

April 15, 1988

Office of the City Engineer
City Hall-Seventh Floor
455 North Main
Wichita, Ks 67202

Subject: Report on Definition of
Regulatory Floodway Boundary at
Woodland at the Park Addition.

Attention: Mr. Chris Breitenstein, P.E.

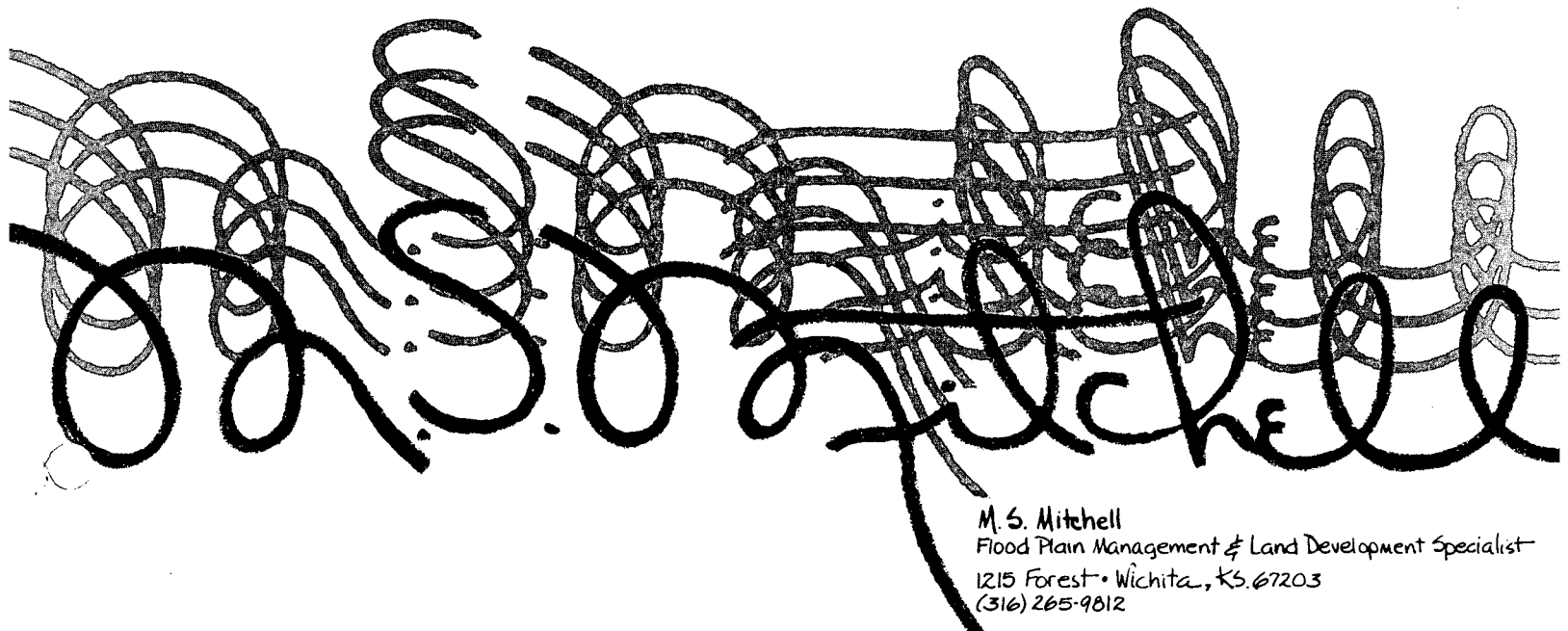
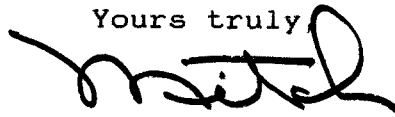
Dear Chris:

Transmitted with this letter is my Report on Definition of Regulatory Floodway Boundary - Cowskin Creek Between Tyler Road and Pawnee Avenue. Purpose of the Report is to demonstrate that the east property line of "WOODLAND AT THE PARK ADDITION" is outside the Right Bank Regulatory Floodway Boundary of Cowskin Creek in the area just south of Pawnee Avenue. Although a Floodway Data Table in which detailed study data are listed for three cross sections in the reach from Tyler Road to Pawnee Avenue is included in the City of Wichita Flood Insurance Study, the City has no Computer Program input or output files, either on hard copy or microfiche from which an accurate location of the Floodway can be determined, therefore it was necessary to make two Encroachment Routine Runs of the HEC-2 Computer Program in order to provide the level of detail necessary.

If further information or discussion is desired, please advise.

encl Report (3)

Yours truly,



M. S. Mitchell
Flood Plain Management & Land Development Specialist
1215 Forest • Wichita, KS 67203
(316) 265-9812

REPORT ON DEFINITION OF REGULATORY FLOODWAY BOUNDARY

COWSKIN CREEK BETWEEN TYLER ROAD AND PAWNEE AVENUE

This report and the accompanying exhibits define the boundaries of the Regulatory Floodway of Cowskin Creek in the reach between Tyler Road and Pawnee Avenue in the City of Wichita. It is necessary to make such definition in order to show that the east property line of a Preliminary Plat titled "WOODLAND AT THE PARK" is outside the Regulatory Floodway.

The reach of Cowskin Creek from downstream of Tyler Road to near Central Avenue was originally studied for the Federal Flood Insurance Program by the United States Geological Survey (USGS) using their E-431 Computer Step-Backwater and Floodway Analysis Program. That study data was later converted to the Corps of Engineers HEC-2 Computer Program for Water Surface Profiles by Mid Kansas Engineering Consultants (MKEC) under contract with the City of Wichita. In between those studies, the Federal Emergency Management Agency (FEMA) contracted with Howard Needles Tammen & Bergendoff (HNTB) and Greenhorne and O'Mara (G&O) to combine results from the earlier studies into separate Flood Insurance Studies (FIS) for the City of Wichita and the unincorporated parts of Sedgwick County. Panel 20 of the Flood Boundary and Floodway Map series for the City of Wichita maps the Regulatory Floodway from Tyler Road to upstream from Pawnee Avenue and identifies three cross sections (A, B & C) for which detailed information is listed in Table 4, "FLOODWAY DATA-COWSKIN CREEK"; however, no computer program input or output data was provided to the City which would enable them to accurately set the Regulatory Floodway Boundary limits. The inaccuracy of the planimetric detail on Panel 20 makes scaling the Floodway Boundary location from it impractical. The HEC-2 analysis done for the City by MKEC did not include an Encroachment Routine and it was necessary to encode the input file data from the MKEC report into the HEC-2 computer program, first to verify that the two programs produced the same results, then to modify that input to include the Encroachment Routine, calculate the location of the Floodway Intercepts and map the Floodway Boundaries.

A print of a photoenlargement is used as a base map for the Geometric Model and on it the five cross sections from the USGS and MKEC programs are drawn. Following comparison of the results of the calibration run (File CSKWPDC2) to the MKEC output to verify their compatibility, the approximate intercepts to match the Regulatory Floodway Boundary widths listed in Table 4 were scaled from Panel 20 to the Geometric Model from the centerline of Cowskin Creek. Those intercept stations were then encoded in the HEC-2 input file (CSKWPKE1) and an Encroachment Run using Encroachment Routine Method 1 was made to check its compatibility with the data in FIS Floodway Data Table. That Floodway Boundary, designated "FIS Regulatory Floodway Boundary" on the Model, is compared to another line designated "Calculated Floodway Boundary" on the Model which was the obtained by using Encroachment Routine Method 4, the "Equal Conveyance Method" (File CSKWPKEEX). There is no appreciable difference in the two Boundary Lines on the Right Bank side of Cowskin Creek and the two lines cross each other on the Left Bank side. Results of the methods used to define the Floodway Boundaries clearly demonstrate that the land being platted as "WOODLAND AT THE PARK" is outside the Floodway, and that subject to being filled to the Base Flood Elevation, or above, there should be no reason that the entire tract cannot be platted into lots, streets and easements.

The following exhibits are furnished to support the finding described above:

Exhibit A. Excerpt from City of Wichita Panel 20 showing the location of Cross Sections A, B & C in the reach of Cowskin Creek between Tyler Road and Pawnee Avenue.

Exhibit B. Table 4, Floodway Data Table for Cowskin Creek from City of Wichita FIS.

Exhibit C. Input and output files from MKEC HEC-2 Run for the reach from downstream from Tyler Road to upstream from Pawnee Avenue on which the Section ID for FIS Sections A, B & C are marked.

Exhibit D. HEC-2 Computer Program input and output files for Calibration Run (File CSKWPKE2) to verify that results of the two HEC-2 Computer Programs are compatible.

Exhibit E. Geometric Model on which the location of Tyler Road, Pawnee Avenue and the FIS Cross Sections A, B & C are shown along with the approximate location of the east property line of WOODLAND AT THE PARK Addition. The Regulatory Floodway Boundaries as calculated in the Encroachment Runs are drawn on the model to demonstrate that the proposed plat is outside the Floodway.

Exhibit F. HEC-2 Computer Program input and output files for the Encroachment Run (File CSKWPKE1) which located the Floodway Boundaries per the widths shown in Table 4 of the City of Wichita FIS.

Exhibit G. Hec-2 Computer Program input and output files for the Encroachment Run (File CSKWPKEEX) which used the "Equal Conveyance Method" and which proved that the Floodway determined by that method did not result in a surcharge of more than one foot.

Exhibit H. Plotted Cross Sections from MKRC HEC-2 input file on which the location of the left and right bank encroachment stations has been plotted to show the relationship of the Regulatory Floodway Boundaries to the channel of Cowskin Creek. That relationship and the planimetric location of the channel of Cowskin Creek and the east property line of "WOODLAND AT THE PARK" on the photoenlargement used as a base map for the Model make possible the determination that the east line of the plat is outside the Regulatory Floodway Boundary.

END OF REPORT

| FLOODING SOURCE | | FLOODWAY | | | BASE FLOOD WATER SURFACE ELEVATION | | | |
|-----------------|-----------------------|-------------------|-------------------------|---------------------------|------------------------------------|-------------------------|----------------------|-----------------|
| CROSS SECTION | DISTANCE ¹ | WIDTH (FEET) | SECTION AREA (SQ. FEET) | MEAN VELOCITY (FEET/SEC.) | REGULATORY (NGVD) | WITHOUT FLOODWAY (NGVD) | WITH FLOODWAY (NGVD) | INCREASE (FEET) |
| COWSKIN CREEK | | | | | | | | |
| A | 6.47 | 1020 | 5081 | 3.4 | 1303.2 | 1303.2 | 1303.6 | 0.4 |
| B | 6.70 | 782 | 3800 | 4.6 | 1304.3 | 1304.3 | 1304.6 | 0.3 |
| C | 7.14 | 750 | 5440 | 3.2 | 1306.7 | 1306.7 | 1307.3 | 0.6 |
| D | 7.59 | 950 | 5289 | 3.3 | 1308.2 | 1308.2 | 1308.6 | 0.4 |
| E | 7.81 | 965 | 4135 | 4.2 | 1308.8 | 1308.8 | 1309.3 | 0.5 |
| F | 8.14 | 577 | 3897 | 4.5 | 1309.7 | 1309.7 | 1310.2 | 0.5 |
| G | 8.54 | 933 | 4713 | 3.7 | 1311.0 | 1311.0 | 1311.7 | 0.7 |
| H | 8.65 | 1080 | 6792 | 2.6 | 1313.1 | 1313.1 | 1313.7 | 0.6 |
| I | 8.72 | 767 | 5182 | 3.4 | 1313.3 | 1313.3 | 1313.9 | 0.6 |
| J | 9.06 | 1269 ² | 6215 | 2.5 | 1314.0 | 1314.0 | 1314.6 | 0.6 |
| K | 9.83 | 1333 | 6208 | 2.5 | 1320.1 | 1320.1 | 1321.0 | 0.9 |
| L | 10.08 | 1147 | 6419 | 2.4 | 1320.5 | 1320.5 | 1321.3 | 0.8 |
| M | 10.30 | 169 | 1387 | 7.2 | 1321.0 | 1321.0 | 1321.7 | 0.7 |
| N | 10.80 | 514 | 2439 | 1.4 | 1324.0 | 1324.0 | 1324.7 | 0.7 |
| O | 11.02 | 1558 ² | 10,592 | 6.2 | 1327.8 | 1327.8 | 1328.3 | 0.5 |
| P | 11.14 | 1446 ² | 7428 | 2.0 | 1327.9 | 1327.9 | 1328.4 | 0.5 |
| Q | 11.89 | 1029 | 5792 | 2.6 | 1329.0 | 1329.0 | 1329.6 | 0.6 |
| R | 12.50 | 1199 | 5571 | 2.7 | 1330.6 | 1330.6 | 1331.3 | 0.7 |
| S | 13.01 | 1068 | 4327 | 3.5 | 1333.3 | 1333.3 | 1334.0 | 0.7 |
| T | 13.40 | 1081 ² | 4532 | 2.7 | 1336.0 | 1336.0 | 1336.7 | 0.7 |
| U | 13.71 | 1123 ² | 6093 | 2.5 | 1337.3 | 1337.3 | 1338.1 | 0.8 |
| V | 13.79 | 1313 ² | 7612 | 2.0 | 1337.6 | 1337.6 | 1338.5 | 0.8 |
| W | 14.30 | 928 ² | 4191 | 3.6 | 1338.6 | 1338.6 | 1339.3 | 0.7 |

¹MILES ABOVE CONFLUENCE WITH WICHITA-VALLEY CENTER FLOODWAY

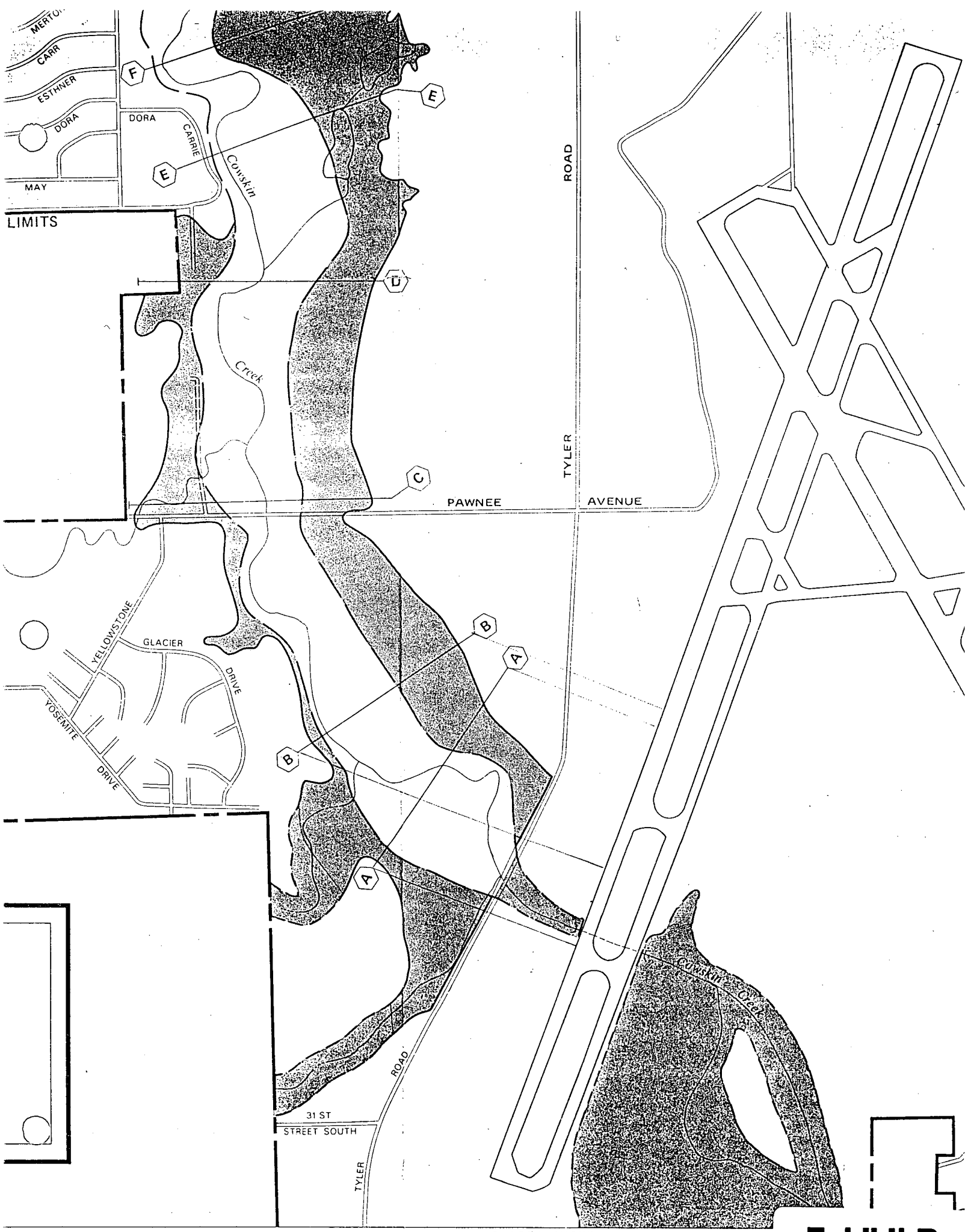
²THIS WIDTH EXTENDS BEYOND CORPORATE LIMITS

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF WICHITA, KS
(SEDGWICK CO.)

FLOODWAY DATA

COWSKIN CREEK



ADJOINING AREA SHOWN AS INSET B ON PANEL 2

Exhibit R

EXHIBIT C

MKEC HEC-2 COMPUTER PROGRAM INPUT & OUTPUT FILE

COWSKIN CREEK

BETWEEN TYLER ROAD AND PAWNEE AVENUE

WICHITA, KANSAS

 * WATER SURFACE PROFILES *
 * VERSION OF NOVEMBER 1976 *
 * UPDATED MAY 1984 *
 * IBM-PC-XT VERSION AUGUST 1985 *
 * RUN DATE 09-24-86 TIME 10:04:43 *

THE HYDROLOGIC ENGINEERING CENTER
 609 SECOND STREET, SUITE D
 DAVIS, CALIFORNIA 95616
 (916) 440-2105 (FTS) 448-2105

Profile No. 3

*Begin's DIS Tyler Road
 Extends to w/s Maple*

USES TAKEC STATIONING
 X X XXXXXX XXXX
 X X X X
 X X X X
 XXXXXX XXXX
 X X X X
 X X X X
 X XXXXXX XXXX

09-24-86 10:04:44 PAGE 1

THIS RUN EXECUTED 09-24-86

 HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
 ERROR CORR - 01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 IBM-PC-XT VERSION AUGUST 1985

T1: COWSKIN CREEK (3RD RUN)
 T2: EXIST. COND.-MKEC N VALUES
 T3: MID-KANSAS ENGINEERING

| J1 | ICHECK | INO | NINW | IDIR | STRT | METRIC | HVINS | Q | WSEL | FQ |
|--------|----------|---------|----------|---------|----------|---------|---------|----------|----------|----------|
| 0. | 0. | 0. | 0. | 0. | 0.000000 | .00 | .0 | 17400. | 1301.200 | .000 |
| J2 | NPROF | IFLOT | PRFVS | XSECV | XSECH | FN | ALLDC | IBW | CHNIM | ITRACE |
| -1.000 | .000 | -1.000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| NC | .035 | .035 | .038 | .050 | .050 | .050 | .000 | .000 | .000 | .000 |
| X1 | 255.250 | 17.000 | 520.000 | 983.000 | .000 | .000 | .000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | 280.000 | 1300.000 | 500.000 | 500.000 | 1298.000 | 655.000 | 1296.000 |
| 6R | 1294.000 | 920.000 | 1290.000 | 940.000 | 1287.900 | 955.000 | 955.000 | 1288.000 | 970.000 | 1290.000 |

USGS
 SECTION
 @ 13.50

| | | | | | | | | | | |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| GR | 1292.000 | 1025.000 | 1276.000 | 1040.000 | 1298.000 | 1875.000 | 1299.000 | 1900.000 | 1300.000 | 2420.000 |
| GR | 1305.000 | 2550.000 | 1310.000 | 2650.000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 276.250 | 13.000 | 580.000 | 780.000 | 1800.000 | 1800.000 | 1800.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | .000 | 1305.000 | 150.000 | 1305.000 | 580.000 | 1290.000 | 660.000 |
| GR | 1289.000 | 680.000 | 1290.000 | 710.000 | 1295.000 | 780.000 | 1300.000 | 1600.000 | 1300.000 | 2030.000 |
| GR | 1300.000 | 2290.000 | 1310.000 | 2500.000 | 1320.000 | 2500.000 | .000 | .000 | .000 | .000 |
| X1 | 283.500 | 15.000 | 1250.000 | 1415.000 | 725.000 | 725.000 | .000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1315.000 | 180.000 | 1310.000 | 370.000 | 1307.000 | 570.000 | 1320.000 | 870.000 |
| GR | 1300.000 | 1130.000 | 1298.000 | 1250.000 | 1290.000 | 1290.000 | 1289.500 | 1320.000 | 1290.000 | 1350.000 |
| GR | 1296.000 | 1415.000 | 1298.000 | 1520.000 | 1299.000 | 3400.000 | 1300.000 | 4100.000 | 1310.000 | 4100.000 |
| X1 | 284.900 | 21.000 | 1250.000 | 1455.000 | 140.000 | 140.000 | .000 | .000 | .000 | .000 |
| X3 | 10.000 | .000 | .000 | .000 | .000 | .000 | .000 | 1304.000 | 1304.000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | 370.000 | 1304.000 | 760.000 | 1302.000 | 870.000 | 1300.000 | 1130.000 |
| GR | 1298.000 | 1250.000 | 1298.000 | 1250.100 | 1298.000 | 1265.000 | 1292.000 | 1320.000 | 1290.000 | 1330.000 |
| GR | 1289.500 | 1345.000 | 1290.000 | 1365.000 | 1292.000 | 1375.000 | 1294.000 | 1435.000 | 1297.000 | 1455.000 |
| GR | 1297.000 | 1455.100 | 1298.000 | 1520.000 | 1298.500 | 1920.000 | 1299.000 | 3400.000 | 1299.000 | 3800.000 |
| GR | 1307.000 | 4750.000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

TYLER ROAD C USGS Station 14.04 ?

| | | | | | | | | | | |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| NC | .045 | .045 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 285.000 | .000 | .000 | .000 | 10.000 | 10.000 | .000 | .000 | .000 | .000 |
| BT | 21.000 | .000 | 1320.000 | 1320.000 | 370.000 | 1310.000 | 1310.000 | 760.000 | 1304.000 | 1304.000 |
| BT | 870.000 | 1304.000 | 1302.000 | 1130.000 | 1304.000 | 1300.000 | 1250.000 | 1304.000 | 1298.000 | 1250.100 |
| BT | 1304.000 | 1302.000 | 1265.000 | 1304.000 | 1302.000 | 1320.000 | 1304.000 | 1302.000 | 1330.000 | 1304.000 |
| BT | 1302.000 | 1345.000 | 1304.000 | 1302.000 | 1365.000 | 1304.000 | 1302.000 | 1375.000 | 1304.000 | 1302.000 |
| BT | 1435.000 | 1304.000 | 1302.000 | 1455.000 | 1304.000 | 1302.000 | 1455.100 | 1304.000 | 1297.000 | 1520.000 |
| BT | 1304.000 | 1298.000 | 1920.000 | 1302.000 | 1298.500 | 3400.000 | 1301.000 | 1299.000 | 3800.000 | 1299.000 |

| | | | | | | | | | | |
|----|----------|----------|----------|----------|--------|--------|--------|----------|----------|------|
| BT | 1299.000 | 4750.000 | 1307.000 | 1307.000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 285.300 | .000 | .000 | .000 | 30.000 | 30.000 | 30.000 | .000 | .000 | .000 |
| X2 | .000 | .000 | .000 | .000 | .000 | .000 | 1.000 | .000 | .000 | .000 |
| X1 | 285.400 | .000 | .000 | .000 | 10.000 | 10.000 | 10.000 | .000 | .000 | .000 |
| X3 | 10.000 | .000 | .000 | .000 | .000 | .000 | .000 | 1304.000 | 1304.000 | .000 |

| | | | | | | | | | | |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| NC | .045 | .045 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 287.300 | 14.000 | 1405.000 | 1610.000 | 250.000 | 150.000 | 200.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | 450.000 | 1302.000 | 650.000 | 1300.000 | 1155.000 | 1298.000 | 1380.000 |
| GR | 1294.000 | 1405.000 | 1292.000 | 1460.000 | 1290.200 | 1495.000 | 1292.000 | 1517.000 | 1298.000 | 1540.000 |
| GR | 1298.000 | 1610.000 | 1299.500 | 2240.000 | 1300.000 | 3820.000 | 1310.000 | 4050.000 | .000 | .000 |

GEO SECTION A C RM G.4

| | | | | | | | | | | |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| X1 | 301.300 | 15.000 | 1030.000 | 1170.000 | 700.000 | 1100.000 | 1800.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1320.000 | 280.000 | 1305.000 | 400.000 | 1300.000 | 910.000 | 1298.000 | 1030.000 |
| GR | 1294.000 | 1060.000 | 1290.800 | 1100.000 | 1294.000 | 1130.000 | 1298.000 | 1170.000 | 1300.000 | 1290.000 |
| GR | 1300.000 | 1750.000 | 1297.000 | 1920.000 | 1300.000 | 2010.000 | 1310.000 | 2760.000 | 1314.000 | 2980.000 |

GEO SECTION B C RM G.10

| | | | | | | | | | | |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| X1 | 1314.300 | 19.000 | 1785.000 | 1912.000 | 950.000 | 1450.000 | 1580.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1320.000 | .000 | 1310.000 | 220.000 | 1304.000 | 390.000 | 1302.000 | 490.000 |
| GR | 1300.000 | 1785.000 | 1298.000 | 1795.000 | 1296.000 | 1820.000 | 1294.000 | 1822.000 | 1292.000 | 1825.000 |
| GR | 1291.500 | 1830.000 | 1291.500 | 1840.000 | 1292.000 | 1850.000 | 1294.000 | 1863.000 | 1296.000 | 1880.000 |
| GR | 1304.000 | 1912.000 | 1310.000 | 2120.000 | 1320.000 | 2535.000 | 1330.000 | 2535.000 | .000 | .000 |

| | | | | | | | | | | |
|----|----------|--------|----------|----------|----------|----------|----------|----------|----------|----------|
| X1 | 335.000 | 17.000 | 1450.000 | 1675.000 | 1450.000 | 2050.000 | 2200.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | 450.000 | 1305.000 | 1170.000 | 1304.000 | 1300.000 | 1302.000 | 1450.000 |

USGS
SECTIONS
@ 13.69

USGS
SECTIONS
@ 14.06

| | | | | | | | | | | |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| GR | 1300.000 | 1530.000 | 1298.000 | 1550.000 | 1296.000 | 1630.000 | 1292.000 | 1640.000 | 1291.800 | 1650.000 |
| GR | 1290.000 | 1655.000 | 1302.000 | 1675.000 | 1302.000 | 95.000 | 1310.000 | 2150.000 | 1311.000 | 2770.000 |
| GR | 1311.000 | 3300.000 | 1325.000 | 3800.000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 336.300 | 15.000 | 1580.000 | 1675.000 | 130.000 | 130.000 | 130.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | 450.000 | 1305.000 | 1170.000 | 1304.000 | 1300.000 | 1302.000 | 1450.000 |
| GR | 1302.000 | 1580.000 | 1292.000 | 1595.000 | 1292.000 | 1620.000 | 1294.000 | 1655.000 | 1302.000 | 1675.000 |
| GR | 1302.000 | 1795.000 | 1310.000 | 2150.000 | 1311.000 | 2770.000 | 1315.000 | 3300.000 | 1325.000 | 3800.000 |
| X1 | 336.400 | .000 | .000 | 10.000 | 10.000 | 10.000 | 10.000 | .000 | .000 | .000 |
| BT | 15.000 | .000 | 1320.000 | 1320.000 | 450.000 | 1310.000 | 1310.000 | 1170.000 | 1305.000 | 1305.000 |
| BT | 1300.000 | 1304.000 | 1304.000 | 1450.000 | 1320.000 | 1320.000 | 1304.000 | 1304.000 | 1302.000 | 1595.000 |
| BT | 1304.200 | 1302.000 | 1620.000 | 1304.800 | 1302.000 | 1655.000 | 1305.000 | 1302.000 | 1675.000 | 1304.000 |
| BT | 1302.000 | 1795.000 | 1304.000 | 1302.000 | 2150.000 | 1310.000 | 1310.000 | 2770.000 | 1311.000 | 1311.000 |
| BT | 3300.000 | 1315.000 | 1315.000 | 3800.000 | 1325.000 | 1325.000 | .000 | .000 | .000 | .000 |
| X1 | 336.650 | .000 | .000 | 25.000 | 25.000 | 25.000 | 25.000 | .000 | .000 | .000 |
| X2 | .000 | .000 | 1302.000 | 1304.000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 336.750 | .000 | .000 | 10.000 | 10.000 | 10.000 | 10.000 | .000 | .000 | .000 |
| X1 | 337.700 | 15.000 | 1395.000 | 1480.000 | 95.000 | 95.000 | 95.000 | .000 | .000 | .000 |
| GR | 1320.000 | 1230.000 | 1310.000 | 25.000 | 1305.000 | 800.000 | 1302.000 | 1395.000 | 1292.000 | 1440.000 |
| GR | 1291.900 | 1450.000 | 1292.000 | 1460.000 | 1298.000 | 1480.000 | 1300.000 | 1545.000 | 1302.000 | 1575.000 |
| GR | 1304.000 | 1770.000 | 1308.000 | 2520.000 | 1310.000 | 2540.000 | 1314.000 | 2760.000 | 1320.000 | 3400.000 |
| X1 | 357.700 | 21.000 | 1295.000 | 1530.000 | 1875.000 | 2225.000 | 3015.000 | .000 | .000 | .000 |
| GR | 1324.000 | .000 | 1314.000 | .000 | 1306.000 | 335.000 | 1304.000 | 1050.000 | 1304.000 | 1205.000 |
| GR | 1302.000 | 1230.000 | 1296.000 | 1245.000 | 1293.700 | 1255.000 | 1302.000 | 1290.000 | 1302.000 | 1304.000 |
| GR | 1302.000 | 1370.000 | 1302.000 | 1470.000 | 1304.000 | 1530.000 | 1304.000 | 1820.000 | 1306.000 | 1960.000 |
| GR | 1308.000 | 2120.000 | 1308.000 | 2235.000 | 1310.000 | 2300.000 | 1312.000 | 2405.000 | 1314.000 | 2570.000 |
| GR | 1324.000 | 2570.000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 368.700 | 21.000 | 3165.000 | 3405.000 | 1480.000 | 1070.000 | 1410.000 | .000 | .000 | .000 |
| GR | 1326.000 | .000 | 1320.000 | 790.000 | 1316.000 | 1575.000 | 1312.000 | 1795.000 | 1310.000 | 2040.000 |
| GR | 1303.000 | 2180.000 | 1306.000 | 2250.000 | 1306.000 | 3120.000 | 1304.000 | 3165.000 | 1300.000 | 3250.000 |
| GR | 1296.000 | 3290.000 | 1295.200 | 3300.000 | 1296.000 | 3305.000 | 1300.000 | 3310.000 | 1310.000 | 3375.000 |
| GR | 1314.000 | 3405.000 | 1311.000 | 3750.000 | 1314.000 | 4130.000 | 1316.000 | 4280.000 | 1320.000 | 4900.000 |
| GR | 1325.000 | 6200.000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 379.700 | 13.000 | 2440.000 | 2750.000 | 975.000 | 925.000 | 1320.000 | .000 | .000 | .000 |
| GR | 1330.000 | .000 | 1320.000 | .000 | 1315.000 | 310.000 | 1310.000 | 510.000 | 1305.000 | 2440.000 |
| GR | 1300.000 | 2550.000 | 1296.000 | 2610.000 | 1300.000 | 2650.000 | 1305.000 | 2700.000 | 1310.000 | 2750.000 |
| GR | 1315.000 | 2800.000 | 1320.000 | 3200.000 | 1330.000 | 3300.000 | .000 | .000 | .000 | .000 |
| X1 | 397.700 | 14.000 | 1945.000 | 2100.000 | 2040.000 | 1780.000 | 3150.000 | .000 | .000 | .000 |
| GR | 1331.000 | .000 | 1319.200 | .000 | 1307.700 | 800.000 | 1306.300 | 1702.000 | 1310.400 | 1945.000 |
| GR | 1300.000 | 1950.000 | 1298.000 | 1980.000 | 1300.000 | 1950.000 | 1304.000 | 2015.000 | 1310.000 | 2020.000 |
| GR | 1309.700 | 2100.000 | 1312.000 | 2420.000 | 1319.500 | 2780.000 | 1324.600 | 3380.000 | .000 | .000 |
| NC | .040 | .040 | .035 | .400 | .700 | .000 | .000 | .000 | .000 | .000 |
| X1 | 398.600 | 15.000 | 1810.000 | 2025.000 | 60.000 | 90.000 | 75.000 | .000 | .000 | .000 |
| GR | 1331.000 | .000 | 1321.000 | .000 | 1320.000 | 200.000 | 1315.000 | 550.000 | 1310.000 | 650.000 |
| GR | 1306.000 | 1820.000 | 1306.000 | 1820.100 | 1302.000 | 1850.000 | 1298.000 | 1915.000 | 1304.000 | 2005.000 |
| GR | 1313.000 | 2025.000 | 1313.000 | 2025.100 | 1318.000 | 2120.000 | 1319.500 | 2700.000 | 1324.600 | 3300.000 |

336 + 50 = PAWNEE AVE

SECTION C @ 7.14

USGS SECTION @ 15.05

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELREA= 1304.00 ELREA= 1304.00
 284.90 10.20 1299.70 ✓ .00 .00 1302.51 2.81 .08 .14 1298.00
 17400. 0. 17400. 0. 1294. 464. 121. 1297.00
 .31 .00 13.45 .00 .035 .000 1289.50 1250.00 ✓
 .010203 140. 140. 5 0 0 205.00 ✓ 1455.00 ✓
 *SECOND 285.000

TYLER ROAD

3301 HV CHANGED MORE THAN HVINS
 1 09-24-86 10:04:44 PAGE 7

| SECDNO | DEPTH | CWSEL | CRIMS | WSELK | EG | HL | HV | HL | OLOSS | BANK | ELEV |
|--------|-------|-------|-------|--------|------|-------|-------|-------|--------|------------|------|
| G | QLOB | GCH | OROB | ALOB | ACH | VOL | AROB | VOL | TWA | LEFT/RIGHT | |
| TIME | VLOB | VCH | VRQB | XNL | XNCH | WTN | XNR | WTN | ELMIN | SSTA | |
| SLOPE | XLOBL | XLCH | XLOBR | ITRIAL | IDC | CORAR | ICONT | CORAR | TOPWID | ENDST | |

3370 NORMAL BRIDGE, NRD= 21 MIN ELTRD= 1299.00 MAX ELLO= 1320.00
 3685 20 TRIALS ATTEMPTED WSEL, CWSEL
 3710 WSEL ASSUMED BASED ON MIN DIFF
 285.00 12.48 1301.98 ✓ 1300.50 .00 1302.65 .67 .05 .11 1298.00
 17400. 0. 13108. 4292. 0. 1759. 2029. 465. 122. 1297.00
 .31 .00 7.45 2.12 .045 .045 1289.50 872.68 ✓
 .002991 10. 10. 19 0 -6864.78 3281.12 ✓ 4153.80 ✓
 *SECOND 285.300

3370 NORMAL BRIDGE, NRD= 21 MIN ELTRD= 1299.00 MAX ELLO= 1320.00
 285.30 13.01 1302.51 ✓ .00 .00 1302.76 .26 .10 .02 1298.00
 17400. 0. 8927. 8473. 0. 1764. 3235. 468. 124. 1297.00
 .31 .00 5.06 2.62 .045 .045 1289.50 842.45 ✓
 .003412 30. 30. 3 0 0 -7390.33 3373.29 ✓ 4215.74 ✓
 *SECOND 285.400

3301 HV CHANGED MORE THAN HVINS
 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELREA= 1304.00 ELREA= 1304.00
 285.40 11.42 1300.92 ✓ .00 .00 1302.90 1.97 .05 .09 1298.00
 17400. 0. 17400. 0. 1543. 0. 469. 124. 1297.00
 .31 .00 11.28 .00 .045 .045 1289.50 1250.00 ✓
 .007953 10. 10. 4 0 0 205.00 ✓ 1455.00 ✓
 *SECOND 287.300

3301 HV CHANGED MORE THAN HVINS
 287.30 12.90 1303.10 ✓ .00 .00 1303.14 .04 .15 .10 1294.00
 17400. 2625. 4138. 10638. 2178. 1783. 8157. 496. 131. 1298.00
 .35 1.20 2.32 1.30 .045 .045 1290.20 622.42 ✓
 .000277 250. 200. 3 0 0 3272.07 ✓ 3894.48 ✓

| SECNO | DEPTH | CWSEL | CRISW | WSELK | EG | HV | HC | OLOSS | BANK | ELEV |
|------------------------------------------------------------------|--------|---------|-------|---------|-------|-------|---------|---------|---------|-------|
| Q | QLOB | QCH | QROB | ALOB | ACH | AROB | VOL | TWA | LEFT | RIGHT |
| TIME | VLOB | VCH | VROB | XNL | XNCH | XNR | WTN | ELMIN | SSTA | |
| SLOPE | XLOBL | XLCH | XLOBR | ITRIAL | IDC | ICONT | CORAR | TOPWID | ENDST | |
| *SECNO 301.300 | | | | | | | | | | |
| 301.30 | 12.76 | 1303.56 | .00 | 1303.70 | .15 | .56 | .01 | 1298.00 | | |
| 17400. | 2351. | 5562. | 9487. | 1192. | 1310. | 3973. | 741. | 192. | 1298.00 | |
| .47 | 1.97 | 4.25 | 2.39 | .045 | .045 | .045 | .000 | 1290.80 | 547.15 | |
| .000844 | 700. | 1800. | 1100. | 3 | 0 | 0 | .00 | 1729.66 | 2276.60 | |
| *SECNO 1314.300 | | | | | | | | | | |
| 1314.30 | 13.23 | 1304.73 | .00 | 1304.89 | .15 | 1.18 | .00 | 1300.00 | | |
| 17400. | 12554. | 4841. | 5. | 5012. | 1102. | 918. | 236. | 1304.00 | | |
| .58 | 2.51 | 4.39 | .54 | .045 | .045 | .045 | .000 | 1291.50 | 369.30 | |
| .001025 | 950. | 1580. | 1450. | 2 | 0 | .00 | 1568.02 | 1937.32 | | |
| *SECNO 335.000 | | | | | | | | | | |
| 335.00 | 15.09 | 1306.89 | .00 | 1307.24 | .35 | 2.34 | .01 | 1302.00 | | |
| 17400. | 2957. | 10947. | 3476. | 1149. | 1971. | 1116. | 286. | 1302.00 | | |
| .70 | 2.57 | 5.55 | 3.13 | .045 | .045 | .045 | .000 | 1291.80 | 898.40 | |
| .001597 | 1450. | 2200. | 2050. | 2 | 0 | .00 | 1113.42 | 2011.82 | | |
| *SECNO 336.300 | | | | | | | | | | |
| 336.30 | 15.03 | 1307.03 | .00 | 1307.44 | .41 | .20 | .00 | 1302.00 | | |
| 17400. | 5640. | 8126. | 3634. | 1885. | 1198. | 1166. | 1138. | 289. | 1302.00 | |
| .70 | 2.99 | 6.78 | 3.12 | .045 | .045 | .045 | .000 | 1292.00 | 877.41 | |
| .001531 | 130. | 130. | 130. | 2 | 0 | .00 | 1140.85 | 2018.29 | | |
| *SECNO 336.400 | | | | | | | | | | |
| 3370 NORMAL BRIDGE, NRD= 15 MIN ELTRD= 1304.00 MAX ELLC= 1325.00 | | | | | | | | | | |
| 336.40 | 15.06 | 1307.06 | .00 | 1307.47 | .41 | .03 | .00 | 1302.00 | | |
| 17400. | 8980. | 5474. | 2946. | 1847. | 955. | 643. | 1138. | 290. | 1302.00 | |
| .70 | 4.66 | 5.73 | 4.58 | .045 | .045 | .045 | .000 | 1292.00 | 874.07 | |
| .006145 | 10. | 10. | 10. | 1 | 0 | 0 | -830.72 | 1145.25 | 2019.32 | |
| *SECNO 336.650 | | | | | | | | | | |
| 3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 1304.00 MAX ELLC= 1302.00 | | | | | | | | | | |
| 336.65 | 15.23 | 1307.23 | .00 | 1307.61 | .38 | .14 | .00 | 1302.00 | | |
| 17400. | 7410. | 5789. | 4201. | 1618. | 1027. | 906. | 1140. | 290. | 1302.00 | |
| .70 | 4.58 | 5.64 | 4.64 | .045 | .045 | .045 | .000 | 1292.00 | 848.72 | |
| .005389 | 25. | 25. | 25. | 2 | 0 | 0 | -928.75 | 1176.40 | 2027.13 | |
| 09-24-86 10:04:44 | | | | | | | | | | |
| *SECNO 336.650 | | | | | | | | | | |
| 3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 1304.00 MAX ELLC= 1302.00 | | | | | | | | | | |
| 336.65 | 15.23 | 1307.23 | .00 | 1307.61 | .38 | .14 | .00 | 1302.00 | | |
| 17400. | 7410. | 5789. | 4201. | 1618. | 1027. | 906. | 1140. | 290. | 1302.00 | |
| .70 | 4.58 | 5.64 | 4.64 | .045 | .045 | .045 | .000 | 1292.00 | 848.72 | |
| .005389 | 25. | 25. | 25. | 2 | 0 | 0 | -928.75 | 1176.40 | 2027.13 | |
| 09-24-86 10:04:44 | | | | | | | | | | |
| *SECNO 336.650 | | | | | | | | | | |
| 3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 1304.00 MAX ELLC= 1302.00 | | | | | | | | | | |
| 336.65 | 15.23 | 1307.23 | .00 | 1307.61 | .38 | .14 | .00 | 1302.00 | | |
| 17400. | 7410. | 5789. | 4201. | 1618. | 1027. | 906. | 1140. | 290. | 1302.00 | |
| .70 | 4.58 | 5.64 | 4.64 | .045 | .045 | .045 | .000 | 1292.00 | 848.72 | |
| .005389 | 25. | 25. | 25. | 2 | 0 | 0 | -928.75 | 1176.40 | 2027.13 | |
| 09-24-86 10:04:44 | | | | | | | | | | |
| *SECNO 336.650 | | | | | | | | | | |
| 3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 1304.00 MAX ELLC= 1302.00 | | | | | | | | | | |
| 336.65 | 15.23 | 1307.23 | .00 | 1307.61 | .38 | .14 | .00 | 1302.00 | | |
| 17400. | 7410. | 5789. | 4201. | 1618. | 1027. | 906. | 1140. | 290. | 1302.00 | |
| .70 | 4.58 | 5.64 | 4.64 | .045 | .045 | .045 | .000 | 1292.00 | 848.72 | |
| .005389 | 25. | 25. | 25. | 2 | 0 | 0 | -928.75 | 1176.40 | 2027.13 | |
| 09-24-86 10:04:44 | | | | | | | | | | |
| *SECNO 336.650 | | | | | | | | | | |
| 3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 1304.00 MAX ELLC= 1302.00 | | | | | | | | | | |
| 336.65 | 15.23 | 1307.23 | .00 | 1307.61 | .38 | .14 | .00 | 1302.00 | | |
| 17400. | 7410. | 5789. | 4201. | 1618. | 1027. | 906. | 1140. | 290. | 1302.00 | |
| .70 | 4.58 | 5.64 | 4.64 | .045 | .045 | .045 | .000 | 1292.00 | 848.72 | |
| .005389 | 25. | 25. | 25. | 2 | 0 | 0 | -928.75 | 1176.40 | 2027.13 | |
| 09-24-86 10:04:44 | | | | | | | | | | |
| *SECNO 336.650 | | | | | | | | | | |
| 3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 1304.00 MAX ELLC= 1302.00 | | | | | | | | | | |
| 336.65 | 15.23 | 1307.23 | .00 | 1307.61 | .38 | .14 | .00 | 1302.00 | | |
| 17400. | 7410. | 5789. | 4201. | 1618. | 1027. | 906. | 1140. | 290. | 1302.00 | |
| .70 | 4.58 | 5.64 | 4.64 | .045 | .045 | .045 | .000 | 1292.00 | 848.72 | |
| .005389 | 25. | 25. | 25. | 2 | 0 | 0 | -928.75 | 1176.40 | 2027.13 | |
| 09-24-86 10:04:44 | | | | | | | | | | |
| *SECNO 336.650 | | | | | | | | | | |
| 3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 1304.00 MAX ELLC= 1302.00 | | | | | | | | | | |
| 336.65 | 15.23 | 1307.23 | .00 | 1307.61 | .38 | .14 | .00 | 1302.00 | | |
| 17400. | 7410. | 5789. | 4201. | 1618. | 1027. | 906. | 1140. | 290. | 1302.00 | |
| .70 | 4.58 | 5.64 | 4.64 | .045 | .045 | .045 | .000 | 1292.00 | 848.72 | |
| .005389 | 25. | 25. | 25. | 2 | 0 | 0 | -928.75 | 1176.40 | 2027.13 | |
| 09-24-86 10:04:44 | | | | | | | | | | |
| *SECNO 336.650 | | | | | | | | | | |
| 3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 1304.00 MAX ELLC= 1302.00 | | | | | | | | | | |
| 336.65 | 15.23 | 1307.23 | .00 | 1307.61 | .38 | .14 | .00 | 1302.00 | | |
| 17400. | 7410. | 5789. | 4201. | 1618. | 1027. | 906. | 1140. | 290. | 1302.00 | |
| .70 | 4.58 | 5.64 | 4.64 | .045 | .045 | .045 | .000 | 1292.00 | 848.72 | |
| .005389 | 25. | 25. | 25. | 2 | 0 | 0 | -928.75 | 1176.40 | 2027.13 | |
| 09-24-86 10:04:44 | | | | | | | | | | |

| SLOPE | XLOBL | XLCH | XLOBR | ITRIAL | IDC | ICONT | CORAR | TOPWID | ENDST |
|----------------|--------|----------|-------|--------|---------|-------|-------|---------|---------|
| *SECNO 336.750 | 15.29 | 1307.297 | .00 | .00 | 1307.64 | .35 | .02 | .00 | 1302.00 |
| 336.75 | 5886. | 7787. | 3727. | 2070. | 1222. | 1255. | 1141. | 291. | 1302.00 |
| 17400. | .71 | 2.84 | 6.37 | 2.97 | .045 | .045 | .000 | 1292.00 | 840.45 |
| .0001315 | 10. | 10. | 10. | 0 | 0 | 0 | .00 | 1185.24 | 2029.68 |
| *SECNO 337.700 | 15.70 | 1307.60 | .00 | .00 | 1307.74 | .14 | .09 | .01 | 1302.00 |
| 337.70 | 6087. | 4837. | 6483. | 2967. | 1042. | 2873. | 1154. | 294. | 1298.00 |
| 17400. | .71 | 2.05 | 4.63 | .045 | .045 | .045 | .000 | 1291.90 | 396.38 |
| .000717 | 95. | 95. | 95. | 0 | 0 | 0 | .00 | 2049.37 | 2445.75 |
| *SECNO 357.700 | 15.25 | 1308.95 | .00 | .00 | 1309.01 | .07 | 1.27 | .00 | 1304.00 |
| 357.70 | 6450. | 6288. | 4661. | 3772. | 2438. | 2698. | 1561. | 395. | 1304.00 |
| 17400. | 1.04 | 1.71 | 2.58 | .045 | .045 | .045 | .000 | 1293.70 | 211.55 |
| .000421 | 1875. | 3015. | 2225. | 3 | 0 | 0 | .00 | 2054.26 | 2265.81 |
| *SECNO 368.700 | 14.50 | 1309.70 | .00 | .00 | 1309.86 | .16 | .84 | .00 | 1304.00 |
| 368.70 | 10497. | 6903. | 0. | 4242. | 1696. | 0. | 1798. | 448. | 1314.00 |
| 17400. | 1.16 | 2.47 | 4.07 | .045 | .045 | .045 | .000 | 1295.20 | 2046.03 |
| .000937 | 1480. | 1410. | 1070. | 0 | 0 | 0 | .00 | 1327.01 | 3373.04 |
| *SECNO 379.700 | 14.53 | 1310.53 | .00 | .00 | 1310.62 | .09 | .75 | .00 | 1305.00 |
| 379.70 | 9034. | 8366. | 0. | 5849. | 2689. | 1. | 1977. | 491. | 1310.00 |
| 17400. | 1.30 | 1.54 | 3.11 | .045 | .045 | .045 | .000 | 1296.00 | 488.90 |
| .000500 | 975. | 1320. | 925. | 2 | 0 | 0 | .00 | 2266.37 | 2755.27 |
| *SECNO 397.700 | 13.95 | 1311.95 | .00 | .00 | 1312.04 | .09 | 1.42 | .00 | 1310.40 |
| 397.70 | 14164. | 2901. | 335. | 5963. | 993. | 351. | 2394. | 593. | 1309.70 |
| 17400. | 1.57 | 2.38 | 2.92 | .045 | .045 | .045 | .000 | 1298.00 | 504.57 |
| .000715 | 2040. | 3150. | 1780. | 2 | 0 | 0 | .00 | 1908.03 | 2412.60 |

| SECNO | DEPTH | DWSEL | CRIMS | WSELK | EG | HV | HL | CLOSS | BANK | ELEV |
|----------------|-------|---------|-------|--------|---------|-------|-------|---------|---------|-------|
| TIME | GLOB | GCH | GRAB | ALOB | ACH | AROB | VOL | TWA | LEFT | RIGHT |
| SLOPE | VLOB | VCH | VROB | XNL | XNCH | XNR | WTN | ELM | JN | SSTA |
| | XLOBL | XLCH | XLOBR | ITRIAL | IDC | ICONT | CORAR | TOPWID | ENDST | |
| CDHV= | .400 | CEHV= | .700 | | | | | | | |
| *SECNO 398.600 | 13.98 | 1311.98 | .00 | .00 | 1312.09 | .10 | .04 | .01 | 1381.00 | |
| 398.60 | 0. | 17400. | 0. | 0. | 6792. | 0. | 2405. | 596. | 1313.00 | |
| 17400. | 1.58 | .00 | 2.56 | .040 | .035 | .040 | .000 | 1298.00 | 610.13 | |
| .000450 | 60. | 75. | 90. | 0 | 0 | 0 | .00 | 1412.63 | 2022.76 | |
| *SECNO 398.700 | | | | | | | | | | |

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE, NRD= 15 MIN ELTRD= 1316.00 MAX ELLC= 1331.00

| | | | | | | | | | |
|---------|-------|---------|---------|------|---------|------|----------|---------|---------|
| 398.70 | 13.68 | 1311.68 | 1307.61 | .00 | 1312.83 | 1.16 | .01 | .74 | 1331.00 |
| 17400. | 0. | 17400. | 0. | 0. | 2015. | 0. | 2406. | 596. | 1313.00 |
| 1.58 | .00 | 8.23 | .00 | .040 | .035 | .040 | .000 | 1298.00 | 616.47 |
| .002028 | 10. | 10. | 10. | 4 | 18 | 0 | -4329.71 | 1405.59 | 2022.06 |

*SECND 398.900

3370 NORMAL BRIDGE, NRD= 15 MIN ELTRD= 1316.00 MAX ELLC= 1331.00

| | | | | | | | | | |
|---------|-------|---------|---------|------|---------|------|----------|---------|---------|
| 398.90 | 13.73 | 1311.73 | 1307.61 | .00 | 1312.88 | 1.14 | .04 | .01 | 1331.00 |
| 17400. | 0. | 17400. | 0. | 0. | 2027. | 0. | 2407. | 597. | 1313.00 |
| 1.58 | .00 | 8.58 | .00 | .040 | .035 | .040 | .000 | 1298.00 | 615.31 |
| .001991 | 20. | 20. | 20. | 4 | 18 | 0 | -4399.53 | 1406.88 | 2022.19 |

*SECND 399.000

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1316.00 ELREA= 1316.00

| | | | | | | | | | |
|---------|-------|---------|-----|------|---------|------|-------|---------|---------|
| 399.00 | 15.25 | 1313.25 | .00 | .00 | 1313.32 | .06 | .00 | .43 | 1331.00 |
| 17400. | 0. | 17400. | 0. | 0. | 8587. | 0. | 2408. | 597. | 1313.00 |
| 1.58 | .00 | 2.03 | .00 | .040 | .035 | .040 | .000 | 1298.00 | 584.96 |
| .000211 | 10. | 10. | 10. | 3 | 0 | 0 | .00 | 1440.04 | 2025.00 |

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| SECNO | DEPTH | CWSEL | CRWS | WSELK | EG | HV | HL | GLOSS | BANK | ELEV |
|-------|-------|-------|-------|--------|------|-------|-------|--------|-------|-------|
| Q | QLOB | QCH | GROB | ALOB | ACH | AROB | VOL | TWA | LEFT | RIGHT |
| TIME | VLOB | VCH | VROB | XNL | XNCH | XNR | WTN | ELMIN | SSTA | |
| SLOPE | XLOBL | XLCH | XLOBR | ITRIAL | IDC | ICONT | CORAR | TOPWID | ENDST | |

*SECNO 399.200

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1320.00 ELREA= 1320.00

| | | | | | | | | | |
|---------|-------|---------|-----|------|---------|------|-------|---------|---------|
| 399.20 | 13.97 | 1312.97 | .00 | .00 | 1314.01 | 1.05 | .01 | .69 | 1304.00 |
| 17400. | 0. | 17400. | 0. | 0. | 2117. | 0. | 2411. | 598. | 1306.00 |
| 1.58 | .00 | 5.22 | .00 | .040 | .035 | .040 | .000 | 1299.00 | 1250.00 |
| .001618 | 20. | 20. | 20. | 2 | 0 | 0 | .00 | 200.00 | 1450.00 |

*SECNO 399.600

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1320.00 ELREA= 1320.00

| | | | | | | | | | |
|---------|-------|---------|-----|------|---------|------|-------|---------|---------|
| 399.60 | 14.04 | 1313.04 | .00 | .00 | 1314.08 | 1.03 | .06 | .01 | 1304.00 |
| 17400. | 0. | 17400. | 0. | 0. | 2132. | 0. | 2412. | 598. | 1306.00 |
| 1.58 | .00 | 6.16 | .00 | .040 | .035 | .040 | .000 | 1299.00 | 1250.00 |
| .001580 | 35. | 35. | 35. | 2 | 0 | 0 | .00 | 200.00 | 1450.00 |

*SECNO 399.700

3370 NORMAL BRIDGE, NRD= 15 MIN ELTRD= 1320.00 MAX ELRC= 1323.60

| | | | | | | | | | |
|---------|-------|---------|---------|------|---------|------|----------|---------|---------|
| 399.70 | 14.24 | 1313.24 | 1308.76 | .00 | 1314.14 | .90 | .02 | .05 | 1304.00 |
| 17400. | 0. | 16829. | 571. | 0. | 2172. | 400. | 2413. | 598. | 1306.00 |
| 1.58 | .00 | 7.75 | 1.43 | .040 | .035 | .040 | .000 | 1299.00 | 325.78 |
| .001476 | 10. | 10. | 10. | 4 | 16 | 0 | -5029.76 | 1392.30 | 1718.09 |

*SECNO 400.500

3370 NORMAL BRIDGE, NRD= 15 MIN ELTRD= 1320.00 MAX ELRC= 1323.60

| | | | | | | | | | |
|---------|-------|---------|---------|------|---------|------|----------|---------|---------|
| 400.50 | 14.40 | 1313.40 | 1308.76 | .00 | 1314.28 | .88 | .12 | .01 | 1304.00 |
| 17400. | 0. | 16842. | 558. | 0. | 2203. | 400. | 2418. | 601. | 1306.00 |
| 1.59 | .00 | 7.64 | 1.39 | .040 | .035 | .040 | .000 | 1299.00 | 310.29 |
| .001411 | 85. | 85. | 85. | 4 | 16 | 0 | -5215.91 | 1411.05 | 1721.34 |

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*SECNO 400.600

| | | | | | | | | | | |
|-------|-------|-------|-------|--------|------|-------|-------|--------|-------|------|
| SECNO | DEPTH | CWSEL | CRIMS | WSELK | EG | HV | HL | GLOSS | BANK | ELEV |
| 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TIME | VLOB | VCH | VROB | XNL | XNCH | XNR | WTN | ELMIN | SSTA | |
| SLOPE | XLOB | XLCR | XLOBR | ITRIAL | IDC | ICONT | CORAR | TOPWID | ENDST | |

*SECNO 402.650

| | | | | | | | | | |
|---------|-------|---------|---------|------|---------|------|-------|---------|---------|
| 402.65 | 14.89 | 1314.49 | 1308.76 | .00 | 1314.54 | .05 | .07 | .05 | 1304.00 |
| 17400. | 0. | 17400. | 0. | 0. | 2941. | 0. | 2419. | 601. | 1304.00 |
| 1.65 | 1.11 | 2.32 | 1.38 | .040 | .030 | .040 | .000 | 1299.60 | 1170.00 |
| .000080 | 360. | 385. | 340. | 2 | 0 | 0 | .00 | 260.00 | 1430.00 |

*SECNO 414.650

| | | | | | | | | | |
|---------|--------|---------|---------|-------|---------|-------|-------|---------|---------|
| 414.65 | 15.62 | 1314.62 | 1308.76 | .00 | 1314.68 | .06 | .13 | .00 | 1308.00 |
| 17400. | 10701. | 4632. | 2066. | 6727. | 1645. | 1574. | 2785. | 657. | 1308.00 |
| 1.83 | 1.59 | 2.82 | 1.31 | .040 | .030 | .040 | .000 | 1299.00 | 384.03 |
| .000150 | 1250. | 1300. | 1150. | 2 | 0 | 0 | .00 | 1845.49 | 2230.52 |

*SECNO 422.650

| | | | | | | | | | |
|---------|-------|---------|---------|-------|---------|------|-------|---------|---------|
| 422.65 | 15.05 | 1314.75 | 1308.76 | .00 | 1314.80 | .05 | .12 | .00 | 1310.00 |
| 17400. | 6871. | 10504. | 25. | 4923. | 5209. | 38. | 2942. | 689. | 1312.00 |
| 1.95 | 1.40 | 2.02 | .65 | .040 | .030 | .040 | .000 | 1299.70 | 248.30 |
| .000201 | 450. | 1000. | 1000. | 2 | 0 | 0 | .00 | 2304.63 | 2662.53 |

*SECNO 435.000

| | | | | | | | | | |
|---------|-------|---------|---------|-------|---------|------|-------|---------|---------|
| 435.00 | 15.05 | 1314.75 | 1308.76 | .00 | 1314.80 | .05 | .12 | .00 | 1310.00 |
| 17400. | 6871. | 10504. | 25. | 4923. | 5209. | 38. | 2942. | 689. | 1312.00 |
| 1.95 | 1.40 | 2.02 | .65 | .040 | .030 | .040 | .000 | 1299.70 | 248.30 |
| .000201 | 450. | 1000. | 1000. | 2 | 0 | 0 | .00 | 2304.63 | 2662.53 |

3301 HV CHANGED MORE THAN HVINS

435.00 14.03 1315.03 .00 .00 1315.60 .57 .64 .16 1310.00
 17400 6405. 10995. 0. 1871. 1532. 3133. 734. 1328.50
 2.01 3.42 7.18 .00. .045 .000 1301.00 109.84
 .003120 1100. 1350. 950. 2 0 0 974.73 1084.57

09-24-86 10:04:44

| SECONO | DEPTH | CWSEL | CRWS | WSELK | EG | HL | OLOSS | BANK ELEV |
|--------|-------|-------|-------|--------|------|-------|--------|------------|
| Q | DLOB | DCH | GROB | ALOB | ACH | VOL | TWA | LEFT/RIGHT |
| TIME | VLOB | VCH | VROB | XNL | XNCH | WTN | ELMIN | SSTA |
| SLOPE | XLOBL | XLCH | XLOBR | ITRIAL | IDC | CORAR | TOPWID | ENDST |

*SECONO 448.000

3301 HV CHANGED MORE THAN HVINS

| | | | | | | | | | |
|---------|-------|---------|-------|-------|---------|------|-------|---------|---------|
| 448.00 | 14.45 | 1316.05 | .00 | .00 | 1316.11 | .06 | .45 | .05 | 1310.00 |
| 17400. | 2342. | 14838. | 220. | 2781. | 7370. | 293. | 3344. | 772. | 1310.00 |
| 2.21 | .84 | 2.01 | .75 | .045 | .040 | .045 | .000 | 1301.60 | 161.06 |
| .000121 | 1200. | 1400. | 1250. | 3 | 0 | 0 | .00 | 1623.13 | 1784.19 |

MAPLE STREET

*SECONO 455.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

| | | | | | | | | | |
|---------|-------|---------|-------|------|---------|------|-------|---------|---------|
| 455.00 | 10.06 | 1316.06 | .00 | .00 | 1316.78 | .72 | .47 | .20 | 1319.00 |
| 17400. | 0. | 17400. | 0. | 0. | 2549. | 1. | 3538. | 806. | 1316.00 |
| 2.26 | .00 | 6.83 | .25 | .045 | .040 | .045 | .000 | 1306.00 | 487.98 |
| .005411 | 1300. | 1300. | 1300. | 3 | 0 | 0 | .00 | 670.94 | 1278.25 |

*SECONO 464.000

| | | | | | | | | | |
|---------|-------|---------|-------|------|---------|-------|-------|---------|---------|
| 464.00 | 12.87 | 1319.07 | .00 | .00 | 1319.73 | .65 | 2.94 | .01 | 1316.00 |
| 17400. | 81. | 12529. | 4790. | 31. | 1668. | 2092. | 3586. | 825. | 1316.00 |
| 2.29 | 2.57 | 7.51 | 2.29 | .045 | .040 | .045 | .000 | 1306.20 | 79.51 |
| .003466 | 800. | 700. | 600. | 3 | 0 | 0 | .00 | 2008.73 | 2088.25 |

09-24-86 10:04:44

THIS RUN EXECUTED 09-24-86

 HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
 ERROR CORR - 01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 ITEM-PC-XT VERSION AUGUST 1985

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

MID-KANSAS ENGINEER
SUMMARY PRINTOUT TABLE 150

| SECNO | XLCH | ELTRD | ELLC | ELMIN | G | CWSEL | CRIMS | EG | 10K*5 | VCH | AREA | .01K |
|-----------|----------|---------|---------|---------|----------|---------|---------|---------|--------|-------|----------|----------|
| 258.250 | .00 | .00 | .00 | 1287.90 | 17400.00 | 1301.20 | .00 | 1301.30 | 4.01 | 3.97 | 7338.46 | 8684.25 |
| 276.250 | 1800.00 | .00 | .00 | 1289.00 | 17400.00 | 1301.97 | .00 | 1302.09 | 4.78 | 3.70 | 6726.89 | 7961.09 |
| 283.500 | 725.00 | .00 | .00 | 1289.50 | 17400.00 | 1302.25 | .00 | 1302.29 | 1.79 | 2.45 | 11634.80 | 12995.72 |
| 284.900 | 140.00 | .00 | .00 | 1289.50 | 17400.00 | 1299.70 | .00 | 1302.51 | 102.03 | 13.45 | 1293.89 | 1722.62 |
| * 285.000 | 10.00 | 1299.00 | 1320.00 | 1289.50 | 17400.00 | 1301.98 | 1300.50 | 1302.65 | 29.91 | 7.45 | 3788.15 | 3181.63 |
| 285.300 | 30.00 | 1299.00 | 1320.00 | 1289.50 | 17400.00 | 1302.51 | .00 | 1302.76 | 34.12 | 5.06 | 4998.48 | 2978.77 |
| 285.400 | 10.00 | .00 | .00 | 1289.50 | 17400.00 | 1300.92 | .00 | 1302.90 | 79.53 | 11.28 | 1543.18 | 1951.17 |
| 287.300 | 200.00 | .00 | .00 | 1290.20 | 17400.00 | 1303.10 | .00 | 1303.14 | 2.77 | 2.32 | 12118.35 | 10445.51 |
| 301.300 | 1800.00 | .00 | .00 | 1290.80 | 17400.00 | 1303.56 | .00 | 1303.70 | 8.44 | 4.25 | 6475.07 | 5988.35 |
| 1314.300 | 1580.00 | .00 | .00 | 1291.50 | 17400.00 | 1304.73 | .00 | 1304.89 | 10.25 | 4.39 | 6122.33 | 5434.45 |
| 335.000 | 2200.00 | .00 | .00 | 1291.80 | 17400.00 | 1306.89 | .00 | 1307.24 | 15.97 | 5.55 | 4236.16 | 4353.98 |
| 336.300 | 130.00 | .00 | .00 | 1292.00 | 17400.00 | 1307.03 | .00 | 1307.44 | 15.31 | 6.78 | 4248.94 | 4446.70 |
| 336.400 | 10.00 | 1304.00 | 1325.00 | 1292.00 | 17400.00 | 1307.06 | .00 | 1307.47 | 61.45 | 5.73 | 3444.74 | 2219.63 |
| 336.650 | 25.00 | 1304.00 | 1302.00 | 1292.00 | 17400.00 | 1307.23 | .00 | 1307.61 | 53.89 | 5.64 | 3551.21 | 2370.23 |
| 336.750 | 10.00 | .00 | .00 | 1292.00 | 17400.00 | 1307.29 | .00 | 1307.64 | 13.15 | 6.37 | 4548.03 | 4798.93 |
| 337.700 | 95.00 | .00 | .00 | 1291.90 | 17400.00 | 1307.60 | .00 | 1307.74 | 7.17 | 4.63 | 6882.60 | 6497.82 |
| 357.700 | 3015.00 | .00 | .00 | 1293.70 | 17400.00 | 1308.95 | .00 | 1309.01 | 4.21 | 2.58 | 8904.51 | 8475.28 |
| 09-24-86 | 10:04:44 | | | | | | | | | | PAGE | 15 |
| 368.700 | 1410.00 | .00 | .00 | 1295.20 | 17400.00 | 1309.70 | .00 | 1309.86 | 9.37 | 4.07 | 5939.85 | 5683.93 |
| 379.700 | 1320.00 | .00 | .00 | 1296.00 | 17400.00 | 1310.53 | .00 | 1310.62 | 5.00 | 3.11 | 8539.48 | 7779.31 |
| 397.700 | 3150.00 | .00 | .00 | 1298.00 | 17400.00 | 1311.95 | .00 | 1312.04 | 7.15 | 2.92 | 7307.25 | 6507.85 |
| 398.600 | 75.00 | .00 | .00 | 1298.00 | 17400.00 | 1311.98 | .00 | 1312.09 | 4.50 | 2.56 | 6791.60 | 8205.23 |
| 398.700 | 10.00 | 1316.00 | 1331.00 | 1298.00 | 17400.00 | 1311.68 | 1307.61 | 1312.83 | 20.28 | 8.63 | 2015.18 | 3864.24 |
| 398.900 | 20.00 | 1316.00 | 1331.00 | 1298.00 | 17400.00 | 1311.73 | 1307.61 | 1312.88 | 19.91 | 8.58 | 2026.89 | 3899.29 |

TYLER ROAD

PAWSEE AVE

ATSF RR

| | | | | | | | | | | | | |
|---------|---------|---------|---------|---------|----------|---------|---------|---------|-------|------|----------|----------|
| 399.000 | 10.00 | .00 | .00 | 1298.00 | 17400.00 | 1313.25 | .00 | 1313.32 | 2.11 | 2.03 | 8586.99 | 11974.88 |
| 399.200 | 20.00 | .00 | .00 | 1299.00 | 17400.00 | 1312.97 | .00 | 1314.01 | 16.18 | 8.22 | 2117.04 | 4325.33 |
| 399.600 | 35.00 | .00 | .00 | 1299.00 | 17400.00 | 1313.04 | .00 | 1314.08 | 15.80 | 8.16 | 2132.49 | 4378.08 |
| 399.700 | 10.00 | 1320.00 | 1299.60 | 1299.00 | 17400.00 | 1313.24 | 1308.76 | 1314.14 | 14.76 | 7.75 | 2572.49 | 4529.24 |
| 400.500 | 85.00 | 1320.00 | 1323.60 | 1299.00 | 17400.00 | 1313.40 | 1308.76 | 1314.28 | 14.11 | 7.64 | 2603.47 | 4631.64 |
| 400.600 | 10.00 | .00 | .00 | 1299.60 | 17400.00 | 1313.89 | .00 | 1314.42 | 7.49 | 5.88 | 2961.37 | 6358.81 |
| 402.650 | 385.00 | .00 | .00 | 1299.60 | 17400.00 | 1314.49 | .00 | 1314.54 | .80 | 2.32 | 11514.17 | 19477.23 |
| 414.650 | 1300.00 | .00 | .00 | 1299.00 | 17400.00 | 1314.62 | .00 | 1314.68 | 1.50 | 2.82 | 9945.62 | 14212.06 |
| 422.650 | 1000.00 | .00 | .00 | 1299.70 | 17400.00 | 1314.75 | .00 | 1314.80 | 2.01 | 2.02 | 10170.06 | 12269.89 |
| 435.000 | 1350.00 | .00 | .00 | 1301.00 | 17400.00 | 1315.03 | .00 | 1315.60 | 31.20 | 7.18 | 3402.82 | 3114.92 |
| 448.000 | 1400.00 | .00 | .00 | 1301.60 | 17400.00 | 1316.05 | .00 | 1316.11 | 1.21 | 2.01 | 10443.37 | 15845.90 |
| 455.000 | 1300.00 | .00 | .00 | 1306.00 | 17400.00 | 1316.06 | .00 | 1316.78 | 54.11 | 6.83 | 2549.56 | 2365.35 |
| 464.000 | 700.00 | .00 | .00 | 1306.20 | 17400.00 | 1319.07 | .00 | 1319.73 | 34.66 | 7.51 | 3791.64 | 2955.42 |

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MID-KANSAS ENGINEE

SUMMARY PRINTOUT TABLE 150

| SECD | 0 | OWSEL | DIFWSP | DIFWSX | DIFKWS | TOPWID | XLCH |
|----------|----------|---------|--------|--------|--------|---------|---------|
| 256.250 | 17400.00 | 1301.20 | .00 | .00 | .00 | 1977.60 | .00 |
| 276.250 | 17400.00 | 1301.97 | .00 | .77 | .00 | 1735.10 | 1800.00 |
| 283.500 | 17400.00 | 1302.25 | .00 | .29 | .00 | 2999.27 | 725.00 |
| 284.900 | 17400.00 | 1299.70 | .00 | -2.55 | .00 | 205.00 | 140.00 |
| 285.000 | 17400.00 | 1301.98 | .00 | 2.28 | .00 | 3281.12 | 10.00 |
| 285.300 | 17400.00 | 1302.51 | .00 | .53 | .00 | 3373.29 | 30.00 |
| 285.400 | 17400.00 | 1300.92 | .00 | -1.58 | .00 | 205.00 | 10.00 |
| 287.300 | 17400.00 | 1303.10 | .00 | 2.18 | .00 | 3272.07 | 200.00 |
| 301.300 | 17400.00 | 1303.56 | .00 | .45 | .00 | 1729.66 | 1800.00 |
| 1314.300 | 17400.00 | 1304.73 | .00 | 1.18 | .00 | 1568.02 | 1580.00 |
| 335.000 | 17400.00 | 1306.89 | .00 | 2.15 | .00 | 1113.42 | 2200.00 |
| 336.300 | 17400.00 | 1307.03 | .00 | .15 | .00 | 1140.88 | 130.00 |

MAPLE STREET

US 54 HIGHWAY

| | | | | | | | |
|---------|----------|---------|-----|------|-----|---------|---------|
| 336.750 | 17400.00 | 1307.06 | .00 | .03 | .00 | 1145.25 | 10.00 |
| 336.850 | 17400.00 | 1307.23 | .00 | .17 | .00 | 1178.40 | 25.00 |
| 336.750 | 17400.00 | 1307.29 | .00 | .05 | .00 | 1189.24 | 10.00 |
| 337.700 | 17400.00 | 1307.60 | .00 | .31 | .00 | 2049.37 | 95.00 |
| 357.700 | 17400.00 | 1308.95 | .00 | 1.35 | .00 | 2054.26 | 3015.00 |
| 368.700 | 17400.00 | 1309.70 | .00 | .76 | .00 | 1327.01 | 1410.00 |
| 379.700 | 17400.00 | 1310.53 | .00 | .82 | .00 | 2266.37 | 1320.00 |
| 397.700 | 17400.00 | 1311.95 | .00 | 1.42 | .00 | 1908.03 | 3150.00 |
| 398.600 | 17400.00 | 1311.98 | .00 | .04 | .00 | 1412.63 | 75.00 |
| 398.700 | 17400.00 | 1311.68 | .00 | -.31 | .00 | 1405.59 | 10.00 |
| 398.900 | 17400.00 | 1311.73 | .00 | .06 | .00 | 1406.88 | 20.00 |
| 399.000 | 17400.00 | 1313.25 | .00 | 1.52 | .00 | 1440.04 | 10.00 |

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| SECNO | Q | CWSEL | DIFWSP | DIFWSX | DIFKWS | TOPWID | XLCH |
|---------|----------|---------|--------|--------|--------|---------|---------|
| 399.200 | 17400.00 | 1312.97 | .00 | -.29 | .00 | 200.00 | 20.00 |
| 399.600 | 17400.00 | 1313.04 | .00 | .08 | .00 | 200.00 | 35.00 |
| 399.700 | 17400.00 | 1313.24 | .00 | .20 | .00 | 1392.30 | 10.00 |
| 400.500 | 17400.00 | 1313.40 | .00 | .16 | .00 | 1411.05 | 85.00 |
| 400.600 | 17400.00 | 1313.89 | .00 | .49 | .00 | 260.00 | 10.00 |
| 402.650 | 17400.00 | 1314.49 | .00 | .60 | .00 | 1575.40 | 385.00 |
| 414.650 | 17400.00 | 1314.62 | .00 | .12 | .00 | 1846.49 | 1300.00 |
| 422.650 | 17400.00 | 1314.75 | .00 | .14 | .00 | 2304.63 | 1000.00 |
| 435.000 | 17400.00 | 1315.03 | .00 | .28 | .00 | 974.73 | 1350.00 |
| 448.000 | 17400.00 | 1316.05 | .00 | 1.02 | .00 | 1623.13 | 1400.00 |
| 455.000 | 17400.00 | 1316.06 | .00 | .01 | .00 | 670.94 | 1300.00 |
| 464.000 | 17400.00 | 1319.07 | .00 | 3.01 | .00 | 2008.73 | 700.00 |

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SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 285.000 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 285.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

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PAGE 1

THIS RUN EXECUTED 09-24-86

HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984

ERROR CORR - 01,02,03,04,05,06

MODIFICATION - 50,51,52,53,54,55,56

IBM-PC-XT VERSION AUGUST 1985

EXHIBIT D

NEW HEC-2 COMPUTER PROGRAM INPUT & OUTPUT FILE

CALIBRATION RUN (FILE CSKWPKC2)

COWSKIN CREEK

BETWEEN TYLER ROAD AND PAWNEE AVENUE

WICHITA, KANSAS

 HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
 ERROR CORR - 01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 IBM-PC-XT VERSION APRIL 1985

C
 T1 COWSKIN CREEK W/MKED PROFILE 3 INPUT FILE CALIBRATION RUN FILE CSKWPKC2.HCE
 T2 WICHITA KANSAS FIS REVISION FOR WOODLAND @ THE PARK ADDITION
 T3 100 YR FLOOD PROFILE

| J1 | ICHECK | ING | NINV | IDIR | STRT | METRIC | HVINS | G | WSEL | FG |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 0. | 0. | 0. | 0. | .000000 | .00 | .0 | 17400. | 1301.200 | .000 |
| J2 | NPROF | IPLOT | PRFVS | XSECV | XSECH | FN | ALLDC | IBW | CHNIM | ITRACE |
| | -1.000 | .000 | -1.000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| NC | .035 | .035 | .038 | .050 | .050 | .000 | .000 | .000 | .000 | .000 |
| X1 | 1258.200 | 17.000 | 920.000 | 983.000 | .000 | .000 | .000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | 280.000 | 1300.000 | 500.000 | 1298.000 | 655.000 | 1296.000 | 855.000 |
| GR | 1294.000 | 920.000 | 1290.000 | 940.000 | 1287.900 | 955.000 | 1288.000 | 970.000 | 1290.000 | 963.000 |
| GR | 1292.000 | 1025.000 | 1296.000 | 1040.000 | 1298.000 | 1875.000 | 1299.000 | 1900.000 | 1300.000 | 2420.000 |
| GR | 1305.000 | 2550.000 | 1310.000 | 2650.000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 276.250 | 13.000 | 580.000 | 780.000 | 1800.000 | 1800.000 | 1800.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | .000 | 1305.000 | 150.000 | 1305.000 | 580.000 | 1290.000 | 660.000 |
| GR | 1300.000 | 680.000 | 1290.000 | 710.000 | 1295.000 | 780.000 | 1300.000 | 1600.000 | 1300.000 | 2080.000 |
| GR | 1296.000 | 2290.000 | 1310.000 | 2500.000 | 1320.000 | 2500.000 | .000 | .000 | .000 | .000 |
| X1 | 283.500 | 15.000 | 1250.000 | 1415.000 | 725.000 | 725.000 | 725.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1315.000 | 180.000 | 1310.000 | 370.000 | 1307.000 | 590.000 | 1320.000 | 870.000 |
| GR | 1300.000 | 1130.000 | 1298.000 | 1250.000 | 1290.000 | 1290.000 | 1289.500 | 1350.000 | 1290.000 | 1350.000 |
| GR | 1296.000 | 1415.000 | 1298.000 | 1520.000 | 1299.000 | 3400.000 | 1300.000 | 4100.000 | 1310.000 | 4100.000 |
| X1 | 284.900 | 21.000 | 1250.000 | 1455.000 | 140.000 | 140.000 | 140.000 | .000 | .000 | .000 |
| X3 | 10.000 | .000 | .000 | .000 | .000 | .000 | .000 | 1304.000 | 1304.000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | 370.000 | 1304.000 | 760.000 | 1302.000 | 870.000 | 1300.000 | 1130.000 |
| GR | 1298.000 | 1250.000 | 1298.000 | 1250.100 | 1298.000 | 1265.000 | 1298.000 | 1320.000 | 1290.000 | 1330.000 |
| GR | 1289.500 | 1345.000 | 1290.000 | 1365.000 | 1292.000 | 1375.000 | 1294.000 | 1435.000 | 1297.000 | 1455.000 |
| GR | 1297.000 | 1455.100 | 1298.000 | 1520.000 | 1198.500 | 1920.000 | 1299.000 | 3400.000 | 1299.000 | 3800.000 |
| GR | 1307.000 | 4750.000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| NC | .045 | .045 | .045 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 285.000 | .000 | .000 | .000 | 10.000 | 10.000 | 10.000 | .000 | .000 | .000 |
| BT | 21.000 | .000 | 1320.000 | 1320.000 | 370.000 | 1310.000 | 1310.000 | 760.000 | 1304.000 | 1304.000 |
| BT | 870.000 | 1304.000 | 1302.000 | 1130.000 | 1304.000 | 1300.000 | 1250.000 | 1304.000 | 1298.000 | 1250.100 |
| BT | 1304.000 | 1302.000 | 1265.000 | 1304.000 | 1302.000 | 1320.000 | 1304.000 | 1302.000 | 1302.000 | 1304.000 |
| BT | 1302.000 | 1345.000 | 1304.000 | 1302.000 | 1365.000 | 1304.000 | 1302.000 | 1375.000 | 1304.000 | 1302.000 |
| BT | 1435.000 | 1304.000 | 1302.000 | 1455.000 | 1304.000 | 1302.000 | 1455.100 | 1304.000 | 1297.000 | 1520.000 |

1298.5

| | | | | | | | | | | |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| BT | 1304.000 | 1298.000 | 1920.000 | 1302.000 | 1298.500 | 3400.000 | 1301.000 | 1299.000 | 3800.000 | 1299.000 |
| BT | 1298.000 | 4750.000 | 1307.000 | 1307.000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 285.300 | .000 | .000 | .000 | 30.000 | 30.000 | 30.000 | .000 | .000 | .000 |
| X2 | .000 | .000 | .000 | .000 | .000 | .000 | 1.000 | .000 | .000 | .000 |
| X1 | 285.400 | .000 | .000 | .000 | 10.000 | 10.000 | 10.000 | .000 | .000 | .000 |
| X3 | 10.000 | .000 | .000 | .000 | .000 | .000 | .000 | 1304.000 | 1304.000 | .000 |
| NC | .045 | .045 | .045 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 287.300 | 14.000 | 1405.000 | 1610.000 | 250.000 | 150.000 | 200.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | 450.000 | 1302.000 | 650.000 | 1300.000 | 1155.000 | 1298.000 | 1380.000 |
| GR | 1294.000 | 1405.000 | 1292.000 | 1460.000 | 1290.200 | 1495.000 | 1292.000 | 1517.000 | 1298.000 | 1540.000 |
| GR | 1298.000 | 1610.000 | 1299.500 | 2240.000 | 1300.000 | 3820.000 | 1310.000 | 4060.000 | .000 | .000 |
| X1 | 301.300 | 15.000 | 1030.000 | 1170.000 | 700.000 | 1100.000 | 1800.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1320.000 | 280.000 | 1305.000 | 400.000 | 1300.000 | 910.000 | 1298.000 | 1030.000 |
| GR | 1294.000 | 1060.000 | 1290.800 | 1100.000 | 1294.000 | 1130.000 | 1298.000 | 1170.000 | 1300.000 | 1290.000 |
| GR | 1300.000 | 1750.000 | 1297.000 | 1920.000 | 1300.000 | 2010.000 | 1310.000 | 2760.000 | 1314.000 | 2980.000 |
| X1 | 314.300 | 19.000 | 1785.000 | 1912.000 | 950.000 | 1450.000 | 1580.000 | .000 | .000 | .000 |
| GR | 1330.000 | .000 | 1320.000 | .000 | 1310.000 | 220.000 | 1304.000 | 390.000 | 1302.000 | 490.000 |
| GR | 1300.000 | 1785.000 | 1298.000 | 1795.000 | 1296.000 | 1820.000 | 1294.000 | 1822.000 | 1292.000 | 1825.000 |
| GR | 1291.500 | 1830.000 | 1291.500 | 1840.000 | 1292.000 | 1850.000 | 1294.000 | 1863.000 | 1296.000 | 1880.000 |
| GR | 1304.000 | 1912.000 | 1310.000 | 2120.000 | 1320.000 | 2535.000 | 1330.000 | 2535.000 | .000 | .000 |
| X1 | 335.000 | 17.000 | 1450.000 | 1675.000 | 1450.000 | 2050.000 | 2200.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | 450.000 | 1305.000 | 1170.000 | 1304.000 | 1300.000 | 1302.000 | 1450.000 |
| GR | 1300.000 | 1530.000 | 1298.000 | 1550.000 | 1296.000 | 1630.000 | 1292.000 | 1640.000 | 1291.800 | 1650.000 |
| GR | 1292.000 | 1655.000 | 1302.000 | 1675.000 | 1302.000 | 1795.000 | 1310.000 | 2150.000 | 1311.000 | 2770.000 |
| GR | 1315.000 | 3300.000 | 1325.000 | 3800.000 | 1302.000 | .000 | .000 | .000 | .000 | .000 |
| X1 | 336.300 | 15.000 | 1580.000 | 1675.000 | 130.000 | 130.000 | 130.000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | 450.000 | 1305.000 | 1170.000 | 1304.000 | 1300.000 | 1302.000 | 1450.000 |
| GR | 1302.000 | 1580.000 | 1292.000 | 1595.000 | 1292.000 | 1620.000 | 1294.000 | 1655.000 | 1302.000 | 1675.000 |
| GR | 1302.000 | 1795.000 | 1310.000 | 2150.000 | 1311.000 | 2770.000 | 1315.000 | 3300.000 | 1325.000 | 3800.000 |
| X1 | 336.400 | 15.000 | 1580.000 | 1675.000 | 10.000 | 10.000 | 10.000 | .000 | .000 | .000 |
| BT | 15.000 | .000 | 1320.000 | 1320.000 | 450.000 | 1310.000 | 1310.000 | 1170.000 | 1305.000 | 1305.000 |
| BT | 1300.000 | 1304.000 | 1304.000 | 1450.000 | 1302.000 | 1302.000 | 1580.000 | 1304.000 | 1302.000 | 1595.000 |
| BT | 1304.200 | 1302.000 | 1620.000 | 1304.800 | 1302.000 | 1655.000 | 1305.000 | 1302.000 | 1675.000 | 1304.000 |
| BT | 1302.000 | 1795.000 | 1304.000 | 1302.000 | 2150.000 | 1310.000 | 1310.000 | 2770.000 | 1311.000 | 1311.000 |
| BT | 3300.000 | 1315.000 | 1315.000 | 3800.000 | 1325.000 | .000 | .000 | .000 | .000 | .000 |
| GR | 1320.000 | .000 | 1310.000 | 450.000 | 1305.000 | 1170.000 | 1304.000 | 1300.000 | 1302.000 | 1450.000 |
| GR | 1302.000 | 1580.000 | 1292.000 | 1595.000 | 1292.000 | 1620.000 | 1294.000 | 1655.000 | 1302.000 | 1675.000 |
| GR | 1302.000 | 1795.000 | 1310.000 | 2150.000 | 1311.000 | 2770.000 | 1315.000 | 3300.000 | 1325.000 | 3800.000 |
| X1 | 336.650 | .000 | .000 | .000 | 25.000 | 25.000 | 25.000 | .000 | .000 | .000 |
| X2 | .000 | .000 | .000 | .000 | .000 | .000 | 1.000 | .000 | .000 | .000 |

| SECNO | DEPTH | CWSEL | CRIMS | WSELK | EG | HV | HL | OLOSS | BANK ELEV |
|-------|-------|-------|-------|--------|------|-------|-------|--------|------------|
| Q | GLOB | QCH | GROB | ALOB | ACH | AROB | VOI | TWA | LEFT/RIGHT |
| TIME | VLOB | VCH | VROB | XNL | XNCH | XNR | WTN | ELMIN | SSTA |
| SLOPE | XLOBL | XLCH | XLOBR | ITRIAL | IDC | ICONT | CORAR | TOPWID | ENDST |

*PROF 1

CCHV= .050 CEHV= .050

*SECNO 1258.200

| | | | | | | | | | |
|---------|-------|---------|--------|---------|---------|-------|------|---------|---------|
| 1258.20 | 13.30 | 1301.20 | .00 | 1301.20 | 1301.30 | .10 | .00 | .00 | 1294.00 |
| 17400. | 3517. | 2875. | 11008. | 1600. | 725. | 5014. | 0. | 0. | 1290.00 |
| .00 | 2.20 | 3.97 | 2.20 | .035 | .038 | .035 | .000 | 1287.90 | 473.60 |
| .000401 | 0. | 0. | 0. | 0 | 0 | 0 | .00 | 1977.60 | 2451.20 |

*SECNO 276.250

| | | | | | | | | | |
|---------|-------|---------|--------|------|---------|-------|------|---------|---------|
| 276.25 | 12.97 | 1301.97 | .00 | .00 | 1302.09 | .12 | .79 | .00 | 1305.00 |
| 17400. | 0. | 6171. | 11229. | 0. | 1668. | 5059. | 291. | 77. | 1295.00 |
| .18 | .00 | 3.70 | 2.22 | .035 | .038 | .035 | .000 | 1289.00 | 596.18 |
| .000478 | 1800. | 1800. | 1800. | 2 | 0 | 0 | .00 | 1735.10 | 2331.28 |

*SECNO 283.500

| | | | | | | | | | |
|---------|-------|---------|--------|------|---------|-------|------|---------|---------|
| 283.50 | 12.75 | 1302.25 | .00 | .00 | 1302.29 | .04 | .20 | .00 | 1298.00 |
| 17400. | 507. | 4121. | 12772. | 423. | 1681. | 9530. | 443. | 116. | 1296.00 |
| .31 | 1.20 | 2.45 | 1.34 | .035 | .038 | .035 | .000 | 1289.50 | 1100.73 |
| .000179 | 725. | 725. | 725. | 2 | 0 | 0 | .00 | 2999.27 | 4100.00 |

*SECNO 284.900

| | | | | | | | | | |
|---------|-------|---------|------|------|---------|------|------|---------|---------|
| 284.90 | 10.20 | 1299.70 | .00 | .00 | 1302.51 | 2.81 | .08 | .14 | 1298.00 |
| 17400. | 0. | 17400. | 0. | 0. | 1294. | 0. | 464. | 121. | 1297.00 |
| .31 | .00 | 13.45 | .00 | .035 | .038 | .035 | .000 | 1289.50 | 1250.00 |
| .010203 | 140. | 140. | 140. | 5 | 0 | 0 | .00 | 205.00 | 1455.00 |

*SECNO 285.000

| | | | | | | | | | |
|---------|-------|---------|------|------|---------|------|------|---------|---------|
| 285.00 | 10.20 | 1299.70 | .00 | .00 | 1302.51 | 2.81 | .08 | .14 | 1298.00 |
| 17400. | 0. | 17400. | 0. | 0. | 1294. | 0. | 464. | 121. | 1297.00 |
| .31 | .00 | 13.45 | .00 | .035 | .038 | .035 | .000 | 1289.50 | 1250.00 |
| .010203 | 140. | 140. | 140. | 5 | 0 | 0 | .00 | 205.00 | 1455.00 |

*SECNO 285.000

| | | | | | | | | | |
|---------|-------|---------|------|------|---------|------|------|---------|---------|
| 285.00 | 10.20 | 1299.70 | .00 | .00 | 1302.51 | 2.81 | .08 | .14 | 1298.00 |
| 17400. | 0. | 17400. | 0. | 0. | 1294. | 0. | 464. | 121. | 1297.00 |
| .31 | .00 | 13.45 | .00 | .035 | .038 | .035 | .000 | 1289.50 | 1250.00 |
| .010203 | 140. | 140. | 140. | 5 | 0 | 0 | .00 | 205.00 | 1455.00 |

*SECNO 285.000

| | | | | | | | | | |
|---------|-------|---------|------|------|---------|------|------|---------|---------|
| 285.00 | 10.20 | 1299.70 | .00 | .00 | 1302.51 | 2.81 | .08 | .14 | 1298.00 |
| 17400. | 0. | 17400. | 0. | 0. | 1294. | 0. | 464. | 121. | 1297.00 |
| .31 | .00 | 13.45 | .00 | .035 | .038 | .035 | .000 | 1289.50 | 1250.00 |
| .010203 | 140. | 140. | 140. | 5 | 0 | 0 | .00 | 205.00 | 1455.00 |

*SECNO 285.000

| | | | | | | | | | |
|---------|-------|---------|------|------|---------|------|------|---------|---------|
| 285.00 | 10.20 | 1299.70 | .00 | .00 | 1302.51 | 2.81 | .08 | .14 | 1298.00 |
| 17400. | 0. | 17400. | 0. | 0. | 1294. | 0. | 464. | 121. | 1297.00 |
| .31 | .00 | 13.45 | .00 | .035 | .038 | .035 | .000 | 1289.50 | 1250.00 |
| .010203 | 140. | 140. | 140. | 5 | 0 | 0 | .00 | 205.00 | 1455.00 |

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELREA= 1304.00 ELREA= 1304.00

3301 HV CHANGED MORE THAN HVINS

| SECNO | DEPTH | CWSEL | CRINS | WSELK | EG | HV | HL | OLOSS | BANK ELEV |
|-------|-------|-------|-------|--------|------|-------|-------|--------|------------|
| G | GLOB | GCH | GROR | ALOB | ACH | AROB | VDL | TWA | LEFT/RIGHT |
| TIME | VLOB | VCH | VROB | XNL | XNCH | XNR | WTN | ELMIN | SSTA |
| SLOPE | XLOBL | XLCH | XLOBR | ITRIAL | IDC | ICONT | CORAR | TOPWID | ENDST |

3370 NORMAL BRIDGE, NRD= 21 MIN ELTRD= 1299.00 MAX ELLD= 1320.00

| | | | | | | | | | |
|---------|--------|---------|--------|------|---------|--------|----------|---------|---------|
| 285.00 | 104.15 | 1302.65 | .00 | .00 | 1302.65 | .00 | .00 | .14 | 1298.00 |
| 17400. | 0. | 121. | 17279. | 0. | 1764. | 97598. | 476. | 122. | 1297.00 |
| .33 | .00 | .07 | .18 | .045 | .045 | .045 | .000 | 1198.50 | 834.19 |
| .000001 | 10. | 10. | 10. | 2 | 0 | 0 | -7535.44 | 3399.38 | 4233.57 |

*SECNO 285.300

3370 NORMAL BRIDGE, NRD= 21 MIN ELTRD= 1299.00 MAX ELLC= 1320.00

| | | | | | | | | | |
|---------|--------|---------|--------|------|---------|--------|----------|---------|---------|
| 285.30 | 104.15 | 1302.65 | .00 | .00 | 1302.65 | .00 | .00 | .00 | 1298.00 |
| 17400. | 0. | 121. | 17279. | 0. | 1764. | 97598. | 544. | 124. | 1297.00 |
| .37 | .00 | .07 | .18 | .045 | .045 | .045 | .000 | 1198.50 | 834.19 |
| .000001 | 30. | 30. | 30. | 2 | 0 | 0 | -7535.44 | 3399.38 | 4233.57 |

*SECNO 285.400

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELREA= 1304.00 ELREA= 1304.00

| | | | | | | | | | |
|---------|-------|---------|-----|------|---------|------|------|---------|---------|
| 285.40 | 11.11 | 1300.61 | .00 | .00 | 1302.76 | 2.15 | .00 | .11 | 1298.00 |
| 17400. | 0. | 17400. | 0. | 0. | 1479. | 0. | 556. | 124. | 1297.00 |
| .37 | .00 | 11.76 | .00 | .045 | .045 | .045 | .000 | 1289.50 | 1250.00 |
| .009156 | 10. | 10. | 10. | 4 | 0 | 0 | .00 | 205.00 | 1455.00 |

*SECNO 287.300

3301 HV CHANGED MORE THAN HVINS

| | | | | | | | | | |
|---------|-------|---------|--------|-------|---------|-------|------|---------|---------|
| 287.30 | 12.79 | 1302.99 | .00 | .00 | 1303.03 | .04 | .16 | .11 | 1294.00 |
| 17400. | 2585. | 4245. | 10570. | 2086. | 1759. | 7887. | 583. | 132. | 1298.00 |
| .41 | 1.24 | 2.41 | 1.34 | .045 | .045 | .045 | .000 | 1290.20 | 625.36 |
| .000306 | 250. | 200. | 150. | 3 | 0 | 0 | .00 | 3266.29 | 3891.65 |

| SECNO | DEPTH | CWSEL | CRIMS | WSELK | EG | HV | HL | GLOSS | BANK ELEV |
|------------------------------------------------------------------|--------|---------|-------|--------|---------|-------|---------|---------|------------|
| G | GLOB | GCH | GROB | ALOB | ACH | AROB | VDL | TWA | LEFT/RIGHT |
| TIME | VLOB | VCH | VROB | XNL | XNCH | XNR | WTN | ELMIN | SSTA |
| SLOPE | XLOBL | XLCH | XLOBR | ITRIAL | IDC | ICONT | CORAR | TOPWID | ENDST |
| *SECNO 301.300 | | | | | | | | | |
| 301.30 | 12.69 | 1303.49 | .00 | .00 | 1303.64 | .15 | .60 | .01 | 1298.00 |
| 17400. | 2324. | 5633. | 9442. | 1158. | 1300. | 3893. | 821. | 191. | 1298.00 |
| .52 | 2.01 | 4.33 | 2.43 | .045 | .045 | .045 | .000 | 1290.80 | 554.49 |
| .000889 | 700. | 1800. | 1100. | 3 | 0 | 0 | .00 | 1716.91 | 2271.40 |
| *SECNO 314.300 | | | | | | | | | |
| 314.30 | 13.21 | 1304.71 | .00 | .00 | 1304.87 | .16 | 1.23 | .00 | 1300.00 |
| 17400. | 12532. | 4863. | 5. | 4978. | 1098. | 9. | 996. | 236. | 1304.00 |
| .64 | 2.52 | 4.43 | .53 | .045 | .045 | .045 | .000 | 1291.50 | 369.98 |
| .001044 | 950. | 1580. | 1450. | 2 | 0 | 0 | .00 | 1566.51 | 1936.49 |
| *SECNO 335.000 | | | | | | | | | |
| 335.00 | 15.09 | 1306.89 | .00 | .00 | 1307.24 | .35 | 2.36 | .01 | 1302.00 |
| 17400. | 2959. | 10944. | 3497. | 1150. | 1971. | 1117. | 1202. | 286. | 1302.00 |
| .75 | 2.57 | 5.55 | 3.13 | .045 | .045 | .045 | .000 | 1291.80 | 898.14 |
| .001595 | 1450. | 2200. | 2050. | 2 | 0 | 0 | .00 | 1113.77 | 2011.90 |
| *SECNO 336.300 | | | | | | | | | |
| 336.30 | 15.03 | 1307.03 | .00 | .00 | 1307.44 | .41 | .20 | .00 | 1302.00 |
| 17400. | 5642. | 8124. | 3635. | 1887. | 1198. | 1166. | 1215. | 289. | 1302.00 |
| .76 | 2.99 | 6.78 | 3.12 | .045 | .045 | .045 | .000 | 1292.00 | 877.17 |
| .001530 | 130. | 130. | 130. | 2 | 0 | 0 | .00 | 1141.20 | 2018.36 |
| *SECNO 336.400 | | | | | | | | | |
| 3370 NORMAL BRIDGE, NRD= 15 MIN ELTRD= 1302.00 MAX ELLC= 1325.00 | | | | | | | | | |
| 336.40 | 15.05 | 1307.05 | .00 | .00 | 1307.47 | .42 | .03 | .00 | 1302.00 |
| 17400. | 9390. | 5212. | 2797. | 1768. | 954. | 641. | 1216. | 289. | 1302.00 |
| .76 | 5.31 | 5.46 | 4.36 | .045 | .045 | .045 | .000 | 1292.00 | 874.92 |
| .005583 | 10. | 10. | 10. | 0 | 0 | 0 | -905.10 | 1144.14 | 2019.06 |
| *SECNO 336.650 | | | | | | | | | |
| 3370 NORMAL BRIDGE, NRD= 15 MIN ELTRD= 1302.00 MAX ELLC= 1325.00 | | | | | | | | | |
| 336.65 | 15.23 | 1307.23 | .00 | .00 | 1307.60 | .38 | .13 | .00 | 1302.00 |
| 17400. | 9527. | 4973. | 2900. | 1894. | 971. | 695. | 1216. | 290. | 1302.00 |
| .76 | 5.03 | 5.12 | 4.17 | .045 | .045 | .045 | .000 | 1292.00 | 849.52 |
| .004794 | 25. | 25. | 25. | 2 | 0 | 0 | -913.57 | 1177.37 | 2026.89 |

| SECNO | DEPTH | CWSEL | CRIMS | WSELK | EG | HV | HL | GLOSS | BANK ELEV |
|----------------|-------|---------|-------|--------|---------|-------|-------|---------|------------|
| Q | QLOB | QCH | GROB | ALOB | ACH | AROB | VOL | TWA | LEFT/RIGHT |
| TIME | VLOB | VCH | VRQB | XNL | XNCH | XNR | WTN | ELMIN | SSTA |
| SLOPE | XLOBL | XLCH | XLOBR | ITRIAL | IDC | ICONT | CORAR | TOPWID | ENDST |
| *SECNO 336.750 | | | | | | | | | |
| 336.75 | 15.27 | 1307.27 | .00 | .00 | 1307.63 | .36 | .02 | .00 | 1302.00 |
| 17400. | 5875. | 7802. | 3723. | 2062. | 1221. | 1251. | 1219. | 290. | 1302.00 |
| .76 | 2.85 | 6.39 | 2.98 | .045 | .045 | .045 | .000 | 1292.00 | 842.10 |
| .001324 | 10. | 10. | 10. | 0 | 0 | 0 | .00 | 1187.07 | 2029.17 |
| *SECNO 337.700 | | | | | | | | | |
| 337.70 | 15.68 | 1307.58 | .00 | .00 | 1307.73 | .15 | .09 | .01 | 1302.00 |
| 17400. | 6072. | 4851. | 6477. | 2944. | 1040. | 2850. | 1231. | 294. | 1298.00 |
| .77 | 2.06 | 4.66 | 2.27 | .045 | .045 | .045 | .000 | 1291.90 | 400.03 |
| .000729 | 95. | 95. | 95. | 2 | 0 | 0 | .00 | 2041.30 | 2441.33 |
| *SECNO 357.700 | | | | | | | | | |
| 357.70 | 15.25 | 1308.95 | .00 | .00 | 1309.01 | .07 | 1.28 | .00 | 1304.00 |
| 17400. | 6449. | 6290. | 4661. | 3770. | 2434. | 2696. | 1637. | 394. | 1304.00 |
| 1.09 | 1.71 | 2.58 | 1.73 | .045 | .045 | .045 | .000 | 1293.70 | 211.64 |
| .000422 | 1875. | 3015. | 2225. | 3 | 0 | 0 | .00 | 2054.09 | 2265.74 |

THIS RUN EXECUTED 04/03/88 11:51:48

 HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
 ERROR CORR - 01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 IBM-PC-XT VERSION APRIL 1985

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

100 YR FLOOD
 SUMMARY PRINTOUT TABLE 150

| SECTNO | XLCH | ELTRD | ELLC | ELMIN | Q | CWSEL | CRIMS | EG | 10K*S | VCH | AREA | .01K |
|----------|---------|---------|---------|---------|----------|---------|-------|---------|--------|-------|-------------------|----------|
| 1258.200 | .00 | .00 | .00 | 1287.90 | 17400.00 | 1301.20 | .00 | 1301.30 | 4.01 | 3.97 | 7338.46 | 8684.25 |
| 276.250 | 1800.00 | .00 | .00 | 1289.00 | 17400.00 | 1301.97 | .00 | 1302.09 | 4.78 | 3.70 | 6726.89 | 7961.09 |
| 283.500 | 725.00 | .00 | .00 | 1289.50 | 17400.00 | 1302.25 | .00 | 1302.29 | 1.79 | 2.45 | 11634.80 | 12995.72 |
| 284.900 | 140.00 | .00 | .00 | 1289.50 | 17400.00 | 1299.70 | .00 | 1302.51 | 102.03 | 13.45 | 1293.89 | 1722.62 |
| 285.000 | 10.00 | 1299.00 | 1320.00 | 1198.50 | 17400.00 | 1302.65 | .00 | 1302.65 | .01 | .07 | 99361.82218936.20 | |
| 285.300 | 30.00 | 1299.00 | 1320.00 | 1198.50 | 17400.00 | 1302.65 | .00 | 1302.65 | .01 | .07 | 99361.82218936.20 | |
| 285.400 | 10.00 | .00 | .00 | 1289.50 | 17400.00 | 1300.61 | .00 | 1302.76 | 91.56 | 11.76 | 1479.30 | 1818.41 |
| 287.300 | 200.00 | .00 | .00 | 1290.20 | 17400.00 | 1302.99 | .00 | 1303.03 | 3.06 | 2.41 | 11732.85 | 9952.90 |
| 301.300 | 1800.00 | .00 | .00 | 1290.80 | 17400.00 | 1303.49 | .00 | 1303.64 | 8.89 | 4.33 | 6350.95 | 5836.60 |
| 314.300 | 1580.00 | .00 | .00 | 1291.50 | 17400.00 | 1304.71 | .00 | 1304.87 | 10.44 | 4.43 | 6084.83 | 5384.44 |
| 335.000 | 2200.00 | .00 | .00 | 1291.80 | 17400.00 | 1306.89 | .00 | 1307.24 | 15.95 | 5.55 | 4238.20 | 4356.42 |
| 336.300 | 130.00 | .00 | .00 | 1292.00 | 17400.00 | 1307.03 | .00 | 1307.44 | 15.30 | 6.78 | 4250.89 | 4448.98 |
| 336.400 | 10.00 | 1302.00 | 1325.00 | 1292.00 | 17400.00 | 1307.05 | .00 | 1307.47 | 55.83 | 5.46 | 3362.64 | 2328.81 |
| 336.650 | 25.00 | 1302.00 | 1325.00 | 1292.00 | 17400.00 | 1307.23 | .00 | 1307.60 | 47.94 | 5.12 | 3559.92 | 2512.92 |
| 336.750 | 10.00 | .00 | .00 | 1292.00 | 17400.00 | 1307.27 | .00 | 1307.63 | 13.24 | 6.39 | 4534.39 | 4782.75 |
| 337.700 | 95.00 | .00 | .00 | 1291.90 | 17400.00 | 1307.58 | .00 | 1307.73 | 7.29 | 4.66 | 6834.42 | 6445.14 |
| 357.700 | 3015.00 | .00 | .00 | 1293.70 | 17400.00 | 1308.95 | .00 | 1309.01 | 4.22 | 2.58 | 8900.00 | 8468.86 |

100 YR FLOOD

SUMMARY PRINTOUT TABLE 150

| SECNO | Q | CWSEL | DIFWSP | DIFWSX | DIFKWS | TOPWID | XLCH |
|----------|----------|---------|--------|--------|--------|---------|---------|
| 1258.200 | 17400.00 | 1301.20 | .00 | .00 | .00 | 1977.60 | .00 |
| 276.250 | 17400.00 | 1301.97 | .00 | .77 | .00 | 1735.10 | 1800.00 |
| 283.500 | 17400.00 | 1302.25 | .00 | .29 | .00 | 2999.27 | 725.00 |
| 284.900 | 17400.00 | 1299.70 | .00 | -2.55 | .00 | 205.00 | 140.00 |
| 285.000 | 17400.00 | 1302.65 | .00 | 2.95 | .00 | 3399.38 | 10.00 |
| 285.300 | 17400.00 | 1302.65 | .00 | .00 | .00 | 3399.38 | 30.00 |
| 285.400 | 17400.00 | 1300.61 | .00 | -2.04 | .00 | 205.00 | 10.00 |
| 287.300 | 17400.00 | 1302.99 | .00 | 2.38 | .00 | 3266.29 | 200.00 |
| 301.300 | 17400.00 | 1303.49 | .00 | .50 | .00 | 1716.91 | 1800.00 |
| 314.300 | 17400.00 | 1304.71 | .00 | 1.22 | .00 | 1566.51 | 1580.00 |
| 335.000 | 17400.00 | 1306.89 | .00 | 2.18 | .00 | 1113.77 | 2200.00 |
| 335.300 | 17400.00 | 1307.03 | .00 | .15 | .00 | 1141.20 | 130.00 |
| 335.400 | 17400.00 | 1307.05 | .00 | .01 | .00 | 1144.14 | 10.00 |
| 335.650 | 17400.00 | 1307.23 | .00 | .18 | .00 | 1177.37 | 25.00 |
| 335.750 | 17400.00 | 1307.27 | .00 | .04 | .00 | 1187.07 | 10.00 |
| 337.700 | 17400.00 | 1307.58 | .00 | .31 | .00 | 2041.30 | 95.00 |
| 357.700 | 17400.00 | 1308.95 | .00 | 1.35 | .00 | 2054.09 | 3015.00 |

SUMMARY OF ERRORS AND SPECIAL NOTES



THIS RUN EXECUTED 04/03/88 11:52:54

HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR - 01,02,03,04,05,06
MODIFICATION - 50,51,52,53,54,55,56
IBM-PC-XT VERSION APRIL 1985

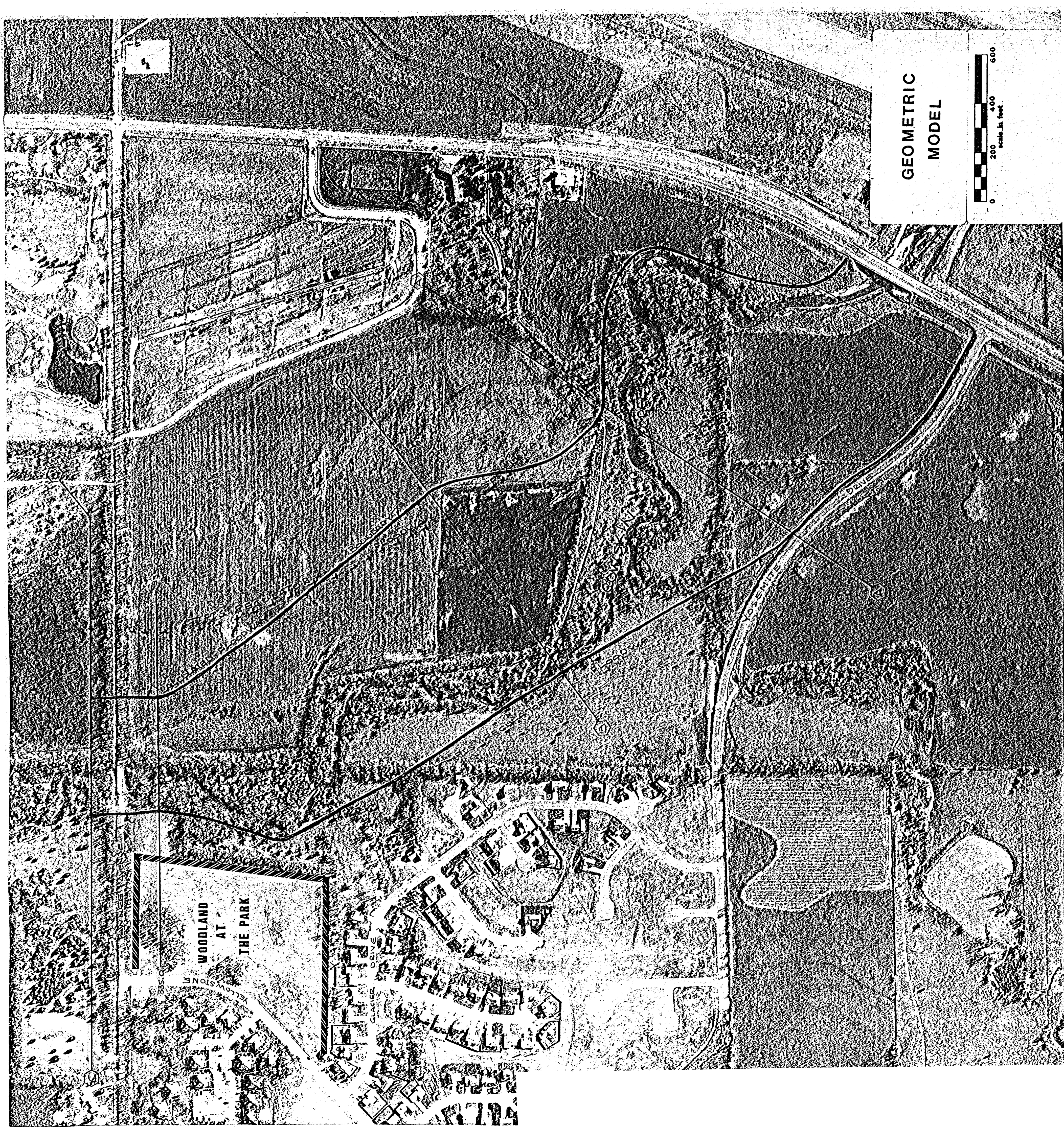
EXHIBIT E

GEOMETRIC MODEL

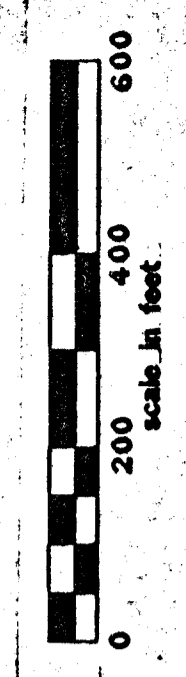
COWSKIN CREEK

BETWEEN TYLER ROAD AND PAWNEE AVENUE

WICHITA, KANSAS



GEOMETRIC
MODEL



WOODLAND
AT
THE PARK

DOUGLASS

CLARK
DOUGLASS

YO SEMINOLE
DOUGLASS