Del Webb's
Sun City Grand

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SUN CITY GRAND PROJECT
REEMS ROAD FLOODPLAIN
PRELIMINARY HYDROLOGY
FOR LETTER OF MAP REVISION

Prepared for:

DEL E. WEBB DEVELOPMENT CO. LP.,
a Delaware Limited Partnership,
Developer

DEL WEBB HOME CONSTRUCTION, INC.
an Arizona Corporation,
Owner

January 1998
(REVISED FEB 1998)

Prepared by:

STANLEY CONSULTANTS
2929 East Camelback Road, Suite 130
Phoenix, Arizona 85016
(602) 912-6500

SCI PROJECT # 13688

STANLEY CONSULTANTS, INC.

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2929 East Camelback Road, Suite 130 • Phoenix, AZ 85016-4425 Tel: 602/912-6500 • Fax: 602/912-6599

February 13, 1998

Mr. Amir Motamedi
FLOOD CONTROL DISTRICT OF
MARICOPA COUNTY
2801 West Durango Street
Phoenix, Arizona 85009

RE: Del Webb's Sun City Grand Phases 1 and 2
Reems Road Floodplain LOMR Hydrology

Dear Mr. Motamedi:

Enclosed are the HEC-1 files and supporting data tables, drainage area maps and exhibits for the Letter of Map Revision (LOMR) request we will be making to the Federal Emergency Management Agency (FEMA). The LOMR request will be intended to eliminate the Reems Road Floodplain from Beardsley Road to Bell Road. The basis for this request will be revised conditions in the contributing watershed (specifically, development with stormwater retention) and its impact on hydrology.

Four (4) HEC-1 models are included in this submittal. These models address comments that were provided to us by District staff in our meeting on February 3, 1998.

Model 13688HIC is extracted from the original model prepared by The WLB Group when delineating the Reems Road Floodplain in 1992. No changes or corrections have been made to this model from the original WLB model.

Model 13688H1J is essentially the same model as 13688H1C except three diversion operations along Bell Road were modified. The modifications were based on more detailed topography and hydraulic analysis from the Master Drainage Report for Sun City Grand Property prepared by Stanley in 1994. Also, corrections were made to reach routing R102 and R106 that were obviously incorrect in the original WLB model. The revised Bell Road diversions and corrected reach routing steps have also been carried over into the next two models.

Model 13688H1N is our preliminary LOMR model to reflect the current impact to the Reems Road floodplain. All the golf courses and most of the parcels in Phase 2 have been graded. Post development conditions are applied to these areas. Parcels along the west side of Reems Road and one at the northwest corner of Phase 2 are not graded and, therefore, are considered undeveloped in this model. Also, this preliminary LOMR model now includes separate summed retention basins in contributing areas 103, 107, 108, 113, 114 and 115. Finally, a total of about 25 acre feet more retention storage was found in Phase 2 as compared to our first submittal.

It must be noted that the temporary retention dikes recently constructed by Del Webb just west of SR303L north of Union Hills are not recognized for the LOMR purpose. These dikes, however, were designed to retain all the 100-year, 2-hour runoff from Sub-Basins 101, 102A and 106. Model 13688H1P is essentially the same as the preliminary LOMR model except it reflects these dikes by eliminating Sub-Basin 106. This model best reflects existing conditions but is not intended for submittal to FEMA for the LOMR application because FEMA will not recognize the temporary facilities.

The results from these four models are shown on the HEC-1 schematic. The peak discharges along Reems Road were essentially reduced to zero at Beardsley Road and at Union Hills Drive. The discharge at Bell Road has been reduced from about 2700 cfs to about 600 cfs. Diversions from Bell Road to the south have been reduced due to the development of Sun City Grand. Please refer to the "ID" notes in each of the HEC-1 model for a more detailed explanation of what the model does and summary of approach and methods.

Should you have any questions, please feel free to call me at 912-6520.

Sincerely,

STANLEY CONSULTANTS, INC.

G. Scott Buchanan

G. Scott Buchanan, P.E.

gsb/tlb:FEB017.60/13688

Enclosures

cc: Project Files (13688)

Registered Professional Engineer (Civil)
CERTIFICATE NO.
26837
G. SCOTT
BUCHANAN
Date Signed 2-13-98
ARIZONA, U.S.A.

TABLE 1
SUN CITY GRAND PHASE 1
RETENTION BASIN SUMMARY
(Refer to HEC-1 Files 13688H1A and PH1RET)

	Retention Basin Operation	Located in ADMS Sub-basin	Depth (Ft) @ Spillway Elevation	Volume (AC FT) @ Spillway Elevation
1	DT114	107	2.1	4.66
2	DT112	107	3.6	10.03
3	DT115A	107	2.6	7.58
4	DT115B	107	3.8	3.48
5	DT101	103	4.6	10.95
6	DT102	103	3.6	9.14
7	DT105	108	5.5	8.12
8	DT107A	108	3.1	4.09
9	DT107B	108	2.1	1.58
10	DT104	103	4.1	7.36
11	DT111	107	4.1	15.33
12	DT107	108	4.5	20.07
13	DT108A	103	3.1	7.21
14	DT108B	108	3.1	3.59
15	DT109	108	4.6	27.40
16	DT110	108	6.6	69.23
			Average Depth = 3.8 ft.	Total Volume = 209.82 AC FT
Total Retention Volume in ADMS Sub-Basin 103 = 34.66 AC FT.				
Total Retention Volume in ADMS Sub-Basin 107 = 41.08 AC FT.				
Total Retention Volume in ADMS Sub-Basin 108 = 134.08 AC FT.				

TABLE 2
SUN CITY GRAND PHASE 2
RETENTION BASIN SUMMARY
(Refer to HEC-1 Files 13688H1B and PH2RET)

	Retention Basin Operation	Located in ADMS Sub-basin	Depth (Ft) @ Spillway Elevation	Volume (AC FT) @ Spillway Elevation
1	DT203A	107	6.4	6.52
2	DT203B	107	4.6	2.21
3	DT205A	107	3.6	5.00
4	DT205B	107	2.6	3.59
5	DT209	107	4.1	15.00
6	DT215A	114	5.5	5.32
7	DT215B	113	5.0	4.61
8	DT224	113	4.0	4.60
9	DT217	113	4.5	4.28
10	DT220A	113	4.5	4.21
11	DT220B	113	7.1	20.87
12	DT49A1	113	2.1	0.67
13	DT49A2	113	1.1	0.26
14	DT49A3	113	1.1	0.44
15	DT249B	114	4.6	4.06
16	1DT230	114	8.5	17.41
17	2DT230	114	7.1	13.94
18	1DT246	114	2.6	6.05
19	DT238B	114	4.0	1.37
20	DT246A	114	3.6	11.18
21	1DT237	115	5.5	6.73
22	2DT237	115	6.5	3.23
23	3DT237	115	6.5	3.61
24	4DT237	115	6.5	3.17
25	5DT237	115	6.0	3.41
26	1DT240	115	7.0	6.31
27	2DT240	115	6.0	3.33
28	3DT240	115	5.5	3.61
29	DT246B	115	8.0	22.35
			Average Depth = 5.0 ft.	Total Volume = 187.34 AC FT
Total Retention Volume in ADMS Sub-Basin 107 = 32.32 AC FT.				
Total Retention Volume in ADMS Sub-Basin 113 = 39.94 AC FT.				
Total Retention Volume in ADMS Sub-Basin 114 = 59.33 AC FT.				
Total Retention Volume in ADMS Sub-Basin 115 = 55.75 AC FT.				

TABLE 3
SUN CITY GRAND REEMS ROAD FLOODPLAIN LOMR
RAINFALL LOSS AND S-GRAPH PARAMETERS FOR HEC-1 MODELS

SUB-BASIN	LAND USE	LAND USE %	IA (IN)	DTHETA	PSIF (IN)	XKSAT (IN/HR)	VEG COVER %	CK	ADJ XKSAT	RTIMP %	Kn
102	PRE-DEV	55	0.50	0.00	6.05	0.17	90	1.7	0.29	0.0	0.12
102	GOLF	10	0.50	0.25	6.05	0.17	50	1.5	0.26	0.0	0.08
102	SINGLE FAM	35	0.25	0.25	6.05	0.17	40	1.4	0.24	30.0	0.05
102	WEIGHTED		0.41	0.11	6.05				0.27	10.5	0.09
103	PRE-DEV	5	0.46	0.09	4.33	0.22	70	1.3	0.29	0.0	0.12
103	GOLF	15	0.50	0.25	4.33	0.22	50	1.5	0.33	0.0	0.08
103	SINGLE FAM	80	0.25	0.25	4.33	0.22	40	1.4	0.31	30.0	0.05
103	WEIGHTED		0.30	0.24	4.33				0.31	24.0	0.06
107	PRE-DEV	17	0.46	0.08	5.65	0.18	70	1.3	0.23	0.0	0.12
107	GOLF	15	0.50	0.25	5.65	0.18	50	1.5	0.27	0.0	0.08
107	SINGLE FAM	68	0.25	0.25	5.65	0.18	40	1.4	0.25	30.0	0.05
107	WEIGHTED		0.32	0.22	5.65				0.25	20.4	0.07
108	PRE-DEV	40	0.44	0.12	5.53	0.18	0	1.0	0.18	0.0	0.12
108	GOLF	20	0.50	0.25	5.53	0.18	50	1.5	0.27	0.0	0.08
108	SINGLE FAM	40	0.25	0.25	5.53	0.18	40	1.4	0.25	30.0	0.05
108	WEIGHTED		0.38	0.20	5.53				0.23	12.0	0.08
113	PRE-DEV	0	0.50	0.00	8.54	0.06	0	1.0	0.06	0.0	0.12
113	GOLF	15	0.50	0.15	8.54	0.06	50	1.5	0.09	0.0	0.08
113	SINGLE FAM	85	0.25	0.15	8.54	0.06	40	1.4	0.08	30.0	0.05
113	WEIGHTED		0.29	0.15	8.54				0.08	25.5	0.05
114	PRE-DEV	0	0.50	0.00	8.35	0.05	0	1.0	0.05	0.0	0.12
114	GOLF	20	0.50	0.15	8.35	0.05	50	1.5	0.08	0.0	0.08
114	SINGLE FAM	80	0.25	0.15	8.35	0.05	40	1.4	0.07	30.0	0.05
114	WEIGHTED		0.30	0.15	8.35				0.07	24.0	0.06
115	PRE-DEV	83	0.50	0.00	7.04	0.12	0	1.0	0.12	0.0	0.12
115	GOLF	10	0.50	0.20	7.04	0.12	50	1.5	0.18	0.0	0.08
115	SINGLE FAM	7	0.25	0.20	7.04	0.12	40	1.4	0.17	30.0	0.05
115	WEIGHTED		0.48	0.03	7.04				0.13	2.1	0.11

NOTES:
1. IA VALUES FOR PRE-DEV FROM WTADMS.24; ALL OTHERS FROM TABLE 4.2a.
2. DTHETA PRE-DEV VALUES FROM WTADMS.24; ALL OTHERS CALCULATED FROM TABLE 4.2 CORRESPONDING TO PSIF (ASSUMING NORMAL).
3. ALL PSIF VALUES FROM WTADMS.24.
4. XKSAT VALUES FOR PRE-DEV FROM WTADMS.24; ALL OTHERS CALCULATED FROM TABLE 4.2 CORRESPONDING TO PSIF. PRE-DEV VALUES ARE BARE GROUND IN SUB-BASINS 108, 113, 114 AND 115.
5. % VEG COVER AND RTIMP VALUES FROM TABLE 4.2a.
6. CK VALUES FROM FIGURE 4.4.
7. Kn VALUES FROM APPENDIX K.

MODEL 13688H1C (ADMS)

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            SEPTEMBER 1990            *
*             VERSION 4.0              *
*                                      *
*  RUN DATE  02/13/1998  TIME  07:31:29 *
*                                      *
****************************************
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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

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

  1           ID
  2           ID        DEL WEBB SUN CITY GRAND REEMS ROAD FLOODLAIN LOMR/LOMA HYDROLOGY
  3           ID
  4           ID        STANLEY CONSULTANTS, INC.
  5           ID        2929 E. CAMELBACK RD.  SUITE 130
  6           ID        PHOENIX, ARIZONA   85016
  7           ID        PHONE: (602)912-6500     FAX: (602)912-6599
  8           ID
  9           ID        SCI PROJECT # 13688     HEC-1 INPUT FILENAME: 13688H1C
 10           ID                                ------------------------------
 11           ID                                -> FCD/WLB WTADMS.24 MODEL ("S" GRAPH,
 12           ID                                     GREEN & AMPT LOSS, 24HR TYPE II
 13           ID                                     W/AERIAL REDUCTION)
 14           ID        GENERAL MODEL NOTES:
 15           ID        --------------------
 16           ID        1. THIS MODEL IS A PORTION OF THE WHITE TANKS/AGUA FRIA AREA DRAINAGE
 17           ID           MASTER STUDY MODEL "WTADMS.24" PREPARED BY CONSULTANT "THE WLB GROUP"
 18           ID           FOR THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY.
 19           ID        2. THIS MODEL REPRESENTS ONLY THAT PORTION OF THE WTADMS.24 MODEL FROM
 20           ID           SUB-BASIN 101 THRU SUB-BASIN 122 INCLUSIVE. ALL OTHER HYDROGRAPH
 21           ID           OPERATIONS FROM THE ORIGINAL MODEL HAVE BEEN DELETED.
 22           ID        3. SUB-BASINS 100, 100A, 109 AND 116 ARE NOT CONSIDERED BY EITHER THE
 23           ID           WTADMS.24 MODEL OR THIS MODEL TO CONTRIBUTE RUNOFF TO THE OLD REEMS
 24           ID           ROAD ALIGNMENT FROM BELL ROAD TO BEARDSLEY ROAD.
 25           ID        4. ANY OF THE ORIGINAL INPUT RECORD FROM THE WTADMS.24 MODEL THAT WAS
 26           ID           MODIFIED OR NOT USED BY THIS STANLEY MODEL HAS BEEN RETAINED AS A
 27           ID           "*  COMMENT". IN MOST CASES, A "NOTE: EXPLANATION" IS FOUND EITHER
 28           ID           IMMEDIATELEY BEFORE OR AFTER THE REVISED OR UNUSED RECORD.
 29           ID
              * ID
              * ID      FINAL HYDROLOGY RUN FOR WHITE TANKS ADMS ---- ENTIRE WATERSHED
              * ID      100-YEAR, 24-HOUR STORM                            WTADMS.24
              * ID
              *DIAGRAM
 30           IT       5                    300
              * IO     3
              * NOTE: CHANGE OUTPUT SPECIFICATION
 31           IO       5
 32           IN      15
 33           JD    4.03    .001
 34           PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
 35           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 36           PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 37           PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
 38           PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
 39           PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
 40           PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
 41           PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 42           PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 43           PC    .983    .986    .989    .992    .995    .998    1.00   1.000   1.000   1.000
 44           JD    3.99      10
 45           JD    3.83      50
 46           JD    3.76     100
 47           JD    3.70     200
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 48           KK     101
 49           KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 101.
 50           BA     .16
 51           LG     .35     .32    3.61     .26     .00
 52           UI     22.     76.    121.    165.    258.    205.    150.    106.     54.     34.
 53           UI     22.      7.      7.      7.      0.      0.      0.      0.      0.      0.
 54           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 55           KK    102A
 56           KM        RUNOFF HYDROGRAPH FROM SUB-SUBIN 102.
 57           BA     .51
 58           LG     .40     .20    6.05     .21     .00
 59           UI     40.     43.    142.    190.    228.    270.    327.    453.    484.    378.
 60           UI    319.    263.    218.    176.    114.     71.     66.     44.     40.     15.
 61           UI     12.     12.     12.     12.     12.      0.      0.      0.      0.      0.
 62           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 63           KK   CP101
 64           KM        ADD HYDROGRAPHS AT CP101
 65           HC       2     .67

 66           KK    R101
 67           KM        ROUTE FLOW FROM CP101 TO CP102.
 68           RS       2              -1       0
 69           RC    .025    .022    .022    2750   .0062
 70           RX    1000    1001    1030    1085    1120    1138    1139    1140
 71           RY    1319    1319    1318    1316    1316    1317    1317    1317

 72           KK     102
 73           KM        RUNOFF FROM SUB-BASIN 102
 74           BA     .10
 75           LG     .50     .00    6.05     .29     .00
 76           UI     10.     21.     44.     57.     70.     97.    122.     94.     75.     59.
 77           UI     45.     26.     17.     13.     10.      3.      3.      3.      3.      3.
 78           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 79           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
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 80          KK   CP102
 81          KM       ADD HYDROGRAPHS AT CP102.
 82          HC       2     .77

 83          KK    R102
 84          KM       ROUTE FLOW FROM CP102 TO CP108
 85          RS      36              -1       0
 86          RC    .075     .075     .075     702    .0054
 87          RX    1000     1001     1120    1700     2030     2630     3070     3270
 88          RY    1289     1289     1288    1286     1286     1288     1290     1292

 89          KK     108
 90          KM       RUNOFF HYDROGRAPH FROM SUB-BASIN 108.
 91          BA     .79
 92          LG     .44      .12     5.53     .25      .00
 93          UI     31.      31.      31.     32.     101.     115.     136.     151.     167.     178.
 94          UI    194.     213.     233.    257.     304.     366.     406.     353.     310.     281.
                                          HEC-1 INPUT                                                    PAGE  3

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

 95          UI    259.     240.     217.    197.     181.     163.     148.     132.     108.      88.
 96          UI     56.      54.      52.     51.      45.      31.      31.      31.      24.       9.
 97          UI      9.       9.       9.      9.       9.       9.       9.       9.       9.       9.
 98          UI      9.       0.       0.      0.       0.       0.       0.       0.       0.       0.
 99          UI      0.       0.       0.      0.       0.       0.       0.       0.       0.       0.

100          KK   1I108
101          KM       ADD HYDROGRAPHS AT CP108.
102          HC       2    1.56

103          KK     103
104          KM       RUNOFF HYDROGRAPH FROM SUB-BASIN 103.
105          BA     .37
106          LG     .46      .09     4.33     .29      .00
107          UI     19.      19.      20.     64.      79.      93.     105.     116.     131.     148.
108          UI    175.     222.     248.    206.     178.     159.     143.     125.     111.      97.
109          UI     84.      64.      45.     34.      32.      32.      19.      19.      19.       6.
110          UI      6.       6.       6.      6.       6.       6.       6.       6.       0.       0.
111          UI      0.       0.       0.      0.       0.       0.       0.       0.       0.       0.

112          KK    R103
113          KM       ROUTE FLOW FROM CP103 TO CP108.
114          RS       4              -1       0
115          RC     .08     .022     .035    5380    .0041
116          RX    1000     1050     1080    1095     1130     1150     1300     1830
117          RY    1285     1284     1282    1280     1280     1282     1284     1286

118          KK   CP108
119          KM       ADD HYDROGRAPHS AT CP108.
120          HC       2    1.93

121          KK    R108
122          KM       ROUTE FLOW FROM CP108 TO CP115.
123          RS       7              -1       0
124          RC    .035     .035     .075    5382    .0037
125          RX    1000     1001     1002    1030     1100     1370     1900     2290
126          RY    1259     1259     1259    1258     1258     1260     1262     1264

127          KK     106
128          KM       RUNOFF HYDROGRAPH FROM SUB-BASIN 106.
129          BA     .77
130          LG     .35      .29     6.63     .16      .00
131          UI     68.     109.     267.    353.     425.     523.     727.     830.     634.     523.
132          UI    422.     338.     237.    132.     114.      77.      65.      21.      21.      21.
133          UI     21.      21.       0.      0.       0.       0.       0.       0.       0.       0.
134          UI      0.       0.       0.      0.       0.       0.       0.       0.       0.       0.

135          KK    R106
136          KM       ROUTE FLOW FROM CP106 TO CP107
137          RS       3              -1       0
138          RC    .075      .03      .03    5382     .039
139          RX    1000     1430     1860    1890     1940     1960     1969     1970
140          RY    1292     1291     1290  1289.5   1289.5     1290   1290.5   1290.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 141          KK     107
 142          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 107.
 143          BA     .60
 144          LG     .46     .08    5.65     .29     .00
 145          UI     26.     26.     26.     53.     91.    109.    125.    141.    152.    167.
 146          UI    186.    203.    238.    291.    340.    308.    266.    238.    216.    199.
 147          UI    177.    160.    143.    129.    114.     90.     71.     46.     46.     43.
 148          UI     43.     27.     26.     26.     19.      8.      8.      8.      8.      8.
 149          UI      8.      8.      8.      8.      8.      8.      0.      0.      0.      0.
 150          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 151          KK   CP107
 152          KM        ADD HYDROGRAPHS AT CP107.
 153          HC       2    1.37

 154          KK    R107
 155          KM        ROUTE FLOW FROM CP107 TO CP115
 156          RS       6              -1       0
 157          RC    .035    .035    .075    6240   .0048
 158          RX    1000    1001    1002    1030    1100    1370    1900    2290
 159          RY    1259    1259    1259    1258    1258    1260    1262    1264

 160          KK     115
 161          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 115.
 162          BA     .49
 163          LG     .50     .00    7.04     .24     .00
 164          UI     22.     22.     22.     45.     76.     91.    104.    117.    126.    138.
 165          UI    155.    170.    200.    245.    284.    247.    215.    192.    176.    161.
 166          UI    142.    129.    115.    103.     90.     69.     52.     38.     37.     35.
 167          UI     31.     22.     22.     22.     10.      7.      7.      7.      7.      7.
 168          UI      7.      7.      7.      7.      7.      0.      0.      0.      0.      0.
 169          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 170          KK   1I115
 171          KM        ADD HYDROGRAPHS AT CP115.
 172          HC       2    1.86

 173          KK   2I115
 174          KM        ADD HYDROGRAPHS AT CP115.
 175          HC       2    3.79

 176          KK     111
 177          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 111.
 178          BA     .50
 179          LG     .40     .21    5.55     .22     .00
 180          UI     32.     32.     78.    129.    160.    184.    211.    246.    304.    406.
 181          UI    374.    307.    266.    230.    196.    167.    139.     99.     58.     55.
 182          UI     50.     32.     32.     15.     10.     10.     10.     10.     10.     10.
 183          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 184          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
```



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

 185          KK    D111
 186          KM        DIVERT TO CP119 FROM CP111
 187          DT   DI119
 188          DI       0      32     109     228     389     599     858    1170    1539    1967
 189          DQ       0      11      39      83     145     228     333     462     617     799

 190          KK    R111
 191          KM        ROUTE REMAINDER FROM CP111 TO CP112
 192          RS       9              -1       0
 193          RC    .075    .035    .035    5280   .0040
 194          RX    1000    1570    2040    2370    2440    2468    2469    2470
 195          RY    1312    1310    1308    1306    1306    1307    1307    1307

 196          KK     104
 197          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 104
 198          BA     .15
 199          LG     .35     .31    4.93     .23     .00
 200          UI     26.    101.    151.    242.    249.    169.    112.     50.     31.     14.
 201          UI      7.      7.      0.      0.      0.      0.      0.      0.      0.      0.
 202          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 203          KK    R104
 204          KM        ROUTE FLOW FROM CP104 TO CP112
 205          RS      53              -1       0
 206          RC    .075    .075    .075    6552   .0056
 207          RX    1000    1001    1230    1270    1750    2000    2380    2650
 208          RY    1321    1321    1320    1318    1318    1319    1318    1320

 209          KK     112
 210          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 112
 211          BA     .97
 212          LG     .50     .00    3.65     .50     .00
 213          UI     35.     35.     35.     35.     92.    123.    142.    165.    179.    193.
 214          UI    207.    224.    245.    266.    290.    340.    400.    464.    424.    371.
 215          UI    335.    308.    286.    267.    243.    220.    206.    185.    170.    155.
 216          UI    131.    101.     77.     62.     61.     58.     58.     45.     35.     35.
 217          UI     35.     28.     11.     11.     11.     11.     11.     11.     11.     11.
 218          UI     11.     11.     11.     11.     11.      0.      0.      0.      0.      0.
 219          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
```

```
220          KK   1I112
221          KM        ADD HYDROGRAPHS AT CP112.
222          HC       2    1.12

223          KK   2I112
224          KM        ADD HYDROGRAPHS AT CP112.
225          HC       2    1.62

226          KK     105
227          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 105
228          BA     .21
229          LG     .35     .27    7.68     .10     .00
230          UI     32.    129.    195.    295.    362.    246.    171.     88.     50.     28.
231          UI     10.     10.     10.      0.      0.      0.      0.      0.      0.      0.
                                          HEC-1 INPUT                                          PAGE  6

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

232          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

233          KK    R105
234          KM        ROUTE FLOW FROM CP105 TO CP112
235          RS       3              -1       0
236          RC    .022    .022     .03    5220   .0044
237          RX    1000    1001    1010    1020    1040    1050    1099    1100
238          RY    1303    1303    1303    1302    1302    1304    1305    1305

239          KK   CP112
240          KM        ADD HYDROGRAPHS AT CP112.
241          HC       2    1.83

242          KK    D112
243          KM        DIVERT TO CP120 FROM CP112
244          DT   DI120
245          DI       0      48     165     355     625     981    1434    1990
246          DQ       0      16      55     118     208     327     478     663

247          KK    D112
248          KM        DIVERT TO CP121A FROM CP112
249          DT  1D121A
250          DI       0      32     110     237     417     654     956    1327
251          DQ       0      16      55     118     208     327     478     663

252          KK    R112
253          KM        ROUTE REMAINDER FROM CP112 TO CP113A
254          RS       6              -1       0
255          RC    .075    .035    .035    2640   .0023
256          RX    1000    1490    1830    2600    2770    2788    2789    2790
257          RY    1290    1288    1286    1284    1284    1285    1285    1285

258          KK    113A
259          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 113A
260          BA     .50
261          LG     .50     .00    7.93     .15     .00
262          UI     22.     22.     22.     42.     75.     89.    103.    115.    125.    137.
263          UI    152.    167.    192.    238.    276.    260.    224.    199.    181.    167.
264          UI    149.    134.    121.    108.     98.     79.     62.     40.     38.     36.
265          UI     35.     26.     22.     22.     20.      7.      7.      7.      7.      7.
266          UI      7.      7.      7.      7.      7.      7.      0.      0.      0.      0.
267          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

268          KK  CP113A
269          KM        ADD HYDROGRAPHS AT CP113A
270          HC       2    2.33

271          KK   D113A
272          KM        DIVERT TO CP121A FROM CP113A
273          DT  2D121A
274          DI       0      26      67     134     232     278     399     561     799    1106
275          DQ       0       0       0       0       0       4      22      58     120     211
                                          HEC-1 INPUT                                          PAGE  7

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

276          KK   R113A
277          KM        ROUTE REMAINDER FROM CP113A TO CP113
278          RS      25              -1       0
279          RC    .075    .035    .035    5280   .0032
280          RX    1000    1080    2620    2725    2735    2798    2799    2800
281          RY    1278    1277    1277    1276    1276    1277    1277    1277

282          KK     113
283          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 113
284          BA     .50
285          LG     .50     .00    8.54     .11     .00
286          UI     22.     22.     22.     49.     79.     95.    108.    122.    132.    145.
287          UI    162.    178.    213.    261.    291.    248.    216.    195.    178.    161.
288          UI    143.    131.    114.    105.     88.     65.     46.     39.     37.     37.
289          UI     27.     22.     22.     20.      7.      7.      7.      7.      7.      7.
290          UI      7.      7.      7.      7.      7.      0.      0.      0.      0.      0.
291          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

292          KK   CP113
293          KM        ADD HYDROGRAPHS AT CP113.
294          HC       2    2.83

295          KK    D113
296          KM        DIVERT TO CP122 FROM CP113
297          DT   1D122
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298          DI       0      79     257     523     872    1307    1829
299          DQ       0      63     205     416     692    1033    1422

300          KK    R113
301          KM        ROUTE REMAINDER FROM CP113 TO CP114
302          RS       6              -1       0
303          RC    .075     .04     .04    2100   .0038
304          RX    1000    1020    1100    1850    2030    2048    2049    2050
305          RY    1266    1264    1262    1260    1260    1261    1261    1261

306          KK     114
307          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 114
308          BA     .38
309          LG     .50     .00    8.35     .13     .00
310          UI     17.     17.     17.     41.     62.     75.     86.     95.    104.    115.
311          UI    129.    144.    177.    215.    216.    183.    161.    146.    133.    118.
312          UI    106.     95.     85.     74.     58.     44.     31.     30.     28.     25.
313          UI     17.     17.     17.      6.      5.      5.      5.      5.      5.      5.
314          UI      5.      5.      5.      5.      0.      0.      0.      0.      0.      0.
315          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

316          KK   CP114
317          KM        ADD HYDROGRAPHS AT CP114.
318          HC       2    3.21
                                    HEC-1 INPUT                                                    PAGE  8

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

319          KK    D114
320          KM        DIVERT TO CP122 FROM CP114
321          DT   2D122
322          DI       0      17      54      80     333     952    2066
323          DQ       0       0       0       0      70     438    1217

324          KK    R114
325          KM        ROUTE REMAINDER FROM CP114 TO CP115
326          RS       2              -1       0
327          RC     .06    .022     .35    2652   .0034
328          RX    1000    1380    1790    1800    1840    1850    1899    1900
329          RY    1258    1256    1254    1250    1250    1252    1253    1253

330          KK   CP115
331          KM        ADD HYDROGRAPHS AT CP115.
332          HC       2     7.0

333          KK    R115
334          KM        ROUTE FLOWS FROM CP115 TO CP122
335          RS       6              -1       0
336          RC    .035    .035    .075    5280   .0038
337          RX    1000    1001    1002    1015    1035    1360    1920    2460
338          RY    1239    1239    1239    1238    1238    1240    1241    1242

339          KK    D113
340          KM        RETURN DIVERT AT CP113
341          DR   1D122

342          KK    R113
343          KM        ROUTE FLOW FROM CP113 TO CP122
344          RS      36              -1       0
345          RC     .08     .08     .08    7488   .0049
346          RX    1000    1001    1610    1820    1990    2010    3059    3060
347          RY    1248    1248    1246    1245    1245    1246    1248    1248

348          KK    D114
349          KM        RETURN DIVERT AT CP114
350          DR   2D122

351          KK    R114
352          KM        ROUTE FLOW FROM CP114 TO CP122
353          RS      45              -1       0
354          RC    .075    .075    .075    6240   .0046
355          RX    1000    1001    1610    1820    1990    2010    3059    3060
356          RY    1248    1248    1246    1245    1245    1246    1248    1248

357          KK     122
358          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 122
359          BA     .89
360          LG     .50     .00    5.83     .32     .00
361          UI     32.     32.     32.     32.     87.    114.    132.    153.    166.    179.
362          UI    193.    207.    229.    247.    272.    319.    378.    428.    385.    338.
363          UI    306.    281.    262.    243.    220.    201.    188.    167.    155.    138.
364          UI    114.     93.     63.     57.     56.     53.     53.     36.     32.     32.
                                    HEC-1 INPUT                                                    PAGE  9

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

365          UI     32.     20.     10.     10.     10.     10.     10.     10.     10.     10.
366          UI     10.     10.     10.     10.     10.      0.      0.      0.      0.      0.
367          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

368          KK   1I122
369          KM        ADD HYDROGRAPHS AT CP122
370          HC       3     4.1

371          KK   CP122
372          KM        ADD HYDROGRAPHS AT CP122
373          HC       2    7.89
374          ZZ
```

```
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

 48          101
             .
             .
 55          .        102A
             .          .
             .          .
 63       CP101............
             V
             V
 66        R101
             .
             .
 72          .         102
             .          .
             .          .
 80       CP102............
             V
             V
 83        R102
             .
             .
 89          .         108
             .          .
             .          .
 100      1I108............
             .
             .
 103         .         103
             .          V
             .          V
 112         .        R103
             .          .
             .          .
 118      CP108............
             V
             V
 121       R108
             .
             .
 127         .         106
             .          V
             .          V
 135         .        R106
             .          .
             .          .
 141         .          .         107
             .          .           .
             .          .           .
 151         .      CP107............
             .          V
             .          V
 154         .        R107
             .          .
             .          .
 160         .          .         115
             .          .           .
             .          .           .
 170         .      1I115............
             .          .
             .          .
 173      2I115............
             .
             .
 176         .         111
             .          .
             .          .
 187         .          .-------->   DI119
 185         .        D111
             .          V
             .          V
 190         .        R111
             .          .
             .          .
 196         .          .         104
             .          .           V
             .          .           V
 203         .          .        R104
             .          .           .
             .          .           .
 209         .          .           .         112
             .          .           .           .
             .          .           .           .
 220         .          .      1I112............
             .          .           .
             .          .           .
 223         .      2I112............
             .          .
             .          .
 226         .          .         105
             .          .           V
             .          .           V
 233         .          .        R105
             .          .           .
```

```
239          .       CP112............
             .           .
244          .           .-------->   DI120
242          .       D112
             .           .
249          .           .-------->  1D121A
247          .       D112
             .           V
             .           V
252          .       R112
             .           .
258          .           .        113A
             .           .           .
             .           .           .
268          .      CP113A............
             .           .
273          .           .-------->  2D121A
271          .      D113A
             .           V
             .           V
276          .      R113A
             .           .
282          .           .         113
             .           .           .
             .           .           .
292          .      CP113............
             .           .
297          .           .-------->   1D122
295          .       D113
             .           V
             .           V
300          .       R113
             .           .
306          .           .         114
             .           .           .
             .           .           .
316          .      CP114............
             .           .
321          .           .-------->   2D122
319          .       D114
             .           V
             .           V
324          .       R114
             .           .
330      CP115............
             V
             V
333       R115
             .
341          .           .<--------   1D122
339          .       D113
             .           V
             .           V
342          .       R113
             .           .
350          .           .           .<--------   2D122
348          .           .       D114
             .           .           V
             .           .           V
351          .           .       R114
             .           .           .
357          .           .           .         122
             .           .           .           .
             .           .           .           .
368          .      1I122........................
             .           .
371      CP122............
```

```
31 IO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN          5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1   0  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      2   0  ENDING DATE
                    NDTIME       0055  ENDING TIME
                     ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL     .08 HOURS
                      TOTAL TIME BASE   24.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA           SQUARE MILES
               PRECIPITATION DEPTH     INCHES
               LENGTH, ELEVATION       FEET
               FLOW                    CUBIC FEET PER SECOND
               STORAGE VOLUME          ACRE-FEET
               SURFACE AREA            ACRES
               TEMPERATURE             DEGREES FAHRENHEIT

33 JD            INDEX STORM NO. 1
                      STRM       4.03  PRECIPITATION DEPTH
                      TRDA        .00  TRANSPOSITION DRAINAGE AREA

34 PI              PRECIPITATION PATTERN
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .01      .00      .01
                   .01      .01      .01      .01      .01      .01      .01      .01      .03      .03
                   .03      .09      .09      .09      .01      .01      .01      .01      .01      .01
                   .01      .01      .01      .01      .01      .01      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00

44 JD            INDEX STORM NO. 2
                      STRM       3.99  PRECIPITATION DEPTH
                      TRDA      10.00  TRANSPOSITION DRAINAGE AREA

 0 PI              PRECIPITATION PATTERN
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .01      .00      .01
                   .01      .01      .01      .01      .01      .01      .01      .01      .03      .03
                   .03      .09      .09      .09      .01      .01      .01      .01      .01      .01
                   .01      .01      .01      .01      .01      .01      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00

45 JD            INDEX STORM NO. 3
                      STRM       3.83  PRECIPITATION DEPTH
                      TRDA      50.00  TRANSPOSITION DRAINAGE AREA
```

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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46 JD INDEX STORM NO. 4
STRM 3.76 PRECIPITATION DEPTH
TRDA 100.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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47 JD INDEX STORM NO. 5
STRM 3.70 PRECIPITATION DEPTH
TRDA 200.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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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	101	233.	12.25	22.	5.	5.	.16		
HYDROGRAPH AT	102A	525.	12.58	73.	18.	18.	.51		
2 COMBINED AT	CP101	635.	12.50	95.	24.	23.	.67		
ROUTED TO	R101	629.	12.50	95.	24.	23.	.67		
HYDROGRAPH AT	102	135.	12.42	17.	4.	4.	.10		
2 COMBINED AT	CP102	753.	12.50	112.	28.	27.	.77		
ROUTED TO	R102	763.	12.58	112.	28.	27.	.77		
HYDROGRAPH AT	108	478.	13.25	117.	29.	28.	.79		
2 COMBINED AT	1I108	999.	12.58	228.	57.	55.	1.56		
HYDROGRAPH AT	103	286.	12.92	55.	14.	13.	.37		
ROUTED TO	R103	267.	13.08	55.	14.	13.	.37		
2 COMBINED AT	CP108	1158.	12.75	283.	71.	68.	1.93		
ROUTED TO	R108	1123.	13.25	283.	71.	68.	1.93		
HYDROGRAPH AT	106	871.	12.50	111.	28.	27.	.77		
ROUTED TO	R106	778.	12.67	111.	28.	27.	.77		
HYDROGRAPH AT	107	398.	13.08	88.	22.	21.	.60		
2 COMBINED AT	CP107	1044.	12.75	199.	50.	48.	1.37		
ROUTED TO	R107	948.	13.17	199.	50.	48.	1.37		
HYDROGRAPH AT	115	379.	13.08	89.	22.	22.	.49		
2 COMBINED AT	1I115	1313.	13.17	288.	72.	69.	1.86		
2 COMBINED AT	2I115	2429.	13.17	570.	143.	137.	3.79		
HYDROGRAPH AT	111	443.	12.67	71.	18.	17.	.50		
DIVERSION TO	DI119	166.	12.67	26.	7.	6.	.50		
HYDROGRAPH AT	D111	276.	12.67	45.	11.	11.	.50		
ROUTED TO	R111	232.	13.33	45.	11.	11.	.50		
HYDROGRAPH AT	104	236.	12.17	20.	5.	5.	.15		
ROUTED TO	R104	89.	14.67	20.	5.	5.	.15		
HYDROGRAPH AT	112	534.	13.33	138.	34.	33.	.97		
2 COMBINED AT	1I112	534.	13.33	157.	40.	38.	1.12		
2 COMBINED AT	2I112	765.	13.33	202.	51.	49.	1.62		
HYDROGRAPH AT	105	354.	12.25	34.	9.	8.	.21		
ROUTED TO	R105	316.	12.42	34.	9.	8.	.21		
2 COMBINED AT	CP112	790.	13.33	236.	59.	57.	1.83		
DIVERSION TO	DI120	263.	13.33	79.	20.	19.	1.83		
HYDROGRAPH AT	D112	527.	13.33	158.	40.	38.	1.83		
DIVERSION TO	1D121A	263.	13.33	79.	20.	19.	1.83		
HYDROGRAPH AT	D112	264.	13.33	79.	20.	19.	1.83		
ROUTED TO	R112	241.	13.75	79.	20.	19.	1.83		
HYDROGRAPH AT	113A	409.	13.08	106.	27.	26.	.50		
2 COMBINED AT	CP113A	560.	13.08	183.	46.	45.	2.33		
DIVERSION TO	2D121A	58.	13.08	9.	2.	2.	2.33		
HYDROGRAPH AT	D113A	502.	13.08	174.	44.	42.	2.33		
ROUTED TO	R113A	444.	15.00	173.	44.	42.	2.33		
HYDROGRAPH AT	113	431.	13.08	117.	29.	28.	.50		
2 COMBINED AT	CP113	556.	13.08	284.	73.	71.	2.83		
DIVERSION TO	1D122	442.	13.08	226.	58.	56.	2.83		

HYDROGRAPH AT	D113	114.	13.08	58.	15.	14.	2.83
ROUTED TO	R113	106.	13.50	58.	15.	14.	2.83
HYDROGRAPH AT	114	326.	13.00	84.	21.	20.	.38
2 COMBINED AT	CP114	376.	13.08	140.	36.	35.	3.21
DIVERSION TO	2D122	96.	13.08	20.	5.	5.	3.21
HYDROGRAPH AT	D114	280.	13.08	120.	31.	30.	3.21
ROUTED TO	R114	278.	13.17	119.	31.	30.	3.21
2 COMBINED AT	CP115	2705.	13.17	688.	173.	167.	7.00
ROUTED TO	R115	2541.	13.67	686.	173.	167.	7.00
HYDROGRAPH AT	D113	442.	13.08	226.	58.	56.	2.83
ROUTED TO	R113	393.	14.50	220.	58.	56.	2.83
HYDROGRAPH AT	D114	96.	13.08	20.	5.	5.	3.21
ROUTED TO	R114	74.	15.08	20.	5.	5.	3.21
HYDROGRAPH AT	122	552.	13.33	146.	37.	35.	.89
3 COMBINED AT	1I122	571.	14.33	357.	99.	96.	4.10
2 COMBINED AT	CP122	2976.	13.58	1041.	273.	263.	7.89

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

MODEL 13688H1J
(ADMS WITH REVISION TO DIVERSIONS ALONG BELL RD.)

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*****************************************                                    ****************************************
*                                       *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*            SEPTEMBER 1990             *                                    *    HYDROLOGIC ENGINEERING CENTER     *
*             VERSION 4.0               *                                    *          609 SECOND STREET           *
*                                       *                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE  02/13/1998  TIME  07:37:31 *                                    *          (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
    2           ID        DEL WEBB SUN CITY GRAND REEMS ROAD FLOODLAIN LOMR/LOMA HYDROLOGY
    3           ID
    4           ID        STANLEY CONSULTANTS, INC.
    5           ID        2929 E. CAMELBACK RD.  SUITE 130
    6           ID        PHOENIX, ARIZONA   85016
    7           ID        PHONE: (602)912-6500     FAX: (602)912-6599
    8           ID
    9           ID        SCI PROJECT # 13688     HEC-1 INPUT FILENAME: 13688H1J
   10           ID                                ------------------------------
   11           ID                                -> FCD/WLB WTADMS.24 MODEL ("S" GRAPH,
   12           ID                                     GREEN & AMPT LOSS, 24HR TYPE II
   13           ID                                     W/AERIAL REDUCTION)
   14           ID                                -> CORRECTION MADE TO ROUTING STEP R102 AND R106
   15           ID                                -> BELL RD DIVERTS FROM STANLEY'S DEL WEBB GRAND
   16           ID                                     AVENUE PROPERTY MASTER DRAINAGE REPORT
   17           ID                                     EXISTING CONDITION MODEL E12291.DAT
   18           ID        GENERAL MODEL NOTES:
   19           ID        --------------------
   20           ID        1. THIS MODEL IS A PORTION OF THE WHITE TANKS/AGUA FRIA AREA DRAINAGE
   21           ID           MASTER STUDY MODEL "WTADMS.24" PREPARED BY CONSULTANT "THE WLB GROUP"
   22           ID           FOR THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY.
   23           ID        2. THIS MODEL REPRESENTS ONLY THAT PORTION OF THE WTADMS.24 MODEL FROM
   24           ID           SUB-BASIN 101 THRU SUB-BASIN 122 INCLUSIVE. ALL OTHER HYDROGRAPH
   25           ID           OPERATIONS FROM THE ORIGINAL MODEL HAVE BEEN DELETED.
   26           ID        3. SUB-BASINS 100, 100A, 109 AND 116 ARE NOT CONSIDERED BY EITHER THE
   27           ID           WTADMS.24 MODEL OR THIS MODEL TO CONTRIBUTE RUNOFF TO THE OLD REEMS
   28           ID           ROAD ALIGNMENT FROM BELL ROAD TO BEARDSLEY ROAD.
   29           ID        4. ANY OF THE ORIGINAL INPUT RECORD FROM THE WTADMS.24 MODEL THAT WAS
   30           ID           MODIFIED OR NOT USED BY THIS STANLEY MODEL HAS BEEN RETAINED AS A
   31           ID           "*  COMMENT". IN MOST CASES, A "NOTE: EXPLANATION" IS FOUND EITHER
   32           ID           IMMEDIATELEY BEFORE OR AFTER THE REVISED OR UNUSED RECORD.
   33           ID        5. THE DIVERSION OPERATIONS ALONG BELL ROAD AT CITRUS ROAD AND AT
   34           ID           COTTON LANE ARE FROM THE ORIGINAL WTADMS.24 MODEL. BELL ROAD
   35           ID           DIVERSION OPERATIONS AT SR303L, SARIVAL AVENUE AND D114 FROM THE
   36           ID           ORIGINAL WTADMS.24 MODEL HAVE BEEN REPLACED BY OPERATIONS FROM
   37           ID           STANLEY'S MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
   38           ID           EXISTING CONDITION MODEL E12291.DAT.
   39           ID
                * ID
                * ID      FINAL HYDROLOGY RUN FOR WHITE TANKS ADMS ---- ENTIRE WATERSHED
                * ID      100-YEAR, 24-HOUR STORM                           WTADMS.24
                * ID
                *DIAGRAM
   40           IT       5                    300
                * IO     3
                * NOTE: CHANGE OUTPUT SPECIFICATION
   41           IO       5
   42           IN      15
   43           JD    4.03    .001
   44           PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
   45           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
   46           PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
   47           PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
   48           PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
                                                HEC-1 INPUT                                                    PAGE  2

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

   49           PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
   50           PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
   51           PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
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 52          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 53          PC    .983    .986    .989    .992    .995    .998    1.00   1.000   1.000   1.000
 54          JD    3.99      10
 55          JD    3.83      50
 56          JD    3.76     100
 57          JD    3.70     200

 58          KK     101
 59          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 101.
 60          BA     .16
 61          LG     .35     .32    3.61     .26     .00
 62          UI     22.     76.    121.    165.    258.    205.    150.    106.     54.     34.
 63          UI     22.      7.      7.      7.      0.      0.      0.      0.      0.      0.
 64          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 65          KK    102A
 66          KM        RUNOFF HYDROGRAPH FROM SUB-SUBIN 102.
             * NOTE: THE ABOVE MESSAGE SHOULD SAY "RUNOFF HYDROGRAPH FROM SUB-BASIN 102A"
 67          BA     .51
 68          LG     .40     .20    6.05     .21     .00
 69          UI     40.     43.    142.    190.    228.    270.    327.    453.    484.    378.
 70          UI    319.    263.    218.    176.    114.     71.     66.     44.     40.     15.
 71          UI     12.     12.     12.     12.     12.      0.      0.      0.      0.      0.
 72          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 73          KK   CP101
 74          KM        ADD HYDROGRAPHS AT CP101
 75          HC       2     .67

 76          KK    R101
 77          KM        ROUTE FLOW FROM CP101 TO CP102.
 78          RS       2              -1       0
 79          RC    .025    .022    .022    2750   .0062
 80          RX    1000    1001    1030    1085    1120    1138    1139    1140
 81          RY    1319    1319    1318    1316    1316    1317    1317    1317

 82          KK     102
 83          KM        RUNOFF FROM SUB-BASIN 102
 84          BA     .10
 85          LG     .50     .00    6.05     .29     .00
 86          UI     10.     21.     44.     57.     70.     97.    122.     94.     75.     59.
 87          UI     45.     26.     17.     13.     10.      3.      3.      3.      3.      3.
 88          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 89          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 90          KK   CP102
 91          KM        ADD HYDROGRAPHS AT CP102.
 92          HC       2     .77
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 93          KK    R102
 94          KM        ROUTE FLOW FROM CP102 TO CP108
             * RS    36              -1       0
             * RC  .075     .075    .075     702   .0054
             * NOTE: THERE IS AN APPARENT ERROR IN ROUTING LENGTH IN THE ORIGINAL WTADMS.24
             *       MODEL THAT RESULTS IN A ROUTED DOWNSTREAM PEAK FLOW THAT IS GREATER
             *       THAN THE UPSTREAM PEAK FLOW. REVISE ORIGINAL WTADMS.24 ROUTING LENGTH
             *       OF 702FT WITH CORRECTED LENGTH APPROXIMATED AT 7000FT.
             *       CONSEQUENTLY THE NSTPS IN THE RS CARD IS ALSO CORRECTED.
 95          RS      19              -1       0
 96          RC    .075     .075    .075    7000   .0054
 97          RX    1000    1001    1120    1700    2030    2630    3070    3270
 98          RY    1289    1289    1288    1286    1286    1288    1290    1292

 99          KK     108
100          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 108.
101          BA     .79
102          LG     .44     .12    5.53     .25     .00
103          UI     31.     31.     31.     32.    101.    115.    136.    151.    167.    178.
104          UI    194.    213.    233.    257.    304.    366.    406.    353.    310.    281.
105          UI    259.    240.    217.    197.    181.    163.    148.    132.    108.     88.
106          UI     56.     54.     52.     51.     45.     31.     31.     31.     24.      9.
107          UI      9.      9.      9.      9.      9.      9.      9.      9.      9.      9.
108          UI      9.      0.      0.      0.      0.      0.      0.      0.      0.      0.
109          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

110          KK   1I108
111          KM        ADD HYDROGRAPHS AT CP108.
112          HC       2    1.56

113          KK     103
114          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 103.
115          BA     .37
116          LG     .46     .09    4.33     .29     .00
117          UI     19.     19.     20.     64.     79.     93.    105.    116.    131.    148.
118          UI    175.    222.    248.    206.    178.    159.    143.    125.    111.     97.
119          UI     84.     64.     45.     34.     32.     32.     19.     19.     19.      6.
120          UI      6.      6.      6.      6.      6.      6.      6.      6.      0.      0.
121          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

122          KK    R103
123          KM        ROUTE FLOW FROM CP103 TO CP108.
124          RS       4              -1       0
125          RC     .08    .022    .035    5380   .0041
126          RX    1000    1050    1080    1095    1130    1150    1300    1830
127          RY    1285    1284    1282    1280    1280    1282    1284    1286
```

```
128          KK   CP108
129          KM        ADD HYDROGRAPHS AT CP108.
130          HC       2    1.93
                                        HEC-1 INPUT                                                    PAGE  4

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


131          KK    R108
132          KM        ROUTE FLOW FROM CP108 TO CP115.
133          RS       7              -1       0
134          RC    .035    .035    .075    5382   .0037
135          RX    1000    1001    1002    1030    1100    1370    1900    2290
136          RY    1259    1259    1259    1258    1258    1260    1262    1264

137          KK     106
138          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 106.
139          BA     .77
140          LG     .35     .29    6.63     .16     .00
141          UI     68.    109.    267.    353.    425.    523.    727.    830.    634.    523.
142          UI    422.    338.    237.    132.    114.     77.     65.     21.     21.     21.
143          UI     21.     21.      0.      0.      0.      0.      0.      0.      0.      0.
144          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

145          KK    R106
146          KM        ROUTE FLOW FROM CP106 TO CP107
             * RS     3              -1       0
             * RC  .075     .03     .03    5382    .039
             * NOTE: THERE IS AN APPARENT ERROR IN ROUTING SLOPE IN THE ORIGINAL WTADMS.24
             *       REVISE ORIGINAL WTADMS.24 ROUTING SLOPE WITH CORRECTED SLOPE
             *       OF 0.0039. CONSEQUENTLY NSTPS IN THE RS CARD IS ALSO CORRECTED.
147          RS       8              -1       0
148          RC    .075     .03     .03    5382   .0039
149          RX    1000    1430    1860    1890    1940    1960    1969    1970
150          RY    1292    1291    1290  1289.5  1289.5    1290  1290.5  1290.5

151          KK     107
152          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 107.
153          BA     .60
154          LG     .46     .08    5.65     .29     .00
155          UI     26.     26.     26.     53.     91.    109.    125.    141.    152.    167.
156          UI    186.    203.    238.    291.    340.    308.    266.    238.    216.    199.
157          UI    177.    160.    143.    129.    114.     90.     71.     46.     46.     43.
158          UI     43.     27.     26.     26.     19.      8.      8.      8.      8.      8.
159          UI      8.      8.      8.      8.      8.      8.      0.      0.      0.      0.
160          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

161          KK   CP107
162          KM        ADD HYDROGRAPHS AT CP107.
163          HC       2    1.37

164          KK    R107
165          KM        ROUTE FLOW FROM CP107 TO CP115
166          RS       6              -1       0
167          RC    .035    .035    .075    6240   .0048
168          RX    1000    1001    1002    1030    1100    1370    1900    2290
169          RY    1259    1259    1259    1258    1258    1260    1262    1264
                                        HEC-1 INPUT                                                    PAGE  5

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


170          KK     115
171          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 115.
172          BA     .49
173          LG     .50     .00    7.04     .24     .00
174          UI     22.     22.     22.     45.     76.     91.    104.    117.    126.    138.
175          UI    155.    170.    200.    245.    284.    247.    215.    192.    176.    161.
176          UI    142.    129.    115.    103.     90.     69.     52.     38.     37.     35.
177          UI     31.     22.     22.     22.     10.      7.      7.      7.      7.      7.
178          UI      7.      7.      7.      7.      7.      0.      0.      0.      0.      0.
179          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

180          KK   1I115
181          KM        ADD HYDROGRAPHS AT CP115.
182          HC       2    1.86

183          KK   2I115
184          KM        ADD HYDROGRAPHS AT CP115.
185          HC       2    3.79

186          KK     111
187          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 111.
188          BA     .50
189          LG     .40     .21    5.55     .22     .00
190          UI     32.     32.     78.    129.    160.    184.    211.    246.    304.    406.
191          UI    374.    307.    266.    230.    196.    167.    139.     99.     58.     55.
192          UI     50.     32.     32.     15.     10.     10.     10.     10.     10.     10.
193          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
194          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

195          KK    D111
196          KM        DIVERT TO CP119 FROM CP111
197          DT   DI119
198          DI       0      32     109     228     389     599     858    1170    1539    1967
199          DQ       0      11      39      83     145     228     333     462     617     799

200          KK    R111
201          KM        ROUTE REMAINDER FROM CP111 TO CP112
202          RS       9              -1       0
```

```
203          RC    .075    .035    .035    5280   .0040
204          RX    1000    1570    2040    2370    2440    2468    2469    2470
205          RY    1312    1310    1308    1306    1306    1307    1307    1307

206          KK     104
207          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 104
208          BA     .15
209          LG     .35     .31    4.93     .23     .00
210          UI     26.    101.    151.    242.    249.    169.    112.     50.     31.     14.
211          UI      7.      7.      0.      0.      0.      0.      0.      0.      0.      0.
212          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                                   HEC-1 INPUT                                                    PAGE  6

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

213          KK    R104
214          KM        ROUTE FLOW FROM CP104 TO CP112
215          RS      53              -1       0
216          RC    .075    .075    .075    6552   .0056
217          RX    1000    1001    1230    1270    1750    2000    2380    2650
218          RY    1321    1321    1320    1318    1318    1319    1318    1320

219          KK     112
220          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 112
221          BA     .97
222          LG     .50     .00    3.65     .50     .00
223          UI     35.     35.     35.     35.     92.    123.    142.    165.    179.    193.
224          UI    207.    224.    245.    266.    290.    340.    400.    464.    424.    371.
225          UI    335.    308.    286.    267.    243.    220.    206.    185.    170.    155.
226          UI    131.    101.     77.     62.     61.     58.     58.     45.     35.     35.
227          UI     35.     28.     11.     11.     11.     11.     11.     11.     11.     11.
228          UI     11.     11.     11.     11.     11.      0.      0.      0.      0.      0.
229          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

230          KK   1I112
231          KM       ADD HYDROGRAPHS AT CP112.
232          HC       2    1.12

233          KK   2I112
234          KM       ADD HYDROGRAPHS AT CP112.
235          HC       2    1.62

236          KK     105
237          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 105
238          BA     .21
239          LG     .35     .27    7.68     .10     .00
240          UI     32.    129.    195.    295.    362.    246.    171.     88.     50.     28.
241          UI     10.     10.     10.      0.      0.      0.      0.      0.      0.      0.
242          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

243          KK    R105
244          KM        ROUTE FLOW FROM CP105 TO CP112
245          RS       3              -1       0
246          RC    .022    .022     .03    5220   .0044
247          RX    1000    1001    1010    1020    1040    1050    1099    1100
248          RY    1303    1303    1303    1302    1302    1304    1305    1305

249          KK   CP112
250          KM       ADD HYDROGRAPHS AT CP112.
251          HC       2    1.83

252          KK    D112
253          KM       DIVERT TO CP120 FROM CP112
254          DT   DI120
255          DI       0      48     165     355     625     981    1434    1990
256          DQ       0      16      55     118     208     327     478     663
                                   HEC-1 INPUT                                                    PAGE  7

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

257          KK    D112
258          KM       DIVERT TO CP121A FROM CP112
259          DT  1D121A
260          DI       0      32     110     237     417     654     956    1327
261          DQ       0      16      55     118     208     327     478     663

262          KK    R112
263          KM        ROUTE REMAINDER FROM CP112 TO CP113A
264          RS       6              -1       0
265          RC    .075    .035    .035    2640   .0023
266          RX    1000    1490    1830    2600    2770    2788    2789    2790
267          RY    1290    1288    1286    1284    1284    1285    1285    1285

268          KK    113A
269          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 113A
270          BA     .50
271          LG     .50     .00    7.93     .15     .00
272          UI     22.     22.     22.     42.     75.     89.    103.    115.    125.    137.
273          UI    152.    167.    192.    238.    276.    260.    224.    199.    181.    167.
274          UI    149.    134.    121.    108.     98.     79.     62.     40.     38.     36.
275          UI     35.     26.     22.     22.     20.      7.      7.      7.      7.      7.
276          UI      7.      7.      7.      7.      7.      7.      0.      0.      0.      0.
277          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

278          KK  CP113A
279          KM       ADD HYDROGRAPHS AT CP113A
280          HC       2    2.33
             * KK D113A
```

```
            * KM      DIVERT TO CP121A FROM CP113A
            * DT2D121A
            * DI      0       26      67      134     232     278     399     561     799     11
            * DQ      0       0       0       0       0       4       22      58      120     2
            * NOTE: REPLACE WTADMS.24 DIVERSION OPERATION WITH STANLEY'S DIVERSION OPERATION
            *       FROM THE MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
            *       EXISTING CONDITION MODEL E12291.DAT.

281         KK   D113A
282         KM          DIVERT TO CP121A FROM  CP113A
283         DT  2D121A
284         DI       0     185     545     642     893    1913
285         DQ       0       0       0      12      74     467

286         KK   R113A
287         KM        ROUTE REMAINDER FROM CP113A TO CP113
288         RS      25              -1       0
289         RC    .075    .035    .035    5280   .0032
290         RX    1000    1080    2620    2725    2735    2798    2799    2800
291         RY    1278    1277    1277    1276    1276    1277    1277    1277
                                      HEC-1 INPUT                                                PAGE  8

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

292         KK     113
293         KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 113
294         BA     .50
295         LG     .50     .00    8.54     .11     .00
296         UI     22.     22.     22.     49.     79.     95.    108.    122.    132.    145.
297         UI    162.    178.    213.    261.    291.    248.    216.    195.    178.    161.
298         UI    143.    131.    114.    105.     88.     65.     46.     39.     37.     37.
299         UI     27.     22.     22.     20.      7.      7.      7.      7.      7.      7.
300         UI      7.      7.      7.      7.      7.      0.      0.      0.      0.      0.
301         UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

302         KK   CP113
303         KM        ADD HYDROGRAPHS AT CP113.
304         HC       2    2.83
            * KK  D113
            * KM      DIVERT TO CP122 FROM CP113
            * DT 1D122
            * DI      0      79     257     523     872    1307    1829
            * DQ      0      63     205     416     692    1033    1422
            * NOTE: REPLACE WTADMS.24 DIVERSION OPERATION WITH STANLEY'S DIVERSION OPERATION
            *       FROM THE MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
            *       EXISTING CONDITION MODEL E12291.DAT.

305         KK    D113
306         KM          DIVERT TO CP122 FROM CP113
307         DT   1D122
308         DI       0     105     354     622    1153    1882
309         DQ       0       0     195     395     845    1480

310         KK    R113
311         KM        ROUTE REMAINDER FROM CP113 TO CP114
312         RS       6              -1       0
313         RC    .075     .04     .04    2100   .0038
314         RX    1000    1020    1100    1850    2030    2048    2049    2050
315         RY    1266    1264    1262    1260    1260    1261    1261    1261

316         KK     114
317         KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 114
318         BA     .38
319         LG     .50     .00    8.35     .13     .00
320         UI     17.     17.     17.     41.     62.     75.     86.     95.    104.    115.
321         UI    129.    144.    177.    215.    216.    183.    161.    146.    133.    118.
322         UI    106.     95.     85.     74.     58.     44.     31.     30.     28.     25.
323         UI     17.     17.     17.      6.      5.      5.      5.      5.      5.      5.
324         UI      5.      5.      5.      5.      0.      0.      0.      0.      0.      0.
325         UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

326         KK   CP114
327         KM        ADD HYDROGRAPHS AT CP114.
328         HC       2    3.21
            * KK  D114
            * KM      DIVERT TO CP122 FROM CP114
            * DT 2D122
            * DI      0      17      54      80     333     952    2066
            * DQ      0       0       0       0      70     438    1217
            * NOTE: REPLACE WTADMS.24 DIVERSION OPERATION WITH STANLEY'S DIVERSION OPERATION
            *       FROM THE MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
            *       EXISTING CONDITION MODEL E12291.DAT.
                                      HEC-1 INPUT                                                PAGE  9

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

329         KK    D114
330         KM          DIVERT TO CP122 FROM CP114
331         DT   2D122
332         DI       0     235     313     480     717    1056
333         DQ       0       0       2      81     225     462

334         KK    R114
335         KM        ROUTE REMAINDER FROM CP114 TO CP115
336         RS       2              -1       0
337         RC     .06    .022     .35    2652   .0034
338         RX    1000    1380    1790    1800    1850    1850    1899    1900
339         RY    1258    1256    1254    1250    1250    1252    1253    1253
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340          KK   CP115
341          KM        ADD HYDROGRAPHS AT CP115.
342          HC       2     7.0

343          KK    R115
344          KM        ROUTE FLOWS FROM CP115 TO CP122
345          RS       6              -1       0
346          RC    .035    .035    .075    5280   .0038
347          RX    1000    1001    1002    1015    1035    1360    1920    2460
348          RY    1239    1239    1239    1238    1238    1240    1241    1242

349          KK    D113
350          KM        RETURN DIVERT AT CP113
351          DR   1D122

352          KK    R113
353          KM        ROUTE FLOW FROM CP113 TO CP122
354          RS      36              -1       0
355          RC     .08     .08     .08    7488   .0049
356          RX    1000    1001    1610    1820    1990    2010    3059    3060
357          RY    1248    1248    1246    1245    1245    1246    1248    1248

358          KK    D114
359          KM        RETURN DIVERT AT CP114
360          DR   2D122

361          KK    R114
362          KM        ROUTE FLOW FROM CP114 TO CP122
363          RS      45              -1       0
364          RC    .075    .075    .075    6240   .0046
365          RX    1000    1001    1610    1820    1990    2010    3059    3060
366          RY    1248    1248    1246    1245    1245    1246    1248    1248

367          KK     122
368          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 122
369          BA     .89
370          LG     .50     .00    5.83     .32     .00
371          UI     32.     32.     32.     32.     87.    114.    132.    153.    166.    179.
372          UI    193.    207.    229.    247.    272.    319.    378.    428.    385.    338.
373          UI    306.    281.    262.    243.    220.    201.    188.    167.    155.    138.
374          UI    114.     93.     63.     57.     56.     53.     53.     36.     32.     32.
```



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

375          UI     32.     20.     10.     10.     10.     10.     10.     10.     10.     10.
376          UI     10.     10.     10.     10.     10.      0.      0.      0.      0.      0.
377          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

378          KK   1I122
379          KM        ADD HYDROGRAPHS AT CP122
380          HC       3     4.1

381          KK   CP122
382          KM        ADD HYDROGRAPHS AT CP122
383          HC       2    7.89
384          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

   58        101
              .
              .
   65         .        102A
              .           .
              .           .
   73      CP101............
              V
              V
   76       R101
              .
              .
   82         .         102
              .           .
              .           .
   90      CP102............
              V
              V
   93       R102
              .
              .
   99         .         108
              .           .
              .           .
  110      1I108............
              .
              .
  113         .         103
              .           V
              .           V
  122         .        R103
              .           .
              .           .
  128      CP108............
              V
```

```
                V
131          R108
                .
                .
137             .          106
                .            V
                .            V
145             .         R106
                .            .
                .            .
151             .            .          107
                .            .            .
                .            .            .
161             .        CP107............
                .            V
                .            V
164             .         R107
                .            .
                .            .
170             .            .          115
                .            .            .
                .            .            .
180             .        1I115............
                .            .
                .            .
183          2I115............
                .
                .
186             .          111
                .            .
                .            .
197             .            .-------->   DI119
195             .         D111
                .            V
                .            V
200             .         R111
                .            .
                .            .
206             .            .          104
                .            .            V
                .            .            V
213             .            .         R104
                .            .            .
                .            .            .
219             .            .            .          112
                .            .            .            .
                .            .            .            .
230             .            .       1I112............
                .            .            .
                .            .            .
233             .        2I112............
                .            .
                .            .
236             .            .          105
                .            .            V
                .            .            V
243             .            .         R105
                .            .            .
                .            .            .
249             .        CP112............
                .            .
                .            .
254             .            .-------->   DI120
252             .         D112
                .            .
                .            .
259             .            .-------->  1D121A
257             .         D112
                .            V
                .            V
262             .         R112
                .            .
                .            .
268             .            .         113A
                .            .            .
                .            .            .
278             .       CP113A............
                .            .
                .            .
283             .            .-------->  2D121A
281             .        D113A
                .            V
                .            V
286             .        R113A
                .            .
                .            .
292             .            .          113
                .            .            .
                .            .            .
302             .        CP113............
                .            .
                .            .
307             .            .-------->   1D122
305             .         D113
                .            V
                .            V
310             .         R113
                .            .
                .            .
316             .            .          114
```

```
                .          .          .
                .          .          .
326             .       CP114..........
                .          .
                .          .
331             .          .-------->   2D122
329             .       D114
                .          V
                .          V
334             .       R114
                .          .
                .          .
340         CP115..........
                V
                V
343         R115
                .
                .
351             .          .<-------   1D122
349             .       D113
                .          V
                .          V
352             .       R113
                .          .
                .          .
360             .          .          .<-------   2D122
358             .          .       D114
                .          .          V
                .          .          V
361             .          .       R114
                .          .          .
                .          .          .
367             .          .          .        122
                .          .          .         .
                .          .          .         .
378             .       1I122........................
                .          .
                .          .
381         CP122..........
```

1

```
41 IO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN           5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME        0000  STARTING TIME
                        NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      2    0  ENDING DATE
                    NDTIME        0055  ENDING TIME
                     ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .08 HOURS
                      TOTAL TIME BASE   24.92 HOURS

        ENGLISH UNITS
             DRAINAGE AREA          SQUARE MILES
             PRECIPITATION DEPTH    INCHES
             LENGTH, ELEVATION      FEET
             FLOW                   CUBIC FEET PER SECOND
             STORAGE VOLUME         ACRE-FEET
             SURFACE AREA           ACRES
             TEMPERATURE            DEGREES FAHRENHEIT

43 JD           INDEX STORM NO. 1
                      STRM        4.03  PRECIPITATION DEPTH
                      TRDA         .00  TRANSPOSITION DRAINAGE AREA

44 PI             PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00
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                     .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                     .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                     .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
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54 JD        INDEX STORM NO. 2
                STRM        3.99  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
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55 JD        INDEX STORM NO. 3
                STRM        3.83  PRECIPITATION DEPTH
                TRDA       50.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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56 JD        INDEX STORM NO. 4
                STRM        3.76  PRECIPITATION DEPTH
                TRDA      100.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
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57 JD INDEX STORM NO. 5

STRM 3.70 PRECIPITATION DEPTH

TRDA 200.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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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	101	233.	12.25	22.	5.	5.	.16		
+	HYDROGRAPH AT	102A	525.	12.58	73.	18.	18.	.51		
+	2 COMBINED AT	CP101	635.	12.50	95.	24.	23.	.67		
+	ROUTED TO	R101	629.	12.50	95.	24.	23.	.67		
+	HYDROGRAPH AT	102	135.	12.42	17.	4.	4.	.10		
+	2 COMBINED AT	CP102	753.	12.50	112.	28.	27.	.77		
+	ROUTED TO	R102	483.	14.08	112.	28.	27.	.77		
+	HYDROGRAPH AT	108	478.	13.25	117.	29.	28.	.79		
+	2 COMBINED AT	1I108	689.	14.00	226.	57.	55.	1.56		
+	HYDROGRAPH AT	103	286.	12.92	55.	14.	13.	.37		
+	ROUTED TO	R103	267.	13.08	55.	14.	13.	.37		
+	2 COMBINED AT	CP108	770.	14.00	281.	71.	68.	1.93		
+	ROUTED TO	R108	715.	14.42	279.	71.	68.	1.93		
+	HYDROGRAPH AT	106	871.	12.50	111.	28.	27.	.77		
+	ROUTED TO	R106	648.	13.17	111.	28.	27.	.77		
+	HYDROGRAPH AT	107	398.	13.08	88.	22.	21.	.60		
	2 COMBINED AT									

+		CP107	1033.	13.17	199.	50.	48.	1.37
+	ROUTED TO	R107	937.	13.58	199.	50.	48.	1.37
+	HYDROGRAPH AT	115	379.	13.08	89.	22.	22.	.49
+	2 COMBINED AT	1I115	1172.	13.50	287.	72.	69.	1.86
+	2 COMBINED AT	2I115	1840.	13.58	561.	143.	137.	3.79
+	HYDROGRAPH AT	111	443.	12.67	71.	18.	17.	.50
+	DIVERSION TO	DI119	166.	12.67	26.	7.	6.	.50
+	HYDROGRAPH AT	D111	276.	12.67	45.	11.	11.	.50
+	ROUTED TO	R111	232.	13.33	45.	11.	11.	.50
+	HYDROGRAPH AT	104	236.	12.17	20.	5.	5.	.15
+	ROUTED TO	R104	89.	14.67	20.	5.	5.	.15
+	HYDROGRAPH AT	112	534.	13.33	138.	34.	33.	.97
+	2 COMBINED AT	1I112	534.	13.33	157.	40.	38.	1.12
+	2 COMBINED AT	2I112	765.	13.33	202.	51.	49.	1.62
+	HYDROGRAPH AT	105	354.	12.25	34.	9.	8.	.21
+	ROUTED TO	R105	316.	12.42	34.	9.	8.	.21
+	2 COMBINED AT	CP112	790.	13.33	236.	59.	57.	1.83
+	DIVERSION TO	DI120	263.	13.33	79.	20.	19.	1.83
+	HYDROGRAPH AT	D112	527.	13.33	158.	40.	38.	1.83
+	DIVERSION TO	1D121A	263.	13.33	79.	20.	19.	1.83
+	HYDROGRAPH AT	D112	264.	13.33	79.	20.	19.	1.83
+	ROUTED TO	R112	241.	13.75	79.	20.	19.	1.83
+	HYDROGRAPH AT	113A	409.	13.08	106.	27.	26.	.50
+	2 COMBINED AT	CP113A	560.	13.08	183.	46.	45.	2.33
+	DIVERSION TO	2D121A	2.	13.08	0.	0.	0.	2.33
+	HYDROGRAPH AT	D113A	558.	13.08	183.	46.	45.	2.33
+	ROUTED TO	R113A	483.	14.83	183.	46.	45.	2.33
+	HYDROGRAPH AT	113	431.	13.08	117.	29.	28.	.50
+	2 COMBINED AT	CP113	556.	13.08	293.	76.	73.	2.83
+	DIVERSION TO	1D122	346.	13.08	156.	39.	37.	2.83
+	HYDROGRAPH AT	D113	210.	13.08	137.	37.	35.	2.83
+	ROUTED TO	R113	201.	13.50	137.	37.	35.	2.83
+	HYDROGRAPH AT	114	326.	13.00	84.	21.	20.	.38
+	2 COMBINED AT	CP114	488.	13.08	218.	58.	56.	3.21

+	DIVERSION TO	2D122	86.	13.08	11.	3.	3.	3.21
+	HYDROGRAPH AT	D114	402.	13.08	207.	55.	53.	3.21
+	ROUTED TO	R114	399.	13.17	207.	55.	53.	3.21
+	2 COMBINED AT	CP115	2206.	13.58	767.	197.	190.	7.00
+	ROUTED TO	R115	2102.	14.00	764.	197.	190.	7.00
+	HYDROGRAPH AT	D113	346.	13.08	156.	39.	37.	2.83
+	ROUTED TO	R113	299.	16.33	151.	39.	37.	2.83
+	HYDROGRAPH AT	D114	86.	13.08	11.	3.	3.	3.21
+	ROUTED TO	R114	46.	15.42	11.	3.	3.	3.21
+	HYDROGRAPH AT	122	552.	13.33	146.	37.	35.	.89
+	3 COMBINED AT	1I122	551.	13.33	285.	78.	75.	4.10
+	2 COMBINED AT	CP122	2425.	13.92	1045.	275.	265.	7.89

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

MODEL 13688H1N (LOMR)

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****************************************                                    ****************************************
*                                      *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*            SEPTEMBER 1990            *                                    *    HYDROLOGIC ENGINEERING CENTER     *
*             VERSION 4.0              *                                    *          609 SECOND STREET           *
*                                      *                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE  02/13/1998  TIME  09:21:36 *                                    *          (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
  2           ID        DEL WEBB SUN CITY GRAND REEMS ROAD FLOODLAIN LOMR HYDROLOGY
  3           ID
  4           ID        STANLEY CONSULTANTS, INC.
  5           ID        2929 E. CAMELBACK RD.  SUITE 130
  6           ID        PHOENIX, ARIZONA   85016
  7           ID        PHONE: (602)912-6500     FAX: (602)912-6599
  8           ID
  9           ID        SCI PROJECT # 13688     HEC-1 INPUT FILENAME: 13688H1N
 10           ID                                ------------------------------
 11           ID                                -> BASED ON FCD/WLB WTADMS.24 MODEL (PHX VLLY
 12           ID                                     S-GRAPH, GREEN & AMPT LOSS, 24HR TYPE II
 13           ID                                     STORM, P=4.03" W/AERIAL REDUCT); TRUNCATED
 14           ID                                     TO INCLUDE ONLY SUB-BASINS 101 THRU 122,
 15           ID                                     INCLUSIVE
 16           ID                                -> NO AZ TRADITIONS OR MTN VISTA RANCH
 17           ID                                -> NO TEMP RET DIKES EAST OR WEST OF SR303L
 18           ID                                -> SCG PHASES 1 AND 2 ASSUMED 100% COMPLETE
 19           ID                                ->  EXCEPT FOR PARTS OF 107 AND 115 THAT HAVE
 20           ID                                ->  NOT BEEN GRADED
 21           ID                                -> REVISED FROM 13688H1K IN MODELING THE RET
 22           ID                                -> BASIN. SIX BASINS ARE MODELED INSTEAD OF
 23           ID                                -> THREE.  SUB-BASINS 107, 113, 114 AND 115
 24           ID                                -> HAVE THERE OWN RETENTION BASINS.
 25           ID                                -> OFFSITE FLOWS ALONG BELL RD. KEPT SEPARATE
 26           ID                                     FROM ONSITE PHASE 2 RUNOFF AND RETENTION
 27           ID                                -> REVISED FROM 13688H1J ALL ROUTINGS OCCUR
 28           ID                                    WITH DEVELOPMENT PLUS ROUTING ON BELL RD
 29           ID                                    TO REFLECT DEVELOPMENT CONDITIONS
 30           ID                                -> BELL RD DIVERTS FROM STANLEY'S DEL WEBB GRAND
 31           ID                                     AVENUE PROPERTY MASTER DRAINAGE REPORT
 32           ID                                     EXISTING CONDITION MODEL E12291.DAT
 33           ID        GENERAL MODEL NOTES:
 34           ID        --------------------
 35           ID        1. THIS MODEL IS BASED ON THE WHITE TANKS/AGUA FRIA AREA DRAINAGE
 36           ID           MASTER STUDY MODEL "WTADMS.24" PREPARED BY CONSULTANT "THE WLB GROUP"
 37           ID           FOR THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY.
 38           ID        2. THIS MODEL REPRESENTS ONLY THAT PORTION OF THE WTADMS.24 MODEL FROM
 39           ID           SUB-BASIN 101 THRU SUB-BASIN 122 INCLUSIVE. ALL OTHER HYDROGRAPH
 40           ID           OPERATIONS FROM THE ORIGINAL MODEL HAVE BEEN DELETED.
 41           ID        3. SUB-BASINS 100, 100A, 109 AND 116 ARE NOT CONSIDERED BY EITHER THE
 42           ID           WTADMS.24 MODEL OR THIS MODEL TO CONTRIBUTE RUNOFF TO THE OLD REEMS
 43           ID           ROAD ALIGNMENT FROM BELL ROAD TO BEARDSLEY ROAD.
 44           ID        4. ANY OF THE ORIGINAL INPUT RECORD FROM THE WTADMS.24 MODEL THAT WAS
 45           ID           MODIFIED OR NOT USED BY THIS STANLEY MODEL HAS BEEN RETAINED AS A
 46           ID           "*  COMMENT". IN MOST CASES, A "NOTE: EXPLANATION" IS FOUND EITHER
 47           ID           IMMEDIATELEY BEFORE OR AFTER THE REVISED OR UNUSED RECORD.
 48           ID        5. THIS MODEL DOES NOT RECOGNIZE THE IMPACT OF THE RECENTLY CONSTRUCTED
 49           ID           ARIZONA TRADITIONS AND MOUNTAIN VISTA RANCH RESIDENTIAL DEVELOPMENTS.
 50           ID           ARIZONA TRADITIONS IS LOCATED NORTH OF BELL ROAD WEST OF SUN CITY
 51           ID           GRAND IN SUB-BASINS 111 AND 112. MTN VISTA RANCH IS LOCATED SOUTH OF
 52           ID           BELL ROAD WEST OF REEMS ROAD IN SUB-BASIN 122. BOTH DEVELOPMENTS
 53           ID           HAVE BEEN DESIGNED TO RETAIN THEIR ONSITE 100-YR RUNOFF AND ALSO MAY
 54           ID           IMPACT ROUTING STEPS ASSOCIATED WITH THOSE SUB-BASINS.
 55           ID        6. THIS MODEL DOES NOT RECOGNIZE THE THREE EXISTING TEMPORARY RETENTION
                                                   HEC-1 INPUT                                                    PAGE  2

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

 56           ID           DIKES RECENTLY CONSTRUCTED BY DEL WEBB ON SUN CITY GRAND PROPERTY
 57           ID           JUST WEST OF SR303L NORTH OF UNION HILLS DRIVE IN SUB-BASINS 102,
 58           ID           102A, 106 AND 107 - - THESE DIKES ARE DESIGNED TO RETAIN ALL OF THE
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 59          ID          100-YR, 2-HR RUNOFF FROM SUB-BASINS 101, 102A AND 106, AND PART OF
 60          ID          THE 100-YR, 2-HR RUNOFF FROM SUB-BASINS 102 AND 107. IT ALSO DOES
 61          ID          NOT RECOGNIZE THE TWO EXISTING TEMPORARY RETENTION DIKES EAST OF
 62          ID          SR303L ON SUN CITY GRAND PROPERTY IN SUB-BASINS 108 AND 109,
 63          ID          DESIGNED TO RETAIN THE 100-YR, 2-HR RUNOFF FROM THE LOWER PORTION OF
 64          ID          PHASE 1 AND THE UN-DEVELOED AREA DOWN-SLOPE FROM PHASE 1.
 65          ID       7. THE DIVERSION OPERATIONS ALONG BELL ROAD AT CITRUS ROAD AND AT
 66          ID          COTTON LANE ARE FROM THE ORIGINAL WTADMS.24 MODEL. BELL ROAD
 67          ID          DIVERSION OPERATIONS AT SR303L, SARIVAL AVENUE AND D114 FROM THE
 68          ID          ORIGINAL WTADMS.24 MODEL HAVE BEEN REPLACED BY OPERATIONS FROM
 69          ID          STANLEY'S MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
 70          ID          EXISTING CONDITION MODEL E12291.DAT.
 71          ID       8. SUN CITY GRAND PHASES 1 AND 2, WHICH HAVE BEEN CONSTRUCTED IN SUB-
 72          ID          BASINS 100, 102, 103, 107, 108, 109, 113, 114, 115 AND 116 ARE
 73          ID          REFLECTED IN THIS MODEL IN THE FOLLOWING MANNER:
 74          ID          A. SUB-BASIN BOUNDARIES AND AREAS FROM WTADMS.24 WERE NOT CHANGED;
 75          ID          B. INITIAL ABSTRACT AND PERCENT IMPERVIOUS WERE ADJUSTED ON AN AREA-
 76          ID             WEIGHTED BASIS TO REFLECT DEVELOPED CONDITIONS; PSIF VALUE HAS
 77          ID             NOT BEEN CHANGED BUT DTHETA HAS BEEN ADJUSTED TO CORRESPOND TO
 78          ID             NORMAL INSTEAD OF SATURATED SOIL CONDITION AND XKSAT VALUES HAVE
 79          ID             BEEN ADJUSTED TO ACCOUNT FOR DEVELOPED CONDITION VEG COVER;
 80          ID          C. PHX VLLY S-GRAPHS FROM THE ORIGINAL WTADMS.24 HAVE BEEN MODIFIED
 81          ID             BY USING MCUHP2 WITH A NEW AREA-WEIGHTED ADJUSTED Kn (L, Lca AND
 82          ID             SLOPE USED IN MCUHP2 HAVE NOT BEEN MODIFIED FROM THE ORIGINAL
 83          ID             WTADMS.24 MODEL);
 84          ID          D. THE DEAD STORAGE PORTION OF RETENTION BASIN VOLUME FOR BASINS IN
 85          ID             PHASES 1 AND PART OF PHASE 2 HAVE BEEN SUMMED AND MODELED AS
 86          ID             SINGLE VOLUME-DIVERTED RETENTION BASINS AT EACH OF THE TWO
 87          ID             CONCENTRATION POINTS ALONG REEMS ROAD AT BEARDSLEY ROAD, UNION
 88          ID             HILLS DRIVE;
 89          ID          E. THE DEAD STORAGE PORTION OF RETENTION BASIN VOLUME FOR BASINS IN
 90          ID             PHASE 2 HAS BEEN SUMMED AND MODELED AT THE FOLLOWING SUB-BASIN
 91          ID             OUTLETS:  107, 113, 114 AND 115.
 92          ID          F. OFFSITE RUNOFF FROM THE WEST THAT CONCENTRATES AT VARIOUS
 93          ID             LOCATIONS ALONG BELL RD. ADJACENT TO PHASE 2 IS MODELED SEPARATE
 94          ID             FROM THE ONSITE RUNOFF AND RETENTION.
 95          ID         G.  ONSITE HYDROGRAPHS FROM SUB-BASINS 107,113, 114 AND 115 ARE VOLUME
 96          ID             DIVERTED THROUGH A RETENTION BASIN AT EACH OF THE CONCENTRATION
 97          ID             POINT REPRESENTING THE TOTAL DEAD STORAGE RETENTION VOLUME FOUND
 98          ID             IN EACH SUB-BASIN.  THESE HYDROGRAPHS THEN ACCUMULATED AT A NEW
 99          ID             ONSITE CONCENTRATION POINT LOCATED AT THE NORTHWEST CORNER OF
100          ID             BELL ROAD AND REEMS ROAD. THE OUTFLOW FROM THIS RETENTION STEP
101          ID             IS THEN ADDED TO THE OFFSITE FLOW THAT HAS BEEN ROUTED ALONG
102          ID             BELL RD. FROM THE WEST AT A SECOND CONCENTRATION POINT AT THE
103          ID             INTERSECTION OF REEMS AND BELL. THE SECOND CONCENTRATION POINT
104          ID             CORRESPONDS TO WTADMS.24 CONCENTRATION POINT CP115.
105          ID          H. NONE OF THE WTADMS.24 HYDROGRAPH REACH ROUTING OPERATIONS WITHIN
106          ID             SUN CITY GRAND, AZ TRADITIONS OR MTN VISTA RANCH WERE CHANGED
107          ID             ALTHOUGH THEY WOULD UNDOUBTEDLY BE IMPACTED BY DEVELOPMENT.
108          ID       9. SUN CITY GRAND PHASE 1 IS 100% CONSTRUCTED AND PHASE 2 IS ASSUMED
109          ID          TO BE PARTIALLY CONSTRUCTED;
110          ID
             * ID
             * ID      FINAL HYDROLOGY RUN FOR WHITE TANKS ADMS ---- ENTIRE WATERSHED
             * ID      100-YEAR, 24-HOUR STORM                          WTADMS.24
             * ID
             *DIAGRAM
                                          HEC-1 INPUT                                          PAGE  3

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

111          IT       5                    300
             * IO     3
             * NOTE: CHANGE OUTPUT SPECIFICATION
112          IO       5
113          IN      15
114          JD    4.03     .001
115          PC    .000     .002     .005     .008     .011     .014     .017     .020     .023     .026
116          PC    .029     .032     .035     .038     .041     .044     .048     .052     .056     .060
117          PC    .064     .068     .072     .076     .080     .085     .090     .095     .100     .105
118          PC    .110     .115     .120     .126     .133     .140     .147     .155     .163     .172
119          PC    .181     .191     .203     .218     .236     .257     .283     .387     .663     .707
120          PC    .735     .758     .776     .791     .804     .815     .825     .834     .842     .849
121          PC    .856     .863     .869     .875     .881     .887     .893     .898     .903     .908
122          PC    .913     .918     .922     .926     .930     .934     .938     .942     .946     .950
123          PC    .953     .956     .959     .962     .965     .968     .971     .974     .977     .980
124          PC    .983     .986     .989     .992     .995     .998     1.00    1.000    1.000    1.000
125          JD    3.99      10
126          JD    3.83      50
127          JD    3.76     100
128          JD    3.70     200

129          KK     101
130          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 101.
131          BA     .16
132          LG     .35      .32     3.61      .26      .00
133          UI     22.      76.     121.     165.     258.     205.     150.     106.      54.      34.
134          UI     22.       7.       7.       7.       0.       0.       0.       0.       0.       0.
135          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.

136          KK    102A
137          KM        RUNOFF HYDROGRAPH FROM SUB-SUBIN 102.
             * NOTE: THE ABOVE MESSAGE SHOULD SAY "RUNOFF HYDROGRAPH FROM SUB-BASIN 102A"
138          BA     .51
139          LG     .40      .20     6.05      .21      .00
140          UI     40.      43.     142.     190.     228.     270.     327.     453.     484.     378.
141          UI    319.     263.     218.     176.     114.      71.      66.      44.      40.      15.
142          UI     12.      12.      12.      12.      12.       0.       0.       0.       0.       0.
143          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
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144          KK   CP101
145          KM        ADD HYDROGRAPHS AT CP101
146          HC       2     .67

147          KK    R101
148          KM        ROUTE FLOW FROM CP101 TO CP102.
149          RS       2             -1       0
150          RC    .025    .022    .022    2750   .0062
151          RX    1000    1001    1030    1085    1120    1138    1139    1140
152          RY    1319    1319    1318    1316    1316    1317    1317    1317
                                         HEC-1 INPUT                                                    PAGE  4

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


153          KK     102
154          KM        RUNOFF FROM SUB-BASIN 102
155          BA     .10
             * LG   .50     .00    6.05     .29     .00
             * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
156          LG     .41     .11    6.05     .27    10.5
             * UI   10.     21.     44.     57.     70.     97.    122.     94.     75.   59.
             * UI   45.     26.     17.     13.     10.      3.      3.      3.      3.    3.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
157          UI     13.     44.     72.     96.    151.    132.     97.     70.     41.     23.
158          UI     15.      7.      4.      4.      4.      0.      0.      0.      0.      0.
159          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

160          KK   CP102
161          KM        ADD HYDROGRAPHS AT CP102.
162          HC       2     .77

163          KK    R102
164          KM        ROUTE FLOW FROM CP102 TO CP108
             * RS    36             -1       0
             * RC  .075    .075    .075     702   .0054
             * NOTE: THERE IS AN APPARENT ERROR IN ROUTING LENGTH IN THE ORIGINAL WTADMS.24
             *       MODEL THAT RESULTS IN A ROUTED DOWNSTREAM PEAK FLOW THAT IS GREATER
             *       THAN THE UPSTREAM PEAK FLOW. REVISE ORIGINAL WTADMS.24 ROUTING LENGTH
             *       OF 702FT WITH CORRECTED LENGTH APPROXIMATED AT 7000FT.
             *       CONSEQUENTLY THE NSTPS IN THE RS CARD IS ALSO CORRECTED.
165          RS      19             -1       0
166          RC    .075    .075    .075    7000   .0054
167          RX    1000    1001    1120    1700    2030    2630    3070    3270
168          RY    1289    1289    1288    1286    1286    1288    1290    1292

169          KK     108
170          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 108.
171          BA     .79
             * LG   .44     .12    5.53     .25     .00
             * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
172          LG     .38     .20    5.53     .23    12.0
             * UI   31.     31.     31.     32.    101.    115.    136.    151.    167.  178.
             * UI  194.    213.    233.    257.    304.    366.    406.    353.    310.  281.
             * UI  259.    240.    217.    197.    181.    163.    148.    132.    108.   88.
             * UI   56.     54.     52.     51.     45.     31.     31.     31.     24.    9.
             * UI    9.      9.      9.      9.      9.      9.      9.      9.      9.    9.
             * UI    9.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
173          UI     35.     35.     35.     78.    125.    151.    173.    193.    209.    230.
174          UI    258.    284.    340.    418.    459.    390.    340.    307.    281.    253.
175          UI    225.    205.    180.    166.    136.    101.     69.     62.     59.     58.
176          UI     41.     35.     35.     28.     11.     11.     11.     11.     11.     11.
177          UI     11.     11.     11.     11.     11.      0.      0.      0.      0.      0.
178          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                                         HEC-1 INPUT                                                    PAGE  5

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


179          KK   1I108
180          KM        ADD HYDROGRAPHS AT CP108.
181          HC       2    1.56

182          KK     103
183          KO       5
184          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 103.
185          BA     .37
             * LG   .46     .09    4.33     .29     .00
             * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
186          LG     .30     .24    4.33     .31    24.0
             * UI   19.     19.     20.     64.     79.     93.    105.    116.    131.  148.
             * UI  175.    222.    248.    206.    178.    159.    143.    125.    111.   97.
             * UI   84.     64.     45.     34.     32.     32.     19.     19.     19.    6.
             * UI    6.      6.      6.      6.      6.      6.      6.      6.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
187          UI     32.     45.    119.    159.    190.    231.    308.    393.    316.    259.
188          UI    212.    172.    137.     81.     55.     48.     32.     23.     10.     10.
189          UI     10.     10.     10.      0.      0.      0.      0.      0.      0.      0.
190          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * NOTE: INSERT HYDROGRAPH STEP INTO ORIGINAL WTADMS.24 TO REFLECT RETENTION
             *       STORAGE SUM OF ALL SUN CITY GRAND RETENTION IN SUB-BASIN 103

191          KK  103OUT
192          KO       5
193          DT  103RET   34.66
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194          DI       0   10000
195          DQ       0   10000

196          KK    R103
             * KM      ROUTE FLOW FROM CP103 TO CP108.
             * NOTE: ROUTE FLOW FROM 103OUT TO CP108
197          RS       4              -1       0
198          RC     .08     .022     .035    5380   .0041
199          RX    1000    1050     1080    1095    1130    1150    1300    1830
200          RY    1285    1284     1282    1280    1280    1282    1284    1286

201          KK   CP108
202          KO       5
203          KM        ADD HYDROGRAPHS AT CP108.
204          HC       2    1.93
             * NOTE: INSERT HYDROGRAPH STEP INTO ORIGINAL WTADMS.24 TO REFLECT RETENTION
             *       STORAGE SUM OF ALL SUN CITY GRAND RETENTION IN SUB-BASIN 108

205          KK  108OUT
206          KO       5
207          DT  108RET  134.08
208          DI       0   10000
209          DQ       0   10000
                                        HEC-1 INPUT                                          PAGE  6

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


210          KK    R108
             * KM    ROUTE FLOW FROM CP108 TO CP115.
             * NOTE: ROUTE FLOW FROM 108OUT TO CP115
             * RS     7              -1       0
             * RC  .035     .035     .075    5382   .0037
             * RX  1000    1001     1002    1030    1100    1370    1900    2290
             * RY  1259    1259     1259    1258    1258    1260    1262    1264
             * REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
211          RS       7              -1       0
212          RC    .050     .050     .050    7000   .0028
213          RX    1000    1100     1130    1190    1200    1220    1240    1320
214          RY    1260    1259     1260    1258    1255    1255    1259    1261

215          KK     106
216          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 106.
217          BA     .77
218          LG     .35     .29     6.63     .16     .00
219          UI     68.    109.     267.    353.    425.    523.    727.    830.    634.    523.
220          UI    422.    338.     237.    132.    114.     77.     65.     21.     21.     21.
221          UI     21.     21.      0.      0.      0.      0.      0.      0.      0.      0.
222          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

223          KK    R106
224          KM        ROUTE FLOW FROM CP106 TO CP107
             * RS     3              -1       0
             * RC  .075     .03      .03    5382    .039
             * RX  1000    1430     1860    1890    1940    1960    1969    1970
             * RY  1292    1291     1290  1289.5  1289.5    1290  1290.5  1290.5
             * NOTE: THERE IS AN APPARENT ERROR IN ROUTING SLOPE IN THE ORIGINAL WTADMS.24
             *       REVISE ORIGINAL WTADMS.24 ROUTING SLOPE WITH CORRECTED SLOPE
             *       CHANGE THIS ROUTING TO REFLECT THE DEVELOPMENT CONDITIONS
225          RS       7              -1       0
226          RC     .05     .05      .05    6800   .0031
227          RX    1000    1032     1040    1085    1093    1108    1240    1265    1274    1390
228          RY    1293    1291     1289    1288    1290    1292    1291    1290    1292    1295

229          KK     107
230          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 107.
231          BA     .60
             * LG   .46     .08     5.65     .29     .00
             * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
232          LG     .32     .22     5.65     .25    21.0
             * UI   26.     26.      26.     53.     91.    109.    125.    141.    152.  167.
             * UI  186.    203.     238.    291.    340.    308.    266.    238.    216.  199.
             * UI  177.    160.     143.    129.    114.     90.     71.     46.     46.   43.
             * UI   43.     27.      26.     26.     19.      8.      8.      8.      8.    8.
             * UI    8.      8.      8.      8.      8.      8.      0.      0.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
233          UI     38.     38.      88.    149.    186.    215.    244.    285.    344.    460.
234          UI    462.    374.     322.    282.    240.    205.    176.    128.     82.     66.
235          UI     63.     43.      38.     28.     12.     12.     12.     12.     12.     12.
236          UI     12.      0.       0.      0.      0.      0.      0.      0.      0.      0.
237          UI      0.      0.       0.      0.      0.      0.      0.      0.      0.      0.
                                        HEC-1 INPUT                                          PAGE  7

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


238          KK   CP107
239          KM        ADD HYDROGRAPHS AT CP107.
240          HC       2    1.37
             * ROUTE THROUGH THE RETENTIONS IN 107

241          KK  107OUT
242          KO       5
243          DT  107RET   72.83
244          DI       0   10000
245          DQ       0   10000

246          KK    R107
247          KM        ROUTE FLOW FROM CP107 TO CP115
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            * RS     6              -1       0
            * RC  .035    .035    .075    6240   .0048
            * RX  1000    1001    1002    1030    1100    1370    1900    2290
            * RY  1259    1259    1259    1258    1258    1260    1262    1264
            * REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
248         RS       7              -1       0
249         RC    .050    .050    .050    7000   .0028
250         RX    1000    1100    1130    1190    1200    1220    1240    1320
251         RY    1260    1259    1260    1258    1255    1255    1259    1261
            * NOTE: BEGIN NEW SUN CITY GRAND PHASE 2 ONSITE BRANCH IN MODEL

252         KK     113
253         KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 113
254         BA     .50
            * LG   .50     .00    8.54     .11     .00
            * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
255         LG     .29     .15    8.54     .08    25.5
            * UI   22.     22.     22.     49.     79.     95.    108.    122.    132.  145.
            * UI  162.    178.    213.    261.    291.    248.    216.    195.    178.  161.
            * UI  143.    131.    114.    105.     88.     65.     46.     39.     37.   37.
            * UI   27.     22.     22.     20.      7.      7.      7.      7.      7.    7.
            * UI    7.      7.      7.      7.      7.      0.      0.      0.      0.    0.
            * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
            * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
256         UI     53.    124.    244.    315.    400.    594.    594.    448.    350.    270.
257         UI    175.     93.     76.     53.     20.     16.     16.     16.      0.      0.
258         UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            * NOTE: DELETE HYDROGRAPH ADDITION AT CP113. IT IS NOT APLICABLE BECAUSE SUN
            *       CITY GRAND ONSITE RUNOFF AND RETENTION IS CONSIDERED SEPARATE FROM
            *       OFFSITE RUNOFF ALONG BELL RD.
            * KK CP113
            * KM      ADD HYDROGRAPHS AT CP113.
            * HC     2    2.83
            * NOTE: ROUTE RUNOFF HYDROGRAPH FROM SUB-BASIN 113 TO CP114 USING SAME ROUTING
            *       STEP PARAMETERS AS R113 FOUND AS LATER STEP IN WTADMS.24 MODEL. THIS
            *       ROUTING OCCURS WITHIN THE SUN CITY GRAND PHASE 2 ONSITE AREA.
            * ADD ROUTING THROUGH THE RETENTIONS IN 113
                                        HEC-1 INPUT                                          PAGE  8

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

259         KK  113OUT
260         KO       5
261         DT  113RET   39.94
262         DI       0   10000
263         DQ       0   10000

264         KK    R113
            * RS     6              -1       0
            * RC  .075     .04     .04    2100   .0038
            * RX  1000    1020    1100    1850    2030    2048    2049    2050
            * RY  1266    1264    1262    1260    1260    1261    1261    1261
            * REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
265         RS       6              -1       0
266         RC     .04     .04     .04    2100   .0038
267         RX    1000    1012    1025    1030    1068    1070    1080    1100
268         RY    1279    1278    1275    1274    1274    1275    1278    1279

269         KK     114
270         KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 114
271         BA     .38
            * LG   .50     .00    8.35     .13     .00
            * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
272         LG     .30     .15    8.35     .07    24.0
            * UI   17.     17.     17.     41.     62.     75.     86.     95.    104.  115.
            * UI  129.    144.    177.    215.    216.    183.    161.    146.    133.  118.
            * UI  106.     95.     85.     74.     58.     44.     31.     30.     28.   25.
            * UI   17.     17.     17.      6.      5.      5.      5.      5.      5.    5.
            * UI    5.      5.      5.      5.      0.      0.      0.      0.      0.    0.
            * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
            * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
273         UI     35.     58.    137.    181.    220.    273.    392.    399.    307.    252.
274         UI    202.    159.    102.     60.     53.     35.     24.     11.     11.     11.
275         UI     11.     11.      0.      0.      0.      0.      0.      0.      0.      0.
276         UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

277         KK   CP114
278         KM      ADD HYDROGRAPHS AT CP114
            * HC     2    3.21
            * NOTE: AREA HAS BEEN REVISED TO ONLY INCLUDE SUB-BASINS 113 AND 114
279         HC       2    0.88
            * NOTE: ROUTE COMBINED HYDROGRAPH FROM SUB-BASIN 113 TO CP114 USING SAME ROUTING
            *       STEP PARAMETERS AS R114 FOUND AS LATER STEP IN WTADMS.24 MODEL. THIS
            *       ROUTING OCCURS WITHIN THE SUN CITY GRAND PHASE 2 ONSITE AREA.
            * ADD ROUTING THROUGH THE RETENTIONS IN 114

280         KK  114OUT
281         KO       5
282         DT  114RET   59.33
283         DI       0   10000
284         DQ       0   10000
                                        HEC-1 INPUT                                          PAGE  9

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

285         KK    R114
            * RS     2              -1       0
            * RC   .06    .022     .35    2652   .0034
```

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            * RX  1000    1380    1790    1800    1840    1850    1899    1900
            * RY  1258    1256    1254    1250    1250    1252    1253    1253
            * REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
286         RS      2               -1       0
287         RC    .04     .04     .04    2652   .0034
288         RX   1000    1012    1025    1030    1068    1070    1080    1100
289         RY   1279    1278    1275    1274    1274    1275    1278    1279

290         KK     115
291         KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 115.
292         BA    .49
            * LG  .50     .00    7.04     .24     .00
            * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
293         LG    .30     .18    7.04     .16    24.0
            * UI   22.     22.     22.     45.     76.     91.    104.    117.    126.  138.
            * UI  155.    170.    200.    245.    284.    247.    215.    192.    176.  161.
            * UI  142.    129.    115.    103.     90.     69.     52.     38.     37.   35.
            * UI   31.     22.     22.     22.     10.      7.      7.      7.      7.    7.
            * UI    7.      7.      7.      7.      7.      0.      0.      0.      0.    0.
            * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
            * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
294         UI    43.     67.    166.    221.    265.    326.    445.    531.    407.    337.
295         UI   271.    219.    159.     90.     72.     53.     43.     17.     13.     13.
296         UI    13.     13.      0.      0.      0.      0.      0.      0.      0.      0.
297         UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            * NOTE: DELETE UNNECESSARY HYDROGRAPH ADDITION STEPS FROM WTADMS.24 MODEL
            * KK 1I115
            * KM      ADD HYDROGRAPHS AT CP115.
            * HC     2    1.86
            * KK 2I115
            * KM      ADD HYDROGRAPHS AT CP115.
            * KKCP115B
            * HC     2    3.79

298         KK  CP115A
299         KO       5
300         HC       4    4.67
            * NOTE: INSERT HYDROGRAPH STEP INTO ORIGINAL WTADMS.24 TO REFLECT RETENTION
            *       STORAGE SUM OF ALL SUN CITY GRAND RETENTION IN SUB-BASINS 107, 113,
            *       114, AND 115

301         KK  115OUT
302         KO       5
            * INCLUDE THE 5' DEPRESSION AT NW CORNER OF BELL AND REEMS. (11 AC-FT)
303         DT  115RET   55.75
304         DI       0   10000
305         DQ       0   10000
            * NOTE: RESUME HYDROGRAPH STEPS FROM WTADMS.24
                                    HEC-1 INPUT                                          PAGE 10

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


306         KK     111
307         KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 111.
308         BA    .50
309         LG    .40     .21    5.55     .22     .00
310         UI    32.     32.     78.    129.    160.    184.    211.    246.    304.    406.
311         UI   374.    307.    266.    230.    196.    167.    139.     99.     58.     55.
312         UI    50.     32.     32.     15.     10.     10.     10.     10.     10.     10.
313         UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
314         UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

315         KK    D111
316         KM        DIVERT TO CP119 FROM CP111
317         DT   DI119
318         DI       0      32     109     228     389     599     858    1170    1539    1967
319         DQ       0      11      39      83     145     228     333     462     617     799

320         KK    R111
321         KM        ROUTE REMAINDER FROM CP111 TO CP112
322         RS       9               -1       0
323         RC    .075    .035    .035    5280   .0040
324         RX    1000    1570    2040    2370    2440    2468    2469    2470
325         RY    1312    1310    1308    1306    1306    1307    1307    1307

326         KK     104
327         KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 104
328         BA    .15
329         LG    .35     .31    4.93     .23     .00
330         UI    26.    101.    151.    242.    249.    169.    112.     50.     31.     14.
331         UI     7.      7.      0.      0.      0.      0.      0.      0.      0.      0.
332         UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

333         KK    R104
334         KM        ROUTE FLOW FROM CP104 TO CP112
335         RS      53               -1       0
336         RC    .075    .075    .075    6552   .0056
337         RX    1000    1001    1230    1270    1750    2000    2380    2650
338         RY    1321    1321    1320    1318    1318    1319    1318    1320

339         KK     112
340         KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 112
341         BA    .97
342         LG    .50     .00    3.65     .50     .00
343         UI    35.     35.     35.     35.     92.    123.    142.    165.    179.    193.
344         UI   207.    224.    245.    266.    290.    340.    400.    464.    424.    371.
345         UI   335.    308.    286.    267.    243.    220.    206.    185.    170.    155.
346         UI   131.    101.     77.     62.     61.     58.     58.     45.     35.     35.
347         UI    35.     28.     11.     11.     11.     11.     11.     11.     11.     11.
```

```
348          UI     11.     11.     11.     11.     11.      0.      0.      0.      0.      0.
349          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                                          HEC-1 INPUT                                                PAGE 11

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


350          KK   1I112
351          KM        ADD HYDROGRAPHS AT CP112.
352          HC       2    1.12

353          KK   2I112
354          KM        ADD HYDROGRAPHS AT CP112.
355          HC       2    1.62

356          KK     105
357          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 105
358          BA     .21
359          LG     .35     .27    7.68     .10     .00
360          UI     32.    129.    195.    295.    362.    246.    171.     88.     50.     28.
361          UI     10.     10.     10.      0.      0.      0.      0.      0.      0.      0.
362          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

363          KK    R105
364          KM        ROUTE FLOW FROM CP105 TO CP112
365          RS       3              -1       0
366          RC    .022    .022     .03    5220   .0044
367          RX    1000    1001    1010    1020    1040    1050    1099    1100
368          RY    1303    1303    1303    1302    1302    1304    1305    1305

369          KK   CP112
370          KM        ADD HYDROGRAPHS AT CP112.
371          HC       2    1.83

372          KK    D112
373          KM        DIVERT TO CP120 FROM CP112
374          DT   DI120
375          DI       0      48     165     355     625     981    1434    1990
376          DQ       0      16      55     118     208     327     478     663

377          KK    D112
378          KM        DIVERT TO CP121A FROM CP112
379          DT  1D121A
380          DI       0      32     110     237     417     654     956    1327
381          DQ       0      16      55     118     208     327     478     663

382          KK    R112
383          KM        ROUTE REMAINDER FROM CP112 TO CP113A
384          RS       6              -1       0
385          RC    .075    .035    .035    2640   .0023
386          RX    1000    1490    1830    2600    2770    2788    2789    2790
387          RY    1290    1288    1286    1284    1284    1285    1285    1285

388          KK    113A
389          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 113A
390          BA     .50
391          LG     .50     .00    7.93     .15     .00
392          UI     22.     22.     22.     42.     75.     89.    103.    115.    125.    137.
393          UI    152.    167.    192.    238.    276.    260.    224.    199.    181.    167.
394          UI    149.    134.    121.    108.     98.     79.     62.     40.     38.     36.
395          UI     35.     26.     22.     22.     20.      7.      7.      7.      7.      7.
                                          HEC-1 INPUT                                                PAGE 12

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

396          UI      7.      7.      7.      7.      7.      7.      0.      0.      0.      0.
397          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

398          KK  CP113A
399          KM        ADD HYDROGRAPHS AT CP113A
400          HC       2    2.33
             * KK D113A
             * KM      DIVERT TO CP121A FROM CP113A
             * DT2D121A
             * DI     0      26      67     134     232     278     399     561     799    11
             * DQ     0       0       0       0       0       4      22      58     120     2
             * NOTE: REPLACE WTADMS.24 DIVERSION OPERATION WITH STANLEY'S DIVERSION OPERATION
             *       FROM THE MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
             *       EXISTING CONDITION MODEL E12291.DAT.

401          KK   D113A
402          KM          DIVERT TO CP121A FROM  CP113A
403          DT  2D121A
404          DI       0     185     545     642     893    1913
405          DQ       0       0       0      12      74     467

406          KK   R113A
407          KM        ROUTE REMAINDER FROM CP113A TO CP113
             * NOTE: THIS ROUTING IS CONSIDERED TO OCCUR ALONG BELL RD SEPARATE FROM SUN
             *       CITY GRAND PHASE 2.
             * RS    25              -1       0
             * RC  .075    .035    .035    5280   .0032
             * RX  1000    1080    2620    2725    2735    2798    2799    2800
             * RY  1278    1277    1277    1276    1276    1277    1277    1277
             * REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
408          RS       6              -1       0
409          RC    .035    .035    .035    5280   .0032
410          RX    1000    1010    1200    1201    1250    1300    1301    1320    1340
411          RY    1276    1274    1275    1274  1275.7    1274    1275    1274    1275
             * NOTE: SET ASIDE SUB-BASIN 113 AND CP113 HYDROGRAPH STEPS. SUB-BASIN 113
```

```
*       STEP WAS PREVIOUSLY USED TO BEGIN SEPARATE BRANCH IN MODEL. CP113
*       HYDROGRAPH ADDITION STEP IS UNNECESSARY.
* KK   113
* KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 113
* BA   .50
* LG   .50     .00    8.54     .11     .00
* UI   22.     22.     22.     49.     79.     95.    108.    122.    132.  145.
* UI  162.    178.    213.    261.    291.    248.    216.    195.    178.  161.
* UI  143.    131.    114.    105.     88.     65.     46.     39.     37.   37.
* UI   27.     22.     22.     20.      7.      7.      7.      7.      7.    7.
* UI    7.      7.      7.      7.      7.      0.      0.      0.      0.    0.
* UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
* KK CP113
* KM      ADD HYDROGRAPHS AT CP113.
* HC     2    2.83
* KK  D113
* KM      DIVERT TO CP122 FROM CP113
* DT 1D122
* DI     0      79     257     523     872    1307    1829
* DQ     0      63     205     416     692    1033    1422
* NOTE: REPLACE WTADMS.24 DIVERSION OPERATION WITH STANLEY'S DIVERSION OPERATION
*       FROM THE MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
*       EXISTING CONDITION MODEL E12291.DAT.
                              HEC-1 INPUT                                    PAGE 13

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

 412          KK    D113
 413          KM          DIVERT TO CP122 FROM CP113
 414          DT   1D122
 415          DI       0     105     354     622    1153    1882
 416          DQ       0       0     195     395     845    1480

 417          KK    R113
 418          KM        ROUTE REMAINDER FROM CP113 TO CP114
              * NOTE: THIS ROUTING IS CONSIDERED TO OCCUR ALONG BELL RD SEPARATE FROM SUN
              *       CITY GRAND PHASE 2.
              * RS     6              -1       0
              * RC  .075     .04     .04    2100   .0038
              * RX  1000    1020    1100    1850    2030    2048    2049    2050
              * RY  1266    1264    1262    1260    1260    1261    1261    1261
              * REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
 419          RS       6              -1       0
 420          RC    .035    .035    .035    2100   .0038
 421          RX    1000    1010    1200    1201    1250    1300    1301    1320    1340
 422          RY    1276    1274    1275    1274  1275.7    1274    1275    1274    1275
              * NOTE: SET ASIDE SUB-BASIN 114 AND CP114 HYDROGRAPH STEPS WHICH WERE PREVIOUSLY
              *       USED AS PART OF SEPARATE BRANCH IN MODEL.
              * KK   114
              * KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 114
              * BA   .38
              * LG   .50     .00    8.35     .13     .00
              * UI   17.     17.     17.     41.     62.     75.     86.     95.    104.  115.
              * UI  129.    144.    177.    215.    216.    183.    161.    146.    133.  118.
              * UI  106.     95.     85.     74.     58.     44.     31.     30.     28.   25.
              * UI   17.     17.     17.      6.      5.      5.      5.      5.      5.    5.
              * UI    5.      5.      5.      5.      0.      0.      0.      0.      0.    0.
              * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
              * KK CP114
              * KM      ADD HYDROGRAPHS AT CP114.
              * HC     2    3.21
              * KK  D114
              * KM      DIVERT TO CP122 FROM CP114
              * DT 2D122
              * DI     0      17      54      80     333     952    2066
              * DQ     0       0       0       0      70     438    1217
              * NOTE: REPLACE WTADMS.24 DIVERSION OPERATION WITH STANLEY'S DIVERSION OPERATION
              *       FROM THE MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
              *       EXISTING CONDITION MODEL E12291.DAT.

 423          KK    D114
 424          KM          DIVERT TO CP122 FROM CP114
 425          DT   2D122
 426          DI       0     235     313     480     717    1056
 427          DQ       0       0       2      81     225     462
                              HEC-1 INPUT                                    PAGE 14

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

 428          KK    R114
              * KM      ROUTE REMAINDER FROM CP114 TO CP115
              * NOTE: ROUTE REMAINDER FROM CP114 TO CP115B
              * NOTE: THIS ROUTING IS CONSIDERED TO OCCUR ALONG BELL RD. SEPARATE FROM SUN
              *       CITY GRAND PHASE 2.
              * RS     2              -1       0
              * RC   .06     .022     .35    2652   .0034
              * RX  1000    1380    1790    1800    1840    1850    1899    1900
              * RY  1258    1256    1254    1250    1250    1252    1253    1253
 429          RS       2              -1       0
 430          RC    .035    .035    .035    2652   .0034
 431          RX    1000    1010    1200    1201    1250    1300    1301    1320    1140
 432          RY    1276    1274    1275    1274  1275.7    1274    1275    1274    1275
              * NOTE: ADD OUTFLOW HYDROGRAPH FROM 115OUT TO OFFSITE HYDROGRAPH ROUTED ALONG
              *       BELL RD FROM WEST AT INTERSECTION OF BELL AND REEMS RDS. THIS
              *       CONCENTRATION POINT CORRESPONDS TO WTADMS.24 CONCENTRATION POINT CP115.

 433          KK  CP115B
 434          HC       2    7.00
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```
435          KK    R115
             * KM       ROUTE FLOWS FROM CP115 TO CP122
             * NOTE: ROUTE FLOW FROM 115B TO CP122
436          RS       6              -1       0
437          RC    .035    .035    .075    5280   .0038
438          RX    1000    1001    1002    1015    1035    1360    1920    2460
439          RY    1239    1239    1239    1238    1238    1240    1241    1242

440          KK    D113
441          KM        RETURN DIVERT AT CP113
442          DR   1D122

443          KK    R113
444          KM        ROUTE FLOW FROM CP113 TO CP122
445          RS      36              -1       0
446          RC     .08     .08     .08    7488   .0049
447          RX    1000    1001    1610    1820    1990    2010    3059    3060
448          RY    1248    1248    1246    1245    1245    1246    1248    1248

449          KK    D114
450          KM        RETURN DIVERT AT CP114
451          DR   2D122

452          KK    R114
453          KM        ROUTE FLOW FROM CP114 TO CP122
454          RS      45              -1       0
455          RC    .075    .075    .075    6240   .0046
456          RX    1000    1001    1610    1820    1990    2010    3059    3060
457          RY    1248    1248    1246    1245    1245    1246    1248    1248
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```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

458          KK     122
459          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 122
460          BA     .89
461          LG     .50     .00    5.83     .32     .00
462          UI     32.     32.     32.     32.     87.    114.    132.    153.    166.    179.
463          UI    193.    207.    229.    247.    272.    319.    378.    428.    385.    338.
464          UI    306.    281.    262.    243.    220.    201.    188.    167.    155.    138.
465          UI    114.     93.     63.     57.     56.     53.     53.     36.     32.     32.
466          UI     32.     20.     10.     10.     10.     10.     10.     10.     10.     10.
467          UI     10.     10.     10.     10.     10.      0.      0.      0.      0.      0.
468          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

469          KK   1I122
470          KM        ADD HYDROGRAPHS AT CP122
471          HC       3     4.1

472          KK   CP122
473          KM        ADD HYDROGRAPHS AT CP122
474          HC       2    7.89
475          ZZ
```

```
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   129        101
                .
                .
   136          .        102A
                .          .
                .          .
   144      CP101............
                V
                V
   147       R101
                .
                .
   153          .         102
                .          .
                .          .
   160      CP102............
                V
                V
   163       R102
                .
                .
   169          .         108
                .          .
                .          .
   179      1I108............
                .
                .
   182          .         103
                .          .
                .          .
   193          .          .-------> 103RET
   191          .      103OUT
                .          V
                .          V
   196          .        R103
                .          .
                .          .
   201      CP108............
```

```
                .
                .
207             .-------> 108RET
205        108OUT
                V
                V
210         R108
                .
                .
215             .         106
                .           V
                .           V
223             .        R106
                .           .
                .           .
229             .           .         107
                .           .           .
                .           .           .
238             .      CP107.............
                .           .
                .           .
243             .           .-------> 107RET
241             .      107OUT
                .           V
                .           V
246             .        R107
                .           .
                .           .
252             .           .         113
                .           .           .
                .           .           .
261             .           .           .-------> 113RET
259             .           .      113OUT
                .           .           V
                .           .           V
264             .           .        R113
                .           .           .
                .           .           .
269             .           .           .         114
                .           .           .           .
                .           .           .           .
277             .           .      CP114.............
                .           .           .
                .           .           .
282             .           .           .-------> 114RET
280             .           .      114OUT
                .           .           V
                .           .           V
285             .           .        R114
                .           .           .
                .           .           .
290             .           .           .         115
                .           .           .           .
                .           .           .           .
298        CP115A.................................
                .
                .
303             .-------> 115RET
301        115OUT
                .
                .
306             .         111
                .           .
                .           .
317             .           .-------> DI119
315             .        D111
                .           V
                .           V
320             .        R111
                .           .
                .           .
326             .           .         104
                .           .           V
                .           .           V
333             .           .        R104
                .           .           .
                .           .           .
339             .           .           .         112
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350             .           .      1I112.............
                .           .           .
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353             .      2I112.............
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356             .           .         105
                .           .           V
                .           .           V
363             .           .        R105
                .           .           .
                .           .           .
369             .      CP112.............
                .           .
                .           .
374             .           .-------> DI120
372             .        D112
                .           .
                .           .
379             .           .-------> 1D121A
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377          .        D112
             .           V
             .           V
382          .        R112
             .           .
             .           .
388          .           .        113A
             .           .           .
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398          .      CP113A............
             .           .
             .           .
403          .           .-------> 2D121A
401          .       D113A
             .           V
             .           V
406          .       R113A
             .           .
             .           .
414          .           .------->   1D122
412          .        D113
             .           V
             .           V
417          .        R113
             .           .
             .           .
425          .           .------->   2D122
423          .        D114
             .           V
             .           V
428          .        R114
             .           .
             .           .
433      CP115B............
             V
             V
435       R115
             .
             .
442          .           .<-------   1D122
440          .        D113
             .           V
             .           V
443          .        R113
             .           .
             .           .
451          .           .           .<-------   2D122
449          .           .        D114
             .           .           V
             .           .           V
452          .           .        R114
             .           .           .
             .           .           .
458          .           .           .        122
             .           .           .          .
             .           .           .          .
469          .       1I122........................
             .           .
             .           .
472      CP122............
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1
 112 IO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE

     IT          HYDROGRAPH TIME DATA
                        NMIN           5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME        0055  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   24.92 HOURS

           ENGLISH UNITS
                DRAINAGE AREA          SQUARE MILES
                PRECIPITATION DEPTH    INCHES
                LENGTH, ELEVATION      FEET
                FLOW                   CUBIC FEET PER SECOND
                STORAGE VOLUME         ACRE-FEET
                SURFACE AREA           ACRES
                TEMPERATURE            DEGREES FAHRENHEIT

 114 JD          INDEX STORM NO. 1
                        STRM        4.03  PRECIPITATION DEPTH
                        TRDA         .00  TRANSPOSITION DRAINAGE AREA

 115 PI            PRECIPITATION PATTERN
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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125 JD INDEX STORM NO. 2

STRM 3.99 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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126 JD INDEX STORM NO. 3

STRM 3.83 PRECIPITATION DEPTH

TRDA 50.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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127 JD INDEX STORM NO. 4

STRM 3.76 PRECIPITATION DEPTH

TRDA 100.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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128 JD INDEX STORM NO. 5

STRM 3.70 PRECIPITATION DEPTH

TRDA 200.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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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	101	233.	12.25	22.	5.	5.	.16		
+	HYDROGRAPH AT	102A	525.	12.58	73.	18.	18.	.51		
+	2 COMBINED AT	CP101	635.	12.50	95.	24.	23.	.67		
+	ROUTED TO	R101	629.	12.50	95.	24.	23.	.67		
+	HYDROGRAPH AT	102	151.	12.25	16.	4.	4.	.10		
+	2 COMBINED AT	CP102	725.	12.42	111.	28.	27.	.77		
+	ROUTED TO	R102	470.	14.08	111.	28.	27.	.77		
+	HYDROGRAPH AT	108	545.	13.08	128.	35.	34.	.79		
+	2 COMBINED AT	1I108	614.	14.00	236.	63.	60.	1.56		

+	HYDROGRAPH AT	103	416.	12.50	64.	19.	18.	.37
+	DIVERSION TO	103RET	416.	12.50	64.	17.	17.	.37
+	HYDROGRAPH AT	103OUT	6.	15.92	4.	1.	1.	.37
+	ROUTED TO	R103	5.	17.33	4.	1.	1.	.37
+	2 COMBINED AT	CP108	614.	14.00	237.	64.	62.	1.93
+	DIVERSION TO	108RET	614.	14.00	237.	64.	62.	1.93
+	HYDROGRAPH AT	108OUT	0.	.08	0.	0.	0.	1.93
+	ROUTED TO	R108	0.	.08	0.	0.	0.	1.93
+	HYDROGRAPH AT	106	871.	12.50	111.	28.	27.	.77
+	ROUTED TO	R106	638.	13.17	111.	28.	27.	.77
+	HYDROGRAPH AT	107	547.	12.75	103.	30.	29.	.60
+	2 COMBINED AT	CP107	981.	12.83	213.	57.	55.	1.37
+	DIVERSION TO	107RET	981.	12.83	142.	37.	35.	1.37
+	HYDROGRAPH AT	107OUT	830.	13.25	79.	21.	20.	1.37
+	ROUTED TO	R107	393.	14.25	77.	20.	20.	1.37
+	HYDROGRAPH AT	113	741.	12.33	110.	32.	30.	.50
+	DIVERSION TO	113RET	741.	12.33	76.	20.	19.	.50
+	HYDROGRAPH AT	113OUT	500.	12.58	41.	11.	11.	.50
+	ROUTED TO	R113	425.	12.75	41.	11.	11.	.50
+	HYDROGRAPH AT	114	514.	12.50	86.	24.	23.	.38
+	2 COMBINED AT	CP114	744.	12.75	124.	36.	34.	.88
+	DIVERSION TO	114RET	744.	12.75	115.	30.	29.	.88
+	HYDROGRAPH AT	114OUT	58.	14.00	17.	6.	6.	.88
+	ROUTED TO	R114	35.	14.50	16.	6.	5.	.88
+	HYDROGRAPH AT	115	609.	12.50	94.	27.	26.	.49
+	4 COMBINED AT	CP115A	608.	12.50	176.	53.	51.	4.67
+	DIVERSION TO	115RET	608.	12.50	107.	28.	27.	4.67
+	HYDROGRAPH AT	115OUT	424.	14.33	86.	25.	24.	4.67
+	HYDROGRAPH AT	111	443.	12.67	71.	18.	17.	.50
+	DIVERSION TO	DI119	166.	12.67	26.	7.	6.	.50
+	HYDROGRAPH AT	D111	276.	12.67	45.	11.	11.	.50
+	ROUTED TO	R111	232.	13.33	45.	11.	11.	.50
+	HYDROGRAPH AT	104	236.	12.17	20.	5.	5.	.15
	ROUTED TO							

+		R104	89.	14.67	20.	5.	5.	.15
+	HYDROGRAPH AT	112	534.	13.33	138.	34.	33.	.97
+	2 COMBINED AT	1I112	534.	13.33	157.	40.	38.	1.12
+	2 COMBINED AT	2I112	765.	13.33	202.	51.	49.	1.62
+	HYDROGRAPH AT	105	354.	12.25	34.	9.	8.	.21
+	ROUTED TO	R105	316.	12.42	34.	9.	8.	.21
+	2 COMBINED AT	CP112	790.	13.33	236.	59.	57.	1.83
+	DIVERSION TO	DI120	263.	13.33	79.	20.	19.	1.83
+	HYDROGRAPH AT	D112	527.	13.33	158.	40.	38.	1.83
+	DIVERSION TO	1D121A	263.	13.33	79.	20.	19.	1.83
+	HYDROGRAPH AT	D112	264.	13.33	79.	20.	19.	1.83
+	ROUTED TO	R112	241.	13.75	79.	20.	19.	1.83
+	HYDROGRAPH AT	113A	409.	13.08	106.	27.	26.	.50
+	2 COMBINED AT	CP113A	560.	13.08	183.	46.	45.	2.33
+	DIVERSION TO	2D121A	2.	13.08	0.	0.	0.	2.33
+	HYDROGRAPH AT	D113A	558.	13.08	183.	46.	45.	2.33
+	ROUTED TO	R113A	523.	13.67	181.	46.	45.	2.33
+	DIVERSION TO	1D122	321.	13.67	82.	20.	20.	2.33
+	HYDROGRAPH AT	D113	202.	13.67	100.	26.	25.	2.33
+	ROUTED TO	R113	200.	13.92	99.	26.	25.	2.33
+	DIVERSION TO	2D122	0.	.08	0.	0.	0.	2.33
+	HYDROGRAPH AT	D114	200.	13.92	99.	26.	25.	2.33
+	ROUTED TO	R114	190.	14.50	97.	26.	25.	2.33
+	2 COMBINED AT	CP115B	608.	14.33	181.	50.	49.	7.00
+	ROUTED TO	R115	529.	14.83	178.	49.	48.	7.00
+	HYDROGRAPH AT	D113	321.	13.67	82.	20.	20.	2.33
+	ROUTED TO	R113	287.	15.33	80.	20.	20.	2.33
+	HYDROGRAPH AT	D114	0.	.08	0.	0.	0.	2.33
+	ROUTED TO	R114	0.	.08	0.	0.	0.	2.33
+	HYDROGRAPH AT	122	552.	13.33	146.	37.	35.	.89
+	3 COMBINED AT	1I122	551.	13.33	216.	57.	55.	4.10
+	2 COMBINED AT	CP122	696.	15.25	370.	106.	102.	7.89

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

MODEL 13688H1P (FOR DISTRICT ONLY)

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****************************************                                    ****************************************
*                                      *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*            SEPTEMBER 1990            *                                    *    HYDROLOGIC ENGINEERING CENTER     *
*             VERSION 4.0              *                                    *          609 SECOND STREET           *
*                                      *                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE  02/13/1998  TIME  09:42:29 *                                    *          (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
    2           ID        DEL WEBB SUN CITY GRAND REEMS ROAD FLOODLAIN LOMR HYDROLOGY
    3           ID
    4           ID        STANLEY CONSULTANTS, INC.
    5           ID        2929 E. CAMELBACK RD.  SUITE 130
    6           ID        PHOENIX, ARIZONA   85016
    7           ID        PHONE: (602)912-6500     FAX: (602)912-6599
    8           ID
    9           ID        SCI PROJECT # 13688     HEC-1 INPUT FILENAME: 13688H1P
   10           ID                                ------------------------------
   11           ID                                -> BASED ON FCD/WLB WTADMS.24 MODEL (PHX VLLY
   12           ID                                     S-GRAPH, GREEN & AMPT LOSS, 24HR TYPE II
   13           ID                                     STORM, P=4.03" W/AERIAL REDUCT); TRUNCATED
   14           ID                                     TO INCLUDE ONLY SUB-BASINS 101 THRU 122,
   15           ID                                     INCLUSIVE
   16           ID                                -> NO AZ TRADITIONS OR MTN VISTA RANCH
   17           ID                                -> NO TEMP RET DIKES EAST OR WEST OF SR303L
   18           ID                                -> SCG PHASES 1 AND 2 ASSUMED 100% COMPLETE
   19           ID                                ->  EXCEPT FOR PARTS OF 107 AND 115 THAT HAVE
   20           ID                                ->  NOT BEEN GRADED
   21           ID                                -> REVISED FROM 13688H1K IN MODELING THE RET
   22           ID                                ->  BASIN. SIX BASINS ARE MODELED INSTEAD OF
   23           ID                                ->  THREE.  SUB-BASINS 107, 113, 114 AND 115
   24           ID                                ->  HAVE THERE OWN RETENTION BASINS.
   25           ID                                -> OFFSITE SUB-BASIN 106 IS REMOVED FROM THE
   26           ID                                    MODEL DUE TO THE NEWLY CONSTRUCTED DIKES
   27           ID                                    ALONG WEST SIDE OF SR303L.
   28           ID                                -> OFFSITE FLOWS ALONG BELL RD. KEPT SEPARATE
   29           ID                                     FROM ONSITE PHASE 2 RUNOFF AND RETENTION
   30           ID                                -> REVISED FROM 13688H1J ALL ROUTINGS OCCUR
   31           ID                                    WITH DEVELOPMENT PLUS ROUTING ON BELL RD
   32           ID                                    TO REFLECT DEVELOPMENT CONDITIONS
   33           ID                                -> BELL RD DIVERTS FROM STANLEY'S DEL WEBB GRAND
   34           ID                                     AVENUE PROPERTY MASTER DRAINAGE REPORT
   35           ID                                     EXISTING CONDITION MODEL E12291.DAT
   36           ID        GENERAL MODEL NOTES:
   37           ID        --------------------
   38           ID        1. THIS MODEL IS BASED ON THE WHITE TANKS/AGUA FRIA AREA DRAINAGE
   39           ID           MASTER STUDY MODEL "WTADMS.24" PREPARED BY CONSULTANT "THE WLB GROUP"
   40           ID           FOR THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY.
   41           ID        2. THIS MODEL REPRESENTS ONLY THAT PORTION OF THE WTADMS.24 MODEL FROM
   42           ID           SUB-BASIN 101 THRU SUB-BASIN 122 INCLUSIVE. ALL OTHER HYDROGRAPH
   43           ID           OPERATIONS FROM THE ORIGINAL MODEL HAVE BEEN DELETED.
   44           ID        3. SUB-BASINS 100, 100A, 109 AND 116 ARE NOT CONSIDERED BY EITHER THE
   45           ID           WTADMS.24 MODEL OR THIS MODEL TO CONTRIBUTE RUNOFF TO THE OLD REEMS
   46           ID           ROAD ALIGNMENT FROM BELL ROAD TO BEARDSLEY ROAD.
   47           ID        4. ANY OF THE ORIGINAL INPUT RECORD FROM THE WTADMS.24 MODEL THAT WAS
   48           ID           MODIFIED OR NOT USED BY THIS STANLEY MODEL HAS BEEN RETAINED AS A
   49           ID           "*  COMMENT". IN MOST CASES, A "NOTE: EXPLANATION" IS FOUND EITHER
   50           ID           IMMEDIATELEY BEFORE OR AFTER THE REVISED OR UNUSED RECORD.
   51           ID        5. THIS MODEL DOES NOT RECOGNIZE THE IMPACT OF THE RECENTLY CONSTRUCTED
   52           ID           ARIZONA TRADITIONS AND MOUNTAIN VISTA RANCH RESIDENTIAL DEVELOPMENTS.
   53           ID           ARIZONA TRADITIONS IS LOCATED NORTH OF BELL ROAD WEST OF SUN CITY
   54           ID           GRAND IN SUB-BASINS 111 AND 112. MTN VISTA RANCH IS LOCATED SOUTH OF
   55           ID           BELL ROAD WEST OF REEMS ROAD IN SUB-BASIN 122. BOTH DEVELOPMENTS
                                                HEC-1 INPUT                                                PAGE  2

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

   56           ID           HAVE BEEN DESIGNED TO RETAIN THEIR ONSITE 100-YR RUNOFF AND ALSO MAY
   57           ID           IMPACT ROUTING STEPS ASSOCIATED WITH THOSE SUB-BASINS.
   58           ID        6. THREE EXISTING TEMPORARY RETENTION DIKES RECENTLY WERE CONSTRUCTED
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 59          ID          BY DEL WEBB ON SUN CITY GRAND PROPERTY JUST WEST OF SR303L NORTH OF
 60          ID          UNION HILLS DRIVE IN SUB-BASINS 102, 102A, 106 AND 107 - - THESE
 61          ID          DIKES ARE DESIGNED TO RETAIN ALL OF THE 100-YR, 2-HR RUNOFF FROM
 62          ID          SUB-BASINS 101, 102A AND 106, AND PART OF THE 100-YR, 2-HR RUNOFF
 63          ID          FROM SUB-BASINS 102 AND 107. THIS MODEL ONLY RECOGNIZE THE DIKE
 64          ID          FROM UNION HILLS TO BEARDSLEY, WHICH WILL RETAIN SUB-BASIN 106 AND
 65          ID          IGNORE THE DIKES NORTH OF BEARDSLEY. IT ALSO DOES NOT RECOGNIZE
 66          ID          TWO EXISTING TEMPORARY RETENTION DIKES EAST OF SR303L ON SUN CITY
 67          ID          GRAND PROPERTY IN SUB-BASINS 108 AND 109, DESIGNED TO RETAIN THE
 68          ID          100-YR, 2-HR RUNOFF FROM THE LOWER PORTION OF PHASE 1 AND THE
 69          ID          UN-DEVELOED AREA DOWN-SLOPE FROM PHASE 1.
 70          ID       7. THE DIVERSION OPERATIONS ALONG BELL ROAD AT CITRUS ROAD AND AT
 71          ID          COTTON LANE ARE FROM THE ORIGINAL WTADMS.24 MODEL. BELL ROAD
 72          ID          DIVERSION OPERATIONS AT SR303L, SARIVAL AVENUE AND D114 FROM THE
 73          ID          ORIGINAL WTADMS.24 MODEL HAVE BEEN REPLACED BY OPERATIONS FROM
 74          ID          STANLEY'S MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
 75          ID          EXISTING CONDITION MODEL E12291.DAT.
 76          ID       8. SUN CITY GRAND PHASES 1 AND 2, WHICH HAVE BEEN CONSTRUCTED IN SUB-
 77          ID          BASINS 100, 102, 103, 107, 108, 109, 113, 114, 115 AND 116 ARE
 78          ID          REFLECTED IN THIS MODEL IN THE FOLLOWING MANNER:
 79          ID          A. SUB-BASIN BOUNDARIES AND AREAS FROM WTADMS.24 WERE NOT CHANGED;
 80          ID          B. INITIAL ABSTRACT AND PERCENT IMPERVIOUS WERE ADJUSTED ON AN AREA-
 81          ID             WEIGHTED BASIS TO REFLECT DEVELOPED CONDITIONS; PSIF VALUE HAS
 82          ID             NOT BEEN CHANGED BUT DTHETA HAS BEEN ADJUSTED TO CORRESPOND TO
 83          ID             NORMAL INSTEAD OF SATURATED SOIL CONDITION AND XKSAT VALUES HAVE
 84          ID             BEEN ADJUSTED TO ACCOUNT FOR DEVELOPED CONDITION VEG COVER;
 85          ID          C. PHX VLLY S-GRAPHS FROM THE ORIGINAL WTADMS.24 HAVE BEEN MODIFIED
 86          ID             BY USING MCUHP2 WITH A NEW AREA-WEIGHTED ADJUSTED Kn (L, Lca AND
 87          ID             SLOPE USED IN MCUHP2 HAVE NOT BEEN MODIFIED FROM THE ORIGINAL
 88          ID             WTADMS.24 MODEL);
 89          ID          D. THE DEAD STORAGE PORTION OF RETENTION BASIN VOLUME FOR BASINS IN
 90          ID             PHASES 1 AND PART OF PHASE 2 HAVE BEEN SUMMED AND MODELED AS
 91          ID             SINGLE VOLUME-DIVERTED RETENTION BASINS AT EACH OF THE TWO
 92          ID             CONCENTRATION POINTS ALONG REEMS ROAD AT BEARDSLEY ROAD, UNION
 93          ID             HILLS DRIVE;
 94          ID          E. THE DEAD STORAGE PORTION OF RETENTION BASIN VOLUME FOR BASINS IN
 95          ID             PHASE 2 HAS BEEN SUMMED AND MODELED AT THE FOLLOWING SUB-BASIN
 96          ID             OUTLETS:  107, 113, 114 AND 115.
 97          ID          F. OFFSITE RUNOFF FROM THE WEST THAT CONCENTRATES AT VARIOUS
 98          ID             LOCATIONS ALONG BELL RD. ADJACENT TO PHASE 2 IS MODELED SEPARATE
 99          ID             FROM THE ONSITE RUNOFF AND RETENTION.
100          ID           G. ONSITE HYDROGRAPHS FROM SUB-BASINS 107,113, 114 AND 115 ARE VOLUME
101          ID             DIVERTED THROUGH A RETENTION BASIN AT EACH OF THE CONCENTRATION
102          ID             POINT REPRESENTING THE TOTAL DEAD STORAGE RETENTION VOLUME FOUND
103          ID             IN EACH SUB-BASIN.  THESE HYDROGRAPHS THEN ACCUMULATED AT A NEW
104          ID             ONSITE CONCENTRATION POINT LOCATED AT THE NORTHWEST CORNER OF
105          ID             BELL ROAD AND REEMS ROAD. THE OUTFLOW FROM THIS RETENTION STEP
106          ID             IS THEN ADDED TO THE OFFSITE FLOW THAT HAS BEEN ROUTED ALONG
107          ID             BELL RD. FROM THE WEST AT A SECOND CONCENTRATION POINT AT THE
108          ID             INTERSECTION OF REEMS AND BELL. THE SECOND CONCENTRATION POINT
109          ID             CORRESPONDS TO WTADMS.24 CONCENTRATION POINT CP115.
110          ID          H. NONE OF THE WTADMS.24 HYDROGRAPH REACH ROUTING OPERATIONS WITHIN
                                      HEC-1 INPUT                                          PAGE  3

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

111          ID             SUN CITY GRAND, AZ TRADITIONS OR MTN VISTA RANCH WERE CHANGED
112          ID             ALTHOUGH THEY WOULD UNDOUBTEDLY BE IMPACTED BY DEVELOPMENT.
113          ID       9. SUN CITY GRAND PHASE 1 IS 100% CONSTRUCTED AND PHASE 2 IS ASSUMED
114          ID          TO BE PARTIALLY CONSTRUCTED;
115          ID
             * ID
             * ID      FINAL HYDROLOGY RUN FOR WHITE TANKS ADMS ---- ENTIRE WATERSHED
             * ID      100-YEAR, 24-HOUR STORM                          WTADMS.24
             * ID
             *DIAGRAM
116          IT       5                    300
             * IO     3
             * NOTE: CHANGE OUTPUT SPECIFICATION
117          IO       5
118          IN      15
119          JD    4.03    .001
120          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
121          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
122          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
123          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
124          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
125          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
126          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
127          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
128          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
129          PC    .983    .986    .989    .992    .995    .998    1.00   1.000   1.000   1.000
130          JD    3.99      10
131          JD    3.83      50
132          JD    3.76     100
133          JD    3.70     200

134          KK     101
135          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 101.
136          BA     .16
137          LG     .35     .32    3.61     .26     .00
138          UI     22.     76.    121.    165.    258.    205.    150.    106.     54.     34.
139          UI     22.      7.      7.      7.      0.      0.      0.      0.      0.      0.
140          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

141          KK    102A
142          KM        RUNOFF HYDROGRAPH FROM SUB-SUBIN 102.
             * NOTE: THE ABOVE MESSAGE SHOULD SAY "RUNOFF HYDROGRAPH FROM SUB-BASIN 102A"
143          BA     .51
144          LG     .40     .20    6.05     .21     .00
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145          UI     40.     43.    142.    190.    228.    270.    327.    453.    484.    378.
146          UI    319.    263.    218.    176.    114.     71.     66.     44.     40.     15.
147          UI     12.     12.     12.     12.     12.      0.      0.      0.      0.      0.
148          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

149          KK   CP101
150          KM        ADD HYDROGRAPHS AT CP101
151          HC       2     .67
                                    HEC-1 INPUT                                                    PAGE  4

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


152          KK    R101
153          KM        ROUTE FLOW FROM CP101 TO CP102.
154          RS       2              -1       0
155          RC    .025    .022    .022    2750   .0062
156          RX    1000    1001    1030    1085    1120    1138    1139    1140
157          RY    1319    1319    1318    1316    1316    1317    1317    1317

158          KK     102
159          KM        RUNOFF FROM SUB-BASIN 102
160          BA     .10
             * LG   .50     .00    6.05     .29     .00
             * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
161          LG     .41     .11    6.05     .27    10.5
             * UI   10.     21.     44.     57.     70.     97.    122.     94.     75.   59.
             * UI   45.     26.     17.     13.     10.      3.      3.      3.      3.    3.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
162          UI     13.     44.     72.     96.    151.    132.     97.     70.     41.    23.
163          UI     15.      7.      4.      4.      4.      0.      0.      0.      0.     0.
164          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.     0.

165          KK   CP102
166          KM        ADD HYDROGRAPHS AT CP102.
167          HC       2     .77

168          KK    R102
169          KM        ROUTE FLOW FROM CP102 TO CP108
             * RS    36              -1       0
             * RC  .075    .075    .075     702   .0054
             * NOTE: THERE IS AN APPARENT ERROR IN ROUTING LENGTH IN THE ORIGINAL WTADMS.24
             *       MODEL THAT RESULTS IN A ROUTED DOWNSTREAM PEAK FLOW THAT IS GREATER
             *       THAN THE UPSTREAM PEAK FLOW. REVISE ORIGINAL WTADMS.24 ROUTING LENGTH
             *       OF 702FT WITH CORRECTED LENGTH APPROXIMATED AT 7000FT.
             *       CONSEQUENTLY THE NSTPS IN THE RS CARD IS ALSO CORRECTED.
170          RS      19              -1       0
171          RC    .075    .075    .075    7000   .0054
172          RX    1000    1001    1120    1700    2030    2630    3070    3270
173          RY    1289    1289    1288    1286    1286    1288    1290    1292

174          KK     108
175          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 108.
176          BA     .79
             * LG   .44     .12    5.53     .25     .00
             * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
177          LG     .38     .20    5.53     .23    12.0
             * UI   31.     31.     31.     32.    101.    115.    136.    151.    167.  178.
             * UI  194.    213.    233.    257.    304.    366.    406.    353.    310.  281.
             * UI  259.    240.    217.    197.    181.    163.    148.    132.    108.   88.
             * UI   56.     54.     52.     51.     45.     31.     31.     31.     24.    9.
             * UI    9.      9.      9.      9.      9.      9.      9.      9.      9.    9.
             * UI    9.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
                                    HEC-1 INPUT                                                    PAGE  5

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

178          UI     35.     35.     35.     78.    125.    151.    173.    193.    209.    230.
179          UI    258.    284.    340.    418.    459.    390.    340.    307.    281.    253.
180          UI    225.    205.    180.    166.    136.    101.     69.     62.     59.     58.
181          UI     41.     35.     35.     28.     11.     11.     11.     11.     11.     11.
182          UI     11.     11.     11.     11.     11.      0.      0.      0.      0.      0.
183          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

184          KK   1I108
185          KM        ADD HYDROGRAPHS AT CP108.
186          HC       2    1.56

187          KK     103
188          KO       5
189          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 103.
190          BA     .37
             * LG   .46     .09    4.33     .29     .00
             * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
191          LG     .30     .24    4.33     .31    24.0
             * UI   19.     19.     20.     64.     79.     93.    105.    116.    131.  148.
             * UI  175.    222.    248.    206.    178.    159.    143.    125.    111.   97.
             * UI   84.     64.     45.     34.     32.     32.     19.     19.     19.    6.
             * UI    6.      6.      6.      6.      6.      6.      6.      6.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
192          UI     32.     45.    119.    159.    190.    231.    308.    393.    316.    259.
193          UI    212.    172.    137.     81.     55.     48.     32.     23.     10.     10.
194          UI     10.     10.     10.      0.      0.      0.      0.      0.      0.      0.
195          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * NOTE: INSERT HYDROGRAPH STEP INTO ORIGINAL WTADMS.24 TO REFLECT RETENTION
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*       STORAGE SUM OF ALL SUN CITY GRAND RETENTION IN SUB-BASIN 103

KK  103OUT
KO       5
DT  103RET   34.66
DI       0   10000
DQ       0   10000

KK    R103
* KM     ROUTE FLOW FROM CP103 TO CP108.
* NOTE: ROUTE FLOW FROM 103OUT TO CP108
RS       4              -1       0
RC     .08     .022     .035    5380   .0041
RX    1000     1050     1080    1095    1130    1150    1300    1830
RY    1285     1284     1282    1280    1280    1282    1284    1286

KK   CP108
KO       5
KM        ADD HYDROGRAPHS AT CP108.
HC       2    1.93
* NOTE: INSERT HYDROGRAPH STEP INTO ORIGINAL WTADMS.24 TO REFLECT RETENTION
*       STORAGE SUM OF ALL SUN CITY GRAND RETENTION IN SUB-BASIN 108
                                HEC-1 INPUT                                          PAGE  6

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

KK  108OUT
KO       5
DT  108RET  134.08
DI       0   10000
DQ       0   10000

KK    R108
* KM    ROUTE FLOW FROM CP108 TO CP115.
* NOTE: ROUTE FLOW FROM 108OUT TO CP115
* RS     7              -1       0
* RC  .035     .035     .075    5382   .0037
* RX  1000     1001     1002    1030    1100    1370    1900    2290
* RY  1259     1259     1259    1258    1258    1260    1262    1264
* REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
RS       7              -1       0
RC    .050     .050     .050    7000   .0028
RX    1000     1100     1130    1190    1200    1220    1240    1320
RY    1260     1259     1260    1258    1255    1255    1259    1261
* REMOVE SUB-BASIN 106 DUE TO THE NEWLY CONSTRUCTED DIKE WEST OF SR303L
* FROM UNION HILLS DR. TO BEARDSLEY RD.
* KK   106
* KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 106.
* BA   .77
* LG   .35      .29     6.63     .16     .00
* UI   68.     109.     267.    353.    425.    523.    727.    830.    634.    52
* UI  422.     338.     237.    132.    114.     77.     65.     21.     21.     2
* UI   21.      21.       0.      0.      0.      0.      0.      0.      0.
* UI    0.       0.       0.      0.      0.      0.      0.      0.      0.
* KK  R106
* KM      ROUTE FLOW FROM CP106 TO CP107
* RS     3              -1       0
* RC  .075      .03      .03    5382    .039
* RX  1000     1430     1860    1890    1940    1960    1969    1970
* RY  1292     1291     1290  1289.5  1289.5    1290  1290.5  1290.5
* NOTE: THERE IS AN APPARENT ERROR IN ROUTING SLOPE IN THE ORIGINAL WTADMS.24
*       REVISE ORIGINAL WTADMS.24 ROUTING SLOPE WITH CORRECTED SLOPE
*       CHANGE THIS ROUTING TO REFLECT THE DEVELOPMENT CONDITIONS
* RS     7              -1       0
* RC   .05      .05      .05    6800   .0031
* RX  1000     1032     1040    1085    1093    1108    1240    1265    1274    13
* RY  1293     1291     1289    1288    1290    1292    1291    1290    1292    12

KK     107
KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 107.
BA     .60
* LG   .46      .08     5.65     .29     .00
* NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
LG     .32      .22     5.65     .25    21.0
* UI   26.      26.      26.     53.     91.    109.    125.    141.    152.  167.
* UI  186.     203.     238.    291.    340.    308.    266.    238.    216.  199.
* UI  177.     160.     143.    129.    114.     90.     71.     46.     46.   43.
* UI   43.      27.      26.     26.     19.      8.      8.      8.      8.    8.
* UI    8.       8.       8.      8.      8.      8.      0.      0.      0.    0.
* UI    0.       0.       0.      0.      0.      0.      0.      0.      0.    0.
* NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
                                HEC-1 INPUT                                          PAGE  7

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

UI     38.      38.      88.    149.    186.    215.    244.    285.    344.    460.
UI    462.     374.     322.    282.    240.    205.    176.    128.     82.     66.
UI     63.      43.      38.     28.     12.     12.     12.     12.     12.     12.
UI     12.       0.       0.      0.      0.      0.      0.      0.      0.      0.
UI      0.       0.       0.      0.      0.      0.      0.      0.      0.      0.
* REMOVED DUE TO THE ELIMINATION OF SUB-BASIN 106
* KK CP107
* KM      ADD HYDROGRAPHS AT CP107.
* HC     2    1.37
* ROUTE THROUGH THE RETENTIONS IN 107

KK  107OUT
KO       5
DT  107RET   72.83
```

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232          DI       0   10000
233          DQ       0   10000

234          KK    R107
235          KM        ROUTE FLOW FROM CP107 TO CP115
             * RS     6              -1       0
             * RC  .035    .035    .075    6240   .0048
             * RX  1000    1001    1002    1030    1100    1370    1900    2290
             * RY  1259    1259    1259    1258    1258    1260    1262    1264
             * REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
236          RS       7              -1       0
237          RC    .050    .050    .050    7000   .0028
238          RX    1000    1100    1130    1190    1200    1220    1240    1320
239          RY    1260    1259    1260    1258    1255    1255    1259    1261
             * NOTE: BEGIN NEW SUN CITY GRAND PHASE 2 ONSITE BRANCH IN MODEL

240          KK     113
241          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 113
242          BA     .50
             * LG   .50     .00    8.54     .11     .00
             * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
243          LG     .29     .15    8.54     .08    25.5
             * UI   22.     22.     22.     49.     79.     95.    108.    122.    132.  145.
             * UI  162.    178.    213.    261.    291.    248.    216.    195.    178.  161.
             * UI  143.    131.    114.    105.     88.     65.     46.     39.     37.   37.
             * UI   27.     22.     22.     20.      7.      7.      7.      7.      7.    7.
             * UI    7.      7.      7.      7.      7.      0.      0.      0.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
244          UI     53.    124.    244.    315.    400.    594.    594.    448.    350.    270.
245          UI    175.     93.     76.     53.     20.     16.     16.     16.      0.      0.
246          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * NOTE: DELETE HYDROGRAPH ADDITION AT CP113. IT IS NOT APLICABLE BECAUSE SUN
             *       CITY GRAND ONSITE RUNOFF AND RETENTION IS CONSIDERED SEPARATE FROM
             *       OFFSITE RUNOFF ALONG BELL RD.
             * KK CP113
             * KM      ADD HYDROGRAPHS AT CP113.
             * HC     2    2.83
             * NOTE: ROUTE RUNOFF HYDROGRAPH FROM SUB-BASIN 113 TO CP114 USING SAME ROUTING
             *       STEP PARAMETERS AS R113 FOUND AS LATER STEP IN WTADMS.24 MODEL. THIS
             *       ROUTING OCCURS WITHIN THE SUN CITY GRAND PHASE 2 ONSITE AREA.
             * ADD ROUTING THROUGH THE RETENTIONS IN 113
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

247          KK  113OUT
248          KO       5
249          DT  113RET   39.94
250          DI       0   10000
251          DQ       0   10000

252          KK    R113
             * RS     6              -1       0
             * RC  .075     .04     .04    2100   .0038
             * RX  1000    1020    1100    1850    2030    2048    2049    2050
             * RY  1266    1264    1262    1260    1260    1261    1261    1261
             * REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
253          RS       6              -1       0
254          RC     .04     .04     .04    2100   .0038
255          RX    1000    1012    1025    1030    1068    1070    1080    1100
256          RY    1279    1278    1275    1274    1274    1275    1278    1279

257          KK     114
258          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 114
259          BA     .38
             * LG   .50     .00    8.35     .13     .00
             * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
260          LG     .30     .15    8.35     .07    24.0
             * UI   17.     17.     17.     41.     62.     75.     86.     95.    104.  115.
             * UI  129.    144.    177.    215.    216.    183.    161.    146.    133.  118.
             * UI  106.     95.     85.     74.     58.     44.     31.     30.     28.   25.
             * UI   17.     17.     17.      6.      5.      5.      5.      5.      5.    5.
             * UI    5.      5.      5.      5.      0.      0.      0.      0.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
261          UI     35.     58.    137.    181.    220.    273.    392.    399.    307.    252.
262          UI    202.    159.    102.     60.     53.     35.     24.     11.     11.     11.
263          UI     11.     11.      0.      0.      0.      0.      0.      0.      0.      0.
264          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

265          KK   CP114
266          KM      ADD HYDROGRAPHS AT CP114
             * HC     2    3.21
             * NOTE: AREA HAS BEEN REVISED TO ONLY INCLUDE SUB-BASINS 113 AND 114
267          HC       2    0.88
             * NOTE: ROUTE COMBINED HYDROGRAPH FROM SUB-BASIN 113 TO CP114 USING SAME ROUTING
             *       STEP PARAMETERS AS R114 FOUND AS LATER STEP IN WTADMS.24 MODEL. THIS
             *       ROUTING OCCURS WITHIN THE SUN CITY GRAND PHASE 2 ONSITE AREA.
             * ADD ROUTING THROUGH THE RETENTIONS IN 114

268          KK  114OUT
269          KO       5
270          DT  114RET   59.33
271          DI       0   10000
272          DQ       0   10000
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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273          KK    R114
             * RS     2              -1       0
             * RC   .06     .022     .35    2652   .0034
             * RX  1000    1380    1790    1800    1840    1850    1899    1900
             * RY  1258    1256    1254    1250    1250    1252    1253    1253
             * REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
274          RS       2              -1       0
275          RC     .04     .04     .04    2652   .0034
276          RX    1000    1012    1025    1030    1068    1070    1080    1100
277          RY    1279    1278    1275    1274    1274    1275    1278    1279

278          KK     115
279          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 115.
280          BA     .49
             * LG   .50     .00    7.04     .24     .00
             * NOTE: REVISE ORIG WTADMS.24 LOSS PARAMETERS TO REFLECT SUN CITY GRAND
281          LG     .30     .18    7.04     .16    24.0
             * UI   22.     22.     22.     45.     76.     91.    104.    117.    126.  138.
             * UI  155.    170.    200.    245.    284.    247.    215.    192.    176.  161.
             * UI  142.    129.    115.    103.     90.     69.     52.     38.     37.   35.
             * UI   31.     22.     22.     22.     10.      7.      7.      7.      7.    7.
             * UI    7.      7.      7.      7.      7.      0.      0.      0.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * NOTE: REVISE ORIG WTADMS.24 S-GRAPH TO REFLECT SUN CITY GRAND
282          UI     43.     67.    166.    221.    265.    326.    445.    531.    407.   337.
283          UI    271.    219.    159.     90.     72.     53.     43.     17.     13.    13.
284          UI     13.     13.      0.      0.      0.      0.      0.      0.      0.     0.
285          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.     0.
             * NOTE: DELETE UNNECESSARY HYDROGRAPH ADDITION STEPS FROM WTADMS.24 MODEL
             * KK 1I115
             * KM      ADD HYDROGRAPHS AT CP115.
             * HC     2    1.86
             * KK 2I115
             * KM      ADD HYDROGRAPHS AT CP115.
             * KKCP115B
             * HC     2    3.79

286          KK  CP115A
287          KO       5
288          HC       4    4.67
             * NOTE: INSERT HYDROGRAPH STEP INTO ORIGINAL WTADMS.24 TO REFLECT RETENTION
             *       STORAGE SUM OF ALL SUN CITY GRAND RETENTION IN SUB-BASINS 107, 113,
             *       114, AND 115

289          KK  115OUT
290          KO       5
             * INCLUDE THE 5' DEPRESSION AT NW CORNER OF BELL AND REEMS. (11 AC-FT)
291          DT  115RET   55.75
292          DI       0   10000
293          DQ       0   10000
             * NOTE: RESUME HYDROGRAPH STEPS FROM WTADMS.24
                                        HEC-1 INPUT                                    PAGE 10

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

294          KK     111
295          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 111.
296          BA     .50
297          LG     .40     .21    5.55     .22     .00
298          UI     32.     32.     78.    129.    160.    184.    211.    246.    304.   406.
299          UI    374.    307.    266.    230.    196.    167.    139.     99.     58.    55.
300          UI     50.     32.     32.     15.     10.     10.     10.     10.     10.    10.
301          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.     0.
302          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.     0.

303          KK    D111
304          KM        DIVERT TO CP119 FROM CP111
305          DT   DI119
306          DI       0      32     109     228     389     599     858    1170    1539   1967
307          DQ       0      11      39      83     145     228     333     462     617    799

308          KK    R111
309          KM        ROUTE REMAINDER FROM CP111 TO CP112
310          RS       9              -1       0
311          RC    .075    .035    .035    5280   .0040
312          RX    1000    1570    2040    2370    2440    2468    2469    2470
313          RY    1312    1310    1308    1306    1306    1307    1307    1307

314          KK     104
315          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 104
316          BA     .15
317          LG     .35     .31    4.93     .23     .00
318          UI     26.    101.    151.    242.    249.    169.    112.     50.     31.    14.
319          UI      7.      7.      0.      0.      0.      0.      0.      0.      0.     0.
320          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.     0.

321          KK    R104
322          KM        ROUTE FLOW FROM CP104 TO CP112
323          RS      53              -1       0
324          RC    .075    .075    .075    6552   .0056
325          RX    1000    1001    1230    1270    1750    2000    2380    2650
326          RY    1321    1321    1320    1318    1318    1319    1318    1320

327          KK     112
328          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 112
329          BA     .97
330          LG     .50     .00    3.65     .50     .00
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331          UI     35.     35.     35.     35.     92.    123.    142.    165.    179.    193.
332          UI    207.    224.    245.    266.    290.    340.    400.    464.    424.    371.
333          UI    335.    308.    286.    267.    243.    220.    206.    185.    170.    155.
334          UI    131.    101.     77.     62.     61.     58.     58.     45.     35.     35.
335          UI     35.     28.     11.     11.     11.     11.     11.     11.     11.     11.
336          UI     11.     11.     11.     11.     11.      0.      0.      0.      0.      0.
337          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                                        HEC-1 INPUT                                          PAGE 11

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

338          KK   1I112
339          KM        ADD HYDROGRAPHS AT CP112.
340          HC       2    1.12

341          KK   2I112
342          KM        ADD HYDROGRAPHS AT CP112.
343          HC       2    1.62

344          KK     105
345          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 105
346          BA     .21
347          LG     .35     .27    7.68     .10     .00
348          UI     32.    129.    195.    295.    362.    246.    171.     88.     50.     28.
349          UI     10.     10.     10.      0.      0.      0.      0.      0.      0.      0.
350          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

351          KK    R105
352          KM        ROUTE FLOW FROM CP105 TO CP112
353          RS       3              -1       0
354          RC    .022    .022     .03    5220   .0044
355          RX    1000    1001    1010    1020    1040    1050    1099    1100
356          RY    1303    1303    1303    1302    1302    1304    1305    1305

357          KK   CP112
358          KM        ADD HYDROGRAPHS AT CP112.
359          HC       2    1.83

360          KK    D112
361          KM        DIVERT TO CP120 FROM CP112
362          DT   DI120
363          DI       0      48     165     355     625     981    1434    1990
364          DQ       0      16      55     118     208     327     478     663

365          KK    D112
366          KM        DIVERT TO CP121A FROM CP112
367          DT  1D121A
368          DI       0      32     110     237     417     654     956    1327
369          DQ       0      16      55     118     208     327     478     663

370          KK    R112
371          KM        ROUTE REMAINDER FROM CP112 TO CP113A
372          RS       6              -1       0
373          RC    .075    .035    .035    2640   .0023
374          RX    1000    1490    1830    2600    2770    2788    2789    2790
375          RY    1290    1288    1286    1284    1284    1285    1285    1285

376          KK    113A
377          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 113A
378          BA     .50
379          LG     .50     .00    7.93     .15     .00
380          UI     22.     22.     22.     42.     75.     89.    103.    115.    125.    137.
381          UI    152.    167.    192.    238.    276.    260.    224.    199.    181.    167.
382          UI    149.    134.    121.    108.     98.     79.     62.     40.     38.     36.
383          UI     35.     26.     22.     22.     20.      7.      7.      7.      7.      7.
                                        HEC-1 INPUT                                          PAGE 12

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

384          UI      7.      7.      7.      7.      7.      7.      0.      0.      0.      0.
385          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

386          KK  CP113A
387          KM        ADD HYDROGRAPHS AT CP113A
388          HC       2    2.33
             * KK D113A
             * KM      DIVERT TO CP121A FROM CP113A
             * DT2D121A
             * DI      0      26      67     134     232     278     399     561     799    11
             * DQ      0       0       0       0       0       4      22      58     120     2
             * NOTE: REPLACE WTADMS.24 DIVERSION OPERATION WITH STANLEY'S DIVERSION OPERATION
             *       FROM THE MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
             *       EXISTING CONDITION MODEL E12291.DAT.

389          KK   D113A
390          KM          DIVERT TO CP121A FROM  CP113A
391          DT  2D121A
392          DI       0     185     545     642     893    1913
393          DQ       0       0       0      12      74     467

394          KK   R113A
395          KM        ROUTE REMAINDER FROM CP113A TO CP113
             * NOTE: THIS ROUTING IS CONSIDERED TO OCCUR ALONG BELL RD SEPARATE FROM SUN
             *       CITY GRAND PHASE 2.
             * RS    25              -1       0
             * RC  .075    .035    .035    5280   .0032
             * RX  1000    1080    2620    2725    2735    2798    2799    2800
             * RY  1278    1277    1277    1276    1276    1277    1277    1277
             * REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
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396          RS       6              -1       0
397          RC    .035    .035    .035    5280   .0032
398          RX    1000    1010    1200    1201    1250    1300    1301    1320    1340
399          RY    1276    1274    1275    1274  1275.7    1274    1275    1274    1275
             * NOTE: SET ASIDE SUB-BASIN 113 AND CP113 HYDROGRAPH STEPS. SUB-BASIN 113
             *       STEP WAS PREVIOUSLY USED TO BEGIN SEPARATE BRANCH IN MODEL. CP113
             *       HYDROGRAPH ADDITION STEP IS UNNECESSARY.
             * KK   113
             * KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 113
             * BA   .50
             * LG   .50     .00    8.54     .11     .00
             * UI   22.     22.     22.     49.     79.     95.    108.    122.    132.  145.
             * UI  162.    178.    213.    261.    291.    248.    216.    195.    178.  161.
             * UI  143.    131.    114.    105.     88.     65.     46.     39.     37.   37.
             * UI   27.     22.     22.     20.      7.      7.      7.      7.      7.    7.
             * UI    7.      7.      7.      7.      7.      0.      0.      0.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * KK CP113
             * KM      ADD HYDROGRAPHS AT CP113.
             * HC     2    2.83
             * KK  D113
             * KM      DIVERT TO CP122 FROM CP113
             * DT 1D122
             * DI     0      79     257     523     872    1307    1829
             * DQ     0      63     205     416     692    1033    1422
             * NOTE: REPLACE WTADMS.24 DIVERSION OPERATION WITH STANLEY'S DIVERSION OPERATION
             *       FROM THE MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
             *       EXISTING CONDITION MODEL E12291.DAT.
                                        HEC-1 INPUT                                          PAGE 13

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

400          KK    D113
401          KM          DIVERT TO CP122 FROM CP113
402          DT   1D122
403          DI       0     105     354     622    1153    1882
404          DQ       0       0     195     395     845    1480

405          KK    R113
406          KM        ROUTE REMAINDER FROM CP113 TO CP114
             * NOTE: THIS ROUTING IS CONSIDERED TO OCCUR ALONG BELL RD SEPARATE FROM SUN
             *       CITY GRAND PHASE 2.
             * RS     6              -1       0
             * RC  .075     .04     .04    2100   .0038
             * RX  1000    1020    1100    1850    2030    2048    2049    2050
             * RY  1266    1264    1262    1260    1260    1261    1261    1261
             * REVISE ROUTING TO REFLECT DEVELOPMENT CONDITIONS
407          RS       6              -1       0
408          RC    .035    .035    .035    2100   .0038
409          RX    1000    1010    1200    1201    1250    1300    1301    1320    1340
410          RY    1276    1274    1275    1274  1275.7    1274    1275    1274    1275
             * NOTE: SET ASIDE SUB-BASIN 114 AND CP114 HYDROGRAPH STEPS WHICH WERE PREVIOUSLY
             *       USED AS PART OF SEPARATE BRANCH IN MODEL.
             * KK   114
             * KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 114
             * BA   .38
             * LG   .50     .00    8.35     .13     .00
             * UI   17.     17.     17.     41.     62.     75.     86.     95.    104.  115.
             * UI  129.    144.    177.    215.    216.    183.    161.    146.    133.  118.
             * UI  106.     95.     85.     74.     58.     44.     31.     30.     28.   25.
             * UI   17.     17.     17.      6.      5.      5.      5.      5.      5.    5.
             * UI    5.      5.      5.      5.      0.      0.      0.      0.      0.    0.
             * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.    0.
             * KK CP114
             * KM      ADD HYDROGRAPHS AT CP114.
             * HC     2    3.21
             * KK  D114
             * KM      DIVERT TO CP122 FROM CP114
             * DT 2D122
             * DI     0      17      54      80     333     952    2066
             * DQ     0       0       0       0      70     438    1217
             * NOTE: REPLACE WTADMS.24 DIVERSION OPERATION WITH STANLEY'S DIVERSION OPERATION
             *       FROM THE MASTER DRAINAGE REPORT FOR DEL WEBB'S GRAND AVENUE PROPERTY
             *       EXISTING CONDITION MODEL E12291.DAT.

411          KK    D114
412          KM          DIVERT TO CP122 FROM CP114
413          DT   2D122
414          DI       0     235     313     480     717    1056
415          DQ       0       0       2      81     225     462
                                        HEC-1 INPUT                                          PAGE 14

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

416          KK    R114
             * KM      ROUTE REMAINDER FROM CP114 TO CP115
             * NOTE: ROUTE REMAINDER FROM CP114 TO CP115B
             * NOTE: THIS ROUTING IS CONSIDERED TO OCCUR ALONG BELL RD. SEPARATE FROM SUN
             *       CITY GRAND PHASE 2.
             * RS     2              -1       0
             * RC   .06    .022     .35    2652   .0034
             * RX  1000    1380    1790    1800    1840    1850    1899    1900
             * RY  1258    1256    1254    1250    1250    1252    1253    1253
417          RS       2              -1       0
418          RC    .035    .035    .035    2652   .0034
419          RX    1000    1010    1200    1201    1250    1300    1301    1320    1140
420          RY    1276    1274    1275    1274  1275.7    1274    1275    1274    1275
             * NOTE: ADD OUTFLOW HYDROGRAPH FROM 115OUT TO OFFSITE HYDROGRAPH ROUTED ALONG
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                    *       BELL RD FROM WEST AT INTERSECTION OF BELL AND REEMS RDS. THIS
                    *       CONCENTRATION POINT CORRESPONDS TO WTADMS.24 CONCENTRATION POINT CP115.

421                 KK  CP115B
422                 HC       2    7.00

423                 KK    R115
                    * KM      ROUTE FLOWS FROM CP115 TO CP122
                    * NOTE: ROUTE FLOW FROM 115B TO CP122
424                 RS       6            -1       0
425                 RC    .035    .035    .075    5280   .0038
426                 RX    1000    1001    1002    1015    1035    1360    1920    2460
427                 RY    1239    1239    1239    1238    1238    1240    1241    1242

428                 KK    D113
429                 KM        RETURN DIVERT AT CP113
430                 DR   1D122

431                 KK    R113
432                 KM        ROUTE FLOW FROM CP113 TO CP122
433                 RS      36             -1       0
434                 RC     .08     .08     .08    7488   .0049
435                 RX    1000    1001    1610    1820    1990    2010    3059    3060
436                 RY    1248    1248    1246    1245    1245    1246    1248    1248

437                 KK    D114
438                 KM        RETURN DIVERT AT CP114
439                 DR   2D122

440                 KK    R114
441                 KM        ROUTE FLOW FROM CP114 TO CP122
442                 RS      45             -1       0
443                 RC    .075    .075    .075    6240   .0046
444                 RX    1000    1001    1610    1820    1990    2010    3059    3060
445                 RY    1248    1248    1246    1245    1245    1246    1248    1248
                                                HEC-1 INPUT                                                    PAGE 15

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


446                 KK     122
447                 KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 122
448                 BA     .89
449                 LG     .50     .00    5.83     .32     .00
450                 UI     32.     32.     32.     32.     87.    114.    132.    153.    166.    179.
451                 UI    193.    207.    229.    247.    272.    319.    378.    428.    385.    338.
452                 UI    306.    281.    262.    243.    220.    201.    188.    167.    155.    138.
453                 UI    114.     93.     63.     57.     56.     53.     53.     36.     32.     32.
454                 UI     32.     20.     10.     10.     10.     10.     10.     10.     10.     10.
455                 UI     10.     10.     10.     10.     10.      0.      0.      0.      0.      0.
456                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

457                 KK   1I122
458                 KM        ADD HYDROGRAPHS AT CP122
459                 HC       3     4.1

460                 KK   CP122
461                 KM        ADD HYDROGRAPHS AT CP122
462                 HC       2    7.89
463                 ZZ
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   134         101
                .
                .
   141          .        102A
                .          .
                .          .
   149       CP101............
                V
                V
   152        R101
                .
                .
   158          .         102
                .          .
                .          .
   165       CP102............
                V
                V
   168        R102
                .
                .
   174          .         108
                .          .
                .          .
   184      1I108............
                .
                .
   187          .         103
                .          .
                .          .
   198          .          .-------->  103RET
   196          .      103OUT
                .          V
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                .          V
201             .       R103
                .          .
                .          .
206         CP108............
                .
                .
212             .-------> 108RET
210         108OUT
                V
                V
215          R108
                .
                .
220             .        107
                .          .
                .          .
231             .          .-------> 107RET
229             .     107OUT
                .          V
                .          V
234             .       R107
                .          .
                .          .
240             .          .        113
                .          .          .
                .          .          .
249             .          .          .-------> 113RET
247             .          .     113OUT
                .          .          V
                .          .          V
252             .          .       R113
                .          .          .
                .          .          .
257             .          .          .        114
                .          .          .          .
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265             .          .      CP114............
                .          .          .
                .          .          .
270             .          .          .-------> 114RET
268             .          .     114OUT
                .          .          V
                .          .          V
273             .          .       R114
                .          .          .
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278             .          .          .        115
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286         CP115A...................................
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                .
291             .-------> 115RET
289         115OUT
                .
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294             .        111
                .          .
                .          .
305             .          .-------> DI119
303             .       D111
                .          V
                .          V
308             .       R111
                .          .
                .          .
314             .          .        104
                .          .          V
                .          .          V
321             .          .       R104
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327             .          .          .        112
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338             .          .     1I112............
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341             .      2I112............
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344             .          .        105
                .          .          V
                .          .          V
351             .          .       R105
                .          .          .
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357             .      CP112............
                .          .
                .          .
362             .          .-------> DI120
360             .       D112
                .          .
                .          .
367             .          .-------> 1D121A
365             .       D112
                .          V
                .          V
370             .       R112
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 376            .          .        113A
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 386            .      CP113A............
                .          .
                .          .
 391            .          .-------> 2D121A
 389            .       D113A
                .          V
                .          V
 394            .       R113A
                .          .
                .          .
 402            .          .------->   1D122
 400            .        D113
                .          V
                .          V
 405            .        R113
                .          .
                .          .
 413            .          .------->   2D122
 411            .        D114
                .          V
                .          V
 416            .        R114
                .          .
                .          .
 421       CP115B............
                V
                V
 423        R115
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 430            .          .<-------   1D122
 428            .        D113
                .          V
                .          V
 431            .        R113
                .          .
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 439            .          .          .<-------   2D122
 437            .          .        D114
                .          .          V
                .          .          V
 440            .          .        R114
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 446            .          .          .         122
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 457            .       1I122........................
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 460       CP122............
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1

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 117 IO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE

     IT          HYDROGRAPH TIME DATA
                        NMIN           5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME        0055  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   24.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

 119 JD          INDEX STORM NO. 1
                        STRM        4.03  PRECIPITATION DEPTH
                        TRDA         .00  TRANSPOSITION DRAINAGE AREA

 120 PI            PRECIPITATION PATTERN
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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130 JD INDEX STORM NO. 2

STRM 3.99 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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131 JD INDEX STORM NO. 3

STRM 3.83 PRECIPITATION DEPTH

TRDA 50.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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132 JD INDEX STORM NO. 4

STRM 3.76 PRECIPITATION DEPTH

TRDA 100.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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133 JD INDEX STORM NO. 5

STRM 3.70 PRECIPITATION DEPTH

TRDA 200.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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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	101	233.	12.25	22.	5.	5.	.16		
+	HYDROGRAPH AT	102A	525.	12.58	73.	18.	18.	.51		
+	2 COMBINED AT	CP101	635.	12.50	95.	24.	23.	.67		
+	ROUTED TO	R101	629.	12.50	95.	24.	23.	.67		
+	HYDROGRAPH AT	102	151.	12.25	16.	4.	4.	.10		
+	2 COMBINED AT	CP102	725.	12.42	111.	28.	27.	.77		
+	ROUTED TO	R102	470.	14.08	111.	28.	27.	.77		
+	HYDROGRAPH AT	108	545.	13.08	128.	35.	34.	.79		
+	2 COMBINED AT	1I108	614.	14.00	236.	63.	60.	1.56		
+	HYDROGRAPH AT	103	416.	12.50	64.	19.	18.	.37		
+	DIVERSION TO	103RET	416.	12.50	64.	17.	17.	.37		

+	HYDROGRAPH AT	103OUT	6.	15.92	4.	1.	1.	.37
+	ROUTED TO	R103	5.	17.33	4.	1.	1.	.37
+	2 COMBINED AT	CP108	614.	14.00	237.	64.	62.	1.93
+	DIVERSION TO	108RET	614.	14.00	237.	64.	62.	1.93
+	HYDROGRAPH AT	108OUT	0.	.08	0.	0.	0.	1.93
+	ROUTED TO	R108	0.	.08	0.	0.	0.	1.93
+	HYDROGRAPH AT	107	547.	12.75	103.	30.	29.	.60
+	DIVERSION TO	107RET	547.	12.75	103.	30.	29.	.60
+	HYDROGRAPH AT	107OUT	0.	.08	0.	0.	0.	.60
+	ROUTED TO	R107	0.	.08	0.	0.	0.	.60
+	HYDROGRAPH AT	113	741.	12.33	110.	32.	30.	.50
+	DIVERSION TO	113RET	741.	12.33	76.	20.	19.	.50
+	HYDROGRAPH AT	113OUT	500.	12.58	41.	11.	11.	.50
+	ROUTED TO	R113	425.	12.75	41.	11.	11.	.50
+	HYDROGRAPH AT	114	514.	12.50	86.	24.	23.	.38
+	2 COMBINED AT	CP114	744.	12.75	124.	36.	34.	.88
+	DIVERSION TO	114RET	744.	12.75	115.	30.	29.	.88
+	HYDROGRAPH AT	114OUT	58.	14.00	17.	6.	6.	.88
+	ROUTED TO	R114	35.	14.50	16.	6.	5.	.88
+	HYDROGRAPH AT	115	609.	12.50	94.	27.	26.	.49
+	4 COMBINED AT	CP115A	608.	12.50	103.	33.	31.	4.67
+	DIVERSION TO	115RET	608.	12.50	103.	28.	27.	4.67
+	HYDROGRAPH AT	115OUT	21.	17.08	14.	4.	4.	4.67
+	HYDROGRAPH AT	111	443.	12.67	71.	18.	17.	.50
+	DIVERSION TO	DI119	166.	12.67	26.	7.	6.	.50
+	HYDROGRAPH AT	D111	276.	12.67	45.	11.	11.	.50
+	ROUTED TO	R111	232.	13.33	45.	11.	11.	.50
+	HYDROGRAPH AT	104	236.	12.17	20.	5.	5.	.15
+	ROUTED TO	R104	89.	14.67	20.	5.	5.	.15
+	HYDROGRAPH AT	112	534.	13.33	138.	34.	33.	.97
+	2 COMBINED AT	1I112	534.	13.33	157.	40.	38.	1.12
+	2 COMBINED AT	2I112	765.	13.33	202.	51.	49.	1.62
+	HYDROGRAPH AT	105	354.	12.25	34.	9.	8.	.21

+	ROUTED TO	R105	316.	12.42	34.	9.	8.	.21
+	2 COMBINED AT	CP112	790.	13.33	236.	59.	57.	1.83
+	DIVERSION TO	DI120	263.	13.33	79.	20.	19.	1.83
+	HYDROGRAPH AT	D112	527.	13.33	158.	40.	38.	1.83
+	DIVERSION TO	1D121A	263.	13.33	79.	20.	19.	1.83
+	HYDROGRAPH AT	D112	264.	13.33	79.	20.	19.	1.83
+	ROUTED TO	R112	241.	13.75	79.	20.	19.	1.83
+	HYDROGRAPH AT	113A	409.	13.08	106.	27.	26.	.50
+	2 COMBINED AT	CP113A	560.	13.08	183.	46.	45.	2.33
+	DIVERSION TO	2D121A	2.	13.08	0.	0.	0.	2.33
+	HYDROGRAPH AT	D113A	558.	13.08	183.	46.	45.	2.33
+	ROUTED TO	R113A	523.	13.67	181.	46.	45.	2.33
+	DIVERSION TO	1D122	321.	13.67	82.	20.	20.	2.33
+	HYDROGRAPH AT	D113	202.	13.67	100.	26.	25.	2.33
+	ROUTED TO	R113	200.	13.92	99.	26.	25.	2.33
+	DIVERSION TO	2D122	0.	.08	0.	0.	0.	2.33
+	HYDROGRAPH AT	D114	200.	13.92	99.	26.	25.	2.33
+	ROUTED TO	R114	190.	14.50	97.	26.	25.	2.33
+	2 COMBINED AT	CP115B	189.	14.50	105.	30.	29.	7.00
+	ROUTED TO	R115	181.	15.25	102.	29.	28.	7.00
+	HYDROGRAPH AT	D113	321.	13.67	82.	20.	20.	2.33
+	ROUTED TO	R113	287.	15.33	80.	20.	20.	2.33
+	HYDROGRAPH AT	D114	0.	.08	0.	0.	0.	2.33
+	ROUTED TO	R114	0.	.08	0.	0.	0.	2.33
+	HYDROGRAPH AT	122	552.	13.33	146.	37.	35.	.89
+	3 COMBINED AT	1I122	551.	13.33	216.	57.	55.	4.10
+	2 COMBINED AT	CP122	551.	13.33	297.	86.	83.	7.89

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