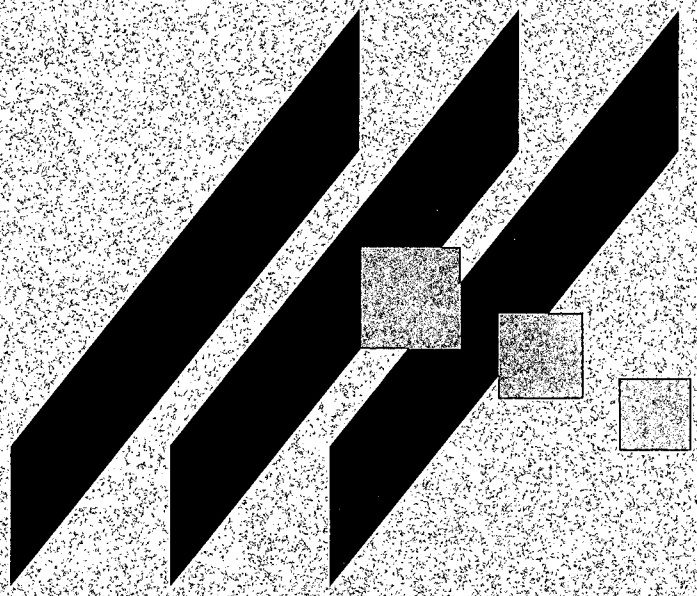
MID-KANSAS ENGINEERING CONSULTANTS, INC.



# TRACTOR SUPPLY COMPANY

# ON-SITE DRAINAGE PLAN

February, 1999

411 N WEBB ROAD • WICHITA KS 67206 • 316 684 9600 • FAX 316 684 5100

MID-KANSAS ENGINEERING CONSULTANTS, INC.

January 29, 1999

Vicky Huang, PE
7th Floor, City Hall
455 N. Main
Wichita, KS 67202

Reference: Tractor Supply Company – On-site Drainage Plan
MKEC Project 98135

Dear Vicky:

Following is our drainage report for the E. M. Stevens 4th Addition development in the NW ¼ of Section 28, T27S, R2E.

Very truly yours,

MID-KANSAS ENGINEERING CONSULTANTS, INC.

Timothy K. Meyer, P.E.

TKM/dm

c: Paul Hays, Central Inspection
Ron Spangenberg, AIA

K:\WP\PROJECT\1998\98135\DRAINAGE\Huang.wpd

411 N. WEBB ROAD • WICHITA, KS 67206 • 316-684-9600 • FAX: 316-684-5100

# Drainage Report
# E. M. Stevens 4th Addition
# MKEC Project 98135
January 29, 1999

## Location

The site is on the south side of U. S. Highway 54 approximately 3/8 mile east of Webb Road in the northwest quarter of Section 28, T27S, R2E. Adjacent lands include Lot 1 Paul Burnett Addition to the west; Lot 1 Block A Pizza Hut Second Addition, and an unplatted parcel to the south.

The preliminary plat shows dimensions or 470 ft north-south, and 440 ft east-west. The total area in the preliminary plat, including the north 78 ft of the property, is 4.75 acres. The north 78 ft for the entire width (approximately 0.79 ac) is under contract with the City of Wichita, and will become part of the Kellogg St/US 54 transportation corridor. The site's net area is 3.96 ac.

## Existing Site Conditions

### *Soils*

According to the NRCS (SCS) Sedgwick County Soil Survey, the entire site is in the Irwin Series: silty clay, 1 to 3 percent slopes; well-drained soil on upland divides and in even side slopes. Substratum is a calcareous shaly clay. In places the surface layer is calcareous. The Hydrologic Soil Group (HSG) is "D".

### *Current Development*

The parcel is currently undeveloped.

### *Landform and Slope*

The site is near an upland divide. The USGS map of the area shows the beginnings of a slope from west to east, indicating that a limited amount of runoff from the west could affect the site. Field observation indicates that the watershed divide to the west is within a few feet of the property line, and runoff from the west should be minimal. If necessary, flow from the west could be diverted north along the property line to the ditch on the south side of US 54.

No natural channels lie on the property. The slope is just slightly north of due east, at approximately one percent.

### *Drainage Conditions*

No portion of the site is included in a regulatory floodplain (FIRM Panel 225, Sedgwick County, June 3, 1986; FIRM Panel 30, City of Wichita, May 15, 1986). The nearest regulatory floodplain is on Spring Branch, approximately ½ mile south of the site.

As noted under Landform and Slope, offsite flow from the west should be minimal.

The parcel south of the site is essentially paved parking area and a building. The parking area is sloped toward the east. Runoff collects on the east side of the parking area and flows north to the southeast corner of E. M. Stevens 4th Addition.

Runoff from the property flows to the east side, where it joins flow from the parcel to the south. All runoff then flows north in a shallow ditch west of the access road to the soulth side of US 54 Highway, through two driveway culverts, then east toward Spring Branch Tributary of Fourmile Creek.

Site runoff is currently uncontrolled.

### *Proposed Site Runoff Characteristics*

General runoff patterns will be modified slightly under proposed conditions. Runoff from the main building and the future building site immediately to the west will flow to the larger of two detention facilities along the south side of the parcel. Runoff from the storage area immediately east of the main building will flow to a smaller detention basin. Runoff from the north parking area will flow east to the driveway culverts where it will join discharge from the detention basins and uncontrolled runoff from the parcel to the south.

A TR-20 computer model of the site was prepared to evaluate detention basins effects on post-development peak flows. A summary of the analyses is attached, followed by the TR-20 output for the developed conditions.

### *Proposed Minimum Pad Elevation*

The minimum building pad for this site will be 182.5 ft, City of Wichita Datum. This represents freeboard of approximately two feet above the anticipated maximum 100-year water surface elevation in the highest detention basin near the site's south boundary.

E. M. Stevens 4th Addition
MKEC 98135-517

Summary of TR-20 Analyses

| | | | | | | |
|---|---|---|---|---|---|---|
| Existing Conditions | 2-yr | 5-yr | 10-yr | 25-yr | 50-yr | 100-yr |
| Uncontrolled | | | | | | |
| 6-hr McEnroe-Larson | 4 | 7 | 9 | 11 | 13 | 15 |
| 24-hr SCS Type II | 6 | 8 | 10 | 12 | 15 | 16 |
| 24-hr SCS Zone 5 | 5 | 8 | 10 | 12 | 14 | 17 |
| | | | | | | |
| | | | | | | |
| Proposed Conditions | | | | | | |
| Uncontrolled | | | | | | |
| 6-hr McEnroe-Larson | 13 | 18 | 21 | 25 | 28 | 32 |
| 24-hr SCS Type II | 15 | 19 | 22 | 26 | 29 | 33 |
| 24-hr SCS Zone 5 | 11 | 14 | 16 | 19 | 21 | 24 |
| | | | | | | |
| | | | | | | |
| Proposed Conditions | | | | | | |
| With Detention | | | | | | |
| 6-hr McEnroe-Larson | 8 | 11 | 13 | 14 | 15 | 17 |
| 24-hr SCS Type II | 9 | 11 | 13 | 14 | 16 | 18 |
| 24-hr SCS Zone 5 | 8 | 10 | 11 | 12 | 14 | 15 |

JNJ 22 DEC 98

# EAST KELLOGG DEVELOPMENT FOR WALTAR LEWIS

## EXISTING

DRAINAGE AREA

440' E-W
392' N-S

= 3.96 Ac
0.0062 SQ MI

ELEV MAX = 84.5
ELEV MIN = 76.5
L = 8.0
LENGTH = 780

Slope = (8.0)/(780) = 0.0103
1.03%

ASSUME TOTAL SITE UNDEVELOPED
(15% IMPERVIOUS)

$C_2$ = 0.33
$C_5$ = 0.35
$C_{10}$ = 0.42
$C_{100}$ = 0.55

CN = 84

$$T_c = \frac{1.8(1.1-C)(L)^{1/2}}{S^{1/3}}$$

$$= \frac{(1.8)(1.1-\overset{0.55}{\underset{0.42}{0.34}})(780)^{1/2}}{(1.03)^{1/3}}$$

$$= \frac{(1.8)(\overset{0.55}{\underset{0.69}{0.76}})(27.9285)}{(1.0099)}$$

SOILS

$I_a$ - Irwin silty clay loam 1-3% 'D'

22.4 (0.4563 HR) $I_{100}$ = 5.77
33.8 (0.5642 HR) $I_{10}$ = [illegible]
= 37.8 MINUTES (0.6305 HR) $I_5$ = [illegible]
$I_2$ = [illegible]

$Q = C\ I\ A$

$Q_2 = (0.33)(1.90)(3.96)$
= 2.48 CFS

$Q_5 = (0.35)(2.32)(3.96)$
= 3.22 CFS

$Q_{10} = (0.42)(3.53)(3.96)$
= 5.87 CFS

$Q_{100} = (0.55)(5.77)(3.96)$
= 12.6 CFS

```
**********80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY**********

JOB TR-20                    FULLPRINT          SUMMARY   NOPLOTS
TITLE 002 EAST KELLOGG DEVELOPMENT FOR WALTER LEWIS  2,5,10,25,50,100-YR 6-HR
TITLE     EKD-WLE       22 DEC 1998                    24-HR ZONE 5
 4 DIMHYD             0.02                                          484
 8          .000       .030       .100       .190       .310
 8          .470       .660       .820       .930       .990
 8          1.000      .990       .930       .860       .780
 8          .680       .560       .460       .390       .330
 8          .280       .241       .207       .174       .147
 8          .126       .107       .091       .077       .066
 8          .055       .047       .040       .034       .029
 8          .025       .021       .018       .015       .013
 8          .011       .009       .008       .007       .006
 8          .005       .004       .003       .002       .001
 8          .000       .000       .000       .000       .000
 9 ENDTBL
 5 RAINFL 7           0.08333                                       6-HR M&L
 8          0.0000     0.0033     0.0066     0.0099     0.0132
 8          0.0166     0.0198     0.0248     0.0296     0.0346
 8          0.0404     0.0463     0.0522     0.0590     0.0658
 8          0.0727     0.0796     0.0864     0.0933     0.1136
 8          0.1340     0.1572     0.1832     0.2124     0.2473
 8          0.2850     0.3400     0.4464     0.6034     0.6752
 8          0.7220     0.7409     0.7598     0.7758     0.7919
 8          0.8072     0.8224     0.8310     0.8396     0.8468
 8          0.8540     0.8628     0.8714     0.8773     0.8832
 8          0.8890     0.8939     0.8988     0.9038     0.9086
 8          0.9136     0.9184     0.9233     0.9282     0.9332
 8          0.9380     0.9429     0.9478     0.9527     0.9576
 8          0.9626     0.9664     0.9704     0.9742     0.9782
 8          0.9821     0.9860     0.9884     0.9906     0.9930
 8          0.9954     0.9976     1.0000     1.0000     1.0000
 9 ENDTBL
 5 RAINFL 8           0.5                                           24-HRSCS
 8          .000       .002       .005       .009       .013        ZONE 5
 8          .018       .023       .029       .035       .042
 8          .050       .059       .068       .078       .089
 8          .101       .114       .128       .144       .162
 8          .183       .208       .244       .339       .723
 8          .773       .802       .825       .844       .861
 8          .876       .890       .903       .914       .924
 8          .934       .943       .951       .959       .966
 8          .972       .977       .982       .986       .990
 8          .993       .996       .998       1.000      1.000
 9 ENDTBL
 6 RUNOFF 1 001       6 0.0062     84.0       0.63       1 1   1   1
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
  ENDATA
7 INCREM 6              0.0833
7 COMPUT 7 001    001   0.0         2.52        1.0         7 2  11  01 2-YR 6-H
  ENDCMP 1
7 COMPUT 7 001    001   0.0         3.42        1.0         7 2  12  02 5-YR 6-H
  ENDCMP 1
7 COMPUT 7 001    001   0.0         4.02        1.0         7 2  13  03 10-YR 6-
  ENDCMP 1
7 COMPUT 7 001    001   0.0         4.63        1.0         7 2  14  04 25-YR 6-
  ENDCMP 1
7 COMPUT 7 001    001   0.0         5.20        1.0         7 2  15  05 50-YR 6-
  ENDCMP 1
7 COMPUT 7 001    001   0.0         5.94        1.0         7 2  16  06 100-YR 6
  ENDCMP 1
7 COMPUT 7 001    001   0.0         3.48        1.0         2 2  21  01 2-YR TYP
  ENDCMP 1
7 COMPUT 7 001    001   0.0         4.55        1.0         2 2  22  02 5-YR TYP
  ENDCMP 1
7 COMPUT 7 001    001   0.0         5.25        1.0         2 2  23  03 10-YR TY
  ENDCMP 1
7 COMPUT 7 001    001   0.0         6.10        1.0         2 2  24  04 25-YR TY
  ENDCMP 1
7 COMPUT 7 001    001   0.0         6.98        1.0         2 2  25  05 50-YR TY
  ENDCMP 1
7 COMPUT 7 001    001   0.0         7.80        1.0         2 2  26  06 100-YR T
  ENDCMP 1
7 COMPUT 7 001    001   0.0         3.48        1.0         8 2  41  01 2-YR ZON
  ENDCMP 1
7 COMPUT 7 001    001   0.0         4.55        1.0         8 2  42  02 5-YR ZON
  ENDCMP 1
7 COMPUT 7 001    001   0.0         5.25        1.0         8 2  43  03 10-YR ZO
  ENDCMP 1
7 COMPUT 7 001    001   0.0         6.10        1.0         8 2  44  04 25-YR ZO
  ENDCMP 1
7 COMPUT 7 001    001   0.0         6.98        1.0         8 2  45  05 50-YR ZO
  ENDCMP 1
7 COMPUT 7 001    001   0.0         7.80        1.0         8 2  46  06 100-YR Z
  ENDCMP 1
  ENDJOB 2
```

**********END OF 80-80 LIST**********

DIMENSIONLESS HYDROGRAPH TABLE ENTERED TIME INCREMENT = .02

| | | | | | |
|---|---|---|---|---|---|
| 3 | .0000 | .0300 | .1000 | .1900 | .3100 |
| 8 | .4700 | .6600 | .8200 | .9300 | .9900 |
| 8 | 1.0000 | .9900 | .9300 | .8600 | .7800 |
| 3 | .6800 | .5600 | .4600 | .3900 | .3300 |
| 3 | .2800 | .2410 | .2070 | .1740 | .1470 |
| 8 | .1260 | .1070 | .0910 | .0770 | .0660 |
| 3 | .0550 | .0470 | .0400 | .0340 | .0290 |
| 3 | .0250 | .0210 | .0180 | .0150 | .0130 |
| 8 | .0110 | .0090 | .0080 | .0070 | .0060 |
| 8 | .0050 | .0040 | .0030 | .0020 | .0010 |
| 3 | .0000 | .0000 | .0000 | .0000 | .0000 |

9 ENDTBL

COMPUTED PEAK RATE FACTOR = 484.00

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .08 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 2-YR 6-H
STARTING TIME = .00 RAIN DEPTH = 2.52 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=11 STORM NO.= 1 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.72 | 4.0 | (RUNOFF) |

*** WARNING - XSECTION 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 12. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

HYDROGRAPH POINTS FOR ALTERNATE =11, STORM = 1

| HRS | MAIN TIME INCREMENT = .08 hr, | | | DRAINAGE AREA = | | .01 SQ.MI. | |
|---|---|---|---|---|---|---|---|
| 2.25 CFS | 0 | 1 | 2 | 3 | 3 | 4 | 4 | 4 |
| 2.92 CFS | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 3.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.25 CFS | 1 | 1 | 0 | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
1.13 WATERSHED INCHES; 5 CFS-HRS; .4 ACRE-FEET.

| DURATION(HRS) | 2 | 2 |
|---|---|---|
| FLOW(CFS) | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 5-YR 6-H
STARTING TIME = .00 RAIN DEPTH = 3.42 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=12 STORM NO.= 2 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.70 | 6.7 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =12, STORM = 2

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 2.08 CFS | 0 | 1 | 1 | 2 | 3 | 5 | 6 | 7 |
| 2.75 CFS | 7 | 6 | 5 | 4 | 4 | 3 | 3 | 2 |
| 3.42 CFS | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| 4.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.75 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.41 CFS | 1 | 1 | 1 | 1 | 1 | 0 | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
1.87 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-FEET

| DURATION(HRS) | 2 | 4 |
|---|---|---|
| FLOW(CFS) | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 10-YR 6-
STARTING TIME = .00 RAIN DEPTH = 4.02 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=13 STORM NO.= 3 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.70 | 8.6 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =13, STORM = 3

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 2.00 CFS | 0 | 1 | 1 | 2 | 3 | 4 | 6 | 8 |
| 2.67 CFS | 9 | 8 | 8 | 7 | 6 | 5 | 4 | 4 |
| 3.33 CFS | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 4.00 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.00 CFS | 1 | 0 | | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
2.39 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-FEET.

| DURATION(HRS) | 2 | 4 |
|---|---|---|
| FLOW(CFS) | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 25-YR 6-
STARTING TIME = .00 RAIN DEPTH = 4.63 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=14 STORM NO.= 4 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.69 | 10.6 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =14, STORM = 4

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = | | | .01 SQ.MI. |
|---|---|---|---|---|---|---|---|---|
| 1.92 CFS | 0 | 1 | 1 | 2 | 2 | 4 | 6 | 8 |
| 2.58 CFS | 10 | 11 | 10 | 9 | 8 | 7 | 6 | 5 |
| 3.25 CFS | 4 | 4 | 3 | 3 | 2 | 2 | 2 | 2 |
| 3.92 CFS | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.25 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.91 CFS | 1 | 1 | 1 | 1 | 0 | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
2.93 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 4 |
|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 50-YR 6-
STARTING TIME = .00 RAIN DEPTH = 5.20 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=15 STORM NO.= 5 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.69 | 12.5 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =15, STORM = 5

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 1.83 CFS | 0 | 1 | 1 | 1 | 2 | 3 | 5 | 7 |
| 2.50 CFS | 10 | 12 | 12 | 12 | 11 | 9 | 8 | 7 |
| 3.17 CFS | 6 | 5 | 4 | 4 | 3 | 3 | 2 | 2 |
| 3.83 CFS | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| 4.50 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 0 | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
3.45 WATERSHED INCHES; 14 CFS-HRS; 1.1 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 4 |
|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 100-YR 6
STARTING TIME = .00 RAIN DEPTH = 5.94 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=16 STORM NO.= 6 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.69 | 15.0 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =16, STORM = 6

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = | | | .01 SQ.MI. |
|---|---|---|---|---|---|---|---|---|
| 1.75 CFS | 0 | 1 | 1 | 1 | 2 | 3 | 4 | 6 |
| 2.42 CFS | 8 | 12 | 14 | 15 | 15 | 13 | 11 | 9 |
| 3.08 CFS | 8 | 7 | 6 | 5 | 4 | 4 | 3 | 3 |
| 3.75 CFS | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 1 |
| 4.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.75 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |

RUNOFF ABOVE BASEFLOW OF .00 CFS
4.14 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 4 |
|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 2-YR TYP
STARTING TIME = .00 RAIN DEPTH = 3.48 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=21 STORM NO.= 1 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.27 | 5.5 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =21, STORM = 1
MAIN TIME INCREMENT = .08 hr, DRAINAGE AREA = .01 SQ.MI.

| HRS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11.58 CFS | 0 | 1 | 1 | 1 | 2 | 3 | 4 | 5 |
| 12.25 CFS | 5 | 5 | 5 | 4 | 3 | 3 | 2 | 2 |
| 12.91 CFS | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |

RUNOFF ABOVE BASEFLOW OF .00 CFS
1.92 WATERSHED INCHES; 8 CFS-HRS; .6 ACRE-FEET.

| DURATION(HRS) | 2 | 2 |
|---|---|---|
| FLOW(CFS) | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 7

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 5-YR TYP
STARTING TIME = .00 RAIN DEPTH = 4.55 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=22 STORM NO.= 2 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.25 | 8.3 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =22, STORM = 2

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 11.25 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| 11.91 CFS | 3 | 5 | 6 | 8 | 8 | 8 | 7 | 6 |
| 12.58 CFS | 5 | 4 | 3 | 3 | 2 | 2 | 2 | 2 |
| 13.24 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.24 CFS | 1 | 0 | | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
2.86 WATERSHED INCHES; 11 CFS-HRS; .29 ACRE-FEET.

| DURATION(HRS) | 2 | 4 |
|---|---|---|
| FLOW(CFS) | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 8

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 10-YR TY
STARTING TIME = .00 RAIN DEPTH = 5.25 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=23 STORM NO.= 3 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.26 | 10.1 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =23, STORM = 3

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = | | .01 SQ.MI. | |
|---|---|---|---|---|---|---|---|---|
| 10.91 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11.58 CFS | 1 | 1 | 2 | 2 | 4 | 6 | 8 | 9 |
| 12.25 CFS | 10 | 10 | 9 | 7 | 6 | 5 | 4 | 3 |
| 12.91 CFS | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| 13.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.24 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 0 | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
3.50 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 5 |
|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 9

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 25-YR TY
STARTING TIME = .00 RAIN DEPTH = 6.10 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=24 STORM NO.= 4 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.26 | 12.3 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =24, STORM = 4

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 10.50 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| 11.83 CFS | 3 | 5 | 7 | 10 | 11 | 12 | 12 | 11 |
| 12.50 CFS | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 3 |
| 13.16 CFS | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| 13.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.49 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.49 CFS | 1 | 1 | 1 | 1 | 1 | 0 | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
4.29 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 6 |
|---|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 10

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 50-YR TY
STARTING TIME = .00 RAIN DEPTH = 6.98 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=25 STORM NO.= 5 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.25 | 14.6 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =25, STORM = 5

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 10.16 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11.50 CFS | 1 | 2 | 2 | 3 | 4 | 6 | 8 | 11 |
| 12.16 CFS | 14 | 15 | 14 | 12 | 10 | 9 | 7 | 6 |
| 12.83 CFS | 5 | 4 | 4 | 3 | 3 | 2 | 2 | 2 |
| 13.49 CFS | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| 14.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.49 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17.49 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 18.16 CFS | 0 | | | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
5.12 WATERSHED INCHES; 20 CFS-HRS; 1.7 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 8 |
|---|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 11

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 100-YR T
STARTING TIME = .00 RAIN DEPTH = 7.80 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=26 STORM NO.= 6 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.25 | 16.8 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =26, STORM = 6
MAIN TIME INCREMENT = .08 hr, DRAINAGE AREA = .01 SQ.MI.

| HRS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9.66 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11.00 CFS | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| 11.66 CFS | 2 | 3 | 4 | 7 | 10 | 13 | 16 | 17 |
| 12.33 CFS | 16 | 14 | 12 | 10 | 8 | 7 | 5 | 5 |
| 12.99 CFS | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 |
| 13.66 CFS | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| 14.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.99 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.99 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 18.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 18.99 CFS | 0 | | | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
5.90 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 8 | 9 |
|---|---|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 12

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 2-YR ZON
STARTING TIME = .00 RAIN DEPTH = 3.48 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=41 STORM NO.= 1 RAIN TABLE NO.= 8

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.17 | 5.3 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =41, STORM = 1

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 11.25 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 3 |
| 11.91 CFS | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 3 |
| 12.58 CFS | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| 13.24 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.91 CFS | 0 | | | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
1.92 WATERSHED INCHES; 8 CFS-HRS; .6 ACRE-FEET.

| DURATION(HRS) | 2 | 3 |
|---|---|---|
| FLOW(CFS) | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 13

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 5-YR ZON
STARTING TIME = .00 RAIN DEPTH = 4.55 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=42 STORM NO.= 2 RAIN TABLE NO.= 8

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.17 | 7.9 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =42, STORM = 2
HRS MAIN TIME INCREMENT = .08 hr, DRAINAGE AREA = .01 SQ.MI.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11.00 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| 11.66 CFS | 2 | 3 | 4 | 6 | 7 | 8 | 8 | 8 |
| 12.33 CFS | 7 | 6 | 5 | 4 | 3 | 3 | 2 | 2 |
| 12.99 CFS | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.99 CFS | 1 | 1 | 0 | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
2.86 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-FEET.

| | | | |
|---|---|---|---|
| DURATION(HRS) | 2 | 4 | 4 |
| FLOW(CFS) | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 14

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 10-YR ZO
STARTING TIME = .00 RAIN DEPTH = 5.25 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=43 STORM NO.= 3 RAIN TABLE NO.= 8

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.17 | 9.7 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =43, STORM = 3
MAIN TIME INCREMENT = .08 hr, DRAINAGE AREA = .01 SQ.MI.

| HRS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 10.75 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11.41 CFS | 1 | 2 | 2 | 3 | 4 | 5 | 7 | 8 |
| 12.08 CFS | 9 | 10 | 9 | 8 | 7 | 6 | 5 | 4 |
| 12.74 CFS | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 1 |
| 13.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.74 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.08 CFS | 1 | 0 | | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
3.50 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 5 |
|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 15

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 25-YR ZO
STARTING TIME = .00 RAIN DEPTH = 6.10 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=44 STORM NO.= 4 RAIN TABLE NO.= 8

)PERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.16 | 11.8 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =44, STORM = 4

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 10.33 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11.00 CFS | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 |
| 11.66 CFS | 3 | 5 | 6 | 8 | 10 | 11 | 12 | 11 |
| 12.33 CFS | 10 | 9 | 7 | 6 | 5 | 4 | 3 | 3 |
| 12.99 CFS | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| 13.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.99 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 0 | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
4.29 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 6 |
|---|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 16

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 50-YR ZO
STARTING TIME = .00 RAIN DEPTH = 6.98 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=45 STORM NO.= 5 RAIN TABLE NO.= 8

)PERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.16 | 14.0 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =45, STORM = 5

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 9.83 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.50 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11.16 CFS | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 6 |
| 11.83 CFS | 8 | 10 | 12 | 13 | 14 | 13 | 12 | 10 |
| 12.49 CFS | 8 | 7 | 6 | 5 | 4 | 3 | 3 | 2 |
| 13.16 CFS | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| 13.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.49 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.49 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17.83 CFS | 1 | 1 | 0 | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
5.12 WATERSHED INCHES; 20 CFS-HRS; 1.7 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 8 | 8 |
|---|---|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 17

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 100-YR Z
STARTING TIME = .00 RAIN DEPTH = 7.80 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=46 STORM NO.= 6 RAIN TABLE NO.= 8

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 84. TIME OF CONCENTRATION= .63 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0840 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.16 | 16.0 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =46, STORM = 6
MAIN TIME INCREMENT = .08 hr, DRAINAGE AREA = .01 SQ.MI.

| HRS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9.41 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.75 CFS | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| 11.41 CFS | 3 | 3 | 4 | 5 | 7 | 9 | 11 | 14 |
| 12.08 CFS | 15 | 16 | 15 | 14 | 12 | 10 | 8 | 6 |
| 12.74 CFS | 5 | 4 | 4 | 3 | 3 | 2 | 2 | 2 |
| 13.41 CFS | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| 14.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.74 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.74 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 18.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 0 | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
5.90 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-FEET

| DURATION(HRS) | 2 | 4 | 6 | 8 | 9 |
|---|---|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 18

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|
| RAINFALL OF 2.52 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| RAINTABLE NUMBER 7, AMC 2 | | | | | | | |
| MAIN TIME INCREMENT .08 HOURS | | | | | | | |
| ALTERNATE 11 STORM 1 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 1.13 | --- | 2.72T | 4T | 400.0 |
| RAINFALL OF 3.42 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 12 STORM 2 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 1.87 | --- | 2.70 | 7 | 700.0 |
| RAINFALL OF 4.02 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 13 STORM 3 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 2.39 | --- | 2.70 | 9 | 900.0 |
| RAINFALL OF 4.63 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 14 STORM 4 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 2.93 | --- | 2.69 | 11 | 1100.0 |
| RAINFALL OF 5.20 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 15 STORM 5 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 3.45 | --- | 2.69 | 13 | 1300.0 |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| (SECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|
| RAINFALL OF 5.94 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 16 STORM 6 | | | | | | | |
| (SECTION 1 | RUNOFF | .01 | 4.14 | --- | 2.69 | 15 | 1500.0 |
| RAINFALL OF 3.48 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| RAINTABLE NUMBER 2, AMC 2 | | | | | | | |
| ALTERNATE 21 STORM 1 | | | | | | | |
| (SECTION 1 | RUNOFF | .01 | 1.92 | --- | 12.27 | 6 | 600.0 |
| RAINFALL OF 4.55 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 22 STORM 2 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 2.86 | --- | 12.25 | 8 | 800.0 |
| RAINFALL OF 5.25 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 23 STORM 3 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 3.50 | --- | 12.26 | 10 | 1000.0 |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
P-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|
| RAINFALL OF 6.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 24 STORM 4 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 4.29 | --- | 12.26 | 12 | 1200.0 |
| RAINFALL OF 6.98 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 25 STORM 5 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 5.12 | --- | 12.25 | 15 | 1500.0 |
| RAINFALL OF 7.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 26 STORM 6 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 5.90 | --- | 12.25 | 17 | 1700.0 |
| RAINFALL OF 3.48 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| RAINTABLE NUMBER 8, AMC 2 | | | | | | | |
| ALTERNATE 41 STORM 1 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 1.92 | --- | 12.17 | 5 | 500.0 |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|
| RAINFALL OF 4.55 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 42 STORM 2 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 2.86 | --- | 12.17 | 8 | 800.0 |
| RAINFALL OF 5.25 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 43 STORM 3 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 3.50 | --- | 12.17 | 10 | 1000.0 |
| RAINFALL OF 6.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 44 STORM 4 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 4.29 | --- | 12.16 | 12 | 1200.0 |
| RAINFALL OF 6.98 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 45 STORM 5 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 5.12 | --- | 12.16 | 14 | 1400.0 |
| RAINFALL OF 7.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 46 STORM 6 | | | | | | | |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | PEAK DISCHARGE TIME (HR) | PEAK DISCHARGE RATE (CFS) | PEAK DISCHARGE RATE (CSM) |
|---|---|---|---|---|---|---|---|
| ALTERNATE 46 STORM 6 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 5.90 | --- | 12.16 | 16 | 1600.0 |

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES

| XSECTION/ STRUCTURE ID | | DRAINAGE AREA (SQ MI) | STORM NUMBERS..... 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| XSECTION 1 | | .01 | | | | | |
| | ALTERNATE | 11 | 4 | ********* | ********* | ********* | ********* |
| | ALTERNATE | 12 | ********* | 7 | ********* | ********* | ********* |
| | ALTERNATE | 13 | ********* | ********* | 9 | ********* | ********* |
| | ALTERNATE | 14 | ********* | ********* | ********* | 11 | ********* |
| | ALTERNATE | 15 | ********* | ********* | ********* | ********* | 13 |
| | ALTERNATE | 21 | 6 | ********* | ********* | ********* | ********* |
| | ALTERNATE | 22 | ********* | 8 | ********* | ********* | ********* |
| | ALTERNATE | 23 | ********* | ********* | 10 | ********* | ********* |
| | ALTERNATE | 24 | ********* | ********* | ********* | 12 | ********* |
| | ALTERNATE | 25 | ********* | ********* | ********* | ********* | 15 |
| | ALTERNATE | 41 | 5 | ********* | ********* | ********* | ********* |
| | ALTERNATE | 42 | ********* | 8 | ********* | ********* | ********* |
| | ALTERNATE | 43 | ********* | ********* | 10 | ********* | ********* |
| | ALTERNATE | 44 | ********* | ********* | ********* | 12 | ********* |
| | ALTERNATE | 45 | ********* | ********* | ********* | ********* | 14 |

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES

| XSECTION/ STRUCTURE ID | | DRAINAGE AREA (SQ MI) | STORM NUMBERS..... 6 |
|---|---|---|---|
| XSECTION 1 | | .01 | |
| | ALTERNATE | 16 | 15 |
| | ALTERNATE | 26 | 17 |
| | ALTERNATE | 46 | 16 |

END OF 1 JOBS IN THIS RUN

JNJ 22 OCT 98

# EAST KELLOGG DEVELOPMENT FOR WALTER LEWIS

PROPOSED

## DRAINAGE AREA

440' E-W
392' N-S
= 3.96 AC
0.0062 SQ. MI

ELEV MAX = 84.5
ELEV MIN = 76.5
Δ = 8.0
LENGTH = 832

SLOPE = (8.0/832) = 0.0096
0.96%

ASSUME TOTAL SITE WILL BE PARKING LOTS & ROOF (94% IMPERVIOUS)

$C_2$ = .85
$C_5$ = .87
$C_{10}$ = .89
$C_{100}$ = .90

CN = 98

$$T_c = \frac{1.8\,(1.1-C)\,(L)^{1/2}}{S^{1/3}}$$

$$= \frac{(1.8)(1.1-.86)(832)^{1/2}}{(0.96)^{1/3}}$$

$$= \frac{(1.8)(0.24)(28.8479)}{(0.9865)}$$

10.5 (0.1754 HR) $I_{100}$ = ~~8.50~~ 7.40
11.1 (0.1842 HR) $I_{10}$ = ~~5.88~~ 5.21
= 12.6 MINUTES (0.2105 HR) $I_5$ = ~~4.62~~ 4.62
$I_2$ = ~~4.11~~ 3.80

$Q = C\,I\,A$

$Q_2 = (.85)(3.80)(3.96)$
= 12.8 CFS

$Q_5 = (.87)(4.62)(3.96)$
= 15.9 CFS

$Q_{10} = (.89)(5.21)(3.96)$
= 18.4 CFS

$Q_{100} = (.90)(7.40)(3.96)$
= 26.4 CFS

SCS - ENG. - 273 DRAFT
REV. May 1982

# TR - 20
## STANDARD CONTROL FOR WATERSHED

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed _____ Hydrologist _____ Date _____ SHEET _____ OF _____

| 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 | 71-80 |
|---|---|---|---|---|---|---|---|
| 1 2 3 4 5 6 7 8 9 0 | 1 2 3 4 5 6 7 8 9 0 | 1 2 3 4 5 6 7 8 9 0 | 1 2 3 4 5 6 7 8 9 0 | 1 2 3 4 5 6 7 8 9 0 | 1 2 3 4 5 6 7 8 9 0 | 1 2 3 4 5 6 7 8 9 0 | 1 2 3 4 5 6 7 8 9 0 |

EXAMPLES DO NOT ENTER

| DATA CODE | OPERATION NAME | OPERATION NO. | X SECT./STRUCT. XSECT. I.D. | X SECT./STRUCT. STRUCT I.D. | HYDRO. NUMBER INPUT #1 | HYDRO. NUMBER INPUT #2 | HYDRO. NUMBER OUTPUT | DATA FIELD #1 | DATA FIELD #2 | DATA FIELD #3 | OUTPUT OPTIONS PRINT PEAK | PRINT HYD. | PRINT ELEV. | PRINT VOL. | FILE | SUM. | RECORD IDENT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | RUNOFF | 1 | | | | | 6 | AREA, SQ. MI. | RUNOFF CURVE NO. | $T_c$, HRS. | | | | | | | |
| 6 | RESVOR | 2 | | | 6 | | 7 | SURF. EL. AT T=0, FT. | | | | | | | | | |
| 6 | REACH | 3 | | | 7 | | 5 | LENGTH, FT. | (OPTIONAL) END AREA COEFF. (X) | (OPTIONAL) EXPONENT (M) | | | | | | | |
| 6 | ADDHYD | 4 | | | 5 | 6 | 7 | | | | | | | | | | |
| 6 | SAVMOV | 5 | | | FROM | | TO | | | | | | | | | | |
| 6 | DIVERT | 6 | | | IN | OUT1 | OUT2 | OUT1 DISCHARGE, CFS | OUT 1, Decimal % D.A. | OUT2, I.D. | | | | | | | |
| | ENDATA | | | | | | | This record is to be used only at end of all standard control records. | | | | | | | | | EXAMPLES DO NOT ENTER |
| | | | (Right justify these fields) | | | | | IMPORTANT: Data Fields No. 1, 2, and 3 require decimal points. | | | | | | | | | |
| 6 | RUNOFF | 1 | 001 | | | | 6 | 0.0062 | 98.0 | 0.21 | 1 | 1 | | 1 | | 1 | |

F-14

```
*****************80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY******************

JOB TR-20                       FULLPRINT          SUMMARY   NOPLOTS
TITLE 001 EAST KELLOGG DEVELOPMENT FOR WALTER LEWIS  2,5,10,25,50,100-YR 6-HR
TITLE     EKD-WL        22 DEC 1998                        24-HR ZONE 5
 4 DIMHYD              0.02                                              484
 8          .000       .030       .100       .190       .310
 8          .470       .660       .820       .930       .990
 8          1.000      .990       .930       .860       .780
 8          .680       .560       .460       .390       .330
 8          .280       .241       .207       .174       .147
 8          .126       .107       .091       .077       .066
 8          .055       .047       .040       .034       .029
 8          .025       .021       .018       .015       .013
 8          .011       .009       .008       .007       .006
 8          .005       .004       .003       .002       .001
 8          .000       .000       .000       .000       .000
 9 ENDTBL
 5 RAINFL 7            0.08333                                           6-HR M&L
 8          0.0000     0.0033     0.0066     0.0099     0.0132
 8          0.0166     0.0198     0.0248     0.0296     0.0346
 8          0.0404     0.0463     0.0522     0.0590     0.0658
 8          0.0727     0.0796     0.0864     0.0933     0.1136
 8          0.1340     0.1572     0.1832     0.2124     0.2473
 8          0.2850     0.3400     0.4464     0.6034     0.6752
 8          0.7220     0.7409     0.7598     0.7758     0.7919
 8          0.8072     0.8224     0.8310     0.8396     0.8468
 8          0.8540     0.8628     0.8714     0.8773     0.8832
 8          0.8890     0.8939     0.8988     0.9038     0.9086
 8          0.9136     0.9184     0.9233     0.9282     0.9332
 8          0.9380     0.9429     0.9478     0.9527     0.9576
 8          0.9626     0.9664     0.9704     0.9742     0.9782
 8          0.9821     0.9860     0.9884     0.9906     0.9930
 8          0.9954     0.9976     1.0000     1.0000     1.0000
 9 ENDTBL
 5 RAINFL 8            0.5                                               24-HRSCS
 8          .000       .002       .005       .009       .013            ZONE 5
 8          .018       .023       .029       .035       .042
 8          .050       .059       .068       .078       .089
 8          .101       .114       .128       .144       .162
 8          .183       .208       .244       .339       .723
 8          .773       .802       .825       .844       .861
 8          .876       .890       .903       .914       .924
 8          .934       .943       .951       .959       .966
 8          .972       .977       .982       .986       .990
 8          .993       .996       .998       1.000      1.000
 9 ENDTBL
 6 RUNOFF 1 001       6 0.0062     98.0       0.21       1 1   1   1
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
  ENDATA
7 INCREM 6              0.0833
7 COMPUT 7 001    001   0.0         2.52        1.0         7 2  11  01 2-YR 6-H
  ENDCMP 1
7 COMPUT 7 001    001   0.0         3.42        1.0         7 2  12  02 5-YR 6-H
  ENDCMP 1
7 COMPUT 7 001    001   0.0         4.02        1.0         7 2  13  03 10-YR 6-
  ENDCMP 1
7 COMPUT 7 001    001   0.0         4.63        1.0         7 2  14  04 25-YR 6-
  ENDCMP 1
7 COMPUT 7 001    001   0.0         5.20        1.0         7 2  15  05 50-YR 6-
  ENDCMP 1
7 COMPUT 7 001    001   0.0         5.94        1.0         7 2  16  06 100-YR 6
  ENDCMP 1
7 COMPUT 7 001    001   0.0         3.48        1.0         2 2  21  01 2-YR TYP
  ENDCMP 1
7 COMPUT 7 001    001   0.0         4.55        1.0         2 2  22  02 5-YR TYP
  ENDCMP 1
7 COMPUT 7 001    001   0.0         5.25        1.0         2 2  23  03 10-YR TY
  ENDCMP 1
7 COMPUT 7 001    001   0.0         6.10        1.0         2 2  24  04 25-YR TY
  ENDCMP 1
7 COMPUT 7 001    001   0.0         6.98        1.0         2 2  25  05 50-YR TY
  ENDCMP 1
7 COMPUT 7 001    001   0.0         7.80        1.0         2 2  26  06 100-YR T
  ENDCMP 1
7 COMPUT 7 001    001   0.0         3.48        1.0         8 2  41  01 2-YR ZON
  ENDCMP 1
7 COMPUT 7 001    001   0.0         4.55        1.0         8 2  42  02 5-YR ZON
  ENDCMP 1
7 COMPUT 7 001    001   0.0         5.25        1.0         8 2  43  03 10-YR ZO
  ENDCMP 1
7 COMPUT 7 001    001   0.0         6.10        1.0         8 2  44  04 25-YR ZO
  ENDCMP 1
7 COMPUT 7 001    001   0.0         6.98        1.0         8 2  45  05 50-YR ZO
  ENDCMP 1
7 COMPUT 7 001    001   0.0         7.80        1.0         8 2  46  06 100-YR Z
  ENDCMP 1
  ENDJOB 2
```

**********END OF 80-80 LIST**********

DIMENSIONLESS HYDROGRAPH TABLE ENTERED TIME INCREMENT = .02

| | | | | | |
|---|---|---|---|---|---|
| 8 | .0000 | .0300 | .1000 | .1900 | .3100 |
| 8 | .4700 | .6600 | .8200 | .9300 | .9900 |
| 8 | 1.0000 | .9900 | .9300 | .8600 | .7800 |
| 8 | .6800 | .5600 | .4600 | .3900 | .3300 |
| 8 | .2800 | .2410 | .2070 | .1740 | .1470 |
| 8 | .1260 | .1070 | .0910 | .0770 | .0660 |
| 8 | .0550 | .0470 | .0400 | .0340 | .0290 |
| 8 | .0250 | .0210 | .0180 | .0150 | .0130 |
| 8 | .0110 | .0090 | .0080 | .0070 | .0060 |
| 8 | .0050 | .0040 | .0030 | .0020 | .0010 |
| 8 | .0000 | .0000 | .0000 | .0000 | .0000 |

9 ENDTBL

COMPUTED PEAK RATE FACTOR = 484.00

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .08 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 2-YR 6-H
STARTING TIME = .00 RAIN DEPTH = 2.52 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=11 STORM NO.= 1 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.42 | 13.2 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =11, STORM = 1

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = | | | .01 SQ.MI. |
|---|---|---|---|---|---|---|---|---|
| 1.25 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| 1.92 CFS | 3 | 3 | 4 | 4 | 6 | 10 | 13 | 11 |
| 2.58 CFS | 7 | 5 | 3 | 2 | 2 | 2 | 2 | 1 |
| 3.25 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3.92 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.25 CFS | 0 | | | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
2.29 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.

| DURATION(HRS) | 2 | 4 |
|---|---|---|
| FLOW(CFS) | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 5-YR 6-H
STARTING TIME = .00 RAIN DEPTH = 3.42 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=12 STORM NO.= 2 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.42 | 18.1 | (RUNOFF) |
| 3.52 | 1.3 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =12, STORM = 2

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = | | .01 SQ.MI. | |
|---|---|---|---|---|---|---|---|---|
| .92 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1.58 CFS | 1 | 2 | 3 | 3 | 4 | 4 | 5 | 6 |
| 2.25 CFS | 9 | 14 | 18 | 15 | 10 | 6 | 4 | 3 |
| 2.92 CFS | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 1 |
| 3.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.25 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.58 CFS | 1 | 0 | | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
3.18 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-FEET;

| DURATION(HRS) | 2 | 4 | 5 |
|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 10-YR 6-
STARTING TIME = .00 RAIN DEPTH = 4.02 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=13 STORM NO.= 3 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.42 | 21.4 | (RUNOFF) |
| 3.52 | 1.6 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =13, STORM = 3

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| .83 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1.50 CFS | 1 | 1 | 2 | 3 | 4 | 4 | 5 | 6 |
| 2.17 CFS | 7 | 10 | 17 | 21 | 18 | 12 | 7 | 5 |
| 2.83 CFS | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 |
| 3.50 CFS | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.50 CFS | 1 | 1 | 1 | 0 | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
3.78 WATERSHED INCHES; 15 CFS-HRS; 1.3 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 5 |
|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 25-YR 6-
STARTING TIME = .00 RAIN DEPTH = 4.63 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=14 STORM NO.= 4 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.42 | 24.7 | (RUNOFF) |
| 4.96 | 1.1 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =14, STORM = 4

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| .75 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1.42 CFS | 1 | 1 | 2 | 3 | 4 | 4 | 5 | 6 |
| 2.08 CFS | 7 | 8 | 12 | 20 | 25 | 20 | 14 | 8 |
| 2.75 CFS | 6 | 4 | 4 | 4 | 3 | 3 | 2 | 2 |
| 3.42 CFS | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| 4.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.75 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.08 CFS | 0 | | | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
4.39 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 5 |
|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 50-YR 6-
STARTING TIME = .00 RAIN DEPTH = 5.20 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=15 STORM NO.= 5 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.42 | 27.8 | (RUNOFF) |
| 3.52 | 2.1 | (RUNOFF) |
| 4.96 | 1.2 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =15, STORM = 5

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| .67 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1.33 CFS | 1 | 1 | 2 | 2 | 3 | 4 | 5 | 6 |
| 2.00 CFS | 7 | 8 | 9 | 14 | 22 | 28 | 23 | 15 |
| 2.67 CFS | 10 | 6 | 5 | 4 | 4 | 4 | 3 | 2 |
| 3.33 CFS | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| 4.00 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.00 CFS | 1 | 0 | | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
4.96 WATERSHED INCHES; 20 CFS-HRS; 1.6 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 5 |
|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 100-YR 6
STARTING TIME = .00 RAIN DEPTH = 5.94 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=16 STORM NO.= 6 RAIN TABLE NO.= 7

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 2.42 | 31.8 | (RUNOFF) |
| 3.52 | 2.3 | (RUNOFF) |
| 4.96 | 1.4 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =16, STORM = 6

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = | | | .01 SQ.MI. |
|---|---|---|---|---|---|---|---|---|
| .58 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1.25 CFS | 2 | 2 | 2 | 2 | 2 | 4 | 5 | 6 |
| 1.92 CFS | 7 | 8 | 9 | 11 | 16 | 25 | 32 | 26 |
| 2.58 CFS | 18 | 11 | 7 | 6 | 5 | 5 | 4 | 3 |
| 3.25 CFS | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3.92 CFS | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.25 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5.91 CFS | 1 | 1 | 1 | 0 | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
5.70 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 5 |
|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 2-YR TYP
STARTING TIME = .00 RAIN DEPTH = 3.48 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=21 STORM NO.= 1 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.00 | 14.6 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =21, STORM = 1

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 10.00 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11.33 CFS | 1 | 1 | 1 | 2 | 3 | 5 | 7 | 12 |
| 12.00 CFS | 15 | 13 | 8 | 4 | 3 | 2 | 2 | 2 |
| 12.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.99 CFS | 1 | 1 | 1 | 1 | 0 | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
3.25 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 4 |
|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 7

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 5-YR TYP
STARTING TIME = .00 RAIN DEPTH = 4.55 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=22 STORM NO.= 2 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.00 | 19.2 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =22, STORM = 2

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = | | .01 SQ.MI. | |
|---|---|---|---|---|---|---|---|---|
| 8.83 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.50 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| 11.50 CFS | 2 | 2 | 4 | 6 | 10 | 15 | 19 | 17 |
| 12.16 CFS | 10 | 6 | 4 | 3 | 2 | 2 | 2 | 2 |
| 12.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.49 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.49 CFS | 1 | 0 | | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
4.30 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 7 |
|---|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 8

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 10-YR TY
STARTING TIME = .00 RAIN DEPTH = 5.25 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=23 STORM NO.= 3 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.00 | 22.1 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =23, STORM = 3

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 8.50 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.50 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11.16 CFS | 2 | 2 | 2 | 2 | 2 | 3 | 4 | 7 |
| 11.83 CFS | 11 | 18 | 22 | 19 | 12 | 7 | 4 | 3 |
| 12.49 CFS | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| 13.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.49 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.83 CFS | 1 | 1 | 1 | 0 | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
5.00 WATERSHED INCHES; 20 CFS-HRS; 1.7 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 7 |
|---|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 9

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 25-YR TY
STARTING TIME = .00 RAIN DEPTH = 6.10 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=24 STORM NO.= 4 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.00 | 25.9 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =24, STORM = 4

| HRS | MAIN TIME INCREMENT = .08 hr, | | | DRAINAGE AREA = .01 SQ.MI. | | | | |
|---|---|---|---|---|---|---|---|---|
| 8.00 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.00 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.66 CFS | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| 11.33 CFS | 2 | 2 | 2 | 3 | 5 | 8 | 13 | 21 |
| 12.00 CFS | 26 | 22 | 13 | 8 | 5 | 4 | 3 | 3 |
| 12.66 CFS | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 |
| 13.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.99 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.33 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.99 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.66 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 0 | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
5.86 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 8 | 9 |
|---|---|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 10

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 50-YR TY
STARTING TIME = .00 RAIN DEPTH = 6.98 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=25 STORM NO.= 5 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.00 | 29.5 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =25, STORM = 5

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 6.75 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8.75 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.75 CFS | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 11.41 CFS | 3 | 3 | 4 | 6 | 9 | 15 | 24 | 29 |
| 12.08 CFS | 25 | 15 | 9 | 6 | 5 | 4 | 3 | 3 |
| 12.74 CFS | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 13.41 CFS | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.74 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.74 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 18.08 CFS | 1 | 1 | 0 | | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
6.74 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 8 | 10 | 11 |
|---|---|---|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 11

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 100-YR T
STARTING TIME = .00 RAIN DEPTH = 7.80 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=26 STORM NO.= 6 RAIN TABLE NO.= 2

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 12.00 | 32.9 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =26, STORM = 6

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 5.83 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.50 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8.50 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.50 CFS | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 11.16 CFS | 2 | 2 | 3 | 3 | 3 | 4 | 6 | 11 |
| 11.83 CFS | 17 | 26 | 33 | 28 | 17 | 10 | 7 | 5 |
| 12.49 CFS | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 |
| 13.16 CFS | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| 13.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.49 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.49 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 18.49 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 0 | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
7.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 8 | 10 | 12 | 13 |
|---|---|---|---|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 1 | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 12

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 2-YR ZON
STARTING TIME = .00 RAIN DEPTH = 3.48 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=41 STORM NO.= 1 RAIN TABLE NO.= 8

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 11.96 | 10.6 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =41, STORM = 1
MAIN TIME INCREMENT = .08 hr, DRAINAGE AREA = .01 SQ.MI.

| HRS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9.58 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.25 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.91 CFS | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 |
| 11.58 CFS | 4 | 7 | 9 | 10 | 10 | 10 | 9 | 5 |
| 12.25 CFS | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| 12.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |

RUNOFF ABOVE BASEFLOW OF .00 CFS
3.24 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 4 |
|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 13

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 5-YR ZON
STARTING TIME = .00 RAIN DEPTH = 4.55 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=42 STORM NO.= 2 RAIN TABLE NO.= 8

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 11.96 | 13.9 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =42, STORM = 2

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 8.58 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.25 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| 11.25 CFS | 3 | 3 | 3 | 3 | 5 | 9 | 12 | 13 |
| 11.91 CFS | 14 | 14 | 12 | 7 | 4 | 3 | 2 | 2 |
| 12.58 CFS | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.24 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.24 CFS | 1 | 1 | 1 | 1 | 1 | 0 | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
4.31 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 7 |
|---|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 14

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 10-YR ZO
STARTING TIME = .00 RAIN DEPTH = 5.25 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=43 STORM NO.= 3 RAIN TABLE NO.= 8

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 11.96 | 16.1 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =43, STORM = 3

| HRS | MAIN TIME INCREMENT = .08 hr, | | | DRAINAGE AREA = .01 SQ.MI. | | | | |
|---|---|---|---|---|---|---|---|---|
| 7.83 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8.50 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.50 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| 11.16 CFS | 3 | 4 | 4 | 4 | 4 | 6 | 11 | 14 |
| 11.83 CFS | 15 | 16 | 16 | 14 | 8 | 4 | 3 | 2 |
| 12.49 CFS | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| 13.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.83 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.49 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.16 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.83 CFS | 1 | 1 | 1 | 1 | 0 | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
5.01 WATERSHED INCHES; 20 CFS-HRS; 1.7 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 8 | 8 |
|---|---|---|---|---|---|
| FLOW(CFS) | 1 | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 15

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 25-YR ZO
STARTING TIME = .00 RAIN DEPTH = 6.10 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=44 STORM NO.= 4 RAIN TABLE NO.= 8

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 11.96 | 18.7 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =44, STORM = 4
MAIN TIME INCREMENT = .08 hr, DRAINAGE AREA = .01 SQ.MI.

| HRS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 7.08 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7.75 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.75 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.41 CFS | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| 11.08 CFS | 2 | 3 | 4 | 4 | 5 | 5 | 7 | 12 |
| 11.75 CFS | 16 | 18 | 18 | 19 | 16 | 10 | 5 | 3 |
| 12.41 CFS | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 1 |
| 13.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13.74 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.41 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.08 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.74 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.41 CFS | 1 | 1 | 1 | 1 | 0 | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
5.86 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 8 | 10 |
|---|---|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 16

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 50-YR ZO
STARTING TIME = .00 RAIN DEPTH = 6.98 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=45 STORM NO.= 5 RAIN TABLE NO.= 8

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 11.96 | 21.5 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =45, STORM = 5

| HRS | MAIN TIME INCREMENT = .08 hr, | | | | DRAINAGE AREA = .01 SQ.MI. | | | |
|---|---|---|---|---|---|---|---|---|
| 6.25 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8.25 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.25 CFS | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| 10.91 CFS | 2 | 2 | 2 | 4 | 5 | 5 | 5 | 5 |
| 11.58 CFS | 8 | 14 | 19 | 20 | 21 | 21 | 19 | 11 |
| 12.25 CFS | 6 | 4 | 3 | 3 | 3 | 2 | 2 | 2 |
| 12.91 CFS | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| 13.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.24 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.24 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 0 | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
6.73 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 17

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1 100-YR Z
STARTING TIME = .00 RAIN DEPTH = 7.80 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=46 STORM NO.= 6 RAIN TABLE NO.= 8

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH= 6 AREA= .01 SQ MI
INPUT RUNOFF CURVE= 98. TIME OF CONCENTRATION= .21 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0280 HOURS

| PEAK TIME(HRS) | PEAK DISCHARGE(CFS) | PEAK ELEVATION(FEET) |
|---|---|---|
| 11.96 | 24.0 | (RUNOFF) |

HYDROGRAPH POINTS FOR ALTERNATE =46, STORM = 6
MAIN TIME INCREMENT = .08 hr, DRAINAGE AREA = .01 SQ.MI.

| HRS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5.58 CFS | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.25 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8.25 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10.25 CFS | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 10.91 CFS | 2 | 2 | 3 | 4 | 5 | 6 | 6 | 6 |
| 11.58 CFS | 8 | 16 | 21 | 23 | 23 | 24 | 21 | 12 |
| 12.25 CFS | 7 | 4 | 4 | 3 | 3 | 2 | 2 | 2 |
| 12.91 CFS | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| 13.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.24 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.24 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16.91 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17.58 CFS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 18.24 CFS | 1 | 1 | 1 | 0 | | | | |

RUNOFF ABOVE BASEFLOW OF .00 CFS
7.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-FEET.

| DURATION(HRS) | 2 | 4 | 6 | 8 | 10 | 12 | 13 |
|---|---|---|---|---|---|---|---|
| FLOW(CFS) | 2 | 1 | 1 | 1 | 1 | 1 | 0 |

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 18

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| (SECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|
| RAINFALL OF 2.52 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| RAINTABLE NUMBER 7, AMC 2 | | | | | | | |
| MAIN TIME INCREMENT .08 HOURS | | | | | | | |
| ALTERNATE 11 STORM 1 | | | | | | | |
| (SECTION 1 | RUNOFF | .01 | 2.29 | --- | 2.42 | 13 | 1300.0 |
| RAINFALL OF 3.42 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 12 STORM 2 | | | | | | | |
| (SECTION 1 | RUNOFF | .01 | 3.18 | --- | 2.42 | 18 | 1800.0 |
| RAINFALL OF 4.02 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 13 STORM 3 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 3.78 | --- | 2.42 | 21 | 2100.0 |
| RAINFALL OF 4.63 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 14 STORM 4 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 4.39 | --- | 2.42 | 25 | 2500.0 |
| RAINFALL OF 5.20 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 15 STORM 5 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 4.96 | --- | 2.42 | 28 | 2800.0 |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| (SECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|
| RAINFALL OF 5.94 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 16 STORM 6 | | | | | | | |
| (SECTION 1 | RUNOFF | .01 | 5.70 | --- | 2.42 | 32 | 3200.0 |
| RAINFALL OF 3.48 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| RAINTABLE NUMBER 2, AMC 2 | | | | | | | |
| ALTERNATE 21 STORM 1 | | | | | | | |
| (SECTION 1 | RUNOFF | .01 | 3.25 | --- | 12.00 | 15 | 1500.0 |
| RAINFALL OF 4.55 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 22 STORM 2 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 4.30 | --- | 12.00 | 19 | 1900.0 |
| RAINFALL OF 5.25 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 23 STORM 3 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 5.00 | --- | 12.00 | 22 | 2200.0 |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| (SECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|
| RAINFALL OF 6.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 24 STORM 4 | | | | | | | |
| (SECTION 1 | RUNOFF | .01 | 5.86 | --- | 12.00 | 26 | 2600.0 |
| RAINFALL OF 6.98 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 25 STORM 5 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 6.74 | --- | 12.00 | 29 | 2900.0 |
| RAINFALL OF 7.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 26 STORM 6 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 7.55 | --- | 12.00 | 33 | 3300.0 |
| RAINFALL OF 3.48 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| RAINTABLE NUMBER 8, AMC 2 | | | | | | | |
| ALTERNATE 41 STORM 1 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 3.24 | --- | 11.96 | 11 | 1100.0 |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| (SECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|
| RAINFALL OF 4.55 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 42 STORM 2 | | | | | | | |
| (SECTION 1 | RUNOFF | .01 | 4.31 | --- | 11.96 | 14 | 1400.0 |
| RAINFALL OF 5.25 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 43 STORM 3 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 5.01 | --- | 11.96 | 16 | 1600.0 |
| RAINFALL OF 6.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 44 STORM 4 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 5.86 | --- | 11.96 | 19 | 1900.0 |
| RAINFALL OF 6.98 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 45 STORM 5 | | | | | | | |
| (SECTION 1 | RUNOFF | .01 | 6.73 | --- | 11.96 | 21 | 2100.0 |
| RAINFALL OF 7.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 46 STORM 6 | | | | | | | |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| SECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | PEAK DISCHARGE TIME (HR) | PEAK DISCHARGE RATE (CFS) | PEAK DISCHARGE RATE (CSM) |
|---|---|---|---|---|---|---|---|
| ALTERNATE 46 STORM 6 | | | | | | | |
| XSECTION 1 | RUNOFF | .01 | 7.55 | --- | 11.96 | 24 | 2400.0 |

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES

| XSECTION/ STRUCTURE ID | | DRAINAGE AREA (SQ MI) | STORM NUMBERS..... 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| XSECTION 1 | | .01 | | | | | |
| ALTERNATE | 11 | | 13 | ********* | ********* | ********* | ********* |
| ALTERNATE | 12 | | ********* | 18 | ********* | ********* | ********* |
| ALTERNATE | 13 | | ********* | ********* | 21 | ********* | ********* |
| ALTERNATE | 14 | | ********* | ********* | ********* | 25 | ********* |
| ALTERNATE | 15 | | ********* | ********* | ********* | ********* | 28 |
| ALTERNATE | 21 | | 15 | ********* | ********* | ********* | ********* |
| ALTERNATE | 22 | | ********* | 19 | ********* | ********* | ********* |
| ALTERNATE | 23 | | ********* | ********* | 22 | ********* | ********* |
| ALTERNATE | 24 | | ********* | ********* | ********* | 26 | ********* |
| ALTERNATE | 25 | | ********* | ********* | ********* | ********* | 29 |
| ALTERNATE | 41 | | 11 | ********* | ********* | ********* | ********* |
| ALTERNATE | 42 | | ********* | 14 | ********* | ********* | ********* |
| ALTERNATE | 43 | | ********* | ********* | 16 | ********* | ********* |
| ALTERNATE | 44 | | ********* | ********* | ********* | 19 | ********* |
| ALTERNATE | 45 | | ********* | ********* | ********* | ********* | 21 |

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES

| XSECTION/ STRUCTURE ID | | DRAINAGE AREA (SQ MI) | STORM NUMBERS..... 6 |
|---|---|---|---|
| XSECTION 1 | | .01 | |
| ALTERNATE | 16 | | 32 |
| ALTERNATE | 26 | | 33 |
| ALTERNATE | 46 | | 24 |

END OF 1 JOBS IN THIS RUN

98135-517
TFM 1/26/99

TRACTOR SUPPLY - E KELLOGG FOR WALTER LEWIS
PROPOSED W/DETENTION

POST - DEVELOPMENT W/ DETENTION - PIPE SIZING

DRAINAGE AREA TOTAL = 3.96 ac
.0062 SQ MI

DRAINAGE AREA TO SOUTH DETENTION = 1.81 ac
= .0028 SQ MI

L = 260+320 = 580 FT
ΔH = 182.5 - 178 = 4.5 FT
SLOPE = 4.5/580 = .007759

USE FULL SITE DEVELOPMENT AS BEFORE
(94% IMPERVIOUS)

$C_2 = 0.85$
$C_5 = 0.87$
$C_{10} = 0.89$
$C_{100} = 0.90$

CN = 98

$$T_c = \frac{1.8(1.1-C)L^{1/2}}{S^{1/3}}$$

$$T_c = \frac{1.8\left(1.1-\frac{.9}{.89}\right)580^{1/2}}{.7759^{1/3}}$$

$$T_c = \frac{1.8\left(\frac{.2}{2^{1/3}}\right)(24.083)}{.9189}$$

$= 9.4_{100}$
$9.9_{10}$
$10.9_5 = 0.182$ hr.

USE 15 MINUTES MINIMUM FOR RATIONAL?

if 5 min minimum
$i_{100} = 8.81$
$i_{10} = 6.13$
$i_5 = 5.27$

$Q_{100} = 1.81(.90)(8.81) = 14.35$
$Q_{10} = 1.81(.89)(6.13) = 9.87$
$Q_5 = 1.81(.87)(5.27)$ 8.30

DRAINAGE AREA TO UNCONTROLLED DISCHARGE

3.96 - 1.81 = 2.15 ac

= .00336 sq mi

L = 450

Δ H = 132 - 177 = 5

Slope = 5/450 = 1.11%

$$T_{c5} = \frac{1.8(1.1-.87)450^{1/2}}{1.11^{1/3}} = 8.48 \text{ min}, .1414 \text{ hr}$$

$$T_{c10} = \frac{1.8(1.1-.89)450^{1/2}}{1.11^{1/3}} = 7.74 \text{ min}, .1291 \text{ hr}$$

$$T_{c100} = \frac{1.8(1.1-.9)450^{1/2}}{1.11^{1/3}} = 7.38 \text{ min}, .1229 \text{ hr}$$

MKEC 98135
Tractor Supply Co. - Walter Lewis

Detention basin volumes - South end of site

Southeast

| Elev. ft | Area sq ft | Inc. Vol, cu ft. | Cum. Vol. cu ft | ac ft |
|---|---|---|---|---|
| 176.5 | 0 | | | |
| 177 | 1275 | 212.5 | 212.5 | 0.004878 |
| 178 | 2210 | 1742.5 | 1955 | 0.044881 |
| 179 | 3300 | 2755 | 4710 | 0.108127 |

Southwest

| Elev. ft | Area sq ft | Inc. Vol, cu ft. | Cum. Vol. cu ft | ac ft |
|---|---|---|---|---|
| 177 | 2275 | | | |
| 178 | 4300 | 3287.5 | 3287.5 | 0.075471 |
| 179 | 5860 | 5080 | 8367.5 | 0.192091 |
| 180 | 7425 | 6642.5 | 15010 | 0.344582 |
| 180.5 | 8710 | 4033.75 | 19043.75 | 0.437184 |

12"x50' rcp outlet - SE Detention

| General Interpolation | | | Elev. | Ft. Head | Q, cfs |
|---|---|---|---|---|---|
| x1 | x2 | x3 | 177 | 0.5 | 0.83 |
| 8.64 | 9.64 | 9 | 178 | 1.5 | 2.48 |
| 3 | 4 | 3.36 | 179 | 2.5 | 3.36 |
| y1 | y2 | | | | |

12 inch outlet, L=170, concrete pipe - SW Detention

| General Interpolation | | | Elev. | Ft. Head | Q, cfs |
|---|---|---|---|---|---|
| x1 | x2 | x3 | 178 | 1 | 2.38 |
| 8.26 | 10.57 | 10 | 179 | 2 | 3.96 |
| 3 | 5 | 4.51 | 180 | 3 | 4.51 |
| y1 | y2 | | 180.5 | 3.5 | 5 |

TRACTOR SUPPLY CO
MIKEE 98135

SOUTHWEST BASIN
DISCHARGE PIPE
RATING "CURVE" FOR
TR-20

CURRENT DATE: 01-28-1999 FILE DATE: 01-28-1999
CURRENT TIME: 14:39:45 FILE NAME: TSDETLCO

FHWA CULVERT ANALYSIS
HY-8, VERSION 4.1

| CULVERT | SITE DATA | | | CULVERT SHAPE, MATERIAL, INLET | | | | |
|---|---|---|---|---|---|---|---|---|
| | INLET ELEV. (FT) | OUTLET ELEV. (FT) | CULVERT LENGTH (FT) | BARRELS SHAPE MATERIAL | SPAN (FT) | RISE (FT) | MANNING n | INLET TYPE |
| 1 | 177.00 | 176.00 | 170.00 | 1 RCP | 1.00 | 1.00 | .012 | CONVENTIONAL |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |

SUMMARY OF CULVERT FLOWS (CFS) FILE: TSDETLCO DATE: 01-28-1999

| ELEV (FT) | TOTAL | 1 | 2 | 3 | 4 | 5 | 6 | ROADWAY | ITR |
|---|---|---|---|---|---|---|---|---|---|
| 177.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 178.26 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 180.57 | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 20 |
| 180.67 | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 7 |
| 180.75 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 8 | 6 |
| 180.80 | 15 | 4 | 0 | 0 | 0 | 0 | 0 | 11 | 5 |
| 180.85 | 18 | 4 | 0 | 0 | 0 | 0 | 0 | 14 | 4 |
| 180.89 | 20 | 4 | 0 | 0 | 0 | 0 | 0 | 16 | 4 |
| 180.95 | 24 | 4 | 0 | 0 | 0 | 0 | 0 | 20 | 4 |
| 180.99 | 27 | 4 | 0 | 0 | 0 | 0 | 0 | 23 | 4 |
| 181.03 | 30 | 4 | 0 | 0 | 0 | 0 | 0 | 26 | 3 |
| 180.50 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | OVERTOPPING | |

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: TSDETLCO DATE: 01-28-1999

| HEAD ELEV(FT) | HEAD ERROR(FT) | TOTAL FLOW(CFS) | FLOW ERROR(CFS) | % FLOW ERROR |
|---|---|---|---|---|
| 177.00 | 0.00 | 0 | 0 | 0.00 |
| 178.26 | 0.00 | 3 | 0 | 0.00 |
| 180.57 | -0.00 | 6 | 0 | 0.69 |
| 180.67 | -0.00 | 9 | 0 | 0.68 |
| 180.75 | -0.00 | 12 | 0 | 0.40 |
| 180.80 | -0.00 | 15 | 0 | 0.39 |
| 180.85 | -0.00 | 18 | 0 | 0.70 |
| 180.89 | -0.00 | 20 | 0 | 0.41 |
| 180.95 | -0.00 | 24 | 0 | 0.47 |
| 180.99 | -0.00 | 27 | 0 | 0.28 |
| 181.03 | -0.01 | 30 | 0 | 0.80 |

<1> TOLERANCE (FT) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 01-28-1999 FILE DATE: 01-28-1999
CURRENT TIME: 14:39:45 FILE NAME: TSDETLCO

PERFORMANCE CURVE FOR CULVERT # 1 - 1 ( 1 BY 1 ) RCP

| DIS-CHARGE FLOW (cfs) | HEAD-WATER ELEV. (ft) | INLET CONTROL DEPTH (ft) | OUTLET CONTROL DEPTH (ft) | FLOW TYPE <F4> | NORMAL DEPTH (ft) | CRITICAL DEPTH (ft) | OUTLET VEL. (fps) | OUTLET DEPTH (ft) | TAILWATER VEL. (fps) | TAILWATER DEPTH (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 177.00 | 0.00 | 0.00 | 0-NF | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 |
| 3 | 178.26 | 1.25 | 1.26 | 3-M2t | 0.84 | 0.74 | 4.45 | 0.80 | 0.00 | 0.80 |
| 5 | 180.56 | 2.18 | 3.56 | 4-FFt | 1.00 | 0.91 | 6.18 | 1.00 | 0.00 | 1.00 |
| 4 | 180.67 | 1.80 | 3.67 | 4-FFt | 1.00 | 0.86 | 5.35 | 1.00 | 0.00 | 2.00 |
| 4 | 180.74 | 1.62 | 3.74 | 4-FFt | 1.00 | 0.83 | 4.90 | 1.00 | 0.00 | 2.50 |
| 4 | 180.80 | 1.64 | 3.80 | 4-FFt | 1.00 | 0.83 | 4.97 | 1.00 | 0.00 | 2.50 |
| 4 | 180.85 | 1.66 | 3.85 | 4-FFt | 1.00 | 0.84 | 5.02 | 1.00 | 0.00 | 2.50 |
| 4 | 180.88 | 1.67 | 3.88 | 4-FFt | 1.00 | 0.84 | 5.06 | 1.00 | 0.00 | 2.50 |
| 4 | 180.95 | 1.70 | 3.95 | 4-FFt | 1.00 | 0.84 | 5.12 | 1.00 | 0.00 | 2.50 |
| 4 | 180.99 | 1.72 | 3.99 | 4-FFt | 1.00 | 0.85 | 5.17 | 1.00 | 0.00 | 2.50 |
| 4 | 181.03 | 1.74 | 4.03 | 4-FFt | 1.00 | 0.85 | 5.21 | 1.00 | 0.00 | 2.50 |

El. inlet face invert 177.00 ft El. outlet invert 176.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

| | |
|---|---|
| INLET STATION (FT) | 0.00 |
| INLET ELEVATION (FT) | 177.00 |
| OUTLET STATION (FT) | 170.00 |
| OUTLET ELEVATION (FT) | 176.00 |
| NUMBER OF BARRELS | 1 |
| SLOPE (V-FT/H-FT) | 0.0059 |
| CULVERT LENGTH ALONG SLOPE (FT) | 170.00 |

***** CULVERT DATA SUMMARY **********

| | |
|---|---|
| BARREL SHAPE | CIRCULAR |
| BARREL DIAMETER | 1.00 FT |
| BARREL MATERIAL | CONCRETE |
| BARREL MANNING'S N | 0.012 |
| INLET TYPE | CONVENTIONAL |
| INLET EDGE AND WALL | SQUARE EDGE WITH HEADWALL |
| INLET DEPRESSION | NONE |

CURRENT DATE: 01-28-1999 FILE DATE: 01-28-1999
CURRENT TIME: 14:39:45 FILE NAME: TSDETLCO

## TAILWATER

TAILWATER RATING CURVE

| FLOW(CFS) | W.S.E.(FT) | DEPTH (FT) |
|---|---|---|
| 0 | 176.50 | 0.50 |
| 3 | 176.80 | 0.80 |
| 6 | 177.00 | 1.00 |
| 9 | 178.00 | 2.00 |
| 12 | 178.50 | 2.50 |
| 15 | 178.50 | 2.50 |
| 18 | 178.50 | 2.50 |
| 20 | 178.50 | 2.50 |
| 24 | 178.50 | 2.50 |
| 27 | 178.50 | 2.50 |
| 30 | 178.50 | 2.50 |

## ROADWAY OVERTOPPING DATA

| | |
|---|---|
| WEIR COEFFICIENT | 2.65 |
| EMBANKMENT TOP WIDTH (FT) | 2.00 |
| CREST LENGTH (FT) | 25.00 |
| OVERTOPPING CREST ELEVATION (FT) | 180.50 |

TRACTOR SUPPLY Co
MICEC 98135

SOUTHEAST BASIN
DISCHARGE PIPE
RATING CURVE FOR
TR-20

CURRENT DATE: 01-28-1999 FILE DATE: 01-26-1999
CURRENT TIME: 16:42:11 FILE NAME: TSDET

FHWA CULVERT ANALYSIS
HY-8, VERSION 4.1

| CULV | SITE DATA: INLET ELEV. (FT) | OUTLET ELEV. (FT) | CULVERT LENGTH (FT) | CULVERT SHAPE, MATERIAL, INLET: BARRELS | SHAPE | SPAN (FT) | RISE (FT) | MANNING n | INLET TYPE |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 176.50 | 176.00 | 50.00 | 1 | RCP | 1.00 | 1.00 | .012 | CONVENTIONAL |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |

SUMMARY OF CULVERT FLOWS (CFS) FILE: TSDET DATE: 01-26-1999

| ELEV (FT) | TOTAL | 1 | 2 | 3 | 4 | 5 | 6 | ROADWAY | ITR |
|---|---|---|---|---|---|---|---|---|---|
| 176.50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 177.10 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 177.42 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 178.64 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 179.64 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 180.07 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 180.19 | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 180.28 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 4 |
| 180.36 | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 3 | 4 |
| 180.42 | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 3 |
| 180.49 | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 3 |
| 180.00 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | OVERTOPPING | |

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: TSDET DATE: 01-26-1999

| HEAD ELEV(FT) | HEAD ERROR(FT) | TOTAL FLOW(CFS) | FLOW ERROR(CFS) | % FLOW ERROR |
|---|---|---|---|---|
| 176.50 | 0.00 | 0 | 0 | 0.00 |
| 177.10 | 0.00 | 1 | 0 | 0.00 |
| 177.42 | 0.00 | 2 | 0 | 0.00 |
| 178.64 | 0.00 | 3 | 0 | 0.00 |
| 179.64 | 0.00 | 4 | 0 | 0.00 |
| 180.07 | -0.01 | 5 | 0 | 0.70 |
| 180.19 | -0.01 | 6 | 0 | 0.72 |
| 180.28 | -0.01 | 7 | 0 | 0.69 |
| 180.36 | -0.01 | 8 | 0 | 0.47 |
| 180.42 | -0.00 | 9 | 0 | 0.91 |
| 180.49 | -0.00 | 10 | 0 | 0.90 |

<1> TOLERANCE (FT) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 01-28-1999 FILE DATE: 01-26-1999
CURRENT TIME: 16:42:11 FILE NAME: TSDET

PERFORMANCE CURVE FOR CULVERT # 1 - 1 ( 1 BY 1 ) RCP

| DIS-CHARGE FLOW (cfs) | HEAD-WATER ELEV. (ft) | INLET CONTROL DEPTH (ft) | OUTLET CONTROL DEPTH (ft) | FLOW TYPE <F4> | NORMAL DEPTH (ft) | CRITICAL DEPTH (ft) | OUTLET VEL. (fps) | OUTLET DEPTH (ft) | TAILWATER VEL. (fps) | TAILWATER DEPTH (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 176.50 | 0.00 | 0.00 | 0-NF | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 |
| 1 | 177.10 | 0.60 | 0.60 | 1-S2n | 0.34 | 0.42 | 4.23 | 0.34 | 0.00 | 0.80 |
| 2 | 177.42 | 0.92 | 0.92 | 1-S1f | 0.51 | 0.60 | 2.55 | 1.00 | 0.00 | 1.00 |
| 3 | 178.64 | 1.25 | 2.14 | 4-FFt | 0.66 | 0.74 | 3.82 | 1.00 | 0.00 | 2.00 |
| 4 | 179.64 | 1.69 | 3.14 | 4-FFt | 0.86 | 0.84 | 5.09 | 1.00 | 0.00 | 2.50 |
| 5 | 180.07 | 2.08 | 3.57 | 4-FFt | 1.00 | 0.90 | 5.99 | 1.00 | 0.00 | 2.50 |
| 5 | 180.18 | 2.18 | 3.68 | 4-FFt | 1.00 | 0.91 | 6.19 | 1.00 | 0.00 | 2.50 |
| 5 | 180.28 | 2.27 | 3.78 | 4-FFt | 1.00 | 0.92 | 6.36 | 1.00 | 0.00 | 2.50 |
| 5 | 180.35 | 2.33 | 3.85 | 4-FFt | 1.00 | 0.93 | 6.49 | 1.00 | 0.00 | 2.50 |
| 5 | 180.42 | 2.40 | 3.92 | 4-FFt | 1.00 | 0.94 | 6.62 | 1.00 | 0.00 | 2.50 |
| 5 | 180.49 | 2.46 | 3.99 | 4-FFt | 1.00 | 0.95 | 6.73 | 1.00 | 0.00 | 2.50 |

El. inlet face invert 176.50 ft El. outlet invert 176.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

| | |
|---|---|
| INLET STATION (FT) | 0.00 |
| INLET ELEVATION (FT) | 176.50 |
| OUTLET STATION (FT) | 50.00 |
| OUTLET ELEVATION (FT) | 176.00 |
| NUMBER OF BARRELS | 1 |
| SLOPE (V-FT/H-FT) | 0.0100 |
| CULVERT LENGTH ALONG SLOPE (FT) | 50.00 |

***** CULVERT DATA SUMMARY **********

| | |
|---|---|
| BARREL SHAPE | CIRCULAR |
| BARREL DIAMETER | 1.00 FT |
| BARREL MATERIAL | CONCRETE |
| BARREL MANNING'S N | 0.012 |
| INLET TYPE | CONVENTIONAL |
| INLET EDGE AND WALL | SQUARE EDGE WITH HEADWALL |
| INLET DEPRESSION | NONE |

CURRENT DATE: 01-28-1999 FILE DATE: 01-26-1999
CURRENT TIME: 16:42:11 FILE NAME: TSDET

## TAILWATER

TAILWATER RATING CURVE

| FLOW(CFS) | W.S.E.(FT) | DEPTH (FT) |
|---|---|---|
| 0 | 176.50 | 0.50 |
| 1 | 176.80 | 0.80 |
| 2 | 177.00 | 1.00 |
| 3 | 178.00 | 2.00 |
| 4 | 178.50 | 2.50 |
| 5 | 178.50 | 2.50 |
| 6 | 178.50 | 2.50 |
| 7 | 178.50 | 2.50 |
| 8 | 178.50 | 2.50 |
| 9 | 178.50 | 2.50 |
| 10 | 178.50 | 2.50 |

## ROADWAY OVERTOPPING DATA

| | |
|---|---|
| WEIR COEFFICIENT | 2.70 |
| EMBANKMENT TOP WIDTH (FT) | 2.00 |
| CREST LENGTH (FT) | 5.00 |
| OVERTOPPING CREST ELEVATION (FT) | 180.00 |

```
*****************80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY******************

JOB TR-20                                        SUMMARY
TITLE 003 Tractor Supply-W. Lewis Detention Check 2,5,10,25,50,100-YR 6-HR
TITLE     TSDETE.T20 28JAN99 MKEC98135-517                          24-HR
 4 DIMHYD              0.02                                          484
 8          .000       .030       .100       .190       .310
 8          .470       .660       .820       .930       .990
 8          1.000      .990       .930       .860       .780
 8          .680       .560       .460       .390       .330
 8          .280       .241       .207       .174       .147
 8          .126       .107       .091       .077       .066
 8          .055       .047       .040       .034       .029
 8          .025       .021       .018       .015       .013
 8          .011       .009       .008       .007       .006
 8          .005       .004       .003       .002       .001
 8          .000       .000       .000       .000       .000
 9 ENDTBL
 5 RAINFL 7            0.08333                                       6-HR M&L
 8          0.0000     0.0033     0.0066     0.0099     0.0132
 8          0.0166     0.0198     0.0248     0.0296     0.0346
 8          0.0404     0.0463     0.0522     0.0590     0.0658
 8          0.0727     0.0796     0.0864     0.0933     0.1136
 8          0.1340     0.1572     0.1832     0.2124     0.2473
 8          0.2850     0.3400     0.4464     0.6034     0.6752
 8          0.7220     0.7409     0.7598     0.7758     0.7919
 8          0.8072     0.8224     0.8310     0.8396     0.8468
 8          0.8540     0.8628     0.8714     0.8773     0.8832
 8          0.8890     0.8939     0.8988     0.9038     0.9086
 8          0.9136     0.9184     0.9233     0.9282     0.9332
 8          0.9380     0.9429     0.9478     0.9527     0.9576
 8          0.9626     0.9664     0.9704     0.9742     0.9782
 8          0.9821     0.9860     0.9884     0.9906     0.9930
 8          0.9954     0.9976     1.0000     1.0000     1.0000
 9 ENDTBL
 5 RAINFL 8            0.5                                           24-HRSCS
 8          .000       .002       .005       .009       .013         ZONE 5
 8          .018       .023       .029       .035       .042
 8          .050       .059       .068       .078       .089
 8          .101       .114       .128       .144       .162
 8          .183       .208       .244       .339       .723
 8          .773       .802       .825       .844       .861
 8          .876       .890       .903       .914       .924
 8          .934       .943       .951       .959       .966
 8          .972       .977       .982       .986       .990
 8          .993       .996       .998       1.000      1.000
 9 ENDTBL
 3 STRUCT     01                                                     SDET 15L
```

POST DEVELOPMENT W/ ON-SITE DETENTION

SOUTHWEST DETENTION BASIN

```
**********80-80 LIST OF INPUT DATA (CONTINUED)**********

8                    177.00      0.0         .0000
8                    178.        2.38        .0755
8                    179.        3.96        .1921
8                    180.        4.51        .3446
8                    180.5       5.00        .4372
8                    180.7       7.00        .4927
9 ENDTBL
3 STRUCT     02                                          SEDET 12   SOUTHEAST
8                    176.5       0.0         .000                   DETENTION BASIN
8                    177.        0.83        .0049
8                    178.        2.48        .0449
8                    179.        3.36        .1081
8                    179.2       5.36        .1095
9 ENDTBL
6 RUNOFF 1 001       6 0.0029    98.0        0.182          1 BLDG/W R
6 RESVOR 2    01 6   7 177.0                                1 DET SWES
6 RUNOFF 1 002       5 0.0014    98.0        0.121          1 STG. RO
6 RESVOR 2    02 5   6 176.5                                1 DET SEAS
6 ADDHYD 4 003   6 7 5                                      1 E STG. R
6 RUNOFF 1 004       6 .0018     98.0        0.151          1 N LOT RO
6 ADDHYD 4 005   5 6 7                                      1 SITE TOT
  ENDATA
7 INCREM 6           0.0833
7 COMPUT 7 001   005 0.0         2.52        1.0      7 2  11  01 2-YR 6-H
  ENDCMP 1
7 COMPUT 7 001   005 0.0         3.42        1.0      7 2  12  02 5-YR 6-H
  ENDCMP 1
7 COMPUT 7 001   005 0.0         4.02        1.0      7 2  13  03 10-YR 6-
  ENDCMP 1
7 COMPUT 7 001   005 0.0         4.63        1.0      7 2  14  04 25-YR 6-
  ENDCMP 1
7 COMPUT 7 001   005 0.0         5.20        1.0      7 2  15  05 50-YR 6-
  ENDCMP 1
7 COMPUT 7 001   005 0.0         5.94        1.0      7 2  16  06 100-YR 6
  ENDCMP 1
7 COMPUT 7 001   005 0.0         3.48        1.0      2 2  21  01 2-YR TYP
  ENDCMP 1
7 COMPUT 7 001   005 0.0         4.55        1.0      2 2  22  02 5-YR TYP
  ENDCMP 1
7 COMPUT 7 001   005 0.0         5.25        1.0      2 2  23  03 10-YR TY
  ENDCMP 1
7 COMPUT 7 001   005 0.0         6.10        1.0      2 2  24  04 25-YR TY
  ENDCMP 1
7 COMPUT 7 001   005 0.0         6.98        1.0      2 2  25  05 50-YR TY
  ENDCMP 1
7 COMPUT 7 001   005 0.0         7.80        1.0      2 2  26  06 100-YR T
```

```
**********80-80 LIST OF INPUT DATA (CONTINUED)**********

  ENDCMP 1
7 COMPUT 7 001   005   0.0        3.48       1.0        8 2  41  01 2-YR ZON
  ENDCMP 1
7 COMPUT 7 001   005   0.0        4.55       1.0        8 2  42  02 5-YR ZON
  ENDCMP 1
7 COMPUT 7 001   005   0.0        5.25       1.0        8 2  43  03 10-YR ZO
  ENDCMP 1
7 COMPUT 7 001   005   0.0        6.10       1.0        8 2  44  04 25-YR ZO
  ENDCMP 1
7 COMPUT 7 001   005   0.0        6.98       1.0        8 2  45  05 50-YR ZO
  ENDCMP 1
7 COMPUT 7 001   005   0.0        7.80       1.0        8 2  46  06 100-YR Z
  ENDCMP 1
  ENDJOB 2

**********END OF 80-80 LIST**********
```

COMPUTED PEAK RATE FACTOR = 484.00

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .08 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 2-YR 6-H
STARTING TIME = .00 RAIN DEPTH = 2.52 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=11 STORM NO.= 1 RAIN TABLE NO.= 7

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 16. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - XSECTION 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 15. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 24. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - XSECTION 3, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 10. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - XSECTION 4, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 11. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 5-YR 6-H
STARTING TIME = .00 RAIN DEPTH = 3.42 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=12 STORM NO.= 2 RAIN TABLE NO.= 7

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 13. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 18. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 10-YR 6-
STARTING TIME = .00 RAIN DEPTH = 4.02 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=13 STORM NO.= 3 RAIN TABLE NO.= 7

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 12. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 14. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 25-YR 6-
STARTING TIME = .00 RAIN DEPTH = 4.63 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=14 STORM NO.= 4 RAIN TABLE NO.= 7

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 12. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 16. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 50-YR 6-
STARTING TIME = .00 RAIN DEPTH = 5.20 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=15 STORM NO.= 5 RAIN TABLE NO.= 7

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 11. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 13. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 100-YR 6
STARTING TIME = .00 RAIN DEPTH = 5.94 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=16 STORM NO.= 6 RAIN TABLE NO.= 7

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 11. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 2-YR TYP
STARTING TIME = .00 RAIN DEPTH = 3.48 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=21 STORM NO.= 1 RAIN TABLE NO.= 2

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 16. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - XSECTION 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 13. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 18. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - XSECTION 4, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 10. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 7

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 5-YR TYP
STARTING TIME = .00 RAIN DEPTH = 4.55 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=22 STORM NO.= 2 RAIN TABLE NO.= 2

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 13. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 15. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 8

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 10-YR TY
STARTING TIME = .00 RAIN DEPTH = 5.25 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=23 STORM NO.= 3 RAIN TABLE NO.= 2

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 12. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 15. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 9

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 25-YR TY
STARTING TIME = .00 RAIN DEPTH = 6.10 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=24 STORM NO.= 4 RAIN TABLE NO.= 2

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 12. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 16. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 10

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 50-YR TY
STARTING TIME = .00 RAIN DEPTH = 6.98 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=25 STORM NO.= 5 RAIN TABLE NO.= 2

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 11. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 14. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 11

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 100-YR T
STARTING TIME = .00 RAIN DEPTH = 7.80 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=26 STORM NO.= 6 RAIN TABLE NO.= 2

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 11. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 2,
VALUE EXTRAPOLATED. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 12

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 2-YR ZON
STARTING TIME = .00 RAIN DEPTH = 3.48 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=41 STORM NO.= 1 RAIN TABLE NO.= 8

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 16. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - XSECTION 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 15. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 20. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - XSECTION 4, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 14. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 13

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 5-YR ZON
STARTING TIME = .00 RAIN DEPTH = 4.55 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=42 STORM NO.= 2 RAIN TABLE NO.= 8

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 13. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - XSECTION 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 15. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 13. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - XSECTION 4, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 12. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 14

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 10-YR ZO
STARTING TIME = .00 RAIN DEPTH = 5.25 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=43 STORM NO.= 3 RAIN TABLE NO.= 8

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 12. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - XSECTION 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 13. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 13. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 15

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 25-YR ZO
STARTING TIME = .00 RAIN DEPTH = 6.10 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=44 STORM NO.= 4 RAIN TABLE NO.= 8

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 12. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - XSECTION 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 11. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 14. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 16

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 50-YR ZO
STARTING TIME = .00 RAIN DEPTH = 6.98 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=45 STORM NO.= 5 RAIN TABLE NO.= 8

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 11. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 14. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 17

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 5 100-YR Z
STARTING TIME = .00 RAIN DEPTH = 7.80 RAIN DURATION= 1.00
ANT. MOIST. COND. = 2 MAIN TIME INCREMENT = .08 HOURS
ALTERNATE NO.=46 STORM NO.= 6 RAIN TABLE NO.= 8

*** WARNING - STRUCTURE 1, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 11. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS
( 12. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 18

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|
| RAINFALL OF 2.52 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| RAINTABLE NUMBER 7, AMC 2 | | | | | | | |
| MAIN TIME INCREMENT .08 HOURS | | | | | | | |
| ALTERNATE 11 STORM 1 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 2.29 | --- | 2.41 | 6 | ******** |
| STRUCTURE 1 | RESVOR | .00 | 2.29 | 178.35 | 2.60T | 3T | ******** |
| XSECTION 2 | RUNOFF | .00 | 2.28 | --- | 2.36T | 3T | ******** |
| STRUCTURE 2 | RESVOR | .00 | 2.29 | 177.71 | 2.50T | 2T | ******** |
| XSECTION 3 | ADDHYD | .00 | 2.29 | --- | 2.53T | 5T | ******** |
| XSECTION 4 | RUNOFF | .00 | 2.29 | --- | 2.39T | 4T | ******** |
| XSECTION 5 | ADDHYD | .01 | 2.29 | --- | 2.42 | 8 | 800.0 |
| RAINFALL OF 3.42 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 12 STORM 2 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 3.19 | --- | 2.40 | 9 | ******** |
| STRUCTURE 1 | RESVOR | .00 | 3.18 | 178.81 | 2.61T | 4T | ******** |
| XSECTION 2 | RUNOFF | .00 | 3.18 | --- | 2.36 | 5 | ******** |
| STRUCTURE 2 | RESVOR | .00 | 3.18 | 178.10 | 2.50T | 3T | ******** |
| XSECTION 3 | ADDHYD | .00 | 3.18 | --- | 2.56 | 6 | ******** |
| XSECTION 4 | RUNOFF | .00 | 3.18 | --- | 2.39 | 6 | ******** |
| XSECTION 5 | ADDHYD | .01 | 3.18 | --- | 2.42 | 11 | 1100.0 |
| RAINFALL OF 4.02 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 13 STORM 3 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 3.79 | --- | 2.40 | 10 | ******** |
| STRUCTURE 1 | RESVOR | .00 | 3.78 | 179.11 | 2.62T | 4T | ******** |
| XSECTION 2 | RUNOFF | .00 | 3.77 | --- | 2.36 | 5 | ******** |
| STRUCTURE 2 | RESVOR | .00 | 3.78 | 178.33 | 2.52T | 3T | ******** |
| XSECTION 3 | ADDHYD | .00 | 3.78 | --- | 2.56 | 7 | ******** |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|---|
| **ALTERNATE 13 STORM 3** | | | | | | | | |
| XSECTION | 4 | RUNOFF | .00 | 3.78 | --- | 2.39 | 7 | ******** |
| XSECTION | 5 | ADDHYD | .01 | 3.78 | --- | 2.41 | 13 | 1300.0 |
| RAINFALL OF 4.63 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | | |
| **ALTERNATE 14 STORM 4** | | | | | | | | |
| XSECTION | 1 | RUNOFF | .00 | 4.40 | --- | 2.41 | 12 | ******** |
| STRUCTURE | 1 | RESVOR | .00 | 4.39 | 179.38 | 2.64T | 4T | ******** |
| XSECTION | 2 | RUNOFF | .00 | 4.38 | --- | 2.36 | 6 | ******** |
| STRUCTURE | 2 | RESVOR | .00 | 4.39 | 178.58 | 2.53T | 3T | ******** |
| XSECTION | 3 | ADDHYD | .00 | 4.39 | --- | 2.56 | 7 | ******** |
| XSECTION | 4 | RUNOFF | .00 | 4.39 | --- | 2.39 | 8 | ******** |
| XSECTION | 5 | ADDHYD | .01 | 4.39 | --- | 2.41 | 14 | 1400.0 |
| RAINFALL OF 5.20 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | | |
| **ALTERNATE 15 STORM 5** | | | | | | | | |
| XSECTION | 1 | RUNOFF | .00 | 4.97 | --- | 2.41 | 14 | ******** |
| STRUCTURE | 1 | RESVOR | .00 | 4.95 | 179.65 | 2.66T | 4T | ******** |
| XSECTION | 2 | RUNOFF | .00 | 4.95 | --- | 2.36 | 7 | ******** |
| STRUCTURE | 2 | RESVOR | .00 | 4.96 | 178.83 | 2.53T | 3T | ******** |
| XSECTION | 3 | ADDHYD | .00 | 4.96 | --- | 2.57 | 7 | ******** |
| XSECTION | 4 | RUNOFF | .00 | 4.96 | --- | 2.39 | 9 | ******** |
| XSECTION | 5 | ADDHYD | .01 | 4.96 | --- | 2.41 | 15 | 1500.0 |
| RAINFALL OF 5.94 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | | |
| **ALTERNATE 16 STORM 6** | | | | | | | | |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | PEAK DISCHARGE TIME (HR) | PEAK DISCHARGE RATE (CFS) | PEAK DISCHARGE RATE (CSM) |
|---|---|---|---|---|---|---|---|
| ALTERNATE 16 STORM 6 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 5.71 | --- | 2.40 | 15 | ******** |
| STRUCTURE 1 | RESVOR | .00 | 5.69 | 180.02 | 2.67T | 5T | ******** |
| XSECTION 2 | RUNOFF | .00 | 5.69 | --- | 2.36 | 8 | ******** |
| STRUCTURE 2 | RESVOR | .00 | 5.70 | 179.19 | 2.50 | 5 | ******** |
| XSECTION 3 | ADDHYD | .00 | 5.68 | --- | 2.50 | 10 | ******** |
| XSECTION 4 | RUNOFF | .00 | 5.70 | --- | 2.39 | 10 | ******** |
| XSECTION 5 | ADDHYD | .01 | 5.68 | --- | 2.42 | 17 | 1700.0 |

RAINFALL OF 3.48 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 2, AMC 2

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ALTERNATE 21 STORM 1 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 3.25 | --- | 11.99 | 7 | ******** |
| STRUCTURE 1 | RESVOR | .00 | 3.24 | 178.44 | 12.17T | 3T | ******** |
| XSECTION 2 | RUNOFF | .00 | 3.25 | --- | 11.94T | 4T | ******** |
| STRUCTURE 2 | RESVOR | .00 | 3.24 | 177.84 | 12.08T | 2T | ******** |
| XSECTION 3 | ADDHYD | .00 | 3.24 | --- | 12.11 | 5 | ******** |
| XSECTION 4 | RUNOFF | .00 | 3.25 | --- | 11.97T | 5T | ******** |
| XSECTION 5 | ADDHYD | .01 | 3.24 | --- | 12.00 | 9 | 900.0 |

RAINFALL OF 4.55 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ALTERNATE 22 STORM 2 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 4.30 | --- | 11.99 | 9 | ******** |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|---|
| ALTERNATE 22 STORM 2 | | | | | | | | |
| STRUCTURE | 1 | RESVOR | .00 | 4.29 | 178.85 | 12.18T | 4T******** | |
| XSECTION | 2 | RUNOFF | .00 | 4.30 | --- | 11.94 | 5 ******** | |
| STRUCTURE | 2 | RESVOR | .00 | 4.28 | 178.17 | 12.09T | 3T******** | |
| XSECTION | 3 | ADDHYD | .00 | 4.29 | --- | 12.14 | 6 ******** | |
| XSECTION | 4 | RUNOFF | .00 | 4.30 | --- | 11.97 | 6 ******** | |
| XSECTION | 5 | ADDHYD | .01 | 4.29 | --- | 12.00 | 11 | 1100.0 |
| RAINFALL OF 5.25 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | | |
| ALTERNATE 23 STORM 3 | | | | | | | | |
| XSECTION | 1 | RUNOFF | .00 | 5.00 | --- | 11.99 | 11 ******** | |
| STRUCTURE | 1 | RESVOR | .00 | 4.99 | 179.11 | 12.20T | 4T******** | |
| XSECTION | 2 | RUNOFF | .00 | 5.00 | --- | 11.94 | 6 ******** | |
| STRUCTURE | 2 | RESVOR | .00 | 4.98 | 178.38 | 12.10T | 3T******** | |
| XSECTION | 3 | ADDHYD | .00 | 4.99 | --- | 12.14 | 7 ******** | |
| XSECTION | 4 | RUNOFF | .00 | 5.00 | --- | 11.97 | 7 ******** | |
| XSECTION | 5 | ADDHYD | .01 | 4.99 | --- | 12.00 | 13 | 1300.0 |
| RAINFALL OF 6.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | | |
| ALTERNATE 24 STORM 4 | | | | | | | | |
| XSECTION | 1 | RUNOFF | .00 | 5.85 | --- | 11.99 | 12 ******** | |
| STRUCTURE | 1 | RESVOR | .00 | 5.84 | 179.39 | 12.20T | 4T******** | |
| XSECTION | 2 | RUNOFF | .00 | 5.85 | --- | 11.94 | 7 ******** | |
| STRUCTURE | 2 | RESVOR | .00 | 5.84 | 178.64 | 12.10T | 3T******** | |
| XSECTION | 3 | ADDHYD | .00 | 5.84 | --- | 12.14 | 7 ******** | |
| XSECTION | 4 | RUNOFF | .00 | 5.86 | --- | 11.97 | 8 ******** | |
| XSECTION | 5 | ADDHYD | .01 | 5.85 | --- | 11.99 | 14 | 1400.0 |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | PEAK DISCHARGE TIME (HR) | PEAK DISCHARGE RATE (CFS) | PEAK DISCHARGE RATE (CSM) |
|---|---|---|---|---|---|---|---|
| RAINFALL OF 6.98 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 25 STORM 5 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 6.74 | --- | 11.99 | 14 | ******** |
| STRUCTURE 1 | RESVOR | .00 | 6.73 | 179.68 | 12.22T | 4T | ******** |
| XSECTION 2 | RUNOFF | .00 | 6.73 | --- | 11.94 | 7 | ******** |
| STRUCTURE 2 | RESVOR | .00 | 6.71 | 178.92 | 12.11T | 3T | ******** |
| XSECTION 3 | ADDHYD | .00 | 6.72 | --- | 12.15 | 8 | ******** |
| XSECTION 4 | RUNOFF | .00 | 6.74 | --- | 11.97 | 9 | ******** |
| XSECTION 5 | ADDHYD | .01 | 6.73 | --- | 11.99 | 16 | 1600.0 |
| RAINFALL OF 7.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 26 STORM 6 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 7.56 | --- | 11.99 | 16 | ******** |
| STRUCTURE 1 | RESVOR | .00 | 7.55 | 179.98 | 12.24T | 4T | ******** |
| XSECTION 2 | RUNOFF | .00 | 7.55 | --- | 11.94 | 8 | ******** |
| STRUCTURE 2 | RESVOR | .00 | 7.61 | 179.25 | 12.08 | 6 | ******** |
| XSECTION 3 | ADDHYD | .00 | 7.57 | --- | 12.08 | 10 | ******** |
| XSECTION 4 | RUNOFF | .00 | 7.56 | --- | 11.97 | 10 | ******** |
| XSECTION 5 | ADDHYD | .01 | 7.56 | --- | 12.03 | 18 | 1800.0 |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | TIME (HR) | RATE (CFS) | RATE (CSM) |
|---|---|---|---|---|---|---|---|---|
| RAINFALL OF 3.48 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | | |
| RAINTABLE NUMBER 8, AMC 2 | | | | | | | | |
| ALTERNATE 41 STORM 1 | | | | | | | | |
| XSECTION | 1 | RUNOFF | .00 | 3.24 | --- | 11.96 | 5 ******** | |
| STRUCTURE | 1 | RESVOR | .00 | 3.24 | 178.39 | 12.13T | 3T******** | |
| XSECTION | 2 | RUNOFF | .00 | 3.24 | --- | 11.95T | 2T******** | |
| STRUCTURE | 2 | RESVOR | .00 | 3.24 | 177.69 | 12.04T | 2T******** | |
| XSECTION | 3 | ADDHYD | .00 | 3.24 | --- | 12.07 | 5 ******** | |
| XSECTION | 4 | RUNOFF | .00 | 3.24 | --- | 11.95T | 3T******** | |
| XSECTION | 5 | ADDHYD | .01 | 3.24 | --- | 11.98 | 8 | 800.0 |
| RAINFALL OF 4.55 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | | |
| ALTERNATE 42 STORM 2 | | | | | | | | |
| XSECTION | 1 | RUNOFF | .00 | 4.31 | --- | 11.96 | 7 ******** | |
| STRUCTURE | 1 | RESVOR | .00 | 4.31 | 178.81 | 12.14T | 4T******** | |
| XSECTION | 2 | RUNOFF | .00 | 4.31 | --- | 11.93T | 3T******** | |
| STRUCTURE | 2 | RESVOR | .00 | 4.31 | 178.06 | 12.04T | 3T******** | |
| XSECTION | 3 | ADDHYD | .00 | 4.31 | --- | 12.08 | 6 ******** | |
| XSECTION | 4 | RUNOFF | .00 | 4.31 | --- | 11.95T | 4T******** | |
| XSECTION | 5 | ADDHYD | .01 | 4.31 | --- | 11.99 | 10 | 1000.0 |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | PEAK DISCHARGE TIME (HR) | PEAK DISCHARGE RATE (CFS) | PEAK DISCHARGE RATE (CSM) |
|---|---|---|---|---|---|---|---|
| RAINFALL OF 5.25 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 43 STORM 3 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 5.01 | --- | 11.96 | 8 ******** | |
| STRUCTURE 1 | RESVOR | .00 | 5.01 | 179.07 | 12.15T | 4T******** | |
| XSECTION 2 | RUNOFF | .00 | 5.00 | --- | 11.93T | 4T******** | |
| STRUCTURE 2 | RESVOR | .00 | 5.00 | 178.22 | 12.05T | 3T******** | |
| XSECTION 3 | ADDHYD | .00 | 5.00 | --- | 12.10 | 7 ******** | |
| XSECTION 4 | RUNOFF | .00 | 5.01 | --- | 11.95 | 5 ******** | |
| XSECTION 5 | ADDHYD | .01 | 5.01 | --- | 11.98 | 11 1100.0 | |
| RAINFALL OF 6.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 44 STORM 4 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 5.85 | --- | 11.96 | 9 ******** | |
| STRUCTURE 1 | RESVOR | .00 | 5.85 | 179.36 | 12.16T | 4T******** | |
| XSECTION 2 | RUNOFF | .00 | 5.85 | --- | 11.93T | 4T******** | |
| STRUCTURE 2 | RESVOR | .00 | 5.85 | 178.48 | 12.07T | 3T******** | |
| XSECTION 3 | ADDHYD | .00 | 5.85 | --- | 12.09 | 7 ******** | |
| XSECTION 4 | RUNOFF | .00 | 5.86 | --- | 11.95 | 6 ******** | |
| XSECTION 5 | ADDHYD | .01 | 5.85 | --- | 11.97 | 12 1200.0 | |
| RAINFALL OF 6.98 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs. | | | | | | | |
| ALTERNATE 45 STORM 5 | | | | | | | |

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

| XSECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | PEAK DISCHARGE TIME (HR) | PEAK DISCHARGE RATE (CFS) | PEAK DISCHARGE RATE (CSM) |
|---|---|---|---|---|---|---|---|
| ALTERNATE 45 STORM 5 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 6.73 | --- | 11.96 | 10 | ******** |
| STRUCTURE 1 | RESVOR | .00 | 6.73 | 179.69 | 12.17T | 4T | ******** |
| XSECTION 2 | RUNOFF | .00 | 6.73 | --- | 11.93 | 5 | ******** |
| STRUCTURE 2 | RESVOR | .00 | 6.73 | 178.76 | 12.07T | 3T | ******** |
| XSECTION 3 | ADDHYD | .00 | 6.73 | --- | 12.10 | 7 | ******** |
| XSECTION 4 | RUNOFF | .00 | 6.73 | --- | 11.95 | 6 | ******** |
| XSECTION 5 | ADDHYD | .01 | 6.73 | --- | 11.97 | 14 | 1400.0 |

RAINFALL OF 7.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

| XSECTION/ STRUCTURE ID | STANDARD CONTROL OPERATION | DRAINAGE AREA (SQ MI) | RUNOFF AMOUNT (IN) | PEAK DISCHARGE ELEVATION (FT) | PEAK DISCHARGE TIME (HR) | PEAK DISCHARGE RATE (CFS) | PEAK DISCHARGE RATE (CSM) |
|---|---|---|---|---|---|---|---|
| ALTERNATE 46 STORM 6 | | | | | | | |
| XSECTION 1 | RUNOFF | .00 | 7.55 | --- | 11.96 | 11 | ******** |
| STRUCTURE 1 | RESVOR | .00 | 7.55 | 180.00 | 12.18T | 5T | ******** |
| XSECTION 2 | RUNOFF | .00 | 7.55 | --- | 11.93 | 5 | ******** |
| STRUCTURE 2 | RESVOR | .00 | 7.56 | 179.07 | 12.08T | 4T | ******** |
| XSECTION 3 | ADDHYD | .00 | 7.55 | --- | 12.08 | 8 | ******** |
| XSECTION 4 | RUNOFF | .00 | 7.55 | --- | 11.95 | 7 | ******** |
| XSECTION 5 | ADDHYD | .01 | 7.55 | --- | 11.98 | 15 | 1500.0 |

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES

| XSECTION/ STRUCTURE ID | DRAINAGE AREA (SQ MI) | STORM NUMBERS..... 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| STRUCTURE 2 | .00 | | | | | |
| ALTERNATE 11 | | 2 | ********* | ********* | ********* | ********* |
| ALTERNATE 12 | | ********* | 3 | ********* | ********* | ********* |
| ALTERNATE 13 | | ********* | ********* | 3 | ********* | ********* |
| ALTERNATE 14 | | ********* | ********* | ********* | 3 | ********* |
| ALTERNATE 15 | | ********* | ********* | ********* | ********* | 3 |
| ALTERNATE 21 | | 2 | ********* | ********* | ********* | ********* |
| ALTERNATE 22 | | ********* | 3 | ********* | ********* | ********* |
| ALTERNATE 23 | | ********* | ********* | 3 | ********* | ********* |
| ALTERNATE 24 | | ********* | ********* | ********* | 3 | ********* |
| ALTERNATE 25 | | ********* | ********* | ********* | ********* | 3 |
| ALTERNATE 41 | | 2 | ********* | ********* | ********* | ********* |
| ALTERNATE 42 | | ********* | 3 | ********* | ********* | ********* |
| ALTERNATE 43 | | ********* | ********* | 3 | ********* | ********* |
| ALTERNATE 44 | | ********* | ********* | ********* | 3 | ********* |
| ALTERNATE 45 | | ********* | ********* | ********* | ********* | 3 |
| STRUCTURE 1 | .00 | | | | | |
| ALTERNATE 11 | | 3 | ********* | ********* | ********* | ********* |
| ALTERNATE 12 | | ********* | 4 | ********* | ********* | ********* |
| ALTERNATE 13 | | ********* | ********* | 4 | ********* | ********* |
| ALTERNATE 14 | | ********* | ********* | ********* | 4 | ********* |
| ALTERNATE 15 | | ********* | ********* | ********* | ********* | 4 |
| ALTERNATE 21 | | 3 | ********* | ********* | ********* | ********* |
| ALTERNATE 22 | | ********* | 4 | ********* | ********* | ********* |
| ALTERNATE 23 | | ********* | ********* | 4 | ********* | ********* |
| ALTERNATE 24 | | ********* | ********* | ********* | 4 | ********* |
| ALTERNATE 25 | | ********* | ********* | ********* | ********* | 4 |
| ALTERNATE 41 | | 3 | ********* | ********* | ********* | ********* |
| ALTERNATE 42 | | ********* | 4 | ********* | ********* | ********* |
| ALTERNATE 43 | | ********* | ********* | 4 | ********* | ********* |
| ALTERNATE 44 | | ********* | ********* | ********* | 4 | ********* |
| ALTERNATE 45 | | ********* | ********* | ********* | ********* | 4 |
| XSECTION 1 | .00 | | | | | |
| ALTERNATE 11 | | 6 | ********* | ********* | ********* | ********* |
| ALTERNATE 12 | | ********* | 9 | ********* | ********* | ********* |

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES

| XSECTION/ STRUCTURE ID | | DRAINAGE AREA (SQ MI) | STORM NUMBERS..... 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| XSECTION 1 | | .00 | | | | | |
| ALTERNATE | 13 | | ********* | ********* | 10 | ********* | ********* |
| ALTERNATE | 14 | | ********* | ********* | ********* | 12 | ********* |
| ALTERNATE | 15 | | ********* | ********* | ********* | ********* | 14 |
| ALTERNATE | 21 | | 7 | ********* | ********* | ********* | ********* |
| ALTERNATE | 22 | | ********* | 9 | ********* | ********* | ********* |
| ALTERNATE | 23 | | ********* | ********* | 11 | ********* | ********* |
| ALTERNATE | 24 | | ********* | ********* | ********* | 12 | ********* |
| ALTERNATE | 25 | | ********* | ********* | ********* | ********* | 14 |
| ALTERNATE | 41 | | 5 | ********* | ********* | ********* | ********* |
| ALTERNATE | 42 | | ********* | 7 | ********* | ********* | ********* |
| ALTERNATE | 43 | | ********* | ********* | 8 | ********* | ********* |
| ALTERNATE | 44 | | ********* | ********* | ********* | 9 | ********* |
| ALTERNATE | 45 | | ********* | ********* | ********* | ********* | 10 |
| XSECTION 2 | | .00 | | | | | |
| ALTERNATE | 11 | | 3 | ********* | ********* | ********* | ********* |
| ALTERNATE | 12 | | ********* | 5 | ********* | ********* | ********* |
| ALTERNATE | 13 | | ********* | ********* | 5 | ********* | ********* |
| ALTERNATE | 14 | | ********* | ********* | ********* | 6 | ********* |
| ALTERNATE | 15 | | ********* | ********* | ********* | ********* | 7 |
| ALTERNATE | 21 | | 4 | ********* | ********* | ********* | ********* |
| ALTERNATE | 22 | | ********* | 5 | ********* | ********* | ********* |
| ALTERNATE | 23 | | ********* | ********* | 6 | ********* | ********* |
| ALTERNATE | 24 | | ********* | ********* | ********* | 7 | ********* |
| ALTERNATE | 25 | | ********* | ********* | ********* | ********* | 7 |
| ALTERNATE | 41 | | 2 | ********* | ********* | ********* | ********* |
| ALTERNATE | 42 | | ********* | 3 | ********* | ********* | ********* |
| ALTERNATE | 43 | | ********* | ********* | 4 | ********* | ********* |
| ALTERNATE | 44 | | ********* | ********* | ********* | 4 | ********* |
| ALTERNATE | 45 | | ********* | ********* | ********* | ********* | 5 |
| XSECTION 3 | | .00 | | | | | |
| ALTERNATE | 11 | | 5 | ********* | ********* | ********* | ********* |
| ALTERNATE | 12 | | ********* | 6 | ********* | ********* | ********* |
| ALTERNATE | 13 | | ********* | ********* | 7 | ********* | ********* |
| ALTERNATE | 14 | | ********* | ********* | ********* | 7 | ********* |

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES

| XSECTION/ STRUCTURE ID | | DRAINAGE AREA (SQ MI) | STORM NUMBERS..... 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| XSECTION 3 | | .00 | | | | | |
| | ALTERNATE 21 | | 5 | ********* | ********* | ********* | ********* |
| | ALTERNATE 22 | | ********* | 6 | ********* | ********* | ********* |
| | ALTERNATE 23 | | ********* | ********* | 7 | ********* | ********* |
| | ALTERNATE 24 | | ********* | ********* | ********* | 7 | ********* |
| | ALTERNATE 25 | | ********* | ********* | ********* | ********* | 8 |
| | ALTERNATE 41 | | 5 | ********* | ********* | ********* | ********* |
| | ALTERNATE 42 | | ********* | 6 | ********* | ********* | ********* |
| | ALTERNATE 43 | | ********* | ********* | 7 | ********* | ********* |
| | ALTERNATE 44 | | ********* | ********* | ********* | 7 | ********* |
| | ALTERNATE 45 | | ********* | ********* | ********* | ********* | 7 |
| XSECTION 4 | | .00 | | | | | |
| | ALTERNATE 11 | | 4 | ********* | ********* | ********* | ********* |
| | ALTERNATE 12 | | ********* | 6 | ********* | ********* | ********* |
| | ALTERNATE 13 | | ********* | ********* | 7 | ********* | ********* |
| | ALTERNATE 14 | | ********* | ********* | ********* | 8 | ********* |
| | ALTERNATE 15 | | ********* | ********* | ********* | ********* | 9 |
| | ALTERNATE 21 | | 5 | ********* | ********* | ********* | ********* |
| | ALTERNATE 22 | | ********* | 6 | ********* | ********* | ********* |
| | ALTERNATE 23 | | ********* | ********* | 7 | ********* | ********* |
| | ALTERNATE 24 | | ********* | ********* | ********* | 8 | ********* |
| | ALTERNATE 25 | | ********* | ********* | ********* | ********* | 9 |
| | ALTERNATE 41 | | 3 | ********* | ********* | ********* | ********* |
| | ALTERNATE 42 | | ********* | 4 | ********* | ********* | ********* |
| | ALTERNATE 43 | | ********* | ********* | 5 | ********* | ********* |
| | ALTERNATE 44 | | ********* | ********* | ********* | 6 | ********* |
| | ALTERNATE 45 | | ********* | ********* | ********* | ********* | 6 |
| XSECTION 5 | | .01 | | | | | |
| | ALTERNATE 11 | | 8 | ********* | ********* | ********* | ********* |
| | ALTERNATE 12 | | ********* | 11 | ********* | ********* | ********* |
| | ALTERNATE 13 | | ********* | ********* | 13 | ********* | ********* |
| | ALTERNATE 14 | | ********* | ********* | ********* | 14 | ********* |
| | ALTERNATE 15 | | ********* | ********* | ********* | ********* | 15 |
| | ALTERNATE 21 | | 9 | ********* | ********* | ********* | ********* |
| | ALTERNATE 22 | | ********* | 11 | ********* | ********* | ********* |

ALTERNATE 23 ********* ********* 13 ********* *********

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES

| XSECTION/ STRUCTURE ID | | DRAINAGE AREA (SQ MI) | STORM NUMBERS..... 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| XSECTION | 5 | .01 | | | | | |
| ALTERNATE | 24 | | ********* | ********* | ********* | 14 | ********* |
| ALTERNATE | 25 | | ********* | ********* | ********* | ********* | 16 |
| ALTERNATE | 41 | | 8 | ********* | ********* | ********* | ********* |
| ALTERNATE | 42 | | ********* | 10 | ********* | ********* | ********* |
| ALTERNATE | 43 | | ********* | ********* | 11 | ********* | ********* |
| ALTERNATE | 44 | | ********* | ********* | ********* | 12 | ********* |
| ALTERNATE | 45 | | ********* | ********* | ********* | ********* | 14 |

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES

| XSECTION/ STRUCTURE ID | | DRAINAGE AREA (SQ MI) | STORM NUMBERS..... 6 |
|---|---|---|---|
| STRUCTURE | 2 | .00 | |
| ALTERNATE | 16 | | 5 |
| ALTERNATE | 26 | | 6 |
| ALTERNATE | 46 | | 4 |
| STRUCTURE | 1 | .00 | |
| ALTERNATE | 16 | | 5 |
| ALTERNATE | 26 | | 4 |
| ALTERNATE | 46 | | 5 |
| XSECTION | 1 | .00 | |
| ALTERNATE | 16 | | 15 |
| ALTERNATE | 26 | | 16 |
| ALTERNATE | 46 | | 11 |
| XSECTION | 2 | .00 | |
| ALTERNATE | 16 | | 8 |
| ALTERNATE | 26 | | 8 |
| ALTERNATE | 46 | | 5 |

```
XSECTION    3          .00
---------------------------
   ALTERNATE   16                   10
   ALTERNATE   26                   10
   ALTERNATE   46                    8

XSECTION    4          .00
---------------------------
   ALTERNATE   16                   10
   ALTERNATE   26                   10
   ALTERNATE   46                    7

XSECTION    5          .01
---------------------------
   ALTERNATE   16                   17
```

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES

| XSECTION/ STRUCTURE ID | DRAINAGE AREA (SQ MI) | STORM NUMBERS..... 6 |
|---|---|---|
| XSECTION 5 | .01 | |
| ALTERNATE 26 | | 18 |
| ALTERNATE 46 | | 15 |

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 10/01/90

FILES

INPUT = tsdete.t20

OUTPUT = tsdete.out , DATED 01/28/99,17:02:34

FILES GENERATED - DATED 01/28/99,17:02:34

NONE!

*** TR-20 RUN COMPLETED ***