ENGINEERING, SURVEYING & LAND PLANNING

SRB

SAVOY, RUGGLES & BOHM, P.A.

# FINAL DRAINAGE PLAN
# FOR
# TARA FALLS
# SEDGWICK COUNTY, KANSAS
# AND SUPPLEMENTAL CALCULATIONS

MAY 2, 2000

SRB
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SAVOY, RUGGLES & BOHM, P.A.
ENGINEERING & SURVEYING

May 2, 2000

Mr. Chris Carrier, P.E.
Storm Water Management
City Hall – 8th Floor
455 N. Main
Wichita, KS 67202

Re: Tara Falls Addition, Sedgwick County, Kansas

Dear Mr. Carrier,

At your request, I have run hydrologic models of the Tara Falls detention pond system for the 5, 10, 25, 50, and 100-year return period storm events in order to demonstrate the discharge characteristics of the developed basin. In each run, the undeveloped model has been calculated in conjunction with the developed model, so that a comparison may be made between the undeveloped and developed discharges from the site. These discharges are tabulated on the following page for your convenience.

Please note that the HEC-1 model used for the original drainage calculations has been modified only with regard to rainfall for each of the design storms. The rainfall totals for each design storm are gleaned from ESSA Weather Bureau Technical Paper 40 Modified to NWS Hydro-35, 1977, using the SCS Type II rainfall distribution.

Also included with this report is a copy of the original drainage plan for your files.

I hope this information proves helpful.

Regards,

Christopher M. Bohm, P.E.

Encl.

MARK A. SAVOY, L.S. • BRIAN N. SAVOY, L.S. • THOMAS C. RUGGLES, P.E. • CHRISTOPHER M. BOHM, P.E.

Summary of Pond Routing Trials
Tara Falls Addition
2-May-00

| Return Peroid | Rainfall (24 hour) | Existing Runoff (Undeveloped) | Pond Outflow (Developed) | Percentage of Undeveloped Flow |
|---|---|---|---|---|
| (years) | (inches) | (cfs) | (cfs) | (percent) |
| 5 | 4.8" | 153 | 168 | 109.8% |
| 10 | 5.52" | 200 | 203 | 101.5% |
| 25 | 6.48" | 258 | 250 | 96.9% |
| 50 | 7.44" | 325 | 296 | 91.1% |
| 100 | 7.8" | 351 | 313 | 89.2% |

Shows some
increases for
smaller
storms!

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1-9-98

Tara Falls

Upstream Basin (Existing) Exiting @ NE Corner of Site (Meier Property)

Upstream Drainage Area = 107 Ac + 27 Acres
= 134 Acres

(From Site Survey: USGS Quad Sheets).

Hydrological Soil Group "D" (Sedgwick County Soil Survey).

Time of Concentration: Beg. @ U.S. of Basin; Existing Subdivision:

$Tc_1$ : 300' Grass lawn @ 2%; V = 0.45 f/s
$Tc_1$ = 11.1 min

$Tc_2$ : 900' Shallow Curb flow; V = 0.91 f/s
@ 0.40%; $Tc_2$ = 16.4 min

$Tc_3$ : Full Pavement flow; L = 1350'; S = 0.40%
V = 3.5 f/sec (See other Calcs).
$Tc_3$ = 6.43 min.

$Tc_4$ : Channel flow; Use V = 2.5 f/sec (Natural Chan)
L = 2400'
$Tc_4$ = 16.0 min

(Note: $Tc_4$ @ Dam Face).

4/9

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Ignore Dam for Tc; Continue to Harry
Tc5: L = 1500' Use V = 3.0 f/s
Tc5 = 8.3 min

Tc Total: = 58 min (Velocity Method).

Check w/ Other Tc Forumles:

Kirpich: $Tc = 0.00781\, L^{0.77}\, S^{-0.385}$
$L = 6450'$ $\bar{S} = \frac{1370 - 1318}{6450} = 0.806\%$

$Tc = 0.00781(6450)^{0.77}(0.00806)^{-0.385}$
Tc = 42.9 minutes (Use 43)

SCS Curve No:

Residentiel: 29 Acres @ CN = 93 (0.216)
Balance Pasture 105 Acres @ CN = 80 (0.784)

$\overline{CN}$ = 82.8; Use 83.0

SCS Lag = 0.6 Tc; $Tc = \frac{58+43}{2} = 50.5$

SCS Lag = $(0.6)\left(\frac{50\,min}{60\,m/hr}\right)$ = 0.50 hours

BA = 134 Ac/640 = 0.209 sq. miles

To HEC-1 (taram1.hc1)

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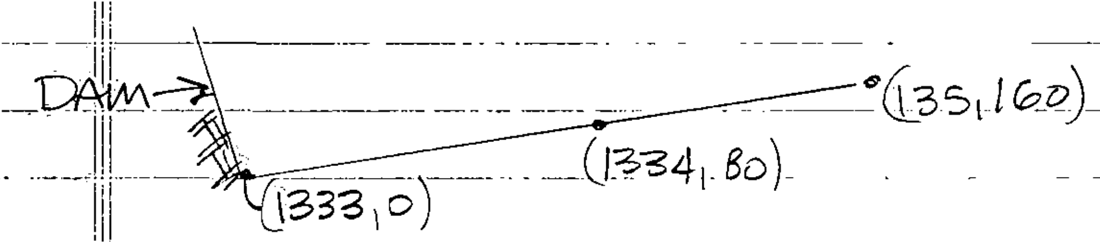
Results w/o Pond: (Existing Condition)

$Q_{100} = 443$ cfs

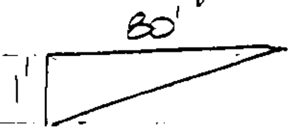
## Add Pond Into Routing:

Pond has no defined spillway, One small trickle pipe to hold static Pool.

East Side of Dam is "Flat" @ 1333 Elevation, Grassed, and Slopes to S.E As Follows:



Assume Triangular Channel



$A = 40'^2$ $n = 0.03$ (grass)

$wp = 81$ feet $S = 0.005$ (Assum

V @ D=1': $V = \frac{1.49}{0.03}\left(\frac{40}{81}\right)^{0.67}(0.005)^{1/2} = 2.18$ f/s

$Q = V \cdot A = (2.18)(40) = 87.2$ cfs

V @ D=2': $A = (2)(160)/2 = 160$ ft$^2$

$wp = 162$ ft

$V = (1.49/0.03)(160/162)^{0.67}(0.005)^{1/2} = 3.48$ cfs

$Q = V \cdot A = 160 * 3.48 = 557$ cfs

CWB
1/9/98

NEED TO RATE @ 0.5' Increments for detail of Outflow vs Storage.

ELEV Q

@1333 0 → Controling Elevation

@1333.5 D=0.5; A=10ft$^2$; wp=40.5
V=1.37; Q=14 cfs

@1334 Q=87cfs (previous)

@1334.5 D=1.5; A=(120*1.5/2)=90ft$^2$
wp=121.5
V=2.87; Q=258.5

@1335 Q=557 cfs (previous).

West Side of Pond Also can discharge across grass at Elev. 1334 & Above. To be conservative, this outflow will be ignored to maximize the pond storage.

Existing Pond Stage-Storage:
(From Other Calculations - SRB Survey)

| Elev | Area (ft$^2$) | Area (Ac) |
|---|---|---|
| 1333 | 217599 | 5.0 |
| 1334 | 321695 | 7.4 |
| 1335 | 426678 | 9.8 |

To Model Through Pond - Separate U.S. Pond Drainage Area for Routing.

CWB
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Area to Pond = 107 Acres
Tc pond = 50 minutes (from previous calc's - Velocity Method). To Be consistent, subtract 8 minutes (from Dam to Harry) since other Tc was Averaged.
Use Tc = 42 minutes

SCS Lag = 0.6Tc = $(0.6)^{42 m}/60^{m}/hr) =$ 0.42 hours

To HEC-1: BA = $^{107}/640 =$ 0.167 sq. miles
$\overline{CN}$ = 83 (As Before)
SCS Lag = 0.42 hrs
Stage Storage / Stage Discharge As Calculated.

file = taram2.hc1

To this routed hydrograph; add the additional 27 Acres (HC card).
For this Area, use Tc = 15 minutes and SCS CN of 80 (pasture).
BA = 27/640 = 0.042 sq miles
SCS Lag = 0.15 hours
CN = 80

To HEC-1 (taram2.hc1)

↓

6/9

CWB
1/9/98

Results: (see Output for detailed results)

$Q_{in\ pond}$ = 388 cfs

$Q_{out}$ Pond 317 cfs (after routing)

$Q_{downstream\ area}$ = 128 cfs

$Q_{combined}$ = 351 cfs (hydrograph addition).

The determined $Q_{100}$ @ Harry (Meier Property)
= 351 cfs as modeled.

For A Quick Check; Use Rational Method
(Ignoring Pond Storage)

A = 134 Ac

Tc = 50 min; $i_{100}$ = 4.13"/hr

Use C = 0.65 (C of Wichita; Type D 1-4% slope)

$Q = CiA = (0.65)(4.13)(134) = 359.7$ cfs

FOR THE DEVELOPED SITE; NO MORE THAN
350 cfs MAY EXIT @ HARRY. (100 yr storm).

FOR UPSTREAM (EXISTING) POND:

DA = 107 ACRES

NEW CURVE NUMBER DUE TO DEVELOPMENT.

29 + 37 (on Site) = 66 Acres Residential

107 − 66 = 41 Ac Pasture

$\overline{CN} = (66/107)(93) + (41/107)(80) = \underline{\underline{88}}$

7/0

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Since the main basin drainage is via a grass channel (some natural - some man made) the Tc will not change. A Box Culvert will be necessary under Bluestem St near the NW corner of the plat; And detention storage here will be omitted (conservative).

Existing Pond will be controlled with outlet weirs to force the 100 year W.S. Elevation.

Weir Elevation = 1332.50
East weir = 50' length
West weir = 20' length
Concrete; Rip-Rap Bag; or Rip Rap weirs to Be Used.

For such weirs; $Q = CLH^{1.5}$ where C = 3.0
Total length = 70 feet (65)

| Elev | H | (w = 70') Q | (w = 65') Q |
|---|---|---|---|
| 1332.5 | 0 | 0 | 0 |
| 1332.75 | 0.25 | 26 | 24 |
| 1333 | 0.5 | 74 | 69 |
| 1333.25 | 0.75 | 136 | 127 |
| 1333.5 | 1.0 | 210 | 195 |
| 1333.75 | 1.25 | 293 | 272 |
| 1334 | 1.5 | 385 | 358 |
| 1334.25 | 1.75 | 486 | 451 |

Use 65' weirs
(Total width)
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As Before; Stage-Storage Remains the Same: See sheet #____ (Existing Pond).

To HEC-1: BA= 0.167 sq. miles
SCS Lag = 0.42 hrs
CN = 88

Route through Modified Pond
file = taram3.hc1

Results:
1/27/98 CMB
Qin Pond = 420 cfs
Qout Pond = ~~353~~ 348 cfs @ Elev = ~~1333.91~~ 1333.97 < 1334 OK ✓

This hydrograph will be added to the D.S. Basin (Improved Condition) and then routed through the new detention pond.

D.S. BASIN = 27 Acres
CN = 93
Tc = 15 min ; SCS LAG = 0.15 hours.

New Detention Pond:

This pond will utilize the existing D.S. Channel, Just U.S. of the Meier Property.

To Control Outflow, A Rip-Rap or Concrete Weir Will be Used.

9/9

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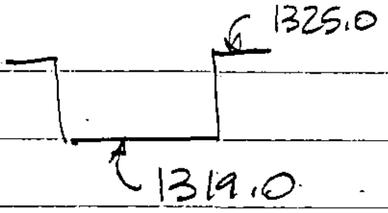
Use weir; L = 13 feet.



| ELEV | Q | STORAGE (ACRES) |
|---|---|---|
| 1319 | — | 1.9 |
| 1319.5 | 14 | |
| 1320 | 39 | 2.1 |
| 1320.5 | 71 | |
| 1321.0 | 110 | 2.3 |
| 1321.5 | 154 | |
| 1322.0 | 202 | 2.5 |
| 1322.5 | 255 | |
| 1323.0 | 312 | 2.7 |
| 1323.5 | 372.3 | |

ROUTE NEW SYSTEM:
HEC-1 taram3.hc1

RESULTS: Comb $Q_{100}$ to New Pond = ~~341~~ cfs 386
Through New Detention Pond = ~~313~~ cfs 341 cfs
Elevation Max = ~~1323.01~~ 1323.3

Allow 1.0 foot of freeboard; Top Weir Elevation = 13~~24~~.0 1324.3

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CMB

1-27-98 10/11
CMB

Tara Falls NW Corner Pond "Reserve C"
Pond 3

Outlet from Site = 36" RCP
Flow = 1323.10; Road Elev = 1329.0
Max Head Avail = 29.0 - 23.1 = 4.9 feet

Area to N.W. Corner = 28 Acres
14 Ac developed $C_{100} = 0.76$
14 Ac Pasture $C_{100} = 0.65$

$\bar{C} = 0.71$, A = 28 Ac; Tc = 20 min
$i_{100} = 6.53$"/hr.

$Q_{100} = (0.71)(28)(6.53) = 130$ cfs

Check w/ HEC-1
SCS Lag = 0.20 hours
$\overline{CN} = 93+80/2 = 87$
100 yr - 24 hr storm
BA = 28/640 = 0.0438 sq. miles

(over)

Tara Falls 1-27-98

Route through New Pond In Res "C"

| Elev | Area | HW/D (1323.10 ft) | Qpipe (Highway Culvert Cht.) |
|---|---|---|---|
| 1329 | 1.05 | 1.97 | 73 |
| 1328 | 0.96 | 1.6 | 65 |
| 1327 | – | 1.3 | 52 |
| 1326 | 0.78 | 1.0 | 37 |
| 1325 | – | 0.6 | 16 |
| 1324 | 0.62 | 0.3 | 4 |
| 1323.5 | 0.51 | – | – |

Results

Qin = 140 cfs
Qout = 70 cfs (culvert)
100 yr W.S. = 1328.58; Use 1329.0

Check 100yr W.S. on Spring Branch Far
Mile Creek on N. Side Harry.
Elev @ w. Culvert = 1325.5 < 1329.0 O.K.
Culvert Controls.

tara 3.ncl

```
HEC1 S/N: 1343000364        HMVersion: 6.33    Data File: taram3.hc1

*****************************************                                                  ***************************************
*                                       *                                                  *                                     *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                  *    U.S. ARMY CORPS OF ENGINEERS     *
*               MAY   1991              *                                                  *    HYDROLOGIC ENGINEERING CENTER    *
*            VERSION 4.0.1E             *                                                  *         609 SECOND STREET           *
*                                       *                                                  *       DAVIS, CALIFORNIA 95616       *
*  RUN DATE  01/20/1998  TIME  14:59:23 *                                                  *           (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



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                                            :::::::::::::::::::::::::::::::::::::::::::
                                            :::                                     :::
                                            :::  Full Microcomputer Implementation  :::
                                            :::                by                   :::
                                            :::        Haestad Methods, Inc.        :::
                                            :::                                     :::
                                            :::::::::::::::::::::::::::::::::::::::::::
                                            :::::::::::::::::::::::::::::::::::::::::::

                                 37 Brookside Road * Waterbury, Connecticut  06708 * (203) 755-1666


           THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.
           THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
           THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
           NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
           DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
           KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM
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                                                 HEC-1 INPUT                                           PAGE  1

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

 *** FREE ***
         1      ID  Tara Falls - Modified Existing Pond with new DS detention pond
         2      IT       5                     289
         3      IN      30
         4      IO       4

         5      KK  BASINA
         6      BA   0.167
         7      PC       0    0.04    0.08     .12     .17     .22     .27     .32     .37     .43
         8      PC     .49     .56     .62     .69     .77     .85     .94    1.04    1.15    1.27
         9      PC    1.41    1.59    1.83    2.21    5.17    5.73    6.02    6.23    6.40    6.54
        10      PC    6.65    6.76    6.86    6.95    7.02    7.09    7.16    7.23    7.29    7.36
        11      PC    7.43    7.49    7.54    7.59    7.63    7.68    7.72    7.76    7.80
        12      UD    0.42
        13      LS       0      88

        14      KK    POND
        15      RS       1    ELEV 1332.50
        16      SA     4.3       5     7.4     9.8
        17      SE  1332.5    1333    1334    1335
        18      SQ     0.1      15      45      82     127     177     233     294
        19      SE  1332.5 1332.75    1333 1333.25  1333.5 1333.75    1334 1334.25

        20      KK  BASINB
        21      BA   0.042
        22      UD    0.15
        23      LS       0      93

        24      KK    COMB
        25      HC       2

        26      KK   DPOND
        27      RS       1    ELEV    1319
        28      SA     1.9     2.1     2.3     2.5     2.7
        29      SE    1319    1320    1321    1322    1323
        30      SQ     0.1      14      39      71     110     154     202     255     312
        31      SE    1319  1319.5    1320  1320.5    1321  1321.5    1322  1322.5    1323
        32      ZZ
```

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HEC1 S/N: 1343000364        HMVersion: 6.33    Data File: taram3.hc1

*****************************************                                         ***************************************
*                                       *                                         *                                     *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                         *   U.S. ARMY CORPS OF ENGINEERS      *
*              MAY   1991               *                                         *   HYDROLOGIC ENGINEERING CENTER     *
*           VERSION 4.0.1E              *                                         *         609 SECOND STREET           *
*                                       *                                         *      DAVIS, CALIFORNIA 95616        *
*  RUN DATE  01/20/1998  TIME  14:59:23 *                                         *          (916) 756-1104             *
*                                       *                                         *                                     *
*****************************************                                         ***************************************



                        Tara Falls - Modified Existing Pond with new DS detention pond

  4 IO        OUTPUT CONTROL VARIABLES
                    IPRNT          4  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        289  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      2   0  ENDING DATE
                   NDTIME       0000  ENDING TIME
                    ICENT         19  CENTURY MARK

                COMPUTATION INTERVAL    0.08 HOURS
                     TOTAL TIME BASE   24.00 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


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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```
                 **************
                 *            *
   5 KK          *   BASINA   *
                 *            *
                 **************

   3 IN              TIME DATA FOR INPUT TIME SERIES
                           JXMIN          30  TIME INTERVAL IN MINUTES
                          JXDATE      1    0  STARTING DATE
                          JXTIME           0  STARTING TIME

                    SUBBASIN RUNOFF DATA

   6 BA              SUBBASIN CHARACTERISTICS
                           TAREA        0.17  SUBBASIN AREA

                     PRECIPITATION DATA

   6 PB                    STORM        7.80  BASIN TOTAL PRECIPITATION

   6 PI                INCREMENTAL PRECIPITATION PATTERN
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.02      0.01      0.01      0.01      0.02      0.02      0.02      0.02
                          0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                          0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                          0.03      0.03      0.03      0.03      0.03      0.03      0.04      0.04      0.04      0.04
                          0.04      0.04      0.06      0.06      0.06      0.06      0.06      0.06      0.49      0.49
                          0.49      0.49      0.49      0.49      0.09      0.09      0.09      0.09      0.09      0.09
                          0.05      0.05      0.05      0.05      0.05      0.05      0.03      0.04      0.03      0.03
                          0.04      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02
                          0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                          0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                          0.02      0.02      0.01      0.01      0.02      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                          0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
```

```
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01

 13 LS          SCS LOSS RATE
                      STRTL        0.27  INITIAL ABSTRACTION
                     CRVNBR       88.00  CURVE NUMBER
                      RTIMP        0.00  PERCENT IMPERVIOUS AREA

 12 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG        0.42  LAG

                                                   ***

                                             UNIT HYDROGRAPH
                                          27 END-OF-PERIOD ORDINATES
               15.       46.       96.      147.      173.      173.      155.      129.       94.       68.
               50.       38.       28.       21.       16.       12.        9.        7.        5.        4.
                3.        2.        2.        1.        1.        1.        0.

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

             **************
             *            *
 14 KK       *     POND   *
             *            *
             **************

               HYDROGRAPH ROUTING DATA

 15 RS          STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        ELEV  TYPE OF INITIAL CONDITION
                     RSVRIC     1332.50  INITIAL CONDITION
                          X        0.00 WORKING R AND D COEFFICIENT

 16 SA                 AREA         4.3       5.0       7.4       9.8

 17 SE          ELEVATION     1332.50   1333.00   1334.00   1335.00

 18 SQ          DISCHARGE          0.       15.       45.       82.      127.      177.      233.      294.

 19 SE          ELEVATION     1332.50   1332.75   1333.00   1333.25   1333.50   1333.75   1334.00   1334.25
```

```
                                                            ***

                                                COMPUTED STORAGE-ELEVATION DATA

                   STORAGE       0.00       2.32       8.48      17.06
                 ELEVATION    1332.50    1333.00    1334.00    1335.00

                                            COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

                   STORAGE       0.00       1.12       2.32       3.64       5.10       6.71       8.48      10.40      17.06
                   OUTFLOW       0.10      15.00      45.00      82.00     127.00     177.00     233.00     294.00     477.00
                 ELEVATION    1332.50    1332.75    1333.00    1333.25    1333.50    1333.75    1334.00    1334.25    1335.00


*** *** *** *** *** *** *** *** *** *** ***.*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                 **************
                 *            *
   20 KK         *    BASINB  *
                 *            *
                 **************

                    SUBBASIN RUNOFF DATA

   21 BA              SUBBASIN CHARACTERISTICS
                            TAREA         0.04   SUBBASIN AREA

                      PRECIPITATION DATA

    6 PB                    STORM         7.80   BASIN TOTAL PRECIPITATION

    6 PI                INCREMENTAL PRECIPITATION PATTERN
                          0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01
                          0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01
                          0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01
                          0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01
                          0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01
                          0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01
                          0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01
                          0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01
                          0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01
                          0.01       0.01       0.02       0.01       0.01       0.01       0.02       0.02       0.02       0.02
                          0.02       0.02       0.02       0.02       0.02       0.02       0.02       0.02       0.02       0.02
                          0.02       0.02       0.02       0.02       0.02       0.02       0.02       0.02       0.02       0.02
                          0.03       0.03       0.03       0.03       0.03       0.03       0.04       0.04       0.04       0.04
                          0.04       0.04       0.06       0.06       0.06       0.06       0.06       0.06       0.49       0.49
```

```
             0.49     0.49     0.49     0.49     0.09     0.09     0.09     0.09     0.09     0.09
             0.05     0.05     0.05     0.05     0.05     0.05     0.03     0.04     0.03     0.03
             0.04     0.03     0.03     0.03     0.03     0.03     0.03     0.03     0.02     0.02
             0.02     0.02     0.02     0.02     0.02     0.02     0.02     0.02     0.02     0.02
             0.02     0.02     0.02     0.02     0.02     0.02     0.02     0.02     0.02     0.02
             0.02     0.02     0.01     0.01     0.02     0.01     0.01     0.01     0.01     0.01
             0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
             0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
             0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
             0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
             0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
             0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
             0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
             0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
             0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01

23 LS        SCS LOSS RATE
                   STRTL          0.15  INITIAL ABSTRACTION
                  CRVNBR         93.00  CURVE NUMBER
                   RTIMP          0.00  PERCENT IMPERVIOUS AREA

22 UD        SCS DIMENSIONLESS UNITGRAPH
                    TLAG          0.15  LAG

                                                ***

                                             UNIT HYDROGRAPH
                                         11 END-OF-PERIOD ORDINATES
            39.      104.       91.       46.       23.       11.        6.        3.        1.        1.
             0.


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

          **************
          *            *
24 KK     *    COMB    *
          *            *
          **************

25 HC        HYDROGRAPH COMBINATION
                   ICOMP             2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                ***

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

```
                 **************
                 *            *
  26 KK          *    DPOND   *
                 *            *
                 **************
                   HYDROGRAPH ROUTING DATA

  27 RS               STORAGE ROUTING
                            NSTPS          1  NUMBER OF SUBREACHES
                             ITYP       ELEV  TYPE OF INITIAL CONDITION
                           RSVRIC    1319.00  INITIAL CONDITION
                                X       0.00 WORKING R AND D COEFFICIENT

  28 SA                    AREA        1.9        2.1        2.3        2.5        2.7

  29 SE               ELEVATION     1319.00    1320.00    1321.00    1322.00    1323.00

  30 SQ               DISCHARGE          0.        14.        39.        71.       110.       154.       202.       255.       312.

  31 SE               ELEVATION     1319.00    1319.50    1320.00    1320.50    1321.00    1321.50    1322.00    1322.50    1323.00
                                                                   ***
                                                        COMPUTED STORAGE-ELEVATION DATA
               STORAGE        0.00       2.00       4.20       6.60       9.20
             ELEVATION     1319.00    1320.00    1321.00    1322.00    1323.00

                                                    COMPUTED STORAGE-OUTFLOW-ELEVATION DATA
               STORAGE        0.00       0.97       2.00       3.07       4.20       5.37       6.60       7.87       9.20
               OUTFLOW        0.10      14.00      39.00      71.00     110.00     154.00     202.00     255.00     312.00
             ELEVATION     1319.00    1319.50    1320.00    1320.50    1321.00    1321.50    1322.00    1322.50    1323.00

WARNING --- ROUTED OUTFLOW (    313.) IS GREATER THAN MAXIMUM OUTFLOW (    312.) IN STORAGE-OUTFLOW TABLE
```

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

                                 PEAK    TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD        BASIN    MAXIMUM    TIME OF
        OPERATION     STATION    FLOW     PEAK                                              AREA      STAGE    MAX STAGE
                                                                                                      6-HOUR     24-HOUR      72-HOUR

        HYDROGRAPH AT  BASINA     420.    12.25          89.          28.          28.       0.17

        ROUTED TO        POND     307.    12.50          88.          28.          28.       0.17   1334.30      12.50

        HYDROGRAPH AT  BASINB     151.    12.00          24.           8.           8.       0.04

        2 COMBINED AT    COMB     341.    12.50         112.          36.          36.       0.21

        ROUTED TO       DPOND     313.    12.67         111.          36.          36.       0.21   1323.01      12.67


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

```
HEC1 S/N: 1343000364      HMVersion: 6.33    Data File: taram2.hc1

 *****************************************                                       ***************************************
 *                                       *                                       *                                     *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                       *     U.S. ARMY CORPS OF ENGINEERS    *
 *             MAY   1991                *                                       *    HYDROLOGIC ENGINEERING CENTER    *
 *           VERSION 4.0.1E              *                                       *          609 SECOND STREET          *
 *                                       *                                       *       DAVIS, CALIFORNIA 95616       *
 * RUN DATE  01/20/1998  TIME  15:00:13  *                                       *           (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



                                          ::::::::::::::::::::::::::::::::::::::::::
                                          ::::::::::::::::::::::::::::::::::::::::::
                                          :::                                    :::
                                          :::  Full Microcomputer Implementation :::
                                          :::                by                  :::
                                          :::        Haestad Methods, Inc.       :::
                                          :::                                    :::
                                          ::::::::::::::::::::::::::::::::::::::::::
                                          ::::::::::::::::::::::::::::::::::::::::::

                               37 Brookside Road * Waterbury, Connecticut  06708 * (203) 755-1666



              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
```

```
                                   HEC-1 INPUT                                      PAGE  1

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

*** FREE ***
    1        ID  Tara Falls Existing Basin to Harry with existng pond modeled.
    2        IT       5                     289
    3        IN      30
    4        IO       4

    5        KK  BASINA
    6        BA   0.167
    7        PC       0    0.04    0.08     .12     .17     .22     .27     .32     .37     .43
    8        PC     .49     .56     .62     .69     .77     .85     .94    1.04    1.15    1.27
    9        PC    1.41    1.59    1.83    2.21    5.17    5.73    6.02    6.23    6.40    6.54
   10        PC    6.65    6.76    6.86    6.95    7.02    7.09    7.16    7.23    7.29    7.36
   11        PC    7.43    7.49    7.54    7.59    7.63    7.68    7.72    7.76    7.80
   12        UD    0.42
   13        LS       0      83

   14        KK    POND
   15        RS       1    ELEV    1333
   16        SA       5     7.4     9.8
   17        SE    1333    1334    1335
   18        SQ     0.1      14      87   258.5     557
   19        SE    1333  1333.5    1334  1334.5    1335

   20        KK  BASINB
   21        BA   0.042
   22        UD    0.15
   23        LS       0      80

   24        KK    COMB
   25        HC       2
   26        ZZ
```

```
HEC1 S/N: 1343000364        HMVersion: 6.33    Data File: taram2.hcl

 *****************************************                                                *****************************************
 *                                       *                                                *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                *     U.S. ARMY CORPS OF ENGINEERS      *
 *              MAY   1991               *                                                *   HYDROLOGIC ENGINEERING CENTER       *
 *            VERSION 4.0.1E             *                                                *         609 SECOND STREET             *
 *                                       *                                                *       DAVIS, CALIFORNIA 95616         *
 *  RUN DATE  01/20/1998  TIME  15:00:13 *                                                *         (916) 756-1104                *
 *                                       *                                                *                                       *
 *****************************************                                                *****************************************



                              Tara Falls Existing Basin to Harry with existng pond modeled.

   4 IO         OUTPUT CONTROL VARIABLES
                      IPRNT          4  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        289  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2   0  ENDING DATE
                     NDTIME       0000  ENDING TIME
                      ICENT         19  CENTURY MARK

                  COMPUTATION INTERVAL   0.08 HOURS
                       TOTAL TIME BASE  24.00 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


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

            **************
            *            *
   5 KK     *   BASINA   *
            *            *
            **************
```

```
 3 IN         TIME DATA FOR INPUT TIME SERIES
                    JXMIN         30  TIME INTERVAL IN MINUTES
                   JXDATE      1   0  STARTING DATE
                   JXTIME          0  STARTING TIME

            SUBBASIN RUNOFF DATA

 6 BA         SUBBASIN CHARACTERISTICS
                    TAREA       0.17  SUBBASIN AREA

              PRECIPITATION DATA

 6 PB               STORM       7.80  BASIN TOTAL PRECIPITATION

 6 PI           INCREMENTAL PRECIPITATION PATTERN
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.02      0.01      0.01      0.01      0.02      0.02      0.02      0.02
                   0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                   0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                   0.03      0.03      0.03      0.03      0.03      0.03      0.04      0.04      0.04      0.04
                   0.04      0.04      0.06      0.06      0.06      0.06      0.06      0.06      0.49      0.49
                   0.49      0.49      0.49      0.49      0.09      0.09      0.09      0.09      0.09      0.09
                   0.05      0.05      0.05      0.05      0.05      0.05      0.03      0.04      0.03      0.03
                   0.04      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02
                   0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                   0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                   0.02      0.02      0.01      0.01      0.02      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01

13 LS         SCS LOSS RATE
                   STRTL        0.41  INITIAL ABSTRACTION
                  CRVNBR       83.00  CURVE NUMBER
                   RTIMP        0.00  PERCENT IMPERVIOUS AREA

12 UD         SCS DIMENSIONLESS UNITGRAPH
                    TLAG        0.42  LAG

                                                    ***

                                                UNIT HYDROGRAPH
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```
                                                                 27 END-OF-PERIOD ORDINATES
                   15.        46.        96.       147.       173.       173.       155.       129.        94.        68.
                   50.        38.        28.        21.        16.        12.         9.         7.         5.         4.
                    3.         2.         2.         1.         1.         1.         0.

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

              **************
              *            *
  14 KK       *    POND    *
              *            *
              **************

                HYDROGRAPH ROUTING DATA

  15 RS          STORAGE ROUTING
                      NSTPS             1  NUMBER OF SUBREACHES
                       ITYP          ELEV  TYPE OF INITIAL CONDITION
                     RSVRIC       1333.00  INITIAL CONDITION
                          X          0.00 WORKING R AND D COEFFICIENT

  16 SA                AREA          5.0        7.4        9.8

  17 SE          ELEVATION     1333.00    1334.00    1335.00

  18 SQ          DISCHARGE          0.         14.         87.        259.        557.

  19 SE          ELEVATION     1333.00    1333.50    1334.00    1334.50    1335.00

                                                                        ***

                                                       COMPUTED STORAGE-ELEVATION DATA

                 STORAGE       0.00       6.16      14.73
               ELEVATION    1333.00    1334.00    1335.00

                                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

                 STORAGE       0.00       2.78       6.16      10.15      14.73
                 OUTFLOW       0.10      14.00      87.00     258.50     557.00
               ELEVATION    1333.00    1333.50    1334.00    1334.50    1335.00

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
              **************
              *            *
  20 KK       *   BASINB   *
              *            *
              **************

                SUBBASIN RUNOFF DATA

  21 BA          SUBBASIN CHARACTERISTICS
                      TAREA          0.04  SUBBASIN AREA

                 PRECIPITATION DATA
```

```
  6 PB            STORM       7.80  BASIN TOTAL PRECIPITATION

  6 PI          INCREMENTAL PRECIPITATION PATTERN
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.02      0.01      0.01      0.01      0.02      0.02      0.02      0.02
                  0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                  0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                  0.03      0.03      0.03      0.03      0.03      0.03      0.04      0.04      0.04      0.04
                  0.04      0.04      0.06      0.06      0.06      0.06      0.06      0.06      0.49      0.49
                  0.49      0.49      0.49      0.49      0.09      0.09      0.09      0.09      0.09      0.09
                  0.05      0.05      0.05      0.05      0.05      0.05      0.03      0.04      0.03      0.03
                  0.04      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02
                  0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                  0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                  0.02      0.02      0.01      0.01      0.02      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01

 23 LS          SCS LOSS RATE
                      STRTL         0.50  INITIAL ABSTRACTION
                     CRVNBR        80.00  CURVE NUMBER
                      RTIMP         0.00  PERCENT IMPERVIOUS AREA

 22 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG         0.15  LAG
                                                                        ***

                                                                  UNIT HYDROGRAPH
                                                             11 END-OF-PERIOD ORDINATES
                   39.      104.       91.       46.       23.       11.        6.        3.        1.        1.      0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
              **************
              *            *
 24 KK        *    COMB    *
              *            *
              **************
 25 HC          HYDROGRAPH COMBINATION
                      ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                        ***
```

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

                                 PEAK    TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
       OPERATION     STATION     FLOW      PEAK                                           AREA       STAGE     MAX STAGE
                                                       6-HOUR      24-HOUR    72-HOUR

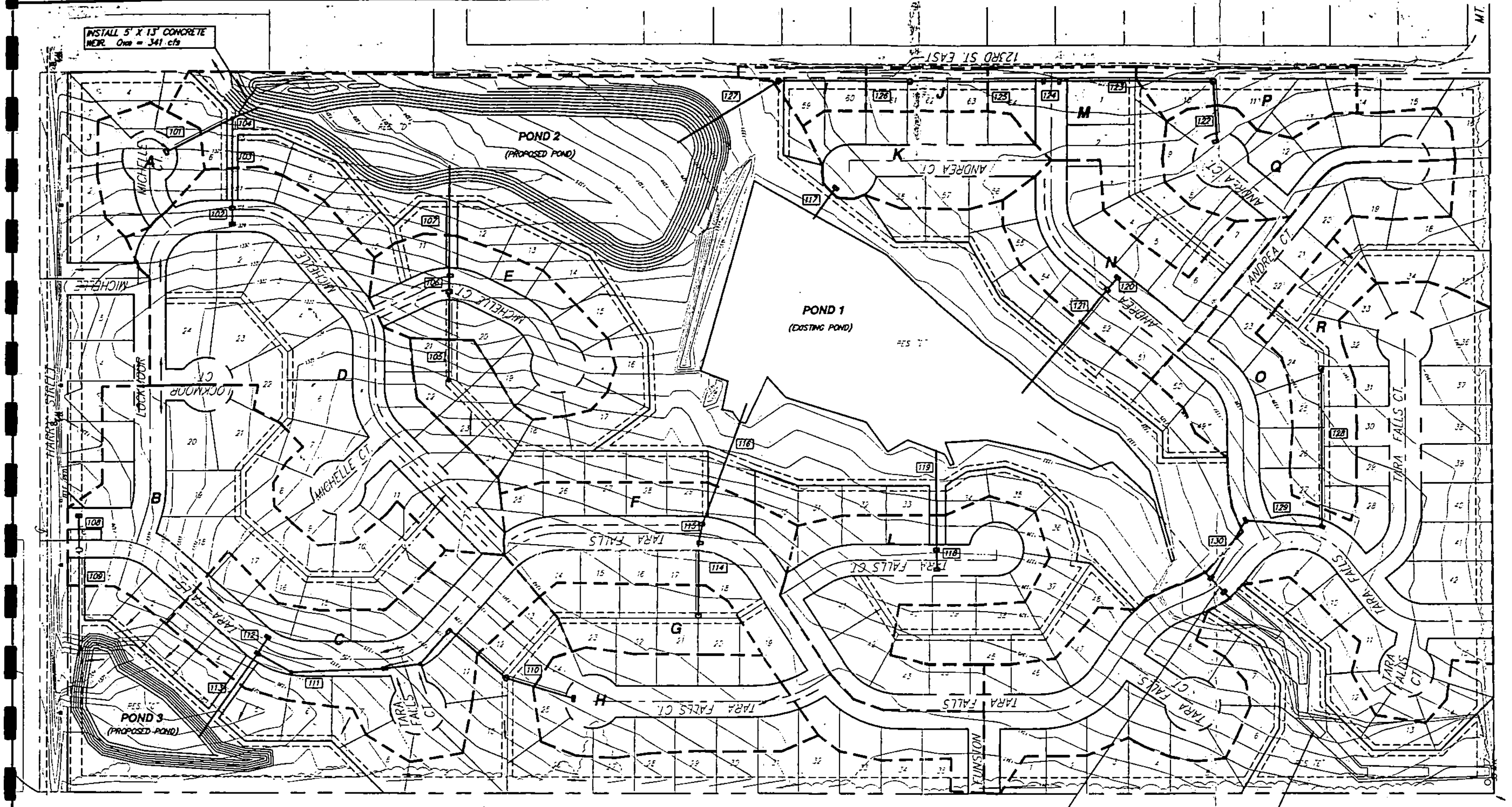
       HYDROGRAPH AT   BASINA     388.     12.25         82.         26.        26.        0.17

       ROUTED TO         POND     317.     12.42         80.         25.        25.        0.17   1334.60      12.42

       HYDROGRAPH AT   BASINB     128.     12.00         20.          6.         6.        0.04

       2 COMBINED AT     COMB     351.     12.42         99.         31.        31.        0.21


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



INSTALL 5' X 13' CONCRETE WEIR. Q100 = 341 cfs

INSTALL 3' X 5' RCBC
Q100 = 196 cfs

Realign channel clear of lots.
Min. slope = 0.8%

## POND SUMMARY

Pond 1: Qin (100 yr) = 420 cfs
Qout (100 yr) = 348 cfs
Outlet = 65' Weir
Static Pool = 1322.5
100 yr. Water Surface = 1334.0

Pond 2: Qin (100 yr) = 386 cfs
Qout (100 yr) = 341 cfs
Outlet = 5' X 13' Notched Weir
Static Pool = 1320.0
100 yr. Water Surface = 1324.3

Pond 3: Qin (100 yr) = 140 cfs
Qout (100 yr) = 70 cfs
Outlet = Existing 36" RCP
Static Pool = 1323.5
100 yr. Water Surface = 1329.0

## DRAINAGE BASIN SUMMARY

| BASIN | AREA (ac) | Tc | $I_2$ | $I_{100}$ | $C_2$ | $C_{100}$ | $Q_2$ | $Q_{100}$ |
|---|---|---|---|---|---|---|---|---|
| A | 0.79 | 15 | 3.83 | 7.37 | 0.57 | 0.79 | 1.7 | 4.6 |
| B | 3.93 | 15 | 3.83 | 7.37 | 0.51 | 0.71 | 7.7 | 20.6 |
| C | 3.15 | 15 | 3.83 | 7.37 | 0.57 | 0.79 | 6.2 | 18.3 |
| D | 5.79 | 15 | 3.83 | 7.37 | 0.51 | 0.71 | 11.3 | 30.3 |
| E | 2.01 | 15 | 3.83 | 7.37 | 0.57 | 0.79 | 4.4 | 11.7 |
| F | 3.40 | 15 | 3.83 | 7.37 | 0.57 | 0.79 | 7.4 | 19.8 |
| G | 0.97 | 15 | 3.83 | 7.37 | 0.41 | 0.67 | 1.5 | 4.8 |
| H | 1.92 | 15 | 3.83 | 7.37 | 0.57 | 0.79 | 4.2 | 11.2 |
| I | 0.34 | 15 | 3.83 | 7.37 | 0.41 | 0.67 | 0.5 | 2.0 |
| J | 0.41 | 15 | 3.83 | 7.37 | 0.41 | 0.67 | 0.6 | 2.0 |
| K | 1.49 | 15 | 3.83 | 7.37 | 0.57 | 0.79 | 3.3 | 8.7 |
| L | 2.73 | 15 | 3.83 | 7.37 | 0.57 | 0.79 | 6.0 | 15.9 |
| M | 1.65 | 15 | 3.83 | 7.37 | 0.45 | 0.71 | 2.8 | 8.6 |
| N | 2.05 | 15 | 3.83 | 7.37 | 0.57 | 0.79 | 4.5 | 11.9 |
| O | 10.26 | 15 | 3.83 | 7.37 | 0.51 | 0.71 | 20.0 | 53.7 |
| P | 0.84 | 15 | 3.83 | 7.37 | 0.41 | 0.67 | 1.3 | 4.1 |
| Q | 1.58 | 15 | 3.83 | 7.37 | 0.57 | 0.79 | 3.4 | 9.2 |
| R | 1.38 | 15 | 3.83 | 7.37 | 0.41 | 0.67 | 2.2 | 6.8 |
| S | 1.40 | 15 | 3.83 | 7.37 | 0.41 | 0.67 | 2.2 | 6.9 |
| T | 22.14 | 30 | 2.67 | 5.40 | 0.41 | 0.67 | 24.2 | 80.1 |

## PIPE SUMMARY

| Pipe | Size | Grade | Q (cfs) |
|---|---|---|---|
| 101 | 18" | 0.50% | 4.6 |
| 102 | 24" | 0.50% | 15.1 |
| 103 | 24" | 2.00% | 30.3 |
| 104 | 30" | 1.00% | 34.9 |
| 105 | 18" | 0.50% | 3.6 |
| 106 | 18" | 0.90% | 9.5 |
| 107 | 18" | 2.00% | 15.3 * |
| 108 | 18" | 1.00% | 10.0 |
| 109 | 24" | 0.80% | 20.0 |
| 110 | 24" | 0.50% | 11.2 |
| 111 | 24" | 0.50% | 15.7 |
| 112 | 18" | 1.00% | 3.1 |
| 113 | 24" | 1.00% | 21.9 * |
| 114 | 18" | 0.50% | 4.8 |
| 115 | 18" | 1.00% | 8.5 |
| 116 | 24" | 0.40% | 12.2 * |
| 117 | 18" | 1.00% | 8.7 |
| 118 | 18" | 0.50% | 7.4 |
| 119 | 24" | 0.50% | 15.9 |
| 120 | 18" | 0.50% | 6.0 |
| 121 | 24" | 0.30% | 11.9 |
| 122 | 18" | 1.00% | 9.2 |
| 123 | 24" | 0.40% | 13.3 |
| 124 | 24" | 0.70% | 17.6 |
| 125 | 24" | 1.00% | 21.9 |
| 126 | 24" | 1.20% | 23.9 |
| 127 | 24" | 1.40% | 25.9 |
| 128 | 18" | 0.50% | 6.8 |
| 129 | 24" | 0.40% | 12.1 |
| 130 | 24" | 0.70% | 17.4 * |

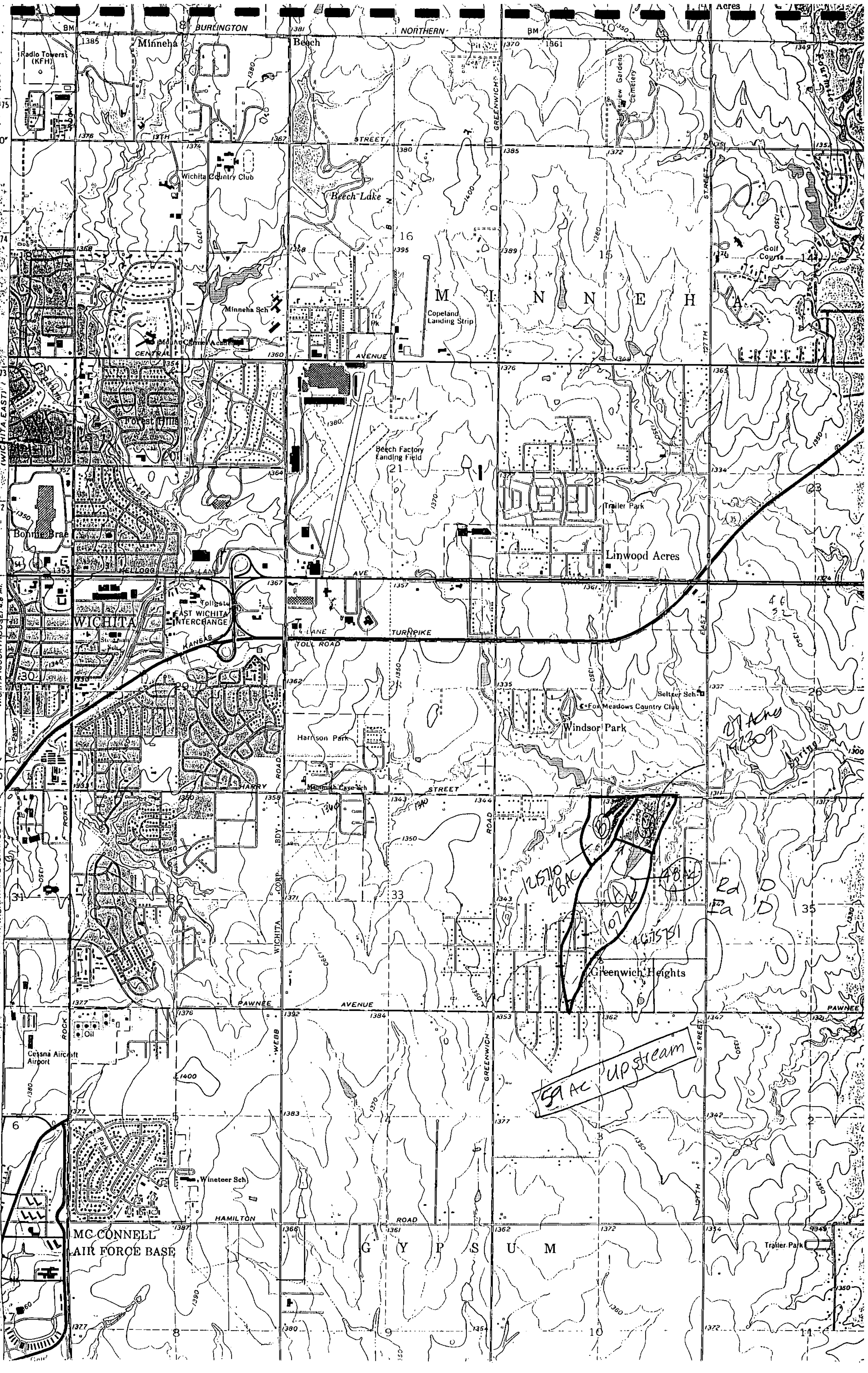
* 100 year storm overtops into drainage swale

DRAINAGE PLAN
TARA FALLS ADDITION
SEDGWICK COUNTY, KANSAS

SRB
924 NORTH MAIN
WICHITA KANSAS 67203
316-264-8008
FAX 264-4821
SAVOY, RUGGLES & BOHM, P.A.
ENGINEERING & SURVEYING

PROJECT NUMBER

| DESIGN | DRAWN | UTILITY | REVIEW | DATE | REVISED | SHEET | OF |
|---|---|---|---|---|---|---|---|
| CMB/KWL | KWL |  |  | Dec. 3, 1997 |  | 1 | 1 |


BURLINGTON
NORTHERN
Minneha
Beech
Radio Towers (KFH)
13TH
STREET
Wichita Country Club
Beech Lake
New Gardens Cemetery
16
15
14
17
M I N N E H A
Minneha Sch
Mount Carmel Academy
Copeland Landing Strip
Golf Course
CENTRAL
AVENUE
127TH
Forest Hills
Beech Factory Landing Field
21
22
23
Trailer Park
Linwood Acres
Bonnie Brae
KELLOGG
AVE
WICHITA
Tollgate
EAST WICHITA INTERCHANGE
KANSAS
4-LANE
TURNPIKE
TOLL ROAD
EAST
Seltzer Sch
Fox Meadows Country Club
Windsor Park
Harrison Park
Mammoth Cave Sch
HARRY
STREET
Spring
GREENWICH
ROAD
WICHITA CORP. BDY.
WEBB
ROCK
33
34
35
31
32
Greenwich Heights
PAWNEE
AVENUE
Oil
Cessna Aircraft Airport
Park
Wineteer Sch
HAMILTON
ROAD
MC CONNELL AIR FORCE BASE
G Y P S U M
Trailer Park
6
5
4
3
2
8
9
10
11
KINGMAN 49 MI.
WICHITA (COURTHOUSE) 4.8 MI.
6559 III NE (WICHITA EAST)
WELLINGTON INTERCHANGE 28 MI.
SOUTH WICHITA INTERCHANGE 6 MI.
27 Acres
1142309
125710
28AC
B
C
A
48AC
107AC
4615751
Rd D
Fa D
59 Ac upstream

```
HEC1 S/N: 1343000364        HMVersion: 6.33    Data File: tf5.hc1

*****************************************                          ****************************************
*                                       *                          *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                          *  U.S. ARMY CORPS OF ENGINEERS        *
*              MAY   1991               *                          *  HYDROLOGIC ENGINEERING CENTER       *
*           VERSION 4.0.1E              *                          *        609 SECOND STREET             *
*                                       *                          *     DAVIS, CALIFORNIA 95616          *
*  RUN DATE  05/02/2000  TIME  13:32:00 *                          *         (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


                                     :::::::::::::::::::::::::::::::::::::::::
                                     :::::::::::::::::::::::::::::::::::::::::
                                     :::                                   :::
                                     :::  Full Microcomputer Implementation :::
                                     :::               by                  :::
                                     :::       Haestad Methods, Inc.       :::
                                     :::                                   :::
                                     :::::::::::::::::::::::::::::::::::::::::
                                     :::::::::::::::::::::::::::::::::::::::::

                        37 Brookside Road * Waterbury, Connecticut  06708 * (203) 755-1666


          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

                                                        HEC-1 INPUT                                                  PAGE  1

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

*** FREE ***
          1          ID   Tara Falls Existing Basin to Harry with existng pond modeled, 5 year, 24 hour
          2          IT       5                     289
          3          IN      30
          4          IO       4

          5          KK  BASINA
          6          BA   0.167
          7          PC       0    0.02    0.05    0.08    0.11    0.14    0.17    0.20    0.23    0.27
          8          PC    0.30    0.34    0.38    0.43    0.47    0.52    0.58    0.64    0.71    0.78
          9          PC    0.87    0.98    1.13    1.36    3.18    3.53    3.71    3.84    3.94    4.02
         10          PC    4.09    4.16    4.22    4.28    4.32    4.36    4.41    4.45    4.49    4.53
         11          PC    4.57    4.61    4.64    4.67    4.70    4.72    4.75    4.78    4.80
         12          UD    0.42
         13          LS       0      83

         14          KK    POND
         15          RS       1    ELEV    1333
         16          SA       5     7.4     9.8
         17          SE    1333    1334    1335
         18          SQ     0.1      14      87   258.5     557
         19          SE    1333  1333.5    1334  1334.5    1335

         20          KK  BASINB
         21          BA   0.042
         22          UD    0.15
         23          LS       0      80

         24          KK    COMB
         25          HC       2
```

```
        26          KK  BASINA
        27          BA   0.167
        28          UD    0.42
        29          LS       0      88

        30          KK    POND
        31          RS       1     ELEV 1332.50
        32          SA     4.3       5     7.4     9.8
        33          SE  1332.5    1333    1334    1335
        34          SQ     0.1      15      45      82     127     177     233     294
        35          SE  1332.5 1332.75    1333 1333.25  1333.5 1333.75    1334 1334.25

        36          KK  BASINB
        37          BA   0.042
        38          UD    0.15
        39          LS       0      93

        40          KK    COMB
        41          HC       2                                                          □□
HEC-1 INPUT                                   PAGE  2

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


        42          KK   DPOND
        43          RS       1     ELEV    1319
        44          SA     1.9     2.1     2.3     2.5     2.7
        45          SE    1319    1320    1321    1322    1323
        46          SQ     0.1      14      39      71     110     154     202     255     312
        47          SE    1319  1319.5    1320  1320.5    1321  1321.5    1322  1322.5    1323
        48          ZZ                                                                       □□HEC1 S/N: 1343000364
HMVersion: 6.33    Data File: tf5.hcl

****************************************
**************************************
*                                      *                                     *
*
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                     *   U.S. ARMY CORPS OF ENGINEERS
*
*              MAY  1991               *                                     *   HYDROLOGIC ENGINEERING CENTER
*
*           VERSION 4.0.1E             *                                     *         609 SECOND STREET
*
*                                      *                                     *      DAVIS, CALIFORNIA 95616
*
*  RUN DATE  05/02/2000  TIME  13:32:00 *                                    *          (916) 756-1104
*
*                                      *                                     *
*
****************************************
**************************************



                         Tara Falls Existing Basin to Harry with existng pond modeled, 5 year, 24 hour

  4 IO        OUTPUT CONTROL VARIABLES
                    IPRNT          4  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        289  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE     2    0  ENDING DATE
                   NDTIME       0000  ENDING TIME
                    ICENT         19  CENTURY MARK

                COMPUTATION INTERVAL    0.08 HOURS
                      TOTAL TIME BASE   24.00 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


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


            **************
            *            *
  5 KK      *   BASINA   *
            *            *
            **************
```

```
 3 IN         TIME DATA FOR INPUT TIME SERIES
                   JXMIN          30  TIME INTERVAL IN MINUTES
                  JXDATE      1    0  STARTING DATE
                  JXTIME           0  STARTING TIME

            SUBBASIN RUNOFF DATA

 6 BA         SUBBASIN CHARACTERISTICS
                   TAREA        0.17  SUBBASIN AREA

              PRECIPITATION DATA

 6 PB              STORM        4.80  BASIN TOTAL PRECIPITATION

 6 PI          INCREMENTAL PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.00      0.01
                 0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.00      0.01      0.00
                 0.01      0.01      0.01      0.00      0.01      0.00      0.01      0.00      0.01      0.00
                 0.00      0.01      0.00      0.00      0.01      0.00      0.00      0.01      0.00      0.00
                 0.01      0.00      0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01
                 0.01      0.01      0.01      0.01      0.00      0.00      0.01      0.00      0.00      0.00
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.02      0.01      0.01      0.02      0.01
                 0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.03      0.02
                 0.02      0.02      0.04      0.04      0.04      0.04      0.04      0.04      0.30      0.30
                 0.30      0.30      0.30      0.30      0.06      0.06      0.06      0.06      0.06      0.06
                 0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02      0.02      0.02
                 0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.01      0.01
                 0.00      0.01      0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.00
                 0.01      0.01      0.00      0.01      0.00      0.00      0.00      0.00      0.00      0.00
                 0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.00
                 0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00

13 LS         SCS LOSS RATE
                   STRTL        0.41  INITIAL ABSTRACTION
                  CRVNBR       83.00  CURVE NUMBER
                   RTIMP        0.00  PERCENT IMPERVIOUS AREA

12 UD         SCS DIMENSIONLESS UNITGRAPH
                    TLAG        0.42  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                      27 END-OF-PERIOD ORDINATES
           15.         46.        96.       147.        173.       173.       155.        129.        94.        68.
           50.         36.        28.        21.         16.        12.         9.          7.         5.         4.
            3.          2.         2.         1.          1.         1.         0.

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

          ***************
          *             *
14 KK     *    POND     *
          *             *
          ***************

            HYDROGRAPH ROUTING DATA

15 RS         STORAGE ROUTING
                   NSTPS           1  NUMBER OF SUBREACHES
                    ITYP        ELEV  TYPE OF INITIAL CONDITION
                  RSVRIC     1333.00  INITIAL CONDITION
                       X        0.00  WORKING R AND D COEFFICIENT

16 SA              AREA         5.0        7.4        9.8

17 SE         ELEVATION     1333.00    1334.00    1335.00

18 SQ         DISCHARGE          0.        14.        67.       259.       557.

19 SE         ELEVATION     1333.00    1333.50    1334.00    1334.50    1335.00

                                                                  ***

                                                     COMPUTED STORAGE-ELEVATION DATA

          STORAGE       0.00       6.16      14.73
        ELEVATION    1333.00    1334.00    1335.00
```

```
                                      COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

         STORAGE       0.00      2.78      6.16     10.15     14.73
         OUTFLOW       0.10     14.00     67.00    258.50    557.00
       ELEVATION    1333.00   1333.50   1334.00   1334.50   1335.00


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

                **************
                *            *
  20 KK         *   BASINB   *
                *            *
                **************

                SUBBASIN RUNOFF DATA

  21 BA           SUBBASIN CHARACTERISTICS
                        TAREA         0.04  SUBBASIN AREA

                  PRECIPITATION DATA

   6 PB                 STORM         4.80  BASIN TOTAL PRECIPITATION

   6 PI             INCREMENTAL PRECIPITATION PATTERN
                       0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.00      0.01
                       0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.00      0.01      0.00
                       0.01      0.01      0.01      0.00      0.01      0.00      0.01      0.00      0.01      0.00
                       0.00      0.01      0.00      0.00      0.01      0.00      0.00      0.01      0.00      0.00
                       0.01      0.00      0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01
                       0.01      0.01      0.01      0.01      0.00      0.00      0.01      0.00      0.00      0.00
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.02      0.01      0.01      0.02      0.01
                       0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.03      0.02
                       0.02      0.02      0.04      0.04      0.04      0.04      0.04      0.04      0.30      0.30
                       0.30      0.30      0.30      0.30      0.06      0.06      0.06      0.06      0.06      0.06
                       0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02      0.02      0.02
                       0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.01      0.01
                       0.00      0.01      0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.00
                       0.01      0.01      0.00      0.01      0.00      0.00      0.00      0.00      0.00      0.00
                       0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.00
                       0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00

  23 LS           SCS LOSS RATE
                        STRTL         0.50  INITIAL ABSTRACTION
                       CRVNBR        80.00  CURVE NUMBER
                        RTIMP         0.00  PERCENT IMPERVIOUS AREA

  22 UD           SCS DIMENSIONLESS UNITGRAPH
                         TLAG         0.15  LAG
                                                        ***

                                                   UNIT HYDROGRAPH
                                               11 END-OF-PERIOD ORDINATES
              39.       104.        91.        46.        23.        11.         6.         3.         1.         1.
               0.


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

                **************
                *            *
  24 KK         *    COMB    *
                *            *
                **************

  25 HC           HYDROGRAPH COMBINATION
                        ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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                  **************
                  *            *
 26 KK            *   BASINA   *
                  *            *
                  **************

                    SUBBASIN RUNOFF DATA

 27 BA                 SUBBASIN CHARACTERISTICS
                             TAREA         0.17  SUBBASIN AREA

                       PRECIPITATION DATA

  6 PB                       STORM         4.80  BASIN TOTAL PRECIPITATION

  6 PI                   INCREMENTAL PRECIPITATION PATTERN
                            0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.00      0.01
                            0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.00      0.01      0.00
                            0.01      0.01      0.01      0.00      0.01      0.00      0.01      0.00      0.01      0.00
                            0.00      0.01      0.00      0.00      0.01      0.00      0.00      0.01      0.00      0.00
                            0.01      0.00      0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01
                            0.01      0.01      0.01      0.01      0.00      0.00      0.01      0.00      0.00      0.00
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.02      0.01      0.01      0.02      0.01
                            0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.03      0.02
                            0.02      0.02      0.04      0.04      0.04      0.04      0.04      0.04      0.30      0.30
                            0.30      0.30      0.30      0.30      0.06      0.06      0.06      0.06      0.06      0.06
                            0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02      0.02      0.02
                            0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                            0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.01      0.01
                            0.00      0.01      0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.00
                            0.01      0.01      0.00      0.01      0.00      0.00      0.00      0.00      0.00      0.00
                            0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.00
                            0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00

 29 LS                 SCS LOSS RATE
                             STRTL         0.27  INITIAL ABSTRACTION
                            CRVNBR        88.00  CURVE NUMBER
                             RTIMP         0.00  PERCENT IMPERVIOUS AREA

 28 UD                 SCS DIMENSIONLESS UNITGRAPH
                              TLAG         0.42  LAG

                                                                ***

                                                           UNIT HYDROGRAPH
                                                      27 END-OF-PERIOD ORDINATES
                    15.       46.       96.      147.      173.      173.      155.      129.       94.       68.
                    50.       38.       28.       21.       16.       12.        9.        7.        5.        4.
                     3.        2.        2.        1.        1.        1.        0.

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

                  **************
                  *            *
 30 KK            *    POND    *
                  *            *
                  **************

                    HYDROGRAPH ROUTING DATA

 31 RS                 STORAGE ROUTING
                            NSTPS             1  NUMBER OF SUBREACHES
                             ITYP          ELEV  TYPE OF INITIAL CONDITION
                            RSVRIC      1332.50  INITIAL CONDITION
                                 X         0.00 WORKING R AND D COEFFICIENT

 32 SA                       AREA          4.3        5.0        7.4        9.8

 33 SE                  ELEVATION      1332.50    1333.00    1334.00    1335.00

 34 SQ                  DISCHARGE           0.        15.        45.        82.       127.       177.       233.       294.

 35 SE                  ELEVATION      1332.50    1332.75    1333.00    1333.25    1333.50    1333.75    1334.00    1334.25

                                                                ***

                                                      COMPUTED STORAGE-ELEVATION DATA

                  STORAGE       0.00       2.32       8.48      17.06
```

```
        ELEVATION    1332.50   1333.00   1334.00   1335.00

                                          COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE        0.00      1.12      2.32      3.64      5.10      6.71      8.48     10.40     17.06
          OUTFLOW        0.10     15.00     45.00     82.00    127.00    177.00    233.00    294.00    477.00
        ELEVATION     1332.50   1332.75   1333.00   1333.25   1333.50   1333.75   1334.00   1334.25   1335.00


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


               **************
               *            *
  36 KK        *   BASINB   *
               *            *
               **************

                 SUBBASIN RUNOFF DATA

  37 BA            SUBBASIN CHARACTERISTICS
                      TAREA          0.04  SUBBASIN AREA

                   PRECIPITATION DATA

   6 PB               STORM          4.80  BASIN TOTAL PRECIPITATION

   6 PI             INCREMENTAL PRECIPITATION PATTERN
                      0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.00      0.01
                      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.00      0.01      0.00
                      0.01      0.01      0.01      0.00      0.01      0.00      0.01      0.00      0.01      0.00
                      0.00      0.01      0.00      0.00      0.01      0.00      0.00      0.01      0.00      0.00
                      0.01      0.00      0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01
                      0.01      0.01      0.01      0.01      0.00      0.00      0.01      0.00      0.00      0.00
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.02      0.01      0.01      0.02      0.01
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.03      0.02
                      0.02      0.02      0.04      0.04      0.04      0.04      0.04      0.04      0.30      0.30
                      0.30      0.30      0.30      0.30      0.06      0.06      0.06      0.06      0.06      0.06
                      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.01      0.01
                      0.00      0.01      0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.00
                      0.01      0.01      0.00      0.01      0.00      0.00      0.00      0.00      0.00      0.00
                      0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.00
                      0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00

  39 LS            SCS LOSS RATE
                      STRTL          0.15  INITIAL ABSTRACTION
                     CRVNBR         93.00  CURVE NUMBER
                      RTIMP          0.00  PERCENT IMPERVIOUS AREA

  38 UD            SCS DIMENSIONLESS UNITGRAPH
                       TLAG          0.15  LAG

                                                         ***

                                                 UNIT HYDROGRAPH
                                             11 END-OF-PERIOD ORDINATES
                 39.       104.        91.        46.        23.        11.         6.         3.         1.         1.
                  0.


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


               **************
               *            *
  40 KK        *    COMB    *
               *            *
               **************

  41 HC            HYDROGRAPH COMBINATION
                      ICOMP             2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
***
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```
            ***************
            *             *
  42 KK     *     DPOND   *
            *             *
            ***************

               HYDROGRAPH ROUTING DATA

  43 RS          STORAGE ROUTING
                       NSTPS          1  NUMBER OF SUBREACHES
                        ITYP        ELEV  TYPE OF INITIAL CONDITION
                      RSVRIC     1319.00  INITIAL CONDITION
                           X        0.00 WORKING R AND D COEFFICIENT

  44 SA               AREA         1.9       2.1       2.3       2.5       2.7

  45 SE          ELEVATION     1319.00   1320.00   1321.00   1322.00   1323.00

  46 SQ          DISCHARGE          0.      14.       39.       71.      110.       154.      202.      255.      312.

  47 SE          ELEVATION     1319.00   1319.50   1320.00   1320.50   1321.00   1321.50   1322.00   1322.50   1323.00
                                                                ***

                                                 COMPUTED STORAGE-ELEVATION DATA

            STORAGE       0.00      2.00      4.20      6.60      9.20
          ELEVATION    1319.00   1320.00   1321.00   1322.00   1323.00

                                             COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

            STORAGE       0.00      0.97      2.00      3.07      4.20      5.37      6.60      7.87      9.20
            OUTFLOW       0.10     14.00     39.00     71.00    110.00    154.00    202.00    255.00    312.00
          ELEVATION    1319.00   1319.50   1320.00   1320.50   1321.00   1321.50   1322.00   1322.50   1323.00□□
                                                          RUNOFF SUMMARY
                                                  FLOW IN CUBIC FEET PER SECOND
                                               TIME IN HOURS,  AREA IN SQUARE MILES

                                      PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM     TIME OF
         OPERATION       STATION      FLOW     PEAK                                            AREA      STAGE     MAX STAGE□
6-HOUR    24-HOUR      72-HOUR

         HYDROGRAPH AT□                          BASINA       203.   12.25          43.         13.         13.       0.17

         ROUTED TO□                            POND       138.   12.58          40.         13.         13.       0.17□
1334.15       12.58

         HYDROGRAPH AT□                          BASINB        65.   12.00          10.          3.          3.       0.04

         2 COMBINED AT□                            COMB       153.   12.50          50.         16.         16.       0.21

         HYDROGRAPH AT□                     .    BASINA       234.   12.25          49.         16.         16.       0.17

         ROUTED TO□                            POND       168.   12.50          49.         15.         15.       0.17□
1333.71       12.50

         HYDROGRAPH AT□                          BASINB        90.   12.00          14.          5.          5.       0.04

         2 COMBINED AT□                            COMB       189.   12.50          62.         20.         20.       0.21

         ROUTED TO□                           DPOND       168.   12.75          62.         20.         20.       0.21□
1321.65       12.75


***·NORMAL END OF HEC-1 ***
```

5 year Storm

SCS TYPE RAINFALL DISTRIBUTION - 24 HOUR STORM
FOR A TOTAL RAINFALL OF 4.8 INCHES

| HOUR | % RAINFALLL | INCHES |
|---|---|---|
| 0.00 | 0.00 | 0.00 |
| 0.50 | 0.52 | 0.02 |
| 1.00 | 1.05 | 0.05 |
| 1.50 | 1.60 | 0.08 |
| 2.00 | 2.20 | 0.11 |
| 2.50 | 2.84 | 0.14 |
| 3.00 | 3.49 | 0.17 |
| 3.50 | 4.13 | 0.20 |
| 4.00 | 4.80 | 0.23 |
| 4.50 | 5.53 | 0.27 |
| 5.00 | 6.32 | 0.30 |
| 5.50 | 7.14 | 0.34 |
| 6.00 | 8.00 | 0.38 |
| 6.50 | 8.90 | 0.43 |
| 7.00 | 9.85 | 0.47 |
| 7.50 | 10.85 | 0.52 |
| 8.00 | 12.00 | 0.58 |
| 8.50 | 13.28 | 0.64 |
| 9.00 | 14.70 | 0.71 |
| 9.50 | 16.30 | 0.78 |
| 10.00 | 18.10 | 0.87 |
| 10.50 | 20.40 | 0.98 |
| 11.00 | 23.50 | 1.13 |
| 11.50 | 28.30 | 1.36 |
| 12.00 | 66.30 | 3.18 |
| 12.50 | 73.50 | 3.53 |
| 13.00 | 77.20 | 3.71 |
| 13.50 | 79.90 | 3.84 |
| 14.00 | 82.00 | 3.94 |
| 14.50 | 83.79 | 4.02 |
| 15.00 | 85.28 | 4.09 |
| 15.50 | 86.68 | 4.16 |
| 16.00 | 88.00 | 4.22 |
| 16.50 | 89.12 | 4.28 |
| 17.00 | 90.04 | 4.32 |
| 17.50 | 90.93 | 4.36 |
| 18.00 | 91.81 | 4.41 |
| 18.50 | 92.67 | 4.45 |
| 19.00 | 93.52 | 4.49 |
| 19.50 | 94.37 | 4.53 |
| 20.00 | 95.20 | 4.57 |
| 20.50 | 95.97 | 4.61 |
| 21.00 | 96.65 | 4.64 |
| 21.50 | 97.26 | 4.67 |
| 22.00 | 97.84 | 4.70 |
| 22.50 | 98.40 | 4.72 |
| 23.00 | 98.95 | 4.75 |
| 23.50 | 99.48 | 4.78 |
| 24.00 | 100.00 | 4.80 |

SOURCE: 'HYDROLOGY FOR ENGINEERS AND PLANNERS', HJELMFELT AND CASSIDY PUBLISHED 1975, TABLE 4.7 - ACCUMULATION OF RAINFALL TO 24 HOURS U.S. SOIL CONSERVATION SERVICE

10 year Event - Existing : Developed

SAVOY, RUGGLES & BOHM, P.A.

```
HEC1 S/N: 1343000364        HMVersion: 6.33    Data File: tf10.hcl

*****************************************                                                      
*****************************************
*                                       *                                                 *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                 *    U.S. ARMY CORPS OF ENGINEERS
*              MAY   1991               *                                                 *    HYDROLOGIC ENGINEERING CENTER
*           VERSION 4.0.1E              *                                                 *          609 SECOND STREET
*                                       *                                                 *       DAVIS, CALIFORNIA 95616
* RUN DATE  05/02/2000  TIME  13:51:43  *                                                 *            (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


                                     :::::::::::::::::::::::::::::::::::::::::::
                                     :::::::::::::::::::::::::::::::::::::::::::
                                     :::                                     :::
                                     :::  Full Microcomputer Implementation  :::
                                     :::                 by                  :::
                                     :::         Haestad Methods, Inc.       :::
                                     :::                                     :::
                                     :::::::::::::::::::::::::::::::::::::::::::
                                     :::::::::::::::::::::::::::::::::::::::::::

                        37 Brookside Road * Waterbury, Connecticut  06708 * (203) 755-1666


          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

                                                  HEC-1 INPUT                                                PAGE  1

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

*** FREE ***
        1          ID   Tara Falls Existing Basin to Harry with existng pond modeled, 10 year, 24 hou
        2          IT       5                      289
        3          IN      30
        4          IO       4

        5          KK  BASINA
        6          BA   0.167
        7          PC       0    0.03    0.06    0.09    0.12    0.16    0.19    0.23    0.26    0.31
        8          PC    0.35    0.39    0.44    0.49    0.54    0.60    0.66    0.73    0.81    0.90
        9          PC    1.00    1.13    1.30    1.56    3.66    4.06    4.26    4.41    4.53    4.63
       10          PC    4.71    4.78    4.86    4.92    4.97    5.02    5.07    5.12    5.16    5.21
       11          PC    5.26    5.30    5.34    5.37    5.40    5.43    5.46    5.49    5.52
       12          UD    0.42
       13          LS       0      83

       14          KK    POND
       15          RS       1    ELEV    1333
       16          SA       5     7.4     9.8
       17          SE    1333    1334    1335
       18          SQ     0.1      14      67   258.5     557
       19          SE    1333  1333.5    1334  1334.5    1335

       20          KK  BASINB
       21          BA   0.042
       22          UD    0.15
       23          LS       0      80

       24          KK    COMB
       25          HC       2
```

```
          26           KK  BASINA
          27           BA   0.167
          28           UD    0.42
          29           LS       0      88

          30           KK    POND
          31           RS       1    ELEV 1332.50
          32           SA     4.3       5     7.4     9.8
          33           SE  1332.5    1333    1334    1335
          34           SQ     0.1      15      45      82     127     177     233     294
          35           SE  1332.5 1332.75    1333 1333.25  1333.5 1333.75    1334 1334.25

          36           KK  BASINB
          37           BA   0.042
          38           UD    0.15
          39           LS       0      93

          40           KK    COMB
          41           HC       2                                                                 □□
HEC-1 INPUT                                        PAGE  2

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


          42           KK   DPOND
          43           RS       1    ELEV    1319
          44           SA     1.9     2.1     2.3     2.5     2.7
          45           SE    1319    1320    1321    1322    1323
          46           SQ     0.1      14      39      71     110     154     202     255     312
          47           SE    1319  1319.5    1320  1320.5    1321  1321.5    1322  1322.5    1323
          48           ZZ                                                                          □□HEC1 S/N: 1343000364
HMVersion: 6.33    Data File: tf10.hcl

*****************************************
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*                                       *                                                    *
*                                                                                            
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                    *    U.S. ARMY CORPS OF ENGINEERS
*                                                                                            
*              MAY   1991               *                                                    *    HYDROLOGIC ENGINEERING CENTER
*                                                                                            
*          VERSION 4.0.1E               *                                                    *          609 SECOND STREET
*                                                                                            
*                                       *                                                    *        DAVIS, CALIFORNIA 95616
*                                                                                            
*  RUN DATE  05/02/2000  TIME  13:51:43 *                                                    *            (916) 756-1104
*                                                                                            
*                                       *                                                    *
*                                                                                            
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                           Tara Falls Existing Basin to Harry with existng pond modeled, 10 year, 24 hou

   4 IO          OUTPUT CONTROL VARIABLES
                       IPRNT          4  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        289  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2   0  ENDING DATE
                      NDTIME       0000  ENDING TIME
                       ICENT         19  CENTURY MARK

                   COMPUTATION INTERVAL    0.08 HOURS
                        TOTAL TIME BASE   24.00 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


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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            **************
            *            *
   5 KK     *   BASINA   *
            *            *
            **************
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  3 IN         TIME DATA FOR INPUT TIME SERIES
                    JXMIN          30  TIME INTERVAL IN MINUTES
                   JXDATE      1    0  STARTING DATE
                   JXTIME           0  STARTING TIME

             SUBBASIN RUNOFF DATA

  6 BA         SUBBASIN CHARACTERISTICS
                    TAREA        0.17  SUBBASIN AREA

               PRECIPITATION DATA

  6 PB              STORM        5.52  BASIN TOTAL PRECIPITATION

  6 PI           INCREMENTAL PRECIPITATION PATTERN
                    0.01     0.01     0.00     0.01     0.00     0.00     0.01     0.00     0.00     0.01
                    0.00     0.00     0.00     0.01     0.01     0.01     0.00     0.01     0.01     0.00
                    0.01     0.00     0.01     0.00     0.01     0.01     0.01     0.01     0.01     0.01
                    0.00     0.01     0.00     0.00     0.01     0.00     0.01     0.01     0.01     0.01
                    0.01     0.01     0.00     0.00     0.01     0.00     0.00     0.00     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.02     0.01     0.01     0.01     0.02     0.02     0.02     0.02     0.02     0.02
                    0.02     0.02     0.02     0.02     0.02     0.02     0.03     0.03     0.03     0.03
                    0.03     0.03     0.04     0.04     0.04     0.04     0.04     0.04     0.35     0.35
                    0.35     0.35     0.35     0.35     0.07     0.07     0.07     0.07     0.07     0.07
                    0.03     0.03     0.03     0.03     0.03     0.03     0.03     0.02     0.03     0.03
                    0.02     0.03     0.02     0.02     0.02     0.02     0.02     0.02     0.02     0.02
                    0.02     0.02     0.02     0.02     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                    0.01     0.01     0.01     0.00     0.01     0.01     0.00     0.01     0.01     0.01
                    0.01     0.00     0.01     0.01     0.01     0.00     0.01     0.01     0.00     0.01
                    0.01     0.01     0.01     0.00     0.01     0.01     0.01     0.00     0.01     0.01
                    0.00     0.01     0.01     0.01     0.01     0.00     0.01     0.01

 13 LS         SCS LOSS RATE
                    STRTL        0.41  INITIAL ABSTRACTION
                   CRVNBR       83.00  CURVE NUMBER
                    RTIMP        0.00  PERCENT IMPERVIOUS AREA

 12 UD         SCS DIMENSIONLESS UNITGRAPH
                     TLAG        0.42  LAG

                                                           ***

                                                    UNIT HYDROGRAPH
                                                27 END-OF-PERIOD ORDINATES
             15.       46.       96.      147.      173.      173.      155.      129.       94.       68.
             50.       38.       28.       21.       16.       12.        9.        7.        5.        4.
              3.        2.        2.        1.        1.        1.        0.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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              **************
              *            *
 14 KK        *    POND    *
              *            *
              **************

             HYDROGRAPH ROUTING DATA

 15 RS         STORAGE ROUTING
                    NSTPS           1  NUMBER OF SUBREACHES
                     ITYP        ELEV  TYPE OF INITIAL CONDITION
                   RSVRIC     1333.00  INITIAL CONDITION
                        X        0.00  WORKING R AND D COEFFICIENT

 16 SA               AREA         5.0       7.4       9.8

 17 SE          ELEVATION     1333.00   1334.00   1335.00

 18 SQ          DISCHARGE          0.       14.       87.      259.      557.

 19 SE          ELEVATION     1333.00   1333.50   1334.00   1334.50   1335.00

                                                           ***

                                                COMPUTED STORAGE-ELEVATION DATA

          STORAGE        0.00      6.16     14.73
        ELEVATION     1333.00   1334.00   1335.00
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                                             COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

              STORAGE        0.00       2.78       6.16      10.15      14.73
              OUTFLOW        0.10      14.00      87.00     258.50     557.00
            ELEVATION     1333.00    1333.50    1334.00    1334.50    1335.00


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              *            *
 20 KK        *   BASINB   *
              *            *
              **************

                SUBBASIN RUNOFF DATA

 21 BA           SUBBASIN CHARACTERISTICS
                       TAREA         0.04  SUBBASIN AREA

                 PRECIPITATION DATA

  6 PB                 STORM         5.52  BASIN TOTAL PRECIPITATION

  6 PI             INCREMENTAL PRECIPITATION PATTERN
                      0.01      0.01      0.00      0.01      0.00      0.00      0.01      0.00      0.00      0.01
                      0.00      0.00      0.00      0.01      0.01      0.01      0.00      0.01      0.01      0.00
                      0.01      0.00      0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                      0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                      0.01      0.01      0.00      0.00      0.01      0.00      0.00      0.00      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.02      0.01      0.01      0.01      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.03      0.03      0.03      0.03
                      0.03      0.03      0.04      0.04      0.04      0.04      0.04      0.04      0.35      0.35
                      0.35      0.35      0.35      0.35      0.07      0.07      0.07      0.07      0.07      0.07
                      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.03      0.03
                      0.02      0.03      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.00      0.01      0.01      0.00      0.01      0.01      0.01
                      0.01      0.00      0.01      0.01      0.01      0.00      0.01      0.01      0.00      0.01
                      0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.00      0.01      0.01
                      0.00      0.01      0.01      0.01      0.01      0.00      0.01      0.01

 23 LS           SCS LOSS RATE
                      STRTL          0.50  INITIAL ABSTRACTION
                     CRVNBR         80.00  CURVE NUMBER
                      RTIMP          0.00  PERCENT IMPERVIOUS AREA

 22 UD           SCS DIMENSIONLESS UNITGRAPH
                       TLAG          0.15  LAG

                                                      ***

                                                  UNIT HYDROGRAPH
                                             11 END-OF-PERIOD ORDINATES
                 39.      104.       91.       46.       23.       11.        6.        3.        1.        1.
                  0.


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              **************
              *            *
 24 KK        *    COMB    *
              *            *
              **************

 25 HC           HYDROGRAPH COMBINATION
                      ICOMP             2  NUMBER OF HYDROGRAPHS TO COMBINE

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              **************
              *            *
 26 KK        *   BASINA   *
              *            *
              **************

                 SUBBASIN RUNOFF DATA

 27 BA             SUBBASIN CHARACTERISTICS
                         TAREA         0.17  SUBBASIN AREA

                   PRECIPITATION DATA

  6 PB                   STORM         5.52  BASIN TOTAL PRECIPITATION

  6 PI               INCREMENTAL PRECIPITATION PATTERN
                        0.01     0.01     0.00     0.01     0.00     0.00     0.01     0.00     0.00     0.01
                        0.00     0.00     0.00     0.01     0.01     0.01     0.00     0.01     0.01     0.00
                        0.01     0.00     0.01     0.00     0.01     0.01     0.01     0.01     0.01     0.01
                        0.00     0.01     0.00     0.00     0.01     0.00     0.01     0.01     0.01     0.01
                        0.01     0.01     0.00     0.00     0.01     0.00     0.00     0.00     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.02     0.01     0.01     0.01     0.02     0.02     0.02     0.02     0.02     0.02
                        0.02     0.02     0.02     0.02     0.02     0.02     0.03     0.03     0.03     0.03
                        0.03     0.03     0.04     0.04     0.04     0.04     0.04     0.04     0.35     0.35
                        0.35     0.35     0.35     0.35     0.07     0.07     0.07     0.07     0.07     0.07
                        0.03     0.03     0.03     0.03     0.03     0.03     0.03     0.02     0.03     0.03
                        0.02     0.03     0.02     0.02     0.02     0.02     0.02     0.02     0.02     0.02
                        0.02     0.02     0.02     0.02     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                        0.01     0.01     0.01     0.00     0.01     0.01     0.00     0.01     0.01     0.01
                        0.01     0.00     0.01     0.01     0.01     0.00     0.01     0.01     0.00     0.01
                        0.01     0.01     0.01     0.00     0.01     0.01     0.01     0.00     0.01     0.01
                        0.00     0.01     0.01     0.01     0.01     0.00     0.01     0.01

 29 LS             SCS LOSS RATE
                         STRTL         0.27  INITIAL ABSTRACTION
                        CRVNBR        88.00  CURVE NUMBER
                         RTIMP         0.00  PERCENT IMPERVIOUS AREA

 28 UD             SCS DIMENSIONLESS UNITGRAPH
                          TLAG         0.42  LAG

                                                      ***

                                                  UNIT HYDROGRAPH
                                             27 END-OF-PERIOD ORDINATES
                 15.       46.       96.      147.      173.      173.      155.      129.       94.       68.
                 50.       38.       28.       21.       16.       12.        9.        7.        5.        4.
                  3.        2.        2.        1.        1.        1.        0.


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              **************
              *            *
 30 KK        *    POND    *
              *            *
              **************

                 HYDROGRAPH ROUTING DATA

 31 RS             STORAGE ROUTING
                         NSTPS            1  NUMBER OF SUBREACHES
                          ITYP         ELEV  TYPE OF INITIAL CONDITION
                        RSVRIC      1332.50  INITIAL CONDITION
                             X         0.00 WORKING R AND D COEFFICIENT

 32 SA                    AREA          4.3       5.0       7.4       9.8

 33 SE             ELEVATION      1332.50   1333.00   1334.00   1335.00

 34 SQ             DISCHARGE           0.       15.       45.       82.      127.      177.      233.      294.

 35 SE             ELEVATION      1332.50   1332.75   1333.00   1333.25   1333.50   1333.75   1334.00   1334.25
                                                      ***

                                            COMPUTED STORAGE-ELEVATION DATA

              STORAGE         0.00      2.32      8.48     17.06
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          ELEVATION    1332.50   1333.00   1334.00   1335.00

                                                           COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

            STORAGE       0.00      1.12      2.32      3.64      5.10      6.71      8.48     10.40     17.06
            OUTFLOW       0.10     15.00     45.00     82.00    127.00    177.00    233.00    294.00    477.00
          ELEVATION    1332.50   1332.75   1333.00   1333.25   1333.50   1333.75   1334.00   1334.25   1335.00


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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              *************
              *           *
 36 KK        *   BASINB  *
              *           *
              *************

                 SUBBASIN RUNOFF DATA

 37 BA             SUBBASIN CHARACTERISTICS
                         TAREA         0.04  SUBBASIN AREA

                   PRECIPITATION DATA

  6 PB                   STORM         5.52  BASIN TOTAL PRECIPITATION

  6 PI               INCREMENTAL PRECIPITATION PATTERN
                        0.01      0.01      0.00      0.01      0.00      0.00      0.01      0.00      0.00      0.01
                        0.00      0.00      0.00      0.01      0.01      0.01      0.00      0.01      0.01      0.00
                        0.01      0.00      0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                        0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                        0.01      0.01      0.00      0.00      0.01      0.00      0.00      0.00      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.02      0.01      0.01      0.01      0.02      0.02      0.02      0.02      0.02      0.02
                        0.02      0.02      0.02      0.02      0.02      0.02      0.03      0.03      0.03      0.03
                        0.03      0.03      0.04      0.04      0.04      0.04      0.04      0.04      0.35      0.35
                        0.35      0.35      0.35      0.35      0.07      0.07      0.07      0.07      0.07      0.07
                        0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.03      0.03
                        0.02      0.03      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                        0.02      0.02      0.02      0.02      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.00      0.01      0.01      0.00      0.01      0.01      0.01
                        0.01      0.00      0.01      0.01      0.01      0.00      0.01      0.01      0.00      0.01
                        0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.00      0.01      0.01
                        0.00      0.01      0.01      0.01      0.01      0.00      0.01      0.01

 39 LS             SCS LOSS RATE
                        STRTL          0.15  INITIAL ABSTRACTION
                       CRVNBR         93.00  CURVE NUMBER
                        RTIMP          0.00  PERCENT IMPERVIOUS AREA

 38 UD             SCS DIMENSIONLESS UNITGRAPH
                         TLAG          0.15  LAG

                                                          ***

                                                 UNIT HYDROGRAPH
                                              11 END-OF-PERIOD ORDINATES
                  39.      104.       91.       46.       23.       11.        6.        3.        1.        1.
                   0.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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              *************
              *           *
 40 KK        *    COMB   *
              *           *
              *************

 41 HC             HYDROGRAPH COMBINATION
                        ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

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              **************
              *            *
  42 KK       *    DPOND   *
              *            *
              **************

                 HYDROGRAPH ROUTING DATA

  43 RS            STORAGE ROUTING
                         NSTPS           1  NUMBER OF SUBREACHES
                          ITYP        ELEV  TYPE OF INITIAL CONDITION
                        RSVRIC     1319.00  INITIAL CONDITION
                             X        0.00 WORKING R AND D COEFFICIENT

  44 SA                   AREA         1.9       2.1       2.3       2.5       2.7

  45 SE            ELEVATION     1319.00   1320.00   1321.00   1322.00   1323.00

  46 SQ            DISCHARGE          0.        14.       39.       71.      110.      154.      202.      255.      312.

  47 SE            ELEVATION     1319.00   1319.50   1320.00   1320.50   1321.00   1321.50   1322.00   1322.50   1323.00

                                                                ***

                                                      COMPUTED STORAGE-ELEVATION DATA

            STORAGE       0.00      2.00      4.20      6.60      9.20
          ELEVATION    1319.00   1320.00   1321.00   1322.00   1323.00

                                                  COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

            STORAGE       0.00      0.97      2.00      3.07      4.20      5.37      6.60      7.87      9.20
            OUTFLOW       0.10     14.00     39.00     71.00    110.00    154.00    202.00    255.00    312.00
          ELEVATION    1319.00   1319.50   1320.00   1320.50   1321.00   1321.50   1322.00   1322.50   1323.00□□
                                                             RUNOFF SUMMARY
                                                       FLOW IN CUBIC FEET PER SECOND
                                                    TIME IN HOURS,  AREA IN SQUARE MILES

                                       PEAK    TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD        BASIN      MAXIMUM      TIME OF
          OPERATION        STATION     FLOW     PEAK                                               AREA       STAGE      MAX STAGE□
6-HOUR     24-HOUR       72-HOUR

          HYDROGRAPH AT□                         BASINA         248.    12.25          52.          16.          16.        0.17

          ROUTED TO□                           POND        180.    12.50          50.         16.          16.        0.17□
1334.27        12.50

          HYDROGRAPH AT□                         BASINB          80.    12.00          12.           4.           4.        0.04

          2 COMBINED AT□                           COMB         200.    12.50          61.          19.          19.        0.21

          HYDROGRAPH AT□                         BASINA         279.    12.25          59.          19.          19.        0.17

          ROUTED TO□                           POND        203.    12.50          58.         18.          18.        0.17□
1333.86        12.50

          HYDROGRAPH AT□                         BASINB         105.    12.00          16.           5.           5.        0.04

          2 COMBINED AT□                           COMB         226.    12.50          74.          24.          24.        0.21

          ROUTED TO□                          DPOND        203.    12.75          74.         23.          23.        0.21□
1322.01        12.75


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

10 year event

SCS TYPE RAINFALL DISTRIBUTION - 24 HOUR STORM
FOR A TOTAL RAINFALL OF 5.52 INCHES

| HOUR | % RAINFALLL | INCHES |
|---|---|---|
| 0.00 | 0.00 | 0.00 |
| 0.50 | 0.52 | 0.03 |
| 1.00 | 1.05 | 0.06 |
| 1.50 | 1.60 | 0.09 |
| 2.00 | 2.20 | 0.12 |
| 2.50 | 2.84 | 0.16 |
| 3.00 | 3.49 | 0.19 |
| 3.50 | 4.13 | 0.23 |
| 4.00 | 4.80 | 0.26 |
| 4.50 | 5.53 | 0.31 |
| 5.00 | 6.32 | 0.35 |
| 5.50 | 7.14 | 0.39 |
| 6.00 | 8.00 | 0.44 |
| 6.50 | 8.90 | 0.49 |
| 7.00 | 9.85 | 0.54 |
| 7.50 | 10.85 | 0.60 |
| 8.00 | 12.00 | 0.66 |
| 8.50 | 13.28 | 0.73 |
| 9.00 | 14.70 | 0.81 |
| 9.50 | 16.30 | 0.90 |
| 10.00 | 18.10 | 1.00 |
| 10.50 | 20.40 | 1.13 |
| 11.00 | 23.50 | 1.30 |
| 11.50 | 28.30 | 1.56 |
| 12.00 | 66.30 | 3.66 |
| 12.50 | 73.50 | 4.06 |
| 13.00 | 77.20 | 4.26 |
| 13.50 | 79.90 | 4.41 |
| 14.00 | 82.00 | 4.53 |
| 14.50 | 83.79 | 4.63 |
| 15.00 | 85.28 | 4.71 |
| 15.50 | 86.68 | 4.78 |
| 16.00 | 88.00 | 4.86 |
| 16.50 | 89.12 | 4.92 |
| 17.00 | 90.04 | 4.97 |
| 17.50 | 90.93 | 5.02 |
| 18.00 | 91.81 | 5.07 |
| 18.50 | 92.67 | 5.12 |
| 19.00 | 93.52 | 5.16 |
| 19.50 | 94.37 | 5.21 |
| 20.00 | 95.20 | 5.26 |
| 20.50 | 95.97 | 5.30 |
| 21.00 | 96.65 | 5.34 |
| 21.50 | 97.26 | 5.37 |
| 22.00 | 97.84 | 5.40 |
| 22.50 | 98.40 | 5.43 |
| 23.00 | 98.95 | 5.46 |
| 23.50 | 99.48 | 5.49 |
| 24.00 | 100.00 | 5.52 |

SOURCE: 'HYDROLOGY FOR ENGINEERS AND PLANNERS', HJELMFELT AND CASSIDY
PUBLISHED 1975, TABLE 4.7 - ACCUMULATION OF RAINFALL TO 24 HOURS
U.S. SOIL CONSERVATION SERVICE

25 year Event - Existing & Developed

SAVOY, RUGGLES & BOHM, P.A.

```
HEC1 S/N: 1343000364        HMVersion: 6.33    Data File: tf25.hcl

****************************************                                                      
****************************************
*                                      *                                    *
*                                      *                                    *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS
*              MAY   1991              *                                    *    HYDROLOGIC ENGINEERING CENTER
*           VERSION 4.0.1E             *                                    *          609 SECOND STREET
*                                      *                                    *       DAVIS, CALIFORNIA 95616
*  RUN DATE  05/02/2000  TIME  13:59:45 *                                   *           (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


                         ::::::::::::::::::::::::::::::::::::::::::
                         ::::::::::::::::::::::::::::::::::::::::::
                         :::                                    :::
                         :::  Full Microcomputer Implementation :::
                         :::                 by                 :::
                         :::        Haestad Methods, Inc.       :::
                         :::                                    :::
                         ::::::::::::::::::::::::::::::::::::::::::
                         ::::::::::::::::::::::::::::::::::::::::::

               37 Brookside Road * Waterbury, Connecticut  06708 * (203) 755-1666


     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

                                          HEC-1 INPUT                                                PAGE  1

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

*** FREE ***
         1          ID   Tara Falls Existing Basin to Harry with existng pond modeled, 25 year, 24 hou
         2          IT       5                     289
         3          IN      30
         4          IO       4

         5          KK  BASINA
         6          BA   0.167
         7          PC       0    0.03    0.07    0.10    0.14    0.18    0.23    0.27    0.31    0.36
         8          PC    0.41    0.46    0.52    0.58    0.64    0.70    0.78    0.86    0.95    1.06
         9          PC    1.17    1.32    1.52    1.63    4.30    4.76    5.00    5.18    5.31    5.43
        10          PC    5.53    5.62    5.70    5.77    5.83    5.89    5.95    6.01    6.06    6.12
        11          PC    6.17    6.22    6.26    6.30    6.34    6.38    6.41    6.45    6.48
        12          UD    0.42
        13          LS       0      83

        14          KK    POND
        15          RS       1    ELEV    1333
        16          SA       5     7.4     9.8
        17          SE    1333    1334    1335
        18          SQ     0.1      14      87   258.5     557
        19          SE    1333  1333.5    1334  1334.5    1335

        20          KK  BASINB
        21          BA   0.042
        22          UD    0.15
        23          LS       0      80

        24          KK    COMB
        25          HC       2
```

```
          26            KK  BASINA
          27            BA   0.167
          28            UD    0.42
          29            LS       0       88

          30            KK    POND
          31            RS       1     ELEV 1332.50
          32            SA     4.3        5     7.4      9.8
          33            SE  1332.5     1333    1334     1335
          34            SQ     0.1       15      45       82      127      177      233      294
          35            SE  1332.5 1332.75    1333 1333.25   1333.5 1333.75     1334 1334.25

          36            KK  BASINB
          37            BA   0.042
          38            UD    0.15
          39            LS       0       93

          40            KK    COMB
          41            HC       2                                                                □□
HEC-1 INPUT                                       PAGE  2

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


          42            KK   DPOND
          43            RS       1     ELEV     1319
          44            SA     1.9      2.1      2.3      2.5      2.7
          45            SE    1319     1320     1321     1322     1323
          46            SQ     0.1       14       39       71      110      154      202      255      312
          47            SE    1319   1319.5     1320   1320.5     1321   1321.5     1322   1322.5     1323
          48            ZZ                                                                            □□HEC1 S/N: 1343000364
HMVersion: 6.33    Data File: tf25.hcl

****************************************                                                
**************************************
*                                      *                                           *
*                                                                                  *     U.S. ARMY CORPS OF ENGINEERS
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                           *
*                                                                                  *     HYDROLOGIC ENGINEERING CENTER
*            MAY   1991                *                                           *
*                                                                                  *           609 SECOND STREET
*         VERSION 4.0.1E               *                                           *
*                                                                                  *        DAVIS, CALIFORNIA 95616
*                                      *                                           *
* RUN DATE  05/02/2000  TIME  13:59:45 *                                           *             (916) 756-1104
*                                                                                  *
*                                      *                                           *
****************************************
**************************************



                         Tara Falls Existing Basin to Harry with existng pond modeled, 25 year, 24 hou

   4 IO          OUTPUT CONTROL VARIABLES
                       IPRNT          4  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        289  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME       0000  ENDING TIME
                       ICENT         19  CENTURY MARK

                   COMPUTATION INTERVAL    0.08 HOURS
                        TOTAL TIME BASE   24.00 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


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

              **************
              *            *
   5 KK       *   BASINA   *
              *            *
              **************
```

```
  3 IN          TIME DATA FOR INPUT TIME SERIES
                      JXMIN          30  TIME INTERVAL IN MINUTES
                     JXDATE       1   0  STARTING DATE
                     JXTIME           0  STARTING TIME

              SUBBASIN RUNOFF DATA

  6 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.17  SUBBASIN AREA

                PRECIPITATION DATA

  6 PB                STORM        6.48  BASIN TOTAL PRECIPITATION

  6 PI            INCREMENTAL PRECIPITATION PATTERN
                     0.01      0.01      0.00      0.01      0.00      0.00      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.00      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.02      0.01      0.01      0.01      0.02      0.02
                     0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                     0.02      0.03      0.02      0.02      0.03      0.02      0.03      0.03      0.03      0.03
                     0.03      0.03      0.05      0.05      0.05      0.05      0.05      0.05      0.41      0.41
                     0.41      0.41      0.41      0.41      0.08      0.08      0.08      0.08      0.08      0.08
                     0.04      0.04      0.04      0.04      0.04      0.04      0.03      0.03      0.03      0.03
                     0.03      0.03      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                     0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                     0.01      0.01      0.02      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.00      0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.00      0.01      0.01

 13 LS          SCS LOSS RATE
                      STRTL        0.41  INITIAL ABSTRACTION
                     CRVNBR       83.00  CURVE NUMBER
                      RTIMP        0.00  PERCENT IMPERVIOUS AREA

 12 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG        0.42  LAG

                                                          ***

                                                     UNIT HYDROGRAPH
                                                27 END-OF-PERIOD ORDINATES
              15.       46.       96.      147.      173.      173.      155.      129.       94.       68.
              50.       38.       28.       21.       16.       12.        9.        7.        5.        4.
               3.        2.        2.        1.        1.        1.        0.

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

              ***************
              *             *
 14 KK        *    POND     *
              *             *
              ***************

              HYDROGRAPH ROUTING DATA

 15 RS          STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        ELEV  TYPE OF INITIAL CONDITION
                     RSVRIC     1333.00  INITIAL CONDITION
                          X        0.00  WORKING R AND D COEFFICIENT

 16 SA                 AREA         5.0       7.4       9.8

 17 SE          ELEVATION     1333.00   1334.00   1335.00

 18 SQ          DISCHARGE          0.       14.       87.      259.      557.

 19 SE          ELEVATION     1333.00   1333.50   1334.00   1334.50   1335.00

                                                          ***

                                            COMPUTED STORAGE-ELEVATION DATA

           STORAGE       0.00      6.16     14.73
         ELEVATION    1333.00   1334.00   1335.00
```

```
                              COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       0.00       2.78       6.16      10.15      14.73
          OUTFLOW       0.10      14.00      87.00     258.50     557.00
        ELEVATION    1333.00    1333.50    1334.00    1334.50    1335.00


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


             **************
             *            *
 20 KK       *   BASINB   *
             *            *
             **************

               SUBBASIN RUNOFF DATA

 21 BA            SUBBASIN CHARACTERISTICS
                        TAREA         0.04  SUBBASIN AREA

                  PRECIPITATION DATA

  6 PB                  STORM         6.48  BASIN TOTAL PRECIPITATION

  6 PI              INCREMENTAL PRECIPITATION PATTERN
                       0.01      0.01      0.00      0.01      0.00      0.00      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.00      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.02      0.01      0.01      0.01      0.02      0.02
                       0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                       0.02      0.03      0.02      0.02      0.03      0.02      0.03      0.03      0.03      0.03
                       0.03      0.03      0.05      0.05      0.05      0.05      0.05      0.05      0.41      0.41
                       0.41      0.41      0.41      0.41      0.08      0.08      0.08      0.08      0.08      0.08
                       0.04      0.04      0.04      0.04      0.04      0.04      0.03      0.03      0.03      0.03
                       0.03      0.03      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                       0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                       0.01      0.01      0.02      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.00      0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.00      0.01      0.01

 23 LS            SCS LOSS RATE
                        STRTL         0.50  INITIAL ABSTRACTION
                       CRVNBR        60.00  CURVE NUMBER
                        RTIMP         0.00  PERCENT IMPERVIOUS AREA

 22 UD            SCS DIMENSIONLESS UNITGRAPH
                         TLAG         0.15  LAG

                                                    ***

                                                  UNIT HYDROGRAPH
                                              11 END-OF-PERIOD ORDINATES
                  39.       104.        91.        46.        23.        11.         6.         3.         1.         1.
                   0.


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


             **************
             *            *
 24 KK       *    COMB    *
             *            *
             **************

 25 HC            HYDROGRAPH COMBINATION
                        ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                    ***


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

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                  **************
                  *            *
 26 KK            *   BASINA   *
                  *            *
                  **************

                    SUBBASIN RUNOFF DATA

 27 BA                SUBBASIN CHARACTERISTICS
                            TAREA        0.17  SUBBASIN AREA

                      PRECIPITATION DATA

  6 PB                      STORM        6.48  BASIN TOTAL PRECIPITATION

  6 PI                  INCREMENTAL PRECIPITATION PATTERN
                           0.01      0.01      0.00      0.01      0.00      0.00      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.00      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.02      0.01      0.01      0.01      0.02      0.02
                           0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                           0.02      0.03      0.02      0.02      0.03      0.02      0.03      0.03      0.03      0.03
                           0.03      0.03      0.05      0.05      0.05      0.05      0.05      0.05      0.41      0.41
                           0.41      0.41      0.41      0.41      0.08      0.08      0.08      0.08      0.08      0.08
                           0.04      0.04      0.04      0.04      0.04      0.04      0.03      0.03      0.03      0.03
                           0.03      0.03      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                           0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                           0.01      0.01      0.02      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                           0.01      0.00      0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01
                           0.01      0.01      0.01      0.01      0.01      0.00      0.01      0.01

 29 LS                SCS LOSS RATE
                           STRTL         0.27  INITIAL ABSTRACTION
                          CRVNBR        88.00  CURVE NUMBER
                           RTIMP         0.00  PERCENT IMPERVIOUS AREA

 28 UD                SCS DIMENSIONLESS UNITGRAPH
                            TLAG         0.42  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                              27 END-OF-PERIOD ORDINATES
                     15.       46.       96.      147.      173.      173.      155.      129.       94.       68.
                     50.       36.       28.       21.       16.       12.        9.        7.        5.        4.
                      3.        2.        2.        1.        1.        1.        0.


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

                  **************
                  *            *
 30 KK            *    POND    *
                  *            *
                  **************

                    HYDROGRAPH ROUTING DATA

 31 RS                STORAGE ROUTING
                           NSTPS            1  NUMBER OF SUBREACHES
                            ITYP         ELEV  TYPE OF INITIAL CONDITION
                          RSVRIC      1332.50  INITIAL CONDITION
                               X         0.00 WORKING R AND D COEFFICIENT

 32 SA                      AREA          4.3       5.0       7.4       9.8

 33 SE                 ELEVATION      1332.50   1333.00   1334.00   1335.00

 34 SQ                 DISCHARGE           0.       15.       45.       82.      127.      177.      233.      294.

 35 SE                 ELEVATION      1332.50   1332.75   1333.00   1333.25   1333.50   1333.75   1334.00   1334.25

                                                        ***

                                              COMPUTED STORAGE-ELEVATION DATA

                 STORAGE        0.00       2.32       8.48      17.06
```

```
          ELEVATION    1332.50   1333.00   1334.00   1335.00

                                             COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

            STORAGE       0.00      1.12      2.32      3.64      5.10      6.71      8.48     10.40     17.06
            OUTFLOW       0.10     15.00     45.00     82.00    127.00    177.00    233.00    294.00    477.00
          ELEVATION    1332.50   1332.75   1333.00   1333.25   1333.50   1333.75   1334.00   1334.25   1335.00


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


            **************
            *            *
  36 KK     *   BASINB   *
            *            *
            **************

              SUBBASIN RUNOFF DATA

  37 BA         SUBBASIN CHARACTERISTICS
                      TAREA         0.04  SUBBASIN AREA

                PRECIPITATION DATA

   6 PB               STORM         6.48  BASIN TOTAL PRECIPITATION

   6 PI           INCREMENTAL PRECIPITATION PATTERN
                    0.01      0.01      0.00      0.01      0.00      0.00      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.00      0.01      0.01      0.01      0.00      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.02      0.01      0.01      0.01      0.02      0.02
                    0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                    0.02      0.03      0.02      0.02      0.03      0.02      0.03      0.03      0.03      0.03
                    0.03      0.03      0.05      0.05      0.05      0.05      0.05      0.05      0.41      0.41
                    0.41      0.41      0.41      0.41      0.06      0.06      0.08      0.08      0.08      0.08
                    0.04      0.04      0.04      0.04      0.04      0.04      0.03      0.03      0.03      0.03
                    0.03      0.03      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                    0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                    0.01      0.01      0.02      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.00      0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.00      0.01      0.01

  39 LS         SCS LOSS RATE
                      STRTL         0.15  INITIAL ABSTRACTION
                     CRVNBR        93.00  CURVE NUMBER
                      RTIMP         0.00  PERCENT IMPERVIOUS AREA

  38 UD         SCS DIMENSIONLESS UNITGRAPH
                       TLAG         0.15  LAG

                                                        ***

                                                      UNIT HYDROGRAPH
                                                 11 END-OF-PERIOD ORDINATES
                39.      104.       91.       46.       23.       11.        6.        3.        1.        1.
                 0.


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


            **************
            *            *
  40 KK     *    COMB    *
            *            *
            **************

  41 HC         HYDROGRAPH COMBINATION
                      ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                        ***


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

```
            **************
            *            *
  42 KK     *     DPOND  *
            *            *
            **************

               HYDROGRAPH ROUTING DATA

  43 RS          STORAGE ROUTING
                       NSTPS            1  NUMBER OF SUBREACHES
                        ITYP         ELEV  TYPE OF INITIAL CONDITION
                      RSVRIC      1319.00  INITIAL CONDITION
                           X         0.00 WORKING R AND D COEFFICIENT

  44 SA                 AREA          1.9       2.1       2.3       2.5       2.7

  45 SE          ELEVATION      1319.00   1320.00   1321.00   1322.00   1323.00

  46 SQ          DISCHARGE           0.       14.       39.       71.      110.      154.      202.      255.      312.

  47 SE          ELEVATION      1319.00   1319.50   1320.00   1320.50   1321.00   1321.50   1322.00   1322.50   1323.00
                                                                ***

                                                      COMPUTED STORAGE-ELEVATION DATA

            STORAGE       0.00      2.00      4.20      6.60      9.20
          ELEVATION    1319.00   1320.00   1321.00   1322.00   1323.00

                                                  COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

            STORAGE       0.00      0.97      2.00      3.07      4.20      5.37      6.60      7.87      9.20
            OUTFLOW       0.10     14.00     39.00     71.00    110.00    154.00    202.00    255.00    312.00
          ELEVATION    1319.00   1319.50   1320.00   1320.50   1321.00   1321.50   1322.00   1322.50   1323.00□□
                                                              RUNOFF SUMMARY
                                                      FLOW IN CUBIC FEET PER SECOND
                                                   TIME IN HOURS,  AREA IN SQUARE MILES

                                          PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD         BASIN       MAXIMUM      TIME OF
         OPERATION        STATION         FLOW    PEAK                                               AREA        STAGE      MAX STAGE□
6-HOUR    24-HOUR      72-HOUR

         HYDROGRAPH AT□                              BASINA         308.    12.25            65.         20.          20.          0.17

         ROUTED TO□                                POND       234.    12.50          62.         19.          19.        0.17□
1334.43        12.50

         HYDROGRAPH AT□                              BASINB         101.    12.00            15.          5.           5.          0.04

         2 COMBINED AT□                                COMB         258.    12.50            77.         24.          24.          0.21

         HYDROGRAPH AT□                              BASINA         339.    12.25            71.         23.          23.          0.17

         ROUTED TO□                                POND       248.    12.50          71.         22.          22.        0.17□
1334.06        12.50

         HYDROGRAPH AT□                              BASINB         125.    12.00            19.          6.           6.          0.04

         2 COMBINED AT□                                COMB         276.    12.50            90.         29.          29.          0.21

         ROUTED TO□                               DPOND       250.    12.67          90.         28.          28.        0.21□
1322.45        12.67


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

## SCS TYPE RAINFALL DISTRIBUTION - 24 HOUR STORM FOR A TOTAL RAINFALL OF 6.48 INCHES

25 year event

| HOUR | % RAINFALLL | INCHES |
|---|---|---|
| 0.00 | 0.00 | 0.00 |
| 0.50 | 0.52 | 0.03 |
| 1.00 | 1.05 | 0.07 |
| 1.50 | 1.60 | 0.10 |
| 2.00 | 2.20 | 0.14 |
| 2.50 | 2.84 | 0.18 |
| 3.00 | 3.49 | 0.23 |
| 3.50 | 4.13 | 0.27 |
| 4.00 | 4.80 | 0.31 |
| 4.50 | 5.53 | 0.36 |
| 5.00 | 6.32 | 0.41 |
| 5.50 | 7.14 | 0.46 |
| 6.00 | 8.00 | 0.52 |
| 6.50 | 8.90 | 0.58 |
| 7.00 | 9.85 | 0.64 |
| 7.50 | 10.85 | 0.70 |
| 8.00 | 12.00 | 0.78 |
| 8.50 | 13.28 | 0.86 |
| 9.00 | 14.70 | 0.95 |
| 9.50 | 16.30 | 1.06 |
| 10.00 | 18.10 | 1.17 |
| 10.50 | 20.40 | 1.32 |
| 11.00 | 23.50 | 1.52 |
| 11.50 | 28.30 | 1.83 |
| 12.00 | 66.30 | 4.30 |
| 12.50 | 73.50 | 4.76 |
| 13.00 | 77.20 | 5.00 |
| 13.50 | 79.90 | 5.18 |
| 14.00 | 82.00 | 5.31 |
| 14.50 | 83.79 | 5.43 |
| 15.00 | 85.28 | 5.53 |
| 15.50 | 86.68 | 5.62 |
| 16.00 | 88.00 | 5.70 |
| 16.50 | 89.12 | 5.77 |
| 17.00 | 90.04 | 5.83 |
| 17.50 | 90.93 | 5.89 |
| 18.00 | 91.81 | 5.95 |
| 18.50 | 92.67 | 6.01 |
| 19.00 | 93.52 | 6.06 |
| 19.50 | 94.37 | 6.12 |
| 20.00 | 95.20 | 6.17 |
| 20.50 | 95.97 | 6.22 |
| 21.00 | 96.65 | 6.26 |
| 21.50 | 97.26 | 6.30 |
| 22.00 | 97.84 | 6.34 |
| 22.50 | 98.40 | 6.38 |
| 23.00 | 98.95 | 6.41 |
| 23.50 | 99.48 | 6.45 |
| 24.00 | 100.00 | 6.48 |

SOURCE: 'HYDROLOGY FOR ENGINEERS AND PLANNERS', HJELMFELT AND CASSIDY PUBLISHED 1975, TABLE 4.7 - ACCUMULATION OF RAINFALL TO 24 HOURS U.S. SOIL CONSERVATION SERVICE

50 year Event - Existing & Developed

SAVOY, RUGGLES & BOHM, P.A.

```
HEC1 S/N: 1343000364        HMVersion: 6.33    Data File: tf50.hc1

*****************************************
***************************************
*                                       *                                                                 *
*                                                                                                          
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                                 *   U.S. ARMY CORPS OF ENGINEERS
*                                                                                                          
*              MAY   1991               *                                                                 *   HYDROLOGIC ENGINEERING CENTER
*                                                                                                          
*           VERSION 4.0.1E              *                                                                 *          609 SECOND STREET
*                                                                                                          
*                                       *                                                                 *       DAVIS, CALIFORNIA 95616
*                                                                                                          
*  RUN DATE  05/02/2000  TIME  14:18:32 *                                                                 *             (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


                                                                  ::::::::::::::::::::::::::::::::::::::::::
                                                                  ::::::::::::::::::::::::::::::::::::::::::
                                                                  :::                                    :::
                                                                  :::  Full Microcomputer Implementation :::
                                                                  :::                 by                 :::
                                                                  :::        Haestad Methods, Inc.       :::
                                                                  :::                                    :::
                                                                  ::::::::::::::::::::::::::::::::::::::::::
                                                                  ::::::::::::::::::::::::::::::::::::::::::

                                                     37 Brookside Road * Waterbury, Connecticut  06708 * (203) 755-1666


             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

                                                                  HEC-1 INPUT                                                   PAGE  1

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

*** FREE ***
              1            ID   Tara Falls Existing Basin to Harry with existng pond modeled, 50 year, 24 hou
              2            IT        5                       289
              3            IN       30
              4            IO        4

              5            KK   BASINA
              6            BA    0.167
              7            PC        0    0.04    0.08    0.12    0.16    0.21    0.26    0.31    0.36    0.41
              8            PC     0.47    0.53    0.60    0.66    0.73    0.81    0.89    0.99    1.09    1.21
              9            PC     1.35    1.52    1.75    2.11    4.93    5.47    5.74    5.94    6.10    6.23
             10            PC     6.34    6.45    6.55    6.63    6.70    6.77    6.83    6.89    6.96    7.02
             11            PC     7.08    7.14    7.19    7.24    7.28    7.32    7.36    7.40    7.44
             12            UD     0.42
             13            LS        0      83

             14            KK     POND
             15            RS        1    ELEV    1333
             16            SA        5     7.4     9.8
             17            SE     1333    1334    1335
             18            SQ      0.1      14      87   258.5     557
             19            SE     1333  1333.5    1334  1334.5    1335

             20            KK   BASINB
             21            BA    0.042
             22            UD     0.15
             23            LS        0      80

             24            KK     COMB
             25            HC        2
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                26          KK  BASINA
                27          BA   0.167
                28          UD   0.42
                29          LS       0       88

                30          KK    POND
                31          RS       1     ELEV 1332.50
                32          SA     4.3       5     7.4     9.8
                33          SE  1332.5    1333    1334    1335
                34          SQ     0.1      15      45      82     127     177     233     294
                35          SE  1332.5 1332.75    1333 1333.25  1333.5 1333.75    1334 1334.25

                36          KK  BASINB
                37          BA   0.042
                38          UD    0.15
                39          LS       0       93

                40          KK    COMB
                41          HC       2                                                         □□
HEC-1 INPUT                                         PAGE  2

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


                42          KK   DPOND
                43          RS       1    ELEV    1319
                44          SA     1.9     2.1     2.3     2.5     2.7
                45          SE    1319    1320    1321    1322    1323
                46          SQ     0.1      14      39      71     110     154     202     255     312
                47          SE    1319  1319.5    1320  1320.5    1321  1321.5    1322  1322.5    1323
                48          ZZ                                                                 □□HEC1 S/N: 1343000364
HMVersion: 6.33    Data File: tf50.hc1

****************************************
***************************************
*                                      *                                                   *
*                                                                                          *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                   *   U.S. ARMY CORPS OF ENGINEERS
*                                                                                          *
*              MAY  1991               *                                                   *   HYDROLOGIC ENGINEERING CENTER
*                                                                                          *
*           VERSION 4.0.1E             *                                                   *        609 SECOND STREET
*                                                                                          *
*                                      *                                                   *      DAVIS, CALIFORNIA 95616
*                                                                                          *
*  RUN DATE  05/02/2000  TIME  14:18:32 *                                                  *          (916) 756-1104
*                                                                                          *
*                                      *                                                   *
*
****************************************
***************************************



                                 Tara Falls Existing Basin to Harry with existng pond modeled, 50 year, 24 hou

   4 IO         OUTPUT CONTROL VARIABLES
                     IPRNT           4  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         289  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      2    0  ENDING DATE
                    NDTIME        0000  ENDING TIME
                     ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE   24.00 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


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


                ***************
                *             *
   5 KK         *    BASINA   *
                *             *
                ***************
```

```
  3 IN         TIME DATA FOR INPUT TIME SERIES
                    JXMIN         30  TIME INTERVAL IN MINUTES
                   JXDATE      1   0  STARTING DATE
                   JXTIME          0  STARTING TIME

             SUBBASIN RUNOFF DATA

  6 BA         SUBBASIN CHARACTERISTICS
                    TAREA       0.17  SUBBASIN AREA

               PRECIPITATION DATA

  6 PB              STORM       7.44  BASIN TOTAL PRECIPITATION

  6 PI           INCREMENTAL PRECIPITATION PATTERN
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.02
                    0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                    0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                    0.03      0.03      0.03      0.03      0.03      0.03      0.04      0.04      0.04      0.04
                    0.04      0.04      0.06      0.06      0.06      0.06      0.06      0.06      0.47      0.47
                    0.47      0.47      0.47      0.47      0.09      0.09      0.09      0.09      0.09      0.09
                    0.05      0.05      0.05      0.04      0.05      0.05      0.03      0.03      0.03      0.03
                    0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02
                    0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                    0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                    0.02      0.02      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01

 13 LS         SCS LOSS RATE
                    STRTL       0.41  INITIAL ABSTRACTION
                   CRVNBR      83.00  CURVE NUMBER
                    RTIMP       0.00  PERCENT IMPERVIOUS AREA

 12 UD         SCS DIMENSIONLESS UNITGRAPH
                     TLAG       0.42  LAG

                                                  ***

                                          UNIT HYDROGRAPH
                                      27 END-OF-PERIOD ORDINATES
            15.        46.        96.       147.       173.       173.       155.       129.        94.        68.
            50.        38.        26.        21.        16.        12.         9.         7.         5.         4.
             3.         2.         2.         1.         1.         1.         0.


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          **************
          *            *
 14 KK    *    POND    *
          *            *
          **************

             HYDROGRAPH ROUTING DATA

 15 RS         STORAGE ROUTING
                   NSTPS           1  NUMBER OF SUBREACHES
                    ITYP        ELEV  TYPE OF INITIAL CONDITION
                  RSVRIC     1333.00  INITIAL CONDITION
                       X        0.00  WORKING R AND D COEFFICIENT

 16 SA              AREA         5.0        7.4        9.8

 17 SE         ELEVATION     1333.00    1334.00    1335.00

 18 SQ         DISCHARGE          0.        14.        87.       259.       557.

 19 SE         ELEVATION     1333.00    1333.50    1334.00    1334.50    1335.00

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                                    COMPUTED STORAGE-ELEVATION DATA

          STORAGE        0.00       6.16      14.73
        ELEVATION     1333.00    1334.00    1335.00
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                                        COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE        0.00       2.78       6.16      10.15      14.73
          OUTFLOW        0.10      14.00      87.00     258.50     557.00
        ELEVATION     1333.00    1333.50    1334.00    1334.50    1335.00


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              *            *
 20 KK        *   BASINB   *
              *            *
              **************

               SUBBASIN RUNOFF DATA

 21 BA           SUBBASIN CHARACTERISTICS
                       TAREA        0.04  SUBBASIN AREA

                 PRECIPITATION DATA

  6 PB                 STORM        7.44  BASIN TOTAL PRECIPITATION

  6 PI             INCREMENTAL PRECIPITATION PATTERN
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.03      0.03      0.03      0.03      0.03      0.03      0.04      0.04      0.04      0.04
                      0.04      0.04      0.06      0.06      0.06      0.06      0.06      0.06      0.47      0.47
                      0.47      0.47      0.47      0.47      0.09      0.09      0.09      0.09      0.09      0.09
                      0.05      0.05      0.05      0.04      0.05      0.05      0.03      0.03      0.03      0.03
                      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01

 23 LS           SCS LOSS RATE
                       STRTL        0.50  INITIAL ABSTRACTION
                      CRVNBR       80.00  CURVE NUMBER
                       RTIMP        0.00  PERCENT IMPERVIOUS AREA

 22 UD           SCS DIMENSIONLESS UNITGRAPH
                        TLAG        0.15  LAG

                                                             ***

                                                                    UNIT HYDROGRAPH
                                                               11 END-OF-PERIOD ORDINATES
                 39.       104.        91.        46.        23.        11.         6.         3.         1.         1.
                  0.


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              *            *
 24 KK        *    COMB    *
              *            *
              **************

 25 HC           HYDROGRAPH COMBINATION
                       ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

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               **************
               *            *
 26 KK         *   BASINA   *
               *            *
               **************

                 SUBBASIN RUNOFF DATA

 27 BA             SUBBASIN CHARACTERISTICS
                         TAREA         0.17  SUBBASIN AREA

                   PRECIPITATION DATA

  6 PB                   STORM         7.44  BASIN TOTAL PRECIPITATION

  6 PI               INCREMENTAL PRECIPITATION PATTERN
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.03      0.03      0.03      0.03      0.03      0.03      0.04      0.04      0.04      0.04
                      0.04      0.04      0.06      0.06      0.06      0.06      0.06      0.06      0.47      0.47
                      0.47      0.47      0.47      0.47      0.09      0.09      0.09      0.09      0.09      0.09
                      0.05      0.05      0.05      0.04      0.05      0.05      0.03      0.03      0.03      0.03
                      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01

 29 LS             SCS LOSS RATE
                        STRTL          0.27  INITIAL ABSTRACTION
                       CRVNBR         88.00  CURVE NUMBER
                        RTIMP          0.00  PERCENT IMPERVIOUS AREA

 28 UD             SCS DIMENSIONLESS UNITGRAPH
                         TLAG          0.42  LAG

                                                       ***

                                                   UNIT HYDROGRAPH
                                               27 END-OF-PERIOD ORDINATES
                 15.       46.       96.      147.      173.      173.      155.      129.       94.       68.
                 50.       38.       28.       21.       16.       12.        9.        7.        5.        4.
                  3.        2.        2.        1.        1.        1.        0.


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               **************
               *            *
 30 KK         *    POND    *
               *            *
               **************

                 HYDROGRAPH ROUTING DATA

 31 RS             STORAGE ROUTING
                        NSTPS             1  NUMBER OF SUBREACHES
                         ITYP          ELEV  TYPE OF INITIAL CONDITION
                       RSVRIC       1332.50  INITIAL CONDITION
                            X          0.00 WORKING R AND D COEFFICIENT

 32 SA                   AREA          4.3       5.0       7.4       9.8

 33 SE             ELEVATION       1332.50   1333.00   1334.00   1335.00

 34 SQ             DISCHARGE            0.       15.       45.       82.      127.      177.      233.      294.

 35 SE             ELEVATION       1332.50   1332.75   1333.00   1333.25   1333.50   1333.75   1334.00   1334.25

                                                       ***

                                              COMPUTED STORAGE-ELEVATION DATA

               STORAGE        0.00       2.32       8.48      17.06
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          ELEVATION     1332.50   1333.00   1334.00   1335.00

                                         COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

           STORAGE         0.00      1.12      2.32      3.64      5.10      6.71      8.48     10.40     17.06
           OUTFLOW         0.10     15.00     45.00     82.00    127.00    177.00    233.00    294.00    477.00
          ELEVATION     1332.50   1332.75   1333.00   1333.25   1333.50   1333.75   1334.00   1334.25   1335.00

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               *            *
  36 KK        *   BASINB   *
               *            *
               **************

                 SUBBASIN RUNOFF DATA

  37 BA            SUBBASIN CHARACTERISTICS
                         TAREA          0.04  SUBBASIN AREA

                   PRECIPITATION DATA

   6 PB                  STORM          7.44  BASIN TOTAL PRECIPITATION

   6 PI              INCREMENTAL PRECIPITATION PATTERN
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.03      0.03      0.03      0.03      0.03      0.03      0.04      0.04      0.04      0.04
                      0.04      0.04      0.06      0.06      0.06      0.06      0.06      0.06      0.47      0.47
                      0.47      0.47      0.47      0.47      0.09      0.09      0.09      0.09      0.09      0.09
                      0.05      0.05      0.05      0.04      0.05      0.05      0.03      0.03      0.03      0.03
                      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01

  39 LS            SCS LOSS RATE
                         STRTL          0.15  INITIAL ABSTRACTION
                        CRVNBR         93.00  CURVE NUMBER
                         RTIMP          0.00  PERCENT IMPERVIOUS AREA

  38 UD            SCS DIMENSIONLESS UNITGRAPH
                          TLAG          0.15  LAG

                                                             ***

                                                     UNIT HYDROGRAPH
                                                11 END-OF-PERIOD ORDINATES
                39.      104.       91.       46.       23.       11.        6.        3.        1.        1.
                 0.

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               *            *
  40 KK        *    COMB    *
               *            *
               **************

  41 HC            HYDROGRAPH COMBINATION
                         ICOMP             2  NUMBER OF HYDROGRAPHS TO COMBINE

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            *************
            *           *
  42 KK     *   DPOND   *
            *           *
            *************

               HYDROGRAPH ROUTING DATA

  43 RS          STORAGE ROUTING
                       NSTPS          1  NUMBER OF SUBREACHES
                        ITYP       ELEV  TYPE OF INITIAL CONDITION
                      RSVRIC    1319.00  INITIAL CONDITION
                           X       0.00  WORKING R AND D COEFFICIENT

  44 SA                  AREA          1.9       2.1       2.3       2.5       2.7

  45 SE          ELEVATION     1319.00   1320.00   1321.00   1322.00   1323.00

  46 SQ          DISCHARGE          0.       14.       39.       71.      110.      154.      202.      255.      312.

  47 SE          ELEVATION     1319.00   1319.50   1320.00   1320.50   1321.00   1321.50   1322.00   1322.50   1323.00
                                                                ***

                                                 COMPUTED STORAGE-ELEVATION DATA

            STORAGE      0.00      2.00      4.20      6.60      9.20
          ELEVATION   1319.00   1320.00   1321.00   1322.00   1323.00

                                             COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

            STORAGE      0.00      0.97      2.00      3.07      4.20      5.37      6.60      7.87      9.20
            OUTFLOW      0.10     14.00     39.00     71.00    110.00    154.00    202.00    255.00    312.00
          ELEVATION   1319.00   1319.50   1320.00   1320.50   1321.00   1321.50   1322.00   1322.50   1323.00□□
                                                          RUNOFF SUMMARY
                                                  FLOW IN CUBIC FEET PER SECOND
                                               TIME IN HOURS,  AREA IN SQUARE MILES

                                      PEAK  TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM    TIME OF
         OPERATION       STATION      FLOW    PEAK                                            AREA      STAGE    MAX STAGE□
6-HOUR     24-HOUR     72-HOUR

         HYDROGRAPH AT□                        BASINA      366.   12.25          77.        24.        24.      0.17

         ROUTED TO□                          POND     292.   12.42         75.        23.        23.      0.17□
1334.56       12.42

         HYDROGRAPH AT□                        BASINB      120.   12.00          18.         6.         6.      0.04

         2 COMBINED AT□                          COMB      325.   12.42          93.        29.        29.      0.21

         HYDROGRAPH AT□                        BASINA      397.   12.25          84.        27.        27.      0.17

         ROUTED TO□                          POND     292.   12.50         84.        27.        27.      0.17□
1334.24       12.50

         HYDROGRAPH AT□                        BASINB      144.   12.00          23.         7.         7.      0.04

         2 COMBINED AT□                          COMB      325.   12.50         106.        34.        34.      0.21

         ROUTED TO□                         DPOND     296.   12.67        105.        34.        34.      0.21□
1322.86       12.67


*** NORMAL END OF HEC-1 ***
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50 year event

SCS TYPE RAINFALL DISTRIBUTION - 24 HOUR STORM
FOR A TOTAL RAINFALL OF 7.44 INCHES

| HOUR | % RAINFALLL | INCHES |
|---|---|---|
| 0.00 | 0.00 | 0.00 |
| 0.50 | 0.52 | 0.04 |
| 1.00 | 1.05 | 0.08 |
| 1.50 | 1.60 | 0.12 |
| 2.00 | 2.20 | 0.16 |
| 2.50 | 2.84 | 0.21 |
| 3.00 | 3.49 | 0.26 |
| 3.50 | 4.13 | 0.31 |
| 4.00 | 4.80 | 0.36 |
| 4.50 | 5.53 | 0.41 |
| 5.00 | 6.32 | 0.47 |
| 5.50 | 7.14 | 0.53 |
| 6.00 | 8.00 | 0.60 |
| 6.50 | 8.90 | 0.66 |
| 7.00 | 9.85 | 0.73 |
| 7.50 | 10.85 | 0.81 |
| 8.00 | 12.00 | 0.89 |
| 8.50 | 13.28 | 0.99 |
| 9.00 | 14.70 | 1.09 |
| 9.50 | 16.30 | 1.21 |
| 10.00 | 18.10 | 1.35 |
| 10.50 | 20.40 | 1.52 |
| 11.00 | 23.50 | 1.75 |
| 11.50 | 28.30 | 2.11 |
| 12.00 | 66.30 | 4.93 |
| 12.50 | 73.50 | 5.47 |
| 13.00 | 77.20 | 5.74 |
| 13.50 | 79.90 | 5.94 |
| 14.00 | 82.00 | 6.10 |
| 14.50 | 83.79 | 6.23 |
| 15.00 | 85.28 | 6.34 |
| 15.50 | 86.68 | 6.45 |
| 16.00 | 88.00 | 6.55 |
| 16.50 | 89.12 | 6.63 |
| 17.00 | 90.04 | 6.70 |
| 17.50 | 90.93 | 6.77 |
| 18.00 | 91.81 | 6.83 |
| 18.50 | 92.67 | 6.89 |
| 19.00 | 93.52 | 6.96 |
| 19.50 | 94.37 | 7.02 |
| 20.00 | 95.20 | 7.08 |
| 20.50 | 95.97 | 7.14 |
| 21.00 | 96.65 | 7.19 |
| 21.50 | 97.26 | 7.24 |
| 22.00 | 97.84 | 7.28 |
| 22.50 | 98.40 | 7.32 |
| 23.00 | 98.95 | 7.36 |
| 23.50 | 99.48 | 7.40 |
| 24.00 | 100.00 | 7.44 |

SOURCE: 'HYDROLOGY FOR ENGINEERS AND PLANNERS', HJELMFELT AND CASSIDY
PUBLISHED 1975, TABLE 4.7 - ACCUMULATION OF RAINFALL TO 24 HOURS
U.S. SOIL CONSERVATION SERVICE

100 year Event - Existing & Developed

SAVOY, RUGGLES & BOHM, P.A.

```
□HEC1 S/N: 1343000364        HMVersion: 6.33    Data File: tf100.hc1

*****************************************
***************************************
*                                       *                                                    *
*                                                                                            *     U.S. ARMY CORPS OF
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
ENGINEERS     *                                                                              *     HYDROLOGIC ENGINEERING
*              MAY   1991               *
CENTER    *                                                                                  *           609 SECOND STREET
*            VERSION 4.0.1E             *
*                                                                                            *        DAVIS, CALIFORNIA
*                                       *
95616         *                                                                              *            (916) 756-1104
*  RUN DATE  05/02/2000  TIME  14:46:42 *
*                                                                                            *
*                                       *
*
*****************************************
***************************************


                                        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


                                     :::::::::::::::::::::::::::::::::::::::::::::
                                     :::::::::::::::::::::::::::::::::::::::::::::
                                     :::                                       :::
                                     :::  Full Microcomputer Implementation    :::
                                     :::                 by                    :::
                                     :::        Haestad Methods, Inc.          :::
                                     :::                                       :::
                                     :::::::::::::::::::::::::::::::::::::::::::::
                                     :::::::::::::::::::::::::::::::::::::::::::::

                        37 Brookside Road * Waterbury, Connecticut  06708 * (203) 755-1666


          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

□□                                             HEC-1 INPUT                                                PAGE  1

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

*** FREE ***
           1           ID   Tara Falls Existing Basin to Harry with existng pond modeled, 100 year, 24 ho
           2           IT       5                   289
           3           IN      30
           4           IO       4

           5           KK  BASINA
           6           BA   0.167
           7           PC       0    0.04    0.08    0.12    0.17    0.22    0.27    0.32    0.37    0.43
           8           PC    0.49    0.56    0.62    0.69    0.77    0.85    0.94    1.04    1.15    1.27
           9           PC    1.41    1.59    1.83    2.21    5.17    5.73    6.02    6.23    6.40    6.54
          10           PC    6.65    6.76    6.86    6.95    7.02    7.09    7.16    7.23    7.29    7.36
          11           PC    7.43    7.49    7.54    7.59    7.63    7.68    7.72    7.76    7.80
          12           UD    0.42
          13           LS       0      83

          14           KK    POND
          15           RS       1    ELEV    1333
          16           SA       5     7.4     9.8
          17           SE    1333    1334    1335
          18           SQ     0.1      14      87   258.5     557
          19           SE    1333  1333.5    1334  1334.5    1335

          20           KK  BASINB
          21           BA   0.042
          22           UD    0.15
          23           LS       0      80

          24           KK    COMB
          25           HC       2

          26           KK  BASINA
          27           BA   0.167
          28           UD    0.42
```

```
          29           LS       0      88

          30           KK    POND
          31           RS       1     ELEV 1332.50
          32           SA     4.3       5     7.4     9.8
          33           SE  1332.5    1333    1334    1335
          34           SQ     0.1      15      45      82     127     177     233     294
          35           SE  1332.5 1332.75    1333 1333.25  1333.5 1333.75    1334 1334.25

          36           KK  BASINB
          37           BA   0.042
          38           UD    0.15
          39           LS       0      93

          40           KK    COMB
          41           HC       2                                                              □□
HEC-1 INPUT                                         PAGE  2

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


          42           KK   DPOND
          43           RS       1     ELEV    1319
          44           SA     1.9     2.1     2.3     2.5     2.7
          45           SE    1319    1320    1321    1322    1323
          46           SQ     0.1      14      39      71     110     154     202     255     312
          47           SE    1319  1319.5    1320  1320.5    1321  1321.5    1322  1322.5    1323
          48           ZZ                                                                           □□HEC1 S/N:
1343000364        HMVersion: 6.33    Data File: tf100.hc1

*****************************************
***************************************
*                                       *                                                   *
*
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                   *    U.S. ARMY CORPS OF
ENGINEERS      *
*               MAY   1991              *                                                   *    HYDROLOGIC ENGINEERING
CENTER    *
*            VERSION 4.0.1E             *                                                   *          609 SECOND STREET
*
*                                       *                                                   *       DAVIS, CALIFORNIA
95616       *
*  RUN DATE  05/02/2000  TIME  14:46:42 *                                                   *           (916) 756-1104
*
*                                       *                                                   *
*
*****************************************
***************************************




                           Tara Falls Existing Basin to Harry with existng pond modeled, 100 year, 24 ho

   4 IO          OUTPUT CONTROL VARIABLES
                       IPRNT          4  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        289  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2   0  ENDING DATE
                      NDTIME       0000  ENDING TIME
                       ICENT         19  CENTURY MARK

                   COMPUTATION INTERVAL    0.08 HOURS
                        TOTAL TIME BASE   24.00 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


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


            **************
            *            *
   5 KK     *   BASINA   *
            *            *
            **************

   3 IN          TIME DATA FOR INPUT TIME SERIES
                       JXMIN         30  TIME INTERVAL IN MINUTES
                      JXDATE      1   0  STARTING DATE
                      JXTIME          0  STARTING TIME

               SUBBASIN RUNOFF DATA
```

```
  6 BA         SUBBASIN CHARACTERISTICS
                     TAREA         0.17  SUBBASIN AREA

               PRECIPITATION DATA

  6 PB               STORM         7.80  BASIN TOTAL PRECIPITATION

  6 PI           INCREMENTAL PRECIPITATION PATTERN
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.02      0.01      0.01      0.01      0.02      0.02      0.02      0.02
                    0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                    0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                    0.03      0.03      0.03      0.03      0.03      0.03      0.04      0.04      0.04      0.04
                    0.04      0.04      0.06      0.06      0.06      0.06      0.06      0.06      0.49      0.49
                    0.49      0.49      0.49      0.49      0.09      0.09      0.09      0.09      0.09      0.09
                    0.05      0.05      0.05      0.05      0.05      0.05      0.03      0.04      0.03      0.03
                    0.04      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02
                    0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                    0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                    0.02      0.02      0.01      0.01      0.02      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01

 13 LS         SCS LOSS RATE
                     STRTL         0.41  INITIAL ABSTRACTION
                    CRVNBR        83.00  CURVE NUMBER
                     RTIMP         0.00  PERCENT IMPERVIOUS AREA

 12 UD         SCS DIMENSIONLESS UNITGRAPH
                      TLAG         0.42  LAG

                                                        ***

                                                 UNIT HYDROGRAPH
                                            27 END-OF-PERIOD ORDINATES
             15.       46.       96.      147.      173.      173.      155.      129.       94.       68.
             50.       38.       28.       21.       16.       12.        9.        7.        5.        4.
              3.        2.        2.        1.        1.        1.        0.


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


           **************
           *            *
 14 KK     *    POND    *
           *            *
           **************

            HYDROGRAPH ROUTING DATA

 15 RS         STORAGE ROUTING
                    NSTPS             1  NUMBER OF SUBREACHES
                     ITYP          ELEV  TYPE OF INITIAL CONDITION
                   RSVRIC       1333.00  INITIAL CONDITION
                        X          0.00  WORKING R AND D COEFFICIENT

 16 SA               AREA         5.0       7.4       9.8

 17 SE         ELEVATION      1333.00   1334.00   1335.00

 18 SQ         DISCHARGE           0.       14.       87.      259.      557.

 19 SE         ELEVATION      1333.00   1333.50   1334.00   1334.50   1335.00
                                                        ***

                                             COMPUTED STORAGE-ELEVATION DATA

         STORAGE       0.00      6.16     14.73
       ELEVATION    1333.00   1334.00   1335.00

                                         COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

         STORAGE       0.00      2.78      6.16     10.15     14.73
         OUTFLOW       0.10     14.00     87.00    258.50    557.00
       ELEVATION    1333.00   1333.50   1334.00   1334.50   1335.00


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
*** *** ***
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              **************
              *            *
  20 KK       *   BASINB   *
              *            *
              **************

               SUBBASIN RUNOFF DATA

  21 BA          SUBBASIN CHARACTERISTICS
                       TAREA         0.04  SUBBASIN AREA

                 PRECIPITATION DATA

   6 PB                STORM         7.80  BASIN TOTAL PRECIPITATION

   6 PI            INCREMENTAL PRECIPITATION PATTERN
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.02      0.01      0.01      0.01      0.02      0.02      0.02      0.02
                       0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                       0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                       0.03      0.03      0.03      0.03      0.03      0.03      0.04      0.04      0.04      0.04
                       0.04      0.04      0.06      0.06      0.06      0.06      0.06      0.06      0.49      0.49
                       0.49      0.49      0.49      0.49      0.09      0.09      0.09      0.09      0.09      0.09
                       0.05      0.05      0.05      0.05      0.05      0.05      0.03      0.04      0.03      0.03
                       0.04      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02
                       0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                       0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                       0.02      0.02      0.01      0.01      0.02      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01

  23 LS          SCS LOSS RATE
                       STRTL         0.50  INITIAL ABSTRACTION
                      CRVNBR        80.00  CURVE NUMBER
                       RTIMP         0.00  PERCENT IMPERVIOUS AREA

  22 UD          SCS DIMENSIONLESS UNITGRAPH
                        TLAG         0.15  LAG

                                                        ***

                                                   UNIT HYDROGRAPH
                                                11 END-OF-PERIOD ORDINATES
               39.      104.       91.       46.       23.       11.        6.        3.        1.        1.
                0.

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

              **************
              *            *
  24 KK       *    COMB    *
              *            *
              **************

  25 HC          HYDROGRAPH COMBINATION
                       ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                        ***

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

              **************
              *            *
  26 KK       *   BASINA   *
              *            *
              **************

               SUBBASIN RUNOFF DATA

  27 BA          SUBBASIN CHARACTERISTICS
                       TAREA         0.17  SUBBASIN AREA

                 PRECIPITATION DATA

   6 PB                STORM         7.80  BASIN TOTAL PRECIPITATION

   6 PI            INCREMENTAL PRECIPITATION PATTERN
                       0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
```

```
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.02      0.01      0.01      0.01      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.03      0.03      0.03      0.03      0.03      0.03      0.04      0.04      0.04      0.04
                      0.04      0.04      0.06      0.06      0.06      0.06      0.06      0.06      0.49      0.49
                      0.49      0.49      0.49      0.49      0.09      0.09      0.09      0.09      0.09      0.09
                      0.05      0.05      0.05      0.05      0.05      0.05      0.03      0.04      0.03      0.03
                      0.04      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                      0.02      0.02      0.01      0.01      0.02      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01

 29 LS         SCS LOSS RATE
                  STRTL        0.27  INITIAL ABSTRACTION
                 CRVNBR       88.00  CURVE NUMBER
                  RTIMP        0.00  PERCENT IMPERVIOUS AREA

 28 UD         SCS DIMENSIONLESS UNITGRAPH
                   TLAG        0.42  LAG

                                                       ***

                                              UNIT HYDROGRAPH
                                          27 END-OF-PERIOD ORDINATES
                   15.       46.       96.      147.      173.      173.      155.      129.       94.       68.
                   50.       38.       28.       21.       16.       12.        9.        7.        5.        4.
                    3.        2.        2.        1.        1.        1.        0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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            *            *
 30 KK      *     POND   *
            *            *
            **************

              HYDROGRAPH ROUTING DATA

 31 RS         STORAGE ROUTING
                    NSTPS           1  NUMBER OF SUBREACHES
                     ITYP        ELEV  TYPE OF INITIAL CONDITION
                   RSVRIC     1332.50  INITIAL CONDITION
                        X        0.00  WORKING R AND D COEFFICIENT

 32 SA                AREA         4.3        5.0        7.4        9.8

 33 SE         ELEVATION     1332.50    1333.00    1334.00    1335.00

 34 SQ         DISCHARGE          0.        15.        45.        82.       127.       177.       233.       294.

 35 SE         ELEVATION     1332.50    1332.75    1333.00    1333.25    1333.50    1333.75    1334.00    1334.25
                                                       ***

                                         COMPUTED STORAGE-ELEVATION DATA

           STORAGE       0.00       2.32       8.48      17.06
         ELEVATION    1332.50    1333.00    1334.00    1335.00

                                      COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

           STORAGE       0.00       1.12       2.32       3.64       5.10       6.71       8.48      10.40      17.06
           OUTFLOW       0.10      15.00      45.00      82.00     127.00     177.00     233.00     294.00     477.00
         ELEVATION    1332.50    1332.75    1333.00    1333.25    1333.50    1333.75    1334.00    1334.25    1335.00

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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            *            *
 36 KK      *   BASINB   *
            *            *
            **************

             SUBBASIN RUNOFF DATA

 37 BA         SUBBASIN CHARACTERISTICS
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                      TAREA        0.04  SUBBASIN AREA

                 PRECIPITATION DATA

  6 PB                STORM        7.80  BASIN TOTAL PRECIPITATION

  6 PI             INCREMENTAL PRECIPITATION PATTERN
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.02      0.01      0.01      0.01      0.02      0.02      0.02      0.02
                        0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                        0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                        0.03      0.03      0.03      0.03      0.03      0.03      0.04      0.04      0.04      0.04
                        0.04      0.04      0.06      0.06      0.06      0.06      0.06      0.06      0.49      0.49
                        0.49      0.49      0.49      0.49      0.09      0.09      0.09      0.09      0.09      0.09
                        0.05      0.05      0.05      0.05      0.05      0.05      0.03      0.04      0.03      0.03
                        0.04      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.02      0.02
                        0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                        0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.02
                        0.02      0.02      0.01      0.01      0.02      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                        0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01

 39 LS             SCS LOSS RATE
                      STRTL        0.15  INITIAL ABSTRACTION
                     CRVNBR       93.00  CURVE NUMBER
                      RTIMP        0.00  PERCENT IMPERVIOUS AREA

 38 UD             SCS DIMENSIONLESS UNITGRAPH
                       TLAG        0.15  LAG

                                                       ***

                                                    UNIT HYDROGRAPH
                                              11 END-OF-PERIOD ORDINATES
                   39.      104.       91.       46.       23.       11.        6.        3.        1.        1.
                    0.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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              *            *
 40 KK        *    COMB    *
              *            *
              **************

 41 HC             HYDROGRAPH COMBINATION
                      ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                       ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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              *            *
 42 KK        *   DPOND    *
              *            *
              **************

                HYDROGRAPH ROUTING DATA

 43 RS             STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        ELEV  TYPE OF INITIAL CONDITION
                     RSVRIC     1319.00  INITIAL CONDITION
                          X        0.00  WORKING R AND D COEFFICIENT

 44 SA                 AREA         1.9        2.1        2.3        2.5        2.7

 45 SE             ELEVATION    1319.00    1320.00    1321.00    1322.00    1323.00

 46 SQ             DISCHARGE         0.        14.        39.        71.       110.       154.       202.       255.       312.

 47 SE             ELEVATION    1319.00    1319.50    1320.00    1320.50    1321.00    1321.50    1322.00    1322.50    1323.00

                                                       ***

                                              COMPUTED STORAGE-ELEVATION DATA
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               STORAGE       0.00       2.00       4.20       6.60       9.20
             ELEVATION    1319.00    1320.00    1321.00    1322.00    1323.00

                                              COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

               STORAGE       0.00       0.97       2.00       3.07       4.20       5.37       6.60       7.87       9.20
               OUTFLOW       0.10      14.00      39.00      71.00     110.00     154.00     202.00     255.00     312.00
             ELEVATION    1319.00    1319.50    1320.00    1320.50    1321.00    1321.50    1322.00    1322.50    1323.00

WARNING --- ROUTED OUTFLOW (     313.) IS GREATER THAN MAXIMUM OUTFLOW (     312.) IN STORAGE-OUTFLOW TABLE□□
                                                              RUNOFF SUMMARY
                                                        FLOW IN CUBIC FEET PER SECOND
                                                     TIME IN HOURS,  AREA IN SQUARE MILES

                                           PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD       BASIN      MAXIMUM      TIME
OF
        OPERATION        STATION          FLOW     PEAK                                               AREA       STAGE       MAX
STAGE□                                                        6-HOUR      24-HOUR      72-HOUR

        HYDROGRAPH AT□                               BASINA       388.   12.25          82.          26.          26.
0.17

        ROUTED TO□                                  POND     317.   12.42          80.          25.          25.        0.17□
1334.60      12.42

        HYDROGRAPH AT□                               BASINB       128.   12.00          20.           6.           6.
0.04

        2 COMBINED AT□                                 COMB       351.   12.42          99.          31.          31.
0.21

        HYDROGRAPH AT□                               BASINA       420.   12.25          89.          28.          28.
0.17

        ROUTED TO□                                  POND     307.   12.50          88.          28.          28.        0.17□
1334.30      12.50

        HYDROGRAPH AT□                               BASINB       151.   12.00          24.           8.           8.
0.04

        2 COMBINED AT□                                 COMB       341.   12.50         112.          36.          36.
0.21

        ROUTED TO□                                 DPOND     313.   12.67         111.          36.          36.        0.21□
1323.01      12.67


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