Spook Hill ADMP Update

Flood Control District of Maricopa County

Appendix B
Volume 6

Level I - Hydrology

(12/06/2002)

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Registered Professional Engineer (Civil)
CERTIFICATE NO.
28615
RICHARD L.
HINER
Date Signed 9-28-03
ARIZONA U.S.A.

Spook Hill Area Drainage Master Plan Update

Flood Control District of Maricopa County

List of Appendices

Property of
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Please Return to
2801 W. Durango
Phoenix, AZ 85009

Appendix A

Volume 1	HEC-1 Modeling Input Data & Output Files – Level III
Volume 2	SCS TR-20 Hydrology Analysis
Volume 3	TR-20 Hydrology Analysis
Volume 4	Design Alternative Analysis – Level I
Volume 5	Design Alternative Analysis – Level II
Volume 6	No-Action/Non-Structural Alternative Analysis
Volume 7	Conveyance Material Analysis
Volume 8	Hydraulics
Volume 9	Red Mountain Freeway Crude Cost Estimates

Appendix B

Volume 1	Level I – Hydrology (1999 – 03/10/2000)
Volume 2	Level I – Hydrology (03/10/2000 – 05/11/2000)
Volume 3	Level I – Hydrology (05/11/2000 – 06/19/2000)
Volume 4	Level I – Hydrology (06/19/2000 – 07/17/2000)
Volume 5	Level I – Hydrology (07/18/2000 – 07/27/2000)
Volume 6	Level I – Hydrology (12/06/2000)
Volume 7A	HEC-1 Modeling Output Files (Level II)
Volume 7B	HEC-1 Modeling Output Files (Level II)
Volume 7C	HEC-1 Modeling Output Files (Level II)

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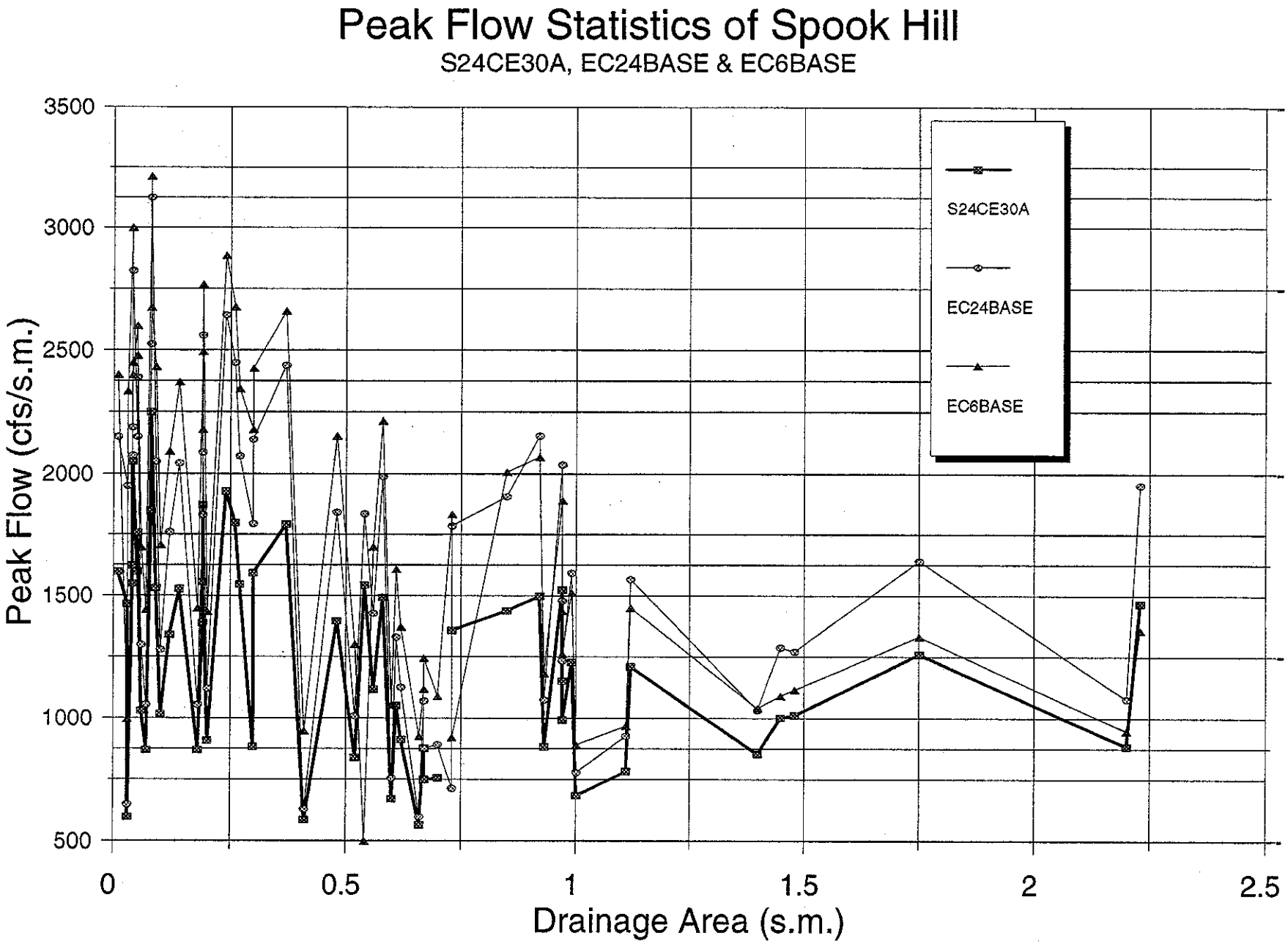
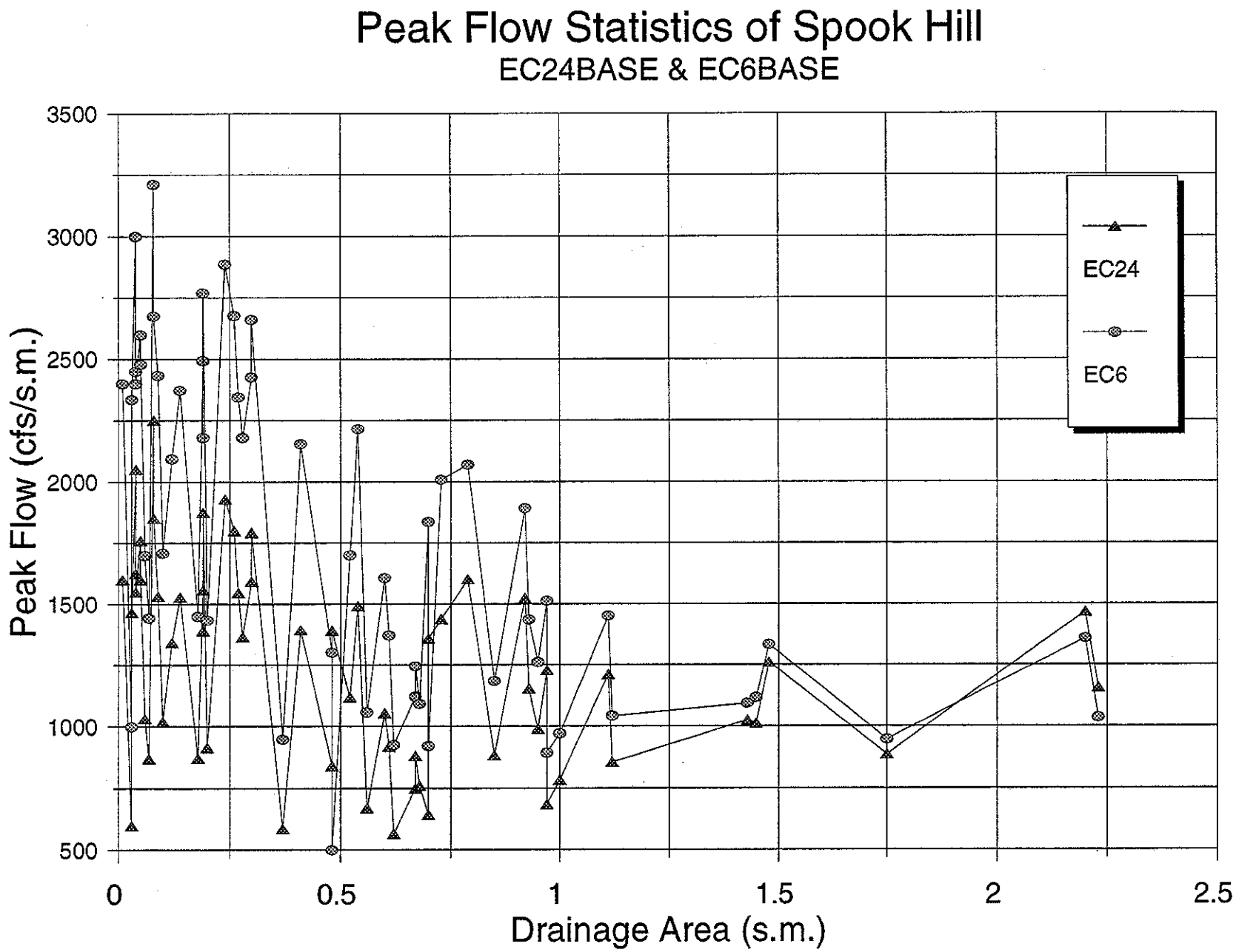
FILE AND OPTION CROSS REFERENCE INDEX

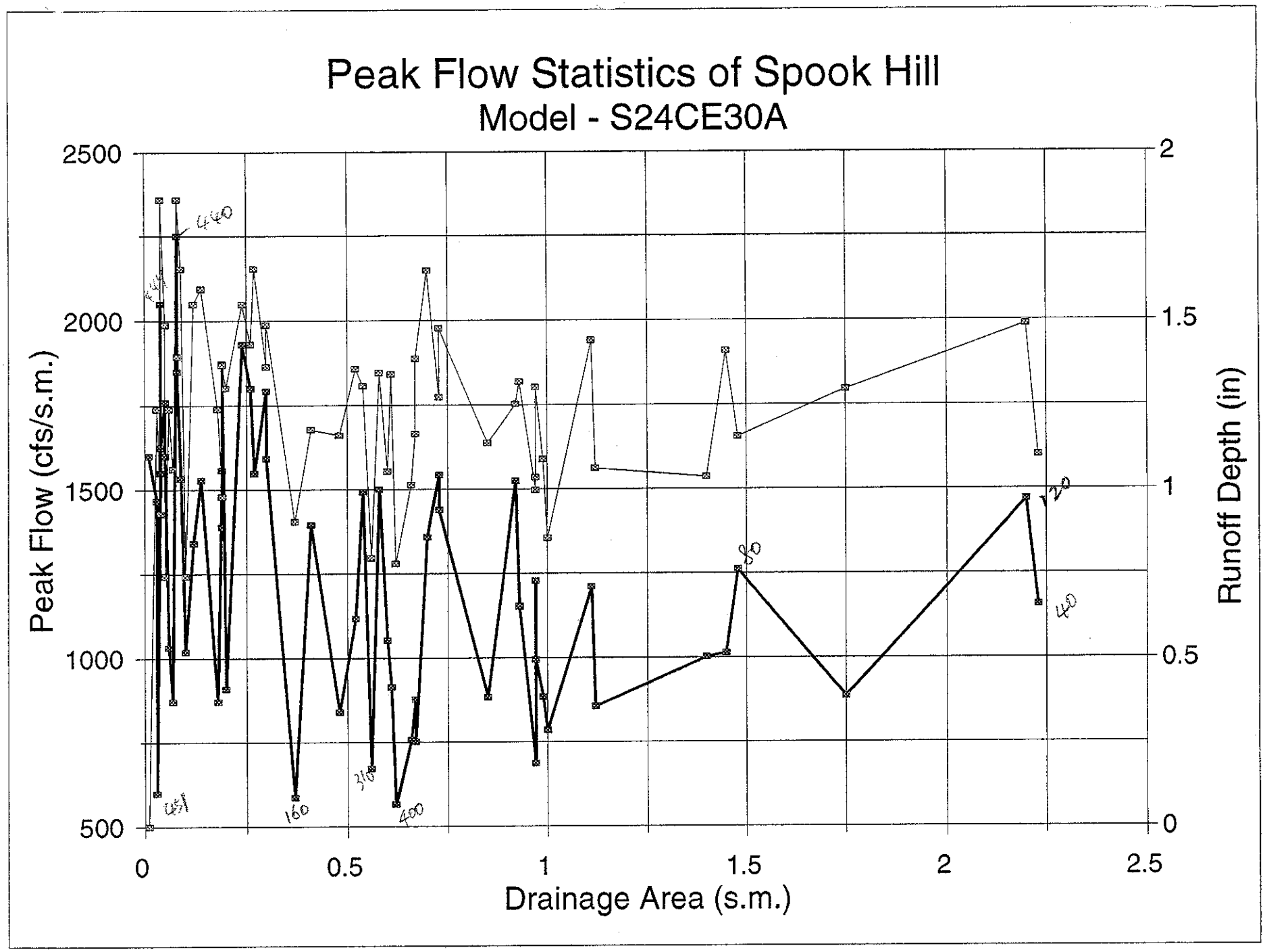
Base Files

Option Name	Other Names Used	Description
EC6base	100	Current 100yr. 6hr. Model; peir review by S.Z. & J.D. Refinement of Sub-Basin areas; Adjust reach lengths of Signal Butte FW.
EC24base	101	Current 100yr. 24hr. Model; Peir review by S.Z. & J.D. Refinement of Sub-Basin areas; Adjust reach lengths of Signal Butte FW.


Peak Flow Statistics of Spook Hill
S24CE30A, EC24BASE & EC6BASE
Peak Flow (cfs/s.m.)
3500
3000
2500
2000
1500
1000
500
0
0.5
1
1.5
2
2.5
Drainage Area (s.m.)
S24CE30A
EC24BASE
EC6BASE


Peak Flow Statistics of Spook Hill
EC24BASE & EC6BASE
Peak Flow (cfs/s.m.)
3500
3000
2500
2000
1500
1000
500
0
0.5
1
1.5
2
2.5
Drainage Area (s.m.)
EC24
EC6

			EC24BASE									S24CE30A		
			PEAK	TIME OF	Q24avg	BASIN	q (cfs/sm)			PEAK	TIME OF	Q24avg	BASIN	q (cfs/sm)
	Area	STATION	FLOW	PEAK		AREA			STATION	FLOW	PEAK		AREA	
		441	16	12.03	0	0.01	1600.00		441	16	12.03	0	0.01	1600
		459	44	12.03	1	0.03	1466.67		459	44	12.03	1	0.03	1467
		451	18	12.17	1	0.03	600.00		451	18	12.17	1	0.03	600
		452	62	12.03	1	0.04	1550.00		452	62	12.03	1	0.04	1550
		446	65	12.03	2	0.04	1625.00		446	65	12.03	2	0.04	1625
		444	82	12.03	1	0.04	2050.00		444	82	12.03	1	0.04	2050
		449	80	12.03	1	0.05	1600.00		449	80	12.03	1	0.05	1600
		448	88	12.03	2	0.05	1760.00		448	88	12.03	2	0.05	1760
		453	62	12.10	2	0.06	1033.33		453	62	12.10	2	0.06	1033
		450	61	12.20	2	0.07	871.43		450	61	12.20	2	0.07	871
		443	148	12.07	4	0.08	1850.00		443	148	12.07	4	0.08	1850
		440	180	12.03	3	0.08	2250.00		440	180	12.03	3	0.08	2250
		447	138	12.07	4	0.09	1533.33		447	138	12.07	4	0.09	1533
		442	102	12.10	2	0.10	1020.00		442	102	12.10	2	0.10	1020
		461	161	12.10	5	0.12	1341.67		461	161	12.10	5	0.12	1342
		460	214	12.07	6	0.14	1528.57		460	214	12.07	6	0.14	1529
		454	157	12.17	6	0.18	872.22		454	157	12.17	6	0.18	872
		457	264	12.07	5	0.19	1389.47		457	264	12.07	5	0.19	1389
		458	356	12.03	7	0.19	1873.68		458	356	12.03	7	0.19	1874
		445	296	12.03	5	0.19	1557.89		445	296	12.03	5	0.19	1558
		395	183	12.23	7	0.20	915.00		395	182	12.23	7	0.20	910
		390	463	12.03	10	0.24	1929.17		390	463	12.03	10	0.24	1929
		456	468	12.07	10	0.26	1800.00		456	468	12.07	10	0.26	1800
		260	418	12.10	12	0.27	1548.15		260	418	12.10	12	0.27	1548
	1	300	382	12.10	9	0.28	1364.29		300	875	12.20	29	0.99	884
		280	478	12.10	12	0.30	1593.33		280	478	12.10	12	0.30	1593
		462	538	12.07	11	0.30	1793.33		462	538	12.07	11	0.30	1793
		160	217	12.40	9	0.37	586.49		160	217	12.40	9	0.37	586
		150	572	12.17	13	0.41	1395.12		150	572	12.17	13	0.41	1395
		100	404	12.20	15	0.48	841.67		100	404	12.20	15	0.48	842
	1	220	668	12.20	17	0.48	1391.67		220	1126	12.17	25	0.73	1542
		385	582	12.23	19	0.52	1119.23		385	582	12.23	19	0.52	1119
		200	806	12.17	19	0.54	1492.59		200	806	12.17	19	0.54	1493
		310	376	12.33	12	0.56	671.43		310	376	12.33	12	0.56	671
		140	632	12.13	17	0.60	1053.33		140	632	12.13	17	0.60	1053
		415	561	12.17	22	0.61	919.67		415	558	12.17	22	0.61	915
		400	351	12.23	13	0.62	566.13		400	351	12.23	13	0.62	566
		370	591	12.30	21	0.67	882.09		370	588	12.30	21	0.67	878
		360	504	12.23	25	0.67	752.24		360	504	12.23	25	0.67	752
	1	355	518	12.33	18	0.68	761.76		355	500	12.33	18	0.66	758
1	1	305	451	12.27	20	0.70	644.29							
		10	951	12.27	31	0.70	1358.57		10	951	12.27	31	0.70	1359
		480	1050	12.10	29	0.73	1438.36		480	1050	12.10	29	0.73	1438
	1	210	1266	12.17	27	0.79	1602.53		210	870	12.20	21	0.58	1500
		420	752	12.20	26	0.85	884.71		420	752	12.20	26	0.85	885
		190	1403	12.17	31	0.92	1525.00		190	1403	12.17	31	0.92	1525
		500	1073	12.27	33	0.93	1153.76		500	1073	12.27	33	0.93	1154
	1	320	941	12.20	34	0.95	990.53		320	965	12.20	34	0.97	995
		350	1192	12.20	27	0.97	1228.87		350	1192	12.20	27	0.97	1229
		380	666	12.27	26	0.97	686.60		380	666	12.27	26	0.97	687
		180	785	12.37	23	1.00	785.00		180	785	12.37	23	1.00	785
		455	1346	12.13	43	1.11	1212.61		455	1346	12.13	43	1.11	1213
		20	959	12.43	32	1.12	856.25		20	959	12.43	32	1.12	856
	1	240	1467	12.30	41	1.43	1025.87		240	1405	12.30	39	1.40	1004
		340	1471	12.17	55	1.45	1014.48		340	1471	12.17	55	1.45	1014
		80	1868	12.27	46	1.48	1262.16		80	1868	12.27	46	1.48	1262
		60	1553	12.40	61	1.75	887.43		60	1553	12.40	61	1.75	887
		120	3232	12.27	88	2.20	1469.09		120	3232	12.27	88	2.20	1469
		40	2582	12.30	66	2.23	1157.85		40	2582	12.30	66	2.23	1158


Peak Flow Statistics of Spook Hill
Model - S24CE30A
Peak Flow (cfs/s.m.)
Runoff Depth (in)
Drainage Area (s.m.)
2500
2000
1500
1000
500
2
1.5
1
0.5
0
0
0.5
1
1.5
2
2.5
440
160
310
400
80
120
40

```
1*************************************                                    *************************************
*                                   *                                    *                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*                                    *   U.S. ARMY CORPS OF ENGINEERS    *
*             JUN   1998            *                                    *   HYDROLOGIC ENGINEERING CENTER   *
*           VERSION 4.1             *                                    *        609 SECOND STREET          *
*                                   *                                    *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE   03JAN01  TIME  16:24:15*                                    *        (916) 756-1104             *
*                                   *                                    *                                   *
*************************************                                    *************************************

                                        X     X  XXXXXXX   XXXXX          X
                                        X     X  X        X     X        XX
                                        X     X  X        X              X
                                        XXXXXXX  XXXX     X        XXXXX  X
                                        X     X  X        X              X
                                        X     X  X        X     X        X
                                        X     X  XXXXXXX   XXXXX        XXX

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                                HEC-1 INPUT                                                PAGE  1

          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

            1           ID   EXISTING LAND USE CALCULATIONS WERE BASED ON 1 YR. FROM 11/5/99/
            2           ID   FOR LAS SENDAS       AND LANDISCOR JAN.1999 AERIAL PHOTOGRAPHS
            3           ID
            4           ID   ALL DAMS WERE ANALYZED WITH NO STORAGE BELOW PRINCIPLE SPILLWAY ELEVATIONS
            5           ID
            6           ID   A CONSERVATIVE ESTIMATE WAS USED FOR THE LOCATION OF THE CENTROID FOR
            7           ID   PRECIPITATION VALUES
            8           ID
            9           ID   ALL CHANNEL ROUTING INFORMATION WAS OBTAINED FROM MCFCD SPOOK HILL   SIGNAL
           10           ID   BUTTE        AND BULLDOG FLOODWAY PLANS
           11           ID
           12           ID   UPDATE TO EXISTING CONDITION 24-HR 100-YR MODEL RUN BASED ON RE-ALIGNMENT
           13           ID   OF SUB-BASIN BOUNDARIES FOR SUB-BASINS 385 (REDUCED) & 415 (ENLARGED)
           14           ID   UPDATE BASED ON INFORMATION FROM 2' CONTOUR MAPPING.
           15           ID
           16           ID   ANALYSIS PERFORMED BY WOOD/PATEL; MW;        07/27/00  FILE: S24CE30Z.DAT
           17           ID
           18           ID   DDM MCUHP1 SPOOK HILL AMDP - EXISTING CONDITIONS MODEL - 100YR, 24HR STORM
                        *       Original File Name: S24CE30.DAT
                        *       Modified File Name: S24CE30Z.DAT
                        *       Changes: 1) No. of Hydrograph Ordinates Increased to 2000
                        *                2) SE, SV and SQ Cards for the Three (3) FRSs Updated
                        *                3) Sediment Volumes Subtracted from Storage Volumes
                        *                4) Old Elevation Datum Adjusted to NAVD 1988
                        *       Wood/Patel, July 19, 2000.  SZ.
                        *
                        *  As of 12/06/00 the following has been added to update the base hec1 file
                        *  S24CE30z. This file is used   to begin update process towards resulting 100yr
                        *  existing condition 24-hour hec run which upon its completion will be  file
                        *  from which all subsequent (future) runs will be derived.
                        *
                        *  This new file will be named (labeled):    EC24base.dat
                        *              E  =  Existing condition model
                        *              C  =  100-year return period
                        *              24 =  Storm Duration
                        *
                        *  MAJOR ASSUMPTIONS / CRITERIA / CHANGES FROM PREVIOUS MODELS: 12/06/00
                        *
                        *       1. Refinement of areas for sub-basins 210, 220, 240, 300, 305, 320,
                        *          355,  370, 395, and 415 using CAD as follows:
                        *               Area of 210 changes to  .792 sq. miles
                        *               Area of 220 changes to  .484 sq. miles
                        *               Area of 240 changes to 1.428 sq. miles
                        *               Area of 300 changes to  .279 sq. miles
                        *               Area of 305 changes to  .702 sq. miles
                        *               Area of 320 changes to  .949 sq. miles
                        *               Area of 355 changes to  .676 sq. miles
                        *               Area of 370 changes to  .672 sq. miles
                        *               Area of 395 changes to  .200 sq. miles
                        *               Area of 415 changes to  .608 sq. miles
                        *
                        *       2. The numbering system used when a sub-basin is further divide
                        *          is changed to a number letter combination from a number only system.
                        *          Now when a sub-basin is divided further, the original number  will
                        *          remain and a letter a,b,c will be attached depending on the
                        *          number of pieces that the sub-basin is divided into. This applies
                        *          only to future condition models.
                        *
                        *       3. The slope of RR455 is incorrect and will change from .002 ft/ft
                        *          to .0002 ft/ft.
                        *
                        *       4. Changes to sub-basin areas will result in changes to soil type
                        *          percentages.  All changes to areas and soil make-up have been
                        *          obtained using CAD instead of hand planimeter.
                        *
                        *       5. Signal Butte Floodway reach lengths have been updated using
                        *          the as built plans dated March of 1983.  Hec routings affected by
                        *          this are as follows:
                        *               R180 increased 100' from 1500' to 1600'
                        *               R260 remained unchanged.
                        *               R280 decreased 400' from 2500' to 2100'
                        *               R300 increased 300' from 2200' to 2500'
                        *               RR300 is relabeled R305
                        *               R305 decreased 50' from 6050' to 6000'
                        *
                        *       6. "N - Steps" balanced using normal depth channel calcs and limiting
                        *          divergence from the resulting value by no more than 30%
                        *          higher or lower.
                        *
                        *
                        *  This HEC model is for the 100 year 6 hour event and uses EC24base for the
                        *  file family.  Changes to the base file family in DDMS include those
```

```
*  for rainfall duration and distribution.
*
*       This new file is named (labeled):  EC6base.dat
*               E  =  Existing condition
*               C  =  100 year event
*               6  =  6 hour duration
*               base = base file
*
*DIAGRAM
1                                   HEC-1 INPUT                                                    PAGE  2

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  19          IT       2                  2000
  20          IO       3
  21          IN      15
  22          JD    3.17    0.01
  23          PC    .000    .008    .016    .025    .033    .041    .050    .058    .066    .074
  24          PC    .087    .099    .118    .138    .216    .377    .834    .911    .931    .950
  25          PC    .962    .972    .983    .991   1.000
  26          JD    3.15    0.50
  27          JD    3.11    2.80
  28          PC    .000    .009    .016    .025    .034    .042    .051    .059    .067    .076
  29          PC    .087    .100    .120    .163    .252    .451    .694    .837    .900    .938
  30          PC    .950    .963    .975    .988   1.000
  31          JD    2.92    16.0
  32          PC    .000    .015    .020    .030    .048    .063    .076    .090    .105    .119
  33          PC    .135    .152    .175    .222    .304    .472    .670    .796    .868    .912
  34          PC    .946    .960    .973    .987   1.000
  35          JD    2.57    90.0
  36          PC    .000    .021    .035    .051    .071    .087    .105    .125    .143    .160
  37          PC    .179    .201    .232    .281    .364    .500    .658    .773    .841    .888
  38          PC    .927    .945    .964    .982   1.000
  39          JD    1.81   500.0
  40          PC    .000    .024    .043    .059    .078    .098    .119    .141    .162    .186
  41          PC    .212    .239    .271    .321    .408    .515    .627    .735    .814    .864
  42          PC    .907    .930    .954    .977   1.000
              * DDM   ***** Updated *****

  43          KK      10
  44          KM   SUB-BASIN 10
  45          KM   6-HOUR RAINFALL, PATTERN NO. 1.20 WAS USED TO FIND TC & R FOR THIS BASIN
  46          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .991
  47          KM     L = 2.00  Kb = .044  Adj. Slope =  165.0
  48          BA    .702
  49          LG    .350    .320   7.600    .090  15.000
  50          UC    .400    .285
  51          UA       0       3       5       8      12      20      43      75      90      96
  52          UA     100
              * DDM   ***** Preserved *****

  53          KK     R10
  54          KM   ROUTING OF FLOW FROM SUB-BASIN 10 TO R12
  55          RS       4    FLOW      -1
  56          RC    .045     .03    .045    8700    .021
  57          RX       0       1       2      17      27      42      43      44
  58          RY       5       5       5       0       0       5       5       5
              * DDM   ***** Preserved *****

  59          KK     R12
  60          KM   ROUTING OF FLOW FROM R12 TO SUB-BASIN 20
  61          RS       6    FLOW      -1
  62          RC    .045     .03    .045    4500     .01
  63          RX       0       1      45    52.5    72.5      80     124     125
  64          RY       4     2.5     2.5       0       0     2.5     2.5       4
              * DDM   ***** Updated *****
1                                   HEC-1 INPUT                                                    PAGE  3

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  65          KK      20
  66          KM   SUB-BASIN 20
  67          KM   6-HOUR RAINFALL, PATTERN NO. 1.47 WAS USED TO FIND TC & R FOR THIS BASIN
  68          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .986
  69          KM     L = 2.50  Kb = .041  Adj. Slope =   88.0
  70          BA   1.120
  71          LG    .350    .390   5.800    .190   1.000
  72          UC    .650    .448
  73          UA       0       3       5       8      12      20      43      75      90      96
  74          UA     100
              * DDM   ***** Preserved *****

  75          KK     C20
  76          KM   HYDROGRAPH COMBINATION OF SUB-BASINS 10 AND 20
  77          HC       2
              * DDM   ***** Preserved *****

  78          KK     R20
  79          KM        ROUTE FLOW THROUGH BULLDOG FLOODWAY FROM APACHE JUNCTION FRS
  80          RS       1    FLOW      -1
  81          RC    .016    .016    .016     990    .004
  82          RX       0       5       7    14.5    34.5      42      44      50
  83          RY     4.5       2       2       0       0       2       2     4.5
              * DDM   ***** Updated *****

  84          KK      40
  85          KM   SUB-BASIN 40
  86          KM   6-HOUR RAINFALL, PATTERN NO. 1.87 WAS USED TO FIND TC & R FOR THIS BASIN
  87          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .979
  88          KM     L = 3.08  Kb = .036  Adj. Slope =  189.0
  89          BA   2.233
  90          LG    .340    .340   4.900    .280   5.000
  91          UC    .554    .299
  92          UA       0       3       5       8      12      20      43      75      90      96
  93          UA     100
              * DDM   ***** Updated *****

  94          KK      60
  95          KM   SUB-BASIN 60
  96          KM   6-HOUR RAINFALL, PATTERN NO. 1.73 WAS USED TO FIND TC & R FOR THIS BASIN
  97          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .982
  98          KM     L = 4.19  Kb = .038  Adj. Slope =  209.6
  99          BA   1.746
 100          LG    .330    .350   5.800    .190   9.000
 101          UC    .617    .495
 102          UA       0       3       5       8      12      20      43      75      90      96
 103          UA     100
              * DDM   ***** Preserved *****
1                                   HEC-1 INPUT                                                    PAGE  4
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 104          KK     60C
 105          KM   HYDROGRAPH COMBINATION FOR APACHE JUNCTION FRS
              *      1        2
 106          HC       3
              * DDM    ***** Preserved *****

 107          KK    SR60
 108          KM   APACHE JUNCTION FRS AS-BUILT PLANS 12/19/88
 109          KM   OUTLET PIPE=30"RCP; L=136.6'; INLET INV.=1783.5; OUTLET INV.=1783
 110          KM   EMERGENCY SPILLWAY ELEV.=1799.77'; PRINCIPLE SPILLWAY ELEV.=1793.5'
 111          KM   STORAGE VOLUME BELOW PRINCIPLE SPILLWAY FOR SEDIMENT = 100 ACRE-FEET
              *  ESE = 1801.92 ft; PSE = 1795.65 ft; Sediment Vol. = 237 Ac-Ft.
 112          RS       1    STOR       0
 113          SV       0       0      77     242     371     439     563     607    2163
 114          SQ       0      12     103     114     120     362    1462    3101   30000
 115          SE    95.0    96.0    98.0   100.0   101.6   101.9   103.0   104.0   112.9
              * DDM    ***** Preserved *****

 116          KK     R60
 117          KM        ROUTE FLOW THROUGH BULLDOG FLOODWAY FROM APACHE JUNCTION FRS
 118          RS       2    FLOW      -1
 119          RC    .016    .016    .016    2850    .012
 120          RX       0       1       2     2.1     5.6     5.7       6       7
 121          RY     4.5     4.5     4.5       0       0     4.5     4.5     4.5
              * DDM    ***** Preserved *****

 122          KK    RR60
 123          KM   ROUTE FLOW FROM BULLDOG FLOODWAY TO SUB-BASIN 80
 124          RS       3    FLOW      -1
 125          RC    .016    .016    .016    3500    .005
 126          RX       0       1       2     2.1     7.1     7.2       8       9
 127          RY       4       4       4       0       0       4       4       4
              * DDM    ***** Updated *****

 128          KK      80
 129          KM   SUB-BASIN 80
 130          KM   6-HOUR RAINFALL, PATTERN NO. 1.63 WAS USED TO FIND TC & R FOR THIS BASIN
 131          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .984
 132          KM     L = 2.69  Kb = .039  Adj. Slope =  229.8
 133          BA   1.475
 134          LG    .330    .330   5.600    .210   4.000
 135          UC    .454    .272
 136          UA       0       3       5       8      12      20      43      75      90      96
 137          UA     100
              * DDM    ***** Preserved *****

 138          KK     80C
 139          KM   HYDROGRAPH COMBINATION FOR FLOW FROM APACHE JUNCTION FRS & SUB-BASIN 80
 140          HC       2   1.475
              * DDM    ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE  5
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 141          KK     R80
 142          KM   ROUTE FLOW FROM SUB-BASIN 80 TO SUB-BASIN 100
 143          RS       1    FLOW      -1
 144          RC    .025    .016    .025    1200    .003
 145          RX       0       2       6     6.1    41.1    41.2    56.2    58.2
 146          RY    5.75     4.5     4.5       0       0     4.5     4.5    5.75
              * DDM    ***** Updated *****

 147          KK     100
 148          KM   SUB-BASIN 100
 149          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
 150          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
 151          KM     L = 1.94  Kb = .046  Adj. Slope =  108.0
 152          BA    .484
 153          LG    .320    .290   5.100    .260   3.000
 154          UC    .492    .432
 155          UA       0       5      16      30      65      77      84      90      94      97
 156          UA     100
              * DDM    ***** Preserved *****

 157          KK    100C
 158          KM   HYDROGRAPH COMBINATION FOR FLOW FROM SUB-BASIN 80 & 100
 159          HC       2
              * DDM    ***** Preserved *****

 160          KK    R100
 161          KM   ROUTE FLOW FROM SUB-BASIN 100 TO SUB-BASIN 120
 162          RS       1    FLOW      -1
 163          RC    .016    .016    .016     940    .005
 164          RX       0       1       2     2.1    52.1    52.2      53      54
 165          RY     4.5     4.5     4.5       0       0     4.5     4.5     4.5
              * DDM    ***** Updated *****

 166          KK     120
 167          KM   SUB-BASIN 120
 168          KM   6-HOUR RAINFALL, PATTERN NO. 1.86 WAS USED TO FIND TC & R FOR THIS BASIN
 169          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .979
 170          KM     L = 3.07  Kb = .037  Adj. Slope =  239.0
 171          BA   2.202
 172          LG    .330    .200   6.800    .130  11.000
 173          UC    .471    .251
 174          UA       0       3       5       8      12      20      43      75      90      96
 175          UA     100
              * DDM    ***** Preserved *****

 176          KK    120C
 177          KM   HYDROGRAPH COMBINATION FOR FLOW FROM SUB-BASIN 100 & 120
 178          HC       2
              * DDM    ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE  6
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 179          KK    R120
 180          KM   ROUTE FLOW FROM SUB-BASIN 120 TO SIGNAL BUTTE FRS
 181          RS       1    FLOW      -1
 182          RC    .025    .016    .025    2100    .005
 183          RX       0       6      10    10.1    60.1    60.2    74.2    80.2
 184          RY       8       5       5       0       0       5       5       8
              * DDM    ***** Updated *****
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185          KK     140
186          KM   SUB-BASIN 140
187          KM   6-HOUR RAINFALL, PATTERN NO. 1.10 WAS USED TO FIND TC & R FOR THIS BASIN
188          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .992
189          KM     L = 1.61  Kb = .044  Adj. Slope =  149.0
190          BA    .598
191          LG    .310    .280   4.200    .440   5.000
192          UC    .383    .250
193          UA       0       5      16      30      65      77      84      90      94      97
194          UA     100
             * DDM   ***** Updated *****

195          KK     150
196          KM   SUB-BASIN 150
197          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
198          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .995
199          KM     L = 1.50  Kb = .047  Adj. Slope =  314.6
200          BA    .408
201          LG    .350    .360   5.100    .260   7.000
202          UC    .262    .193
203          UA       0       3       5       8      12      20      43      75      90      96
204          UA     100
             * DDM   ***** Preserved *****

205          KK    R150
206          KM   ROUTING OF FLOW FROM SUB-BASIN 150 TO R152
207          RS       1    FLOW      -1
208          RC    .045     .04    .045    3100    .032
209          RX       0       1       2      23      33      54      55      56
210          RY       7       7       7       0       0       7       7       7
             * DDM   ***** Preserved *****

211          KK    R152
212          KM   ROUTING OF FLOW FROM R152 TO SUB-BASIN 160
213          RS       4    FLOW      -1
214          RC    .045     .03    .045    5900    .019
215          RX       0       1       2       8      33      39      40      41
216          RY       3       2       2       0       0       2       2       3
             * DDM   ***** Updated *****

217          KK     160
218          KM   SUB-BASIN 160
219          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
220          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .995
221          KM     L = 2.10  Kb = .047  Adj. Slope =  129.0
222          BA    .369
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

223          LG    .340    .330   4.150    .440   1.000
224          UC    .533    .588
225          UA       0       3       5       8      12      20      43      75      90      96
226          UA     100
             * DDM   ***** Updated *****

227          KK     180
228          KM   SUB-BASIN 180
229          KM   6-HOUR RAINFALL, PATTERN NO. 1.40 WAS USED TO FIND TC & R FOR THIS BASIN
230          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .987
231          KM     L = 2.42  Kb = .041  Adj. Slope =  140.0
232          BA   1.000
233          LG    .350    .350   4.150    .430    .000
234          UC    .575    .406
235          UA       0       3       5       8      12      20      43      75      90      96
236          UA     100
             * DDM   ***** Preserved *****

237          KK    180C
238          KM   HYDROGRAPH COMBINATION FOR SIGNAL BUTTE FRS
239          HC       5
             *
             * The sub-basin area and soil make-up have been updated from CAD file 12/07/00
             * DDM   ***** Updated *****

240          KK     210
241          KM   SUB-BASIN 210
242          KM   6-HOUR RAINFALL, PATTERN NO. 1.27 WAS USED TO FIND TC & R FOR THIS BASIN
243          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .990
244          KM     L = 1.84  Kb = .043  Adj. Slope =  315.0
245          BA    .792
246          LG    .350    .360   6.800    .130   4.000
247          UC    .300    .181
248          UA       0       3       5       8      12      20      43      75      90      96
249          UA     100
             * DDM   ***** Preserved *****

250          KK    R210
251          KM   ROUTING OF FLOW FROM SUB-BASIN 210 TO SUB-BASIN 220
252          RS       2    FLOW      -1
253          RC    .045     .03    .045    5100    .022
254          RX       0       1       2      14      34      46      47      48
255          RY       4       4       4       0       0       4       4       4
             *
             * The sub-basin area and soil make-up have been updated from CAD file 12/07/00
             * DDM   ***** Updated *****

256          KK     240
257          KM   SUB-BASIN 240
258          KM   6-HOUR RAINFALL, PATTERN NO. 1.61 WAS USED TO FIND TC & R FOR THIS BASIN
259          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .984
260          KM     L = 3.50  Kb = .039  Adj. Slope =  298.6
261          BA   1.428
262          LG    .350    .370   5.300    .230   2.000
263          UC    .496    .378
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

264          UA       0       3       5       8      12      20      43      75      90      96
265          UA     100
             * DDM   ***** Preserved *****

266          KK    240C
267          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 240 & 220
268          HC       2
             * DDM   ***** Preserved *****

269          KK   SR240
270          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
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271          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
272          RS       1    STOR       0
273          SA    1.38    14.2    36.5
274          SE     1.7       5      11
275          SS       5      42       3     1.5
             *
             * The sub-basin area and soil make-up have been updated from CAD file 12/07/00
             * DDM   ***** Updated *****

276          KK     220
277          KM   SUB-BASIN 220
278          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
279          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
280          KM     L = 1.92  Kb = .046  Adj. Slope =  315.0
281          BA    .484
282          LG    .350    .350   7.000    .120   4.000
283          UC   1.579   1.566
284          UA       0       3       5       8      12      20      43      75      90      96
285          UA     100
             * DDM   ***** Preserved *****

286          KK    220C
287          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 240 & 220
288          HC       2
             * DDM   ***** Preserved *****

289          KK   SR220
290          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
291          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
292          RS       1    STOR       0
293          SA     .78     4.1    13.7
294          SE       1       3      10
295          SS       3      65       3     1.5
             * DDM   ***** Updated *****

296          KK     190
297          KM   SUB-BASIN 190
298          KM   6-HOUR RAINFALL, PATTERN NO. 1.35 WAS USED TO FIND TC & R FOR THIS BASIN
299          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .988
300          KM     L = 1.91  Kb = .042  Adj. Slope =  315.0
301          BA    .918
302          LG    .350    .390   5.800    .190   8.000
303          UC    .313    .179
304          UA       0       3       5       8      12      20      43      75      90      96
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

305          UA     100
             * DDM   ***** Preserved *****

306          KK    R190
307          KM   ROUTING OF FLOW FROM SUB-BASIN 190 TO SUB-BASIN 200
308          RS       2    FLOW      -1
309          RC    .045     .03    .045    4740     .03
310          RX       0       1       2      17      37      52      53      54
311          RY       5       5       5       0       0       5       5       5
             * DDM   ***** Preserved *****

312          KK    R192
313          KM   ROUTING OF FLOW FROM SUB-BASIN 190 TO SUB-BASIN 200
314          RS       2    FLOW      -1
315          RC    .045    .035    .045    2200    .018
316          RX       0       1      50      59      79      88     137     138
317          RY     4.5       3       3       0       0       3       3     4.5
             * DDM   ***** Updated *****

318          KK     200
319          KM   SUB-BASIN 200
320          KM   6-HOUR RAINFALL, PATTERN NO. 1.04 WAS USED TO FIND TC & R FOR THIS BASIN
321          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .993
322          KM     L = 1.58  Kb = .045  Adj. Slope =  305.6
323          BA    .535
324          LG    .350    .390   5.700    .200  10.000
325          UC    .271    .179
326          UA       0       3       5       8      12      20      43      75      90      96
327          UA     100
             * DDM   ***** Preserved *****

328          KK    200C
329          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 220 & 200
330          HC       3
             * DDM   ***** Preserved *****

331          KK   SR200
332          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
333          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
334          RS       1    STOR       0
335          SA    2.56     3.1     9.4
336          SE       0       3      10
337          SS       3     112       3     1.5
             * DDM   ***** Preserved *****

338          KK   200SR
339          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
340          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
341          RS       1    STOR       0
342          SA       8     9.2     9.2
343          SE       0       7      10
344          SS       7     251       3     1.5
             * DDM   ***** Preserved *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

345          KK    C180
346          KM   HYDROGRAPH COMBINATION FOR SIGNAL BUTTE FRS
             *      1       2
347          HC       2
             * DDM   ***** Preserved *****

348          KK   SR180
349          KM   SIGNAL BUTTE FRS DATED 1/28/85
350          KM   OUTLET PIPE=36"RCP; L= 147';  INLET INV.=1690; OUTLET INV.=1687
351          KM   EMERGENCY SPILLWAY ELEV.=1712.4; PRINCIPLE SPILLWAY ELEV.=1701
352          KM   STORAGE VOLUME BELOW PRINCIPLE SPILLWAY FOR SEDIMENT = 250 ACRE-FEET
             *  ESE = 1714.63 ft; PSE = 1703.23 ft; Sediment Vol. = 247 Ac-Ft.
353          RS       1    STOR       0
354          SV       0      92     226     462     742    1197    1418    1776    1941    3114
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355          SQ       0      10    10.5      98     133     149     155    1484    2567    6000
356          SE      99     101   103.0     106     109   113.0   114.6     117     118     120
             * DDM   ***** Preserved *****

357          KK    R180
358          KM   Routing length updated using Signal Butte Floodway plans dated March 1983
359          KM   Routing length increased 100' from 1500' to 1600'    12/12/00
360          KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
361          KM   ROUTE FLOW FROM SIGNAL BUTTE FRS TO SUB-BASIN 260
362          RS       3    FLOW      -1
363          RC    .035    .025    .035    1600    .003
364          RX       0       1       2    22.6    38.6    59.2      60      61
365          RY     9.3     9.3     9.3       0       0     9.3     9.3     9.3
             * DDM   ***** Updated *****

366          KK     260
367          KM   SUB-BASIN 260
368          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
369          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
370          KM     L =  .81  Kb = .049  Adj. Slope =   68.0
371          BA    .267
372          LG    .300    .170   6.800    .160  15.000
373          UC    .325    .191
374          UA       0       5      16      30      65      77      84      90      94      97
375          UA     100
             * DDM   ***** Preserved *****

376          KK    260C
377          KM   HYDROGRAPH COMBINATION FOR OUTFLOW OF SIGNAL BUTTE FRS & SUB-BASIN 260
378          HC       2    .267
             * DDM   ***** Preserved *****

379          KK    R260
380          KM   Routing length updated using Signal Butte Floodway plans dated March 1983
381          KM   Routing length unchanged     12/12/00
382          KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
383          KM   ROUTE FLOW FROM SUB-BASIN 260 TO SUB-BASIN 280
384          RS       2    FLOW      -1
385          RC    .035    .025    .035    2300    .003
386          RX       0       1       2    23.4    43.4    64.8      65      66
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

387          RY     9.7     9.7     9.7       0       0     9.7     9.7     9.7
             * DDM   ***** Updated *****

388          KK     280
389          KM   SUB-BASIN 280
390          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
391          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
392          KM     L =  .77  Kb = .049  Adj. Slope =   84.0
393          BA    .304
394          LG    .300    .250   5.300    .290  15.000
395          UC    .296    .153
396          UA       0       5      16      30      65      77      84      90      94      97
397          UA     100
             * DDM   ***** Preserved *****

398          KK    280C
399          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 260 & SUB-BASIN 280
400          HC       2
             * DDM   ***** Preserved *****

401          KK    R280
402          KM   Routing length updated using Signal Butte Floodway plans dated March 1983
403          KM   Routing length decreased 400' from 2500' to 2100'    12/12/00
404          KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
405          KM   ROUTE FLOW FROM SUB-BASIN 280 TO SUB-BASIN 300
406          RS       2    FLOW      -1
407          RC    .035    .025    .035    2100    .003
408          RX       0       1       2    23.4    43.4    64.8      65      66
409          RY     9.7     9.7     9.7       0       0     9.7     9.7     9.7
             *
             * The sub-basin area and soil make-up have been updated from CAD file 12/07/00
             * DDM   ***** Updated *****

410          KK     300
411          KM   SUB-BASIN 300
412          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
413          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
414          KM     L =  .78  Kb = .049  Adj. Slope =  103.0
415          BA    .279
416          LG    .320    .290   4.200    .480  10.000
417          UC    .283    .155
418          UA       0       5      16      30      65      77      84      90      94      97
419          UA     100
             * DDM   ***** Preserved *****

420          KK    300C
421          KM   HYDROGRAPH COMBINATION OF SUB-BASIN 280 & 300
422          HC       2
             * DDM   ***** Preserved *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

423          KK    R300
424          KM   Routing length updated using Signal Butte Floodway plans dated March 1983
425          KM   Routing length increased 300' from 2200' to 2500'    12/12/00
426          KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
427          KM   ROUTE FLOW FROM SUB-BASIN 300 TO START OF FLOODWAY CONCRETE CHANNEL
428          RS       2    FLOW      -1
429          RC    .035    .025    .035    2500    .003
430          RX       0       1       2    23.4    55.4    76.8      77      78
431          RY     9.7     9.7     9.7       0       0     9.7     9.7     9.7
             *
             * The sub-basin area and soil make-up have been updated from CAD file 12/07/00
             * DDM   ***** Updated *****

432          KK     305
433          KM   SUB-BASIN 305
434          KM   6-HOUR RAINFALL, PATTERN NO. 1.20 WAS USED TO FIND TC & R FOR THIS BASIN
435          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .991
436          KM     L = 2.50  Kb = .044  Adj. Slope =  116.0
437          BA    .702
438          LG    .340    .340   4.550    .350   6.000
439          UC    .608    .543
440          UA       0       5      16      30      65      77      84      90      94      97
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441          UA     100
             * DDM   ***** Preserved *****

442          KK    305C
443          KM   HYDROGRAPH COMBINATION OF SUB-BASIN 300 AND 305
444          HC       2
             * DDM   ***** Preserved *****

445          KK    R305
446          KM   Routing length updated using Signal Butte Floodway plans dated March 1983
447          KM   Routing length decreased 50' from 6050' to 6000'     12/12/00
448          KM   CHANNEL GEOMETRY FOR SPOOK HILL FRS OBTAINED FROM AS-BUILTS PLANS.
449          KM   CONTINUE TO ROUTE FLOW WITHIN CONCRETE CHANNEL TO SPOOK HILL FRS
450          RS       2    FLOW     -1
451          RC    .016    .016    .016    6000    .0146
452          RX       0       1       2     2.1    16.1    16.2      17      18
453          RY     7.5     7.5     7.5       0       0     7.5     7.5     7.5
             *        1       2
             * DDM   ***** Updated *****

454          KK     350
455          KM   SUB-BASIN 350
456          KM   6-HOUR RAINFALL, PATTERN NO. 1.38 WAS USED TO FIND TC & R FOR THIS BASIN
457          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .987
458          KM     L = 2.22  Kb = .042  Adj. Slope =  315.0
459          BA    .970
460          LG    .350    .350   4.550    .340   4.000
461          UC    .363    .231
462          UA       0       3       5       8      12      20      43      75      90      96
463          UA     100
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 13

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

464          KK    D350
465          KM   DIVERT FLOW FROM SUB-BASIN 350. FOR MODELING PURPOSES THE SPLIT FLOW WILL
466          KM   BE ROUTED BETWEEN SUB-BASINS 355 & 310. THE MAIN FLOW WILL ROUTED TO 310
467          DT   SP350
468          DI       0    5000
469          DQ       0    2500
             * DDM   ***** Preserved *****

470          KK    350R
471          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING
472          KM   ROUTING OF MAIN FLOW FROM DIVERSION OF SUB-BASIN 350 TO SUB-BASIN 310
473          RS       5    FLOW     -1
474          RC    .045    .035    .045    5150    .025
475          RX       0       1      40      46      56      62     102     103
476          RY       3       2       2       0       0       2       2       3
             * DDM   ***** Updated *****

477          KK     310
478          KM   SUB-BASIN 310
479          KM   6-HOUR RAINFALL, PATTERN NO. 1.06 WAS USED TO FIND TC & R FOR THIS BASIN
480          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .993
481          KM     L = 2.70  Kb = .045  Adj. Slope =  283.5
482          BA    .555
483          LG    .350    .350   3.910    .480    .000
484          UC    .446    .467
485          UA       0       3       5       8      12      20      43      75      90      96
486          UA     100
             * DDM   ***** Preserved *****

487          KK    C310
488          KM   HYDROGRAPH COMBINATION OF SUB-BASINS 350 & 310
489          HC       2    .943
             * DDM   ***** Preserved *****

490          KK    R310
491          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
492          KM   ROUTING OF FLOW FROM SUB-BASIN 310 TO 320
493          RS      10    FLOW     -1
494          RC    .045    .035    .045   10050    .022
495          RX       0       1      40      46      56      62     102     103
496          RY     3.5       2       2       0       0       2       2     3.5
             *
             * The sub-basin area and soil make-up have been updated from CAD file 12/07/00
             * DDM   ***** Updated *****

497          KK     320
498          KM   SUB-BASIN 320
499          KM   6-HOUR RAINFALL, PATTERN NO. 1.37 WAS USED TO FIND TC & R FOR THIS BASIN
500          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .988
501          KM     L = 2.20  Kb = .042  Adj. Slope =  132.0
502          BA    .949
503          LG    .310    .300   4.600    .350  14.000
504          UC    .504    .335
505          UA       0       5      16      30      65      77      84      90      94      97
1                                          HEC-1 INPUT                                          PAGE 14

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

506          UA     100
             * DDM   ***** Preserved *****

507          KK    D320
508          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
509          KM   DETENTION/RETENTION BASINS LOCATED WITHIN THREE SUBDIVISIONS
510          KM   SIERRA HEIGHTS       FALCON RIDGE    & MARBLE CREEK
511          KM        MAXIMUM VOLUME DIVERSION = 12.27acre-feet
             *      1
512          DT   BS320   12.27
513          DI       0   10000
514          DQ       0   10000
             * DDM   ***** Preserved *****

515          KK   RT320
516          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
517          DR   BS320
             * DDM   ***** Preserved *****

518          KK   SR320
519          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
520          KM   12.27 ACRE-FEETx43560/36x3600=4.1cfs
             *      1
521          RS       1    STOR       0
522          SV       0     .01    12.3
523          SQ       0     4.2     4.2
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                * DDM   ***** Preserved *****

524             KK    C320
525             KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
526             HC       4
                * DDM   ***** Updated *****

527             KK     340
528             KM   SUB-BASIN 340
529             KM   6-HOUR RAINFALL, PATTERN NO. 1.62 WAS USED TO FIND TC & R FOR THIS BASIN
530             KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .984
531             KM     L = 2.40  Kb = .042  Adj. Slope =  160.0
532             BA   1.449
533             LG    .280    .280   4.150    .520  21.000
534             UC    .538    .303
535             UA       0       5      16      30      65      77      84      90      94      97
536             UA     100
                * DDM   ***** Preserved *****

537             KK    D340
538             KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
539             KM   DETENTION/RETENTION BASINS LOCATED WITHIN THREE SUBDIVISIONS
540             KM   GRANDVIEW ESTATES    BOULDER MOUNTAIN & 33% OF MESA HIGHLANDS
541             KM        MAXIMUM VOLUME DIVERSION = 56.0 acre-feet
                *      1
542             DT   BS340      56
543             DI       0   10000
544             DQ       0   10000
                * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                                    PAGE 15

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

545             KK   RT340
546             KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
547             DR   BS340
                * DDM   ***** Preserved *****

548             KK   SR340
549             KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
550             KM    56.0 ACRE-FEETx43560/36x3600=18.8cfs
                *      1
551             RS       1    STOR       0
552             SV       0     .01      56
553             SQ       0    18.9    18.9
                * DDM   ***** Preserved *****

554             KK    C340
555             KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
556             HC       3
                * DDM   ***** Preserved *****

557             KK   RT350
558             KM   RETRIEVE SPLIT FLOW FROM DIVERSION OF SUB-BASIN 350
559             DR   SP350
                * DDM   ***** Preserved *****

560             KK   RR350
561             KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
562             KM   ROUTING OF FLOW FROM SPLIT OF SUB-BASIN 350 TO 355
563             RS       6    FLOW      -1
564             RC    .045    .035    .045    6050    .025
565             RX       0       1      40      46      56      62     102     103
566             RY       3       2       2       0       0       2       2       3
                *
                * The sub-basin area and soil make-up have been updated from CAD file 12/07/00
                * DDM   ***** Updated *****

567             KK     355
568             KM   SUB-BASIN 355
569             KM   6-HOUR RAINFALL, PATTERN NO. 1.17 WAS USED TO FIND TC & R FOR THIS BASIN
570             KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .991
571             KM     L = 3.00  Kb = .044  Adj. Slope =  284.0
572             BA    .676
573             LG    .340    .340   4.450    .370   4.000
574             UC    .463    .473
575             UA       0       3       5       8      12      20      43      75      90      96
576             UA     100
                * DDM   ***** Preserved *****

577             KK    C355
578             KM   HYDROGRAPH COMBINATION OF SUB-BASIN 355 AND THE SPLIT FLOW FROM SUB-BASIN 350
579             HC       2    1.24
                * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                                    PAGE 16

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

580             KK    R355
581             KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
582             KM   ROUTING OF FLOW FROM SUB-BASIN 355 TO SUB-BASIN 360
583             RS       8    FLOW      -1
584             RC    .045    .035    .045   10100    .026
585             RX       0       1      40      46      56      62     102     103
586             RY     3.5       2       2       0       0       2       2     3.5
                * DDM   ***** Updated *****

587             KK     360
588             KM   SUB-BASIN 360
589             KM   6-HOUR RAINFALL, PATTERN NO. 1.17 WAS USED TO FIND TC & R FOR THIS BASIN
590             KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .991
591             KM     L = 2.10  Kb = .048  Adj. Slope =  124.0
592             BA    .670
593             LG    .260    .270   4.100    .560  20.000
594             UC    .546    .430
595             UA       0       5      16      30      65      77      84      90      94      97
596             UA     100
                * DDM   ***** Preserved *****

597             KK    D360
598             KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
599             KM   DETENTION/RETENTION BASINS LOCATED WITHIN 33% OF MESA HIGHLANDS
600             KM        MAXIMUM VOLUME DIVERSION = 28.6 acre-feet
                *      1
601             DT   BS360    28.6
602             DI       0   10000
603             DQ       0   10000
                * DDM   ***** Preserved *****
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604          KK   RT360
605          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
606          DR   BS360
             * DDM   ***** Preserved *****

607          KK   SR360
608          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
609          KM    28.6 ACRE-FEETx43560/36x3600=9.6cfs
610          RS       1    STOR       0
611          SV       0     .01    28.6
612          SQ       0     9.6     9.6
             * DDM   ***** Preserved *****

613          KK    360C
614          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
615          HC       4
             *
             * The sub-basin area and soil make-up have been updated from CAD file 12/07/00
             * DDM   ***** Updated *****
1                                        HEC-1 INPUT                                          PAGE 17

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

616          KK     370
617          KM   SUB-BASIN 370
618          KM   6-HOUR RAINFALL, PATTERN NO. 1.17 WAS USED TO FIND TC & R FOR THIS BASIN
619          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .991
620          KM     L = 2.90  Kb = .044  Adj. Slope =  294.6
621          BA    .672
622          LG    .340    .320   4.650    .330   8.000
623          UC    .433    .430
624          UA       0       3       5       8      12      20      43      75      90      96
625          UA     100
             *
             * The sub-basin area and soil make-up have been updated from CAD file 12/07/00
             * DDM   ***** Updated *****

626          KK     395
627          KM   SUB-BASIN 395
628          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
629          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
630          KM     L = 1.60  Kb = .051  Adj. Slope =  215.8
631          BA    .199
632          LG    .330    .320   4.900    .300  10.000
633          UC    .342    .411
634          UA       0       3       5       8      12      20      43      75      90      96
635          UA     100
             * DDM   ***** Preserved *****

636          KK    370C
637          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
638          HC       2
             * DDM   ***** Preserved *****

639          KK    R370
640          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
641          KM   ROUTING OF FLOW FROM SUB-BASINS 370 AND 395 TO SUB-BASIN 380.
642          RS      10    FLOW      -1
643          RC    .045    .035    .045   10250    .023
644          RX       0       1      40      46      56      62     102     103
645          RY       3       2       2       0       0       2       2       3
             * DDM   ***** Updated *****

646          KK     380
647          KM   SUB-BASIN 380
648          KM   6-HOUR RAINFALL, PATTERN NO. 1.39 WAS USED TO FIND TC & R FOR THIS BASIN
649          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .987
650          KM     L = 2.20  Kb = .048  Adj. Slope =  114.0
651          BA    .972
652          LG    .300    .310   4.150    .500   7.000
653          UC    .650    .438
654          UA       0       5      16      30      65      77      84      90      94      97
655          UA     100
             * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE 18

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

656          KK    D380
657          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
658          KM   DETENTION/RETENTION BASINS LOCATED WITHIN 33% OF MESA HIGHLANDS
659          KM        MAXIMUM VOLUME DIVERSION = 28.6 acre-feet
             *      1
660          DT   BS380    28.6
661          DI       0   10000
662          DQ       0   10000
             * DDM   ***** Preserved *****

663          KK   RT380
664          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
665          DR   BS380
             * DDM   ***** Preserved *****

666          KK   SR380
667          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
668          KM    28.6 ACRE-FEETx43560/36x3600=9.6cfs
669          RS       1    STOR       0
670          SV       0     .01    28.6
671          SQ       0     9.6     9.6
             * DDM   ***** Preserved *****

672          KK    380C
673          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
674          HC       4
             * DDM   ***** Updated *****

675          KK     390
676          KM   SUB-BASIN 390
677          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
678          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
679          KM     L =  .70  Kb = .050  Adj. Slope =  299.4
680          BA    .244
681          LG    .300    .250   4.700    .380  18.000
682          UC    .188    .097
683          UA       0       5      16      30      65      77      84      90      94      97
684          UA     100
             * DDM   ***** Preserved *****
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 685          KK    D390
 686          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
 687          KM   DETENTION/RETENTION BASINS LOCATED WITHIN THUNDER MOUNTAIN ESTATES
 688          KM        MAXIMUM VOLUME DIVERSION  = 3.5 acre-feet
              *      1
 689          DT   BS390     3.5
 690          DI       0   10000
 691          DQ       0   10000
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 19

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 692          KK   RT390
 693          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
 694          DR   BS390
              * DDM   ***** Preserved *****

 695          KK   SR390
 696          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
 697          KM     3.5 ACRE-FEETx43560/36x3600=1.2cfs
 698          RS       1    STOR       0
 699          SV       0     .01     3.5
 700          SQ       0     1.2     1.2
              * DDM   ***** Preserved *****

 701          KK    390C
 702          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
 703          HC       2
              * DDM   ***** Preserved *****

 704          KK   RR390
 705          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
 706          KM   FROM SUB-BASIN 390 TO SUB-BASIN 400
 707          RS      11    FLOW      -1
 708          RC    .045    .045    .045    8800    .020
 709          RX       0       1      40      46      56      62     102     103
 710          RY       3       2       2       0       0       2       2       3
              * DDM   ***** Updated *****

 711          KK     400
 712          KM   SUB-BASIN 400
 713          KM   6-HOUR RAINFALL, PATTERN NO. 1.12 WAS USED TO FIND TC & R FOR THIS BASIN
 714          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .992
 715          KM     L = 1.64  Kb = .046  Adj. Slope =  110.0
 716          BA    .616
 717          LG    .320    .320   3.130    .930   6.000
 718          UC    .546    .370
 719          UA       0       5      16      30      65      77      84      90      94      97
 720          UA     100
              * DDM   ***** Preserved *****

 721          KK    D400
 722          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
 723          KM   DETENTION/RETENTION BASIN LOCATED WITHIN SAGUARO VISTA SUBDIVISION
 724          KM        MAXIMUM VOLUME DIVERSION = 5.6 ACRE-FEET
              *      1
 725          DT   BS400     5.6
 726          DI       0   10000
 727          DQ       0   10000
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 20

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 728          KK   RT400
 729          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
 730          DR   BS400
              * DDM   ***** Preserved *****

 731          KK   SR400
 732          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
 733          KM     5.6 ACRE-FEETx43560/36x3600 = 2 cfs
 734          RS       1    STOR       0
 735          SV       0     .01     5.6
 736          SQ       0       2       2
              * DDM   ***** Preserved *****

 737          KK    C400
 738          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
 739          HC       2
              * DDM   ***** Preserved *****

 740          KK    400C
 741          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
 742          HC       3
              * DDM   ***** Updated *****

 743          KK     385
 744          KM   SUB-BASIN 385
 745          KM   6-HOUR RAINFALL, PATTERN NO. 1.03 WAS USED TO FIND TC & R FOR THIS BASIN
 746          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .993
 747          KM     L = 2.30  Kb = .045  Adj. Slope =  303.0
 748          BA    .523
 749          LG    .340    .360   5.600    .220  13.000
 750          UC    .346    .321
 751          UA       0       3       5       8      12      20      43      75      90      96
 752          UA     100
              * DDM   ***** Preserved *****

 753          KK    D385
 754          KM   DIVERT FLOW INTO SUB-BASINS 415 & 420
 755          DT   SP385
 756          DI       0    5000
 757          DQ       0    3000
              * DDM   ***** Preserved *****

 758          KK    385R
 759          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
 760          KM   ROUTING OF FLOW DIVERSION FROM SUB-BASIN 385 INTO SUB-BASIN 420
 761          RS      14    FLOW      -1
 762          RC    .045     .04    .045   10250    .022
 763          RX       0       1      40      46      56      62     102     103
 764          RY       3       2       2       0       0       2       2       3
              * DDM   ***** Updated *****
1                                          HEC-1 INPUT                                          PAGE 21
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 765          KK     420
 766          KM   SUB-BASIN 420
 767          KM   6-HOUR RAINFALL, PATTERN NO. 1.31 WAS USED TO FIND TC & R FOR THIS BASIN
 768          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .989
 769          KM     L = 1.91  Kb = .042  Adj. Slope =  120.0
 770          BA    .849
 771          LG    .310    .270   3.880    .580  12.000
 772          UC    .504    .319
 773          UA       0       5      16      30      65      77      84      90      94      97
 774          UA     100
              * DDM   ***** Preserved *****

 775          KK    D420
 776          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
 777          KM   DETENTION/RETENTION BASINS LOCATED WITHIN GRAY FOX SUBDIVISION
 778          KM        MAXIMUM VOLUME DIVERSION = 8.65 acre-feet
              *      1
 779          DT   BS420    8.65
 780          DI       0   10000
 781          DQ       0   10000
              * DDM   ***** Preserved *****

 782          KK   RT420
 783          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
 784          DR   BS420
              * DDM   ***** Preserved *****

 785          KK   SR420
 786          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
 787          KM   38.55 ACRE-FEETx43560/36x3600=13cfs
 788          RS       1    STOR       0
 789          SV       0     .01   38.55
 790          SQ       0      13      13
              * DDM   ***** Preserved *****

 791          KK    420C
 792          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
 793          HC       4   10.87
              * DDM   ***** Updated *****

 794          KK     440
 795          KM   SUB-BASIN 440
 796          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
 797          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
 798          KM     L =  .40  Kb = .039  Adj. Slope =  315.0
 799          BA    .080
 800          LG    .190    .380   6.400    .140  13.000
 801          UC    .121    .072
 802          UA       0       3       5       8      12      20      43      75      90      96
 803          UA     100
              * DDM   ***** Preserved *****
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 804          KK     R70
 805          KM   ROUTE FLOW FROM SUB-BASIN 440 TO C108
 806          RS       1    FLOW      -1
 807          RC     .05    .035     .05    2250     .08
 808          RX    1000    1025    1050    1070    1075    1095    1120    1145
 809          RY      30    22.9    15.7      10      10    15.7    22.9      30
              * DDM   ***** Updated *****

 810          KK     441
 811          KM   SUB-BASIN 441
 812          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
 813          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
 814          KM     L =  .28  Kb = .069  Adj. Slope =  315.0
 815          BA    .010
 816          LG    .300    .250   5.600    .220   5.000
 817          UC    .133    .197
 818          UA       0       5      16      30      65      77      84      90      94      97
 819          UA     100
              * DDM   ***** Preserved *****

 820          KK    C108
 821          KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 440 & 441
 822          HC       2
              * DDM   ***** Preserved *****

 823          KK    DIV4
 824          KM        SPLIT FLOW WITH TWO 42 INCH PIPES TO WEST AND SOUTH
              *      1
 825          DT   SPLIT
 826          DI       0      14      40      82     120     154     180
 827          DQ       0       7      20      41      60      77      90
              * DDM   ***** Preserved *****

 828          KK    R108
 829          KM        ROUTE FLOW FROM SUB-BASIN C108 TO C67
 830          RS       2    FLOW      -1
 831          RC     .05    .035     .05    3200      .1
 832          RX    1000    1025    1050    1070    1075    1095    1120    1145
 833          RY      30    22.9    15.7      10      10    15.7    22.9      30
              * DDM   ***** Updated *****

 834          KK     442
 835          KM   SUB-BASIN 442
 836          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
 837          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
 838          KM     L =  .83  Kb = .055  Adj. Slope =  274.2
 839          BA    .100
 840          LG    .300    .270   3.290    .770   5.000
 841          UC    .229    .231
 842          UA       0       5      16      30      65      77      84      90      94      97
 843          UA     100
              * DDM   ***** Preserved *****
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 844          KK     C67
 845          KM   COMBINE FLOW FROM SUB-BASIN 442 & DIV4
 846          HC       2
              * DDM   ***** Preserved *****
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847          KK    DIV6
848          KM        OFFLINE BASIN WITH 25 FOOT WEIR SET AT 2.5 FEET ABOVE BOTTOM OF CHANNEL
849          KM        FLOW CONTINUES BEYOND BASIN THROUGH 2-30" PIPES
             *      1
850          DT  BASIN4
851          DI       0      10      32      44    79.9   132.5     198   272.9   356.8
852          DQ       0       0       0       0    23.9    67.5     124   190.9   266.8
             * DDM   ***** Preserved *****

853          KK  RTDIV6
854          KM   RETRIEVE FLOW FROM DIVERSION INTO OFFLINE BASIN
855          DR  BASIN4
             * DDM   ***** Preserved *****

856          KK  RFDIV6
857          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
858          KM     3.3 ACRE-FEETx43560/36x3600=1.1cfs
             *      1
859          RS       1    STOR       0
860          SV       0     .01     3.3
861          SQ       0     1.1     1.1
             * DDM   ***** Preserved *****

862          KK   CDIV6
863          KM   HYDROGRAPH COMBINATION FOR OFFLINE BASIN BLEEDOFF
864          HC       2
             * DDM   ***** Updated *****

865          KK     443
866          KM   SUB-BASIN 443
867          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
868          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
869          KM     L =  .71  Kb = .050  Adj. Slope =  315.0
870          BA    .080
871          LG    .250    .190   8.000    .080  10.000
872          UC    .179    .176
873          UA       0       5      16      30      65      77      84      90      94      97
874          UA     100
             * DDM   ***** Preserved *****

875          KK   DIV66
876          KM        DIVERT FLOW INTO 3 NATURAL WASHES WITH ONE 24" PIPE IN EACH WASH.
877          KM        EACH PIPE CAPACITY BASED ON 4 FEET OF HEAD
878          DT   WSH66
879          DI       0      78     100     200
880          DQ       0      78      78      78
             * DDM   ***** Preserved *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

881          KK    R113
882          KM        ROUTE FLOW FROM C113 TO C114
883          RS       1    FLOW      -1
884          RC    .019    .019    .019    1300    .029
885          RX    1000    1004    1008    1012    1018    1022    1026    1030
886          RY      17   15.33   12.67      10      10   12.67   15.33      17
             * DDM   ***** Preserved *****

887          KK    C114
888          KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 67 AND C113
889          HC       2
             * DDM   ***** Updated *****

890          KK     444
891          KM   SUB-BASIN 444
892          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
893          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
894          KM     L =  .33  Kb = .034  Adj. Slope =  315.0
895          BA    .040
896          LG    .130    .350   4.450    .320   1.000
897          UC    .104    .078
898          UA       0       3       5       8      12      20      43      75      90      96
899          UA     100
             * DDM   ***** Preserved *****

900          KK     R58
901          KM   ROUTE FLOW FROM SUB-BASIN 444 TO C107
902          RS       1    FLOW      -1
903          RC     .05    .035     .05    2370   .0516
904          RX    1000    1010    1020    1050    1055    1085    1095    1105
905          RY      19      18      17      10      10      17      18      19
             * DDM   ***** Updated *****

906          KK     445
907          KM   SUB-BASIN 445
908          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
909          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
910          KM     L =  .82  Kb = .036  Adj. Slope =  315.0
911          BA    .190
912          LG    .170    .320   3.470    .590   3.000
913          UC    .171    .114
914          UA       0       5      16      30      65      77      84      90      94      97
915          UA     100
             * DDM   ***** Preserved *****

916          KK    C107
917          KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 444 & 445
918          HC       2
             * DDM   ***** Preserved *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

919          KK    R107
920          KM        ROUTE FLOW FROM C107 TO C109
921          RS       1    FLOW      -1
922          RC     .05    .035     .05     700   .0516
923          RX    1000    1010    1020    1050    1055    1085    1095    1105
924          RY      19      18      17      10      10      17      18      19
             * DDM   ***** Preserved *****

925          KK    RTB2
926          KM        RETRIEVE DIVERTED FLOW FROM BASIN 1
             *      1
927          DR   SPLIT
             * DDM   ***** Preserved *****
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928          KK  RSPLIT
929          KM        ROUTE FLOW FROM SPLIT TO C109
930          RS       1    FLOW      -1
931          RC     .05    .035     .05     800     .05
932          RX    1000    1025    1050    1070    1075    1095    1120    1145
933          RY      30    22.9    15.7      10      10    15.7    22.9      30
             * DDM   ***** Updated *****

934          KK     446
935          KM   SUB-BASIN 446
936          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
937          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
938          KM     L =  .46  Kb = .061  Adj. Slope =  303.9
939          BA    .040
940          LG    .270    .250   4.500    .400  19.000
941          UC    .167    .170
942          UA       0       5      16      30      65      77      84      90      94      97
943          UA     100
             * DDM   ***** Preserved *****

944          KK    C109
945          KM        COMBINE HYDROGRAPHS FROM COMBINES C107 AND C108
946          HC       3
             * DDM   ***** Preserved *****

947          KK    DIV5
948          KM        DIVERT FLOW INTO WASHES TOWARDS WEST
949          KM        DIVERSION THROUGH 36" PIPE WITH 3 FEET OF HEAD
             *      1
950          DT  WSH404
951          DI       0    40.7    71.2   121.6     190     276   379.4   500.6
952          DQ       0      35      35      35      35      35      35      35
             * DDM   ***** Preserved *****

953          KK    R109
954          KM        ROUTE FLOW FROM C109 TO C110
955          RS       1    FLOW      -1
956          RC    .019    .019    .019    3080     .05
957          RX    1000    1005    1010    1015    1025    1030    1035    1040
958          RY   13.75    12.5   11.25      10      10   11.25    12.5   13.75
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT                                                    PAGE 26

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

959          KK     447
960          KM   SUB-BASIN 447
961          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
962          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
963          KM     L =  .49  Kb = .056  Adj. Slope =  221.0
964          BA    .090
965          LG    .250    .270   3.350    .870  30.000
966          UC    .188    .129
967          UA       0       5      16      30      65      77      84      90      94      97
968          UA     100
             * DDM   ***** Preserved *****

969          KK   RT404
970          KM        RETRIEVE DIVERTED FLOW FOR WASH 109
971          DR  WSH404
             * DDM   ***** Preserved *****

972          KK    R404
973          KM        ROUTE FLOW FROM C110 TO C110
974          RS       6    FLOW      -1
975          RC    .019    .019    .019    3540     .03
976          RX    1000    1012    1016    1020    1025    1029    1033    1045
977          RY      15      12      11      10      10      11      12      15
             * DDM   ***** Preserved *****

978          KK    C110
979          KM   COMBINE HYDROGRAPHS FROM SUB-BASIN 447 AND R404
980          HC       3
             * DDM   ***** Preserved *****

981          KK    R110
982          KM        ROUTE FLOW FROM C110 TO C115
983          RS       1    FLOW      -1
984          RC    .019    .019    .019     580   .0291
985          RX    1000    1012    1016    1020    1035    1039    1043    1055
986          RY      15      12      11      10      10      11      12      15
             * DDM   ***** Preserved *****

987          KK    C115
988          KM        COMBINE HYDROGRAPHS FROM C114 AND C110
989          HC       2
             * DDM   ***** Preserved *****

990          KK    R115
             * ******OUTFLOW FROM THIS ROUTING IS GREATER THAN INFLOW TO THE
             * ******ROUTING BY 2cfs.  THIS IS NOTED BUT LEFT UNCHANGED WITHIN THE MODEL
991          KM        ROUTE FLOW FROM C115 TO C119
992          RS       1    FLOW      -1
993          RC    .019    .019    .019    2125    .029
994          RC    .019    .019    .019     580   .0291
995          RX    1000    1012    1016    1020    1035    1039    1043    1055
996          RY      15      12      11      10      10      11      12      15
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT                                                    PAGE 27

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

997          KK     448
998          KM   SUB-BASIN 448
999          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1000         KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1001         KM     L =  .36  Kb = .042  Adj. Slope =  315.0
1002         BA    .045
1003         LG    .170    .310   4.200    .390  11.000
1004         UC    .121    .092
1005         UA       0       5      16      30      65      77      84      90      94      97
1006         UA     100
             * DDM   ***** Updated *****

1007         KK     449
1008         KM   SUB-BASIN 449
1009         KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
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1010        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1011        KM     L =  .40  Kb = .054  Adj. Slope =  315.0
1012        BA    .050
1013        LG    .260    .280   3.500    .640   6.000
1014        UC    .150    .119
1015        UA       0       5      16      30      65      77      84      90      94      97
1016        UA     100
            * DDM   ***** Preserved *****

1017        KK   C6364
1018        KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 448 & 449
1019        HC       2
            * DDM   ***** Preserved *****

1020        KK   R6364
1021        KM   ROUTE FLOW FROM C116 AND SUB-BASINS 448 AND 449
1022        RS       4    FLOW      -1
1023        RC     .05    .035     .05    4375   .0333
1024        RX    1000    1027    1053    1080    1090    1117    1143    1170
1025        RY      15   13.33   11.67      10      10   11.67   13.33      15
            * DDM   ***** Updated *****

1026        KK     450
1027        KM   SUB-BASIN 450
1028        KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1029        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1030        KM     L =  .85  Kb = .057  Adj. Slope =  210.5
1031        BA    .070
1032        LG    .340    .350   3.630    .570   4.000
1033        UC    .258    .329
1034        UA       0       3       5       8      12      20      43      75      90      96
1035        UA     100
            * DDM   ***** Updated *****
1                                          HEC-1 INPUT                                          PAGE 28

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1036        KK     451
1037        KM   SUB-BASIN 451
1038        KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1039        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1040        KM     L =  .57  Kb = .063  Adj. Slope =  175.0
1041        BA    .025
1042        LG    .340    .340   3.290    .750   3.000
1043        UC    .237    .392
1044        UA       0       3       5       8      12      20      43      75      90      96
1045        UA     100
            * DDM   ***** Preserved *****

1046        KK    RT66
1047        KM        RETRIEVE DIVERTED FLOW FROM SUB-BASIN 66
1048        DR   WBH66
            * DDM   ***** Updated *****

1049        KK     452
1050        KM   SUB-BASIN 452
1051        KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1052        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1053        KM     L =  .43  Kb = .055  Adj. Slope =  315.0
1054        BA    .040
1055        LG    .260    .280   3.700    .550   9.000
1056        UC    .154    .148
1057        UA       0       5      16      30      65      77      84      90      94      97
1058        UA     100
            * DDM   ***** Preserved *****

1059        KK   C6465
1060        KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 443 AND 452
1061        HC       2
            * DDM   ***** Preserved *****

1062        KK   R6566
1063        KM        ROUTE FLOW FROM DIVERSIONS 65 AND 66 TO C116
1064        RS       2    FLOW      -1
1065        RC     .05    .035     .05    2435   .0282
1066        RX    1000    1045    1090    1150    1160    1220    1265    1310
1067        RY      25      23      20      10      10      20      23      25
            * DDM   ***** Preserved *****

1068        KK    C116
1069        KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 450 & 451 AND R6364 & R6465
1070        HC       4
            * DDM   ***** Preserved *****

1071        KK  BASIN5
1072        KM        RESERVOIR WITHIN PARCEL 31      2-48 INCH PIPES AT OUTFALL
1073        KM        BASIN 5 FEET DEEP
1074        RS       1    ELEV       0
1075        SV       0     4.5     9.9
1076        SQ       0      69     190
1077        SE       0     2.5       5
            * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 29

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1078        KK    R116
1079        KM   ROUTE FLOW FROM C116 TO C117
1080        RS       2    FLOW      -1
1081        RC     .05    .035     .05    1300   .0333
1082        RX    1000    1100    1200    1300    1320    1420    1520    1620
1083        RY      13      12      11      10      10      11      12      13
            * DDM   ***** Updated *****

1084        KK     453
1085        KM   SUB-BASIN 453
1086        KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1087        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1088        KM     L =  .58  Kb = .058  Adj. Slope =  138.0
1089        BA    .060
1090        LG    .290    .300   3.290    .820  18.000
1091        UC    .242    .246
1092        UA       0       5      16      30      65      77      84      90      94      97
1093        UA     100
            * DDM   ***** Preserved *****

1094        KK    C117
1095        KM   COMBINE HYDROGRAPHS FROM SUB-BASIN 453 AND R116
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1096        HC       2
            * DDM   ***** Preserved *****

1097        KK    C118
1098        KM   COMBINE HYDROGRAPHS FROM R115 AND C117
1099        HC       2
            * DDM   ***** Preserved *****

1100        KK    R118
1101        KM        ROUTE FLOW FROM C118 TO  DIV7
1102        RS       1     FLOW      -1
1103        RC    .019    .019    .019    1500    .024
1104        RX    1000    1012    1016    1020    1035    1039    1043    1055
1105        RY      15      12      11      10      10      11      12      15
            * DDM   ***** Preserved *****

1106        KK    DIV7
1107        KM        OFFLINE BASIN AT NORTH MOUNTAIN RIDGE   FLOWS ENTER BASIN OVER
1108        KM        30' WEIR SET AT 5.3' ABOVE THE CHANNEL BOTTOM
            *      1
1109        DT  BASIN6
1110        DI       0     363     487     563     645     844
1111        DQ       0       3      47      83     125     244
            * DDM   ***** Preserved *****

1112        KK  RTDIV7
1113        KM   RETRIEVE FLOW FROM DIVERSION INTO OFFLINE BASIN
1114        DR  BASIN6
            * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 30

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1115        KK  RFDIV7
1116        KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1117        KM     3.6 ACRE-FEETx43560/36x3600=1.2cfs
1118        RS       1     STOR       0
1119        SV       0     .01     3.6
1120        SQ       0      1.2     1.2
            * DDM   ***** Preserved *****

1121        KK   CDIV7
1122        KM   HYDROGRAPH COMBINATION FOR OFFLINE BASIN BLEEDOFF
1123        HC       2
            * DDM   ***** Updated *****

1124        KK     454
1125        KM   SUB-BASIN 454
1126        KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1127        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
1128        KM     L = 1.23  Kb = .051  Adj. Slope =  163.0
1129        BA    .180
1130        LG    .300    .310   3.780    .560  14.000
1131        UC    .333    .343
1132        UA       0       5      16      30      65      77      84      90      94      97
1133        UA     100
            * DDM   ***** Preserved *****

1134        KK    C119
1135        KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 454 AND C119
            *      1       2
1136        HC       2
            * DDM   ***** Preserved *****

1137        KK    R454
1138        KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
1139        KM   ROUTE FLOW FROM C119 TO 415C
1140        RS       2     FLOW      -1
1141        RC    .045    .035    .045    2200    .009
1142        RX       0      .5       1      33      42      67    67.5      68
1143        RY       5       4       4       0       0       6       6       6
            *
            * The sub-basin area and soil make-up have been updated from CAD file 12/07/00
            * DDM   ***** Updated *****

1144        KK     415
1145        KM   SUB-BASIN 415
1146        KM   6-HOUR RAINFALL, PATTERN NO. 1.11 WAS USED TO FIND TC & R FOR THIS BASIN
1147        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .992
1148        KM     L = 2.58  Kb = .044  Adj. Slope =  298.5
1149        BA    .608
1150        LG    .320    .290   4.500    .400  15.000
1151        UC    .387    .366
1152        UA       0       5      16      30      65      77      84      90      94      97
1153        UA     100
            * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 31

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1154        KK   RT385
1155        KM   RETRIEVE FLOW FROM DIVERSION OF SUB-BASIN 385 INTO SUB-BASIN 415
1156        DR   SF385
            * DDM   ***** Preserved *****

1157        KK   RR385
1158        KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
1159        KM   ROUTING OF SPLIT FLOW FROM SUB-BASIN 385 TO SUB-BASIN 415
1160        RS       8     FLOW      -1
1161        RC    .045     .04    .045    5878    .024
1162        RX       0       1      40      46      56      62     102     103
1163        RY       3       2       2       0       0       2       2       3
            * DDM   ***** Preserved *****

1164        KK    415C
1165        KM   HYDROGRAPH COMBINATION OF SUB-BASINS 415, R454 & SPLIT FLOW FROM 385
1166        HC       3    1.71
            * DDM   ***** Preserved *****

1167        KK    R415
1168        KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
1169        KM   ROUTING OF FLOW FROM 415C TO 455C
1170        RS       2     FLOW      -1
1171        RC    .045     .03    .045    4100    .024
1172        RX       0      .5       1       8      16      23    23.5      24
1173        RY       8       8       8       0       0       8       8       8
            * DDM   ***** Updated *****
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1174          KK     455
1175          KM   SUB-BASIN 455
1176          KM   6-HOUR RAINFALL, PATTERN NO. 1.46 WAS USED TO FIND TC & R FOR THIS BASIN
1177          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .986
1178          KM     L = 1.70  Kb = .041  Adj. Slope =  146.0
1179          BA   1.111
1180          LG    .270    .280   3.700    .640  24.000
1181          UC    .425    .206
1182          UA       0       5      16      30      65      77      84      90      94      97
1183          UA     100
              * DDM   ***** Preserved *****

1184          KK    D455
1185          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
1186          KM   DETENTION/RETENTION BASINS LOCATED WITHIN LAS SENDAS ADDENDUM III
1187          KM   FOR BASIN #: 30      34      43      47&58
1188          KM        MAXIMUM VOLUME DIVERSION = 74.1 acre-feet
              *      1
1189          DT   BS455    74.1
1190          DI       0   10000
1191          DQ       0   10000
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 32

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1192          KK   RT455
1193          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
1194          DR   BS455
              * DDM   ***** Preserved *****

1195          KK   SR455
1196          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1197          KM    74.1 ACRE-FEETx43560/36x3600=25cfs
1198          RS       1    STOR       0
1199          SV       0     .01    74.1
1200          SQ       0      25      25
              * DDM   ***** Preserved *****

1201          KK    C455
1202          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 455 AND DIVERTED BASIN STORAGE OF 455
1203          HC       2
              * DDM   ***** Preserved *****

1204          KK    455C
1205          KM  HYDROGRAPH COMBINATION OF 420C, R415 AND C455
              *      1       2
1206          HC       3
              * DDM   ***** Preserved *****

1207          KK   SR440
1208          KM   SPOOK HILL FRS PLANS DATED 6/15/77
1209          KM   OUTLET PIPE=7'x7.5'RCBC; L=70 INLET INV.=1566; OUTLET INV.=1566
1210          KM   EMERGENCY SPILLWAY ELEV.=1582; PRINCIPLE SPILLWAY ELEV.=1577.5
1211          KM   STORAGE VOLUME BELOW PRINCIPLE SPILLWAY FOR SEDIMENT = 200 ACRE-FEET
              *   ESE = 1583.86 ft; PSE = 1579.36 ft; Sediment Vol. = 271 Ac-Ft.
1212          RS       1    STOR       0
1213          SV       0      81     363     533     719     925    1120    1399    1668    4051
1214          SQ       0       0      10     180     367     595     800    1231    2625   24500
1215          SE      76      78      80      81      82      83    83.9      85      86      92
              * DDM   ***** Preserved *****

1216          KK   RR455
1217          KM   ROUTE FLOW FROM SPOOK HILL FRS TO SUB-BASIN 462
1218          RS      20    FLOW      -1
1219          RC    .035    .025    .035    9200   .0002
1220          RX       0       1       2      28      58      84      85      86
1221          RY    13.5    13.5    13.5       0       0    13.5    13.5    13.5
              * DDM   ***** Updated *****

1222          KK     456
1223          KM   SUB-BASIN 456
1224          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1225          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
1226          KM     L =  .94  Kb = .045  Adj. Slope =  315.0
1227          BA    .260
1228          LG    .300    .380   5.600    .200  12.000
1229          UC    .200    .127
1230          UA       0       5      16      30      65      77      84      90      94      97
1231          UA     100
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 33

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1232          KK    DIV1
1233          KM        DIVERT FLOW INTO OFFLINE DETENTION BASIN
1234          KM        WEIR FOR BASIN SET AT 4 FEET ABOVE CHANNEL BOTTOM
              *      1
1235          DT  BASIN1
1236          DI       0    11.1   127.9   234.4   577.7   789.9  1025.5  1280.9  1555.7
1237          DQ       0       0       0    47.7     248   381.8   533.6   701.5     884
              * DDM   ***** Preserved *****

1238          KK    DIV2
1239          KM        SPLIT OUT FLOW FOR WASHES THAT FLOW TO THE SOUTH FROM
1240          KM        WASHES THAT DRAIN TO THE WES, SOUTHERN WASHES FED BY 30" & 24" PIPE
1241          DT    WA30
1242          DI       0    11.1   127.9   189.6   329.7     408   491.9   579.4   671.7
1243          DQ       0    11.1    38.4    48.2      63    69.5      76      81      86
              * DDM   ***** Preserved *****

1244          KK    R456
1245          KM        ROUTE FLOW FROM SUB-BASIN 51 TO C101
1246          RS       2    FLOW      -1
1247          RC     .05    .035     .05    3800    .044
1248          RX    1000    1010    1020    1036    1041    1057    1067    1077
1249          RY   14.88   14.44      14      10      10      14   14.44   14.88
              * DDM   ***** Updated *****

1250          KK     457
1251          KM   SUB-BASIN 457
1252          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1253          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
1254          KM     L = 1.01  Kb = .045  Adj. Slope =  308.8
1255          BA    .190
1256          LG    .270    .330   3.950    .460   6.000
1257          UC    .213    .172
```

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1258        UA       0       5      16      30      65      77      84      90      94      97
1259        UA     100
            * DDM   ***** Preserved *****

1260        KK    C101
1261        KM        COMBINE HYDROGRAPHS FROM SUB-BASINS 50 AND 51
1262        HC       2
            * DDM   ***** Preserved *****

1263        KK    DIV3
1264        KM        RESERVOIR AT THE EDGE OF THE PROPERTY   FLOW FROM CHANNEL
1265        KM        DIVERTED  INTO OFFLINE BASIN A 25' WEIR SET AT ELEVATION 1808 FT
            *      1
1266        DT  BASIN2
1267        DI       0      36      70     110     180   313.5     402   500.9
1268        DQ       0       0       0       0       0    67.5     124   190.9
            * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 34

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1269        KK  RTDIV3
1270        KM   RETRIEVE FLOW FROM DIVERSION INTO OFFLINE BASIN
1271        DR  BASIN2
            * DDM   ***** Preserved *****

1272        KK  RFDIV3
1273        KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1274        KM     5.0 ACRE-FEETx43560/36x3600=1.7cfs
1275        RS       1    STOR       0
1276        SV       0     .01       5
1277        SQ       0     1.7     1.7
            * DDM   ***** Preserved *****

1278        KK   CDIV3
1279        KM   HYDROGRAPH COMBINATION FOR OFFLINE BASIN BLEEDOFF
1280        HC       2
            * DDM   ***** Preserved *****

1281        KK    R101
1282        KM        ROUTE FLOW FROM SUBBASIN C101 TO C103
1283        RS       1    FLOW      -1
1284        RC     .05    .035     .05    1450     .05
1285        RX    1000    1010    1020    1036    1041    1057    1067    1077
1286        RY      15    14.5      14      10      10      14    14.5      15
            * DDM   ***** Updated *****

1287        KK     458
1288        KM   SUB-BASIN 458
1289        KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1290        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
1291        KM     L =  .76  Kb = .048  Adj. slope =  299.0
1292        BA    .190
1293        LG    .290    .330   5.800    .190   6.000
1294        UC    .188    .119
1295        UA       0       5      16      30      65      77      84      90      94      97
1296        UA     100
            * DDM   ***** Preserved *****

1297        KK    C103
1298        KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 55 AND C101
1299        HC       2
            * DDM   ***** Preserved *****

1300        KK    R103
1301        KM        ROUTE FLOW FROM SUBBASIN C103 TO C106
1302        RS       1    FLOW      -1
1303        RC     .05    .035     .05     900     .03
1304        RX    1000    1010    1020    1030    1050    1060    1070    1080
1305        RY   13.16   12.83    12.5      10      10    12.5   12.83   13.16
            * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 35

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1306        KK    RT30
1307        KM        RETRIEVE DIVERTED FLOW FOR WASH BELOW 30 INCH PIPE
1308        DR    WA30
            * DDM   ***** Preserved *****

1309        KK     R30
1310        KM        ROUTE FLOW FROM WASH DIVERSION TO COMBINE C52
1311        RS       1    FLOW      -1
1312        RC     .05    .035     .05    1630     .05
1313        RX    1000    1010    1020    1036    1041    1057    1067    1077
1314        RY      15    14.5      14      10      10      14    14.5      15
            * DDM   ***** Preserved *****

1315        KK    RTB1
1316        KM        RETRIEVE DIVERTED FLOW FROM BASIN 1
            *      1       2
1317        DR  BASIN1
            * DDM   ***** Preserved *****

1318        KK      B1
1319        KM        ROUTE FLOW THROUGH OFFLINE DETENTION BASIN
1320        KM        FLOW OUTLETS THROUGH A 30 INCH OUTLET PIPE
            *      1       2
1321        RS       1    ELEV       0
1322        SV              .7     1.4     2.3     2.7     3.2
1323        SQ       0       5      16      28    32.5      37
1324        SE       0       1       2       3     3.5       4
            * DDM   ***** Preserved *****

1325        KK     RB1
1326        KM        ROUTE FLOW FROM BASIN DIVERSION TO COMBINE C52
1327        RS       2    FLOW      -1
1328        RC     .05    .035     .05    1720     .05
1329        RX    1000    1010    1020    1036    1041    1057    1067    1077
1330        RY      15    14.5      14      10      10      14    14.5      15
            * DDM   ***** Preserved *****

1331        KK    CDIV
1332        KM        COMBINE FLOWS FROM WA30 AND BASIN 1
1333        HC       2     .12
            * DDM   ***** Updated *****

1334        KK     459
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1335          KM   SUB-BASIN 459
1336          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1337          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1338          KM     L =  .35  Kb = .052  Adj. Slope =  251.6
1339          BA   .030
1340          LG   .220    .300   3.330    .710   8.000
1341          UC   .146    .139
1342          UA      0       5      16      30      65      77      84      90      94      97
1343          UA    100
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                                    PAGE 36

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1344          KK    C52
1345          KM        COMBINE FLOWS FROM SUB-BASIN 52 WA30 AND BASIN 1
1346          HC       2
              * DDM   ***** Preserved *****

1347          KK     R52
1348          KM        ROUTE FLOW FROM SUBBASIN 52 TO C102
1349          RS       2    FLOW      -1
1350          RC     .05    .035     .05    2000     .05
1351          RX    1000    1010    1020    1036    1041    1057    1067    1077
1352          RY      15    14.5      14      10      10      14    14.5      15
              * DDM   ***** Updated *****

1353          KK     460
1354          KM   SUB-BASIN 460
1355          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1356          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
1357          KM     L =  .62  Kb = .058  Adj. Slope =  194.0
1358          BA   .140
1359          LG   .250    .260   3.740    .690  27.000
1360          UC   .221    .145
1361          UA      0       5      16      30      65      77      84      90      94      97
1362          UA    100
              * DDM   ***** Preserved *****

1363          KK    C102
1364          KM        COMBINE HYDROGRAPHS FROM SUB-BASINS 52 AND 53
1365          HC       2
              * DDM   ***** Preserved *****

1366          KK  BASIN3
1367          KM        RESERVOIR AT CLUBHOUSE LOCATION 1-30 INCH PIPE AT OUTFALL
1368          KM        BOTTOM OF BASIN AT 6 FEET ABOVE 1795 ELEVATION
1369          RS       1    ELEV       0
1370          SA       0       0       0       0     .34    1.59    1.81    1.96    2.13     2.3
              *      0       0       0       0    1.14    3.25    5.52    9.23
1371          SQ       0      22      45    47.4      48      51      57      62      67      73
1372          SE    1795  1797.5    1800  1800.4  1800.5    1801    1802    1803    1804  1805.5
              * DDM   ***** Preserved *****

1373          KK      R3
1374          KM        ROUTE FLOW FROM C102 to C106
1375          RS       4    FLOW      -1
1376          RC     .05     .03     .05    2750   .0375
1377          RX    1000    1010    1020    1052    1086    1118    1128    1138
1378          RY    19.2    18.4      18      10      10      18    18.4    19.2
              * DDM   ***** Updated *****

1379          KK     461
1380          KM   SUB-BASIN 461
1381          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1382          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
1383          KM     L =  .83  Kb = .052  Adj. Slope =  181.0
1384          BA   .120
1                                          HEC-1 INPUT                                                    PAGE 37

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1385          LG   .270    .250   4.250    .450  21.000
1386          UC   .242    .221
1387          UA      0       5      16      30      65      77      84      90      94      97
1388          UA    100
              * DDM   ***** Preserved *****

1389          KK    C104
1390          KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 54 AND R102
1391          HC       2
              * DDM   ***** Preserved *****

1392          KK    C106
1393          KM        COMBINE HYDROGRAPHS FROM SUB-BASIN C103 AND C104
1394          HC       2
              * DDM   ***** Preserved *****

1395          KK    R106
1396          KM        ROUTE FLOW FROM C106 TO C49
1397          RS       2    FLOW      -1
1398          RC     .05    .035     .05    3950    .033
1399          RX    1000    1010    1020    1030    1050    1060    1070    1080
1400          RY   13.16   12.83    12.5      10      10    12.5   12.83   13.16
              * DDM   ***** Updated *****

1401          KK     462
1402          KM   SUB-BASIN 462
1403          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
1404          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
1405          KM     L =  .97  Kb = .045  Adj. Slope =  297.7
1406          BA   .301
1407          LG   .300    .330   5.300    .240  12.000
1408          UC   .208    .126
1409          UA      0       5      16      30      65      77      84      90      94      97
1410          UA    100
              * DDM   ***** Preserved *****

1411          KK     C56
1412          KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 56 AND C106
              *      1       2
1413          HC       2
              * DDM   ***** Updated *****

1414          KK     480
1415          KM   SUB-BASIN 480
1416          KM   6-HOUR RAINFALL, PATTERN NO. 1.22 WAS USED TO FIND TC & R FOR THIS BASIN
1417          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .990
1418          KM     L = 1.21  Kb = .042  Adj. Slope =  165.0
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1419          BA    .731
1420          LG    .270    .270   3.580    .730  27.000
1421          UC    .304    .137
1422          UA      0       5      16      30      65      77      84      90      94      97
1423          UA    100
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 38

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1424          KK    D480
1425          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
1426          KM   DETENTION/RETENTION BASINS LOCATED WITHIN LAS SENDAS ADDENDUM III
1427          KM   FOR BASIN #: 18 & 26
1428          KM        MAXIMUM VOLUME DIVERSION = 16.5 acre-feet
              *      1
1429          DT   BS480    16.5
1430          DI       0   10000
1431          DQ       0   10000
              * DDM   ***** Preserved *****

1432          KK   RT480
1433          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
1434          DR   BS480
              * DDM   ***** Preserved *****

1435          KK   SR480
1436          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1437          KM    16.5 ACRE-FEETx43560/36x3600=5.5cfs
1438          RS       1    STOR       0
1439          SV       0     .01    16.5
1440          SQ       0     5.6     5.6
              * DDM   ***** Preserved *****

1441          KK    C480
1442          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
1443          HC       2
              * DDM   ***** Preserved *****

1444          KK    480C
1445          KM   HYDROGRAPH COMBINATION FOR THE ENTIRE WATERSHED AT THE SALT RIVER
1446          HC       3    2.09
              * DDM   ***** Preserved *****

1447          KK    R480
1448          KM   ROUTE FLOW FROM SUB-BASIN 480 TO RR480
1449          RS       1    FLOW      -1
1450          RC    .025    .025    .025    1800     .05
1451          RX       0       1      20      32      62      74      93      94
1452          RY      13      12      12       0       0      12      12      13
              * DDM   ***** Preserved *****

1453          KK   RR480
1454          KM   ROUTE FLOW FROM SUB-BASIN 480 TO SUB-BASIN 500
1455          RS       3    FLOW      -1
1456          RC    .055     .05    .055    6500     .05
1457          RX       0       1       2      28      58      84      85      86
1458          RY    13.5    13.5    13.5       0       0    13.5    13.5    13.5
              * DDM   ***** Updated *****
1                                          HEC-1 INPUT                                          PAGE 39

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1459          KK     500
1460          KM   SUB-BASIN 500
1461          KM   6-HOUR RAINFALL, PATTERN NO. 1.36 WAS USED TO FIND TC & R FOR THIS BASIN
1462          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .988
1463          KM     L = 2.77  Kb = .042  Adj. Slope =  286.8
1464          BA    .930
1465          LG    .350    .400   6.000    .170   9.000
1466          UC    .417    .330
1467          UA      0       3       5       8      12      20      43      75      90      96
1468          UA    100
              * DDM   ***** Preserved *****

1469          KK    500C
1470          KM   HYDROGRAPH COMBINATION FOR THE ENTIRE WATERSHED AT THE SALT RIVER
1471          HC       2    3.02
1472          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   43          10
                V
                V
   53         R10
                V
                V
   59         R12
                .
                .
   65           .          20
                .           .
                .           .
   75         C20............
                V
                V
   78         R20
                .
                .
   84           .          40
                .           .
                .           .
   94           .           .          60
                .           .           .
                .           .           .
  104         60C........................
                V
                V
  107        SR60
                V
                V
  116         R60
                V
                V
  122        RR60
                .
                .
  128           .          80
                .           .
                .           .
  138         80C............
                V
                V
  141         R80
                .
                .
  147           .         100
                .           .
                .           .
  157        100C............
                V
                V
  160        R100
                .
                .
  166           .         120
                .           .
                .           .
  176        120C............
                V
                V
  179        R120
                .
                .
  185           .         140
                .           .
                .           .
  195           .           .         150
                .           .           V
                .           .           V
  205           .           .        R150
                .           .           V
                .           .           V
  211           .           .        R152
                .           .           .
                .           .           .
  217           .           .           .         160
                .           .           .           .
                .           .           .           .
  227           .           .           .           .         180
                .           .           .           .           .
                .           .           .           .           .
  237        180C.............................................
                .
                .
  240           .         210
                .           V
                .           V
  250           .        R210
                .           .
                .           .
  256           .           .         240
                .           .           .
                .           .           .
  266           .        240C............
                .           V
                .           V
  269           .       SR240
                .           .
                .           .
  276           .           .         220
                .           .           .
                .           .           .
  286           .        220C............
                .           V
                .           V
  289           .       SR220
                .           .
                .           .
  296           .           .         190
                .           .           V
                .           .           V
  306           .           .        R190
                .           .           V
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                .           .           V
312             .           .        R192
                .           .           .
                .           .           .
318             .           .           .        200
                .           .           .          .
                .           .           .          .
328             .       200C.......................
                .           V
                .           V
331             .      SR200
                .           V
                .           V
338             .      200SR
                .           .
                .           .
345         C180............
                V
                V
348        SR180
                V
                V
357         R180
                .
                .
366             .        260
                .           .
                .           .
376         260C............
                V
                V
379         R260
                .
                .
388             .        280
                .           .
                .           .
398         280C............
                V
                V
401         R280
                .
                .
410             .        300
                .           .
                .           .
420         300C............
                V
                V
423         R300
                .
                .
432             .        305
                .           .
                .           .
442         305C............
                V
                V
445         R305
                .
                .
454             .        350
                .           .
                .           .
467             .           .-------->   SF350
464             .       D350
                .           V
                .           V
470             .       350R
                .           .
                .           .
477             .           .        310
                .           .           .
                .           .           .
487             .       C310............
                .           V
                .           V
490             .       R310
                .           .
                .           .
497             .           .        320
                .           .           .
                .           .           .
512             .           .           .-------->   BS320
507             .           .       D320
                .           .           .
                .           .           .
517             .           .           .          .<-------   BS320
515             .           .           .      RT320
                .           .           .          V
                .           .           .          V
518             .           .           .      SR320
                .           .           .          .
                .           .           .          .
524         C320.................................
                .
                .
527             .        340
                .           .
                .           .
542             .           .-------->   BS340
537             .       D340
                .           .
                .           .
547             .           .           .<-------   BS340
545             .           .       RT340
                .           .           V
                .           .           V
548             .           .       SR340
                .           .           .
                .           .           .
554         C340........................
                .
                .
559             .           .<-------   SF350
557             .      RT350
                .           V
                .           V
560             .      RR350
                .           .
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567          .          .        355
             .          .          .
             .          .          .
577          .      C355............
             .         V
             .         V
580          .      R355
             .          .
             .          .
587          .          .        360
             .          .          .
             .          .          .
601          .          .          .-------->   BS360
597          .          .      D360
             .          .          .
             .          .          .
606          .          .          .          .<--------   BS360
604          .          .          .      RT360
             .          .          .         V
             .          .          .         V
607          .          .          .      SR360
             .          .          .          .
             .          .          .          .
613       360C...............................
             .
             .
616          .       370
             .          .
             .          .
626          .          .        395
             .          .          .
             .          .          .
636          .      370C............
             .         V
             .         V
639          .      R370
             .          .
             .          .
646          .          .        380
             .          .          .
             .          .          .
660          .          .          .-------->   BS380
656          .          .      D380
             .          .          .
             .          .          .
665          .          .          .          .<--------   BS380
663          .          .          .      RT380
             .          .          .         V
             .          .          .         V
666          .          .          .      SR380
             .          .          .          .
             .          .          .          .
672       380C...............................
             .
             .
675          .       390
             .          .
             .          .
689          .          .-------->   BS390
685          .      D390
             .          .
             .          .
694          .          .          .<--------   BS390
692          .          .      RT390
             .          .         V
             .          .         V
695          .          .      SR390
             .          .          .
             .          .          .
701          .      390C............
             .         V
             .         V
704          .     RR390
             .          .
             .          .
711          .          .        400
             .          .          .
             .          .          .
725          .          .          .-------->   BS400
721          .          .      D400
             .          .          .
             .          .          .
730          .          .          .          .<--------   BS400
728          .          .          .      RT400
             .          .          .         V
             .          .          .         V
731          .          .          .      SR400
             .          .          .          .
             .          .          .          .
737          .          .      C400............
             .          .          .
             .          .          .
740       400C........................
             .
             .
743          .       385
             .          .
             .          .
755          .          .-------->   SF385
753          .      D385
             .         V
             .         V
758          .      385R
             .          .
             .          .
765          .          .        420
             .          .          .
             .          .          .
779          .          .          .-------->   BS420
775          .          .      D420
             .          .          .
             .          .          .
784          .          .          .          .<--------   BS420
782          .          .          .      RT420
             .          .          .         V
             .          .          .         V
785          .          .          .      SR420
             .          .          .          .
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791     420C...............................
          .
794       .        440
          .         V
          .         V
804       .       R70
          .         .
          .         .
810       .         .        441
          .         .         .
          .         .         .
820       .      C108...........
          .         .
          .         .
825       .         .------->  SPLIT
823       .      DIV4
          .         V
          .         V
828       .      R108
          .         .
          .         .
834       .         .        442
          .         .         .
          .         .         .
844       .       C67...........
          .         .
          .         .
850       .         .------->  BASIN4
847       .      DIV6
          .         .
          .         .
855       .         .          .<-------  BASIN4
853       .         .     RTDIV6
          .         .         V
          .         .         V
856       .         .     RFDIV6
          .         .         .
          .         .         .
862       .     CDIV6...........
          .         .
          .         .
865       .         .        443
          .         .         .
          .         .         .
878       .         .         .------->  WSH66
875       .         .      DIV66
          .         .         V
          .         .         V
881       .         .       R113
          .         .         .
          .         .         .
887       .      C114...........
          .         .
          .         .
890       .         .        444
          .         .         V
          .         .         V
900       .         .        R58
          .         .         .
          .         .         .
906       .         .         .        445
          .         .         .         .
          .         .         .         .
916       .         .       C107...........
          .         .         V
          .         .         V
919       .         .       R107
          .         .         .
          .         .         .
927       .         .         .          .<-------   SPLIT
925       .         .         .       RTB2
          .         .         .         V
          .         .         .         V
928       .         .         .     RSPLIT
          .         .         .         .
          .         .         .         .
934       .         .         .         .        446
          .         .         .         .         .
          .         .         .         .         .
944       .         .       C109........................
          .         .         .
          .         .         .
950       .         .         .-------> WSH404
947       .         .       DIV5
          .         .         V
          .         .         V
953       .         .       R109
          .         .         .
          .         .         .
959       .         .         .        447
          .         .         .         .
          .         .         .         .
971       .         .         .         .          .<-------  WSH404
969       .         .         .         .      RT404
          .         .         .         .         V
          .         .         .         .         V
972       .         .         .         .       R404
          .         .         .         .         .
          .         .         .         .         .
978       .         .       C110........................
          .         .         V
          .         .         V
981       .         .       R110
          .         .         .
          .         .         .
987       .      C115...........
          .         V
          .         V
990       .      R115
          .         .
          .         .
997       .         .        448
          .         .         .
          .         .         .
1007      .         .         .        449
          .         .         .         .
          .         .         .         .
1017      .         .      C6364...........
          .         .         V
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                                  V
1020                           R6364
                                   .
1026                               .          450
                                   .            .
1036                               .            .          451
                                   .            .            .
1048                               .            .            .          .<-------   WSH66
1046                               .            .            .       RT66
                                   .            .            .          .
1049                               .            .            .          .        452
                                   .            .            .          .          .
1059                               .            .            .       C6465............
                                   .            .            .          V
1062                               .            .            .          V
                                   .            .            .       R6566
                                   .            .            .          .
1068                            C116.................................
                                   V
                                   V
1071                           BASIN5
                                   V
                                   V
1078                            R116
                                   .
1084                               .          453
                                   .            .
1094                            C117............
                                   .
1097                         C118............
                                V
                                V
1100                         R118
                                .
                                .-------> BASIN6
1109
1106                         DIV7
                                .
                                .
1114                                .<-------  BASIN6
1112                           RTDIV7
                                   V
                                   V
1115                           RFDIV7
                                   .
1121                        CDIV7............
                                .
                                .
1124                                454
                                   .
                                   .
1134                         C119............
                                V
                                V
1137                         R454
                                .
                                .
1144                                415
                                   .
                                   .
1156                               .          .<-------   SF385
1154                               .       RT385
                                   .          V
                                   .          V
1157                               .       RR385
                                   .          .
                                   .          .
1164                         415C........................
                                V
                                V
1167                         R415
                                .
                                .
1174                                455
                                   .
                                   .
1189                               .-------> BS455
1184                           D455
                                   .
                                   .
1194                               .          .<-------   BS455
1192                               .       RT455
                                   .          V
                                   .          V
1195                               .       SR455
                                   .          .
                                   .          .
1201                           C455............
                                   .
                                   .
1204                     455C........................
                            V
                            V
1207                     SR440
                            V
                            V
1216                     RR455
                                .
                                .
1222                            456
                                .
                                .
1235                            .-------> BASIN1
1232                         DIV1
                                .
                                .
1241                            .-------> WA30
1238                         DIV2
                                V
                                V
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1244          .        R456
              .          .
1250          .          .         457
              .          .          .
              .          .          .
1260          .        C101............
              .          .
              .          .
1266          .          .-------> BASIN2
1263          .        DIV3
              .          .
              .          .
1271          .          .          .<------- BASIN2
1269          .          .      RTDIV3
              .          .          V
              .          .          V
1272          .          .      RFDIV3
              .          .          .
              .          .          .
1278          .       CDIV3............
              .          V
              .          V
1281          .        R101
              .          .
              .          .
1287          .          .         458
              .          .          .
              .          .          .
1297          .        C103............
              .          V
              .          V
1300          .        R103
              .          .
              .          .
1308          .          .          .<-------   WA30
1306          .          .        RT30
              .          .          V
              .          .          V
1309          .          .        R30
              .          .          .
              .          .          .
1317          .          .          .          .<------- BASIN1
1315          .          .          .        RTB1
              .          .          .          V
              .          .          .          V
1318          .          .          .         B1
              .          .          .          V
              .          .          .          V
1325          .          .          .        RB1
              .          .          .          .
              .          .          .          .
1331          .          .        CDIV............
              .          .          .
              .          .          .
1334          .          .          .        459
              .          .          .          .
              .          .          .          .
1344          .          .        C52............
              .          .          V
              .          .          V
1347          .          .        R52
              .          .          .
              .          .          .
1353          .          .          .        460
              .          .          .          .
              .          .          .          .
1363          .          .        C102............
              .          .          V
              .          .          V
1366          .          .      BASIN3
              .          .          V
              .          .          V
1373          .          .         R3
              .          .          .
              .          .          .
1379          .          .          .        461
              .          .          .          .
              .          .          .          .
1389          .          .        C104............
              .          .          .
              .          .          .
1392          .        C106............
              .          V
              .          V
1395          .        R106
              .          .
              .          .
1401          .          .         462
              .          .          .
              .          .          .
1411          .         C56............
              .          .
              .          .
1414          .          .         480
              .          .          .
              .          .          .
1429          .          .          .-------> BS480
1424          .          .        D480
              .          .          .
              .          .          .
1434          .          .          .          .<------- BS480
1432          .          .          .      RT480
              .          .          .          V
              .          .          .          V
1435          .          .          .      SR480
              .          .          .          .
              .          .          .          .
1441          .          .        C480............
              .          .          .
              .          .          .
1444       480C.........................
              V
              V
1447        R480
              V
              V
1453       RR480
              .
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1459            .          500
                .            .
                .            .
1469        500C............
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	10	1285.	4.23	149.	37.	13.	.70		
+	ROUTED TO	R10	1205.	4.37	148.	37.	13.	.70		
+	ROUTED TO	R12	1142.	4.57	148.	37.	13.	.70		
+	HYDROGRAPH AT	20	1168.	4.43	172.	43.	15.	1.12		
+	2 COMBINED AT	C20	1896.	4.53	305.	77.	28.	1.82		
+	ROUTED TO	R20	1894.	4.57	305.	77.	28.	1.82		
+	HYDROGRAPH AT	40	2315.	4.37	313.	78.	28.	2.23		
+	HYDROGRAPH AT	60	1661.	4.43	290.	73.	26.	1.75		
+	3 COMBINED AT	60C	4523.	4.47	797.	200.	72.	5.80		
+	ROUTED TO	SR60	177.	6.07	138.	119.	72.	5.80		
+	ROUTED TO	R60	177.	6.13	138.	119.	72.	5.80		
+	ROUTED TO	RR60	177.	6.23	138.	119.	72.	5.80		
+	HYDROGRAPH AT	80	1973.	4.27	233.	58.	21.	1.48		
+	2 COMBINED AT	80C	2036.	4.30	414.	191.	105.	1.48		
+	ROUTED TO	R80	2027.	4.30	414.	190.	105.	1.48		
+	HYDROGRAPH AT	100	625.	4.20	83.	21.	7.	.48		
+	2 COMBINED AT	100C	2304.	4.30	459.	202.	109.	1.96		
+	ROUTED TO	R100	2299.	4.33	459.	202.	109.	1.96		
+	HYDROGRAPH AT	120	2988.	4.30	415.	104.	37.	2.20		
+	2 COMBINED AT	120C	4524.	4.30	782.	281.	136.	4.16		
+	ROUTED TO	R120	4505.	4.33	782.	281.	136.	4.16		
+	HYDROGRAPH AT	140	966.	4.13	90.	22.	8.	.60		
+	HYDROGRAPH AT	150	883.	4.13	69.	17.	6.	.41		
+	ROUTED TO	R150	828.	4.20	69.	17.	6.	.41		
+	ROUTED TO	R152	782.	4.30	69.	17.	6.	.41		
+	HYDROGRAPH AT	160	351.	4.37	51.	13.	5.	.37		
+	HYDROGRAPH AT	180	971.	4.37	121.	30.	11.	1.00		
+	5 COMBINED AT	180C	5685.	4.33	963.	326.	149.	6.54		
+	HYDROGRAPH AT	210	1635.	4.17	142.	36.	13.	.79		
+	ROUTED TO	R210	1555.	4.23	142.	36.	13.	.79		
+	HYDROGRAPH AT	240	1563.	4.33	209.	52.	19.	1.43		
+	2 COMBINED AT	240C	2417.	4.30	330.	83.	30.	2.22		
+	ROUTED TO	SR240	948.	4.80	278.	71.	26.	2.22		
+	HYDROGRAPH AT	220	241.	5.23	88.	23.	8.	.48		
+	2 COMBINED AT	220C	1060.	4.93	350.	90.	32.	2.70		
+	ROUTED TO	SR220	1012.	5.13	340.	88.	32.	2.70		
+	HYDROGRAPH AT	190	1740.	4.17	155.	39.	14.	.92		

+	ROUTED TO	R190	1683.	4.23	155.	39.	14.	.92
+	ROUTED TO	R192	1615.	4.30	155.	39.	14.	.92
+	HYDROGRAPH AT	200	1196.	4.13	96.	24.	9.	.54
+	3 COMBINED AT	200C	1614.	4.27	542.	141.	51.	4.16
+	ROUTED TO	SR200	1512.	4.37	510.	131.	47.	4.16
+	ROUTED TO	200SR	1197.	4.90	390.	101.	36.	4.16
+	2 COMBINED AT	C180	5685.	4.33	1311.	418.	182.	10.69
+	ROUTED TO	SR180	112.	20.13	112.	112.	96.	10.69
+	ROUTED TO	R180	112.	20.20	112.	112.	96.	10.69
+	HYDROGRAPH AT	260	633.	4.10	58.	15.	5.	.27
+	2 COMBINED AT	260C	636.	4.10	168.	146.	131.	.27
+	ROUTED TO	R260	602.	4.17	168.	146.	131.	.27
+	HYDROGRAPH AT	280	728.	4.07	58.	15.	5.	.30
+	2 COMBINED AT	280C	1233.	4.10	218.	158.	135.	.57
+	ROUTED TO	R280	1199.	4.17	217.	157.	135.	.57
+	HYDROGRAPH AT	300	610.	4.07	44.	11.	4.	.28
+	2 COMBINED AT	300C	1533.	4.13	249.	164.	135.	.85
+	ROUTED TO	R300	1484.	4.20	248.	163.	135.	.85
+	HYDROGRAPH AT	305	645.	4.27	106.	27.	10.	.70
+	2 COMBINED AT	305C	1758.	4.23	330.	181.	139.	1.55
+	ROUTED TO	R305	1737.	4.27	329.	181.	138.	1.55
+	HYDROGRAPH AT	350	1469.	4.20	137.	34.	12.	.97
+	DIVERSION TO	SF350	734.	4.20	69.	17.	6.	.97
+	HYDROGRAPH AT	D350	734.	4.20	69.	17.	6.	.97
+	ROUTED TO	350R	657.	4.37	69.	17.	6.	.97
+	HYDROGRAPH AT	310	592.	4.30	71.	18.	6.	.56
+	2 COMBINED AT	C310	1148.	4.37	134.	34.	12.	.94
+	ROUTED TO	R310	1025.	4.67	134.	34.	12.	.94
+	HYDROGRAPH AT	320	1198.	4.20	159.	40.	14.	.95
+	DIVERSION TO	BS320	572.	3.97	25.	6.	2.	.95
+	HYDROGRAPH AT	D320	1198.	4.20	135.	34.	12.	.95
+	HYDROGRAPH AT	RT320	572.	3.97	25.	6.	2.	.95
+	ROUTED TO	SR320	4.	.47	4.	4.	2.	.95
+	4 COMBINED AT	C320	2449.	4.33	527.	229.	152.	3.44
+	HYDROGRAPH AT	340	1621.	4.20	231.	58.	21.	1.45
+	DIVERSION TO	BS340	1621.	4.20	113.	28.	10.	1.45
+	HYDROGRAPH AT	D340	1401.	4.37	119.	30.	11.	1.45
+	HYDROGRAPH AT	RT340	1621.	4.20	113.	28.	10.	1.45
+	ROUTED TO	SR340	19.	1.00	19.	19.	10.	1.45
+	3 COMBINED AT	C340	3143.	4.37	605.	260.	163.	4.89

+	HYDROGRAPH AT	RT350	734.	4.20	69.	17.	6.	.97
+	ROUTED TO	RR350	645.	4.40	69.	17.	6.	.97
+	HYDROGRAPH AT	355	742.	4.30	98.	25.	9.	.68
+	2 COMBINED AT	C355	1186.	4.40	157.	39.	14.	1.24
+	ROUTED TO	R355	1087.	4.67	157.	39.	14.	1.24
+	HYDROGRAPH AT	360	751.	4.23	113.	28.	10.	.67
+	DIVERSION TO	BS360	751.	4.23	58.	14.	5.	.67
+	HYDROGRAPH AT	D360	563.	4.40	56.	14.	5.	.67
+	HYDROGRAPH AT	RT360	751.	4.23	58.	14.	5.	.67
+	ROUTED TO	SR360	10.	2.57	10.	10.	5.	.67
+	4 COMBINED AT	360C	3404.	4.53	725.	294.	175.	6.80
+	HYDROGRAPH AT	370	834.	4.30	108.	27.	10.	.67
+	HYDROGRAPH AT	395	287.	4.23	35.	9.	3.	.20
+	2 COMBINED AT	370C	1024.	4.27	138.	35.	12.	.87
+	ROUTED TO	R370	917.	4.60	138.	35.	12.	.87
+	HYDROGRAPH AT	380	867.	4.27	130.	33.	12.	.97
+	DIVERSION TO	BS380	867.	4.27	58.	14.	5.	.97
+	HYDROGRAPH AT	D380	714.	4.50	73.	18.	7.	.97
+	HYDROGRAPH AT	RT380	867.	4.27	58.	14.	5.	.97
+	ROUTED TO	SR380	10.	3.43	10.	10.	5.	.97
+	4 COMBINED AT	380C	3878.	4.53	831.	326.	186.	8.65
+	HYDROGRAPH AT	390	693.	4.03	46.	11.	4.	.24
+	DIVERSION TO	BS390	149.	3.77	7.	2.	1.	.24
+	HYDROGRAPH AT	D390	693.	4.03	39.	10.	3.	.24
+	HYDROGRAPH AT	RT390	149.	3.77	7.	2.	1.	.24
+	ROUTED TO	SR390	1.	.23	1.	1.	1.	.24
+	2 COMBINED AT	390C	694.	4.03	40.	11.	4.	.24
+	ROUTED TO	RR390	478.	4.40	40.	11.	4.	.24
+	HYDROGRAPH AT	400	574.	4.20	70.	17.	6.	.62
+	DIVERSION TO	BS400	397.	4.07	11.	3.	1.	.62
+	HYDROGRAPH AT	D400	574.	4.20	59.	15.	5.	.62
+	HYDROGRAPH AT	RT400	397.	4.07	11.	3.	1.	.62
+	ROUTED TO	SR400	2.	.93	2.	2.	1.	.62
+	2 COMBINED AT	C400	576.	4.20	61.	17.	6.	.62
+	3 COMBINED AT	400C	4096.	4.53	860.	334.	189.	9.51
+	HYDROGRAPH AT	385	885.	4.20	96.	24.	9.	.52
+	DIVERSION TO	SF385	531.	4.20	58.	14.	5.	.52
+	HYDROGRAPH AT	D385	354.	4.20	38.	10.	3.	.52
+	ROUTED TO	385R	277.	4.83	38.	10.	3.	.52
+	HYDROGRAPH AT	420	1007.	4.20	124.	31.	11.	.85

+ DIVERSION TO	BS420	404.	3.97	17.	4.	2.	.85
+ HYDROGRAPH AT	D420	1007.	4.20	106.	27.	10.	.85
+ HYDROGRAPH AT	RT420	404.	3.97	17.	4.	2.	.85
+ ROUTED TO	SR420	13.	3.23	13.	4.	2.	.85
+ 4 COMBINED AT	420C	4422.	4.53	937.	352.	195.	10.87
+ HYDROGRAPH AT	440	257.	4.03	16.	4.	1.	.08
+ ROUTED TO	R70	249.	4.07	16.	4.	1.	.08
+ HYDROGRAPH AT	441	24.	4.03	2.	0.	0.	.01
+ 2 COMBINED AT	C108	272.	4.07	18.	5.	2.	.09
+ DIVERSION TO	SPLIT	136.	4.07	9.	2.	1.	.09
+ HYDROGRAPH AT	DIV4	136.	4.07	9.	2.	1.	.09
+ ROUTED TO	R108	133.	4.10	9.	2.	1.	.09
+ HYDROGRAPH AT	442	171.	4.07	13.	3.	1.	.10
+ 2 COMBINED AT	C67	300.	4.10	22.	6.	2.	.19
+ DIVERSION TO	BASIN4	216.	4.10	11.	3.	1.	.19
+ HYDROGRAPH AT	DIV6	85.	4.10	11.	3.	1.	.19
+ HYDROGRAPH AT	RTDIV6	216.	4.10	11.	3.	1.	.19
+ ROUTED TO	RFDIV6	1.	3.83	1.	1.	1.	.19
+ 2 COMBINED AT	CDIV6	86.	4.10	12.	4.	2.	.19
+ HYDROGRAPH AT	443	214.	4.03	18.	5.	2.	.08
+ DIVERSION TO	WSH66	78.	3.83	12.	3.	1.	.08
+ HYDROGRAPH AT	DIV66	136.	4.03	6.	2.	1.	.08
+ ROUTED TO	R113	135.	4.07	6.	2.	1.	.08
+ 2 COMBINED AT	C114	220.	4.07	18.	5.	3.	.27
+ HYDROGRAPH AT	444	120.	4.03	7.	2.	1.	.04
+ ROUTED TO	R58	111.	4.07	7.	2.	1.	.04
+ HYDROGRAPH AT	445	474.	4.03	27.	7.	2.	.19
+ 2 COMBINED AT	C107	582.	4.03	33.	8.	3.	.23
+ ROUTED TO	R107	575.	4.03	33.	8.	3.	.23
+ HYDROGRAPH AT	RTB2	136.	4.07	9.	2.	1.	.09
+ ROUTED TO	RSPLIT	136.	4.07	9.	2.	1.	.09
+ HYDROGRAPH AT	446	98.	4.03	8.	2.	1.	.04
+ 3 COMBINED AT	C109	803.	4.03	50.	13.	5.	.27
+ DIVERSION TO	WSH404	35.	3.67	7.	2.	1.	.27
+ HYDROGRAPH AT	DIV5	768.	4.03	43.	11.	4.	.27
+ ROUTED TO	R109	756.	4.07	43.	11.	4.	.27
+ HYDROGRAPH AT	447	219.	4.03	16.	4.	1.	.09
+ HYDROGRAPH AT	RT404	35.	3.67	7.	2.	1.	.27
+ ROUTED TO	R404	35.	3.80	7.	2.	1.	.27
+ 3 COMBINED AT	C110	1003.	4.07	66.	17.	6.	.36

+	ROUTED TO	R110	1003.	4.07	66.	17.	6.	.36
+	2 COMBINED AT	C115	1137.	4.07	82.	21.	8.	.63
+	ROUTED TO	R115	1134.	4.07	82.	21.	8.	.63
+	HYDROGRAPH AT	448	130.	4.00	8.	2.	1.	.05
+	HYDROGRAPH AT	449	124.	4.03	7.	2.	1.	.05
+	2 COMBINED AT	C6364	253.	4.03	15.	4.	1.	.09
+	ROUTED TO	R6364	215.	4.13	15.	4.	1.	.09
+	HYDROGRAPH AT	450	101.	4.17	9.	2.	1.	.07
+	HYDROGRAPH AT	451	30.	4.17	3.	1.	0.	.03
+	HYDROGRAPH AT	RT66	78.	3.83	12.	3.	1.	.08
+	HYDROGRAPH AT	452	96.	4.03	6.	2.	1.	.04
+	2 COMBINED AT	C6465	174.	4.03	18.	5.	2.	.04
+	ROUTED TO	R6566	166.	4.10	18.	5.	2.	.04
+	4 COMBINED AT	C116	506.	4.13	46.	11.	4.	.23
+	ROUTED TO	BASIN5	223.	4.43	45.	11.	4.	.23
+	ROUTED TO	R116	221.	4.50	45.	11.	4.	.23
+	HYDROGRAPH AT	453	102.	4.07	9.	2.	1.	.06
+	2 COMBINED AT	C117	251.	4.43	54.	14.	5.	.29
+	2 COMBINED AT	C118	1132.	4.07	129.	33.	13.	.92
+	ROUTED TO	R118	1118.	4.10	128.	33.	13.	.92
+	DIVERSION TO	BASIN6	408.	4.10	20.	5.	2.	.92
+	HYDROGRAPH AT	DIV7	710.	4.10	108.	28.	11.	.92
+	HYDROGRAPH AT	RTDIV7	408.	4.10	20.	5.	2.	.92
+	ROUTED TO	RFDIV7	1.	3.90	1.	1.	1.	.92
+	2 COMBINED AT	CDIV7	711.	4.10	109.	29.	12.	.92
+	HYDROGRAPH AT	454	261.	4.13	29.	7.	3.	.18
+	2 COMBINED AT	C119	868.	4.10	134.	36.	14.	1.10
+	ROUTED TO	R454	863.	4.17	134.	36.	14.	1.10
+	HYDROGRAPH AT	415	837.	4.13	104.	26.	9.	.61
+	HYDROGRAPH AT	RT385	531.	4.20	58.	14.	5.	.52
+	ROUTED TO	RR385	470.	4.47	58.	14.	5.	.52
+	3 COMBINED AT	415C	1608.	4.17	274.	71.	26.	1.71
+	ROUTED TO	R415	1593.	4.23	274.	71.	26.	1.71
+	HYDROGRAPH AT	455	1611.	4.13	181.	45.	16.	1.11
+	DIVERSION TO	BS455	1611.	4.13	149.	37.	13.	1.11
+	HYDROGRAPH AT	D455	535.	4.40	32.	8.	3.	1.11
+	HYDROGRAPH AT	RT455	1611.	4.13	149.	37.	13.	1.11
+	ROUTED TO	SR455	25.	2.83	25.	25.	13.	1.11
+	2 COMBINED AT	C455	560.	4.40	57.	33.	16.	1.11
+	3 COMBINED AT	455C	5048.	4.53	1117.	415.	219.	13.69

+	ROUTED TO	SR440	179.	30.93	179.	177.	139.	13.69
+	ROUTED TO	RR455	179.	31.60	179.	177.	136.	13.69
+	HYDROGRAPH AT	456	696.	4.03	49.	12.	4.	.26
+	DIVERSION TO	BASIN1	323.	4.03	15.	4.	1.	.26
+	HYDROGRAPH AT	DIV1	373.	4.03	34.	8.	3.	.26
+	DIVERSION TO	WA30	67.	4.03	10.	3.	1.	.26
+	HYDROGRAPH AT	DIV2	307.	4.03	24.	6.	2.	.26
+	ROUTED TO	R456	290.	4.10	24.	6.	2.	.26
+	HYDROGRAPH AT	457	414.	4.07	29.	7.	3.	.19
+	2 COMBINED AT	C101	691.	4.07	52.	13.	5.	.45
+	DIVERSION TO	BASIN2	320.	4.07	15.	4.	1.	.45
+	HYDROGRAPH AT	DIV3	372.	4.07	37.	9.	3.	.45
+	HYDROGRAPH AT	RTDIV3	320.	4.07	15.	4.	1.	.45
+	ROUTED TO	RFDIV3	2.	3.87	2.	2.	1.	.45
+	2 COMBINED AT	CDIV3	373.	4.07	38.	11.	5.	.45
+	ROUTED TO	R101	370.	4.10	38.	11.	5.	.45
+	HYDROGRAPH AT	458	526.	4.03	35.	9.	3.	.19
+	2 COMBINED AT	C103	825.	4.03	72.	19.	8.	.64
+	ROUTED TO	R103	824.	4.07	72.	19.	8.	.64
+	HYDROGRAPH AT	RT30	67.	4.03	10.	3.	1.	.26
+	ROUTED TO	R30	65.	4.07	10.	3.	1.	.26
+	HYDROGRAPH AT	RTB1	323.	4.03	15.	4.	1.	.26
+	ROUTED TO	B1	62.	4.23	15.	4.	1.	.26
+	ROUTED TO	RB1	62.	4.30	15.	4.	1.	.26
+	2 COMBINED AT	CDIV	115.	4.20	24.	6.	2.	.12
+	HYDROGRAPH AT	459	70.	4.03	4.	1.	0.	.03
+	2 COMBINED AT	C52	163.	4.07	28.	7.	3.	.15
+	ROUTED TO	R52	160.	4.13	28.	7.	3.	.15
+	HYDROGRAPH AT	460	332.	4.07	26.	6.	2.	.14
+	2 COMBINED AT	C102	480.	4.07	53.	14.	5.	.29
+	ROUTED TO	BASIN3	80.	4.70	53.	14.	5.	.29
+	ROUTED TO	R3	80.	4.83	53.	14.	5.	.29
+	HYDROGRAPH AT	461	251.	4.07	23.	6.	2.	.12
+	2 COMBINED AT	C104	307.	4.07	75.	19.	7.	.41
+	2 COMBINED AT	C106	987.	4.07	140.	37.	14.	1.05
+	ROUTED TO	R106	949.	4.13	140.	37.	14.	1.05
+	HYDROGRAPH AT	462	798.	4.03	56.	14.	5.	.30
+	2 COMBINED AT	C56	1412.	4.07	188.	49.	18.	1.35
+	HYDROGRAPH AT	480	1466.	4.07	126.	32.	11.	.73
+	DIVERSION TO	BS480	717.	3.90	33.	8.	3.	.73

+	HYDROGRAPH AT	D480	1466.	4.07	93.	23.	8.	.73
+	HYDROGRAPH AT	RT480	717.	3.90	33.	8.	3.	.73
+	ROUTED TO	SR480	6.	.23	6.	6.	3.	.73
+	2 COMBINED AT	C480	1471.	4.07	99.	29.	11.	.73
+	3 COMBINED AT	480C	2196.	4.07	461.	327.	222.	2.09
+	ROUTED TO	R480	2196.	4.10	461.	327.	222.	2.09
+	ROUTED TO	RR480	2108.	4.17	458.	326.	222.	2.09
+	HYDROGRAPH AT	500	1336.	4.27	162.	40.	15.	.93
+	2 COMBINED AT	500C	2746.	4.23	557.	338.	223.	3.02

*** NORMAL END OF HEC-1 ***

```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*            JUN  1998              *
*          VERSION 4.1              *
*                                   *
*  RUN DATE   20DEC00  TIME  08:05:00*
*                                   *
*************************************
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```
*************************************
*                                   *
*   U.S. ARMY CORPS OF ENGINEERS    *
*   HYDROLOGIC ENGINEERING CENTER   *
*         609 SECOND STREET         *
*      DAVIS, CALIFORNIA 95616      *
*          (916) 756-1104           *
*                                   *
*************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1 HEC-1 INPUT PAGE 1

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID   EXISTING LAND USE CALCULATIONS WERE BASED ON 1 YR. FROM 11/5/99
  2           ID   FOR LAS SENDAS       AND LANDISCOR JAN.1999 AERIAL PHOTOGPRAPHS
  3           ID
  4           ID   ALL DAMS WERE ANALYZED WITH NO STORAGE BELOW PRINCIPLE SPILLWAY ELEVATIONS
  5           ID
  6           ID   A CONSERVATIVE ESTIMATE WAS USED FOR THE LOCATION OF THE CENTROID FOR
  7           ID   PRECIPITATION VALUES
  8           ID
  9           ID   ALL CHANNEL ROUTING INFORMATION WAS OBTAINED FROM MCFCD SPOOK HILL   SIGNAL
 10           ID   BUTTE        AND BULLDOG FLOODWAY PLANS
 11           ID
 12           ID   UPDATE TO EXISTING CONDITION 24-HR 100-YR MODEL RUN BASED ON RE-ALIGNMENT
 13           ID   OF SUB-BASIN BOUNDARIES FOR SUB-BASINS 305 (REDUCED) & 415 (ENLARGED)
 14           ID   UPDATE BASED ON INFORMATION FROM 2' CONTOUR MAPPING.
 15           ID
 16           ID   ANALYSIS PERFORMED BY WOOD/PATEL; MW;        07/27/00  FILE: S24CE30Z.DAT
 17           ID
 18           ID   DDM MCUHP1 SPOOK HILL AMDP - EXISTING CONDITIONS MODEL - 100YR, 24HR STORM
              *       Original File Name: S24CE30.DAT
              *       Modified File Name: S24CE30Z.DAT
              *       Changes: 1) No. of Hydrograph Ordinates Increased to 2000
              *                2) SE, SV and SQ Cards for the Three (3) FRSs Updated
              *                3) Sediment Volumes Subtracted from Storage Volumes
              *                4) Old Elevation Datum Adjusted to NAVD 1988
              *       Wood/Patel, July 19, 2000.  SZ.
              *
              *
              *  As of 12/06/00 the following has been added to update the base hec1 file
              *  EC24base.dat.  These changes were taken from S24ce14 which was the current
              *  HEC model being used for the Pass Mountain alternatives.
              *  updates and changes to the model are as follows:
              *
              *  This new file will be named (labeled):   FC24PM4.dat
              *                F  =  Future Condition
              *                C  =  100-year return period
              *                24 =  Storm Duration
              *                PM =  Pass Mountain alternative
              *
              *
              *  MAJOR ASSUMPTIONS / CRITERIA / CHANGES FROM PREVIOUS MODELS: 12/06/00
              *
              *       1. Refinement of areas for sub-basins 210, 220, 240, 300, 305, 320,
              *          355,  370, 395, and 415 using CAD as follows:
              *                Area of 210 changes to  .792 sq. miles
              *                Area of 220 changes to  .484 sq. miles
              *                Area of 240 changes to 1.428 sq. miles
              *                Area of 300 changes to  .279 sq. miles
              *                Area of 305 changes to  .702 sq. miles
              *                Area of 320 changes to  .949 sq. miles
              *                Area of 355 changes to  .676 sq. miles
              *                Area of 370 changes to  .672 sq. miles
              *                Area of 395 changes to  .200 sq. miles
              *                Area of 415 changes to  .608 sq. miles
              *
              *       2. The numbering system used when a sub-basin is further divide
              *          is changed to a number letter combination from a number only system.
              *          Now when a sub-basin is divided further, the original number  will
              *          remain and a letter a,b,c will be attached depending on the
              *          number of pieces that the sub-basin is divided into. This applies
              *          only to future condition models.
              *
              *       3. The slope of RR455 is incorrect and will change from .002 ft/ft
              *          to .0002 ft/ft.
              *
              *       4. Changes to sub-basin areas will result in changes to soil type
              *          percentages.  All changes to areas and soil make-up have been
              *          obtained using CAD instead of hand planimeter.
              *
              *       5. Signal Butte Floodway reach lengths have been updated using
              *          the as built plans dated March of 1983.  Hec routings affected by
              *          this are as follows:
              *                R180 increased 100' from 1500' to 1600'
              *                R260 remained unchanged.
              *                R280 decreased 400' from 2500' to 2100'
              *                R300 increased 300' from 2200' to 2500'
              *                RR300 is relabeled R305
              *                R305 decreased 50' from 6050' to 6000'
              *
              *       6. "N - Steps" balanced using normal depth channel calcs and limiting
              *          divergence from the resulting value by no more than 30%
              *          higher or lower.
              *
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*       7. Sub-Basin 380 detention basin outflow conditions updated using
*          rating curve based on 2' diameter low flow pipe and weir flow
*          after 3' ponding condition.
*
*       8. Sub-Basins 320, 340, 360, 380, 400, and 420 have channel routings
*          added to take the place of Spook Hill FRS
*
*
*DIAGRAM
```



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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 19         IT       2                    2000
 20         IO       3
 21         IN      15
 22         JD    3.81    0.01
 23         PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
 24         PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 25         PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 26         PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
 27         PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
 28         PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
 29         PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
 30         PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 31         PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 32         PC    .983    .986    .989    .992    .995    .998   1.000
 33         JD    3.58   10.00
 34         JD    3.43   30.00
 35         JD    3.28   60.00
 36         JD    3.22   90.00
 37         JD    3.18  120.00
 38         JD    3.14  150.00
 39         JD    3.05  300.00
 40         JD    2.97  500.00
            * DDM   ***** Updated *****

 41         KK      10
 42         KM   SUB-BASIN 10
 43         KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 44         KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
 45         KM     L = 2.00  Kb = .044  Adj. Slope =  165.0
 46         BA    .702
 47         LG    .350    .320   7.600    .090  15.000
 48         UC    .421    .302
 49         UA       0       3       5       8      12      20      43      75      90      96
 50         UA     100
            * DDM   ***** Preserved *****

 51         KK     R10
 52         KM   ROUTING OF FLOW FROM SUB-BASIN 10 TO R12
 53         RS       5    FLOW      -1
 54         RC    .045     .03    .045    8700    .021
 55         RX       0       1       2      17      27      42      43      44
 56         RY       5       5       5       0       0       5       5       5
            * DDM   ***** Preserved *****

 57         KK     R12
 58         KM   ROUTING OF FLOW FROM R12 TO SUB-BASIN 20
 59         RS       4    FLOW      -1
 60         RC    .045     .03    .045    4500     .01
 61         RX       0       1      45    52.5    72.5      80     124     125
 62         RY       3     2.5     2.5       0       0     2.5     2.5       3
            * DDM   ***** Updated *****
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 63         KK      20
 64         KM   SUB-BASIN 20
 65         KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 66         KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .993
 67         KM     L = 2.50  Kb = .041  Adj. Slope =   88.0
 68         BA   1.120
 69         LG    .350    .390   5.800    .190   1.000
 70         UC    .658    .454
 71         UA       0       3       5       8      12      20      43      75      90      96
 72         UA     100
            * DDM   ***** Preserved *****

 73         KK     C20
 74         KM   HYDROGRAPH COMBINATION OF SUB-BASINS 10 AND 20
 75         HC       2
            * DDM   ***** Preserved *****

 76         KK     R20
 77         KM       ROUTE FLOW THROUGH BULLDOG FLOODWAY FROM APACHE JUNCTION FRS
 78         RS       1    FLOW      -1
 79         RC    .016    .016    .016     990    .004
 80         RX       0       5       7    14.5    34.5      42      44      50
 81         RY       4       2       2       0       0       2       2       4
            * DDM   ***** Updated *****

 82         KK      40
 83         KM   SUB-BASIN 40
 84         KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 85         KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .987
 86         KM     L = 3.00  Kb = .036  Adj. Slope =  169.0
 87         BA   2.233
 88         LG    .340    .340   4.900    .280   5.000
 89         UC    .496    .264
 90         UA       0       3       5       8      12      20      43      75      90      96
 91         UA     100
            * DDM   ***** Updated *****

 92         KK      60
 93         KM   SUB-BASIN 60
 94         KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 95         KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .990
 96         KM     L = 4.19  Kb = .038  Adj. Slope =  209.6
 97         BA   1.746
 98         LG    .330    .350   5.800    .190   9.000
 99         UC    .596    .477
100         UA       0       3       5       8      12      20      43      75      90      96
101         UA     100
            * DDM   ***** Preserved *****
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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102          KK     60C
103          KM   HYDROGRAPH COMBINATION FOR APACHE JUNCTION FRS
             *      1       2
104          HC       3
             * DDM   ***** Preserved *****

105          KK    SR60
106          KM   APACHE JUNCTION FRS AS-BUILT PLANS 12/19/88
107          KM   OUTLET PIPE=30"RCP; L=136.6'; INLET INV.=1783.5; OUTLET INV.=1783
108          KM   EMERGENCY SPILLWAY ELEV.=1799.77'; PRINCIPLE SPILLWAY ELEV.=1793.5'
109          KM   STORAGE VOLUME BELOW PRINCIPLE SPILLWAY FOR SEDIMENT = 100 ACRE-FEET
             *  ESE = 1801.92 ft; PSE = 1795.65 ft; Sediment Vol. = 237 Ac-Ft.
110          RS       1    STOR       0
111          SV       0       0      77     242     371     439     563     687    2163
112          SQ       0      12     103     114     120     362    1462    3101   30000
113          SE    95.0    96.0    98.0   100.0   101.6   101.9   103.0   104.0   112.9
             * DDM   ***** Preserved *****

114          KK     R60
115          KM        ROUTE FLOW THROUGH BULLDOG FLOODWAY FROM APACHE JUNCTION FRS
116          RS       2    FLOW      -1
117          RC    .016    .016    .016    2850    .012
118          RX       0       1       2     2.1     5.6     5.7       6       7
119          RY     3.5     3.5     3.5       0       0     3.5     3.5     3.5
             * DDM   ***** Preserved *****

120          KK    RR60
121          KM   ROUTE FLOW FROM BULLDOG FLOODWAY TO SUB-BASIN 80
122          RS       3    FLOW      -1
123          RC    .016    .016    .016    3500    .005
124          RX       0       1       2     2.1     7.1     7.2       8       9
125          RY     3.5     3.5     3.5       0       0     3.5     3.5     3.5
             * DDM   ***** Updated *****

126          KK      80
127          KM   SUB-BASIN 80
128          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
129          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .991
130          KM     L = 2.69  Kb = .039  Adj. Slope =  229.8
131          BA   1.475
132          LG    .330    .330   5.600    .210   4.000
133          UC    .433    .259
134          UA       0       3       5       8      12      20      43      75      90      96
135          UA     100
             * DDM   ***** Preserved *****

136          KK     80C
137          KM   HYDROGRAPH COMBINATION FOR FLOW FROM APACHE JUNCTION FRS & SUB-BASIN 80
138          HC       2   1.475
             * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE  5

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

139          KK     R80
140          KM   ROUTE FLOW FROM SUB-BASIN 80 TO SUB-BASIN 100
141          RS       1    FLOW      -1
142          RC    .025    .016    .025    1200    .003
143          RX       0       2       6     6.1    41.1    41.2    56.2    58.2
144          RY     5.5     4.5     4.5       0       0     4.5     4.5     5.5
             * DDM   ***** Updated *****

145          KK     100
146          KM   SUB-BASIN 100
147          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
148          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
149          KM     L = 1.94  Kb = .046  Adj. Slope =  108.0
150          BA    .484
151          LG    .320    .290   5.100    .260   3.000
152          UC    .533    .473
153          UA       0       5      16      30      65      77      84      90      94      97
154          UA     100
             * DDM   ***** Preserved *****

155          KK    100C
156          KM   HYDROGRAPH COMBINATION FOR FLOW FROM SUB-BASIN 80 & 100
157          HC       2
             * DDM   ***** Preserved *****

158          KK    R100
159          KM   ROUTE FLOW FROM SUB-BASIN 100 TO SUB-BASIN 120
160          RS       1    FLOW      -1
161          RC    .016    .016    .016     940    .005
162          RX       0       1       2     2.1    52.1    52.2      53      54
163          RY     4.5     4.5     4.5       0       0     4.5     4.5     4.5
             * DDM   ***** Updated *****

164          KK     120
165          KM   SUB-BASIN 120
166          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
167          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .987
168          KM     L = 3.07  Kb = .037  Adj. Slope =  239.0
169          BA   2.202
170          LG    .330    .280   6.800    .130  11.000
171          UC    .429    .226
172          UA       0       3       5       8      12      20      43      75      90      96
173          UA     100
             * DDM   ***** Preserved *****

174          KK    120C
175          KM   HYDROGRAPH COMBINATION FOR FLOW FROM SUB-BASIN 100 & 120
176          HC       2
             * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE  6

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

177          KK    R120
178          KM   ROUTE FLOW FROM SUB-BASIN 120 TO SIGNAL BUTTE FRS
179          RS       1    FLOW      -1
180          RC    .025    .016    .025    2100    .005
181          RX       0       6      10    10.1    60.1    60.2    74.2    80.2
182          RY       8       5       5       0       0       5       5       8
             * DDM   ***** Updated *****

183          KK     140
184          KM   SUB-BASIN 140
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185          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
186          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
187          KM     L = 1.61  Kb = .044  Adj. Slope =  149.0
188          BA    .598
189          LG    .310    .280   4.200    .440   5.000
190          UC    .421    .278
191          UA       0       5      16      30      65      77      84      90      94      97
192          UA     100
             * DDM   ***** Updated *****

193          KK     150
194          KM   SUB-BASIN 150
195          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
196          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
197          KM     L = 1.50  Kb = .047  Adj. Slope =  314.6
198          BA    .408
199          LG    .350    .360   5.100    .260   7.000
200          UC    .296    .221
201          UA       0       3       5       8      12      20      43      75      90      96
202          UA     100
             * DDM   ***** Preserved *****

203          KK    R150
204          KM   ROUTING OF FLOW FROM SUB-BASIN 150 TO R152
205          RS       2    FLOW      -1
206          RC    .045     .04    .045    3100    .032
207          RX       0       1       2      23      33      54      55      56
208          RY       7       7       7       0       0       7       7       7
             * DDM   ***** Preserved *****

209          KK    R152
210          KM   ROUTING OF FLOW FROM R152 TO SUB-BASIN 160
211          RS       4    FLOW      -1
212          RC    .045     .03    .045    5900    .019
213          RX       0       1       2       8      33      39      40      41
214          RY       2       2       2       0       0       2       2       2
             * DDM   ***** Updated *****

215          KK     160
216          KM   SUB-BASIN 160
217          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
218          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
219          KM     L = 2.10  Kb = .047  Adj. Slope =  129.0
220          BA    .369
1                                        HEC-1 INPUT                                        PAGE  7

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

221          LG    .340    .330   4.150    .440   1.000
222          UC    .587    .655
223          UA       0       3       5       8      12      20      43      75      90      96
224          UA     100
             * DDM   ***** Updated *****

225          KK     180
226          KM   SUB-BASIN 180
227          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
228          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
229          KM     L = 2.42  Kb = .041  Adj. Slope =  140.0
230          BA   1.000
231          LG    .350    .350   4.150    .430    .000
232          UC    .571    .403
233          UA       0       3       5       8      12      20      43      75      90      96
234          UA     100
             * DDM   ***** Preserved *****

235          KK    180C
236          KM   HYDROGRAPH COMBINATION FOR SIGNAL BUTTE FRS
237          HC       5
             * DDM   ***** Updated *****

238          KK    385B
239          KM   SUB-BASIN 385B
240          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
241          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
242          KM     L = 1.50  Kb = .048  Adj. Slope =  315.0
243          BA    .329
244          LG    .350    .400   6.000    .170  16.000
245          UC    .296    .250
246          UA       0       3       5       8      12      20      43      75      90      96
247          UA     100
             * DDM   ***** Preserved *****

248          KK   R385B
249          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING & AERIAL MAPPING
250          KM   ROUTING OF FLOW FROM SUB-BASIN 385B TO 395B
251          KM   OVERBANK MANNINGS INCREASED TO ACCOUNT FOR SKEWED FLOW TO NATURAL
252          KM   WATERCOURSE FLOW PATH
253          RS       1    FLOW      -1
254          RC     .07     .03     .07    1115    .045
255          RX       0       1       3       9      39      45      46      47
256          RY       3       2       2       0       0       2       2       3
             * DDM   ***** Updated *****

257          KK    395B
258          KM   SUB-BASIN 395B
259          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
260          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
261          KM     L =  .61  Kb = .061  Adj. Slope =  246.2
262          BA    .040
263          LG    .350    .350   4.150    .430    .000
264          UC    .233    .310
265          UA       0       3       5       8      12      20      43      75      90      96
1                                        HEC-1 INPUT                                        PAGE  8

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

266          UA     100
             * DDM   ***** Preserved *****

267          KK   395BC
268          KM   HYDROGRAPH COMBINATION OF SUB-BASINS 383 & 393
269          HC       2
             * DDM   ***** Preserved *****

270          KK   R395B
271          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING & AERIAL MAPPING
272          KM   ROUTING OF FLOW FROM SUB-BASIN 393 TO SUB-BASIN 365
273          RS       2    FLOW      -1
274          RC    .055     .03    .055    2000    .045
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275          RX       0       1       3       9      39      45      46      47
276          RY       3       2       2       0       0       2       2       3
             * DDM   ***** Updated *****

277          KK    370B
278          KM   SUB-BASIN 370B
279          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
280          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
281          KM     L = 2.20  Kb = .047  Adj. Slope =  299.5
282          BA    .415
283          LG    .350    .350   4.600    .330   4.000
284          UC    .400    .415
285          UA       0       3       5       8      12      20      43      75      90      96
286          UA     100
             * DDM   ***** Preserved *****

287          KK   370BC
288          KM   HYDROGRAPH COMBINATION OF SUB-BASINS 395B & 370B
289          HC       2
             * DDM   ***** Preserved *****

290          KK   R370B
291          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING & AERIAL MAPPING
292          KM   ROUTING OF FLOW FROM SUB-BASIN 370B TO ROUTING RR370B
293          RS       2    FLOW      -1
294          RC    .045     .03    .045    1500    .025
295          RX       0       1      50      56      76      82     131     132
296          RY       3       2       2       0       0       2       2       3
             * DDM   ***** Preserved *****

297          KK  RR370B
298          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING & AERIAL MAPPING
299          KM   ROUTING OF FLOW FROM RR370B TO SUB-BASIN 355B
300          KM   OVERBANK MANNINGS INCREASED TO ACCOUNT FOR SKEWED FLOW TO NATURAL
301          KM   WATERCOURSE FLOW PATH
302          RS       3    FLOW      -1
303          RC     .07     .03     .07    1200    .008
304          RX       0       3       5      11      41      47     147     247
305          RY     3.5     2.5       2       0       0       2     2.5     3.5
             * DDM   ***** Updated *****
1                                        HEC-1 INPUT                                          PAGE  9

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

306          KK    355B
307          KM   SUB-BASIN 355B
308          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
309          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
310          KM     L = 2.50  Kb = .046  Adj. Slope =  297.9
311          BA    .482
312          LG    .350    .350   4.450    .360   1.000
313          UC    .438    .466
314          UA       0       3       5       8      12      20      43      75      90      96
315          UA     100
             * DDM   ***** Preserved *****

316          KK   355BC
317          KM   HYDROGRAPH COMBINATION OF SUB-BASINS 370B & 355B
318          HC       2
             * DDM   ***** Preserved *****

319          KK   R355B
320          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING & AERIAL MAPPING
321          KM   ROUTING OF FLOW FROM SUB-BASIN 355B TO ROUTING RR355B
322          KM   OVERBANK MANNINGS INCREASED TO ACCOUNT FOR SKEWED FLOW TO NATURAL
323          KM   WATERCOURSE FLOW PATH
324          RS       2    FLOW      -1
325          RC     .07     .03     .07     710    .009
326          RX       0       3       5      11      41      47     172     302
327          RY     3.5     2.5       2       0       0       2     2.5     3.5
             * DDM   ***** Preserved *****

328          KK  RR355B
329          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING & AERIAL MAPPING
330          KM   ROUTING OF FLOW FROM R355B TO SUB-BASIN 310
331          RS       2    FLOW      -1
332          RC    .045     .03    .045    1692     .03
333          RX       0       1      25      31      51      57      81      82
334          RY       3       2       2       0       0       2       2       3
             * DDM   ***** Updated *****

335          KK     350
336          KM   SUB-BASIN 350
337          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
338          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
339          KM     L = 2.22  Kb = .042  Adj. Slope =  315.0
340          BA    .970
341          LG    .350    .350   4.550    .340   4.000
342          UC    .367    .234
343          UA       0       3       5       8      12      20      43      75      90      96
344          UA     100
             * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE 10

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

345          KK    350R
346          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING & AERIAL MAPPING
347          KM   ROUTING OF MAIN FLOW FROM DIVERSION OF SUB-BASIN 350 TO SUB-BASIN 310
348          RS       8    FLOW      -1
349          RC    .045    .035    .045    7650    .025
350          RX       0       1      50      56      86      92     141     142
351          RY       3       2       2       0       0       2       2       3
             * DDM   ***** Updated *****

352          KK     310
353          KM   SUB-BASIN 310
354          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
355          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
356          KM     L = 2.70  Kb = .045  Adj. Slope =  283.5
357          BA    .555
358          LG    .350    .350   3.910    .480    .000
359          UC    .403    .511
360          UA       0       3       5       8      12      20      43      75      90      96
361          UA     100
             * DDM   ***** Preserved *****

362          KK    C310
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363          KM   HYDROGRAPH COMBINATION OF SUB-BASINS 350 & 310
364          HC       3
             * DDM   ***** Preserved *****

365          KK    R310
366          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING & AERIAL MAPPING
367          KM   ROUTING OF FLOW FROM SUB-BASIN 310 TO R312
368          RS       2    FLOW      -1
369          RC    .045     .03    .045    1500    .021
370          RX       0       1     100     106     126     132     231     232
371          RY     3.5       2       2       0       0       2       2     3.5
             * DDM   ***** Preserved *****

372          KK    R312
373          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING & AERIAL MAPPING
374          KM   ROUTING OF FLOW FROM SUB-BASIN 310 TO 320B
375          KM   OVERBANK MANNINGS INCREASED TO ACCOUNT FOR SKEWED FLOW TO NATURAL
376          KM   WATERCOURSE FLOW PATH
377          RS       2    FLOW      -1
378          RC     .07     .03     .07     800   .0124
379          RX       0       3       5      11      61      67     200     395
380          RY       4     2.5       2       0       0       2     2.5       4
             * DDM   ***** Updated *****

381          KK    320B
382          KM   SUB-BASIN 320B
383          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
384          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
385          KM     L =  .67  Kb = .057  Adj. Slope =  134.0
386          BA    .075
387          LG    .350    .400   6.000    .170    .000
388          UC    .279    .285
1                                        HEC-1 INPUT                                                    PAGE 11

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

389          UA       0       3       5       8      12      20      43      75      90      96
390          UA     100
             * DDM   ***** Preserved *****

391          KK   320BC
392          KM   HYDROGRAPH COMBINATION OF SUB-BASINS 310 & 320B
393          HC       2
             * DDM   ***** Preserved *****

394          KK   R320B
395          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING & AERIAL MAPPING
396          KM   ROUTING OF FLOW FROM SUB-BASIN 320B TO 305B
397          KM   OVERBANK MANNINGS INCREASED TO ACCOUNT FOR SKEWED FLOW TO NATURAL
398          KM   WATERCOURSE FLOW PATH
399          RS       3    FLOW      -1
400          RC     .07     .03     .07    2500   .0124
401          RX       0       3       5      11      61      67     200     395
402          RY       4     2.5       2       0       0       2     2.5       4
             * DDM   ***** Updated *****

403          KK    305B
404          KM   SUB-BASIN 305B
405          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
406          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
407          KM     L = 1.60  Kb = .049  Adj. Slope =  131.0
408          BA    .295
409          LG    .350    .350   4.700    .300    .000
410          UC    .467    .464
411          UA       0       3       5       8      12      20      43      75      90      96
412          UA     100
             * DDM   ***** Preserved *****

413          KK   305BC
414          KM   HYDROGRAPH COMBINATION OF SUB-BASINS 310 & 295
415          HC       2
             * DDM   ***** Preserved *****

416          KK   R305B
417          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING & AERIAL MAPPING
418          KM   ROUTING OF FLOW FROM SUBBASIN 305B TO BEGINNING OF PASS MTN. DIVERSION.
419          KM   OVERBANK MANNINGS INCREASED TO ACCOUNT FOR SKEWED FLOW TO NATURAL
420          KM   WATERCOURSE FLOW PATH
421          RS       2    FLOW      -1
422          RC     .07     .03     .07    1100    .013
423          RX       0       3       5      11      51      57     200     400
424          RY       4     2.5       2       0       0       2     2.5       4
             * DDM   ***** Updated *****

425          KK     210
426          KM   SUB-BASIN 210
427          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
428          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .995
429          KM     L = 1.84  Kb = .043  Adj. Slope =  315.0
430          BA    .792
431          LG    .350    .360   6.800    .130   4.000
1                                        HEC-1 INPUT                                                    PAGE 12

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

432          UC    .313    .189
433          UA       0       3       5       8      12      20      43      75      90      96
434          UA     100
             * DDM   ***** Preserved *****

435          KK    R210
436          KM   ROUTING OF FLOW FROM SUB-BASIN 210 TO SUB-BASIN 220
437          RS       2    FLOW      -1
438          RC    .045     .03    .045    5100    .022
439          RX       0       1       2      14      34      46      47      48
440          RY       4       4       4       0       0       4       4       4
             * DDM   ***** Updated *****

441          KK     240
442          KM   SUB-BASIN 240
443          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
444          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .991
445          KM     L = 3.50  Kb = .039  Adj. Slope =  298.6
446          BA   1.428
447          LG    .350    .370   5.300    .230   2.000
448          UC    .467    .353
449          UA       0       3       5       8      12      20      43      75      90      96
450          UA     100
             * DDM   ***** Preserved *****
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451          KK    240C
452          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 240 & 220
453          HC       3
             * DDM   ***** Preserved *****

454          KK   SR240
455          KM   DIGITAL MAPPING SHOWS SEDIMENTATION.  FOR SIMPLICITY NO ADDITIONAL
456          KM   SEDIMENTATION WILL BE CONSIDERED FOR STORAGE ROUTING ANALYSIS. 5/11/00
457          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
458          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
459          RS       1    STOR       0
460          SA    1.38    14.2    36.5
461          SE       0       5      11
462          SS       5      42       3     1.5
             * DDM   ***** Updated *****

463          KK     220
464          KM   SUB-BASIN 220
465          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
466          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
467          KM     L = 1.92  Kb = .046  Adj. Slope =  315.0
468          BA    .484
469          LG    .350    .350   7.000    .120   4.000
470          UC    .333    .279
471          UA       0       3       5       8      12      20      43      75      90      96
472          UA     100
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 13

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

473          KK    220C
474          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 240 & 220
475          HC       2
             * DDM   ***** Preserved *****

476          KK   SR220
477          KM   DIGITAL MAPPING SHOWS SEDIMENTATION.  FOR SIMPLICITY NO ADDITIONAL
478          KM   SEDIMENTATION WILL BE CONSIDERED FOR STORAGE ROUTING ANALYSIS. 5/11/00
479          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
480          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
481          RS       1    STOR       0
482          SA     .78     4.1    13.7
483          SE       0       3      10
484          SS       3      65       3     1.5
             * DDM   ***** Updated *****

485          KK     190
486          KM   SUB-BASIN 190
487          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
488          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
489          KM     L = 1.91  Kb = .042  Adj. Slope =  315.0
490          BA    .918
491          LG    .350    .390   5.000    .190   8.000
492          UC    .321    .185
493          UA       0       3       5       8      12      20      43      75      90      96
494          UA     100
             * DDM   ***** Preserved *****

495          KK    R190
496          KM   ROUTING OF FLOW FROM SUB-BASIN 190 TO SUB-BASIN 200
497          RS       2    FLOW      -1
498          RC    .045     .03    .045    4740     .03
499          RX       0       1       2      17      37      52      53      54
500          RY       5       5       5       0       0       5       5       5
             * DDM   ***** Preserved *****

501          KK    R192
502          KM   ROUTING OF FLOW FROM SUB-BASIN 190 TO SUB-BASIN 200
503          RS       2    FLOW      -1
504          RC    .045    .035    .045    2200    .016
505          RX       0       1      50      59      79      88     137     138
506          RY     3.5       3       3       0       0       3       3     3.5
             * DDM   ***** Updated *****

507          KK     200
508          KM   SUB-BASIN 200
509          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
510          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
511          KM     L = 1.58  Kb = .045  Adj. Slope =  305.6
512          BA    .535
513          LG    .350    .390   5.700    .200  10.000
514          UC    .300    .200
515          UA       0       3       5       8      12      20      43      75      90      96
516          UA     100
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 14

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

517          KK    200C
518          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 220 & 200
519          HC       3
             * DDM   ***** Preserved *****

520          KK   SR200
521          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
522          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
523          RS       1    STOR       0
524          SA    2.56     3.1     9.4
525          SE       0       3      10
526          SS       3     112       3     1.5
             * DDM   ***** Preserved *****

527          KK   200SR
528          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
529          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
530          KO       1       2
531          RS       1    STOR       0
532          SA       8     9.2     9.2
533          SE       0       7      10
534          SS       7     251       3     1.5
535          KM   ******************************************************************
536          KM   ************* END OF PASS MOUNTAIN ALTERNATIVE UPDATE. **************
537          KM
             * DDM   ***** Preserved *****

538          KK    C180
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539          KM   HYDROGRAPH COMBINATION FOR SIGNAL BUTTE FRS
540          KO       1       2
541          HC       2
             * DDM   ***** Preserved *****

542          KK   SR180
543          KM   SIGNAL BUTTE FRS DATED 1/28/85
544          KM   OUTLET PIPE=36"RCP; L= 147';  INLET INV.=1690; OUTLET INV.=1687
545          KM   EMERGENCY SPILLWAY ELEV.=1712.4; PRINCIPLE SPILLWAY ELEV.=1701
546          KM   STORAGE VOLUME BELOW PRINCIPLE SPILLWAY FOR SEDIMENT = 250 ACRE-FEET
547          RS       1    STOR       0
548          SV       0    46.8     106     130   161.2   170.7   230.7   322.2     543   584.1
549          SV   812.9  1121.9  1470.1    1865
550          SE  1791.9    1973  1794.1  1794.5    1795 1795.14    1796 1797.14 1799.42 1799.77
551          SE  1801.7    1804 1806.28 1808.57
552          SQ       0     .04     .08   105.2   297.6   364.8   384.6   409.7   455.6   462.8
553          SQ    2113    8156   15656   26656
             *      0       1     250     500     750    1060
             *      0   106.5   125.5   137.5     146     160
             *     90     101   104.5     107     109   112.4
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT                                          PAGE 15

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

554          KK    R180
555          KM   Routing length updated using Signal Butte Floodway plans dated March 1983
556          KM   Routing length increased 100' from 1500' to 1600'    12/12/00
557          KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
558          KM   ROUTE FLOW FROM SIGNAL BUTTE FRS TO SUB-BASIN 260
559          RS       2    FLOW      -1
560          RC    .035    .025    .035    1600    .003
561          RX       0       1       2    22.6    38.6    59.2      60      61
562          RY     9.3     9.3     9.3       0       0     9.3     9.3     9.3

563          KK     260
564          KM   SUB-BASIN 260
565          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
566          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
567          KM     L =  .81  Kb = .049  Adj. Slope =   68.0
568          BA    .267
569          LG    .300    .170   6.800    .160  15.000
570          UC    .363    .215
571          UA       0       5      16      30      65      77      84      90      94      97
572          UA     100
             * DDM   ***** Preserved *****

573          KK    260C
574          KM   HYDROGRAPH COMBINATION FOR OUTFLOW OF SIGNAL BUTTE FRS & SUB-BASIN 260
575          HC       2    .267
             * DDM   ***** Preserved *****

576          KK    R260
577          KM   Routing length updated using Signal Butte Floodway plans dated March 1983
578          KM   Routing length unchanged     12/12/00
579          KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
580          KM   ROUTE FLOW FROM SUB-BASIN 260 TO SUB-BASIN 280
581          RS       3    FLOW      -1
582          RC    .035    .025    .035    2300    .003
583          RX       0       1       2    23.4    43.4    64.8      65      66
584          RY     9.7     9.7     9.7       0       0     9.7     9.7     9.7
             * DDM   ***** Updated *****

585          KK     280
586          KM   SUB-BASIN 280
587          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
588          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
589          KM     L =  .77  Kb = .049  Adj. Slope =   84.0
590          BA    .304
591          LG    .300    .250   5.300    .290  15.000
592          UC    .333    .175
593          UA       0       5      16      30      65      77      84      90      94      97
594          UA     100
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 16

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

595          KK    280C
596          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 260 & SUB-BASIN 280
597          HC       2
             * DDM   ***** Preserved *****

598          KK    R280
599          KM   Routing length updated using Signal Butte Floodway plans dated March 1983
600          KM   Routing length decreased 400' from 2500' to 2100'    12/12/00
601          KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
602          KM   ROUTE FLOW FROM SUB-BASIN 280 TO SUB-BASIN 300
603          RS       2    FLOW      -1
604          RC    .035    .025    .035    2100    .003
605          RX       0       1       2    23.4    43.4    64.8      65      66
606          RY     9.7     9.7     9.7       0       0     9.7     9.7     9.7
             *
             * DDM   ***** Updated *****

607          KK     300
608          KM   SUB-BASIN 300
609          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
610          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
611          KM     L =  .78  Kb = .049  Adj. Slope =  103.0
612          BA    .279
613          LG    .320    .290   4.200    .480  10.000
614          UC    .325    .180
615          UA       0       5      16      30      65      77      84      90      94      97
616          UA     100
             * DDM   ***** Preserved *****

617          KK    C300
618          KM   HYDROGRAPH COMBINATION OF DIVERTED FLOW
619          HC       2

620          KK    R300
621          KM   Routing length updated using Signal Butte Floodway plans dated March 1983
622          KM   Routing length increased 300' from 2200' to 2500'    12/12/00
623          KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
624          KM   ROUTE FLOW FROM SUB-BASIN 300 TO START OF FLOODWAY CONCRETE CHANNEL
625          RS       2    FLOW      -1
626          RC    .035    .025    .035    2500    .003
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627          RX       0       1       2    23.4    55.4    76.8      77      78
628          RY     9.7     9.7     9.7       0       0     9.7     9.7     9.7
             * DDM   ***** Updated *****

629          KK    305A
630          KM   SUB-BASIN 305A
631          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
632          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
633          KM     L = 1.20  Kb = .047  Adj. Slope =   92.0
634          BA    .407
635          LG    .340    .330   4.450    .380   9.000
636          UC    .438    .285
637          UA       0       5      16      30      65      77      84      90      94      97
638          UA     100
             * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE 17

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

639          KK   305AC
640          KM   HYDROGRAPH COMBINATION OF SUB-BASIN 280 & 300 & 305A
641          HC       2
             * DDM   ***** Preserved *****

642          KK   R305A
643          KM   Routing length updated using Signal Butte Floodway plans dated March 1983
644          KM   Routing length decreased 50' from 6050' to 6000'     12/12/00
645          KM   CHANNEL GEOMETRY FOR SPOOK HILL FRS OBTAINED FROM AS-BUILTS PLANS.
646          KM   CONTINUE TO ROUTE FLOW WITHIN CONCRETE CHANNEL TO SPOOK HILL FRS
647          RS       5    FLOW      -1
648          RC    .016    .016    .016    6000   .0146
649          RX       0       1       2     2.1    16.1    16.2      17      18
650          RY     7.5     7.5     7.5       0       0     7.5     7.5     7.5
             *       1       2
             * DDM   ***** Updated *****

651          KK    320A
652          KM   SUB-BASIN 320A
653          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
654          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .995
655          KM     L = 1.60  Kb = .042  Adj. Slope =  106.0
656          BA    .874
657          LG    .310    .300   4.500    .380  15.000
658          UC    .454    .242
659          UA       0       5      16      30      65      77      84      90      94      97
660          UA     100
             * DDM   ***** Preserved *****

661          KK   D320A
662          KM       DIVERT FLOW INTO ONLINE  DETENTION BASIN
663          KM   DETENTION/RETENTION BASINS LOCATED WITHIN THREE SUBDIVISIONS
664          KM   SIERRA HEIGHTS       FALCON RIDGE     & MARBLE CREEK
665          KM       MAXIMUM VOLUME DIVERSION = 12.27acre-feet
             *       1
666          DT  BS320A   12.27
667          DI       0   10000
668          DQ       0   10000
             * DDM   ***** Preserved *****

669          KK  RT320A
670          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
671          DR  BS320A
             * DDM   ***** Preserved *****

672          KK  SR320A
673          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
674          KM   12.27 ACRE-FEETx43560/36x3600=4.1cfs
             *       1
675          RS       1    STOR       0
676          SV       0     .01    12.3
677          SQ       0     4.2     4.2
             * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE 18

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

678          KK   320AC
679          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
680          HC       3
             * ADD ROUTING ALONG SPOOK HILL FRS
             * DDM   ***** Preserved *****

681          KK   R320A
682          KM   ROUTE FLOW THROUGH SPOOK HILL FRS FROM JUNCTION OF BROWN & ELLSWORTH ROAD
683          KM   TO JUST NORTH OF JUNCTION OF MCDOWELL & POWER RD.    ASH BW+10'
684          RS       9    FLOW      -1
685          RC    .035    .035    .035    4500   .0007
686          RX       0       9      50      68     198     206     267     275
687          RY     100      97      97      91      91      97      97     100
             * DDM   ***** Updated *****

688          KK     340
689          KM   SUB-BASIN 340
690          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
691          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .991
692          KM     L = 2.40  Kb = .042  Adj. Slope =  160.0
693          BA   1.449
694          LG    .280    .280   4.150    .520  21.000
695          UC    .512    .287
696          UA       0       5      16      30      65      77      84      90      94      97
697          UA     100
             * DDM   ***** Preserved *****

698          KK    D340
699          KM       DIVERT FLOW INTO ONLINE  DETENTION BASIN
700          KM   DETENTION/RETENTION BASINS LOCATED WITHIN THREE SUBDIVISIONS
701          KM   GRANDVIEW ESTATES    BOULDER MOUNTAIN & 33% OF MESA HIGHLANDS
702          KM       MAXIMUM VOLUME DIVERSION = 56.0 acre-feet
             *       1
703          DT   BS340      56
704          DI       0   10000
705          DQ       0   10000
             * DDM   ***** Preserved *****

706          KK   RT340
707          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
708          DR   BS340
             * DDM   ***** Preserved *****
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709          KK   SR340
710          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
711          KM    56.0 ACRE-FEETx43560/36x3600=18.8cfs
             *      1
712          RS      1    STOR       0
713          SV      0     .01      56
714          SQ      0    18.9    18.9
             * DDM   ***** Preserved *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

715          KK    C340
716          KO      1       2
717          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
718          HC      3
             * ADD ROUTING ALONG SPOOK HILL FRS
             * DDM   ***** Preserved *****

719          KK    R340
720          KM   ROUTE FLOW THROUGH SPOOK HILL FRS FROM JUNCTION OF BROWN & ELLSWORTH ROAD
721          KM   TO JUST NORTH OF JUNCTION OF MCDOWELL & POWER RD.    ASH BW+30'
722          RS      5    FLOW      -1
723          RC    .035    .035    .035    2300   .0007
724          RX      0       9      50      68     233     241     307     315
725          RY    100      97      97      91      91      97      97     100
             *      0       9      50      68     308     326     367     376
             *    100      97      97      91      91      97      97     100
             * DDM   ***** Inserted *****

726          KK    355A
727          KM   SUB-BASIN 355A
728          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
729          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
730          KM     L =  .80  Kb = .051  Adj. Slope =  125.0
731          BA    .194
732          LG    .320    .300   4.500    .370  12.000
733          UC    .304    .210
734          UA      0       5      16      30      65      77      84      90      94      97
735          UA    100
             * DDM   ***** Preserved *****

736          KK   R355A
737          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
738          KM   ROUTING OF FLOW FROM SUB-BASIN 355A TO SUB-BASIN 360
739          RS     10    FLOW      -1
740          RC    .045    .035    .045   10100    .026
741          RX      0       1      40      46      56      62     102     103
742          RY      3       2       2       0       0       2       2       3
             * DDM   ***** Updated *****

743          KK     360
744          KM   SUB-BASIN 360
745          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
746          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
747          KM     L = 2.10  Kb = .040  Adj. Slope =  124.0
748          BA    .670
749          LG    .260    .270   4.100    .560  20.000
750          UC    .587    .466
751          UA      0       5      16      30      65      77      84      90      94      97
752          UA    100
             * DDM   ***** Preserved *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

753          KK    D360
754          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
755          KM   DETENTION/RETENTION BASINS LOCATED WITHIN 33% OF MESA HIGHLANDS
756          KM        MAXIMUM VOLUME DIVERSION = 28.6 acre-feet
             *      1
757          DT   BS360    28.6
758          DI      0   10000
759          DQ      0   10000
             * DDM   ***** Preserved *****

760          KK   RT360
761          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
762          DR   BS360
             * DDM   ***** Preserved *****

763          KK   SR360
764          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
765          KM    28.6 ACRE-FEETx43560/36x3600=9.6cfs
766          RS      1    STOR       0
767          SV      0     .01    28.6
768          SQ      0     9.6     9.6
             * DDM   ***** Preserved *****

769          KK    360C
770          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
771          HC      4
             * ADD ROUTING ALONG SPOOK HILL FRS
             * DDM   ***** Preserved *****

772          KK    R360
773          KM   ROUTE FLOW THROUGH SPOOK HILL FRS FROM JUNCTION OF BROWN & ELLSWORTH ROAD
774          KM   TO JUST NORTH OF JUNCTION OF MCDOWELL & POWER RD.    ASH BW+80
775          RS      7    FLOW      -1
776          RC    .035    .035    .035    2600   .0007
777          RX      0       9      50      68     268     286     337     345
778          RY    100      97      97      91      91      97      97     100
             *      0       9      50      68     308     326     367     376
             *    100      97      97      91      91      97      97     100

779          KK    370A
780          KM   SUB-BASIN 370A
781          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
782          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
783          KM     L =  .90  Kb = .050  Adj. Slope =  189.0
784          BA    .257
785          LG    .310    .280   4.800    .340  16.000
786          UC    .271    .173
787          UA      0       5      16      30      65      77      84      90      94      97
788          UA    100
             * DDM   ***** Inserted *****
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 789          KK    395A
 790          KM   SUB-BASIN 395A
 791          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 792          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
 793          KM     L = 1.00  Kb = .052  Adj. Slope =  188.0
 794          BA    .160
 795          LG    .330    .320   5.100    .280  12.000
 796          UC    .300    .276
 797          UA       0       5      16      30      65      77      84      90      94      97
 798          UA     100
              * DDM   ***** Preserved *****

 799          KK   370AC
 800          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
 801          HC       2
              * DDM   ***** Preserved *****

 802          KK   R370A
 803          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
 804          KM   ROUTING OF FLOW FROM SUB-BASINS 370 AND 395 TO SUB-BASIN 380.
 805          RS      12    FLOW      -1
 806          RC    .045    .035    .045   10250    .023
 807          RX       0       1      40      46      56      62     102     103
 808          RY     3.5       2       2       0       0       2       2     3.5
              * DDM   ***** Updated *****

 809          KK     380
 810          KM   SUB-BASIN 380
 811          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 812          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
 813          KM     L = 2.20  Kb = .048  Adj. Slope =  114.0
 814          BA    .972
 815          LG    .300    .310   4.150    .500   7.000
 816          UC    .658    .444
 817          UA       0       5      16      30      65      77      84      90      94      97
 818          UA     100
              * DDM   ***** Preserved *****

 819          KK    D380
 820          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
 821          KM   DETENTION/RETENTION BASINS LOCATED WITHIN 33% OF MESA HIGHLANDS
 822          KM        MAXIMUM VOLUME DIVERSION = 28.6 acre-feet
              *      1
 823          DT   BS380    28.6
 824          DI       0   10000
 825          DQ       0   10000
              * DDM   ***** Preserved *****

 826          KK   RT380
 827          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
 828          DR   BS380
              * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE 22
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 829          KK   SR380
 830          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
 831          KM    28.6 ACRE-FEETx43560/36x3600=9.6cfs
 832          RS       1    STOR       0
 833          SV       0     .01    28.6
 834          SQ       0     9.6     9.6
              * DDM   ***** Preserved *****

 835          KK    380C
 836          KO       1       2
 837          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
 838          HC       4
              * OFFLINE DETENTION BASIN ADDED THIS ALTERNATIVE
              * DDM   ***** Preserved *****

 839          KK    380D
 840          KM        DIVERT FLOW INTO OFFLINE  DETENTION BASIN
 841          KM        IN RED MOUNTAIN REGIONAL PARK
 842          KM
 843          DT    380S
 844          DI       0    1400   10000
 845          DQ       0       0    8600
              * DDM   ***** Preserved *****

 846          KK   TR380
 847          KM   RETRIEVE FLOW FROM DIVERSION INTO OFFLINE BASIN
 848          DR    380S
              * DDM   ***** Preserved *****

 849          KK   380SR
 850          KM   OFFLINE BASIN IN PARK AREA
              *  RATING CURVE FOR OUTLET OF OFFLINE DETENTION BASIN DETERMINED USING 2
              *  DIAMETER LOWFLOW PIPE AND WEIR FLOW AFTER 3' OF PONDING.     12/06/00
              *
              *      1       2
 851          RS       1    ELEV       0
              *     17      18      20
 852          SA       0       8       8       8       8       8       8    8.33    8.66       9
 853          SA    9.33    9.66      10
 854          SE       0      .5       1     1.5       2     2.5       3     3.5       4     4.5
 855          SE       5     5.5       6
 856          SQ       0       1       5       9      13      17      20     100     278     557
 857          SQ     946    1443    2060
              *     5.9      10       3
              *       0      40      .6
              * DDM   ***** Preserved *****

 858          KK    C380
 859          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
 860          HC       2
              * ADD ROUTING ALONG SPOOK HILL FRS
              * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE 23
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 861          KK    R380
 862          KM   ROUTE FLOW THROUGH SPOOK HILL FRS FROM JUNCTION OF BROWN & ELLSWORTH ROAD
 863          KM   TO JUST NORTH OF JUNCTION OF MCDOWELL & POWER RD.
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864          RS       8    FLOW      -1
865          RC    .035    .035    .035    4000   .0007
866          RX       0       9      50      68     163     181     257     265
867          RY     100      97      97      91      91      97      97     100
             *        0       9      50      68     308     326     367     376
             *      100      97      97      91      91      97      97     100
             * DDM   ***** Updated *****

868          KK     390
869          KM   SUB-BASIN 390
870          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
871          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
872          KM     L =  .70  Kb = .050  Adj. Slope =  299.4
873          BA    .244
874          LG    .300    .250   4.700    .380  18.000
875          UC    .204    .107
876          UA       0       5      16      30      65      77      84      90      94      97
877          UA     100
             * DDM   ***** Preserved *****

878          KK    D390
879          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
880          KM   DETENTION/RETENTION BASINS LOCATED WITHIN THUNDER MOUNTAIN ESTATES
881          KM        MAXIMUM VOLUME DIVERSION  = 3.5 acre-feet
             *      1
882          DT   BS390     3.5
883          DI       0   10000
884          DQ       0   10000
             * DDM   ***** Preserved *****

885          KK   RT390
886          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
887          DR   BS390
             * DDM   ***** Preserved *****

888          KK   SR390
889          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
890          KM     3.5 ACRE-FEETx43560/36x3600=1.2cfs
891          RS       1    STOR       0
892          SV       0     .01     3.5
893          SQ       0     1.2     1.2
             * DDM   ***** Preserved *****

894          KK    390C
895          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
896          HC       2
             * DDM   ***** Preserved *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

897          KK   RR390
898          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
899          KM   FROM SUB-BASIN 390 TO SUB-BASIN 400
900          RS      14    FLOW      -1
901          RC    .045    .045    .045    8800    .020
902          RX       0       1      40      46      56      62     102     103
903          RY       3       2       2       0       0       2       2       3
             * DDM   ***** Updated *****

904          KK     400
905          KM   SUB-BASIN 400
906          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
907          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
908          KM     L = 1.64  Kb = .046  Adj. Slope =  110.0
909          BA    .616
910          LG    .320    .320   3.130    .930   6.000
911          UC    .592    .405
912          UA       0       5      16      30      65      77      84      90      94      97
913          UA     100
             * DDM   ***** Preserved *****

914          KK    D400
915          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
916          KM   DETENTION/RETENTION BASIN LOCATED WITHIN SAGUARO VISTA SUBDIVISION
917          KM        MAXIMUM VOLUME DIVERSION = 5.6 ACRE-FEET
             *      1
918          DT   BS400     5.6
919          DI       0   10000
920          DQ       0   10000
             * DDM   ***** Preserved *****

921          KK   RT400
922          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
923          DR   BS400
             * DDM   ***** Preserved *****

924          KK   SR400
925          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
926          KM     5.6 ACRE-FEETx43560/36x3600 = 2 cfs
927          RS       1    STOR       0
928          SV       0     .01     5.6
929          SQ       0       2       2
             * DDM   ***** Preserved *****

930          KK    C400
931          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
932          HC       2
             * DDM   ***** Preserved *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

933          KK    400C
934          KO       1       2
935          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
936          HC       3
             * ADD ROUTING ALONG SPOOK HILL FRS
             * DDM   ***** Preserved *****

937          KK    R400
938          KM   ROUTE FLOW THROUGH SPOOK HILL FRS FROM JUNCTION OF BROWN & ELLSWORTH ROAD
939          KM   TO JUST NORTH OF JUNCTION OF MCDOWELL & POWER RD.
940          RS       8    FLOW      -1
941          RC    .035    .035    .035    3800   .0007
942          RX       0       9      50      68     163     181     257     265
943          RY     100      97      97      91      91      97      97     100
             *        0       9      50      68     308     326     367     376
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                 *    100      97      97      91      91      97      97     100
                 * DDM   ***** Inserted *****

 944             KK    385A
 945             KM   SUB-BASIN 385A
 946             KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 947             KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
 948             KM     L =  .90  Kb = .051  Adj. Slope =  309.5
 949             BA    .190
 950             LG    .330    .320   4.800    .310   9.000
 951             UC    .233    .170
 952             UA       0       5      16      30      65      77      84      90      94      97
 953             UA     100
                 * DDM   ***** Preserved *****

 954             KK   D385A
 955             KM   DIVERT FLOW INTO SUB-BASINS 415 & 420
 956             DT  SF385A
 957             DI       0    5000
 958             DQ       0    3000
                 * DDM   ***** Preserved *****

 959             KK   R385A
 960             KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
 961             KM   ROUTING OF FLOW DIVERSION FROM SUB-BASIN 385A TO 420
 962             RS      12    FLOW      -1
 963             RC    .045     .04    .045   10250    .022
 964             RX       0       1      40      46      56      62     102     103
 965             RY       3       2       2       0       0       2       2       3
                 * DDM   ***** Updated *****

 966             KK     420
 967             KM   SUB-BASIN 420
 968             KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 969             KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .995
 970             KM     L = 1.91  Kb = .042  Adj. Slope =  120.0
 971             BA    .849
 972             LG    .310    .270   3.880    .580  12.000
 973             UC    .512    .325
1                                          HEC-1 INPUT                                          PAGE 26

LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 974             UA       0       5      16      30      65      77      84      90      94      97
 975             UA     100
                 * DDM   ***** Preserved *****

 976             KK    D420
 977             KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
 978             KM   DETENTION/RETENTION BASINS LOCATED WITHIN GRAY FOX SUBDIVISION
 979             KM        MAXIMUM VOLUME DIVERSION = 8.65 acre-feet
                 *       1
 980             DT   BS420    8.65
 981             DI       0   10000
 982             DQ       0   10000
                 * DDM   ***** Preserved *****

 983             KK   RT420
 984             KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
 985             DR   BS420
                 * DDM   ***** Preserved *****

 986             KK   SR420
 987             KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
 988             KM   38.55 ACRE-FEETx43560/36x3600=13cfs
 989             RS       1    STOR       0
 990             SV       0     .01   38.55
 991             SQ       0      13      13
                 * DDM   ***** Preserved *****

 992             KK    420C
 993             KO       1       2
 994             KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
 995             HC       4   10.87
                 * ADD ROUTING ALONG SPOOK HILL FRS
                 * DDM   ***** Preserved *****

 996             KK    R420
 997             KM   ROUTE FLOW THROUGH SPOOK HILL FRS FROM JUNCTION OF BROWN & ELLSWORTH ROAD
 998             KM   TO JUST NORTH OF JUNCTION OF MCDOWELL & POWER RD.
 999             RS       6    FLOW      -1
1000             RC    .035    .035    .035    2900   .0007
1001             RX       0       9      50      68     163     181     257     265
1002             RY     100      97      97      91      91      97      97     100
                 *       0       9      50      68     308     326     367     376
                 *     100      97      97      91      91      97      97     100
                 * DDM   ***** Updated *****

1003             KK     440
1004             KM   SUB-BASIN 440
1005             KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1006             KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1007             KM     L =  .40  Kb = .039  Adj. Slope =  315.0
1008             BA    .080
1009             LG    .190    .380   6.400    .140  13.000
1010             UC    .129    .077
1011             UA       0       3       5       8      12      20      43      75      90      96
1012             UA     100
                 * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 27

LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1013             KK     R70
1014             KM   ROUTE FLOW FROM SUB-BASIN 440 TO C108
1015             RS       1    FLOW      -1
1016             RC     .05    .035     .05    2250     .08
1017             RX    1000    1025    1050    1070    1075    1095    1120    1145
1018             RY      30    22.9    15.7      10      10    15.7    22.9      30
                 * DDM   ***** Updated *****

1019             KK     441
1020             KM   SUB-BASIN 441
1021             KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1022             KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1023             KM     L =  .28  Kb = .069  Adj. Slope =  315.0
1024             BA    .010
1025             LG    .300    .250   5.600    .220   5.000
1026             UC    .150    .225
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1027        UA       0       5      16      30      65      77      84      90      94      97
1028        UA     100
            * DDM   ***** Preserved *****

1029        KK    C108
1030        KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 440 & 441
1031        HC       2
            * DDM   ***** Preserved *****

1032        KK    DIV4
1033        KM        SPLIT FLOW WITH TWO 42 INCH PIPES TO WEST AND SOUTH
            *      1
1034        DT   SPLIT
1035        DI       0      14      40      82     120     154     180
1036        DQ       0       7      20      41      60      77      90
            * DDM   ***** Preserved *****

1037        KK    R108
1038        KM        ROUTE FLOW FROM SUB-BASIN C108 TO C67
1039        RS       2    FLOW      -1
1040        RC     .05    .035     .05    3200      .1
1041        RX    1000    1025    1050    1070    1075    1095    1120    1145
1042        RY      30    22.9    15.7      10      10    15.7    22.9      30
            * DDM   ***** Updated *****

1043        KK     442
1044        KM   SUB-BASIN 442
1045        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1046        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1047        KM     L =  .83  Kb = .055  Adj. Slope =  274.2
1048        BA    .100
1049        LG    .300    .270   3.290    .770   5.000
1050        UC    .258    .264
1051        UA       0       5      16      30      65      77      84      90      94      97
1052        UA     100
            * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 28

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1053        KK     C67
1054        KM   COMBINE FLOW FROM SUB-BASIN 442 & DIV4
1055        HC       2
            * DDM   ***** Preserved *****

1056        KK    DIV6
1057        KM        OFFLINE BASIN WITH 25 FOOT WEIR SET AT 2.5 FEET ABOVE BOTTOM OF CHANNEL
1058        KM        FLOW CONTINUES BEYOND BASIN THROUGH 2-30" PIPES
            *      1
1059        DT  BASIN4
1060        DI       0      10      32      44    79.9   132.5     198   272.9   356.8
1061        DQ       0       0       0       0    23.9    67.5     124   190.9   266.8
            * DDM   ***** Preserved *****

1062        KK  RTDIV6
1063        KM   RETRIEVE FLOW FROM DIVERSION INTO OFFLINE BASIN
1064        DR  BASIN4
            * DDM   ***** Preserved *****

1065        KK  RFDIV6
1066        KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1067        KM     3.3 ACRE-FEETx43560/36x3600=1.1cfs
            *      1
1068        RS       1    STOR       0
1069        SV       0     .01     3.3
1070        SQ       0     1.1     1.1
            * DDM   ***** Preserved *****

1071        KK   CDIV6
1072        KM   HYDROGRAPH COMBINATION FOR OFFLINE BASIN BLEEDOFF
1073        HC       2
            * DDM   ***** Updated *****

1074        KK     443
1075        KM   SUB-BASIN 443
1076        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1077        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1078        KM     L =  .71  Kb = .050  Adj. Slope =  315.0
1079        BA    .080
1080        LG    .250    .190   8.000    .080  10.000
1081        UC    .196    .194
1082        UA       0       5      16      30      65      77      84      90      94      97
1083        UA     100
            * DDM   ***** Preserved *****

1084        KK   DIV66
1085        KM        DIVERT FLOW INTO 3 NATURAL WASHES WITH ONE 24" PIPE IN EACH WASH.
1086        KM        EACH PIPE CAPACITY BASED ON 4 FEET OF HEAD
1087        DT   WSH66
1088        DI       0      78     100     200
1089        DQ       0      78      78      78
            * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 29

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1090        KK    R113
1091        KM        ROUTE FLOW FROM C113 TO C114
1092        RS       1    FLOW      -1
1093        RC    .019    .019    .019    1300    .029
1094        RX    1000    1004    1008    1012    1018    1022    1026    1030
1095        RY      17   15.33   12.67      10      10   12.67   15.33      17
            * DDM   ***** Preserved *****

1096        KK    C114
1097        KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 67 AND C113
1098        HC       2
            * DDM   ***** Updated *****

1099        KK     444
1100        KM   SUB-BASIN 444
1101        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1102        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1103        KM     L =  .33  Kb = .034  Adj. Slope =  315.0
1104        BA    .040
1105        LG    .130    .350   4.450    .320   1.000
1106        UC    .112    .084
1107        UA       0       3       5       8      12      20      43      75      90      96
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1108          UA     100
              * DDM   ***** Preserved *****

1109          KK     R58
1110          KM   ROUTE FLOW FROM SUB-BASIN 444 TO C107
1111          RS       1    FLOW      -1
1112          RC     .05    .035     .05    2370   .0516
1113          RX    1000    1010    1020    1050    1055    1085    1095    1105
1114          RY      19      18      17      10      10      17      18      19
              * DDM   ***** Updated *****

1115          KK     445
1116          KM   SUB-BASIN 445
1117          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1118          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1119          KM     L =  .82  Kb = .036  Adj. Slope =  315.0
1120          BA    .190
1121          LG    .170    .320   3.470    .590   3.000
1122          UC    .192    .130
1123          UA       0       5      16      30      65      77      84      90      94      97
1124          UA     100
              * DDM   ***** Preserved *****

1125          KK    C107
1126          KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 444 & 445
1127          HC       2
              * DDM   ***** Preserved *****
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1128          KK    R107
1129          KM        ROUTE FLOW FROM C107 TO C109
1130          RS       1    FLOW      -1
1131          RC     .05    .035     .05     700   .0516
1132          RX    1000    1010    1020    1050    1055    1085    1095    1105
1133          RY      19      18      17      10      10      17      18      19
              * DDM   ***** Preserved *****

1134          KK    RTB2
1135          KM        RETRIEVE DIVERTED FLOW FROM BASIN 1
              *       1
1136          DR   SPLIT
              * DDM   ***** Preserved *****

1137          KK  RSPLIT
1138          KM        ROUTE FLOW FROM SPLIT TO C109
1139          RS       1    FLOW      -1
1140          RC     .05    .035     .05     800     .05
1141          RX    1000    1025    1050    1070    1075    1095    1120    1145
1142          RY      30    22.9    15.7      10      10    15.7    22.9      30
              * DDM   ***** Updated *****

1143          KK     446
1144          KM   SUB-BASIN 446
1145          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1146          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1147          KM     L =  .46  Kb = .061  Adj. Slope =  303.9
1148          BA    .040
1149          LG    .270    .250   4.500    .400  19.000
1150          UC    .183    .189
1151          UA       0       5      16      30      65      77      84      90      94      97
1152          UA     100
              * DDM   ***** Preserved *****

1153          KK    C109
1154          KM        COMBINE HYDROGRAPHS FROM COMBINES C107 AND C108
1155          HC       3
              * DDM   ***** Preserved *****

1156          KK    DIV5
1157          KM        DIVERT FLOW INTO WASHES TOWARDS WEST
1158          KM        DIVERSION THROUGH 36" PIPE WITH 3 FEET OF HEAD
              *       1
1159          DT  WSH404
1160          DI       0    40.7    71.2   121.6     190     276   379.4   500.6
1161          DQ       0      35      35      35      35      35      35      35
              * DDM   ***** Preserved *****

1162          KK    R109
1163          KM        ROUTE FLOW FROM C109 TO C110
1164          RS       1    FLOW      -1
1165          RC    .019    .019    .019    3080     .05
1166          RX    1000    1005    1010    1015    1025    1030    1035    1040
1167          RY   13.75    12.5   11.25      10      10   11.25    12.5   13.75
              * DDM   ***** Updated *****
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1168          KK     447
1169          KM   SUB-BASIN 447
1170          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1171          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1172          KM     L =  .49  Kb = .056  Adj. Slope =  221.0
1173          BA    .090
1174          LG    .250    .270   3.350    .870  30.000
1175          UC    .208    .145
1176          UA       0       5      16      30      65      77      84      90      94      97
1177          UA     100
              * DDM   ***** Preserved *****

1178          KK   RT404
1179          KM        RETRIEVE DIVERTED FLOW FOR WASH 109
1180          DR  WSH404
              * DDM   ***** Preserved *****

1181          KK    R404
1182          KM        ROUTE FLOW FROM C110 TO C110
1183          RS       6    FLOW      -1
1184          RC    .019    .019    .019    3540     .03
1185          RX    1000    1012    1016    1020    1025    1029    1033    1045
1186          RY      15      12      11      10      10      11      12      15
              * DDM   ***** Preserved *****

1187          KK    C110
1188          KM   COMBINE HYDROGRAPHS FROM SUB-BASIN 447 AND R404
1189          HC       3
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                * DDM   ***** Preserved *****

1190            KK    R110
1191            KM        ROUTE FLOW FROM C110 TO C115
1192            RS       1    FLOW      -1
1193            RC    .019    .019    .019     560   .0291
1194            RX    1000    1012    1016    1020    1035    1039    1043    1055
1195            RY      15      12      11      10      10      11      12      15
                * DDM   ***** Preserved *****

1196            KK    C115
1197            KM        COMBINE HYDROGRAPHS FROM C114 AND C110
1198            HC       2
                * DDM   ***** Preserved *****

1199            KK    R115
                * ******OUTFLOW FROM THIS ROUTING IS GREATER THAN INFLOW TO THE
                * ******ROUTING BY 2cfs.  THIS IS NOTED BUT LEFT UNCHANGED WITHIN THE MODEL
1200            KM        ROUTE FLOW FROM C115 TO C119
1201            RS       1    FLOW      -1
1202            RC    .019    .019    .019    2125    .029
1203            RC    .019    .019    .019     580   .0291
1204            RX    1000    1012    1016    1020    1035    1039    1043    1055
1205            RY      15      12      11      10      10      11      12      15
                * DDM   ***** Updated *****
1                                          HEC-1 INPUT                                                    PAGE 32

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1206            KK     448
1207            KM   SUB-BASIN 448
1208            KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1209            KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1210            KM     L =  .36  Kb = .042  Adj. Slope =  315.0
1211            BA    .045
1212            LG    .170    .310   4.200    .390  11.000
1213            UC    .133    .102
1214            UA       0       5      16      30      65      77      84      90      94      97
1215            UA     100
                * DDM   ***** Updated *****

1216            KK     449
1217            KM   SUB-BASIN 449
1218            KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1219            KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1220            KM     L =  .40  Kb = .054  Adj. Slope =  315.0
1221            BA    .050
1222            LG    .260    .280   3.500    .640   6.000
1223            UC    .167    .134
1224            UA       0       5      16      30      65      77      84      90      94      97
1225            UA     100
                * DDM   ***** Preserved *****

1226            KK   C6364
1227            KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 448 & 449
1228            HC       2
                * DDM   ***** Preserved *****

1229            KK   R6364
1230            KM   ROUTE FLOW FROM C116 AND SUB-BASINS 448 AND 449
1231            RS       4    FLOW      -1
1232            RC     .05    .035     .05    4375   .0333
1233            RX    1000    1027    1053    1080    1090    1117    1143    1170
1234            RY      15   13.33   11.67      10      10   11.67   13.33      15
                * DDM   ***** Updated *****

1235            KK     450
1236            KM   SUB-BASIN 450
1237            KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1238            KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1239            KM     L =  .85  Kb = .057  Adj. Slope =  210.5
1240            BA    .070
1241            LG    .340    .350   3.630    .570   4.000
1242            UC    .296    .383
1243            UA       0       3       5       8      12      20      43      75      90      96
1244            UA     100
                * DDM   ***** Updated *****
1                                          HEC-1 INPUT                                                    PAGE 33

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1245            KK     451
1246            KM   SUB-BASIN 451
1247            KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1248            KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1249            KM     L =  .57  Kb = .063  Adj. Slope =  175.0
1250            BA    .025
1251            LG    .340    .340   3.290    .750   3.000
1252            UC    .271    .453
1253            UA       0       3       5       8      12      20      43      75      90      96
1254            UA     100
                * DDM   ***** Preserved *****

1255            KK    R766
1256            KM        RETRIEVE DIVERTED FLOW FROM SUB-BASIN 66
1257            DR   WSH66
                * DDM   ***** Updated *****

1258            KK     452
1259            KM   SUB-BASIN 452
1260            KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1261            KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1262            KM     L =  .43  Kb = .055  Adj. Slope =  315.0
1263            BA    .040
1264            LG    .260    .280   3.700    .550   9.000
1265            UC    .171    .166
1266            UA       0       5      16      30      65      77      84      90      94      97
1267            UA     100
                * DDM   ***** Preserved *****

1268            KK   C6465
1269            KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 443 AND 452
1270            HC       2
                * DDM   ***** Preserved *****

1271            KK   R6566
1272            KM        ROUTE FLOW FROM DIVERSIONS 65 AND 66 TO C116
1273            RS       2    FLOW      -1
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1274        RC     .05    .035     .05    2435   .0282
1275        RX    1000    1045    1090    1150    1160    1220    1265    1310
1276        RY      25      23      20      10      10      20      23      25
            * DDM   ***** Preserved *****

1277        KK    C116
1278        KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 450 & 451 AND R6364 & R6465
1279        HC       4
            * DDM   ***** Preserved *****

1280        KK  BASIN5
1281        KM        RESERVOIR WITHIN PARCEL 31      2-48 INCH PIPES AT OUTFALL
1282        KM        BASIN 5 FEET DEEP
1283        RS       1    ELEV      0
1284        SV       0     4.5     9.9
1285        SQ       0      69     190
1286        SE       0     2.5       5
            * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                                    PAGE 34

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1287        KK    R116
1288        KM   ROUTE FLOW FROM C116 TO C117
1289        RS       2    FLOW      -1
1290        RC     .05    .035     .05    1300   .0333
1291        RX    1000    1100    1200    1300    1320    1420    1520    1620
1292        RY      13      12      11      10      10      11      12      13
            * DDM   ***** Updated *****

1293        KK     453
1294        KM   SUB-BASIN 453
1295        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1296        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1297        KM     L =  .58  Kb = .058  Adj. Slope =  138.0
1298        BA    .060
1299        LG    .290    .300   3.290    .820  18.000
1300        UC    .275    .284
1301        UA       0       5      16      30      65      77      84      90      94      97
1302        UA     100
            * DDM   ***** Preserved *****

1303        KK    C117
1304        KM   COMBINE HYDROGRAPHS FROM SUB-BASIN 453 AND R116
1305        HC       2
            * DDM   ***** Preserved *****

1306        KK    C118
1307        KM   COMBINE HYDROGRAPHS FROM R115 AND C117
1308        HC       2
            * DDM   ***** Preserved *****

1309        KK    R118
1310        KM        ROUTE FLOW FROM C118 TO  DIV7
1311        RS       1    FLOW      -1
1312        RC    .019    .019    .019    1500    .024
1313        RX    1000    1012    1016    1020    1035    1039    1043    1055
1314        RY      15      12      11      10      10      11      12      15
            * DDM   ***** Preserved *****

1315        KK    DIV7
1316        KM        OFFLINE BASIN AT NORTH MOUNTAIN RIDGE   FLOWS ENTER BASIN OVER
1317        KM        30' WEIR SET AT 5.3' ABOVE THE CHANNEL BOTTOM
            *      1
1318        DT  BASIN6
1319        DI       0     363     487     563     645     844
1320        DQ       0       3      47      83     125     244
            * DDM   ***** Preserved *****

1321        KK  RTDIV7
1322        KM   RETRIEVE FLOW FROM DIVERSION INTO OFFLINE BASIN
1323        DR  BASIN6
            * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                                    PAGE 35

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1324        KK  RFDIV7
1325        KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1326        KM     3.6 ACRE-FEETx43560/36x3600=1.2cfs
1327        RS       1    STOR       0
1328        SV       0     .01     3.6
1329        SQ       0     1.2     1.2
            * DDM   ***** Preserved *****

1330        KK   CDIV7
1331        KM   HYDROGRAPH COMBINATION FOR OFFLINE BASIN BLEEDOFF
1332        HC       2
            * DDM   ***** Updated *****

1333        KK     454
1334        KM   SUB-BASIN 454
1335        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1336        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1337        KM     L = 1.23  Kb = .051  Adj. Slope =  163.0
1338        BA    .180
1339        LG    .300    .310   3.780    .560  14.000
1340        UC    .379    .395
1341        UA       0       5      16      30      65      77      84      90      94      97
1342        UA     100
            * DDM   ***** Preserved *****

1343        KK    C119
1344        KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 454 AND C119
            *      1       2
1345        HC       2
            * DDM   ***** Preserved *****

1346        KK    R454
1347        KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
1348        KM   ROUTE FLOW FROM C119 TO 415C
1349        RS       2    FLOW      -1
1350        RC    .045    .035    .045    2200    .009
1351        RX       0      .5       1      33      42      67    67.5      68
1352        RY       5       4       4       0       0       6       6       6
            * DDM   ***** Updated *****

1353        KK     415
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1354          KM   SUB-BASIN 415
1355          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1356          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
1357          KM     L = 2.58  Kb = .044  Adj. Slope =  298.5
1358          BA    .608
1359          LG    .320    .290   4.500    .400  15.000
1360          UC    .421    .401
1361          UA      0       5      16      30      65      77      84      90      94      97
1362          UA    100
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 36

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1363          KK  RT385A
1364          KM   RETRIEVE FLOW FROM DIVERSION OF SUB-BASIN 385A INTO 415
1365          DR  SF385A
              * DDM   ***** Preserved *****

1366          KK  RR385A
1367          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
1368          KM   ROUTING OF SPLIT FLOW FROM SUB-BASIN 385A TO 415
1369          RS       6    FLOW      -1
1370          RC    .045     .04    .045    5878    .024
1371          RX       0       1      40      46      56      62     102     103
1372          RY       3       2       2       0       0       2       2       3
              * DDM   ***** Preserved *****

1373          KK    415C
1374          KM   HYDROGRAPH COMBINATION OF SUB-BASINS 415, R454 & SPLIT FLOW FROM 385A
1375          HC       3    1.71
              * DDM   ***** Preserved *****

1376          KK    R415
1377          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
1378          KM   ROUTING OF FLOW FROM 415C TO 455C
1379          RS       2    FLOW      -1
1380          RC    .045     .03    .045    4100    .024
1381          RX       0      .5       1       8      16      23    23.5      24
1382          RY       8       8       8       0       0       8       8       8
              * DDM   ***** Updated *****

1383          KK     455
1384          KM   SUB-BASIN 455
1385          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1386          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .993
1387          KM     L = 1.70  Kb = .041  Adj. Slope =  146.0
1388          BA   1.111
1389          LG    .270    .280   3.700    .640  24.000
1390          UC    .421    .204
1391          UA       0       5      16      30      65      77      84      90      94      97
1392          UA     100
              * DDM   ***** Preserved *****

1393          KK    D455
1394          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
1395          KM   DETENTION/RETENTION BASINS LOCATED WITHIN LAS SENDAS ADDENDUM III
1396          KM   FOR BASIN #: 30      34      43      47&58
1397          KM        MAXIMUM VOLUME DIVERSION = 74.1 acre-feet
              *      1
1398          DT   BS455    74.1
1399          DI       0   10000
1400          DQ       0   10000
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE 37

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1401          KK   RT455
1402          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
1403          DR   BS455
              * DDM   ***** Preserved *****

1404          KK   SR455
1405          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1406          KM    74.1 ACRE-FEETx43560/36x3600=25cfs
1407          RS       1    STOR       0
1408          SV       0     .01    74.1
1409          SQ       0      25      25
              * DDM   ***** Preserved *****

1410          KK    C455
1411          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 455 AND DIVERTED BASIN STORAGE OF 455
1412          HC       2
              * DDM   ***** Preserved *****

1413          KK    455C
1414          KM  HYDROGRAPH COMBINATION OF 420C, R415 AND C455
1415          KO       1       2
1416          HC       3
              * KK SR440
              * KM SPOOK HILL FRS PLANS DATED 6/15/77
              * KM OUTLET PIPE=7'x7.5'RCBC; L=70 INLET INV.=1566; OUTLET INV.=1566
              * KM EMERGENCY SPILLWAY ELEV.=1582; PRINCIPLE SPILLWAY ELEV.=1577.5
              * KM STORAGE VOLUME BELOW PRINCIPLE SPILLWAY FOR SEDIMENT = 200 ACRE-FEET
              *   ESE = 1583.86 ft; PSE = 1579.36 ft; Sediment Vol. = 271 Ac-Ft.
              * RS     1    STOR       0
              * SV     0      81     363     533     719     925    1120    1399    1668    4051
              * SQ     0       0      10     180     367     595     800    1231    2625   24500
              * SE    76      78      80      81      82      83    83.9      85      86      92
              * DDM   ***** Preserved *****

1417          KK   RR455
1418          KM   ROUTE FLOW FROM SPOOK HILL FRS TO SUB-BASIN 462
1419          KM        NEW CHANNEL PROPOSED  - CONCRETE W/30' BW & SS2:1 & 0.0017 SLOPE
1420          RS      14    FLOW      -1
              *      19    FLOW      -1
              *  As built plans show slope of .0002 and hec model changed to this
              * on December 06, 2000. Old values starred and left for comparison.
              *   .014    .014    .014    9200   .0017
1421          RC    .035    .025    .035    9200   .0002
1422          RX       0       1       2      28      58      84      85      86
1423          RY    13.5    13.5      13       0       0      13    13.5    13.5
              *       0       1       2      28      58      84      85      86
              *    13.5    13.5    13.5       0       0    13.5    13.5    13.5
              * DDM   ***** Updated *****
1                                          HEC-1 INPUT                                          PAGE 38
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1424          KK     456
1425          KM   SUB-BASIN 456
1426          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1427          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
1428          KM     L =  .94  Kb = .045  Adj. Slope =  315.0
1429          BA    .260
1430          LG    .300    .380   5.600    .200  12.000
1431          UC    .217    .139
1432          UA       0       5      16      30      65      77      84      90      94      97
1433          UA     100
              * DDM   ***** Preserved *****

1434          KK    DIV1
1435          KM        DIVERT FLOW INTO OFFLINE DETENTION BASIN
1436          KM        WEIR FOR BASIN SET AT 4 FEET ABOVE CHANNEL BOTTOM
              *      1
1437          DT  BASIN1
1438          DI       0    11.1   127.9   234.4   577.7   789.9  1025.5  1280.9  1555.7
1439          DQ       0       0       0    47.7     248   381.8   533.6   701.5     884
              * DDM   ***** Preserved *****

1440          KK    DIV2
1441          KM        SPLIT OUT FLOW FOR WASHES THAT FLOW TO THE SOUTH FROM
1442          KM        WASHES THAT DRAIN TO THE WES, SOUTHERN WASHES FED BY 30" & 24" PIPE
1443          DT    WA30
1444          DI       0    11.1   127.9   189.6   329.7     408   491.9   579.4   671.7
1445          DQ       0    11.1    38.4    48.2      63    69.5      76      81      86
              * DDM   ***** Preserved *****

1446          KK    R456
1447          KM        ROUTE FLOW FROM SUB-BASIN 51 TO C101
1448          RS       2    FLOW      -1
1449          RC     .05    .035     .05    3800    .044
1450          RX    1000    1010    1020    1036    1041    1057    1067    1077
1451          RY   14.88   14.44      14      10      10      14   14.44   14.88
              * DDM   ***** Updated *****

1452          KK     457
1453          KM   SUB-BASIN 457
1454          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1455          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1456          KM     L = 1.01  Kb = .045  Adj. Slope =  308.8
1457          BA    .190
1458          LG    .270    .330   3.950    .460   6.000
1459          UC    .237    .195
1460          UA       0       5      16      30      65      77      84      90      94      97
1461          UA     100
              * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE 39

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1462          KK    C101
1463          KM        COMBINE HYDROGRAPHS FROM SUB-BASINS 50 AND 51
1464          HC       2
              * DDM   ***** Preserved *****

1465          KK    DIV3
1466          KM        RESERVOIR AT THE EDGE OF THE PROPERTY   FLOW FROM CHANNEL
1467          KM        DIVERTED  INTO OFFLINE BASIN A 25' WEIR SET AT ELEVATION 1808 FT
              *      1
1468          DT  BASIN2
1469          DI       0      36      70     110     180   313.5     402   500.9
1470          DQ       0       0       0       0       0    67.5     124   190.9
              * DDM   ***** Preserved *****

1471          KK  RTDIV3
1472          KM   RETRIEVE FLOW FROM DIVERSION INTO OFFLINE BASIN
1473          DR  BASIN2
              * DDM   ***** Preserved *****

1474          KK  RFDIV3
1475          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1476          KM     5.0 ACRE-FEETx43560/36x3600=1.7cfs
1477          RS       1    STOR       0
1478          SV       0     .01       5
1479          SQ       0     1.7     1.7
              * DDM   ***** Preserved *****

1480          KK   CDIV3
1481          KM   HYDROGRAPH COMBINATION FOR OFFLINE BASIN BLEEDOFF
1482          HC       2
              * DDM   ***** Preserved *****

1483          KK    R101
1484          KM        ROUTE FLOW FROM SUBBASIN C101 TO C103
1485          RS       1    FLOW      -1
1486          RC     .05    .035     .05    1450     .05
1487          RX    1000    1010    1020    1036    1041    1057    1067    1077
1488          RY      15    14.5      14      10      10      14    14.5      15
              * DDM   ***** Updated *****

1489          KK     458
1490          KM   SUB-BASIN 458
1491          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1492          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1493          KM     L =  .76  Kb = .048  Adj. Slope =  299.0
1494          BA    .190
1495          LG    .290    .330   5.800    .190   6.000
1496          UC    .204    .131
1497          UA       0       5      16      30      65      77      84      90      94      97
1498          UA     100
              * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE 40

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1499          KK    C103
1500          KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 55 AND C101
1501          HC       2
              * DDM   ***** Preserved *****

1502          KK    R103
1503          KM        ROUTE FLOW FROM SUBBASIN C103 TO C106
1504          RS       1    FLOW      -1
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1505          RC     .05    .035     .05     900     .03
1506          RX    1000    1010    1020    1030    1050    1060    1070    1080
1507          RY   13.16   12.83    12.5      10      10    12.5   12.83   13.16
              * DDM   ***** Preserved *****

1508          KK    RT30
1509          KM        RETRIEVE DIVERTED FLOW FOR WASH BELOW 30 INCH PIPE
1510          DR    WA30
              * DDM   ***** Preserved *****

1511          KK     R30
1512          KM        ROUTE FLOW FROM WASH DIVERSION TO COMBINE C52
1513          RS       1    FLOW      -1
1514          RC     .05    .035     .05    1630     .05
1515          RX    1000    1010    1020    1036    1041    1057    1067    1077
1516          RY      15    14.5      14      10      10      14    14.5      15
              * DDM   ***** Preserved *****

1517          KK    RTB1
1518          KM        RETRIEVE DIVERTED FLOW FROM BASIN 1
              *       1       2
1519          DR  BASIN1
              * DDM   ***** Preserved *****

1520          KK      B1
1521          KM        ROUTE FLOW THROUGH OFFLINE DETENTION BASIN
1522          KM        FLOW OUTLETS THROUGH A 30 INCH OUTLET PIPE
              *      1       2
1523          RS       1    ELEV       0
1524          SV              .7     1.4     2.3     2.7     3.2
1525          SQ       0       5      16      28    32.5      37
1526          SE       0       1       2       3     3.5       4
              * DDM   ***** Preserved *****

1527          KK     RB1
1528          KM        ROUTE FLOW FROM BASIN DIVERSION TO COMBINE C52
1529          RS       2    FLOW      -1
1530          RC     .05    .035     .05    1720     .05
1531          RX    1000    1010    1020    1036    1041    1057    1067    1077
1532          RY      15    14.5      14      10      10      14    14.5      15
              * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                                    PAGE 41

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1533          KK    CDIV
1534          KM        COMBINE FLOWS FROM WA30 AND BASIN 1
1535          HC       2      .12
              * DDM   ***** Updated *****

1536          KK     459
1537          KM   SUB-BASIN 459
1538          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1539          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1540          KM     L =  .35  Kb = .052  Adj. Slope =  251.6
1541          BA    .030
1542          LG    .220    .300   3.330    .710   8.000
1543          UC    .162    .157
1544          UA       0       5      16      30      65      77      84      90      94      97
1545          UA     100
              * DDM   ***** Preserved *****

1546          KK     C52
1547          KM        COMBINE FLOWS FROM SUB-BASIN 52 WA30 AND BASIN 1
1548          HC       2
              * DDM   ***** Preserved *****

1549          KK     R52
1550          KM        ROUTE FLOW FROM SUBBASIN 52 TO C102
1551          RS       2    FLOW      -1
1552          RC     .05    .035     .05    2000     .05
1553          RX    1000    1010    1020    1036    1041    1057    1067    1077
1554          RY      15    14.5      14      10      10      14    14.5      15
              * DDM   ***** Updated *****

1555          KK     460
1556          KM   SUB-BASIN 460
1557          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1558          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1559          KM     L =  .62  Kb = .058  Adj. Slope =  194.0
1560          BA    .140
1561          LG    .250    .260   3.740    .690  27.000
1562          UC    .242    .160
1563          UA       0       5      16      30      65      77      84      90      94      97
1564          UA     100
              * DDM   ***** Preserved *****

1565          KK    C102
1566          KM        COMBINE HYDROGRAPHS FROM SUB-BASINS 52 AND 53
1567          HC       2
              * DDM   ***** Preserved *****

1568          KK  BASIN3
1569          KM        RESERVOIR AT CLUBHOUSE LOCATION 1-30 INCH PIPE AT OUTFALL
1570          KM        BOTTOM OF BASIN AT 6 FEET ABOVE 1795 ELEVATION
1571          RS       1    ELEV       0
1572          SA       0       0       0       0     .34    1.59    1.81    1.96    2.13     2.3
              *      0       0       0       0    1.14    3.25    5.52    9.23
1573          SQ       0      22      45    47.4      48      51      57      62      67      73
1                                        HEC-1 INPUT                                                    PAGE 42

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1574          SE    1795  1797.5    1800  1800.4  1800.5    1801    1802    1803    1804  1805.5
              * DDM   ***** Preserved *****

1575          KK      R3
1576          KM        ROUTE FLOW FROM C102 to C106
1577          RS       4    FLOW      -1
1578          RC     .05     .03     .05    2750   .0375
1579          RX    1000    1010    1020    1052    1086    1118    1128    1138
1580          RY    19.2    18.4      18      10      10      18    18.4    19.2
              * DDM   ***** Updated *****

1581          KK     461
1582          KM   SUB-BASIN 461
1583          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1584          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1585          KM     L =  .03  Kb = .052  Adj. Slope =  181.0
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1586          BA    .120
1587          LG    .270    .250   4.250    .450  21.000
1588          UC    .271    .250
1589          UA       0       5      16      30      65      77      84      90      94      97
1590          UA     100
              * DDM   ***** Preserved *****

1591          KK    C104
1592          KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 54 AND R102
1593          HC       2
              * DDM   ***** Preserved *****

1594          KK    C106
1595          KM        COMBINE HYDROGRAPHS FROM SUB-BASIN C103 AND C104
1596          HC       2
              * DDM   ***** Preserved *****

1597          KK    R106
1598          KM        ROUTE FLOW FROM C106 TO C49
1599          RS       2    FLOW      -1
1600          RC     .05    .035     .05    3950    .033
1601          RX    1000    1010    1020    1030    1050    1060    1070    1080
1602          RY   13.16   12.83    12.5      10      10    12.5   12.83   13.16
              * DDM   ***** Updated *****

1603          KK     462
1604          KM   SUB-BASIN 462
1605          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1606          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
1607          KM     L =  .97  Kb = .045  Adj. Slope =  297.7
1608          BA    .301
1609          LG    .300    .330   5.300    .240  12.000
1610          UC    .225    .137
1611          UA       0       5      16      30      65      77      84      90      94      97
1612          UA     100
              * DDM   ***** Preserved *****
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1613          KK     C56
1614          KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 56 AND C106
              *      1       2
1615          HC       2
              * DDM   ***** Updated *****

1616          KK     480
1617          KM   SUB-BASIN 480
1618          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1619          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
1620          KM     L = 1.21  Kb = .042  Adj. Slope =  165.0
1621          BA    .731
1622          LG    .270    .270   3.580    .730  27.000
1623          UC    .325    .148
1624          UA       0       5      16      30      65      77      84      90      94      97
1625          UA     100
              * DDM   ***** Preserved *****

1626          KK    D480
1627          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
1628          KM   DETENTION/RETENTION BASINS LOCATED WITHIN LAS SENDAS ADDENDUM III
1629          KM   FOR BASIN #: 18 & 26
1630          KM        MAXIMUM VOLUME DIVERSION = 16.5 acre-feet
              *      1
1631          DT   BS480    16.5
1632          DI       0   10000
1633          DQ       0   10000
              * DDM   ***** Preserved *****

1634          KK   RT480
1635          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
1636          DR   BS480
              * DDM   ***** Preserved *****

1637          KK   SR480
1638          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1639          KM    16.5 ACRE-FEETx43560/36x3600=5.5cfs
1640          RS       1    STOR       0
1641          SV       0     .01    16.5
1642          SQ       0     5.6     5.6
              * DDM   ***** Preserved *****

1643          KK    C480
1644          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
1645          HC       2
              * DDM   ***** Preserved *****

1646          KK    480C
1647          KM   HYDROGRAPH COMBINATION FOR THE ENTIRE WATERSHED AT THE SALT RIVER
1648          HC       3    2.09
              * DDM   ***** Preserved *****
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1649          KK    R480
1650          KM   ROUTE FLOW FROM SUB-BASIN 480 TO RR480
1651          RS       2    FLOW      -1
1652          RC    .025    .025    .025    1800     .05
1653          RX       0       1      20      32      62      74      93      94
1654          RY      13      12      12       0       0      12      12      13
              * DDM   ***** Preserved *****

1655          KK   RR480
1656          KM   ROUTE FLOW FROM SUB-BASIN 480 TO SUB-BASIN 500
1657          RS       3    FLOW      -1
1658          RC    .055     .05    .055    6500     .05
1659          RX       0       1       2      28      58      84      85      86
1660          RY    13.5    13.5    13.5       0       0    13.5    13.5    13.5
              * DDM   ***** Updated *****

1661          KK     500
1662          KM   SUB-BASIN 500
1663          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1664          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
1665          KM     L = 2.77  Kb = .042  Adj. Slope =  286.8
1666          BA    .930
1667          LG    .350    .400   6.000    .170   9.000
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1668    UC    .421    .333
1669    UA       0       3       5       8      12      20      43      75      90      96
1670    UA     100
        * DDM   ***** Preserved *****

1671    KK    500C
1672    KM   HYDROGRAPH COMBINATION FOR THE ENTIRE WATERSHED AT THE SALT RIVER
1673    HC       2    3.02
1674    ZZ
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SCHEMATIC DIAGRAM OF STREAM NETWORK

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 INPUT
 LINE       (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.       (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   41          10
                V
                V
   51         R10
                V
                V
   57         R12
                .
                .
   63           .          20
                .           .
                .           .
   73         C20............
                V
                V
   76         R20
                .
                .
   82           .          40
                .           .
                .           .
   92           .           .          60
                .           .           .
                .           .           .
  102         60C........................
                V
                V
  105        SR60
                V
                V
  114         R60
                V
                V
  120        RR60
                .
                .
  126           .          80
                .           .
                .           .
  136         80C............
                V
                V
  139         R80
                .
                .
  145           .         100
                .           .
                .           .
  155        100C............
                V
                V
  158        R100
                .
                .
  164           .         120
                .           .
                .           .
  174        120C............
                V
                V
  177        R120
                .
                .
  183           .         140
                .           .
                .           .
  193           .           .         150
                .           .           V
                .           .           V
```

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203          .           .        R150
             .           .           V
             .           .           V
209          .           .        R152
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             .           .           .
215          .           .           .        160
             .           .           .          .
             .           .           .          .
225          .           .           .          .         180
             .           .           .          .           .
             .           .           .          .           .
235       180C..............................................
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             .
238          .       385B
             .          V
             .          V
248          .      R385B
             .           .
             .           .
257          .           .        395B
             .           .           .
             .           .           .
267          .      395BC............
             .          V
             .          V
270          .      R395B
             .           .
             .           .
277          .           .        370B
             .           .           .
             .           .           .
287          .      370BC............
             .          V
             .          V
290          .      R370B
             .          V
             .          V
297          .     RR370B
             .           .
             .           .
306          .           .        355B
             .           .           .
             .           .           .
316          .      355BC............
             .          V
             .          V
319          .      R355B
             .          V
             .          V
328          .     RR355B
             .           .
             .           .
335          .           .         350
             .           .           V
             .           .           V
345          .           .        350R
             .           .           .
             .           .           .
352          .           .           .        310
             .           .           .          .
             .           .           .          .
362          .       C310........................
             .          V
             .          V
365          .       R310
             .          V
             .          V
372          .       R312
             .           .
             .           .
381          .           .        320B
             .           .           .
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391          .      320BC............
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                .          V
                .          V
394             .      R320B
                .          .
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403             .          .       305B
                .          .          .
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413             .      305BC............
                .          V
                .          V
416             .      R305B
                .          .
                .          .
425             .          .        210
                .          .          V
                .          .          V
435             .          .       R210
                .          .          .
                .          .          .
441             .          .          .         240
                .          .          .           .
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451             .       240C........................
                .          V
                .          V
454             .      SR240
                .          .
                .          .
463             .          .        220
                .          .          .
                .          .          .
473             .       220C............
                .          V
                .          V
476             .      SR220
                .          .
                .          .
485             .          .        190
                .          .          V
                .          .          V
495             .          .       R190
                .          .          V
                .          .          V
501             .          .       R192
                .          .          .
                .          .          .
507             .          .          .         200
                .          .          .           .
                .          .          .           .
517             .       200C........................
                .          V
                .          V
520             .      SR200
                .          V
                .          V
527             .      200SR
                .          .
                .          .
538          C180............
                V
                V
542         SR180
                V
                V
554          R180
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                .
563             .        260
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                .          .
573          260C............
                V
                V
576          R260
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585             .         280
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595         280C............
               V
               V
598         R280
                .
                .
607             .         300
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                .           .
617         C300............
               V
               V
620         R300
                .
                .
629             .        305A
                .           .
                .           .
639        305AC............
               V
               V
642        R305A
                .
                .
651             .        320A
                .           .
                .           .
666             .           .-------> BS320A
661             .       D320A
                .           .
                .           .
671             .           .          .<-------  BS320A
669             .           .     RT320A
                .           .          V
                .           .          V
672             .           .     SR320A
                .           .          .
                .           .          .
678        320AC.......................
               V
               V
681        R320A
                .
                .
688             .         340
                .           .
                .           .
703             .           .------->  BS340
698             .        D340
                .           .
                .           .
708             .           .          .<-------  BS340
706             .           .      RT340
                .           .          V
                .           .          V
709             .           .      SR340
                .           .          .
                .           .          .
715         C340........................
               V
               V
719         R340
                .
                .
726             .        355A
                .          V
                .          V
736             .       R355A
                .           .
                .           .
743             .           .        360
                .           .          .
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757          .           .           .
             .           .           .-------->   BS360
753          .           .       D360
             .           .           .
             .           .           .
762          .           .           .           .<-------   BS360
760          .           .           .       RT360
             .           .           .           V
             .           .           .           V
763          .           .           .       SR360
             .           .           .           .
             .           .           .           .
769       360C.................................
             V
             V
772       R360
             .
             .
779          .        370A
             .           .
             .           .
789          .           .       395A
             .           .           .
             .           .           .
799          .       370AC............
             .           V
             .           V
802          .       R370A
             .           .
             .           .
809          .           .        380
             .           .           .
             .           .           .
823          .           .           .-------->   BS380
819          .           .       D380
             .           .           .
             .           .           .
828          .           .           .           .<-------   BS380
826          .           .           .       RT380
             .           .           .           V
             .           .           .           V
829          .           .           .       SR380
             .           .           .           .
             .           .           .           .
835       380C.................................
             .
             .
843          .------->    380S
839       380D
             .
             .
848          .           .<-------    380S
846          .       TR380
             .           V
             .           V
849          .       380SR
             .           .
             .           .
858       C380............
             V
             V
861       R380
             .
             .
868          .         390
             .           .
             .           .
882          .           .------->   BS390
878          .        D390
             .           .
             .           .
887          .           .           .<-------   BS390
885          .           .       RT390
             .           .           V
             .           .           V
888          .           .       SR390
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                .           .           .
894             .        390C............
                .           V
                .           V
897             .       RR390
                .           .
                .           .
904             .           .         400
                .           .           .
                .           .           .
918             .           .           .-------->   BS400
914             .           .        D400
                .           .           .
                .           .           .
923             .           .           .           .<-------   BS400
921             .           .           .       RT400
                .           .           .           V
                .           .           .           V
924             .           .           .       SR400
                .           .           .           .
                .           .           .           .
930             .           .        C400............
                .           .           .
                .           .           .
933          400C........................
                V
                V
937          R400
                .
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944             .        385A
                .           .
                .           .
956             .           .-------->  SF385A
954             .       D385A
                .           V
                .           V
959             .       R385A
                .           .
                .           .
966             .           .         420
                .           .           .
                .           .           .
980             .           .           .-------->   BS420
976             .           .        D420
                .           .           .
                .           .           .
985             .           .           .           .<-------   BS420
983             .           .           .       RT420
                .           .           .           V
                .           .           .           V
986             .           .           .       SR420
                .           .           .           .
                .           .           .           .
992          420C....................................
                V
                V
996          R420
                .
                .
1003            .         440
                .           V
                .           V
1013            .         R70
                .           .
                .           .
1019            .           .         441
                .           .           .
                .           .           .
1029            .        C108............
                .           .
                .           .
1034            .           .-------->   SPLIT
1032            .        DIV4
                .           V
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                 .          V
1037             .       R108
                 .          .
                 .          .
1043             .          .         442
                 .          .           .
                 .          .           .
1053             .        C67............
                 .          .
                 .          .
1059             .          .-------> BASIN4
1056             .       DIV6
                 .          .
                 .          .
1064             .          .           .<-------- BASIN4
1062             .          .      RTDIV6
                 .          .           V
                 .          .           V
1065             .          .      RFDIV6
                 .          .           .
                 .          .           .
1071             .      CDIV6............
                 .          .
                 .          .
1074             .          .         443
                 .          .           .
                 .          .           .
1087             .          .           .--------> WSH66
1084             .          .       DIV66
                 .          .           V
                 .          .           V
1090             .          .        R113
                 .          .           .
                 .          .           .
1096             .       C114............
                 .          .
                 .          .
1099             .          .         444
                 .          .           V
                 .          .           V
1109             .          .         R58
                 .          .           .
                 .          .           .
1115             .          .           .         445
                 .          .           .           .
                 .          .           .           .
1125             .          .        C107............
                 .          .           V
                 .          .           V
1128             .          .        R107
                 .          .           .
                 .          .           .
1136             .          .           .           .<-------   SPLIT
1134             .          .           .        RTB2
                 .          .           .           V
                 .          .           .           V
1137             .          .           .      RSPLIT
                 .          .           .           .
                 .          .           .           .
1143             .          .           .           .         446
                 .          .           .           .           .
                 .          .           .           .           .
1153             .          .        C109........................
                 .          .           .
                 .          .           .
1159             .          .           .-------> WSH404
1156             .          .        DIV5
                 .          .           V
                 .          .           V
1162             .          .        R109
                 .          .           .
                 .          .           .
1168             .          .           .         447
                 .          .           .           .
                 .          .           .           .
1180             .          .           .           .           .<-------  WSH404
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1178          .           .           .           .       RT404
              .           .           .           .           V
              .           .           .           .           V
1181          .           .           .           .        R404
              .           .           .           .           .
              .           .           .           .           .
1187          .           .        C110.......................
              .           .           V
              .           .           V
1190          .           .        R110
              .           .           .
              .           .           .
1196          .        C115............
              .           V
              .           V
1199          .        R115
              .           .
              .           .
1206          .           .         448
              .           .           .
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1216          .           .           .         449
              .           .           .           .
              .           .           .           .
1226          .           .       C6364............
              .           .           V
              .           .           V
1229          .           .       R6364
              .           .           .
              .           .           .
1235          .           .           .         450
              .           .           .           .
              .           .           .           .
1245          .           .           .           .         451
              .           .           .           .           .
              .           .           .           .           .
1257          .           .           .           .           .           .<-------   WSH66
1255          .           .           .           .           .        RT66
              .           .           .           .           .           .
              .           .           .           .           .           .
1258          .           .           .           .           .           .         452
              .           .           .           .           .           .           .
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1268          .           .           .           .           .       C6465............
              .           .           .           .           .           V
              .           .           .           .           .           V
1271          .           .           .           .           .       R6566
              .           .           .           .           .           .
              .           .           .           .           .           .
1277          .           .        C116.................................
              .           .           V
              .           .           V
1280          .           .      BASIN5
              .           .           V
              .           .           V
1287          .           .        R116
              .           .           .
              .           .           .
1293          .           .           .         453
              .           .           .           .
              .           .           .           .
1303          .           .        C117............
              .           .           .
              .           .           .
1306          .        C118............
              .           V
              .           V
1309          .        R118
              .           .
              .           .
1318          .           .-------->  BASIN6
1315          .        DIV7
              .           .
              .           .
1323          .           .           .<-------  BASIN6
1321          .           .      RTDIV7
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                .           .           V
                .           .           V
1324            .           .      RFDIV7
                .           .           .
                .           .           .
1330            .       CDIV7............
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                .           .
1333            .           .         454
                .           .           .
                .           .           .
1343            .        C119............
                .           V
                .           V
1346            .        R454
                .           .
                .           .
1353            .           .         415
                .           .           .
                .           .           .
1365            .           .           .           .<-------  SF385A
1363            .           .           .      RT385A
                .           .           .           V
                .           .           .           V
1366            .           .           .      RR385A
                .           .           .           .
                .           .           .           .
1373            .        415C........................
                .           V
                .           V
1376            .        R415
                .           .
                .           .
1383            .           .         455
                .           .           .
                .           .           .
1398            .           .           .-------->   BS455
1393            .           .       D455
                .           .           .
                .           .           .
1403            .           .           .           .<-------   BS455
1401            .           .           .       RT455
                .           .           .           V
                .           .           .           V
1404            .           .           .       SR455
                .           .           .           .
                .           .           .           .
1410            .           .       C455............
                .           .           .
                .           .           .
1413         455C........................
                V
                V
1417        RR455
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                .
1424            .         456
                .           .
                .           .
1437            .           .-------->  BASIN1
1434            .        DIV1
                .           .
                .           .
1443            .           .-------->    WA30
1440            .        DIV2
                .           V
                .           V
1446            .        R456
                .           .
                .           .
1452            .           .         457
                .           .           .
                .           .           .
1462            .        C101............
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1468          .          .-------> BASIN2
1465          .       DIV3
              .          .
              .          .
1473          .          .          .<-------- BASIN2
1471          .          .     RTDIV3
              .          .          V
              .          .          V
1474          .          .     RFDIV3
              .          .          .
              .          .          .
1480          .      CDIV3............
              .          V
              .          V
1483          .       R101
              .          .
              .          .
1489          .          .        458
              .          .          .
              .          .          .
1499          .       C103............
              .          V
              .          V
1502          .       R103
              .          .
              .          .
1510          .          .          .<-------    WA30
1508          .          .       RT30
              .          .          V
              .          .          V
1511          .          .        R30
              .          .          .
              .          .          .
1519          .          .          .          .<-------  BASIN1
1517          .          .          .       RTB1
              .          .          .          V
              .          .          .          V
1520          .          .          .         B1
              .          .          .          V
              .          .          .          V
1527          .          .          .        RB1
              .          .          .          .
              .          .          .          .
1533          .          .       CDIV............
              .          .          .
              .          .          .
1536          .          .          .        459
              .          .          .          .
              .          .          .          .
1546          .          .        C52............
              .          .          V
              .          .          V
1549          .          .        R52
              .          .          .
              .          .          .
1555          .          .          .        460
              .          .          .          .
              .          .          .          .
1565          .          .       C102............
              .          .          V
              .          .          V
1568          .          .     BASIN3
              .          .          V
              .          .          V
1575          .          .         R3
              .          .          .
              .          .          .
1581          .          .          .        461
              .          .          .          .
              .          .          .          .
1591          .          .       C104............
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              .          .          .
1594          .       C106............
              .          V
              .          V
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1597          .        R106
              .          .
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1603          .          .         462
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              .          .           .
1613          .         C56...........
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              .          .
1616          .          .         480
              .          .           .
              .          .           .
1631          .          .           .-------->   BS480
1626          .          .        D480
              .          .           .
              .          .           .
1636          .          .           .           .<-------   BS480
1634          .          .           .       RT480
              .          .           .           V
              .          .           .           V
1637          .          .           .       SR480
              .          .           .           .
              .          .           .           .
1643          .          .        C480...........
              .          .           .
              .          .           .
1646       480C......................
              V
              V
1649       R480
              V
              V
1655      RR480
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              .
1661          .         500
              .          .
              .          .
1671       500C...........
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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

MAXIMUM	TIME OF OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	STAGE
+	MAX STAGE								
+	HYDROGRAPH AT	10	951.	12.27	114.	31.	11.	.70	
+	ROUTED TO	R10	894.	12.40	114.	31.	11.	.70	
+	ROUTED TO	R12	799.	12.63	114.	31.	11.	.70	
+	HYDROGRAPH AT	20	959.	12.43	128.	32.	12.	1.12	
+	2 COMBINED AT	C20	1600.	12.53	240.	63.	23.	1.82	
+	ROUTED TO	R20	1597.	12.53	240.	63.	23.	1.82	
+	HYDROGRAPH AT	40	2582.	12.30	252.	66.	24.	2.23	
+	HYDROGRAPH AT	60	1553.	12.40	228.	61.	22.	1.75	
+	3 COMBINED AT	60C	5208.	12.37	708.	188.	68.	5.80	
+	ROUTED TO	SR60	118.	14.23	117.	113.	68.	5.80	
+	ROUTED TO	R60	118.	14.30	117.	113.	68.	5.80	
+	ROUTED TO	RR60	118.	14.40	117.	113.	68.	5.80	
+	HYDROGRAPH AT	80	1868.	12.27	179.	46.	17.	1.48	
+	2 COMBINED AT	80C	1918.	12.27	284.	156.	86.	1.48	
+	ROUTED TO	R80	1892.	12.27	284.	156.	86.	1.48	
+	HYDROGRAPH AT	100	404.	12.20	58.	15.	5.	.48	
+	2 COMBINED AT	100C	2272.	12.27	339.	170.	91.	1.96	
+	ROUTED TO	R100	2268.	12.30	339.	170.	91.	1.96	
+	HYDROGRAPH AT	120	3232.	12.27	326.	88.	32.	2.20	
+	2 COMBINED AT	120C	5439.	12.27	652.	250.	121.	4.16	
+	ROUTED TO	R120	5368.	12.30	652.	250.	121.	4.16	
+	HYDROGRAPH AT	140	632.	12.13	64.	17.	6.	.60	
+	HYDROGRAPH AT	150	572.	12.17	49.	13.	5.	.41	
+	ROUTED TO	R150	546.	12.23	49.	13.	5.	.41	
+	ROUTED TO	R152	504.	12.37	49.	13.	5.	.41	

+	HYDROGRAPH AT	160	217.	12.40	35.	9.	3.	.37
+	HYDROGRAPH AT	180	785.	12.37	90.	23.	8.	1.00
+	5 COMBINED AT	180C	7134.	12.30	875.	307.	142.	6.54
+	HYDROGRAPH AT	385B	471.	12.17	47.	13.	5.	.33
+	ROUTED TO	R385B	466.	12.20	47.	13.	5.	.33
+	HYDROGRAPH AT	395B	44.	12.13	4.	1.	0.	.04
+	2 COMBINED AT	395BC	504.	12.20	51.	14.	5.	.37
+	ROUTED TO	R395B	499.	12.20	51.	14.	5.	.37
+	HYDROGRAPH AT	370B	380.	12.27	45.	12.	4.	.41
+	2 COMBINED AT	370BC	866.	12.23	95.	26.	9.	.78
+	ROUTED TO	R370B	840.	12.30	95.	26.	9.	.78
+	ROUTED TO	RR370B	817.	12.37	95.	26.	9.	.78
+	HYDROGRAPH AT	355B	389.	12.30	48.	12.	4.	.48
+	2 COMBINED AT	355BC	1171.	12.33	142.	38.	14.	1.27
+	ROUTED TO	R355B	1157.	12.40	142.	38.	14.	1.27
+	ROUTED TO	RR355B	1150.	12.43	142.	38.	14.	1.27
+	HYDROGRAPH AT	350	1192.	12.20	103.	27.	10.	.97
+	ROUTED TO	350R	1029.	12.47	103.	27.	10.	.97
+	HYDROGRAPH AT	310	376.	12.33	49.	12.	4.	.56
+	3 COMBINED AT	C310	2447.	12.43	288.	75.	27.	2.79
+	ROUTED TO	R310	2423.	12.50	288.	75.	27.	2.79
+	ROUTED TO	R312	2410.	12.53	288.	75.	27.	2.79
+	HYDROGRAPH AT	320B	99.	12.17	9.	2.	1.	.08
+	2 COMBINED AT	320BC	2440.	12.53	296.	77.	28.	2.87
+	ROUTED TO	R320B	2359.	12.63	296.	77.	28.	2.87
+	HYDROGRAPH AT	305B	250.	12.30	31.	8.	3.	.29
+	2 COMBINED AT	305BC	2489.	12.63	326.	85.	30.	3.16
+	ROUTED TO	R305B	2464.	12.67	326.	85.	30.	3.16
	HYDROGRAPH AT							

+		210	1266.	12.17	105.	27.	10.	.79
+	ROUTED TO	R210	1191.	12.23	105.	27.	10.	.79
+	HYDROGRAPH AT	240	1467.	12.30	160.	41.	15.	1.43
+	3 COMBINED AT	240C	3639.	12.33	581.	150.	54.	5.38
+	ROUTED TO	SR240	1731.	12.97	514.	133.	48.	5.38
+	HYDROGRAPH AT	220	668.	12.20	66.	17.	6.	.48
+	2 COMBINED AT	220C	1792.	12.93	574.	149.	54.	5.87
+	ROUTED TO	SR220	1703.	13.10	562.	146.	53.	5.87
+	HYDROGRAPH AT	190	1403.	12.17	116.	31.	11.	.92
+	ROUTED TO	R190	1348.	12.23	116.	31.	11.	.92
+	ROUTED TO	R192	1267.	12.30	116.	31.	11.	.92
+	HYDROGRAPH AT	200	806.	12.17	69.	19.	7.	.54
+	3 COMBINED AT	200C	2226.	12.30	733.	193.	70.	7.32
+	ROUTED TO	SR200	2131.	12.40	728.	190.	68.	7.32
+	ROUTED TO	200SR	1774.	13.17	608.	159.	57.	7.32
+	2 COMBINED AT	C180	7134.	12.30	1477.	466.	199.	13.85
+	ROUTED TO	SR180	460.	15.43	455.	400.	174.	13.85
+	ROUTED TO	R180	460.	15.50	455.	400.	174.	13.85
+	HYDROGRAPH AT	260	418.	12.10	43.	12.	4.	.27
+	2 COMBINED AT	260C	654.	14.80	532.	436.	194.	.27
+	ROUTED TO	R260	654.	14.87	532.	436.	194.	.27
+	HYDROGRAPH AT	280	478.	12.10	42.	12.	4.	.30
+	2 COMBINED AT	280C	831.	12.13	542.	440.	196.	.57
+	ROUTED TO	R280	802.	12.20	541.	440.	196.	.57
+	HYDROGRAPH AT	300	382.	12.10	31.	9.	3.	.28
+	2 COMBINED AT	C300	1116.	12.17	557.	445.	197.	.85
+	ROUTED TO	R300	1074.	12.23	556.	444.	197.	.85
+	HYDROGRAPH AT	305A	433.	12.17	46.	13.	5.	.41
+	2 COMBINED AT	305AC	1461.	12.20	587.	453.	200.	1.26

+	ROUTED TO	R305A	1455.	12.27	587.	452.	200.	1.26
+	HYDROGRAPH AT	320A	1034.	12.17	110.	31.	11.	.87
+	DIVERSION TO	BS320A	413.	11.93	21.	6.	2.	.87
+	HYDROGRAPH AT	D320A	1034.	12.17	96.	25.	9.	.87
+	HYDROGRAPH AT	RT320A	413.	11.93	21.	6.	2.	.87
+	ROUTED TO	SR320A	4.	4.13	4.	4.	2.	.87
+	3 COMBINED AT	320AC	2340.	12.23	672.	478.	210.	2.13
+	ROUTED TO	R320A	2080.	12.53	652.	474.	209.	2.13
+	HYDROGRAPH AT	340	1471.	12.17	186.	55.	20.	1.45
+	DIVERSION TO	BS340	1471.	12.17	104.	28.	10.	1.45
+	HYDROGRAPH AT	D340	1199.	12.33	97.	27.	10.	1.45
+	HYDROGRAPH AT	RT340	1471.	12.17	104.	28.	10.	1.45
+	ROUTED TO	SR340	19.	9.00	19.	19.	10.	1.45
+	3 COMBINED AT	C340	2799.	12.50	749.	515.	227.	3.58
+	ROUTED TO	R340	2624.	12.67	737.	512.	227.	3.58
+	HYDROGRAPH AT	355A	270.	12.10	24.	7.	2.	.19
+	ROUTED TO	R355A	237.	12.37	24.	7.	2.	.19
+	HYDROGRAPH AT	360	504.	12.23	84.	25.	9.	.67
+	DIVERSION TO	BS360	504.	12.23	53.	14.	5.	.67
+	HYDROGRAPH AT	D360	306.	12.63	38.	11.	4.	.67
+	HYDROGRAPH AT	RT360	504.	12.23	53.	14.	5.	.67
+	ROUTED TO	SR360	10.	9.83	10.	10.	5.	.67
+	4 COMBINED AT	360C	3009.	12.67	788.	534.	237.	4.44
+	ROUTED TO	R360	2791.	12.87	781.	533.	237.	4.44
+	HYDROGRAPH AT	370A	406.	12.07	34.	10.	4.	.26
+	HYDROGRAPH AT	395A	204.	12.10	21.	6.	2.	.16
+	2 COMBINED AT	370AC	599.	12.07	55.	15.	6.	.42
+	ROUTED TO	R370A	458.	12.53	55.	15.	6.	.42
	HYDROGRAPH AT							

+		380	666.	12.27	98.	26.	10.	.97
+	DIVERSION TO	BS380	666.	12.27	56.	14.	5.	.97
+	HYDROGRAPH AT	D380	472.	12.57	46.	12.	4.	.97
+	HYDROGRAPH AT	RT380	666.	12.27	56.	14.	5.	.97
+	ROUTED TO	SR380	10.	11.33	10.	10.	5.	.97
+	4 COMBINED AT	380C	3152.	12.87	845.	559.	250.	5.83
+	DIVERSION TO	380S	1752.	12.87	105.	26.	9.	5.83
+	HYDROGRAPH AT	380D	1400.	12.73	740.	533.	241.	5.83
+	HYDROGRAPH AT	TR380	1752.	12.87	105.	26.	9.	5.83
+	ROUTED TO	380SR	690.	13.17	74.	24.	9.	5.83
+	2 COMBINED AT	C380	2090.	13.17	813.	557.	250.	5.83
+	ROUTED TO	R380	2023.	13.40	810.	557.	249.	5.83
+	HYDROGRAPH AT	390	463.	12.03	33.	10.	3.	.24
+	DIVERSION TO	BS390	95.	11.73	6.	2.	1.	.24
+	HYDROGRAPH AT	D390	463.	12.03	30.	8.	3.	.24
+	HYDROGRAPH AT	RT390	95.	11.73	6.	2.	1.	.24
+	ROUTED TO	SR390	1.	.90	1.	1.	1.	.24
+	2 COMBINED AT	390C	464.	12.03	31.	9.	3.	.24
+	ROUTED TO	RR390	324.	12.50	31.	9.	3.	.24
+	HYDROGRAPH AT	400	351.	12.23	47.	13.	5.	.62
+	DIVERSION TO	BS400	262.	12.10	10.	3.	1.	.62
+	HYDROGRAPH AT	D400	351.	12.23	39.	10.	4.	.62
+	HYDROGRAPH AT	RT400	262.	12.10	10.	3.	1.	.62
+	ROUTED TO	SR400	2.	8.70	2.	2.	1.	.62
+	2 COMBINED AT	C400	353.	12.23	41.	12.	5.	.62
+	3 COMBINED AT	400C	2060.	13.40	832.	570.	257.	6.69
+	ROUTED TO	R400	2012.	13.63	831.	569.	256.	6.69
+	HYDROGRAPH AT	385A	316.	12.07	24.	7.	2.	.20
+	DIVERSION TO	SF385A	190.	12.07	15.	4.	1.	.20

	HYDROGRAPH AT							
+		D385A	127.	12.07	10.	3.	1.	.20
	ROUTED TO							
+		R385A	98.	12.43	10.	3.	1.	.20
	HYDROGRAPH AT							
+		420	752.	12.20	92.	26.	9.	.85
	DIVERSION TO							
+		BS420	269.	11.97	15.	4.	2.	.85
	HYDROGRAPH AT							
+		D420	752.	12.20	83.	22.	8.	.85
	HYDROGRAPH AT							
+		RT420	269.	11.97	15.	4.	2.	.85
	ROUTED TO							
+		SR420	13.	11.03	12.	4.	2.	.85
	4 COMBINED AT							
+		420C	2010.	13.63	860.	581.	263.	10.87
	ROUTED TO							
+		R420	1971.	13.83	855.	579.	262.	10.87
	HYDROGRAPH AT							
+		440	180.	12.03	12.	3.	1.	.08
	ROUTED TO							
+		R70	176.	12.07	12.	3.	1.	.08
	HYDROGRAPH AT							
+		441	16.	12.03	1.	0.	0.	.01
	2 COMBINED AT							
+		C108	191.	12.07	14.	4.	1.	.09
	DIVERSION TO							
+		SPLIT	96.	12.07	7.	2.	1.	.09
	HYDROGRAPH AT							
+		DIV4	96.	12.07	7.	2.	1.	.09
	ROUTED TO							
+		R108	88.	12.13	7.	2.	1.	.09
	HYDROGRAPH AT							
+		442	102.	12.10	9.	2.	1.	.10
	2 COMBINED AT							
+		C67	187.	12.10	15.	4.	1.	.19
	DIVERSION TO							
+		BASIN4	115.	12.10	6.	1.	1.	.19
	HYDROGRAPH AT							
+		DIV6	72.	12.10	10.	3.	1.	.19
	HYDROGRAPH AT							
+		RTDIV6	115.	12.10	6.	1.	1.	.19
	ROUTED TO							
+		RFDIV6	1.	11.90	1.	1.	1.	.19
	2 COMBINED AT							
+		CDIV6	74.	12.10	10.	4.	1.	.19
	HYDROGRAPH AT							
+		443	148.	12.07	14.	4.	1.	.08
	DIVERSION TO							
+		WSH66	78.	11.90	12.	3.	1.	.08
	HYDROGRAPH AT							
+		DIV66	70.	12.07	3.	1.	0.	.08
	ROUTED TO							
+		R113	69.	12.07	3.	1.	0.	.08
	2 COMBINED AT							
+		C114	140.	12.07	13.	4.	2.	.27
	HYDROGRAPH AT							

+		444	82.	12.03	5.	1.	0.	.04
	ROUTED TO							
+		R58	75.	12.07	5.	1.	0.	.04
	HYDROGRAPH AT							
+		445	296.	12.03	18.	5.	2.	.19
	2 COMBINED AT							
+		C107	365.	12.03	22.	6.	2.	.23
	ROUTED TO							
+		R107	365.	12.07	22.	6.	2.	.23
	HYDROGRAPH AT							
+		RTB2	96.	12.07	7.	2.	1.	.09
	ROUTED TO							
+		RSPLIT	95.	12.07	7.	2.	1.	.09
	HYDROGRAPH AT							
+		446	65.	12.03	6.	2.	1.	.04
	3 COMBINED AT							
+		C109	520.	12.07	35.	9.	3.	.27
	DIVERSION TO							
+		WSH404	35.	11.73	8.	2.	1.	.27
	HYDROGRAPH AT							
+		DIV5	485.	12.07	27.	7.	2.	.27
	ROUTED TO							
+		R109	469.	12.10	27.	7.	2.	.27
	HYDROGRAPH AT							
+		447	138.	12.07	12.	4.	1.	.09
	HYDROGRAPH AT							
+		RT404	35.	11.73	8.	2.	1.	.27
	ROUTED TO							
+		R404	35.	11.87	8.	2.	1.	.27
	3 COMBINED AT							
+		C110	635.	12.07	46.	13.	5.	.36
	ROUTED TO							
+		R110	632.	12.10	46.	13.	5.	.36
	2 COMBINED AT							
+		C115	764.	12.10	59.	17.	6.	.63
	ROUTED TO							
+		R115	767.	12.10	59.	17.	6.	.63
	HYDROGRAPH AT							
+		448	88.	12.03	6.	2.	1.	.05
	HYDROGRAPH AT							
+		449	80.	12.03	5.	1.	0.	.05
	2 COMBINED AT							
+		C6364	166.	12.03	11.	3.	1.	.09
	ROUTED TO							
+		R6364	137.	12.17	11.	3.	1.	.09
	HYDROGRAPH AT							
+		450	61.	12.20	6.	2.	1.	.07
	HYDROGRAPH AT							
+		451	18.	12.17	2.	1.	0.	.03
	HYDROGRAPH AT							
+		RT66	78.	11.90	12.	3.	1.	.08
	HYDROGRAPH AT							
+		452	62.	12.03	4.	1.	0.	.04
	2 COMBINED AT							
+		C6465	140.	12.03	16.	4.	2.	.04
	ROUTED TO							
+		R6566	135.	12.10	16.	4.	2.	.04

+	4 COMBINED AT	C116	341.	12.17	35.	9.	3.	.23
+	ROUTED TO	BASIN5	152.	12.47	35.	9.	3.	.23
+	ROUTED TO	R116	150.	12.53	35.	9.	3.	.23
+	HYDROGRAPH AT	453	62.	12.10	7.	2.	1.	.06
+	2 COMBINED AT	C117	169.	12.50	41.	11.	4.	.29
+	2 COMBINED AT	C118	852.	12.10	99.	28.	10.	.92
+	ROUTED TO	R118	842.	12.10	99.	28.	10.	.92
+	DIVERSION TO	BASIN6	243.	12.10	10.	2.	1.	.92
+	HYDROGRAPH AT	DIV7	599.	12.10	89.	25.	9.	.92
+	HYDROGRAPH AT	RTDIV7	243.	12.10	10.	2.	1.	.92
+	ROUTED TO	RFDIV7	1.	11.97	1.	1.	1.	.92
+	2 COMBINED AT	CDIV7	600.	12.10	90.	26.	10.	.92
+	HYDROGRAPH AT	454	157.	12.17	21.	6.	2.	.18
+	2 COMBINED AT	C119	748.	12.13	110.	32.	12.	1.10
+	ROUTED TO	R454	722.	12.20	110.	32.	12.	1.10
+	HYDROGRAPH AT	415	561.	12.17	76.	22.	8.	.61
+	HYDROGRAPH AT	RT385A	190.	12.07	15.	4.	1.	.20
+	ROUTED TO	RR385A	166.	12.23	15.	4.	1.	.20
+	3 COMBINED AT	415C	1418.	12.20	198.	57.	21.	1.71
+	ROUTED TO	R415	1392.	12.23	198.	57.	21.	1.71
+	HYDROGRAPH AT	455	1346.	12.13	142.	43.	16.	1.11
+	DIVERSION TO	BS455	1346.	12.13	137.	37.	13.	1.11
+	HYDROGRAPH AT	D455	55.	12.77	16.	6.	2.	1.11
+	HYDROGRAPH AT	RT455	1346.	12.13	137.	37.	13.	1.11
+	ROUTED TO	SR455	25.	10.47	25.	25.	13.	1.11
+	2 COMBINED AT	C455	80.	12.77	41.	31.	16.	1.11
+	3 COMBINED AT	455C	2023.	13.83	1030.	647.	293.	13.69
+	ROUTED TO	RR455	1915.	14.40	1014.	644.	292.	13.69
	HYDROGRAPH AT							

+		456	468.	12.07	35.	10.	4.	.26
+	DIVERSION TO	BASIN1	184.	12.07	8.	2.	1.	.26
+	HYDROGRAPH AT	DIV1	284.	12.07	27.	8.	3.	.26
+	DIVERSION TO	WA30	58.	12.07	10.	3.	1.	.26
+	HYDROGRAPH AT	DIV2	226.	12.07	18.	4.	2.	.26
+	ROUTED TO	R456	213.	12.13	18.	4.	2.	.26
+	HYDROGRAPH AT	457	264.	12.07	20.	5.	2.	.19
+	2 COMBINED AT	C101	462.	12.10	38.	10.	4.	.45
+	DIVERSION TO	BASIN2	165.	12.10	7.	2.	1.	.45
+	HYDROGRAPH AT	DIV3	297.	12.10	30.	8.	3.	.45
+	HYDROGRAPH AT	RTDIV3	165.	12.10	7.	2.	1.	.45
+	ROUTED TO	RFDIV3	2.	11.90	2.	2.	1.	.45
+	2 COMBINED AT	CDIV3	299.	12.10	32.	9.	4.	.45
+	ROUTED TO	R101	297.	12.10	32.	9.	4.	.45
+	HYDROGRAPH AT	458	356.	12.03	25.	7.	2.	.19
+	2 COMBINED AT	C103	635.	12.07	56.	16.	6.	.64
+	ROUTED TO	R103	630.	12.07	56.	16.	6.	.64
+	HYDROGRAPH AT	RT30	58.	12.07	10.	3.	1.	.26
+	ROUTED TO	R30	57.	12.10	10.	3.	1.	.26
+	HYDROGRAPH AT	RTB1	184.	12.07	8.	2.	1.	.26
+	ROUTED TO	B1	37.	12.23	8.	2.	1.	.26
+	ROUTED TO	RB1	37.	12.30	8.	2.	1.	.26
+	2 COMBINED AT	CDIV	86.	12.20	17.	5.	2.	.12
+	HYDROGRAPH AT	459	44.	12.03	3.	1.	0.	.03
+	2 COMBINED AT	C52	113.	12.10	20.	6.	2.	.15
+	ROUTED TO	R52	112.	12.17	20.	6.	2.	.15
+	HYDROGRAPH AT	460	214.	12.07	19.	6.	2.	.14
+	2 COMBINED AT	C102	313.	12.07	39.	12.	4.	.29
+	ROUTED TO	BASIN3	71.	12.63	39.	12.	4.	.29

+	ROUTED TO	R3	71.	12.77	39.	12.	4.	.29
+	HYDROGRAPH AT	461	161.	12.10	17.	5.	2.	.12
+	2 COMBINED AT	C104	213.	12.10	55.	17.	6.	.41
+	2 COMBINED AT	C106	835.	12.07	110.	32.	12.	1.05
+	ROUTED TO	R106	797.	12.13	110.	32.	12.	1.05
+	HYDROGRAPH AT	462	538.	12.07	40.	11.	4.	.30
+	2 COMBINED AT	C56	1254.	12.10	149.	42.	16.	1.35
+	HYDROGRAPH AT	480	1050.	12.10	96.	29.	11.	.73
+	DIVERSION TO	BS480	455.	11.90	27.	8.	3.	.73
+	HYDROGRAPH AT	D480	1050.	12.10	78.	21.	8.	.73
+	HYDROGRAPH AT	RT480	455.	11.90	27.	8.	3.	.73
+	ROUTED TO	SR480	6.	3.90	6.	6.	3.	.73
+	2 COMBINED AT	C480	1056.	12.10	84.	27.	11.	.73
+	3 COMBINED AT	480C	2381.	12.10	1232.	722.	332.	2.09
+	ROUTED TO	R480	2381.	12.10	1232.	722.	332.	2.09
+	ROUTED TO	RR480	2237.	12.20	1229.	721.	331.	2.09
+	HYDROGRAPH AT	500	1073.	12.27	122.	33.	12.	.93
+	2 COMBINED AT	500C	3216.	12.23	1326.	746.	341.	3.02

*** NORMAL END OF HEC-1 ***