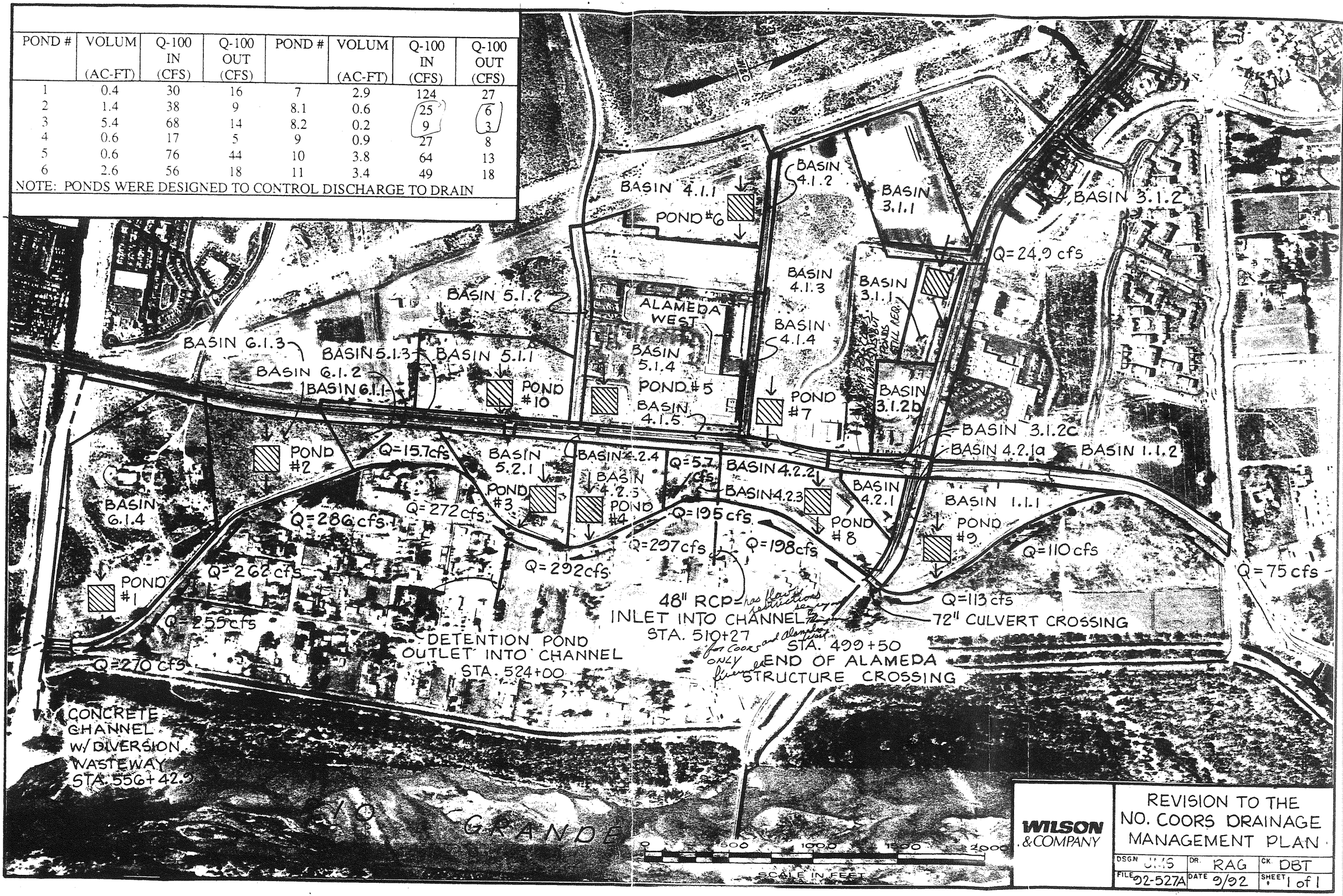
*

FINISH

END TIME (HR:MIN:SEC) = 09:11:14

POND #	VOLUM (AC-FT)	Q-100 IN (CFS)	Q-100 OUT (CFS)	POND #	VOLUM (AC-FT)	Q-100 IN (CFS)	Q-100 OUT (CFS)
1	0.4	30	16	7	2.9	124	27
2	1.4	38	9	8.1	0.6	25	6
3	5.4	68	14	8.2	0.2	9	3
4	0.6	17	5	9	0.9	27	8
5	0.6	76	44	10	3.8	64	13
6	2.6	56	18	11	3.4	49	18

NOTE: PONDS WERE DESIGNED TO CONTROL DISCHARGE TO DRAIN



WILSON & COMPANY

REVISION TO THE NO. COORS DRAINAGE MANAGEMENT PLAN

DSGN	DR.	CK.
JMS	RAG	DBT
FILE 92-527A	DATE 9/92	SHEET 1 of 1