Appendix B – Hydrologic Calculations

- Curve Number Calculations - EX
- Curve Number Calculations – Neighborhood Study Basins
- Standard Form 4 - EX
- HEC-1 Output - EX
- Curve Number Calculations – DEV
- Standard Form 4 - DEV
- HEC-1 Output – DEV

RACEL AND MAVERICK

WEIGHTED CURVE NUMBERS AND PRECIPITATION VALUES

EXISTING CONDITION

BasinID	Soil	Area	Percent	CN	Description	WCN	PREC
EON1	305	9.80	100.0%	85.7	Desert (Poor)	**85.7**	2.77
EOFF1	305	4.37	100.0%	80.6	Residential (40,000 sq ft lot)	**80.6**	2.77
EOFF2	305	4.83	100.0%	80.6	Residential (40,000 sq ft lot)	**80.6**	2.77
EOFF3	305	1.12	56.6%	81.7	Residential (20,000 sq ft lot)	**88.8**	2.77
	305	0.86	43.4%	98.0	Streets		
RAC	305	0.30	24.4%	80.6	Residential (40,000 sq ft lot)	**92.0**	2.77
	305	0.75	61.0%	98.0	Streets		
	305	0.18	14.6%	85.7	Desert (Poor)		
MEI	305	1.67	83.1%	98.0	Streets	**95.9**	2.77
	305	0.34	16.9%	85.7	Desert (Poor)		

RACEL AND MAVERICK

WEIGHTED CURVE NUMBERS AND PRECIPITATION VALUES

DEVELOPED CONDITION

BasinID	Soil	Area	Percent	CN	Description	WCN	PREC
DON1	305	1.71	100.0%	81.7	Residential (20,000 sq ft lot)	**81.7**	2.77
DON2	305	5.49	100.0%	81.7	Residential (20,000 sq ft lot)	**81.7**	2.77
DON3	305	2.63	100.0%	81.7	Residential (20,000 sq ft lot)	**81.7**	2.77
EOFF1	305	4.37	100.0%	80.6	Residential (40,000 sq ft lot)	**80.6**	2.77
EOFF2	305	4.83	100.0%	80.6	Residential (40,000 sq ft lot)	**80.6**	2.77
EOFF3	305	1.12	56.6%	81.7	Residential (20,000 sq ft lot)	**88.8**	2.77
	305	0.86	43.4%	98.0	Streets		
RAC	305	0.30	24.4%	80.6	Residential (20,000 sq ft lot)	**93.8**	2.77
	305	0.93	75.6%	98.0	Streets		
MEI	305	2.01	100.0%	98.0	Streets	**98.0**	2.77

EXISTING COMPOSITE CURVE NUMBER BREAKDOWN										
SUBBASIN	SOIL MAP UNIT #	LAND USE	SUBREGION CN	SUBREGION AREA (ACRE)	SUBBASIN AREA (ACRE)	PERCENT OF SUBBASIN	CUMULATIVE PERCENT	AREA WEIGHTED CN	CUMULATIVE CN	COMPOSITE CN
NW173-A	192	4	68	1.65	26.01	6.3%	6.3%	4.31	4.31	
NW173-A	305	1	86	1.62	26.01	6.2%	12.6%	5.34	9.66	
NW173-A	305	4	84	21.52	26.01	82.7%	95.3%	69.51	79.17	
NW173-A	305	15	96	1.22	26.01	4.7%	100.0%	4.51	83.67	**83.7**
NW173-B	192	1	70	0.00	64.79	0.0%	0.0%	0.01	0.01	
NW173-B	192	4	68	30.08	64.79	46.4%	46.4%	31.57	31.58	
NW173-B	192	15	93	0.15	64.79	0.2%	46.7%	0.22	31.80	
NW173-B	305	1	86	0.39	64.79	0.6%	47.3%	0.52	32.32	
NW173-B	305	1	86	0.72	64.79	1.1%	48.4%	0.95	33.27	
NW173-B	305	4	84	30.32	64.79	46.8%	95.2%	39.31	72.58	
NW173-B	305	12	88	0.65	64.79	1.0%	96.2%	0.89	73.46	
NW173-B	305	15	96	2.47	64.79	3.8%	100.0%	3.66	77.12	**77.1**

SOIL MAP UNIT	HYDROLOGIC SOIL GROUP					LAND USE CATEGORY INDEX NUMBER			
	A	B	C	D	ROCK OUTCROP	**1**	**4**	**12**	**15**
	CN --->					63	60	72	92
		CN --->				77	74	82	94
			CN --->			85	83	87	95
				CN --->		88	87	90	96
					CN --->	90	92	94	97
	%	%	%	%	%	**SOIL TYPE COMPOSITE CN FOR LAND USE CATEGORY**			
192	55	35	0	10	0	70.0	68.0	77.0	93.0
305	5	0	35	60	0	86.0	84.0	88.0	96.0

Land Use Index No.	Current Class Names	CN for Hydrologic Soil Group				
		A	B	C	D	R
1	Desert Shrub (Poor Condition)	63	77	85	88	90
4	Residential (20,000 sq ft lot)	60	74	83	87	92
12	Schools	72	82	87	90	94
15	Streets	92	94	95	96	97

TIME OF CONCENTRATION / LAG TIME DETERMINATION - less than 1 mi2

Kimley»Horn

RACEL AND MAVERICK
NWC OF RACEL STREET AND MAVERICK STREET
EXISTING CONDITIONS

Project No: 291400040
Date: 10/14/24
Calculated by: AA

SUB-BASIN DATA						INITIAL / OVERLAND TIME (Ti)			TRAVEL TIME (Tt)							T_{lag}	REMARKS
Basin ID	DEV./UNDEV. (D or U)	CN	K	AREA Ac	AREA Mi^2	INITIAL LENGTH Feet	SLOPE %	Ti Min	TRAVEL LENGTH Feet	SLOPE %	V_1 VELOCITY FPS	V_2 VELOCITY FPS	Tt Min	Tc Min	Tc Check Min	T_{lag} 0.6Tc/60 Hours	RAINFALL INCHES
(1)	(2)	(3)	(4)	(5a)	(5b)	(6)	(7)	(8)	(9)	(10)	(10a)	(10b)	(11)	(12)	(13)	(14)	(15)
EON1	E	85.7	0.7412	9.83	0.0154	50	1.00	4.6	835	0.66	1.2	2.4	9.3	13.8	N/A	**0.138**	2.77
EOFF1	D	80.6	0.6739	4.37	0.0068	175	1.00	10.1	400	1.00	2.0	3.1	3.3	13.4	13.2	**0.132**	2.77
EOFF2	D	80.6	0.6739	4.83	0.0075	155	1.00	9.5	530	0.38	1.2	1.9	7.0	16.5	13.8	**0.138**	2.77
EOFF3	D	88.8	0.7822	1.98	0.0031	95	1.00	5.6	550	0.36	1.2	1.8	7.3	12.9	13.6	**0.129**	2.77
RAC	D	92.0	0.8244	1.23	0.0019	95	1.00	4.8	595	0.34	1.2	1.8	8.0	12.8	13.8	**0.128**	2.77
MEI	D	95.9	0.8759	2.01	0.0031	30	2.00	1.8	1270	0.39	1.3	1.9	13.3	15.0	17.2	**0.150**	2.77
NW173-A	D	83.7	0.7148	26.01	0.0406	85	2.00	5.1	1980	0.61	1.6	2.4	15.7	20.7	21.5	**0.207**	2.77
***NW173-B**	D	77.1	0.6277	26.01	0.0406	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**0.327**	2.77

NOTE:

(1) Subbasin Name
(2) Developed or Undeveloped Subbasin
(3) Curve Number (See Subbasin CN Calculations)
(4) K = 0.0132 (CN) - 0.39
(5a) & (5b) Area
(6) Initial Length
(7) Initial Slope
(8) Ti = 1.8 (1.1 - K) L^1/2 / S^1/3
(9) Travel Length
(10) Slope
(10a) Slope V_1 applies to the first 500 feet of travel distance; Developed V_1 = 20.2*(S/100)^1/2
(10b) V_2 applies to the remaining travel distance; Developed V_2 = 30.6*(S/100)^1/2
(11) Tt = 500/(V1*60)+(Travel Length-500)/(V2*60)
(12) Tc = Ti + Tt
(13) Tc Check = L/180+10 (select smaller Tc)
(14) Tlag = 0.6 Tc/60
(15) Rainfall in inches

REFERENCE: Calculations based on the Clark County Regional Flood Control District HCDDM

STANDARD FORM 4

*Basin NW173 has been referenced from neighborhood Study. NW173-A has been separately analyzed while NW173-B area and CN have been revised but the lag time has been kept same from Neighborhood Study

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *               JUN   1998             *
 *            VERSION 4.1               *
 *                                      *
 *  RUN DATE   15OCT24  TIME  14:03:29  *
 *                                      *
 ****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (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


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

                        *DIAGRAM
 *** FREE ***
              1         ID
              2         ID   ********************************************
              3         ID   *                                          *
              4         ID   *    RACEL AND MAVERICK                    *
              5         ID   *    EXISTING CONDITION                    *
              6         ID   *                                          *
              7         ID   *    PROJECT No:_ _ _ 291400040            *
              8         ID   *    FILE: _ _ _ _ _ _EX_100.H1            *
              9         ID   *    DATE MODELED:_ _ 10/14/24             *
             10         ID   *    MODELED BY:_ _ _ AA                   *
             11         ID   *                                          *
             12         ID   ********************************************
             13         ID
             14         ID   ********************************************
             15         ID   *    RETURN PERIOD:_ _& 100- YEAR          *
             16         ID   *    DISTRIBUTION:_ _ 6-HOUR SDN3          *
             17         ID   ********************************************
             18         ID
             19         ID   ********************************************
             20         ID
             21         ID
             22         ID   JR CARD RATIOS REPRESENT DEPTH-AREA REDUCTION FACTORS (DARF'S)
             23         ID
             24         ID   100-YEAR,  6-HOUR STORM,  SDN3
             25         ID   DARF RATIOS FOR AREAS OF 0, 0.5, 1, 2, 4, 6 AND 8 SQUARE MILES FOR 100-YEAR
             26         ID
             27         IT       5       0       0     500
             28         IO       5       0       0
             29         IN       5       0       0
             30         JR    PREC       1    0.98    0.97    0.93    0.91     0.9    0.88
                        *
                        *    BEGIN NORTHWEST NEIGHBORHOOD STUDY PHASE 2 REFERENCE **********************
                        *

             31         KK   NW158
             32         BA    0.09
             33         PB   2.774
             34         PC   0.000   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
             35         PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
             36         PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
             37         PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
             38         PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
             39         PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
             40         PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
             41         PC   0.998   0.999   1.000
             42         LS       0      66
             43         UD   0.278
                        *
```



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

```
 44          KK  RNW158
 45          KM  ROUTE THROUGH NW167
 46          RK    3800   0.007    0.03       0    TRAP      50       2
             *

 47          KK   NW167
 48          BA    0.18
 49          PB   2.774
 50          LS       0   66.87
 51          UD   0.278
             *

 52          KK  DNW167
 53          KM  DIVERT 50% TO LOG CABIN WAY
 54          DT  DNW176
 55          DI       0     100     500    1000    5000
 56          DQ       0      50     250     500    2500
             *

 57          KK  CNW167
 58          KM  COMBINE DNW167 WITH RNW158
 59          HC       2
             *

 60          KK RCNW167
 61          KM  ROUTE TO NW166
 62          RK    2640   0.025    0.03       0    TRAP      50       2
             *

 63          KK   NW166
 64          BA    0.09
 65          PB   2.774
 66          LS       0   69.32
 67          UD   0.289
             *

 68          KK  CNW166
 69          KM  COMBINE NW166 WITH RNW167
 70          HC       2
             *

 71          KK RCNW166
 72          KM  ROUTE THROUGH NW174
 73          RK    4000   0.009    0.03       0    TRAP      50       2
             *

 74          KK   NW175
 75          BA    0.25
 76          PB   2.774
 77          LS       0      74
 78          UD   0.322
             *
```



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

 79          KK  DNW175
 80          KM  FLOW SPLIT AT TORREY PINES AND IRON MTN
 81          KM  DIVERSION TO IRON MTN
 82          KM  NO CROWNS HELD IN EITHER STREET
 83          DT  DNW186
 84          DI       0     100     500    1000    5000
 85          DQ       0      49     240     502    2654
             *

 86          KK RDNW175
 87          KM  ROUTE TO BRENT
 88          RK    1450   0.007    0.02       0    TRAP      80       2
             *

 89          KK DDNW175
 90          KM  FLOW SPLIT AT TORREY PINES AND BRENT
 91          KM  DIVERSION TO BRENT
 92          KM  NO CROWNS HELD IN EITHER STREET
 93          DT  DNW185
 94          DI       0     100     500    1000    5000
 95          DQ       0      46     213     409    1938
             *

 96          KKRDDNW175
 97          KM  ROUTE TO NW174
 98          RK    1450   0.007    0.02       0    TRAP      80       2
             *

 99          KK   NW174
100          BA    0.27
101          PB   2.774
102          LS       0   84.71
```

```
          103          UD   0.320
                       *

          104          KK CCNW174
          105          KM  COMBINE RDDNW175 WITH NW174 AND RCNW166
          106          HC       3
                       *

          107          KKDCCNW174
          108          KM  FLOW SPLIT AT HORSE AND TORREY PINES
          109          KM  DIVERSION TO HORSE
          110          KM  NO CROWNS HELD IN EITHER STREET
          111          DT  DNW184
          112          DI       0     100     500    1000    5000
          113          DQ       0      44     218     436    2179
                       *
1                                      HEC-1 INPUT                                              PAGE  4

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


          114          KKRDCCNW174
          115          KM  ROUTE TO NW173
          116          RK    1400   0.007    0.02       0    TRAP      80       2
                       *
                       *
                       *    END NORTHWEST NEIGHBORHOOD STUDY PHASE 2 REFERENCE ************************
                       *

          117          KK NW173-A
          118          KM   REFERENCED/REVISED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
          119          BA    0.04
          120          PB   2.774
          121          LS       0    83.7
          122          UD   0.207
                       *

          123          KKCNW173-A
          124          KM  COMBINE NW173-A WITH RDCCNW174
          125          HC       2
                       *

          126          KKDCNW173-A
          127          KM  FLOW SPLIT AT TORREY PINES AND MEISENHEIMER
          128          KM  DIVERSION TO MEISENHEIMER
          129          KM  NO CROWNS HELD IN EITHER STREET
          130          DT  DIVMEI
          131          DI       0     100     500    1000    5000
          132          DQ       0      51     257     513    2557
                       *

          133          KK NW173-B
          134          KM   REFERENCED/REVISED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
          135          BA    0.10
          136          PB   2.774
          137          LS       0   77.10
          138          UD   0.327
                       *

          139          KK  CNW173
          140          KM  COMBINE NW173 WITH RDCCNW174
          141          HC       2
                       *

          142          KKDTCNW173
          143          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
          144          KM  DIVERT 10-YEAR FLOWS
          145          DT DTNW173
          146          DI       0       9     100     500    1000    5000
          147          DQ       0       8       8       8       8       8
                       *
1                                      HEC-1 INPUT                                              PAGE  5

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


          148          KK DCNW173
          149          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
          150          KM  FLOW SPLIT AT TORREY PINES AND RACEL
          151          KM  DIVERSION TO RACEL
          152          KM  NO CROWNS HELD IN EITHER STREET
          153          DT  DNW183
          154          DI       0     100     500    1000    5000
          155          DQ       0      43     199     380    1797
                       *

          156          KKRDCNW173
          157          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
          158          KM  ROUTE TO NW172
          159          RK    1400   0.004    0.02       0    TRAP      80       2
                       *
```

```
 160          KK   NW172
 161          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 162          BA    0.14
 163          PB   2.774
 164          LS       0    81.9
 165          UD   0.326
              *

 166          KK  CNW172
 167          KM  COMBINE NW172 WITH RDCNW173
 168          HC       2
              *

 169          KKDTDNW183
 170          KM  RETRIEVE RACEL STREET FLOW SPLIT
 171          DR  DNW183
              *

 172          KK   EOFF2
 173          BA   .0075
 174          PB    2.77
 175          LS       0    80.6
 176          UD    .138
              *

 177          KK   EOFF1
 178          BA   .0068
 179          LS       0    80.6
 180          UD    .132
              *

 181          KK   EOFF3
 182          BA   .0031
 183          LS       0    88.8
 184          UD    .129
              *
```



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

 185          KK     CP1
 186          KM    COMBINED DNW183, EOFF1, EOFF2, & EOFF3
 187          HC       4
              *

 188          KK    EON1
 189          BA   .0153
 190          LS       0    85.7
 191          UD    .138
              *

 192          KK     RAC
 193          BA   .0019
 194          LS       0    92.0
 195          UD    .128
              *

 196          KK     CP2
 197          KM    COMBINED CP1, EON1, & RAC
 198          HC       3
              *

 199          KKDTDIVMEI
 200          KM  RETRIEVE MEISENHEIMER AVE FLOW SPLIT
 201          DR  DIVMEI
              *

 202          KK   *DOF8
 203          KM    REFERENCED BASIN FROM LA CRESENTA STUDY
 204          BA    .013
 205          LS       0    80.0
 206          UD   .1456
              *

 207          KK    *ST5
 208          KM    REFERENCED BASIN FROM LA CRESENTA STUDY
 209          BA    .001
 210          LS       0    98.0
 211          UD   .0538
              *

 212          KK   *ECP6
 213          KM    REFERENCED CP FROM LA CRESENTA STUDY
 214          KM    COMBINED *DOF8 & *ST5
 215          HC       2
              *

 216          KK     MEI
 217          BA   .0031
```

```
           218          LS       0    95.9
           219          UD    .150
                        *
1                                                HEC-1 INPUT                                                PAGE  7

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


           220          KK   DMEI1
           221          KM   3 CFS DIVERTED TO CP4
           222          DT   DMEI2
           223          DI       0       3       5
           224          DQ       0       1       2
                        *

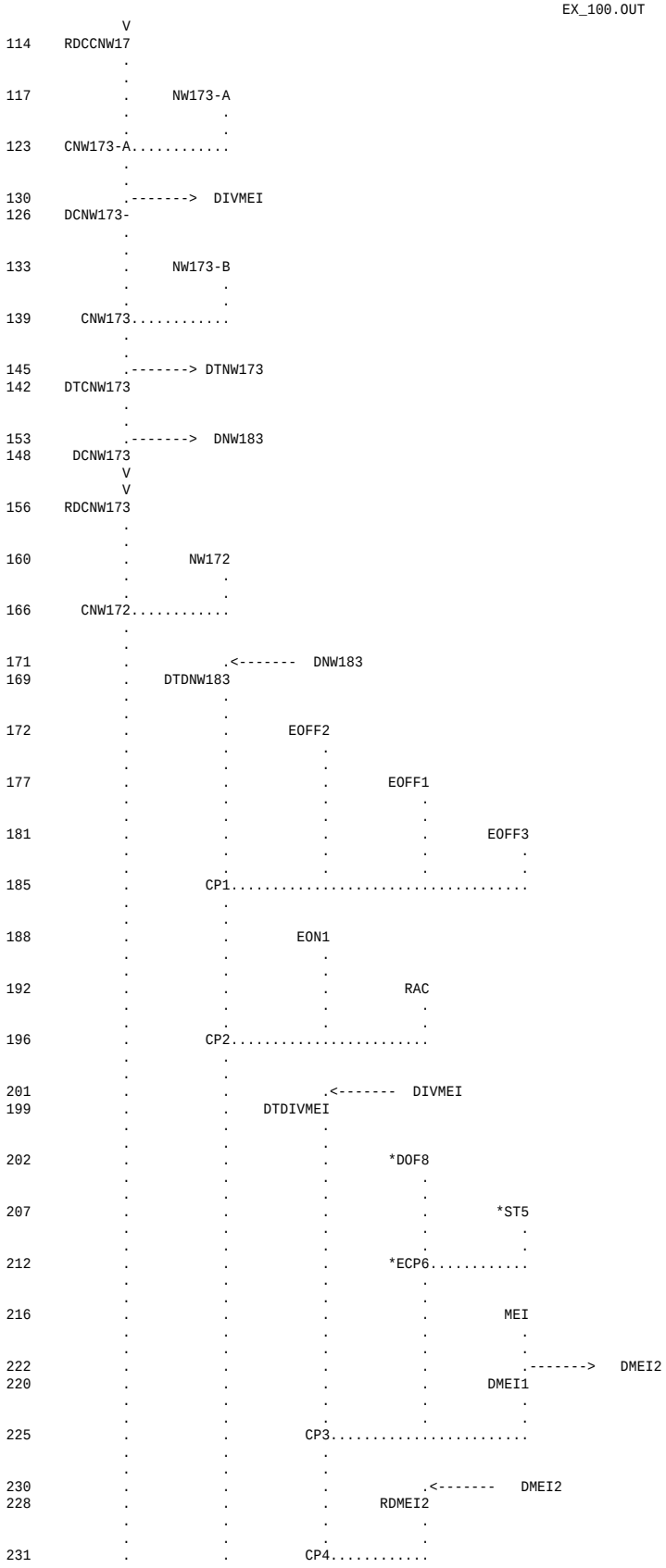
           225          KK     CP3
           226          KM    COMBINED MEI, *ECP6 & DMEI1
           227          HC       3
                        *

           228          KK  RDMEI2
           229          KM   RETREIVE DIVERTED FLOW FROM MEI
           230          DR   DMEI2
                        *

           231          KK     CP4
           232          KM    COMBINED CP3 & DMEI2
           233          HC       2
                        *
           234          ZZ
1
               SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    31       NW158
                  V
                  V
    44      RNW158
                  .
                  .
    47            .       NW167
                  .           .
                  .           .
    54            .           .-------->  DNW176
    52            .      DNW167
                  .           .
                  .           .
    57      CNW167............
                  V
                  V
    60     RCNW167
                  .
                  .
    63            .       NW166
                  .           .
                  .           .
    68      CNW166............
                  V
                  V
    71     RCNW166
                  .
                  .
    74            .       NW175
                  .           .
                  .           .
    83            .           .-------->  DNW186
    79            .      DNW175
                  .           V
                  .           V
    86            .     RDNW175
                  .           .
                  .           .
    93            .           .-------->  DNW185
    89            .     DDNW175
                  .           V
                  .           V
    96            .    RDDNW175
                  .           .
                  .           .
    99            .           .       NW174
                  .           .           .
                  .           .           .
   104     CCNW174.......................
                  .
                  .
   111            .-------->  DNW184
   107    DCCNW174
                  V
```


V
114 RDCCNW17
117 NW173-A
123 CNW173-A
130
126 DCNW173-
133 NW173-B
139 CNW173
145 DTNW173
142 DTCNW173
153
148 DCNW173
V
V
156 RDCNW173
160 NW172
166 CNW172
171
169 DTDNW183
172 EOFF2
177 EOFF1
181 EOFF3
185 CP1
188 EON1
192 RAC
196 CP2
201
199 DTDIVMEI
202 *DOF8
207 *ST5
212 *ECP6
216 MEI
222
220 DMEI1
225 CP3
230
228 RDMEI2
231 CP4

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *               JUN   1998             *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                    *         609 SECOND STREET            *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   15OCT24  TIME  14:03:29  *                                    *           (916) 756-1104             *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
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                        *********************************************
                        *                                           *
                        *    RACEL AND MAVERICK                     *
                        *    EXISTING CONDITION                     *
                        *                                           *
                        *    PROJECT No:_ _ _ 291400040             *
                        *    FILE: _ _ _ _ _ _EX_100.H1             *
                        *    DATE MODELED:_ _ 10/14/24              *
                        *    MODELED BY:_ _ _ AA                    *
                        *                                           *
                        *********************************************

                        *********************************************
                        *    RETURN PERIOD:_ _& 100- YEAR           *
                        *    DISTRIBUTION:_ _ 6-HOUR SDN3           *
                        *********************************************

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


                        JR CARD RATIOS REPRESENT DEPTH-AREA REDUCTION FACTORS (DARF'S)

                        100-YEAR,  6-HOUR STORM,  SDN3
                        DARF RATIOS FOR AREAS OF 0, 0.5, 1, 2, 4, 6 AND 8 SQUARE MILES FOR 100-YEAR


   28 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         500  NUMBER OF HYDROGRAPH ORDINATES
                       NDDATE      2    0  ENDING DATE
                       NDTIME        1735  ENDING TIME
                       ICENT           19  CENTURY MARK

                     COMPUTATION INTERVAL     .08 HOURS
                          TOTAL TIME BASE   41.58 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

      JP          MULTI-PLAN OPTION
                        NPLAN           1  NUMBER OF PLANS

      JR          MULTI-RATIO OPTION
                      RATIOS OF PRECIPITATION
                     1.00       .98       .97       .93       .91       .90       .88
1

                PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
                                FLOWS IN CUBIC FEET PER SECOND,  AREA IN SQUARE MILES
                                           TIME TO PEAK IN HOURS


                                                                  RATIOS APPLIED TO PRECIPITATION
 OPERATION       STATION     AREA    PLAN           RATIO 1  RATIO 2  RATIO 3  RATIO 4  RATIO 5  RATIO 6  RATIO 7
                                                       1.00      .98      .97      .93      .91      .90      .88

 HYDROGRAPH AT
+                 NW158       .09     1   FLOW          24.      22.      22.      19.      18.      17.      16.
                                           TIME        3.83     3.83     3.83     3.83     3.83     3.83     3.83

 ROUTED TO
+                 RNW158      .09     1   FLOW          24.      22.      22.      19.      17.      17.      15.
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				TIME	4.08	4.08	4.08	4.17	4.17	4.17	4.17
HYDROGRAPH AT												
+	NW167	.18	1	FLOW	52.	49.	47.	41.	39.	37.	35.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	3.83
DIVERSION TO												
+	DNW176	.18	1	FLOW	26.	24.	24.	21.	19.	19.	17.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	DNW167	.18	1	FLOW	26.	24.	24.	21.	19.	19.	17.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	3.83
2 COMBINED AT												
+	CNW167	.27	1	FLOW	40.	38.	37.	30.	28.	28.	25.
				TIME	4.08	4.08	4.08	4.17	4.17	4.08	4.17
ROUTED TO												
+	RCNW167	.27	1	FLOW	37.	36.	35.	29.	26.	28.	25.
				TIME	4.17	4.25	4.25	4.25	4.33	4.25	4.25
HYDROGRAPH AT												
+	NW166	.09	1	FLOW	32.	30.	29.	26.	24.	23.	22.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	3.83
2 COMBINED AT												
+	CNW166	.36	1	FLOW	56.	53.	51.	44.	41.	40.	37.
				TIME	3.83	3.83	3.83	3.92	3.92	3.92	3.92
ROUTED TO												
+	RCNW166	.36	1	FLOW	54.	51.	50.	44.	41.	39.	36.
				TIME	4.08	4.08	4.08	4.08	4.08	4.17	4.17
HYDROGRAPH AT												
+	NW175	.25	1	FLOW	118.	113.	110.	100.	95.	92.	87.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
DIVERSION TO												
+	DNW186	.25	1	FLOW	58.	55.	54.	49.	46.	45.	43.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	DNW175	.25	1	FLOW	60.	58.	56.	51.	48.	47.	45.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
ROUTED TO												
+	RDNW175	.25	1	FLOW	60.	57.	56.	50.	48.	46.	44.
				TIME	3.83	3.83	3.83	3.83	3.92	3.92	3.92
DIVERSION TO												
+	DNW185	.25	1	FLOW	28.	26.	26.	23.	22.	21.	20.
				TIME	3.83	3.83	3.83	3.83	3.92	3.92	3.92
HYDROGRAPH AT												
+	DDNW175	.25	1	FLOW	32.	31.	30.	27.	26.	25.	24.
				TIME	3.83	3.83	3.83	3.83	3.92	3.92	3.92
ROUTED TO												
+	RDDNW175	.25	1	FLOW	32.	31.	30.	27.	26.	25.	24.
				TIME	3.92	3.92	3.92	4.00	4.00	4.00	4.00
HYDROGRAPH AT												
+	NW174	.27	1	FLOW	234.	226.	223.	208.	200.	197.	189.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75
3 COMBINED AT												
+	CCNW174	.88	1	FLOW	266.	253.	248.	224.	216.	211.	202.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
DIVERSION TO												
+	DNW184	.88	1	FLOW	116.	111.	108.	98.	94.	92.	88.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	DCCNW174	.88	1	FLOW	150.	143.	140.	126.	121.	119.	113.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
ROUTED TO												
+	RDCCNW17	.88	1	FLOW	149.	142.	139.	124.	119.	117.	111.
				TIME	3.92	3.92	3.92	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	NW173-A	.04	1	FLOW	39.	38.	37.	35.	34.	33.	32.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT												
+	CNW173-A	.92	1	FLOW	174.	167.	164.	149.	143.	140.	134.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
DIVERSION TO												

+	DIVMEI	.92	1	FLOW	89.	86.	84.	76.	73.	72.	69.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT											
+	DCNW173-	.92	1	FLOW	85.	82.	80.	73.	70.	69.	66.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT											
+	NW173-B	.10	1	FLOW	57.	55.	53.	49.	47.	46.	43.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	3.83
2 COMBINED AT											
+	CNW173	1.02	1	FLOW	142.	136.	133.	122.	117.	114.	109.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
DIVERSION TO											
+	DTNW173	1.02	1	FLOW	8.	8.	8.	8.	8.	8.	8.
				TIME	3.25	3.25	3.25	3.33	3.33	3.33	3.33
HYDROGRAPH AT											
+	DTCNW173	1.02	1	FLOW	134.	128.	125.	114.	109.	106.	101.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
DIVERSION TO											
+	DNW183	1.02	1	FLOW	56.	54.	53.	48.	46.	45.	43.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT											
+	DCNW173	1.02	1	FLOW	78.	74.	72.	65.	62.	61.	58.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
ROUTED TO											
+	RDCNW173	1.02	1	FLOW	77.	73.	72.	65.	61.	60.	57.
				TIME	3.92	3.92	3.92	3.92	3.92	3.92	3.92
HYDROGRAPH AT											
+	NW172	.14	1	FLOW	105.	101.	99.	92.	88.	86.	83.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT											
+	CNW172	1.16	1	FLOW	179.	172.	168.	154.	148.	145.	138.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT											
+	DTDNW183	.00	1	FLOW	56.	54.	53.	48.	46.	45.	43.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT											
+	EOFF2	.01	1	FLOW	7.	7.	7.	7.	6.	6.	6.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	EOFF1	.01	1	FLOW	7.	7.	6.	6.	6.	6.	5.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	EOFF3	.00	1	FLOW	4.	4.	4.	4.	4.	4.	4.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
4 COMBINED AT											
+	CP1	.02	1	FLOW	67.	64.	63.	58.	56.	55.	52.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75
HYDROGRAPH AT											
+	EON1	.02	1	FLOW	19.	19.	18.	17.	17.	16.	16.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	RAC	.00	1	FLOW	3.	3.	3.	3.	3.	3.	3.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
3 COMBINED AT											
+	CP2	.03	1	FLOW	83.	80.	78.	73.	70.	68.	65.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT											
+	DTDIVMEI	.00	1	FLOW	89.	86.	84.	76.	73.	72.	69.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT											
+	*DOF8	.01	1	FLOW	12.	12.	12.	11.	10.	10.	10.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	*ST5	.00	1	FLOW	2.	2.	2.	2.	2.	2.	2.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT											
+	*ECP6	.01	1	FLOW	14.	13.	13.	12.	12.	11.	11.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58

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 HYDROGRAPH AT
+                    MEI       .00     1   FLOW          5.      5.      5.      5.      5.      5.      5.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

 DIVERSION TO
+                  DMEI2       .00     1   FLOW          2.      2.      2.      2.      2.      2.      2.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

 HYDROGRAPH AT
+                  DMEI1       .00     1   FLOW          3.      3.      3.      3.      3.      3.      3.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

  3 COMBINED AT
+                    CP3       .02     1   FLOW         98.     94.     92.     85.     81.     80.     77.
                                           TIME        3.83    3.75    3.75    3.75    3.75    3.75    3.75

 HYDROGRAPH AT
+                 RDMEI2       .00     1   FLOW          2.      2.      2.      2.      2.      2.      2.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

  2 COMBINED AT
+                    CP4       .02     1   FLOW         99.     95.     93.     86.     83.     81.     78.
                                           TIME        3.75    3.75    3.75    3.75    3.75    3.75    3.75
1
                                       SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                           (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                                 INTERPOLATED TO
                                                                               COMPUTATION INTERVAL
            ISTAQ    ELEMENT      DT       PEAK    TIME TO     VOLUME      DT       PEAK    TIME TO     VOLUME
                                                      PEAK                                    PEAK

                                  (MIN)     (CFS)     (MIN)     (IN)     (MIN)     (CFS)     (MIN)       (IN)

          FOR PLAN = 1  RATIO= 1.00
            RNW158  MANE         4.62     23.85    247.53       .46      5.00     23.70    245.00         .46

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2117E+01 EXCESS= .0000E+00 OUTFLOW= .2194E+01 BASIN STORAGE= .2799E-03 PERCENT ERROR=  -3.7

          FOR PLAN = 1  RATIO=  .98
            RNW158  MANE         4.71     22.45    248.61       .43      5.00     22.39    245.00         .43

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2000E+01 EXCESS= .0000E+00 OUTFLOW= .2078E+01 BASIN STORAGE= .2730E-03 PERCENT ERROR=  -3.9

          FOR PLAN = 1  RATIO=  .97
            RNW158  MANE         4.76     21.68    249.26       .42      5.00     21.62    245.00         .42

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1943E+01 EXCESS= .0000E+00 OUTFLOW= .2016E+01 BASIN STORAGE= .2874E-03 PERCENT ERROR=  -3.8

          FOR PLAN = 1  RATIO=  .93
            RNW158  MANE         5.00     18.77    247.00       .37      5.00     18.58    250.00         .37

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1720E+01 EXCESS= .0000E+00 OUTFLOW= .1781E+01 BASIN STORAGE= .2526E-03 PERCENT ERROR=  -3.6

          FOR PLAN = 1  RATIO=  .91
            RNW158  MANE         5.00     17.46    248.35       .35      5.00     17.24    250.00         .35

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1612E+01 EXCESS= .0000E+00 OUTFLOW= .1666E+01 BASIN STORAGE= .2779E-03 PERCENT ERROR=  -3.3

          FOR PLAN = 1  RATIO=  .90
            RNW158  MANE         5.00     16.93    250.32       .35      5.00     16.88    250.00         .35

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1559E+01 EXCESS= .0000E+00 OUTFLOW= .1681E+01 BASIN STORAGE= .2349E-03 PERCENT ERROR=  -7.8

          FOR PLAN = 1  RATIO=  .88
            RNW158  MANE         5.00     15.67    251.63       .33      5.00     15.50    250.00         .33

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1456E+01 EXCESS= .0000E+00 OUTFLOW= .1575E+01 BASIN STORAGE= .2591E-03 PERCENT ERROR=  -8.2

          FOR PLAN = 1  RATIO= 1.00
             RCNW167  MANE         3.01     39.58    251.83       .31      5.00     37.40    250.00         .31

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .4457E+01 EXCESS= .0000E+00 OUTFLOW= .4462E+01 BASIN STORAGE= .2640E-03 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .98
             RCNW167  MANE         3.04     36.91    252.92       .29      5.00     35.68    255.00         .29
```

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4219E+01 EXCESS= .0000E+00 OUTFLOW= .4227E+01 BASIN STORAGE= .2656E-03 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .97

RCNW167	MANE	3.03	35.60	253.47	.29	5.00	34.67	255.00	.29	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4098E+01 EXCESS= .0000E+00 OUTFLOW= .4110E+01 BASIN STORAGE= .2432E-03 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .93

RCNW167	MANE	3.32	29.86	256.56	.25	5.00	28.71	255.00	.25	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3632E+01 EXCESS= .0000E+00 OUTFLOW= .3639E+01 BASIN STORAGE= .2482E-03 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .91

RCNW167	MANE	3.29	27.11	258.13	.24	5.00	26.08	260.00	.24	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3406E+01 EXCESS= .0000E+00 OUTFLOW= .3408E+01 BASIN STORAGE= .2663E-03 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .90

RCNW167	MANE	3.32	27.72	254.68	.23	5.00	27.61	255.00	.24	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3366E+01 EXCESS= .0000E+00 OUTFLOW= .3382E+01 BASIN STORAGE= .2632E-03 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .88

RCNW167	MANE	3.50	25.16	256.66	.22	5.00	24.50	255.00	.22	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3149E+01 EXCESS= .0000E+00 OUTFLOW= .3157E+01 BASIN STORAGE= .2636E-03 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= 1.00

RCNW166	MANE	5.00	54.76	244.57	.38	5.00	54.36	245.00	.38	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7172E+01 EXCESS= .0000E+00 OUTFLOW= .7234E+01 BASIN STORAGE= .8741E-03 PERCENT ERROR= -.9

FOR PLAN = 1 RATIO= .98

RCNW166	MANE	5.00	52.23	241.04	.36	5.00	51.20	245.00	.36	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6809E+01 EXCESS= .0000E+00 OUTFLOW= .6861E+01 BASIN STORAGE= .1047E-02 PERCENT ERROR= -.8

FOR PLAN = 1 RATIO= .97

RCNW166	MANE	5.00	50.72	241.57	.35	5.00	49.59	245.00	.35	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6624E+01 EXCESS= .0000E+00 OUTFLOW= .6672E+01 BASIN STORAGE= .8524E-03 PERCENT ERROR= -.7

FOR PLAN = 1 RATIO= .93

RCNW166	MANE	4.40	44.06	247.50	.31	5.00	43.76	245.00	.31	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5889E+01 EXCESS= .0000E+00 OUTFLOW= .5926E+01 BASIN STORAGE= .1087E-02 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .91

RCNW166	MANE	4.52	41.14	248.82	.29	5.00	40.56	245.00	.29	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5538E+01 EXCESS= .0000E+00 OUTFLOW= .5569E+01 BASIN STORAGE= .1104E-02 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .90

RCNW166	MANE	4.57	39.21	245.80	.29	5.00	38.66	250.00	.29	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5450E+01 EXCESS= .0000E+00 OUTFLOW= .5473E+01 BASIN STORAGE= .1001E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .88

RCNW166	MANE	4.70	36.34	247.13	.27	5.00	35.73	250.00	.27	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5100E+01 EXCESS= .0000E+00 OUTFLOW= .5117E+01 BASIN STORAGE= .1139E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= 1.00

RDNW175	MANE	1.90	60.31	233.73	.39	5.00	60.17	230.00	.39	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5228E+01 EXCESS= .0000E+00 OUTFLOW= .5228E+01 BASIN STORAGE= .2694E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .98

RDNW175	MANE	2.01	57.47	231.67	.38	5.00	57.34	230.00	.38	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5000E+01 EXCESS= .0000E+00 OUTFLOW= .5002E+01 BASIN STORAGE= .2859E-04 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .97

RDNW175	MANE	2.00	56.11	232.19	.37	5.00	55.84	230.00	.37	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4887E+01 EXCESS= .0000E+00 OUTFLOW= .4888E+01 BASIN STORAGE= .2308E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .93

RDNW175	MANE	2.08	50.69	232.81	.33	5.00	50.20	230.00	.33	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4445E+01 EXCESS= .0000E+00 OUTFLOW= .4448E+01 BASIN STORAGE= .2645E-04 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .91

RDNW175	MANE	2.13	48.06	234.46	.32	5.00	47.70	235.00	.32	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4229E+01 EXCESS= .0000E+00 OUTFLOW= .4230E+01 BASIN STORAGE= .2855E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .90

RDNW175	MANE	2.09	46.85	232.97	.31	5.00	46.44	235.00	.31	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4123E+01 EXCESS= .0000E+00 OUTFLOW= .4124E+01 BASIN STORAGE= .2398E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .88

RDNW175	MANE	2.09	44.52	234.10	.29	5.00	44.00	235.00	.29	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3913E+01 EXCESS= .0000E+00 OUTFLOW= .3917E+01 BASIN STORAGE= .3065E-04 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= 1.00

RDDNW175	MANE	2.37	32.43	235.26	.21	5.00	32.31	235.00	.21	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2823E+01 EXCESS= .0000E+00 OUTFLOW= .2828E+01 BASIN STORAGE= .6020E-04 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .98

RDDNW175	MANE	2.53	30.79	236.61	.20	5.00	30.54	235.00	.20	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2701E+01 EXCESS= .0000E+00 OUTFLOW= .2704E+01 BASIN STORAGE= .4872E-04 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .97

RDDNW175	MANE	2.51	30.02	236.89	.20	5.00	29.85	235.00	.20	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2642E+01 EXCESS= .0000E+00 OUTFLOW= .2645E+01 BASIN STORAGE= .5926E-04 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .93

RDDNW175	MANE	2.52	27.10	236.68	.18	5.00	26.85	240.00	.18	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2404E+01 EXCESS= .0000E+00 OUTFLOW= .2404E+01 BASIN STORAGE= .5780E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .91

RDDNW175	MANE	2.72	25.72	238.01	.17	5.00	25.57	240.00	.17	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2283E+01 EXCESS= .0000E+00 OUTFLOW= .2289E+01 BASIN STORAGE= .5307E-04 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .90

RDDNW175	MANE	2.71	25.01	238.59	.17	5.00	24.83	240.00	.17	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2228E+01 EXCESS= .0000E+00 OUTFLOW= .2236E+01 BASIN STORAGE= .5482E-04 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .88

RDDNW175	MANE	2.76	23.69	239.45	.16	5.00	23.57	240.00	.16	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2116E+01 EXCESS= .0000E+00 OUTFLOW= .2122E+01 BASIN STORAGE= .6130E-04 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= 1.00

RDCCNW17	MANE	1.37	149.33	233.28	.36	5.00	148.84	235.00	.36	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1681E+02 EXCESS= .0000E+00 OUTFLOW= .1682E+02 BASIN STORAGE= .3757E-03 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .98

RDCCNW17	MANE	1.42	142.33	233.60	.34	5.00	141.80	235.00	.34	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1616E+02 EXCESS= .0000E+00 OUTFLOW= .1617E+02 BASIN STORAGE= .3788E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .97

RDCCNW17	MANE	1.45	139.28	233.48	.34	5.00	138.67	235.00	.34	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1584E+02 EXCESS= .0000E+00 OUTFLOW= .1584E+02 BASIN STORAGE= .3872E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .93

RDCCNW17	MANE	1.46	125.52	233.11	.31	5.00	124.18	230.00	.31	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1456E+02 EXCESS= .0000E+00 OUTFLOW= .1456E+02 BASIN STORAGE= .4064E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .91

RDCCNW17	MANE	1.51	120.84	232.50	.30	5.00	119.08	230.00	.30	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1394E+02 EXCESS= .0000E+00 OUTFLOW= .1394E+02 BASIN STORAGE= .3861E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .90

RDCCNW17	MANE	1.47	118.69	232.93	.29	5.00	116.51	230.00	.29	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1368E+02 EXCESS= .0000E+00 OUTFLOW= .1368E+02 BASIN STORAGE= .4121E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .88

RDCCNW17	MANE	1.43	112.94	233.20	.28	5.00	111.33	230.00	.28	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1306E+02 EXCESS= .0000E+00 OUTFLOW= .1306E+02 BASIN STORAGE= .3828E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= 1.00

RDCNW173	MANE	1.97	77.60	233.92	.12	5.00	76.74	235.00	.12	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6785E+01 EXCESS= .0000E+00 OUTFLOW= .6792E+01 BASIN STORAGE= .8752E-04 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .98

RDCNW173	MANE	2.12	73.84	233.97	.12	5.00	73.14	235.00	.12	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6478E+01 EXCESS= .0000E+00 OUTFLOW= .6476E+01 BASIN STORAGE= .1088E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .97

RDCNW173	MANE	2.12	72.07	234.41	.12	5.00	71.61	235.00	.12	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6328E+01 EXCESS= .0000E+00 OUTFLOW= .6327E+01 BASIN STORAGE= .9367E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .93

RDCNW173	MANE	2.21	65.02	232.51	.11	5.00	64.66	235.00	.11	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5721E+01 EXCESS= .0000E+00 OUTFLOW= .5725E+01 BASIN STORAGE= .1052E-03 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .91

RDCNW173	MANE	2.21	62.02	233.57	.10	5.00	61.38	235.00	.10	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5435E+01 EXCESS= .0000E+00 OUTFLOW= .5434E+01 BASIN STORAGE= .9757E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .90

RDCNW173	MANE	2.23	60.53	234.03	.10	5.00	59.95	235.00	.10	

```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .5305E+01 EXCESS= .0000E+00 OUTFLOW= .5303E+01 BASIN STORAGE= .1093E-03 PERCENT ERROR=    .0


          FOR PLAN = 1  RATIO=  .88
          RDCNW173  MANE         2.32     57.31    233.16       .09      5.00     56.94    235.00         .09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5021E+01 EXCESS= .0000E+00 OUTFLOW= .5025E+01 BASIN STORAGE= .9429E-04 PERCENT ERROR=   -.1



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

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *               JUN   1998             *
 *            VERSION 4.1               *
 *                                      *
 *  RUN DATE   15OCT24  TIME  14:03:18  *
 *                                      *
 ****************************************
```

```
****************************************
*                                      *
*    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


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

                        *DIAGRAM
 *** FREE ***
              1         ID
              2         ID   ********************************************
              3         ID   *                                          *
              4         ID   *    RACEL AND MAVERICK                    *
              5         ID   *    EXISTING CONDITION                    *
              6         ID   *                                          *
              7         ID   *    PROJECT No:_ _ _ 291400040            *
              8         ID   *    FILE: _ _ _ _ _ _EX_10.H1             *
              9         ID   *    DATE MODELED:_ _ 10/14/24             *
             10         ID   *    MODELED BY:_ _ _ AA                   *
             11         ID   *                                          *
             12         ID   ********************************************
             13         ID
             14         ID   ********************************************
             15         ID   *    RETURN PERIOD:_ _& 10- YEAR           *
             16         ID   *    DISTRIBUTION:_ _ 6-HOUR SDN3          *
             17         ID   ********************************************
             18         ID
             19         ID   ********************************************
             20         ID
             21         ID
             22         ID   JR CARD RATIOS REPRESENT DEPTH-AREA REDUCTION FACTORS (DARF'S)
             23         ID
             24         ID   10-YEAR,  6-HOUR STORM,  SDN3
             25         ID   DARF RATIOS FOR AREAS OF 0, 1, 2, 6 AND 10 SQUARE MILES FOR 10-YEAR
             26         ID   DARF RATIOS HAVE BEEN ADJUSTED FOR 10-YEAR FLOWS WITH A FACTOR OF 0.57
             27         ID
             28         IT       5       0       0     300
             29         IO       5       0       0
             30         IN       5       0       0
             31         JR    PREC    0.57    0.55    0.53   0.513    0.49
                        *
                        *    BEGIN NORTHWEST NEIGHBORHOOD STUDY PHASE 2 REFERENCE **********************
                        *

             32         KK   NW158
             33         BA    0.09
             34         PB   2.774
             35         PC   0.000   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
             36         PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
             37         PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
             38         PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
             39         PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
             40         PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
             41         PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
             42         PC   0.998   0.999   1.000
             43         LS       0    66.0
             44         UD   0.278
                        *
```

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

  45          KK  RNW158
  46          KM  ROUTE THROUGH NW167
  47          RK    3800  0.0066    0.03       0    TRAP      50       2
              *
  48          KK   NW167
  49          BA    0.18
  50          PB   2.774
  51          LS       0 66.8653
  52          UD   0.278
              *
  53          KK  DNW167
  54          KM  DIVERT 50% TO LOG CABIN WAY
  55          DT  DNW176
  56          DI       0     100     500    1000    5000
  57          DQ       0      50     250     500    2500
              *
  58          KK  CNW167
  59          KM  COMBINE DNW167 WITH RNW158
  60          HC       2
              *
  61          KK RCNW167
  62          KM  ROUTE TO NW166
  63          RK    2640   0.025    0.03       0    TRAP      50       2
              *
  64          KK   NW166
  65          BA    0.09
  66          PB   2.774
  67          LS       0 69.3212
  68          UD   0.289
              *
  69          KK  CNW166
  70          KM  COMBINE NW166 WITH RNW167
  71          HC       2
              *
  72          KK RCNW166
  73          KM  ROUTE THROUGH NW174
  74          RK    4000   0.009    0.03       0    TRAP      50       2
              *
  75          KK   NW175
  76          BA    0.25
  77          PB   2.774
  78          LS       0    74.0
  79          UD   0.322
              *
```



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

  80          KK  DNW175
  81          KM  FLOW SPLIT AT TORREY PINES AND IRON MTN
  82          KM  DIVERSION TO IRON MTN
  83          KM  NO CROWNS HELD IN EITHER STREET
  84          DT  DNW186
  85          DI       0     100     500    1000    5000
  86          DQ       0      49     240     502    2654
              *
  87          KK RDNW175
  88          KM  ROUTE TO BRENT
  89          RK    1450   0.007    0.02       0    TRAP      80       2
              *
  90          KK DDNW175
  91          KM  FLOW SPLIT AT TORREY PINES AND BRENT
  92          KM  DIVERSION TO BRENT
  93          KM  NO CROWNS HELD IN EITHER STREET
  94          DT  DNW185
  95          DI       0     100     500    1000    5000
  96          DQ       0      46     213     409    1938
              *
  97          KKRDDNW175
  98          KM  ROUTE TO NW174
  99          RK    1450  0.0072    0.02       0    TRAP      80       2
              *
 100          KK   NW174
 101          BA    0.27
 102          PB   2.774
```

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 103          LS       0    84.7
 104          UD   0.320
              *

 105          KK CCNW174
 106          KM  COMBINE RDDNW175 WITH NW174 AND RCNW166
 107          HC       3
              *

 108          KKDCCNW174
 109          KM  FLOW SPLIT AT HORSE AND TORREY PINES
 110          KM  DIVERSION TO HORSE
 111          KM  NO CROWNS HELD IN EITHER STREET
 112          DT  DNW184
 113          DI       0     100     500    1000    5000
 114          DQ       0      44     218     436    2179
              *
```

1 HEC-1 INPUT PAGE 4

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

 115          KKRDCCNW174
 116          KM  ROUTE TO NW173
 117          RK    1400  0.0072    0.02       0    TRAP      80       2
              *
              *    END NORTHWEST NEIGHBORHOOD STUDY PHASE 2 REFERENCE ***********************
              *

 118          KK NW173-A
 119          KM   REFERENCED/REVISED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 120          BA    0.04
 121          PB   2.774
 122          LS       0    83.7
 123          UD   0.207
              *

 124          KKCNW173-A
 125          KM  COMBINE NW173-A WITH RDCCNW174
 126          HC       2
              *

 127          KKDCNW173-A
 128          KM  FLOW SPLIT AT TORREY PINES AND MEISENHEIMER
 129          KM  DIVERSION TO MEISENHEIMER
 130          KM  NO CROWNS HELD IN EITHER STREET
 131          DT  DIVMEI
 132          DI       0     100     500    1000    5000
 133          DQ       0      51     257     513    2557
              *

 134          KK NW173-B
 135          KM   REFERENCED/REVISED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 136          BA    0.10
 137          PB   2.774
 138          LS       0   77.10
 139          UD   0.327
              *

 140          KK  CNW173
 141          KM  COMBINE NW173 WITH RDCCNW174
 142          HC       2
              *

 143          KKDTCNW173
 144          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 145          KM  DIVERT 10-YEAR FLOWS
 146          DT DTNW173
 147          DI       0       9     100     500    1000    5000
 148          DQ       0       8       8       8       8       8
              *
```

1 HEC-1 INPUT PAGE 5

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

 149          KK DCNW173
 150          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 151          KM  FLOW SPLIT AT TORREY PINES AND RACEL
 152          KM  DIVERSION TO RACEL
 153          KM  NO CROWNS HELD IN EITHER STREET
 154          DT  DNW183
 155          DI       0     100     500    1000    5000
 156          DQ       0      43     199     380    1797
              *

 157          KKRDCNW173
 158          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 159          KM  ROUTE TO NW172
 160          RK    1400   0.004    0.02       0    TRAP      80       2
              *
```

```
 161          KK   NW172
 162          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 163          BA    0.14
 164          PB   2.774
 165          LS       0    81.9
 166          UD   0.326
              *

 167          KK  CNW172
 168          KM  COMBINE NW172 WITH RDCNW173
 169          HC       2
              *

 170          KKDTDNW183
 171          KM  RETRIEVE RACEL STREET FLOW SPLIT
 172          DR  DNW183
              *

 173          KK   EOFF2
 174          BA   .0075
 175          PB    2.77
 176          LS       0    80.6
 177          UD    .138
              *

 178          KK   EOFF1
 179          BA   .0068
 180          LS       0    80.6
 181          UD    .132
              *

 182          KK   EOFF3
 183          BA   .0031
 184          LS       0    88.8
 185          UD    .129
              *
```



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

 186          KK     CP1
 187          KM    COMBINED DNW183, EOFF1, EOFF2, & EOFF3
 188          HC       4
              *

 189          KK    EON1
 190          BA   .0153
 191          LS       0    85.7
 192          UD    .138
              *

 193          KK     RAC
 194          BA   .0019
 195          LS       0    92.0
 196          UD    .128
              *

 197          KK     CP2
 198          KM    COMBINED CP1, EON1, & RAC
 199          HC       3
              *

 200          KKDTDIVMEI
 201          KM  RETRIEVE MEISENHEIMER AVE FLOW SPLIT
 202          DR  DIVMEI
              *

 203          KK   *DOF8
 204          KM    REFERENCED BASIN FROM LA CRESENTA STUDY
 205          BA    .013
 206          LS       0    80.0
 207          UD   .1456
              *

 208          KK    *ST5
 209          KM    REFERENCED BASIN FROM LA CRESENTA STUDY
 210          BA    .001
 211          LS       0    98.0
 212          UD   .0538
              *

 213          KK   *ECP6
 214          KM    REFERENCED CP FROM LA CRESENTA STUDY
 215          KM    COMBINED *DOF8 & *ST5
 216          HC       2
              *

 217          KK     MEI
 218          BA   .0031
```

```
           219          LS       0    95.9
           220          UD    .150
                        *
1                                                HEC-1 INPUT                                                PAGE  7

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


           221          KK   DMEI1
           222          KM   3 CFS DIVERTED TO CP4
           223          DT   DMEI2
           224          DI       0       3       5
           225          DQ       0       1       2
                        *

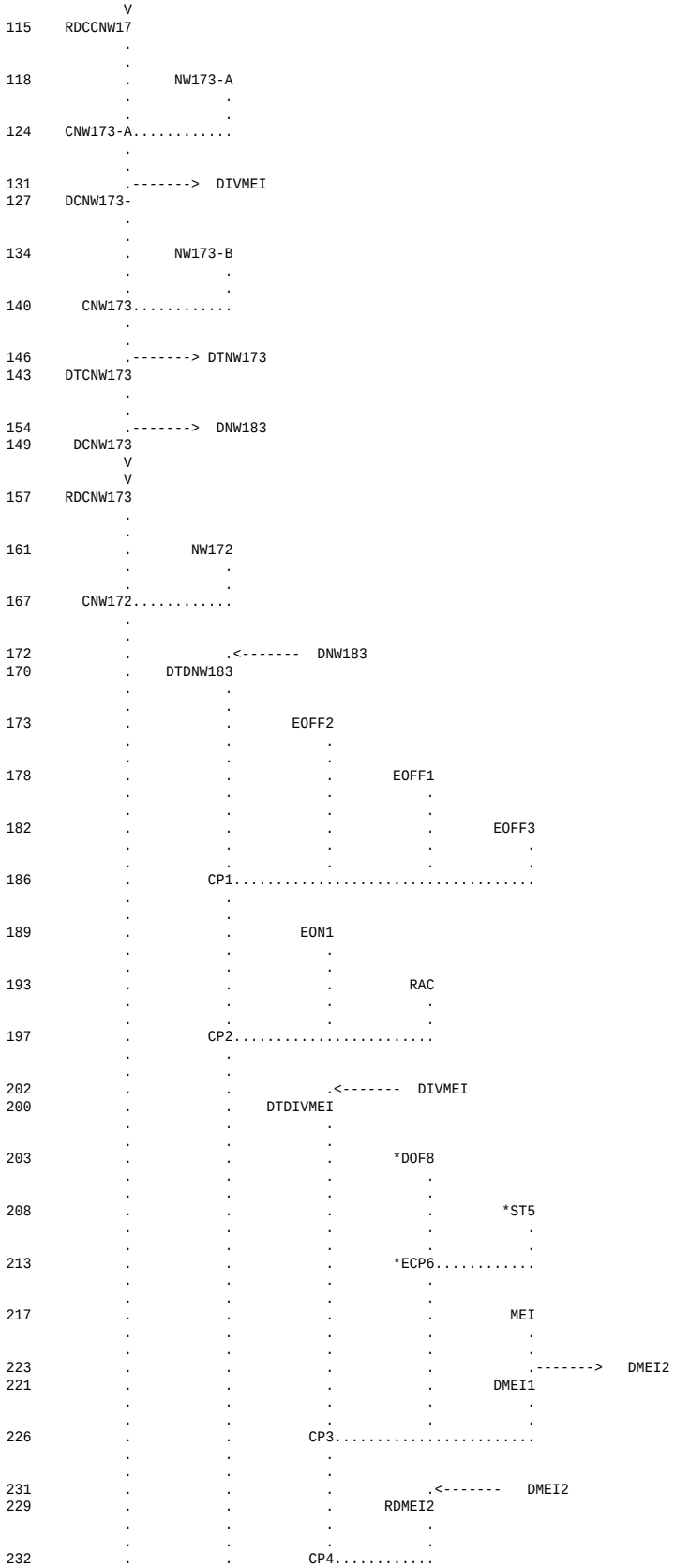
           226          KK     CP3
           227          KM    COMBINED MEI, *ECP6 & DMEI1
           228          HC       3
                        *

           229          KK  RDMEI2
           230          KM   RETREIVE DIVERTED FLOW FROM MEI
           231          DR   DMEI2
                        *

           232          KK     CP4
           233          KM    COMBINED CP3 & DMEI2
           234          HC       2
                        *
           235          ZZ
1
               SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    32       NW158
                V
                V
    45      RNW158
                .
                .
    48          .       NW167
                .           .
                .           .
    55          .           .-------->  DNW176
    53          .      DNW167
                .           .
                .           .
    58      CNW167.............
                V
                V
    61     RCNW167
                .
                .
    64          .       NW166
                .           .
                .           .
    69      CNW166.............
                V
                V
    72     RCNW166
                .
                .
    75          .       NW175
                .           .
                .           .
    84          .           .-------->  DNW186
    80          .      DNW175
                .           V
                .           V
    87          .     RDNW175
                .           .
                .           .
    94          .           .-------->  DNW185
    90          .     DDNW175
                .           V
                .           V
    97          .    RDDNW175
                .           .
                .           .
   100          .           .       NW174
                .           .           .
                .           .           .
   105     CCNW174.......................
                .
                .
   112          .-------->  DNW184
   108    DCCNW174
                V
```


RDCCNW17
NW173-A
CNW173-A
DIVMEI
DCNW173-
NW173-B
CNW173
DTNW173
DTCNW173
DNW183
DCNW173
RDCNW173
NW172
CNW172
DNW183
DTDNW183
EOFF2
EOFF1
EOFF3
CP1
EON1
RAC
CP2
DIVMEI
DTDIVMEI
*DOF8
*ST5
*ECP6
MEI
DMEI2
DMEI1
CP3
DMEI2
RDMEI2
CP4

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *               JUN   1998             *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                    *         609 SECOND STREET            *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   15OCT24  TIME  14:03:18  *                                    *           (916) 756-1104             *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
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                        *********************************************
                        *                                           *
                        *    RACEL AND MAVERICK                     *
                        *    EXISTING CONDITION                     *
                        *                                           *
                        *    PROJECT No:_ _ _ 291400040             *
                        *    FILE: _ _ _ _ _ _EX_10.H1              *
                        *    DATE MODELED:_ _ 10/14/24              *
                        *    MODELED BY:_ _ _ AA                    *
                        *                                           *
                        *********************************************

                        *********************************************
                        *    RETURN PERIOD:_ _& 10- YEAR            *
                        *    DISTRIBUTION:_ _ 6-HOUR SDN3           *
                        *********************************************

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


                        JR CARD RATIOS REPRESENT DEPTH-AREA REDUCTION FACTORS (DARF'S)

                        10-YEAR,  6-HOUR STORM,  SDN3
                        DARF RATIOS FOR AREAS OF 0, 1, 2, 6 AND 10 SQUARE MILES FOR 10-YEAR
                        DARF RATIOS HAVE BEEN ADJUSTED FOR 10-YEAR FLOWS WITH A FACTOR OF 0.57


   29 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

      JP          MULTI-PLAN OPTION
                       NPLAN           1  NUMBER OF PLANS

      JR          MULTI-RATIO OPTION
                      RATIOS OF PRECIPITATION
                      .57       .55       .53       .51       .49
1

               PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
                                FLOWS IN CUBIC FEET PER SECOND,  AREA IN SQUARE MILES
                                                TIME TO PEAK IN HOURS


                                                                    RATIOS APPLIED TO PRECIPITATION
 OPERATION       STATION     AREA    PLAN           RATIO 1  RATIO 2  RATIO 3  RATIO 4  RATIO 5
                                                        .57      .55      .53      .51      .49

 HYDROGRAPH AT
+                 NW158       .09     1   FLOW           2.       2.       2.       1.       1.
                                           TIME         5.00     5.00     5.00     5.00     5.00

 ROUTED TO
```

+	RNW158	.09	1	FLOW	2.	2.	2.	1.	1.
				TIME	5.83	5.83	5.92	6.00	6.17
HYDROGRAPH AT									
+	NW167	.18	1	FLOW	5.	4.	4.	3.	3.
				TIME	5.00	5.00	5.00	5.00	5.00
DIVERSION TO									
+	DNW176	.18	1	FLOW	3.	2.	2.	2.	1.
				TIME	5.00	5.00	5.00	5.00	5.00
HYDROGRAPH AT									
+	DNW167	.18	1	FLOW	3.	2.	2.	2.	1.
				TIME	5.00	5.00	5.00	5.00	5.00
2 COMBINED AT									
+	CNW167	.27	1	FLOW	4.	2.	2.	2.	1.
				TIME	5.08	5.83	5.00	5.00	5.00
ROUTED TO									
+	RCNW167	.27	1	FLOW	4.	2.	2.	2.	1.
				TIME	5.33	6.17	5.33	5.33	5.42
HYDROGRAPH AT									
+	NW166	.09	1	FLOW	4.	3.	3.	2.	2.
				TIME	3.92	3.92	5.00	5.00	5.00
2 COMBINED AT									
+	CNW166	.36	1	FLOW	5.	5.	4.	3.	3.
				TIME	5.25	5.08	5.08	5.08	5.08
ROUTED TO									
+	RCNW166	.36	1	FLOW	5.	4.	4.	3.	3.
				TIME	5.75	5.67	5.75	5.75	5.83
HYDROGRAPH AT									
+	NW175	.25	1	FLOW	23.	20.	17.	15.	12.
				TIME	3.92	3.92	3.92	3.92	3.92
DIVERSION TO									
+	DNW186	.25	1	FLOW	11.	10.	8.	7.	6.
				TIME	3.92	3.92	3.92	3.92	3.92
HYDROGRAPH AT									
+	DNW175	.25	1	FLOW	12.	10.	9.	8.	6.
				TIME	3.92	3.92	3.92	3.92	3.92
ROUTED TO									
+	RDNW175	.25	1	FLOW	12.	10.	9.	7.	6.
				TIME	4.00	4.00	4.00	4.08	4.08
DIVERSION TO									
+	DNW185	.25	1	FLOW	5.	5.	4.	3.	3.
				TIME	4.00	4.00	4.00	4.08	4.08
HYDROGRAPH AT									
+	DDNW175	.25	1	FLOW	6.	5.	5.	4.	3.
				TIME	4.00	4.00	4.00	4.08	4.08
ROUTED TO									
+	RDDNW175	.25	1	FLOW	6.	5.	5.	4.	3.
				TIME	4.17	4.17	4.25	4.25	4.33
HYDROGRAPH AT									
+	NW174	.27	1	FLOW	83.	76.	70.	65.	59.
				TIME	3.75	3.75	3.75	3.83	3.83
3 COMBINED AT									
+	CCNW174	.88	1	FLOW	83.	76.	70.	65.	59.
				TIME	3.75	3.75	3.75	3.83	3.83
DIVERSION TO									
+	DNW184	.88	1	FLOW	36.	34.	31.	29.	26.
				TIME	3.75	3.75	3.75	3.83	3.83
HYDROGRAPH AT									
+	DCCNW174	.88	1	FLOW	46.	43.	39.	37.	33.
				TIME	3.75	3.75	3.75	3.83	3.83
ROUTED TO									
+	RDCCNW17	.88	1	FLOW	46.	43.	39.	36.	32.
				TIME	3.83	3.83	3.83	3.83	3.92
HYDROGRAPH AT									
+	NW173-A	.04	1	FLOW	14.	13.	12.	11.	10.
				TIME	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT									
+	CNW173-A	.92	1	FLOW	57.	52.	48.	45.	40.
				TIME	3.83	3.83	3.83	3.83	3.83

DIVERSION TO									
+	DIVMEI	.92	1	FLOW	29.	27.	25.	23.	20.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	DCNW173-	.92	1	FLOW	28.	26.	24.	22.	20.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	NW173-B	.10	1	FLOW	14.	12.	11.	10.	8.
				TIME	3.83	3.83	3.83	3.83	3.92
2 COMBINED AT									
+	CNW173	1.02	1	FLOW	42.	38.	35.	31.	28.
				TIME	3.83	3.83	3.83	3.83	3.83
DIVERSION TO									
+	DTNW173	1.02	1	FLOW	8.	8.	8.	8.	8.
				TIME	3.50	3.50	3.58	3.58	3.58
HYDROGRAPH AT									
+	DTCNW173	1.02	1	FLOW	34.	30.	27.	23.	20.
				TIME	3.83	3.83	3.83	3.83	3.83
DIVERSION TO									
+	DNW183	1.02	1	FLOW	14.	13.	11.	10.	8.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	DCNW173	1.02	1	FLOW	19.	17.	15.	13.	11.
				TIME	3.83	3.83	3.83	3.83	3.83
ROUTED TO									
+	RDCNW173	1.02	1	FLOW	19.	17.	15.	13.	11.
				TIME	3.92	3.92	4.00	4.00	4.00
HYDROGRAPH AT									
+	NW172	.14	1	FLOW	33.	30.	27.	25.	22.
				TIME	3.83	3.83	3.83	3.83	3.83
2 COMBINED AT									
+	CNW172	1.16	1	FLOW	49.	45.	40.	36.	31.
				TIME	3.92	3.92	3.92	3.92	3.92
HYDROGRAPH AT									
+	DTDNW183	.00	1	FLOW	14.	13.	11.	10.	8.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	EOFF2	.01	1	FLOW	2.	2.	2.	2.	1.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	EOFF1	.01	1	FLOW	2.	2.	2.	2.	1.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	EOFF3	.00	1	FLOW	2.	2.	2.	2.	1.
				TIME	3.58	3.58	3.58	3.58	3.58
4 COMBINED AT									
+	CP1	.02	1	FLOW	18.	16.	14.	13.	11.
				TIME	3.75	3.75	3.83	3.83	3.83
HYDROGRAPH AT									
+	EON1	.02	1	FLOW	7.	7.	6.	6.	5.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	RAC	.00	1	FLOW	1.	1.	1.	1.	1.
				TIME	3.58	3.58	3.58	3.58	3.58
3 COMBINED AT									
+	CP2	.03	1	FLOW	23.	21.	19.	17.	15.
				TIME	3.75	3.75	3.75	3.75	3.75
HYDROGRAPH AT									
+	DTDIVMEI	.00	1	FLOW	29.	27.	25.	23.	20.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	*DOF8	.01	1	FLOW	4.	3.	3.	3.	2.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*ST5	.00	1	FLOW	1.	1.	1.	1.	1.
				TIME	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT									
+	*ECP6	.01	1	FLOW	4.	4.	4.	3.	3.
				TIME	3.58	3.58	3.58	3.58	3.58

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 HYDROGRAPH AT
+                    MEI       .00     1   FLOW          3.       3.       3.       3.       2.
                                           TIME        3.58     3.58     3.58     3.58     3.58

 DIVERSION TO
+                  DMEI2       .00     1   FLOW          1.       1.       1.       1.       1.
                                           TIME        3.58     3.58     3.58     3.58     3.58

 HYDROGRAPH AT
+                  DMEI1       .00     1   FLOW          2.       2.       2.       2.       2.
                                           TIME        3.58     3.58     3.58     3.58     3.58

  3 COMBINED AT
+                    CP3       .02     1   FLOW         32.      30.      28.      25.      23.
                                           TIME        3.75     3.75     3.83     3.83     3.83

 HYDROGRAPH AT
+                 RDMEI2       .00     1   FLOW          1.       1.       1.       1.       1.
                                           TIME        3.58     3.58     3.58     3.58     3.58

  2 COMBINED AT
+                    CP4       .02     1   FLOW         33.      30.      28.      26.      23.
                                           TIME        3.75     3.75     3.83     3.83     3.83
1
                                       SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                           (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                                 INTERPOLATED TO
                                                                                COMPUTATION INTERVAL
            ISTAQ    ELEMENT      DT       PEAK    TIME TO     VOLUME      DT       PEAK    TIME TO     VOLUME
                                                      PEAK                                    PEAK

                                  (MIN)     (CFS)      (MIN)     (IN)     (MIN)     (CFS)     (MIN)       (IN)

          FOR PLAN = 1  RATIO=  .57
            RNW158  MANE         4.97      2.25    345.76       .06      5.00      2.24    350.00         .06

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2554E+00 EXCESS= .0000E+00 OUTFLOW= .2884E+00 BASIN STORAGE= .7062E-03 PERCENT ERROR= -13.2

          FOR PLAN = 1  RATIO=  .55
            RNW158  MANE         5.00      1.96    350.67       .05      5.00      1.94    350.00         .05

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2086E+00 EXCESS= .0000E+00 OUTFLOW= .2240E+00 BASIN STORAGE= .7397E-03 PERCENT ERROR=  -7.8

          FOR PLAN = 1  RATIO=  .53
            RNW158  MANE         5.00      1.63    353.18       .04      5.00      1.63    355.00         .04

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1661E+00 EXCESS= .0000E+00 OUTFLOW= .1751E+00 BASIN STORAGE= .7079E-03 PERCENT ERROR=  -5.8

          FOR PLAN = 1  RATIO=  .51
            RNW158  MANE         5.00      1.40    359.60       .03      5.00      1.40    360.00         .03

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1336E+00 EXCESS= .0000E+00 OUTFLOW= .1406E+00 BASIN STORAGE= .7242E-03 PERCENT ERROR=  -5.8

          FOR PLAN = 1  RATIO=  .49
            RNW158  MANE         5.00      1.09    368.47       .02      5.00      1.06    370.00         .02

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .9478E-01 EXCESS= .0000E+00 OUTFLOW= .1031E+00 BASIN STORAGE= .7173E-03 PERCENT ERROR=  -9.6

          FOR PLAN = 1  RATIO=  .57
            RCNW167 MANE         5.00      3.63    321.75       .04      5.00      3.58    320.00         .04

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .5898E+00 EXCESS= .0000E+00 OUTFLOW= .5956E+00 BASIN STORAGE= .8170E-03 PERCENT ERROR=  -1.1

          FOR PLAN = 1  RATIO=  .55
            RCNW167 MANE         5.00      2.22    372.81       .03      5.00      2.21    370.00         .03

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .4740E+00 EXCESS= .0000E+00 OUTFLOW= .4845E+00 BASIN STORAGE= .8350E-03 PERCENT ERROR=  -2.4

          FOR PLAN = 1  RATIO=  .53
            RCNW167 MANE         5.00      1.90    320.29       .03      5.00      1.89    320.00         .03

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3778E+00 EXCESS= .0000E+00 OUTFLOW= .3871E+00 BASIN STORAGE= .8108E-03 PERCENT ERROR=  -2.7

          FOR PLAN = 1  RATIO=  .51
```

RCNW167 MANE 4.69 1.63 322.96 .02 5.00 1.61 320.00 .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3069E+00 EXCESS= .0000E+00 OUTFLOW= .3134E+00 BASIN STORAGE= .8976E-03 PERCENT ERROR= -2.4

FOR PLAN = 1 RATIO= .49
RCNW167 MANE 5.00 1.30 326.27 .02 5.00 1.30 325.00 .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2253E+00 EXCESS= .0000E+00 OUTFLOW= .2326E+00 BASIN STORAGE= .8441E-03 PERCENT ERROR= -3.6

FOR PLAN = 1 RATIO= .57
RCNW166 MANE 4.74 5.35 346.42 .06 5.00 5.33 345.00 .06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1049E+01 EXCESS= .0000E+00 OUTFLOW= .1073E+01 BASIN STORAGE= .3790E-02 PERCENT ERROR= -2.6

FOR PLAN = 1 RATIO= .55
RCNW166 MANE 5.00 4.51 341.29 .05 5.00 4.49 340.00 .05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8734E+00 EXCESS= .0000E+00 OUTFLOW= .8921E+00 BASIN STORAGE= .3951E-02 PERCENT ERROR= -2.6

FOR PLAN = 1 RATIO= .53
RCNW166 MANE 4.82 3.83 342.11 .04 5.00 3.82 345.00 .04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7159E+00 EXCESS= .0000E+00 OUTFLOW= .7373E+00 BASIN STORAGE= .3900E-02 PERCENT ERROR= -3.5

FOR PLAN = 1 RATIO= .51
RCNW166 MANE 5.00 3.24 346.41 .03 5.00 3.23 345.00 .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5935E+00 EXCESS= .0000E+00 OUTFLOW= .6137E+00 BASIN STORAGE= .3767E-02 PERCENT ERROR= -4.0

FOR PLAN = 1 RATIO= .49
RCNW166 MANE 5.00 2.51 348.76 .02 5.00 2.50 350.00 .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4528E+00 EXCESS= .0000E+00 OUTFLOW= .4743E+00 BASIN STORAGE= .3924E-02 PERCENT ERROR= -5.6

FOR PLAN = 1 RATIO= .57
RDNW175 MANE 3.53 11.61 241.91 .09 5.00 11.58 240.00 .09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1195E+01 EXCESS= .0000E+00 OUTFLOW= .1200E+01 BASIN STORAGE= .8359E-04 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .55
RDNW175 MANE 3.69 10.05 240.21 .08 5.00 10.03 240.00 .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1062E+01 EXCESS= .0000E+00 OUTFLOW= .1067E+01 BASIN STORAGE= .7535E-04 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .53
RDNW175 MANE 3.89 8.70 242.37 .07 5.00 8.57 240.00 .07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9357E+00 EXCESS= .0000E+00 OUTFLOW= .9410E+00 BASIN STORAGE= .8239E-04 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .51
RDNW175 MANE 4.09 7.47 244.50 .06 5.00 7.42 245.00 .06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8334E+00 EXCESS= .0000E+00 OUTFLOW= .8383E+00 BASIN STORAGE= .6560E-04 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .49
RDNW175 MANE 4.39 6.08 244.68 .05 5.00 6.06 245.00 .05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7029E+00 EXCESS= .0000E+00 OUTFLOW= .7070E+00 BASIN STORAGE= .8134E-04 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .57
RDDNW175 MANE 3.29 6.24 249.76 .05 5.00 6.23 250.00 .05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6478E+00 EXCESS= .0000E+00 OUTFLOW= .6548E+00 BASIN STORAGE= .1619E-03 PERCENT ERROR= -1.1

FOR PLAN = 1 RATIO= .55

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          RDDNW175  MANE         3.53      5.35    252.33       .04      5.00      5.27    250.00         .04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5758E+00 EXCESS= .0000E+00 OUTFLOW= .5831E+00 BASIN STORAGE= .1752E-03 PERCENT ERROR=  -1.3

          FOR PLAN = 1  RATIO=  .53
          RDDNW175  MANE         3.65      4.59    250.70       .04      5.00      4.55    255.00         .04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5090E+00 EXCESS= .0000E+00 OUTFLOW= .5161E+00 BASIN STORAGE= .1769E-03 PERCENT ERROR=  -1.4

          FOR PLAN = 1  RATIO=  .51
          RDDNW175  MANE         3.85      3.98    257.16       .03      5.00      3.97    255.00         .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4532E+00 EXCESS= .0000E+00 OUTFLOW= .4592E+00 BASIN STORAGE= .1560E-03 PERCENT ERROR=  -1.3

          FOR PLAN = 1  RATIO=  .49
          RDDNW175  MANE         3.47      3.24    259.55       .03      5.00      3.22    260.00         .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3826E+00 EXCESS= .0000E+00 OUTFLOW= .3902E+00 BASIN STORAGE= .1827E-03 PERCENT ERROR=  -2.0

          FOR PLAN = 1  RATIO=  .57
          RDCCNW17  MANE         1.99     46.23    229.24       .11      5.00     46.18    230.00         .11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4932E+01 EXCESS= .0000E+00 OUTFLOW= .4930E+01 BASIN STORAGE= .1131E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .55
          RDCCNW17  MANE         2.15     42.68    231.08       .10      5.00     42.57    230.00         .10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4506E+01 EXCESS= .0000E+00 OUTFLOW= .4499E+01 BASIN STORAGE= .1136E-02 PERCENT ERROR=    .1

          FOR PLAN = 1  RATIO=  .53
          RDCCNW17  MANE         2.17     39.33    230.00       .09      5.00     39.33    230.00         .09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4104E+01 EXCESS= .0000E+00 OUTFLOW= .4099E+01 BASIN STORAGE= .1163E-02 PERCENT ERROR=    .1

          FOR PLAN = 1  RATIO=  .51
          RDCCNW17  MANE         2.28     36.50    230.59       .08      5.00     36.25    230.00         .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3770E+01 EXCESS= .0000E+00 OUTFLOW= .3766E+01 BASIN STORAGE= .1230E-02 PERCENT ERROR=    .1

          FOR PLAN = 1  RATIO=  .49
          RDCCNW17  MANE         2.37     32.81    233.73       .07      5.00     32.45    235.00         .07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3349E+01 EXCESS= .0000E+00 OUTFLOW= .3344E+01 BASIN STORAGE= .1140E-02 PERCENT ERROR=    .1

          FOR PLAN = 1  RATIO=  .57
          RDCNW173  MANE         3.40     19.05    236.50       .02      5.00     18.74    235.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1333E+01 EXCESS= .0000E+00 OUTFLOW= .1342E+01 BASIN STORAGE= .2670E-03 PERCENT ERROR=   -.7

          FOR PLAN = 1  RATIO=  .55
          RDCNW173  MANE         3.55     16.76    238.62       .02      5.00     16.61    235.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1152E+01 EXCESS= .0000E+00 OUTFLOW= .1169E+01 BASIN STORAGE= .3212E-03 PERCENT ERROR=  -1.5

          FOR PLAN = 1  RATIO=  .53
          RDCNW173  MANE         3.67     15.05    237.61       .02      5.00     14.73    240.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9824E+00 EXCESS= .0000E+00 OUTFLOW= .9935E+00 BASIN STORAGE= .2998E-03 PERCENT ERROR=  -1.2

          FOR PLAN = 1  RATIO=  .51
          RDCNW173  MANE         3.81     13.20    239.44       .02      5.00     13.11    240.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8450E+00 EXCESS= .0000E+00 OUTFLOW= .8522E+00 BASIN STORAGE= .2767E-03 PERCENT ERROR=   -.9

          FOR PLAN = 1  RATIO=  .49
```

RDCNW173	MANE	3.12	11.03	241.50	.01	5.00	11.01	240.00	.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6701E+00 EXCESS= .0000E+00 OUTFLOW= .6847E+00 BASIN STORAGE= .3385E-03 PERCENT ERROR= -2.2

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

RACEL AND MAVERICK

WEIGHTED CURVE NUMBERS AND PRECIPITATION VALUES

DEVELOPED CONDITION

BasinID	Soil	Area	Percent	CN	Description	WCN	PREC
DON1	305	1.71	100.0%	81.7	Residential (20,000 sq ft lot)	**81.7**	2.77
DON2	305	5.49	100.0%	81.7	Residential (20,000 sq ft lot)	**81.7**	2.77
DON3	305	2.63	100.0%	81.7	Residential (20,000 sq ft lot)	**81.7**	2.77
EOFF1	305	4.37	100.0%	80.6	Residential (40,000 sq ft lot)	**80.6**	2.77
EOFF2	305	4.83	100.0%	80.6	Residential (40,000 sq ft lot)	**80.6**	2.77
EOFF3	305	1.12	56.6%	81.7	Residential (20,000 sq ft lot)	**88.8**	2.77
	305	0.86	43.4%	98.0	Streets		
RAC	305	0.30	24.4%	80.6	Residential (20,000 sq ft lot)	**93.8**	2.77
	305	0.93	75.6%	98.0	Streets		
MEI	305	2.01	100.0%	98.0	Streets	**98.0**	2.77

TIME OF CONCENTRATION / LAG TIME DETERMINATION - less than 1 mi2

Kimley»Horn

RACEL AND MAVERICK
NWC OF RACEL STREET AND MAVERICK STREET
DEVELOPED CONDITIONS

Project No: 291400040
Date: 10/14/24
Calculated by: AA

SUB-BASIN DATA						INITIAL / OVERLAND TIME (Ti)			TRAVEL TIME (Tt)							T_{lag}	REMARKS
Basin ID	DEV./UNDEV. (D or U)	CN	K	AREA Ac	AREA Mi^2	INITIAL LENGTH Feet	SLOPE %	Ti Min	TRAVEL LENGTH Feet	SLOPE %	V_1 VELOCITY FPS	V_2 VELOCITY FPS	Tt Min	Tc Min	Tc Check Min	T_{lag} 0.6Tc/60 Hours	RAINFALL INCHES
(1)	(2)	(3)	(4)	(5a)	(5b)	(6)	(7)	(8)	(9)	(10)	(10a)	(10b)	(11)	(12)	(13)	(14)	(15)
DON1	D	81.7	0.6884	1.71	0.0027	125	1.00	8.3	280	1.30	2.3	3.5	2.0	10.3	12.3	**0.103**	2.77
DON2	D	81.7	0.6884	5.49	0.0086	155	1.00	9.2	935	0.60	1.6	2.4	8.4	17.6	16.1	**0.161**	2.77
DON3	D	81.7	0.6884	2.63	0.0041	220	1.00	11.0	560	0.50	1.4	2.2	6.3	17.3	14.3	**0.143**	2.77
RAC	D	93.8	0.8482	1.23	0.0019	95	1.00	4.4	595	0.34	1.2	1.8	8.0	12.4	13.8	**0.124**	2.77
MEI	D	98.0	0.9036	2.01	0.0031	30	2.00	1.5	1270	0.39	1.3	1.9	13.3	14.8	17.2	**0.148**	2.77

NOTE:

(1) Subbasin Name
(2) Developed or Undeveloped Subbasin
(3) Curve Number (See Subbasin CN Calculations)
(4) K = 0.0132 (CN) - 0.39
(5a) & (5b) Area
(6) Initial Length
(7) Initial Slope
(8) Ti = 1.8 (1.1 - K) L^1/2 / S^1/3
(9) Travel Length
(10) Slope
(10a) Slope V_1 applies to the first 500 feet of travel distance; Developed V_1 = 20.2*(S/100)^1/2
(10b) V_2 applies to the remaining travel distance; Developed V_2 = 30.6*(S/100)^1/2
(11) Tt = 500/(V1*60)+(Travel Length-500)/(V2*60)
(12) Tc = Ti + Tt
(13) Tc Check = L/180+10 (select smaller Tc)
(14) Tlag = 0.6 Tc/60
(15) Rainfall in inches

REFERENCE: Calculations based on the Clark County Regional Flood Control District HCDDM

STANDARD FORM 4

```
1****************************************                    ****************************************
 *                                      *                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUN   1998              *                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                *                    *         609 SECOND STREET            *
 *                                      *                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   15OCT24  TIME  14:02:19  *                    *          (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


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

                        *DIAGRAM
 *** FREE ***
              1         ID
              2         ID   *********************************************
              3         ID   *                                           *
              4         ID   *    RACEL AND MAVERICK                     *
              5         ID   *    DEVELOPED CONDITION                    *
              6         ID   *                                           *
              7         ID   *    PROJECT No:_ _ _ 291400040             *
              8         ID   *    FILE: _ _ _ _ _ _DEV_100.H1            *
              9         ID   *    DATE MODELED:_ _ 10/14/24              *
             10         ID   *    MODELED BY:_ _ _ AA                    *
             11         ID   *                                           *
             12         ID   *********************************************
             13         ID
             14         ID   *********************************************
             15         ID   *    RETURN PERIOD:_ _& 100- YEAR           *
             16         ID   *    DISTRIBUTION:_ _ 6-HOUR SDN3           *
             17         ID   *********************************************
             18         ID
             19         ID   *********************************************
             20         ID
             21         ID
             22         ID   JR CARD RATIOS REPRESENT DEPTH-AREA REDUCTION FACTORS (DARF'S)
             23         ID
             24         ID   100-YEAR,  6-HOUR STORM,  SDN3
             25         ID   DARF RATIOS FOR AREAS OF 0, 0.5, 1, 2, 4, 6 AND 8 SQUARE MILES FOR 100-YEAR
             26         ID
             27         IT       5       0       0     500
             28         IO       5       0       0
             29         IN       5       0       0
             30         JR    PREC       1    0.98    0.97    0.93    0.91     0.9    0.88
                        *
                        *    BEGIN NORTHWEST NEIGHBORHOOD STUDY PHASE 2 REFERENCE **********************
                        *

             31         KK   NW158
             32         BA    0.09
             33         PB   2.774
             34         PC   0.000   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
             35         PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
             36         PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
             37         PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
             38         PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
             39         PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
             40         PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
             41         PC   0.998   0.999   1.000
             42         LS       0      66
             43         UD   0.278
                        *
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          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
  44          KK  RNW158
  45          KM  ROUTE THROUGH NW167
  46          RK    3800   0.007    0.03       0    TRAP      50       2
              *

  47          KK   NW167
  48          BA    0.18
  49          PB   2.774
  50          LS       0   66.87
  51          UD   0.278
              *

  52          KK  DNW167
  53          KM  DIVERT 50% TO LOG CABIN WAY
  54          DT  DNW176
  55          DI       0     100     500    1000    5000
  56          DQ       0      50     250     500    2500
              *

  57          KK  CNW167
  58          KM  COMBINE DNW167 WITH RNW158
  59          HC       2
              *

  60          KK RCNW167
  61          KM  ROUTE TO NW166
  62          RK    2640   0.025    0.03       0    TRAP      50       2
              *

  63          KK   NW166
  64          BA    0.09
  65          PB   2.774
  66          LS       0   69.32
  67          UD   0.289
              *

  68          KK  CNW166
  69          KM  COMBINE NW166 WITH RNW167
  70          HC       2
              *

  71          KK RCNW166
  72          KM  ROUTE THROUGH NW174
  73          RK    4000   0.009    0.03       0    TRAP      50       2
              *

  74          KK   NW175
  75          BA    0.25
  76          PB   2.774
  77          LS       0      74
  78          UD   0.322
              *
```



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

  79          KK  DNW175
  80          KM  FLOW SPLIT AT TORREY PINES AND IRON MTN
  81          KM  DIVERSION TO IRON MTN
  82          KM  NO CROWNS HELD IN EITHER STREET
  83          DT  DNW186
  84          DI       0     100     500    1000    5000
  85          DQ       0      49     240     502    2654
              *

  86          KK RDNW175
  87          KM  ROUTE TO BRENT
  88          RK    1450   0.007    0.02       0    TRAP      80       2
              *

  89          KK DDNW175
  90          KM  FLOW SPLIT AT TORREY PINES AND BRENT
  91          KM  DIVERSION TO BRENT
  92          KM  NO CROWNS HELD IN EITHER STREET
  93          DT  DNW185
  94          DI       0     100     500    1000    5000
  95          DQ       0      46     213     409    1938
              *

  96          KKRDDNW175
  97          KM  ROUTE TO NW174
  98          RK    1450   0.007    0.02       0    TRAP      80       2
              *

  99          KK   NW174
 100          BA    0.27
 101          PB   2.774
 102          LS       0   84.71
```

```
 103          UD   0.320
              *

 104          KK CCNW174
 105          KM  COMBINE RDDNW175 WITH NW174 AND RCNW166
 106          HC       3
              *

 107          KKDCCNW174
 108          KM  FLOW SPLIT AT HORSE AND TORREY PINES
 109          KM  DIVERSION TO HORSE
 110          KM  NO CROWNS HELD IN EITHER STREET
 111          DT  DNW184
 112          DI       0     100     500    1000    5000
 113          DQ       0      44     218     436    2179
              *
```



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

 114          KKRDCCNW174
 115          KM  ROUTE TO NW173
 116          RK    1400   0.007    0.02       0    TRAP      80       2
              *
              *    END NORTHWEST NEIGHBORHOOD STUDY PHASE 2 REFERENCE ************************
              *

 117          KK NW173-A
 118          KM   REFERENCED/REVISED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 119          BA    0.04
 120          PB   2.774
 121          LS       0    83.7
 122          UD   0.207
              *

 123          KKCNW173-A
 124          KM  COMBINE NW173-A WITH RDCCNW174
 125          HC       2
              *

 126          KKDCNW173-A
 127          KM  FLOW SPLIT AT TORREY PINES AND MEISENHEIMER
 128          KM  DIVERSION TO MEISENHEIMER
 129          KM  NO CROWNS HELD IN EITHER STREET
 130          DT  DIVMEI
 131          DI       0     100     500    1000    5000
 132          DQ       0      51     257     513    2557
              *

 133          KK NW173-B
 134          KM   REFERENCED/REVISED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 135          BA    0.10
 136          PB   2.774
 137          LS       0   77.10
 138          UD   0.327
              *

 139          KK  CNW173
 140          KM  COMBINE NW173 WITH RDCCNW174
 141          HC       2
              *

 142          KKDTCNW173
 143          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 144          KM  DIVERT 10-YEAR FLOWS
 145          DT DTNW173
 146          DI       0       9     100     500    1000    5000
 147          DQ       0       8       8       8       8       8
              *
```



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

 148          KK DCNW173
 149          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 150          KM  FLOW SPLIT AT TORREY PINES AND RACEL
 151          KM  DIVERSION TO RACEL
 152          KM  NO CROWNS HELD IN EITHER STREET
 153          DT  DNW183
 154          DI       0     100     500    1000    5000
 155          DQ       0      43     199     380    1797
              *

 156          KKRDCNW173
 157          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 158          KM  ROUTE TO NW172
 159          RK    1400   0.004    0.02       0    TRAP      80       2
              *
```

```
 160          KK   NW172
 161          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 162          BA    0.14
 163          PB   2.774
 164          LS       0    81.9
 165          UD   0.326
              *

 166          KK  CNW172
 167          KM  COMBINE NW172 WITH RDCNW173
 168          HC       2
              *

 169          KKDTDNW183
 170          KM  RETRIEVE RACEL STREET FLOW SPLIT
 171          DR  DNW183
              *

 172          KK   EOFF2
 173          BA   .0075
 174          PB    2.77
 175          LS       0    80.6
 176          UD    .138
              *

 177          KK   EOFF1
 178          BA   .0068
 179          LS       0    80.6
 180          UD    .132
              *

 181          KK   EOFF3
 182          BA   .0031
 183          LS       0    88.8
 184          UD    .129
              *
```



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

 185          KK     CP1
 186          KM    COMBINED DNW183, EOFF1, EOFF2, & EOFF3
 187          HC       4
              *

 188          KK    DON3
 189          BA   .0041
 190          LS       0    81.7
 191          UD    .143
              *

 192          KK     RAC
 193          BA   .0019
 194          LS       0    93.8
 195          UD    .124
              *

 196          KK    CP1A
 197          KM    COMBINED CP1, DON3, & RAC
 198          HC       3
              *

 199          KK    DON2
 200          BA   .0086
 201          LS       0    81.7
 202          UD    .161
              *

 203          KK     CP2
 204          KM    COMBINED CP1A & DON2
 205          HC       2
              *

 206          KKDTDIVMEI
 207          KM  RETRIEVE MEISENHEIMER AVE FLOW SPLIT
 208          DR  DIVMEI
              *

 209          KK   *DOF8
 210          KM    REFERENCED BASIN FROM LA CRESENTA STUDY
 211          BA    .013
 212          LS       0    80.0
 213          UD   .1456
              *

 214          KK    *ST5
 215          KM    REFERENCED BASIN FROM LA CRESENTA STUDY
 216          BA    .001
 217          LS       0    98.0
 218          UD   .0538
```

```
                    *
1                                          HEC-1 INPUT                                          PAGE  7

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


           219          KK   *ECP6
           220          KM    REFERENCED CP FROM LA CRESENTA STUDY
           221          KM    COMBINED *DOF8 & *ST5
           222          HC       2
                        *

           223          KK     MEI
           224          BA   .0031
           225          LS       0    98.0
           226          UD    .148
                        *

           227          KK   DMEI1
           228          KM   3 CFS DIVERTED TO CP4
           229          DT   DMEI2
           230          DI       0       3       6
           231          DQ       0       1       3
                        *

           232          KK     CP3
           233          KM    COMBINED MEI, *ECP6 & DMEI1
           234          HC       3
                        *

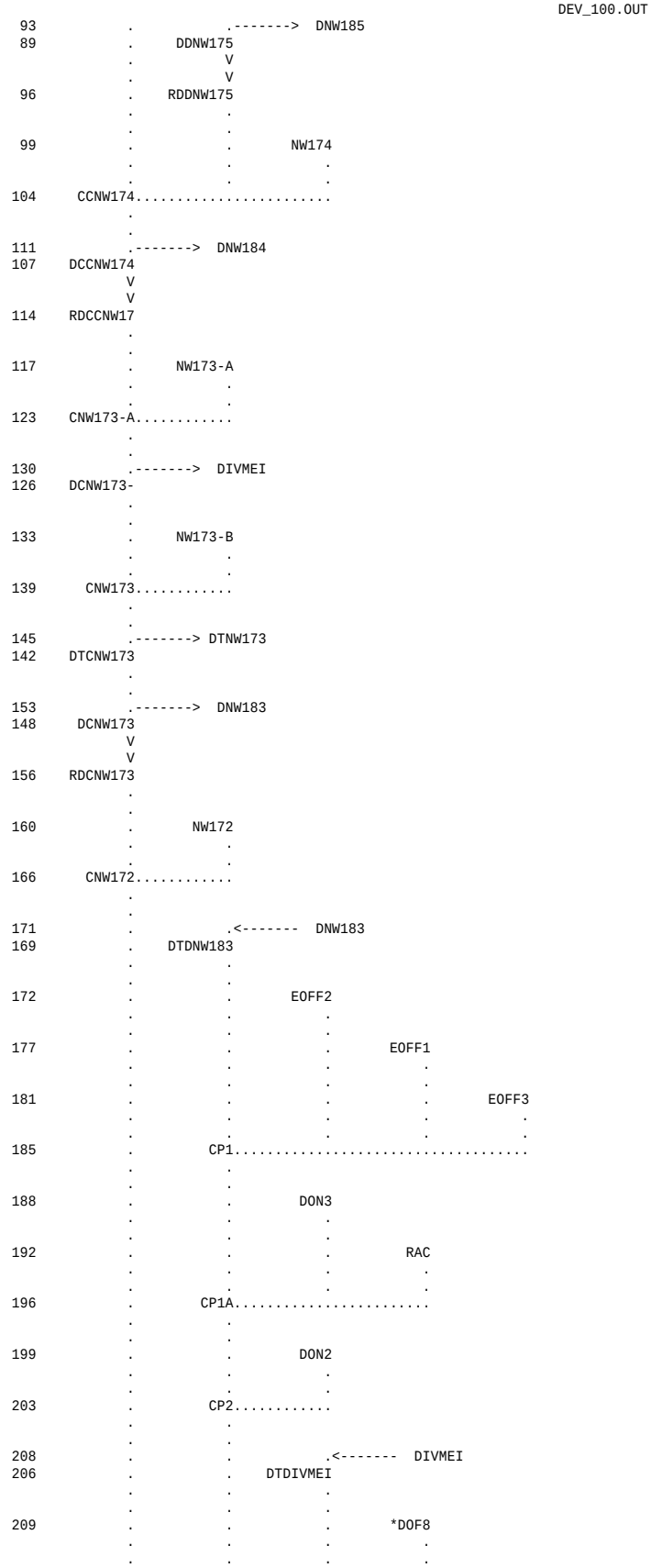
           235          KK    DON1
           236          BA   .0027
           237          LS       0    81.7
           238          UD    .103
                        *

           239          KK  RDMEI2
           240          KM   RETREIVE DIVERTED FLOW FROM MEI
           241          DR   DMEI2
                        *

           242          KK     CP4
           243          KM    COMBINED CP3, DON1, & DMEI2
           244          HC       3
                        *
           245          ZZ
1
               SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    31       NW158
                  V
                  V
    44      RNW158
                  .
                  .
    47            .       NW167
                  .           .
                  .           .
    54            .           .-------->  DNW176
    52            .      DNW167
                  .           .
                  .           .
    57      CNW167.............
                  V
                  V
    60     RCNW167
                  .
                  .
    63            .       NW166
                  .           .
                  .           .
    68      CNW166.............
                  V
                  V
    71     RCNW166
                  .
                  .
    74            .       NW175
                  .           .
                  .           .
    83            .           .-------->  DNW186
    79            .      DNW175
                  .           V
                  .           V
    86            .     RDNW175
                  .           .
                  .           .
```


93
89
96
99
104
111
107
114
117
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130
126
133
139
145
142
153
148
156
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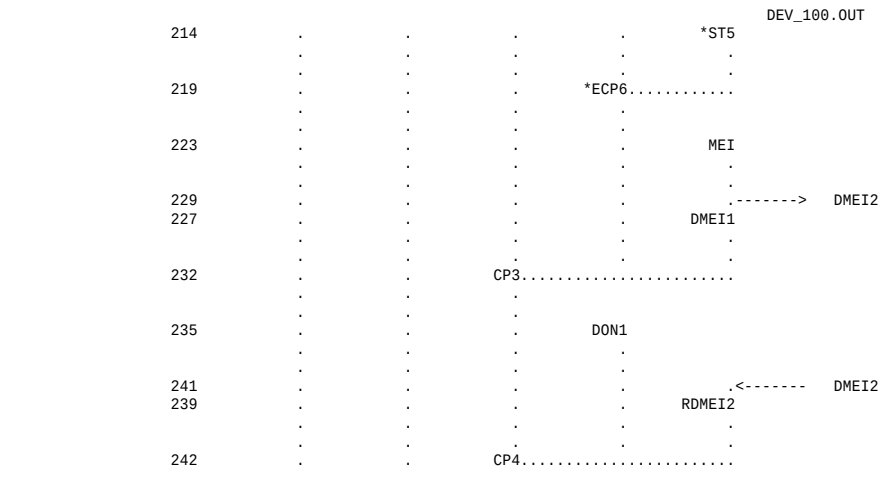
166
171
169
172
177
181
185
188
192
196
199
203
208
206
209
DNW185
DDNW175
RDDNW175
NW174
CCNW174
DNW184
DCCNW174
RDCCNW17
NW173-A
CNW173-A
DIVMEI
DCNW173-
NW173-B
CNW173
DTNW173
DTCNW173
DNW183
DCNW173
RDCNW173
NW172
CNW172
DNW183
DTDNW183
EOFF2
EOFF1
EOFF3
CP1
DON3
RAC
CP1A
DON2
CP2
DIVMEI
DTDIVMEI
*DOF8



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*************************************                                  *************************************
 *                                   *                                  *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                              *    U.S. ARMY CORPS OF ENGINEERS     *
 *               JUN   1998          *                                  *    HYDROLOGIC ENGINEERING CENTER    *
 *            VERSION 4.1            *                                  *          609 SECOND STREET          *
 *                                   *                                  *       DAVIS, CALIFORNIA 95616       *
 *  RUN DATE   15OCT24  TIME  14:02:19   *                              *           (916) 756-1104            *
 *                                   *                                  *                                   *
 *************************************                                  *************************************
```

```
                        *********************************************
                        *                                           *
                        *    RACEL AND MAVERICK                     *
                        *    DEVELOPED CONDITION                    *
                        *                                           *
                        *    PROJECT No:_ _ _ 291400040             *
                        *    FILE: _ _ _ _ _ _DEV_100.H1            *
                        *    DATE MODELED:_ _ 10/14/24              *
                        *    MODELED BY:_ _ _ AA                    *
                        *                                           *
                        *********************************************

                        *********************************************
                        *    RETURN PERIOD:_ _& 100- YEAR           *
                        *    DISTRIBUTION:_ _ 6-HOUR SDN3           *
                        *********************************************

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


                        JR CARD RATIOS REPRESENT DEPTH-AREA REDUCTION FACTORS (DARF'S)

                        100-YEAR,  6-HOUR STORM,  SDN3
                        DARF RATIOS FOR AREAS OF 0, 0.5, 1, 2, 4, 6 AND 8 SQUARE MILES FOR 100-YEAR


   28 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         500  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME        1735  ENDING TIME
                      ICENT           19  CENTURY MARK

                    COMPUTATION INTERVAL     .08 HOURS
                         TOTAL TIME BASE   41.58 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

JP MULTI-PLAN OPTION
NPLAN 1 NUMBER OF PLANS

JR MULTI-RATIO OPTION
RATIOS OF PRECIPITATION
1.00 .98 .97 .93 .91 .90 .88
1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1 1.00	RATIO 2 .98	RATIO 3 .97	RATIO 4 .93	RATIO 5 .91	RATIO 6 .90	RATIO 7 .88
HYDROGRAPH AT											
+	NW158	.09	1	FLOW	24.	22.	22.	19.	18.	17.	16.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
ROUTED TO											
+	RNW158	.09	1	FLOW	24.	22.	22.	19.	17.	17.	15.
				TIME	4.08	4.08	4.08	4.17	4.17	4.17	4.17
HYDROGRAPH AT											
+	NW167	.18	1	FLOW	52.	49.	47.	41.	39.	37.	35.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	3.83
DIVERSION TO											
+	DNW176	.18	1	FLOW	26.	24.	24.	21.	19.	19.	17.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	3.83
HYDROGRAPH AT											
+	DNW167	.18	1	FLOW	26.	24.	24.	21.	19.	19.	17.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	3.83
2 COMBINED AT											
+	CNW167	.27	1	FLOW	40.	38.	37.	30.	28.	28.	25.
				TIME	4.08	4.08	4.08	4.17	4.17	4.08	4.17
ROUTED TO											
+	RCNW167	.27	1	FLOW	37.	36.	35.	29.	26.	28.	25.
				TIME	4.17	4.25	4.25	4.25	4.33	4.25	4.25
HYDROGRAPH AT											
+	NW166	.09	1	FLOW	32.	30.	29.	26.	24.	23.	22.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	3.83
2 COMBINED AT											
+	CNW166	.36	1	FLOW	56.	53.	51.	44.	41.	40.	37.
				TIME	3.83	3.83	3.83	3.92	3.92	3.92	3.92
ROUTED TO											
+	RCNW166	.36	1	FLOW	54.	51.	50.	44.	41.	39.	36.
				TIME	4.08	4.08	4.08	4.08	4.08	4.17	4.17
HYDROGRAPH AT											
+	NW175	.25	1	FLOW	118.	113.	110.	100.	95.	92.	87.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
DIVERSION TO											
+	DNW186	.25	1	FLOW	58.	55.	54.	49.	46.	45.	43.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT											
+	DNW175	.25	1	FLOW	60.	58.	56.	51.	48.	47.	45.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
ROUTED TO											
+	RDNW175	.25	1	FLOW	60.	57.	56.	50.	48.	46.	44.
				TIME	3.83	3.83	3.83	3.83	3.92	3.92	3.92
DIVERSION TO											
+	DNW185	.25	1	FLOW	28.	26.	26.	23.	22.	21.	20.
				TIME	3.83	3.83	3.83	3.83	3.92	3.92	3.92
HYDROGRAPH AT											
+	DDNW175	.25	1	FLOW	32.	31.	30.	27.	26.	25.	24.
				TIME	3.83	3.83	3.83	3.83	3.92	3.92	3.92
ROUTED TO											
+	RDDNW175	.25	1	FLOW	32.	31.	30.	27.	26.	25.	24.
				TIME	3.92	3.92	3.92	4.00	4.00	4.00	4.00
HYDROGRAPH AT											
+	NW174	.27	1	FLOW	234.	226.	223.	208.	200.	197.	189.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75

3 COMBINED AT												
+	CCNW174	.88	1	FLOW	266.	253.	248.	224.	216.	211.	202.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
DIVERSION TO												
+	DNW184	.88	1	FLOW	116.	111.	108.	98.	94.	92.	88.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	DCCNW174	.88	1	FLOW	150.	143.	140.	126.	121.	119.	113.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
ROUTED TO												
+	RDCCNW17	.88	1	FLOW	149.	142.	139.	124.	119.	117.	111.
				TIME	3.92	3.92	3.92	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	NW173-A	.04	1	FLOW	39.	38.	37.	35.	34.	33.	32.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT												
+	CNW173-A	.92	1	FLOW	174.	167.	164.	149.	143.	140.	134.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
DIVERSION TO												
+	DIVMEI	.92	1	FLOW	89.	86.	84.	76.	73.	72.	69.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	DCNW173-	.92	1	FLOW	85.	82.	80.	73.	70.	69.	66.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	NW173-B	.10	1	FLOW	57.	55.	53.	49.	47.	46.	43.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	3.83
2 COMBINED AT												
+	CNW173	1.02	1	FLOW	142.	136.	133.	122.	117.	114.	109.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
DIVERSION TO												
+	DTNW173	1.02	1	FLOW	8.	8.	8.	8.	8.	8.	8.
				TIME	3.25	3.25	3.25	3.33	3.33	3.33	3.33
HYDROGRAPH AT												
+	DTCNW173	1.02	1	FLOW	134.	128.	125.	114.	109.	106.	101.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
DIVERSION TO												
+	DNW183	1.02	1	FLOW	56.	54.	53.	48.	46.	45.	43.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	DCNW173	1.02	1	FLOW	78.	74.	72.	65.	62.	61.	58.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
ROUTED TO												
+	RDCNW173	1.02	1	FLOW	77.	73.	72.	65.	61.	60.	57.
				TIME	3.92	3.92	3.92	3.92	3.92	3.92	3.92
HYDROGRAPH AT												
+	NW172	.14	1	FLOW	105.	101.	99.	92.	88.	86.	83.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT												
+	CNW172	1.16	1	FLOW	179.	172.	168.	154.	148.	145.	138.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	DTDNW183	.00	1	FLOW	56.	54.	53.	48.	46.	45.	43.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	EOFF2	.01	1	FLOW	7.	7.	7.	7.	6.	6.	6.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT												
+	EOFF1	.01	1	FLOW	7.	7.	6.	6.	6.	6.	5.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT												
+	EOFF3	.00	1	FLOW	4.	4.	4.	4.	4.	4.	4.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
4 COMBINED AT												
+	CP1	.02	1	FLOW	67.	64.	63.	58.	56.	55.	52.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75
HYDROGRAPH AT												
+	DON3	.00	1	FLOW	4.	4.	4.	4.	4.	4.	3.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58

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 HYDROGRAPH AT
+                    RAC       .00     1   FLOW          3.      3.      3.      3.      3.      3.      3.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

  3 COMBINED AT
+                    CP1A      .02     1   FLOW         71.     69.     68.     62.     60.     59.     56.
                                           TIME        3.75    3.75    3.75    3.75    3.75    3.75    3.75

 HYDROGRAPH AT
+                    DON2      .01     1   FLOW          9.      8.      8.      8.      7.      7.      7.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

  2 COMBINED AT
+                    CP2       .03     1   FLOW         78.     76.     74.     69.     66.     64.     61.
                                           TIME        3.67    3.67    3.67    3.67    3.67    3.67    3.67

 HYDROGRAPH AT
+                DTDIVMEI      .00     1   FLOW         89.     86.     84.     76.     73.     72.     69.
                                           TIME        3.83    3.83    3.83    3.83    3.83    3.83    3.83

 HYDROGRAPH AT
+                   *DOF8      .01     1   FLOW         12.     12.     12.     11.     10.     10.     10.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

 HYDROGRAPH AT
+                   *ST5       .00     1   FLOW          2.      2.      2.      2.      2.      2.      2.
                                           TIME        3.50    3.50    3.50    3.50    3.50    3.50    3.50

  2 COMBINED AT
+                   *ECP6      .01     1   FLOW         14.     13.     13.     12.     12.     11.     11.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

 HYDROGRAPH AT
+                    MEI       .00     1   FLOW          6.      6.      5.      5.      5.      5.      5.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

 DIVERSION TO
+                   DMEI2      .00     1   FLOW          3.      3.      3.      3.      2.      2.      2.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

 HYDROGRAPH AT
+                   DMEI1      .00     1   FLOW          3.      3.      3.      3.      3.      3.      3.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

  3 COMBINED AT
+                    CP3       .02     1   FLOW         98.     94.     92.     85.     82.     80.     77.
                                           TIME        3.83    3.75    3.75    3.75    3.75    3.75    3.75

 HYDROGRAPH AT
+                    DON1      .00     1   FLOW          3.      3.      3.      3.      2.      2.      2.
                                           TIME        3.50    3.50    3.50    3.58    3.58    3.58    3.58

 HYDROGRAPH AT
+                  RDMEI2      .00     1   FLOW          3.      3.      3.      3.      2.      2.      2.
                                           TIME        3.58    3.58    3.58    3.58    3.58    3.58    3.58

  3 COMBINED AT
+                    CP4       .02     1   FLOW        101.     97.     95.     87.     84.     82.     79.
                                           TIME        3.75    3.75    3.75    3.75    3.75    3.75    3.75
1
                                    SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                        (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                                 INTERPOLATED TO
                                                                              COMPUTATION INTERVAL
            ISTAQ    ELEMENT      DT       PEAK    TIME TO     VOLUME      DT       PEAK    TIME TO     VOLUME
                                                      PEAK                                    PEAK

                                  (MIN)     (CFS)      (MIN)     (IN)     (MIN)     (CFS)     (MIN)       (IN)

          FOR PLAN = 1  RATIO= 1.00
            RNW158  MANE         4.62     23.85    247.53       .46      5.00     23.70    245.00         .46

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2117E+01 EXCESS= .0000E+00 OUTFLOW= .2194E+01 BASIN STORAGE= .2799E-03 PERCENT ERROR=  -3.7

          FOR PLAN = 1  RATIO=  .98
            RNW158  MANE         4.71     22.45    248.61       .43      5.00     22.39    245.00         .43

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2000E+01 EXCESS= .0000E+00 OUTFLOW= .2078E+01 BASIN STORAGE= .2730E-03 PERCENT ERROR=  -3.9

          FOR PLAN = 1  RATIO=  .97
            RNW158  MANE         4.76     21.68    249.26       .42      5.00     21.62    245.00         .42

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1943E+01 EXCESS= .0000E+00 OUTFLOW= .2016E+01 BASIN STORAGE= .2874E-03 PERCENT ERROR=  -3.8
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FOR PLAN = 1 RATIO= .93
RNW158 MANE 5.00 18.77 247.00 .37 5.00 18.58 250.00 .37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1720E+01 EXCESS= .0000E+00 OUTFLOW= .1781E+01 BASIN STORAGE= .2526E-03 PERCENT ERROR= -3.6

FOR PLAN = 1 RATIO= .91
RNW158 MANE 5.00 17.46 248.35 .35 5.00 17.24 250.00 .35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1612E+01 EXCESS= .0000E+00 OUTFLOW= .1666E+01 BASIN STORAGE= .2779E-03 PERCENT ERROR= -3.3

FOR PLAN = 1 RATIO= .90
RNW158 MANE 5.00 16.93 250.32 .35 5.00 16.88 250.00 .35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1559E+01 EXCESS= .0000E+00 OUTFLOW= .1681E+01 BASIN STORAGE= .2349E-03 PERCENT ERROR= -7.8

FOR PLAN = 1 RATIO= .88
RNW158 MANE 5.00 15.67 251.63 .33 5.00 15.50 250.00 .33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1456E+01 EXCESS= .0000E+00 OUTFLOW= .1575E+01 BASIN STORAGE= .2591E-03 PERCENT ERROR= -8.2

FOR PLAN = 1 RATIO= 1.00
RCNW167 MANE 3.01 39.58 251.83 .31 5.00 37.40 250.00 .31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4457E+01 EXCESS= .0000E+00 OUTFLOW= .4462E+01 BASIN STORAGE= .2640E-03 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .98
RCNW167 MANE 3.04 36.91 252.92 .29 5.00 35.68 255.00 .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4219E+01 EXCESS= .0000E+00 OUTFLOW= .4227E+01 BASIN STORAGE= .2656E-03 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .97
RCNW167 MANE 3.03 35.60 253.47 .29 5.00 34.67 255.00 .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4098E+01 EXCESS= .0000E+00 OUTFLOW= .4110E+01 BASIN STORAGE= .2432E-03 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .93
RCNW167 MANE 3.32 29.86 256.56 .25 5.00 28.71 255.00 .25

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3632E+01 EXCESS= .0000E+00 OUTFLOW= .3639E+01 BASIN STORAGE= .2482E-03 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .91
RCNW167 MANE 3.29 27.11 258.13 .24 5.00 26.08 260.00 .24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3406E+01 EXCESS= .0000E+00 OUTFLOW= .3408E+01 BASIN STORAGE= .2663E-03 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .90
RCNW167 MANE 3.32 27.72 254.68 .23 5.00 27.61 255.00 .24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3366E+01 EXCESS= .0000E+00 OUTFLOW= .3382E+01 BASIN STORAGE= .2632E-03 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .88
RCNW167 MANE 3.50 25.16 256.66 .22 5.00 24.50 255.00 .22

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3149E+01 EXCESS= .0000E+00 OUTFLOW= .3157E+01 BASIN STORAGE= .2636E-03 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= 1.00
RCNW166 MANE 5.00 54.76 244.57 .38 5.00 54.36 245.00 .38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7172E+01 EXCESS= .0000E+00 OUTFLOW= .7234E+01 BASIN STORAGE= .8741E-03 PERCENT ERROR= -.9

FOR PLAN = 1 RATIO= .98
RCNW166 MANE 5.00 52.23 241.04 .36 5.00 51.20 245.00 .36

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6809E+01 EXCESS= .0000E+00 OUTFLOW= .6861E+01 BASIN STORAGE= .1047E-02 PERCENT ERROR= -.8

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          FOR PLAN = 1  RATIO=  .97
           RCNW166  MANE         5.00     50.72    241.57       .35      5.00     49.59    245.00         .35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6624E+01 EXCESS= .0000E+00 OUTFLOW= .6672E+01 BASIN STORAGE= .8524E-03 PERCENT ERROR=   -.7

          FOR PLAN = 1  RATIO=  .93
           RCNW166  MANE         4.40     44.06    247.50       .31      5.00     43.76    245.00         .31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5889E+01 EXCESS= .0000E+00 OUTFLOW= .5926E+01 BASIN STORAGE= .1087E-02 PERCENT ERROR=   -.6

          FOR PLAN = 1  RATIO=  .91
           RCNW166  MANE         4.52     41.14    248.82       .29      5.00     40.56    245.00         .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5538E+01 EXCESS= .0000E+00 OUTFLOW= .5569E+01 BASIN STORAGE= .1104E-02 PERCENT ERROR=   -.6

          FOR PLAN = 1  RATIO=  .90
           RCNW166  MANE         4.57     39.21    245.80       .29      5.00     38.66    250.00         .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5450E+01 EXCESS= .0000E+00 OUTFLOW= .5473E+01 BASIN STORAGE= .1001E-02 PERCENT ERROR=   -.4

          FOR PLAN = 1  RATIO=  .88
           RCNW166  MANE         4.70     36.34    247.13       .27      5.00     35.73    250.00         .27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5100E+01 EXCESS= .0000E+00 OUTFLOW= .5117E+01 BASIN STORAGE= .1139E-02 PERCENT ERROR=   -.4

          FOR PLAN = 1  RATIO= 1.00
           RDNW175  MANE         1.90     60.31    233.73       .39      5.00     60.17    230.00         .39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5228E+01 EXCESS= .0000E+00 OUTFLOW= .5228E+01 BASIN STORAGE= .2694E-04 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .98
           RDNW175  MANE         2.01     57.47    231.67       .38      5.00     57.34    230.00         .38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5000E+01 EXCESS= .0000E+00 OUTFLOW= .5002E+01 BASIN STORAGE= .2859E-04 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .97
           RDNW175  MANE         2.00     56.11    232.19       .37      5.00     55.84    230.00         .37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4887E+01 EXCESS= .0000E+00 OUTFLOW= .4888E+01 BASIN STORAGE= .2308E-04 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .93
           RDNW175  MANE         2.08     50.69    232.81       .33      5.00     50.20    230.00         .33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4445E+01 EXCESS= .0000E+00 OUTFLOW= .4448E+01 BASIN STORAGE= .2645E-04 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .91
           RDNW175  MANE         2.13     48.06    234.46       .32      5.00     47.70    235.00         .32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4229E+01 EXCESS= .0000E+00 OUTFLOW= .4230E+01 BASIN STORAGE= .2855E-04 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .90
           RDNW175  MANE         2.09     46.85    232.97       .31      5.00     46.44    235.00         .31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4123E+01 EXCESS= .0000E+00 OUTFLOW= .4124E+01 BASIN STORAGE= .2398E-04 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .88
           RDNW175  MANE         2.09     44.52    234.10       .29      5.00     44.00    235.00         .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3913E+01 EXCESS= .0000E+00 OUTFLOW= .3917E+01 BASIN STORAGE= .3065E-04 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO= 1.00
          RDDNW175  MANE         2.37     32.43    235.26       .21      5.00     32.31    235.00         .21

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2823E+01 EXCESS= .0000E+00 OUTFLOW= .2828E+01 BASIN STORAGE= .6020E-04 PERCENT ERROR=   -.2
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FOR PLAN = 1 RATIO= .98
RDDNW175 MANE 2.53 30.79 236.61 .20 5.00 30.54 235.00 .20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2701E+01 EXCESS= .0000E+00 OUTFLOW= .2704E+01 BASIN STORAGE= .4872E-04 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .97
RDDNW175 MANE 2.51 30.02 236.89 .20 5.00 29.85 235.00 .20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2642E+01 EXCESS= .0000E+00 OUTFLOW= .2645E+01 BASIN STORAGE= .5926E-04 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .93
RDDNW175 MANE 2.52 27.10 236.68 .18 5.00 26.85 240.00 .18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2404E+01 EXCESS= .0000E+00 OUTFLOW= .2404E+01 BASIN STORAGE= .5780E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .91
RDDNW175 MANE 2.72 25.72 238.01 .17 5.00 25.57 240.00 .17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2283E+01 EXCESS= .0000E+00 OUTFLOW= .2289E+01 BASIN STORAGE= .5307E-04 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .90
RDDNW175 MANE 2.71 25.01 238.59 .17 5.00 24.83 240.00 .17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2228E+01 EXCESS= .0000E+00 OUTFLOW= .2236E+01 BASIN STORAGE= .5482E-04 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .88
RDDNW175 MANE 2.76 23.69 239.45 .16 5.00 23.57 240.00 .16

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2116E+01 EXCESS= .0000E+00 OUTFLOW= .2122E+01 BASIN STORAGE= .6130E-04 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= 1.00
RDCCNW17 MANE 1.37 149.33 233.28 .36 5.00 148.84 235.00 .36

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1681E+02 EXCESS= .0000E+00 OUTFLOW= .1682E+02 BASIN STORAGE= .3757E-03 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .98
RDCCNW17 MANE 1.42 142.33 233.60 .34 5.00 141.80 235.00 .34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1616E+02 EXCESS= .0000E+00 OUTFLOW= .1617E+02 BASIN STORAGE= .3788E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .97
RDCCNW17 MANE 1.45 139.28 233.48 .34 5.00 138.67 235.00 .34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1584E+02 EXCESS= .0000E+00 OUTFLOW= .1584E+02 BASIN STORAGE= .3872E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .93
RDCCNW17 MANE 1.46 125.52 233.11 .31 5.00 124.18 230.00 .31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1456E+02 EXCESS= .0000E+00 OUTFLOW= .1456E+02 BASIN STORAGE= .4064E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .91
RDCCNW17 MANE 1.51 120.84 232.50 .30 5.00 119.08 230.00 .30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1394E+02 EXCESS= .0000E+00 OUTFLOW= .1394E+02 BASIN STORAGE= .3861E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .90
RDCCNW17 MANE 1.47 118.69 232.93 .29 5.00 116.51 230.00 .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1368E+02 EXCESS= .0000E+00 OUTFLOW= .1368E+02 BASIN STORAGE= .4121E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .88
RDCCNW17 MANE 1.43 112.94 233.20 .28 5.00 111.33 230.00 .28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1306E+02 EXCESS= .0000E+00 OUTFLOW= .1306E+02 BASIN STORAGE= .3828E-03 PERCENT ERROR= .0

```
          FOR PLAN = 1  RATIO= 1.00
          RDCNW173  MANE         1.97     77.60    233.92       .12      5.00     76.74    235.00         .12


CONTINUITY SUMMARY (AC-FT) - INFLOW= .6785E+01 EXCESS= .0000E+00 OUTFLOW= .6792E+01 BASIN STORAGE= .8752E-04 PERCENT ERROR=   -.1


          FOR PLAN = 1  RATIO=  .98
          RDCNW173  MANE         2.12     73.84    233.97       .12      5.00     73.14    235.00         .12


CONTINUITY SUMMARY (AC-FT) - INFLOW= .6478E+01 EXCESS= .0000E+00 OUTFLOW= .6476E+01 BASIN STORAGE= .1088E-03 PERCENT ERROR=    .0


          FOR PLAN = 1  RATIO=  .97
          RDCNW173  MANE         2.12     72.07    234.41       .12      5.00     71.61    235.00         .12


CONTINUITY SUMMARY (AC-FT) - INFLOW= .6328E+01 EXCESS= .0000E+00 OUTFLOW= .6327E+01 BASIN STORAGE= .9367E-04 PERCENT ERROR=    .0


          FOR PLAN = 1  RATIO=  .93
          RDCNW173  MANE         2.21     65.02    232.51       .11      5.00     64.66    235.00         .11


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5721E+01 EXCESS= .0000E+00 OUTFLOW= .5725E+01 BASIN STORAGE= .1052E-03 PERCENT ERROR=   -.1


          FOR PLAN = 1  RATIO=  .91
          RDCNW173  MANE         2.21     62.02    233.57       .10      5.00     61.38    235.00         .10


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5435E+01 EXCESS= .0000E+00 OUTFLOW= .5434E+01 BASIN STORAGE= .9757E-04 PERCENT ERROR=    .0


          FOR PLAN = 1  RATIO=  .90
          RDCNW173  MANE         2.23     60.53    234.03       .10      5.00     59.95    235.00         .10


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5305E+01 EXCESS= .0000E+00 OUTFLOW= .5303E+01 BASIN STORAGE= .1093E-03 PERCENT ERROR=    .0


          FOR PLAN = 1  RATIO=  .88
          RDCNW173  MANE         2.32     57.31    233.16       .09      5.00     56.94    235.00         .09


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5021E+01 EXCESS= .0000E+00 OUTFLOW= .5025E+01 BASIN STORAGE= .9429E-04 PERCENT ERROR=   -.1



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

```
1****************************************                 ****************************************
 *                                      *                 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                 *    U.S. ARMY CORPS OF ENGINEERS      *
 *               JUN   1998             *                 *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                 *         609 SECOND STREET            *
 *                                      *                 *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   15OCT24  TIME  14:01:02  *                 *          (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


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

                        *DIAGRAM
 *** FREE ***
              1         ID
              2         ID   ********************************************
              3         ID   *                                          *
              4         ID   *    RACEL AND MAVERICK                    *
              5         ID   *    DEVELOPED CONDITION                   *
              6         ID   *                                          *
              7         ID   *    PROJECT No:_ _ _ 291400040            *
              8         ID   *    FILE: _ _ _ _ _ _DEV_10.H1            *
              9         ID   *    DATE MODELED:_ _ 10/14/24             *
             10         ID   *    MODELED BY:_ _ _ AA                   *
             11         ID   *                                          *
             12         ID   ********************************************
             13         ID
             14         ID   ********************************************
             15         ID   *    RETURN PERIOD:_ _& 10- YEAR           *
             16         ID   *    DISTRIBUTION:_ _ 6-HOUR SDN3          *
             17         ID   ********************************************
             18         ID
             19         ID   ********************************************
             20         ID
             21         ID
             22         ID   JR CARD RATIOS REPRESENT DEPTH-AREA REDUCTION FACTORS (DARF'S)
             23         ID
             24         ID   10-YEAR,  6-HOUR STORM,  SDN3
             25         ID   DARF RATIOS FOR AREAS OF 0, 1, 2, 6 AND 10 SQUARE MILES FOR 10-YEAR
             26         ID   DARF RATIOS HAVE BEEN ADJUSTED FOR 10-YEAR FLOWS WITH A FACTOR OF 0.57
             27         ID
             28         IT       5       0       0     300
             29         IO       5       0       0
             30         IN       5       0       0
             31         JR    PREC    0.57    0.55    0.53   0.513    0.49
                        *
                        *    BEGIN NORTHWEST NEIGHBORHOOD STUDY PHASE 2 REFERENCE **********************
                        *

             32         KK   NW158
             33         BA    0.09
             34         PB   2.774
             35         PC   0.000   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
             36         PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
             37         PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
             38         PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
             39         PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
             40         PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
             41         PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
             42         PC   0.998   0.999   1.000
             43         LS       0    66.0
             44         UD   0.278
                        *
```

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

   45         KK  RNW158
   46         KM  ROUTE THROUGH NW167
   47         RK    3800  0.0066    0.03       0    TRAP      50       2
              *

   48         KK   NW167
   49         BA    0.18
   50         PB   2.774
   51         LS       0 66.8653
   52         UD   0.278
              *

   53         KK  DNW167
   54         KM  DIVERT 50% TO LOG CABIN WAY
   55         DT  DNW176
   56         DI       0     100     500    1000    5000
   57         DQ       0      50     250     500    2500
              *

   58         KK  CNW167
   59         KM  COMBINE DNW167 WITH RNW158
   60         HC       2
              *

   61         KK RCNW167
   62         KM  ROUTE TO NW166
   63         RK    2640   0.025    0.03       0    TRAP      50       2
              *

   64         KK   NW166
   65         BA    0.09
   66         PB   2.774
   67         LS       0 69.3212
   68         UD   0.289
              *

   69         KK  CNW166
   70         KM  COMBINE NW166 WITH RNW167
   71         HC       2
              *

   72         KK RCNW166
   73         KM  ROUTE THROUGH NW174
   74         RK    4000   0.009    0.03       0    TRAP      50       2
              *

   75         KK   NW175
   76         BA    0.25
   77         PB   2.774
   78         LS       0    74.0
   79         UD   0.322
              *
```



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

   80         KK  DNW175
   81         KM  FLOW SPLIT AT TORREY PINES AND IRON MTN
   82         KM  DIVERSION TO IRON MTN
   83         KM  NO CROWNS HELD IN EITHER STREET
   84         DT  DNW186
   85         DI       0     100     500    1000    5000
   86         DQ       0      49     240     502    2654
              *

   87         KK RDNW175
   88         KM  ROUTE TO BRENT
   89         RK    1450   0.007    0.02       0    TRAP      80       2
              *

   90         KK DDNW175
   91         KM  FLOW SPLIT AT TORREY PINES AND BRENT
   92         KM  DIVERSION TO BRENT
   93         KM  NO CROWNS HELD IN EITHER STREET
   94         DT  DNW185
   95         DI       0     100     500    1000    5000
   96         DQ       0      46     213     409    1938
              *

   97         KKRDDNW175
   98         KM  ROUTE TO NW174
   99         RK    1450  0.0072    0.02       0    TRAP      80       2
              *

  100         KK   NW174
  101         BA    0.27
  102         PB   2.774
```

```
 103          LS       0    84.7
 104          UD   0.320
              *

 105          KK CCNW174
 106          KM  COMBINE RDDNW175 WITH NW174 AND RCNW166
 107          HC       3
              *

 108          KKDCCNW174
 109          KM  FLOW SPLIT AT HORSE AND TORREY PINES
 110          KM  DIVERSION TO HORSE
 111          KM  NO CROWNS HELD IN EITHER STREET
 112          DT  DNW184
 113          DI       0     100     500    1000    5000
 114          DQ       0      44     218     436    2179
              *
```



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

 115          KKRDCCNW174
 116          KM  ROUTE TO NW173
 117          RK    1400  0.0072    0.02       0    TRAP      80       2
              *
              *    END NORTHWEST NEIGHBORHOOD STUDY PHASE 2 REFERENCE ************************
              *

 118          KK NW173-A
 119          KM   REFERENCED/REVISED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 120          BA    0.04
 121          PB   2.774
 122          LS       0    83.7
 123          UD   0.207
              *

 124          KKCNW173-A
 125          KM  COMBINE NW173-A WITH RDCCNW174
 126          HC       2
              *

 127          KKDCNW173-A
 128          KM  FLOW SPLIT AT TORREY PINES AND MEISENHEIMER
 129          KM  DIVERSION TO MEISENHEIMER
 130          KM  NO CROWNS HELD IN EITHER STREET
 131          DT  DIVMEI
 132          DI       0     100     500    1000    5000
 133          DQ       0      51     257     513    2557
              *

 134          KK NW173-B
 135          KM   REFERENCED/REVISED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 136          BA    0.10
 137          PB   2.774
 138          LS       0   77.10
 139          UD   0.327
              *

 140          KK  CNW173
 141          KM  COMBINE NW173 WITH RDCCNW174
 142          HC       2
              *

 143          KKDTCNW173
 144          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 145          KM  DIVERT 10-YEAR FLOWS
 146          DT DTNW173
 147          DI       0       9     100     500    1000    5000
 148          DQ       0       8       8       8       8       8
              *
```



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

 149          KK DCNW173
 150          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 151          KM  FLOW SPLIT AT TORREY PINES AND RACEL
 152          KM  DIVERSION TO RACEL
 153          KM  NO CROWNS HELD IN EITHER STREET
 154          DT  DNW183
 155          DI       0     100     500    1000    5000
 156          DQ       0      43     199     380    1797
              *

 157          KKRDCNW173
 158          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 159          KM  ROUTE TO NW172
 160          RK    1400   0.004    0.02       0    TRAP      80       2
              *
```

```
 161          KK   NW172
 162          KM   REFERENCED FROM NORTHWEST NEIGHBORHOOD STUDY PHASE 2
 163          BA    0.14
 164          PB   2.774
 165          LS       0    81.9
 166          UD   0.326
              *

 167          KK  CNW172
 168          KM  COMBINE NW172 WITH RDCNW173
 169          HC       2
              *

 170          KKDTDNW183
 171          KM  RETRIEVE RACEL STREET FLOW SPLIT
 172          DR  DNW183
              *

 173          KK   EOFF2
 174          BA   .0075
 175          PB    2.77
 176          LS       0    80.6
 177          UD    .138
              *

 178          KK   EOFF1
 179          BA   .0068
 180          LS       0    80.6
 181          UD    .132
              *

 182          KK   EOFF3
 183          BA   .0031
 184          LS       0    88.8
 185          UD    .129
              *
```



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

 186          KK     CP1
 187          KM    COMBINED DNW183, EOFF1, EOFF2, & EOFF3
 188          HC       4
              *

 189          KK    DON3
 190          BA   .0041
 191          LS       0    81.7
 192          UD    .143
              *

 193          KK     RAC
 194          BA   .0019
 195          LS       0    93.8
 196          UD    .124
              *

 197          KK    CP1A
 198          KM    COMBINED CP1, DON3, & RAC
 199          HC       3
              *

 200          KK    DON2
 201          BA   .0086
 202          LS       0    81.7
 203          UD    .161
              *

 204          KK     CP2
 205          KM    COMBINED CP1A & DON2
 206          HC       2
              *

 207          KKDTDIVMEI
 208          KM  RETRIEVE MEISENHEIMER AVE FLOW SPLIT
 209          DR  DIVMEI
              *

 210          KK   *DOF8
 211          KM    REFERENCED BASIN FROM LA CRESENTA STUDY
 212          BA    .013
 213          LS       0    80.0
 214          UD   .1456
              *

 215          KK    *ST5
 216          KM    REFERENCED BASIN FROM LA CRESENTA STUDY
 217          BA    .001
 218          LS       0    98.0
```

```
 219          UD   .0538
              *
1                                        HEC-1 INPUT                                        PAGE  7

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


 220          KK   *ECP6
 221          KM    REFERENCED CP FROM LA CRESENTA STUDY
 222          KM    COMBINED *DOF8 & *ST5
 223          HC       2
              *

 224          KK     MEI
 225          BA   .0031
 226          LS       0    98.0
 227          UD    .148
              *

 228          KK   DMEI1
 229          KM   3 CFS DIVERTED TO CP4
 230          DT   DMEI2
 231          DI       0       3       6
 232          DQ       0       1       3
              *

 233          KK     CP3
 234          KM    COMBINED MEI, *ECP6 & DMEI1
 235          HC       3
              *

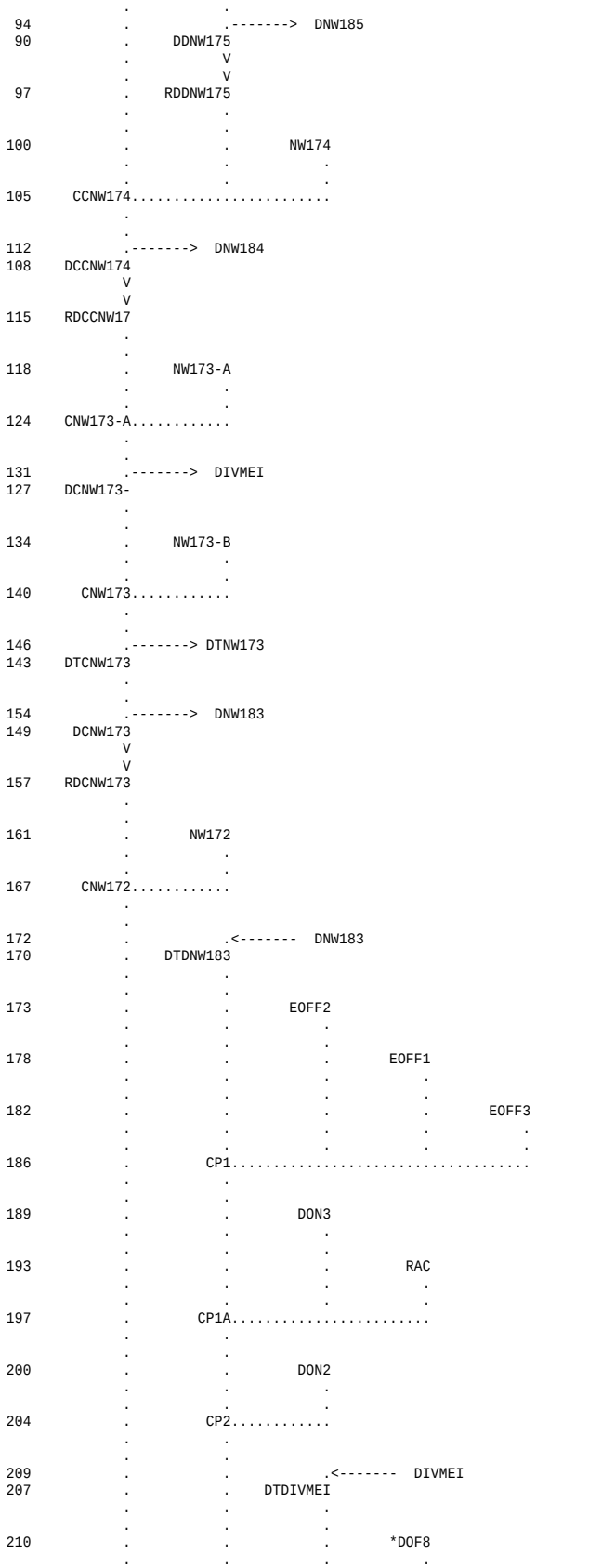
 236          KK    DON1
 237          BA   .0027
 238          LS       0    81.7
 239          UD    .103
              *

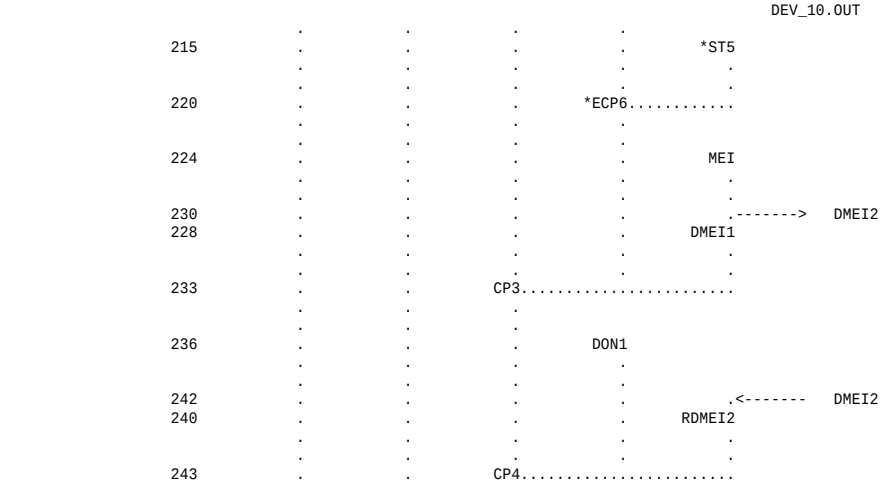
 240          KK  RDMEI2
 241          KM   RETREIVE DIVERTED FLOW FROM MEI
 242          DR   DMEI2
              *

 243          KK     CP4
 244          KM    COMBINED CP3, DON1, & DMEI2
 245          HC       3
              *
 246          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    32       NW158
                 V
                 V
    45      RNW158
                 .
                 .
    48           .       NW167
                 .          .
                 .          .
    55           .          .-------->  DNW176
    53           .      DNW167
                 .          .
                 .          .
    58      CNW167............
                 V
                 V
    61     RCNW167
                 .
                 .
    64           .       NW166
                 .          .
                 .          .
    69      CNW166............
                 V
                 V
    72     RCNW166
                 .
                 .
    75           .       NW175
                 .          .
                 .          .
    84           .          .-------->  DNW186
    80           .      DNW175
                 .          V
                 .          V
    87           .     RDNW175
                 .          .
```


94
90 DDNW175
97 RDDNW175
100 NW174
105 CCNW174
112
108 DCCNW174
115 RDCCNW17
118
124 CNW173-A
131
127 DCNW173-
134
140 CNW173
146
143 DTCNW173
154
149 DCNW173
157 RDCNW173
161
167 CNW172
172
170 DTDNW183
173
178
182
186 CP1
189
193
197 CP1A
200
204 CP2
209
207 DTDIVMEI
210
DNW185
DNW184
DIVMEI
DTNW173
DNW183
DNW183
EOFF2
EOFF1
EOFF3
DON3
RAC
DON2
DIVMEI
*DOF8



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*************************************                                  *************************************
 *                                   *                                  *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                              *    U.S. ARMY CORPS OF ENGINEERS     *
 *               JUN   1998          *                                  *    HYDROLOGIC ENGINEERING CENTER    *
 *            VERSION 4.1            *                                  *          609 SECOND STREET          *
 *                                   *                                  *       DAVIS, CALIFORNIA 95616       *
 *  RUN DATE   15OCT24  TIME  14:01:02   *                              *          (916) 756-1104           *
 *                                   *                                  *                                   *
 *************************************                                  *************************************
```

```
                        *********************************************
                        *                                           *
                        *    RACEL AND MAVERICK                     *
                        *    DEVELOPED CONDITION                    *
                        *                                           *
                        *    PROJECT No:_ _ _ 291400040             *
                        *    FILE: _ _ _ _ _ _DEV_10.H1             *
                        *    DATE MODELED:_ _ 10/14/24              *
                        *    MODELED BY:_ _ _ AA                    *
                        *                                           *
                        *********************************************

                        *********************************************
                        *    RETURN PERIOD:_ _& 10- YEAR            *
                        *    DISTRIBUTION:_ _ 6-HOUR SDN3           *
                        *********************************************

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


                        JR CARD RATIOS REPRESENT DEPTH-AREA REDUCTION FACTORS (DARF'S)

                        10-YEAR,  6-HOUR STORM,  SDN3
                        DARF RATIOS FOR AREAS OF 0, 1, 2, 6 AND 10 SQUARE MILES FOR 10-YEAR
                        DARF RATIOS HAVE BEEN ADJUSTED FOR 10-YEAR FLOWS WITH A FACTOR OF 0.57


   29 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

JP MULTI-PLAN OPTION
NPLAN 1 NUMBER OF PLANS

JR MULTI-RATIO OPTION
RATIOS OF PRECIPITATION
.57 .55 .53 .51 .49
1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1 .57	RATIO 2 .55	RATIO 3 .53	RATIO 4 .51	RATIO 5 .49
HYDROGRAPH AT									
+	NW158	.09	1	FLOW	2.	2.	2.	1.	1.
				TIME	5.00	5.00	5.00	5.00	5.00
ROUTED TO									
+	RNW158	.09	1	FLOW	2.	2.	2.	1.	1.
				TIME	5.83	5.83	5.92	6.00	6.17
HYDROGRAPH AT									
+	NW167	.18	1	FLOW	5.	4.	4.	3.	3.
				TIME	5.00	5.00	5.00	5.00	5.00
DIVERSION TO									
+	DNW176	.18	1	FLOW	3.	2.	2.	2.	1.
				TIME	5.00	5.00	5.00	5.00	5.00
HYDROGRAPH AT									
+	DNW167	.18	1	FLOW	3.	2.	2.	2.	1.
				TIME	5.00	5.00	5.00	5.00	5.00
2 COMBINED AT									
+	CNW167	.27	1	FLOW	4.	2.	2.	2.	1.
				TIME	5.08	5.83	5.00	5.00	5.00
ROUTED TO									
+	RCNW167	.27	1	FLOW	4.	2.	2.	2.	1.
				TIME	5.33	6.17	5.33	5.33	5.42
HYDROGRAPH AT									
+	NW166	.09	1	FLOW	4.	3.	3.	2.	2.
				TIME	3.92	3.92	5.00	5.00	5.00
2 COMBINED AT									
+	CNW166	.36	1	FLOW	5.	5.	4.	3.	3.
				TIME	5.25	5.08	5.08	5.08	5.08
ROUTED TO									
+	RCNW166	.36	1	FLOW	5.	4.	4.	3.	3.
				TIME	5.75	5.67	5.75	5.75	5.83
HYDROGRAPH AT									
+	NW175	.25	1	FLOW	23.	20.	17.	15.	12.
				TIME	3.92	3.92	3.92	3.92	3.92
DIVERSION TO									
+	DNW186	.25	1	FLOW	11.	10.	8.	7.	6.
				TIME	3.92	3.92	3.92	3.92	3.92
HYDROGRAPH AT									
+	DNW175	.25	1	FLOW	12.	10.	9.	8.	6.
				TIME	3.92	3.92	3.92	3.92	3.92
ROUTED TO									
+	RDNW175	.25	1	FLOW	12.	10.	9.	7.	6.
				TIME	4.00	4.00	4.00	4.08	4.08
DIVERSION TO									
+	DNW185	.25	1	FLOW	5.	5.	4.	3.	3.
				TIME	4.00	4.00	4.00	4.08	4.08
HYDROGRAPH AT									
+	DDNW175	.25	1	FLOW	6.	5.	5.	4.	3.
				TIME	4.00	4.00	4.00	4.08	4.08
ROUTED TO									
+	RDDNW175	.25	1	FLOW	6.	5.	5.	4.	3.
				TIME	4.17	4.17	4.25	4.25	4.33
HYDROGRAPH AT									
+	NW174	.27	1	FLOW	83.	76.	70.	65.	59.
							8		

				TIME	3.75	3.75	3.75	3.83	3.83
3 COMBINED AT									
+	CCNW174	.88	1	FLOW	83.	76.	70.	65.	59.
				TIME	3.75	3.75	3.75	3.83	3.83
DIVERSION TO									
+	DNW184	.88	1	FLOW	36.	34.	31.	29.	26.
				TIME	3.75	3.75	3.75	3.83	3.83
HYDROGRAPH AT									
+	DCCNW174	.88	1	FLOW	46.	43.	39.	37.	33.
				TIME	3.75	3.75	3.75	3.83	3.83
ROUTED TO									
+	RDCCNW17	.88	1	FLOW	46.	43.	39.	36.	32.
				TIME	3.83	3.83	3.83	3.83	3.92
HYDROGRAPH AT									
+	NW173-A	.04	1	FLOW	14.	13.	12.	11.	10.
				TIME	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT									
+	CNW173-A	.92	1	FLOW	57.	52.	48.	45.	40.
				TIME	3.83	3.83	3.83	3.83	3.83
DIVERSION TO									
+	DIVMEI	.92	1	FLOW	29.	27.	25.	23.	20.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	DCNW173-	.92	1	FLOW	28.	26.	24.	22.	20.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	NW173-B	.10	1	FLOW	14.	12.	11.	10.	8.
				TIME	3.83	3.83	3.83	3.83	3.92
2 COMBINED AT									
+	CNW173	1.02	1	FLOW	42.	38.	35.	31.	28.
				TIME	3.83	3.83	3.83	3.83	3.83
DIVERSION TO									
+	DTNW173	1.02	1	FLOW	8.	8.	8.	8.	8.
				TIME	3.50	3.50	3.58	3.58	3.58
HYDROGRAPH AT									
+	DTCNW173	1.02	1	FLOW	34.	30.	27.	23.	20.
				TIME	3.83	3.83	3.83	3.83	3.83
DIVERSION TO									
+	DNW183	1.02	1	FLOW	14.	13.	11.	10.	8.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	DCNW173	1.02	1	FLOW	19.	17.	15.	13.	11.
				TIME	3.83	3.83	3.83	3.83	3.83
ROUTED TO									
+	RDCNW173	1.02	1	FLOW	19.	17.	15.	13.	11.
				TIME	3.92	3.92	4.00	4.00	4.00
HYDROGRAPH AT									
+	NW172	.14	1	FLOW	33.	30.	27.	25.	22.
				TIME	3.83	3.83	3.83	3.83	3.83
2 COMBINED AT									
+	CNW172	1.16	1	FLOW	49.	45.	40.	36.	31.
				TIME	3.92	3.92	3.92	3.92	3.92
HYDROGRAPH AT									
+	DTDNW183	.00	1	FLOW	14.	13.	11.	10.	8.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	EOFF2	.01	1	FLOW	2.	2.	2.	2.	1.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	EOFF1	.01	1	FLOW	2.	2.	2.	2.	1.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	EOFF3	.00	1	FLOW	2.	2.	2.	2.	1.
				TIME	3.58	3.58	3.58	3.58	3.58
4 COMBINED AT									
+	CP1	.02	1	FLOW	18.	16.	14.	13.	11.
				TIME	3.75	3.75	3.83	3.83	3.83
HYDROGRAPH AT									

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+                   DON3       .00     1   FLOW          1.      1.       1.       1.       1.
                                           TIME        3.58    3.58     3.58     3.58     3.58

 HYDROGRAPH AT
+                    RAC       .00     1   FLOW          2.      2.       1.       1.       1.
                                           TIME        3.58    3.58     3.58     3.58     3.58

  3 COMBINED AT
+                   CP1A       .02     1   FLOW         20.     18.      16.      14.      12.
                                           TIME        3.75    3.75     3.75     3.75     3.75

 HYDROGRAPH AT
+                   DON2       .01     1   FLOW          3.      2.       2.       2.       2.
                                           TIME        3.58    3.58     3.58     3.58     3.58

  2 COMBINED AT
+                    CP2       .03     1   FLOW         22.     20.      18.      16.      14.
                                           TIME        3.75    3.75     3.75     3.75     3.75

 HYDROGRAPH AT
+               DTDIVMEI       .00     1   FLOW         29.     27.      25.      23.      20.
                                           TIME        3.83    3.83     3.83     3.83     3.83

 HYDROGRAPH AT
+                  *DOF8       .01     1   FLOW          4.      3.       3.       3.       2.
                                           TIME        3.58    3.58     3.58     3.58     3.58

 HYDROGRAPH AT
+                   *ST5       .00     1   FLOW          1.      1.       1.       1.       1.
                                           TIME        3.50    3.50     3.50     3.50     3.50

  2 COMBINED AT
+                  *ECP6       .01     1   FLOW          4.      4.       4.       3.       3.
                                           TIME        3.58    3.58     3.58     3.58     3.58

 HYDROGRAPH AT
+                    MEI       .00     1   FLOW          3.      3.       3.       3.       3.
                                           TIME        3.58    3.58     3.58     3.58     3.58

 DIVERSION TO
+                  DMEI2       .00     1   FLOW          1.      1.       1.       1.       1.
                                           TIME        3.58    3.58     3.58     3.58     3.58

 HYDROGRAPH AT
+                  DMEI1       .00     1   FLOW          2.      2.       2.       2.       2.
                                           TIME        3.58    3.58     3.58     3.58     3.58

  3 COMBINED AT
+                    CP3       .02     1   FLOW         32.     30.      28.      26.      23.
                                           TIME        3.75    3.75     3.83     3.83     3.83

 HYDROGRAPH AT
+                   DON1       .00     1   FLOW          1.      1.       1.       1.       1.
                                           TIME        3.58    3.58     3.58     3.58     3.58

 HYDROGRAPH AT
+                 RDMEI2       .00     1   FLOW          1.      1.       1.       1.       1.
                                           TIME        3.58    3.58     3.58     3.58     3.58

  3 COMBINED AT
+                    CP4       .02     1   FLOW         34.     31.      28.      26.      24.
                                           TIME        3.75    3.75     3.83     3.75     3.83
1
                                       SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                           (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                                INTERPOLATED TO
                                                                            COMPUTATION INTERVAL
            ISTAQ    ELEMENT      DT       PEAK    TIME TO     VOLUME      DT       PEAK    TIME TO     VOLUME
                                                      PEAK                                     PEAK

                                 (MIN)     (CFS)      (MIN)     (IN)     (MIN)     (CFS)     (MIN)       (IN)

          FOR PLAN = 1  RATIO=  .57
            RNW158  MANE         4.97      2.25    345.76       .06      5.00      2.24    350.00         .06

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2554E+00 EXCESS= .0000E+00 OUTFLOW= .2884E+00 BASIN STORAGE= .7062E-03 PERCENT ERROR= -13.2

          FOR PLAN = 1  RATIO=  .55
            RNW158  MANE         5.00      1.96    350.67       .05      5.00      1.94    350.00         .05

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2086E+00 EXCESS= .0000E+00 OUTFLOW= .2240E+00 BASIN STORAGE= .7397E-03 PERCENT ERROR=  -7.8

          FOR PLAN = 1  RATIO=  .53
            RNW158  MANE         5.00      1.63    353.18       .04      5.00      1.63    355.00         .04

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1661E+00 EXCESS= .0000E+00 OUTFLOW= .1751E+00 BASIN STORAGE= .7079E-03 PERCENT ERROR=  -5.8
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          FOR PLAN = 1  RATIO=  .51
            RNW158  MANE         5.00      1.40    359.60       .03      5.00      1.40    360.00         .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1336E+00 EXCESS= .0000E+00 OUTFLOW= .1406E+00 BASIN STORAGE= .7242E-03 PERCENT ERROR=  -5.8

          FOR PLAN = 1  RATIO=  .49
            RNW158  MANE         5.00      1.09    368.47       .02      5.00      1.06    370.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9478E-01 EXCESS= .0000E+00 OUTFLOW= .1031E+00 BASIN STORAGE= .7173E-03 PERCENT ERROR=  -9.6

          FOR PLAN = 1  RATIO=  .57
            RCNW167  MANE         5.00      3.63    321.75       .04      5.00      3.58    320.00         .04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5898E+00 EXCESS= .0000E+00 OUTFLOW= .5956E+00 BASIN STORAGE= .8170E-03 PERCENT ERROR=  -1.1

          FOR PLAN = 1  RATIO=  .55
            RCNW167  MANE         5.00      2.22    372.81       .03      5.00      2.21    370.00         .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4740E+00 EXCESS= .0000E+00 OUTFLOW= .4845E+00 BASIN STORAGE= .8350E-03 PERCENT ERROR=  -2.4

          FOR PLAN = 1  RATIO=  .53
            RCNW167  MANE         5.00      1.90    320.29       .03      5.00      1.89    320.00         .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3778E+00 EXCESS= .0000E+00 OUTFLOW= .3871E+00 BASIN STORAGE= .8108E-03 PERCENT ERROR=  -2.7

          FOR PLAN = 1  RATIO=  .51
            RCNW167  MANE         4.69      1.63    322.96       .02      5.00      1.61    320.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3069E+00 EXCESS= .0000E+00 OUTFLOW= .3134E+00 BASIN STORAGE= .8976E-03 PERCENT ERROR=  -2.4

          FOR PLAN = 1  RATIO=  .49
            RCNW167  MANE         5.00      1.30    326.27       .02      5.00      1.30    325.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2253E+00 EXCESS= .0000E+00 OUTFLOW= .2326E+00 BASIN STORAGE= .8441E-03 PERCENT ERROR=  -3.6

          FOR PLAN = 1  RATIO=  .57
            RCNW166  MANE         4.74      5.35    346.42       .06      5.00      5.33    345.00         .06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1049E+01 EXCESS= .0000E+00 OUTFLOW= .1073E+01 BASIN STORAGE= .3790E-02 PERCENT ERROR=  -2.6

          FOR PLAN = 1  RATIO=  .55
            RCNW166  MANE         5.00      4.51    341.29       .05      5.00      4.49    340.00         .05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8734E+00 EXCESS= .0000E+00 OUTFLOW= .8921E+00 BASIN STORAGE= .3951E-02 PERCENT ERROR=  -2.6

          FOR PLAN = 1  RATIO=  .53
            RCNW166  MANE         4.82      3.83    342.11       .04      5.00      3.82    345.00         .04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7159E+00 EXCESS= .0000E+00 OUTFLOW= .7373E+00 BASIN STORAGE= .3900E-02 PERCENT ERROR=  -3.5

          FOR PLAN = 1  RATIO=  .51
            RCNW166  MANE         5.00      3.24    346.41       .03      5.00      3.23    345.00         .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5935E+00 EXCESS= .0000E+00 OUTFLOW= .6137E+00 BASIN STORAGE= .3767E-02 PERCENT ERROR=  -4.0

          FOR PLAN = 1  RATIO=  .49
            RCNW166  MANE         5.00      2.51    348.76       .02      5.00      2.50    350.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4528E+00 EXCESS= .0000E+00 OUTFLOW= .4743E+00 BASIN STORAGE= .3924E-02 PERCENT ERROR=  -5.6

          FOR PLAN = 1  RATIO=  .57
            RDNW175  MANE         3.53     11.61    241.91       .09      5.00     11.58    240.00         .09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1195E+01 EXCESS= .0000E+00 OUTFLOW= .1200E+01 BASIN STORAGE= .8359E-04 PERCENT ERROR=   -.4
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          FOR PLAN = 1  RATIO=  .55
           RDNW175  MANE         3.69     10.05    240.21       .08      5.00     10.03    240.00         .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1062E+01 EXCESS= .0000E+00 OUTFLOW= .1067E+01 BASIN STORAGE= .7535E-04 PERCENT ERROR=   -.5

          FOR PLAN = 1  RATIO=  .53
           RDNW175  MANE         3.89      8.70    242.37       .07      5.00      8.57    240.00         .07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9357E+00 EXCESS= .0000E+00 OUTFLOW= .9410E+00 BASIN STORAGE= .8239E-04 PERCENT ERROR=   -.6

          FOR PLAN = 1  RATIO=  .51
           RDNW175  MANE         4.09      7.47    244.50       .06      5.00      7.42    245.00         .06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8334E+00 EXCESS= .0000E+00 OUTFLOW= .8383E+00 BASIN STORAGE= .6560E-04 PERCENT ERROR=   -.6

          FOR PLAN = 1  RATIO=  .49
           RDNW175  MANE         4.39      6.08    244.68       .05      5.00      6.06    245.00         .05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7029E+00 EXCESS= .0000E+00 OUTFLOW= .7070E+00 BASIN STORAGE= .8134E-04 PERCENT ERROR=   -.6

          FOR PLAN = 1  RATIO=  .57
          RDDNW175  MANE         3.29      6.24    249.76       .05      5.00      6.23    250.00         .05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6478E+00 EXCESS= .0000E+00 OUTFLOW= .6548E+00 BASIN STORAGE= .1619E-03 PERCENT ERROR=  -1.1

          FOR PLAN = 1  RATIO=  .55
          RDDNW175  MANE         3.53      5.35    252.33       .04      5.00      5.27    250.00         .04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5758E+00 EXCESS= .0000E+00 OUTFLOW= .5831E+00 BASIN STORAGE= .1752E-03 PERCENT ERROR=  -1.3

          FOR PLAN = 1  RATIO=  .53
          RDDNW175  MANE         3.65      4.59    250.70       .04      5.00      4.55    255.00         .04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5090E+00 EXCESS= .0000E+00 OUTFLOW= .5161E+00 BASIN STORAGE= .1769E-03 PERCENT ERROR=  -1.4

          FOR PLAN = 1  RATIO=  .51
          RDDNW175  MANE         3.85      3.98    257.16       .03      5.00      3.97    255.00         .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4532E+00 EXCESS= .0000E+00 OUTFLOW= .4592E+00 BASIN STORAGE= .1560E-03 PERCENT ERROR=  -1.3

          FOR PLAN = 1  RATIO=  .49
          RDDNW175  MANE         3.47      3.24    259.55       .03      5.00      3.22    260.00         .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3826E+00 EXCESS= .0000E+00 OUTFLOW= .3902E+00 BASIN STORAGE= .1827E-03 PERCENT ERROR=  -2.0

          FOR PLAN = 1  RATIO=  .57
          RDCCNW17  MANE         1.99     46.23    229.24       .11      5.00     46.18    230.00         .11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4932E+01 EXCESS= .0000E+00 OUTFLOW= .4930E+01 BASIN STORAGE= .1131E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .55
          RDCCNW17  MANE         2.15     42.68    231.08       .10      5.00     42.57    230.00         .10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4506E+01 EXCESS= .0000E+00 OUTFLOW= .4499E+01 BASIN STORAGE= .1136E-02 PERCENT ERROR=    .1

          FOR PLAN = 1  RATIO=  .53
          RDCCNW17  MANE         2.17     39.33    230.00       .09      5.00     39.33    230.00         .09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4104E+01 EXCESS= .0000E+00 OUTFLOW= .4099E+01 BASIN STORAGE= .1163E-02 PERCENT ERROR=    .1

          FOR PLAN = 1  RATIO=  .51
          RDCCNW17  MANE         2.28     36.50    230.59       .08      5.00     36.25    230.00         .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3770E+01 EXCESS= .0000E+00 OUTFLOW= .3766E+01 BASIN STORAGE= .1230E-02 PERCENT ERROR=    .1
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          FOR PLAN = 1  RATIO=  .49
          RDCCNW17  MANE         2.37     32.81    233.73       .07      5.00     32.45    235.00         .07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3349E+01 EXCESS= .0000E+00 OUTFLOW= .3344E+01 BASIN STORAGE= .1140E-02 PERCENT ERROR=    .1

          FOR PLAN = 1  RATIO=  .57
          RDCNW173  MANE         3.40     19.05    236.50       .02      5.00     18.74    235.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1333E+01 EXCESS= .0000E+00 OUTFLOW= .1342E+01 BASIN STORAGE= .2670E-03 PERCENT ERROR=   -.7

          FOR PLAN = 1  RATIO=  .55
          RDCNW173  MANE         3.55     16.76    238.62       .02      5.00     16.61    235.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1152E+01 EXCESS= .0000E+00 OUTFLOW= .1169E+01 BASIN STORAGE= .3212E-03 PERCENT ERROR=  -1.5

          FOR PLAN = 1  RATIO=  .53
          RDCNW173  MANE         3.67     15.05    237.61       .02      5.00     14.73    240.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9824E+00 EXCESS= .0000E+00 OUTFLOW= .9935E+00 BASIN STORAGE= .2998E-03 PERCENT ERROR=  -1.2

          FOR PLAN = 1  RATIO=  .51
          RDCNW173  MANE         3.81     13.20    239.44       .02      5.00     13.11    240.00         .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8450E+00 EXCESS= .0000E+00 OUTFLOW= .8522E+00 BASIN STORAGE= .2767E-03 PERCENT ERROR=   -.9

          FOR PLAN = 1  RATIO=  .49
          RDCNW173  MANE         3.12     11.03    241.50       .01      5.00     11.01    240.00         .01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6701E+00 EXCESS= .0000E+00 OUTFLOW= .6847E+00 BASIN STORAGE= .3385E-03 PERCENT ERROR=  -2.2



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