GRAND AVENUE BRIDGES OVER
THE AGUA FRIA RIVER

ADOT PROJECT NO. SBM-022-2-319PE,-519C

DRAINAGE DESIGN REPORT

19

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April 6, 1987

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Phoenix, Arizona 85016

Attention: David Miller

Reference: Grand Avenue Bridges over the Agua Fria River
ADOT Project No. SFM-022-2-319PE,-519C
Drainage Design Report

Gentlemen:

We hereby submit the Revised Initial Drainage Design Report for the above project.

Yours very truly,

BENSON & GERDIN, INC.
CONSULTING ENGINEERS

Randy L. Harrel

Randy L. Harrel, P.E.

RLH:tr

PRELIMINARY
NOT TO BE USED
FOR CONSTRUCTION

BENSON & GERDIN

CONSULTING ENGINEERS

GRAND AVENUE BRIDGES
OVER THE AGUA FRIA RIVER
DRAINAGE DESIGN REPORT
(INITIAL)

ADOT PROJECT NO. SFM-022-2-319PE,-519C

BENSON & GERDIN, INC.
3150 North Seventh Street
Phoenix, Arizona 85014

APRIL 1987

GRAND AVENUE BRIDGES
OVER THE AGUA FRIA RIVER
DRAINAGE DESIGN REPORT

TABLE OF CONTENTS

Report

I. Scope

II. Existing Drainage Conditions
- A. Agua Fria River
- B. Local Drainage

III. Future Considerations
- A. Agua Fria River
- B. Local Drainage

IV. Proposed Drainage Features
- A. Agua Fria River
- B. Local Drainage

V. Detailed Hydraulic Analysis

VI. References

Appendices

1. Correspondence and Existing Data

2. Agua Fria River Hydraulic Analysis (HEC-2)

3. Scour Calculations (Not included - for future submittal)

4. Local Drainage Calculations (Not included - for future submittal)

GRAND AVENUE BRIDGES
OVER AGUA FRIA RIVER
DRAINAGE DESIGN REPORT

I. SCOPE

This report analyzes the drainage system modifications needed for the construction of new, four-lane westbound bridges on Grand Avenue (U.S. 60) over the Agua Fria River and the Agua Fria overflow channel, including the roadway between the bridges and the approaches. The new bridges will lie between the existing Grand Avenue and the Santa Fe Railroad.

The work is a part of the Grand Avenue Expressway Program, Stage 1. The work needs to consider the effect of, and be compatible with, the widening of Grand Avenue to four lanes west of this project later in Stage 1; and the demolition of the existing bridges, construction of new eastbound bridges, and interchange/expressway construction in this area in Stage 5.

II. EXISTING DRAINAGE CONDITIONS

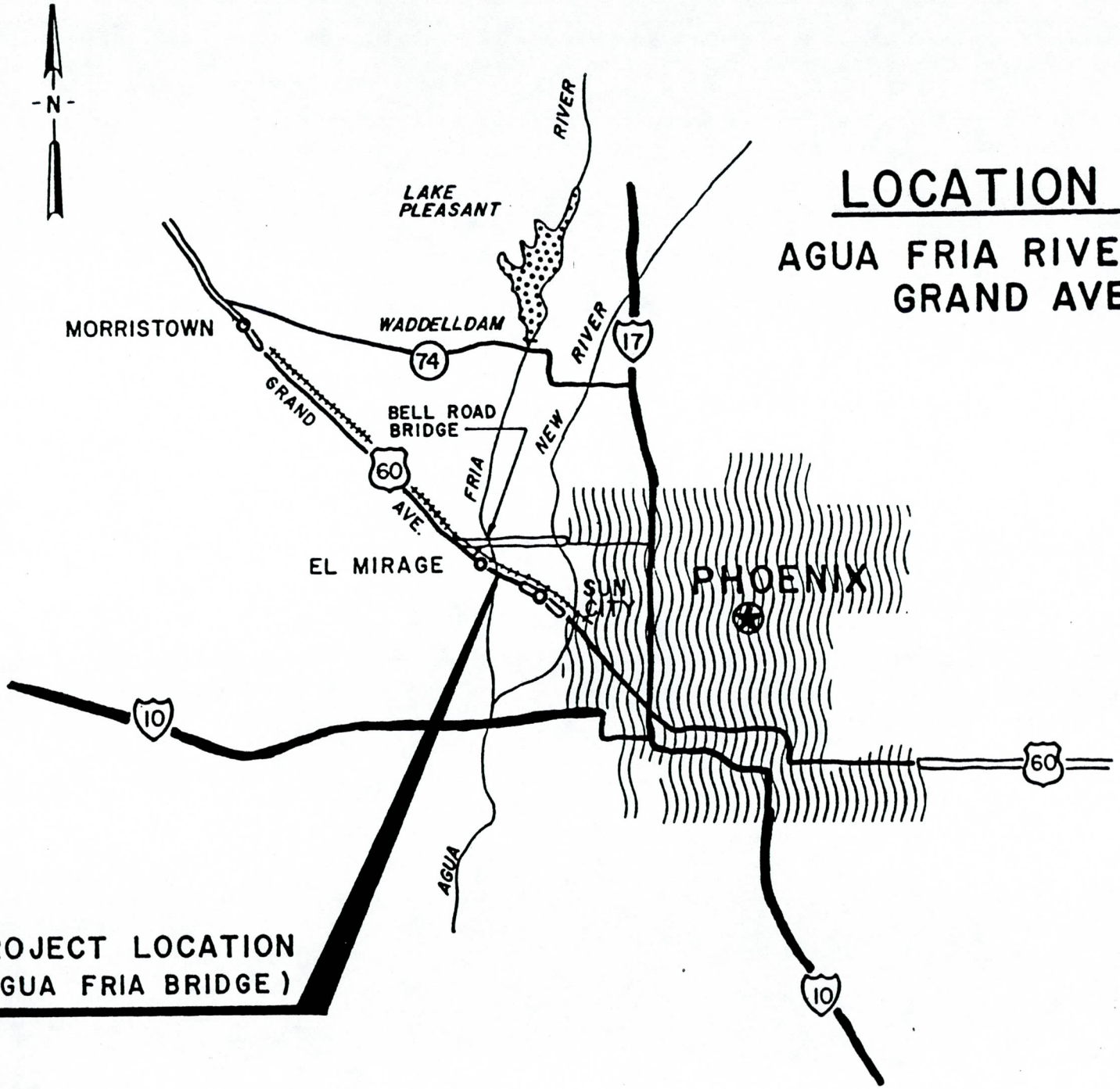
A. Agua Fria River

The Agua Fria River drains a large portion of central Arizona, and is impounded at Waddell Dam (Lake Pleasant) 17 miles north of the project site. Because of irrigation storage and drawoff below the dam, the Agua Fria River only flows during major storm periods. The River flowed six times during the period of 1978-80, with the peak flow estimated at 66,000 cfs.

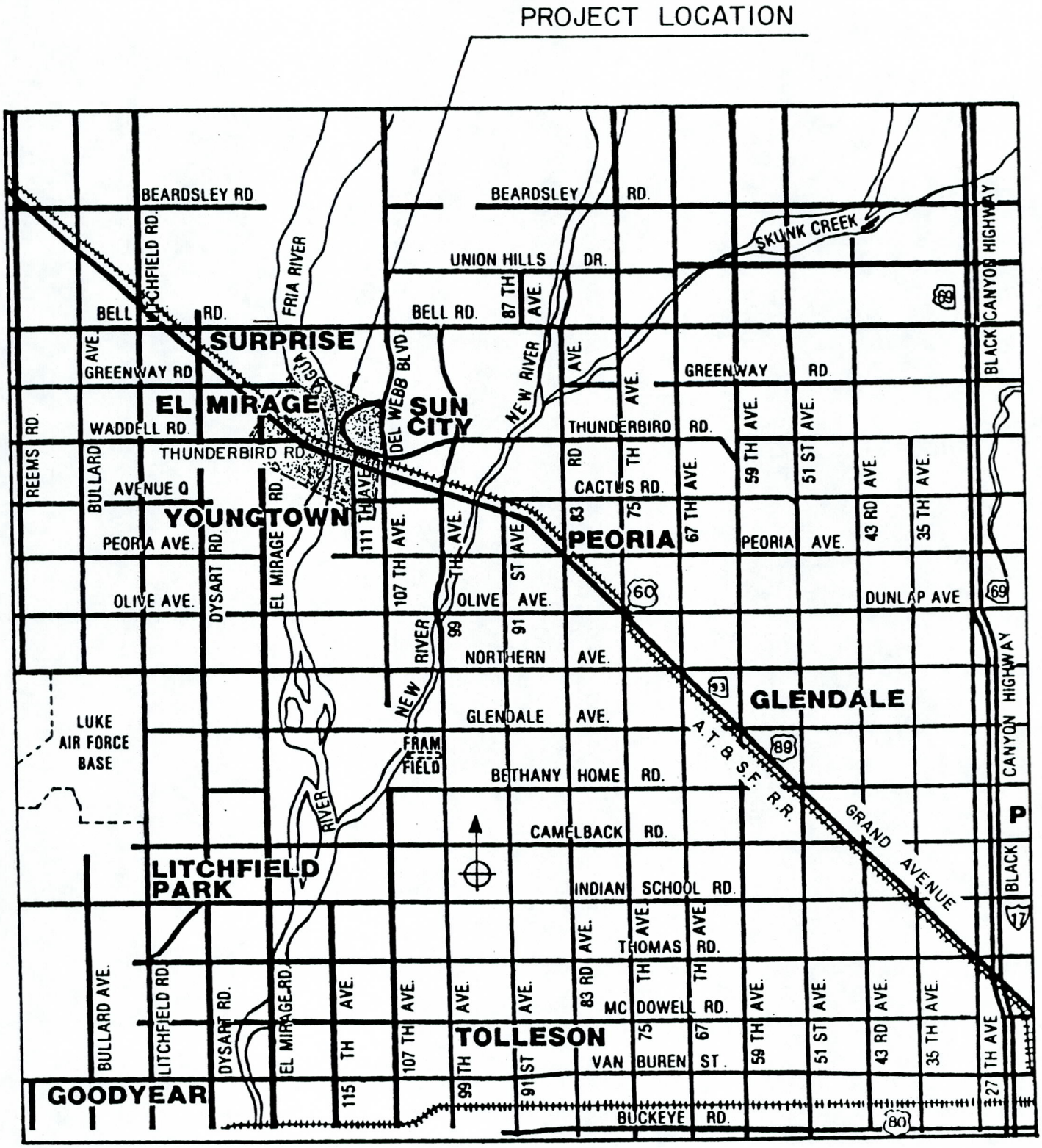
At the bridge site, the river flows from north to south. The main channel is bounded by a very high bank on the east side and a wide overbank area on the west side. The existing overflow bridge, located 1000 feet west of the existing main channel bridge collects flows from the wide overbank area and does not have a clearly defined channel. Directly south of the bridges, the El Mirage Industrial Landfill (EMIL) has constructed a 50-foot high landfill, separating the flows between the main and overflow channel bridges. Major flows have caused flooding in the developed areas of El Mirage, downstream from the overflow bridge. The manmade developments in the area - the railroad and highway bridges, EMIL, and the Calmat aggregate mining north of the bridges - have restricted and intended to concentrate the flow in the overbank area.

LOCATION MAP

AGUA FRIA RIVER BRIDGE
GRAND AVENUE



VICINITY MAP



Design flows for the Agua Fria River are shown in the following table. These flows were determined by the Corps of Engineers in 1981 for a FEMA Study using an HEC-1 analysis, and are those currently being used by the Maricopa County Flood Control District.

The Maricopa County Flood Control District will be performing a new hydraulic analysis of the river in the near future through the consulting firm of Dooley-Jones, but the hydrology will not be revised. In accordance with the project scope, these flows are being accepted for the design of this project. (These flows are also in general agreement with the flows previously determined by Benson & Gerdin for the Maricopa County Highway Department in the design of the nearby Bell Road Bridge in 1980.)

with ~~generally~~ minor exception

Return Period (years)	Flow (cfs) Main Channel	Overflow Channel	Total
10	-	-	20,800
50	-	-	77,000
100	77,775	30,000	107,775

The Agua Fria River in this vicinity consists of a main channel against a high east bank and a wide flood plain area to the west. Construction of the existing AT & SF railroad, built prior to the existing highway bridges, began the channelization of the flow in the main channel. The existing highway bridges (originally built in 1919, with reconstruction of the main channel bridge on the old footings in 1949; and with widening of the 1923 overflow channel bridge in 1946) tended to further the channelization.

The El Mirage Industrial Landfill (EMIL) south of Grand Avenue on the west edge of the main channel has excavated a reported 300,000 cubic yards of material from the main channel since 1973 using it as cover material for the now 60' high landfill which splits the channel and overflow floodplain. The original landfill plans called for eventual removal of 425,000 cubic yards from the river bed. The landfill is reportedly bounded on the east (main channel) side with a 15' thick rubble dike, toed in 8' below river grade.

North of Grand Avenue, the predecessors to the current CalMat aggregate/concrete plant excavated a large pit just northwest of the railroad main channel bridge (and may have partially landfilled it back in), and constructed an unprotected dike along the west bank of the river for approximately 1000' upstream from Grand Avenue.

There was previously a baseball field and masonry building built in the main channel just north of the railroad bridge, but it appears to have been completely washed away in the 1980 era floods.

In general, the Agua Fria main channel currently has a fairly fixed width of 400'-500' for approximately 3000' upstream from the Grand Avenue Bridge site, and a typical width of 800' for 4000' downstream.

Just northwest of the overflow channel bridges is the remnants of a former irrigation sump.

B. Local Drainage

The median between the railroad and the existing highway drains from Factory Road to the overflow bridge on the west, and from about 111th Avenue to the main channel on the east.

A large gunite channel draining Sun City parallels the north side of the railroad east from the main channel bridges. The gunite channel is undermined and broken for approximately 150' east from its entrance into the Agua Fria River main channel.

A storm drain which drains Thunderbird Road in El Mirage terminates in a drywell near the southwest corner of the overflow bridge.

III. FUTURE CONSIDERATIONS

A. Agua Fria River

The Agua Fria River in this vicinity will be affected by the following considerations:

1. New Waddell Dam

Plan 6 of the Central Arizona Water Resources Control Study calls for construction of a new larger dam just downstream from the existing Waddell Dam. The new dam's purposes include irrigation, storage of Central Arizona Project (CAP) water, and flood control.

The Dam is scheduled to begin holding water by 1995, as a condition of the State Matching funds. Construction is currently underway on the dam cut-off wall. The Bureau of Reclamation anticipates contracting with the Corps of Engineers in the near future to perform a benefit cost analysis, including a flood frequency distribution analysis, for the Agua Fria River after construction of the new dam. Because a substantial majority of the area tributary to the project site lies upstream from the New Waddell Dam, and because of the flood control storage proposed for the dam, a significant drop in the design flood flows is expected upon completion of the Dam, but there is currently no data available as to what the peak flow will be after dam completion. Currently, the dam construction is tied up in court, together with the controversial Cliff Dam, but the Bureau hopes to disconnect the Waddell Dam from the case and proceed with its construction.

2. Maricopa County Flood Control District (MCFCD)

The MCFCD is currently in the scope and negotiation stage of an engineering contract to re-run the hydraulic analysis of the Agua Fria river, with the firm of Dooley-Jones. The analysis will utilize the peak flow and cross-section data used in the current hydraulic analysis, except where significant changes have occurred. The contract currently does not call for the analysis or recommendation of channelization improvements. The MCFCD has no current plans, study, or funding for any channelization improvements in the reach of the Agua Fria River.

3. El Mirage Industrial Landfill (EMIL)

The EMIL is currently embroiled in a number of legal actions. It seems likely that because of these legal actions, relocation negotiations, and/or the high cost of operating the landfill at its present height, the EMIL will cease operation at its current location in the near future. However, it seems unlikely that the existing landfill material will be removed.

4. Highway Bridge

The existing Grand Avenue Bridges are scheduled for demolition and construction of new bridges in Stage 5 of the Grand Avenue improvements, approximately 20 years from now.

5. Santa Fe Railroad Bridge

The railroad alignment is scheduled to be shifted northward during Stage 5 of the Grand Avenue improvements (approximately 20 years from now) to make room for the Thunderbird Road interchange. The main channel bridge is of some historic significance and may impact this shifting.

Santa Fe Railroad and Southern Pacific Railroad have attempted to merge, an action that is currently in court. If the merger occurs, there is a possibility that the Grand Avenue mainline track could be abandoned in the near future.

6. CalMat Aggregate Plant

CalMat estimates that there is a 30-year supply of aggregate remaining on their property upstream from Grand Avenue, and they anticipate mining the aggregate at their plant for the foreseeable future.

7. Sierra Grande Resort

The Sierra Grande Resort is a proposed hotel/golf course development along the south side of Grand Avenue, from the EMIL to Main Street. Although held up for some time due to implementing the financing arrangements, representatives of the resort anticipate start-up of construction in the very near future.

Since the resort lies in the floodplain, directly downstream from the overflow bridge, they intend to grade a flow channel through the golf course and place fill to raise the hotel buildings out of the floodplain. A drop structure just south of the overflow bridge is a possible design feature.

B. Local Drainage

The highway/railroad median drainage should accommodate the additional flow from the Stage 1 Grand Avenue temporary widening west of this project. Any permanent storm drainage features, such as storm drain mainline pipe, should also accommodate the ultimate Grand Avenue improvement and interchange planned for Stage 5.

IV. PROPOSED DRAINAGE FEATURES

A. Agua Fria River

The Q_{100} flow infringes on the superstructure of the existing main channel highway and railroad bridges, indicating the need for a wider channel; however, in order to effectively widen the main channel width, the following events would have to fall into place:

1. Removal of EMIL landfill material, or channel widening to the east.

2. Reconstruction or lengthening of the Grand Avenue highway bridge.

3. Reconstruction, realignment, or lengthening of the Santa Fe Railroad bridge.

4. Removal of CalMat dike, regrading the widened channel area, and removal of landfill pit material (if it exists), or channel widening to the east.

5. The New Waddell Dam, which will reduce or eliminate the need for a widened channel, <u>not</u> be built.

It seems questionable that an effective widening of the main channel will ever occur. The above events (Numbers 2 and 3) will not occur for approximately 20 years, and the other events are unplanned and not likely to occur.

Two alternates have been considered for the main channel bridge:

1. Construct the new main channel bridge, approximately 500' long, just slightly longer than the existing railroad and highway bridges, to avoid a further channel constriction. The "abutments" should be constructed as piers, so that additional span(s) could be added if, and when, an effective channel widening becomes feasible. The new bridge piers should be aligned to match the existing railroad and highway bridge piers to the extent possible, and minimize the stream flow angle of attack.

2. Construct the new main channel bridge approximately 800' long at this time, having two spans east and one span west from the 500' bridge alternate. There is room for no more than a 750' channelization between the EMIL and the high east bank south of Grand Avenue, and between CalMat plant and the east bank north of Grand Avenue.

   The principal part of the existing channel is typically 400'-500' in width. A future 750' wide channelization could contain the entire Q_{100} making the overflow channel superfluous, or would permit a reduction in the Q_{100} water surface elevation, reducing flooding.

   The spans longer than the 500' bridge alternate would not be effective in carrying stream flow until after Stage 5.

The Q_{100} flows overtop both the existing overflow channel highway and railroad bridges for a long length and floods a large area of the town of El Mirage. Since the approach roadways for any bridge built higher than the existing bridges will act as a dam, push the overtopping flows westerly into El Mirage, and create additional flooding, the opening for the bridge should be widened, as follows:

1. Construct a 264' long highway bridge.

2. Consider the approach roadways to the existing highway bridge to be washed out or breeched for a 300' length (the existing highway bridge will be overtopped) during the 100-year event.

3. The Q_{100} will still impinge on the railroad bridge superstructure but would not overtop the railroad embankment. This concept is compatible with the proposed downstream golf course channel for the Sierra Grande Resort, which will carry the entire 30,000 cfs (Q_{100} for the overflow channel).

Both the new main channel and overflow channel bridges should have both their piers and abutments founded on deep foundations, such as drilled concrete caissons, and have spaced concrete pier columns to prevent undermining from scour.

Consideration should be given to the following items, either in this project or by others:

1. Protection of the existing highway and railroad piers and abutments from scour with riprap, gabions, lining material, or cutoff walls. All of the existing bridges could be susceptible to undermining by scour.

2. Reconstruction of the Sun City gunite drainage channel outlet at the northeast corner of the main channel railroad bridge.

B. Local Drainage

Local drainage will be designed to accommodate the 10-year storm. Median drainage between the new approach roadway and the Santa Fe Railroad tracks will be handled by unpaved ditch flow. The new pavement (WB) will all slope to the right (north) and drain to this ditch.

Median drainage between the new and existing roadways will be handled by unpaved ditch flow, except where the narrow median and large difference in roadway elevations require either paved ditches, curbs, or storm drain pipe.

Initial design calculations for the local drainage features have been submitted under separate cover.

V. HYDRAULIC ANALYSIS

The digitized cross-section data used in previous HEC-2 runs (as provided by the MCFCD) has been used as the starting point for the new analysis.

For the main channel, the following items should be noted:

1. The EMIL landfill has extended to the south since the MCFCD mapping. We have started the split flow at Mile 15.823 and have revised the cross-section using field survey data at Mile 15.823.

2. The EMIL landfill has excavated substantial material in the river channel at Mile 16.191 and 16.291. We have revised these cross-sections using field survey data (which is more recent than the ADOT mapping).

3. The hole mined out by CalMat northwest of the main channel bridge is not modelled in the cross-sections, although it appears on the floodplain map. Apparently, the cross-section of the hole was assumed to not be effective in carrying flow. We have maintained the same assumption.

4. From Mile 16.191 northward, the cross-sections look upstream. From Mile 16.153 southward, the cross-sections look downstream. This apparently resulted from the joining of two separate flood studies. We have maintained the same orientations for the main channel.

For the overflow channel, the following items should be noted:

1. The cross-sections used for the overflow channel do not appear to be taken from photogrammetrically digitized data, but rather from interpolated data which showed variation from our aerial mapping. We have used the ADOT aerial mapping to revise cross-sections from Mile 16.191 to 16.481, to the extent that the ADOT mapping exists. Because of this revision, we have maintained the cross-sections looking downstream.

2. The existing highway overflow bridge was not modelled in the MCFCD analysis. We have analyzed the bridge using the special bridge method.

The following HEC-2 runs have been made. For each run, several flow profiles were run to be able to determine the proper flow split between the overflow channel and the main channel. Then the water surface elevations were compared at River Mile 16.481, the diverge point of the split flow analysis. The intersection of the profile curves for the overflow channel and the main channel indicates the flow split that will occur, as plotted in the following graphs. Based on that flow split, the water surfaces at the upstream side of the existing highway bridges, railroad bridges, and proposed highway bridges were interpolated and are tabulated in the following table:

HEC-2 Models:

1. EXISTING CONDITION: This run models the existing condition of both the main channel and overflow. It models the existing highway and railroad bridges.

2. NO EMBANKMENT: The cross-sections representing the bridges and embankments were removed from this run, for both the overflow and main channel. This run models what the hydraulics would be if the highway and railroad were not in place.

3. PROPOSED CONDITION: This run models the condition after the proposed Stage 1 improvements have been constructed. It models the existing highway and railroad bridges, with the new highway bridges in place, between them. Although the new main channel bridge is 800 feet long, its effective channel width is limited to approximately 500 feet long by the adjacent highway and railroad bridges. The existing overflow channel highway bridge has been modelled as being breeched at each approach for a 300 foot total opening length.

4. FUTURE CONDITIONS: This run models a possible condition which may exist approximately 20 years in the future after construction of the Stage 5 improvement. The model consists of the new and future highway bridges in place, and the existing highway and railroad bridges removed. The future highway bridges modelled are essentially duplications of the proposed bridges. The main channel has been modelled as being widened from Mile 16.191 to Mile 16.581 to effectively utilize the full 800 foot length of the main channel bridge.

Obviously, construction of the New Waddell Dam, Sierra Grande Resort channel, main channel widening or channelization, relocation (rather than removal) of the railroad bridges and embankment, and the configuration of the future Thunderbird Road Traffic Interchange would have an effect on the hydraulics of the future river.

It should be noted that the preliminary, proposed and future highway grades were based on maintaining a freeboard of .2 (depth + $V^2/2g$). The freeboard criteria have since been clarified to require only one foot of freeboard for the proposed condition and 3 feet of freeboard for the Future condition. Based on these lower freeboard criteria, the main channel bridge will be lowered substantially during further design phases.

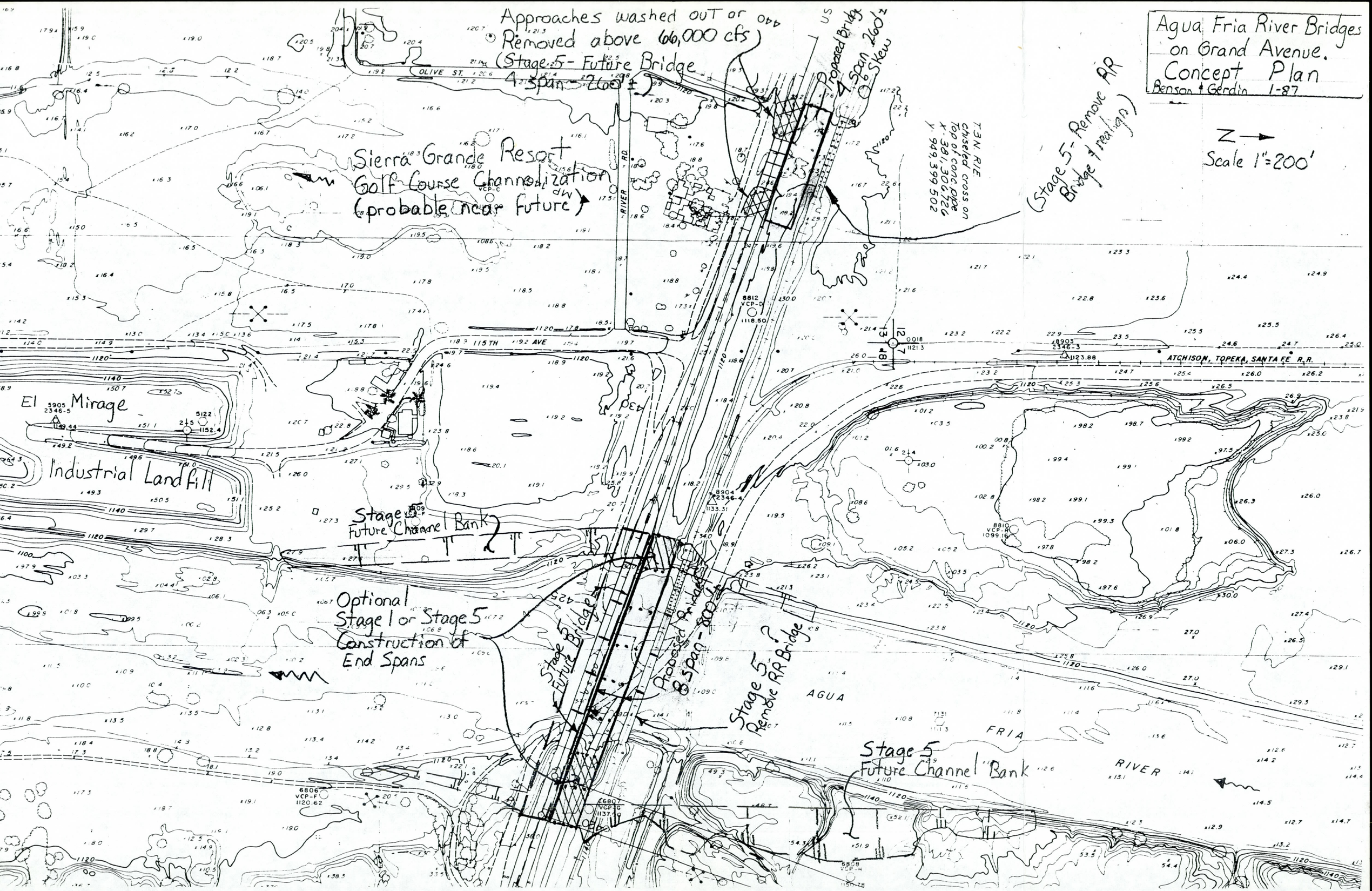
Details of the hydraulic analysis, including the flow split interpolation, elevation cross-sections and plans for the models of the proposed and future bridges, and excerpts from the HEC-2 runs are contained in Appendix 2.

AGUA FRIA RIVER BRIDGES

SUMMARY OF FLOW AND WATER SURFACES

			100 YEAR FLOW					50 YEAR FLOW					BRIDGE DATA			
				MAIN CHANNEL		OVERFLOW CHANNEL			MAIN CHANNEL		OVERFLOW CHANNEL		MAIN CHANNEL		OVERFLOW CHANNEL	
CONDITION	LOCATION	RIVER MILE	Q	Q	WS	Q	WS	Q	Q	WS	Q	WS	TOP OF ROAD	LOW CHORD	TOP OF ROAD	LOW CHORD
Exist. Condition	Flow Divergence	16.481	108,000	82,000	1131.6	26,000	1131.6	72,000	59,000	1128.2	13,000	1128.2	-	-	-	-
	RR Bridge	16.379	108,000	82,000	1129.4	26,000	1129.0	72,000	59,000	1124.7±	13,000	1127.2	1134.0	1124.8	1129.7	1126.2
	Exist. Hwy Bridge	16.355	108,000	82,000	1125.6	26,000	1128.7	72,000	59,000	1122.6±	13,000	1126.4	1131.5	1124.1	1124.6	1122.0
No highway or RR bridges or embankments	Flow Divergence Point	16.481	108,000	68,000	1127.9	42,000	1127.9	72,000	-	-	-	-	-	-	-	-
Proposed Bridge	Flow Divergence	16.481	108,000	83,000	1131.8	25,000	1131.8	72,000	58,000	1128.0	14,000	1128.0	-	-	-	-
	RR Bridge	16.379	108,000	83,000	1129.7	25,000	1128.6	72,000	58,000	1126.3	14,000	1127.6	1134.0	1124.8	1129.7	1120.2
	Proposed Hyw Bridge	16.371	108,000	83,000	1127.6	25,000	1127.2	72,000	58,000	1124.9	14,000	1123.3	1139.0*	1132.3*	1134.6	1129.4
	Exist. Hyw Bridge	16.355	108,000	83,000	1126.2	25,000	1123.0	72,000	58,000	1122.8	14,000	1121.5	1131.5	1124.1	1124.6	1122.0
Future Bridge	Flow Divergence	16.481	108,000	92,000	1125.5	16,000	1125.5	72,000	64,000	1122.7	8,000	1122.7	-	-	-	-
	Future Hwy Bridge	16.371 (16.373)	108,000	92,000	1125.2	16,000	1123.7	72,000	64,000	1122.0	8,000	1121.9	1139.0*	1132.3*	1134.6	1129.4

*To be lowered in subsequent design due to lowered freeboard requirement.


Agua Fria River Bridges on Grand Avenue.
Concept Plan
Benson + Gerdin 1-87
N
Scale 1"=200'
Approaches washed out or removed above 66,000 cfs
(Stage 5 - Future Bridge 4 span - 260'±)
Proposed Bridge 4 span 260'± 0° Skew
(Stage 5 - Remove RR Bridge + realign)
T3N R1E chiseled cross on top of conc. pipe X 381,300.426 Y 949,399.502
Sierra Grande Resort Golf Course Channelization (probable near future)
OLIVE ST.
RIVER RD.
115TH AVE
ATCHISON, TOPEKA, SANTA FE R.R.
El Mirage
Industrial Landfill
Stage 5 Future Channel Bank
Optional Stage 1 or Stage 5 Construction of End Spans
Stage 5 Future Bridge
Proposed Bridge 8 span - 800'±
Stage 5 Remove RR Bridge
AGUA FRIA RIVER
Stage 5 Future Channel Bank

REFERENCES

Design Report for the Replacement of the Bell Road Bridge over the Agua Fria River; MCHD W.O. #68067; Benson & Gerdin, Inc.; 1980.

Flood Control Study for El Mirage Industrial Landfill; Prepared for Mucho Dinero by PRC Toups; 1981.

HEC-2 Analysis of the Agua Fria River, main channel and overflow channel, floodplain and floodway; Maricopa County Flood Control District; Run March 1984, and run Dec. 1986 using previous database.

Project Design Guidelines; ADOT, ASMP; December 1986.

Procedures for Coordinating Highway Encroachments on Flood plains with FEMA; FEMA; June 1982.

Design Standards for Highways in National Flood Insurance Program Mapped Floodplains; FHWA; April 1986.

Hydrology & Hydraulic Training Session; ADOT; 1973.

Final Environmental Assessment, New Waddell Dam; USBR.

APPENDIX 1

EXISTING DATA

```
SECNO     DEPTH+    CWSEL     CRIWS     WSELK     EG        HV        HL        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 15.647
3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

                                                                                                
   15.65     14.35   1111.39      0.00      0.00   1111.83      0.44      2.21      0.02   1132.00
  105600.       0.     76356.   28644.       0.     13353.    7195.    36770.      8530.   1107.00
    4.28      0.00      5.76      3.98     0.040     0.040     0.040     0.000   1097.00   9341.77
 0.002135    1060.      1020.      810.                   0         0      0.00   4722.23  14864.00

FLOW DISTRIBUTION FOR SECNO=     15.65          CWSEL=    1111.39
STA=     9342.    11506.    11712.    11941.    12151.    12391.    12703.    13119.    14064.
PER Q=     72.9       3.9       4.4       4.0       4.6       4.1       3.5       2.6
AREA=  13353.3     904.6    1005.6     922.2    1053.9    1097.1    1106.8    1105.2
VEL=       5.8       4.6       4.6       4.6       4.6       4.0       3.3       2.4

*SECNO 15.823
3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1108.00

      30000 CFS WEST SPLIT FLOW REJOINS MAIN CHANNEL
   15.82     13.35   1113.35      0.00      0.00   1113.78      0.44      1.95      0.00   1133.00
  107175.       0.     78682.   29093.       0.     13599.    7805.    37223.      8633.   1108.00
    4.33      0.00      5.79      3.73     0.040     0.040     0.040     0.000   1100.00   9365.48
 0.002026     900.       930.      960.                   0         0      0.00   4729.68  14895.16

FLOW DISTRIBUTION FOR SECNO=     15.82          CWSEL=    1113.35
STA=     9365.    11470.    11794.    12063.    12294.    12542.    12796.    13075.    13608.    14095.
PER Q=     73.0       4.0       3.9       4.1       4.5       3.1       3.1       3.3       1.1
AREA=  13599.0    1114.2    1025.6    1004.0    1077.9     876.9     901.6    1212.5     592.3
VEL=       5.8       3.8       4.1       4.5       4.5       3.8       3.8       2.9       2.0

CCHV=   0.100 CEHV=   0.300
*SECNO 16.01
3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1138.00 ELREA=     1146.00
```

EXCERPTS
AGUA FRIA FLOODPLAIN OUTPUT
SOURCE: MARICOPA COUNTY
FLOOD CONTROL DISTRICT

```
19 MAR 84      8:39:03

          30000 CFS SPLIT FLOW DEDUCT X16.013 TO 16.580.ROB CN
          TOP OF SANITARY LAND FILL.
    16.01     15.06  1115.06      0.00      0.00  1116.26      1.19      2.24      0.23  1138.00
   77775.        0.    77775.        0.        0.   8871.        0.    37569.     8697.  1146.00
     4.36      0.00      8.77      0.00     0.048   0.040     0.048     0.000   1100.00  9293.36
 0.002628     1000.     1000.     980.         2       0         0      0.00    889.84 10183.20

FLOW DISTRIBUTION FOR SECNO=      16.01          CWSEL=   1115.06

STA=     9293.    10275.
  PER Q=     100.0
   AREA=    8870.6
    VEL=       8.8

.SECNO 16.153
3301 HV CHANGED MORE THAN HVINS

3455 OVERBANK AREA ASSUMED NON-EFFECTIVE.ELLEA=     1141.00 ELREA=     1151.00

          MEYER LANE EXTENTION
          FROM RM 15.823 TO 16.681. 100 YR Q IS REDUCED TO ACCOUNT FOR
          BREAKOUT FLOW THROUGH GRAND AVE. AND RAILROAD BRIDGES. A SPLIT
          FLOW ANALYSIS IS DONE FOR THIS REACH.  SEE A SEPARATE RUN.
    16.15     15.28  1117.28      0.00      0.00  1119.52      2.24      2.95      0.31  1141.00
   77775.        0.    77775.        0.        0.   6480.        0.    37695.     8712.  1151.00
     4.38      0.00     12.00      0.00     0.048   0.040     0.048     0.000   1102.00  9294.79
 0.006753      710.      740.      770.         3       0         0      0.00    824.50 10119.29

FLOW DISTRIBUTION FOR SECNO=      16.15          CWSEL=   1117.28

STA=     9295.    10209.
  PER Q=     100.0
   AREA=    6480.2
    VEL=      12.0

.SECNO 16.191
3265 DIVIDED FLOW

3280 CROSS SECTION     16.19 EXTENDED      1.59 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL.CWSEL
```

```
                                                  HV        HL        OLOSS    BANK ELEV
            [illegible]   CWSEL  CRIWS  WSELK  EG
            QLOB     QCH     QROB    ALOB    ACH     AROB      VOL       TWA     LEFT/RIGHT
            VLOB     VCH     VROB    XNL     XNCH    XNR       WTN       ELMIN      SSTA
   TIME     XLOBL    XLCH    XLOBR   ITRIAL  IDC     ICONT     CORAR     TOPWID     ENDST
   SLOPE

 3493 PROBABLE MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED
 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      1131.50 ELREA=      1141.80

          FROM RM 16.191 TO RM 18.707, HYDRAULIC MODEL IS BASED ON
          AMERICAN ENGINEERING WORK, TOPO DATED JULY 1982,
          1 INCH = 200 FEET, 4 FOOT C.I., WITH DIGITIZED CROSS-SECTIONS.
          NOTE:  FROM RM 16.191 TO RM 18.707, SECTIONS ARE TAKEN LOOKING
          UPSTREAM.
    16.19     14.99   1122.59  1122.59     0.00  1125.90      3.31      1.80      0.32   1131.50
   77775.        0.    77775.       0.       0.    5326.        0.    37726.     8715.   1141.80
     4.38      0.00     14.60     0.00    0.048    0.040     0.048     0.000   1107.60   9932.87
 0.012658      200.      200.     200.       20        8         0      0.00    810.93  10758.83

 FLOW DISTRIBUTION FOR SECNO=     16.19          CWSEL=    1122.59

 STA=      9933.    10823.
    PER Q=     100.0
     AREA=    5325.9
      VEL=      14.6

 CCHV=     0.300 CEHV=     0.500
 *SECNO 16.291
 3280 CROSS SECTION      16.29 EXTENDED       7.87 FEET

 3301 HV CHANGED MORE THAN HVINS

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      1132.90 ELREA=      1137.90
    16.29     17.88   1127.18     0.00     0.00  1129.13      1.95      2.82      0.41   1132.90
   77775.        0.    77775.       0.       0.    6945.        0.    37800.     8724.   1137.90
     4.40      0.00     11.20     0.00    0.035    0.035     0.035     0.000   1109.30   9900.91
 0.002922      533.      528.     476.        2        0         0      0.00    638.88  10539.78

 FLOW DISTRIBUTION FOR SECNO=     16.29          CWSEL=    1127.18

 STA=      9901.    10566.
    PER Q=     100.0
     AREA=    6945.3
      VEL=      11.2
```

```
SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      BANK ELEV
Q          CLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA      LEFT/RIGHT
TIME       WLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN        SSTA
SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID       ENDST

*SECNO 16.350
3280 CROSS SECTION      16.35 EXTENDED       1.06 FEET

3301 HV CHANGED MORE THAN HVINS

3455 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.00 ELREA=     1134.00

        DOWNSTREAM SIDE GRAND AVE MAIN CHANNEL BRIDGE
   16.35     17.36  1127.76      0.00       0.00  1130.21       2.46       0.83       0.25  1126.00
  77775.        0.    77775.        0.         0.    6183.         0.    37846.       8728.   1120.00
    4.40      0.00     12.58      0.00      0.035    0.035      0.035     0.000    1110.40   9778.00
0.002637      200.      300.      375.          4        0          0      0.00     444.00  10222.00

FLOW DISTRIBUTION FOR SECNO=      16.35          CWSEL=    1127.76

STA=     9778.    10222.
  PER Q=     100.0
   AREA=    6182.8
    VEL=      12.6

SPECIAL BRIDGE

SE   XK        XKOR       COFQ       ROLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
     1.25       1.56       3.00       0.00     444.00      28.00    6760.00       0.00    1112.00    1112.00

*SECNO 16.355
CLASS A LOW FLOW

3420 BRIDGE W.S.=    1127.36 BRIDGE VELOCITY=      12.17    CALCULATED CHANNEL AREA=      6390.

EGPRS      EGLWC      H3         QWEIR      QLOW       BAREA      TRAPEZOID  ELLC       ELTRD
                                                                    AREA
   0.00    1130.59      0.86          0.    77775.     6760.      7904.      1131.00    1131.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1131.00 ELREA=     1137.00

        GRAND AVE  BRIDGE
      UPSTREAM SIDE GRAND AVE MAIN HIGHWAY BRIDGE
   16.35     18.62  1128.62      0.00       0.00  1130.59       1.97       0.37       0.00  1125.00
  77775.        0.    77775.        0.         0.    6905.         0.    37851.       8728.   1122.40
    4.40      0.00     11.26      0.00      0.035    0.035      0.035     0.000    1110.00   9778.00
0.001669       38.       38.       38.          0        0          0      0.00     444.00  10222.00
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
	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

FLOW DISTRIBUTION FOR SECNO= 16.35 CWSEL= 1128.62

STA= 9778. 10222.
PER Q= 100.0
AREA= 6904.8
VEL= 11.3

*SECNO 16.376
2280 CROSS SECTION 16.38 EXTENDED 4.34 FEET

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELCEA= 1134.00 ELREA= 1137.50

A T &S F RAILROAD BRIDGE DOWNSTREAM SIDE

16.38	16.94	1128.74	0.00	0.00	1130.79	2.05	0.17	0.04	1134.00
77775.	0.	77775.	0.	0.	6773.	0.	37865.	8729.	1137.50
4.41	0.00	11.48	0.00	0.035	0.035	0.035	0.000	1111.80	9738.59
0.002055	85.	85.	85.	2	0.	0	0.00	454.82	10193.41

FLOW DISTRIBUTION FOR SECNO= 16.38 CWSEL= 1128.74

STA= 9739. 10200.
PER Q= 100.0
AREA= 6772.9
VEL= 11.5

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RCLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	0.00	465.00	60.00	7607.00	0.10	1112.20	1111.80

*SECNO 16.379
CLASS A LOW FLOW

3420 BRIDGE W.S.= 1128.26 BRIDGE VELOCITY= 11.77 CALCULATED CHANNEL AREA= 6529.

EGPRS	EGLWC	HS	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
0.00	1131.83	1.26	0.	77775.	7607.	9081.	1134.50	1134.00

```
19 MAR 84      8:39:03

  SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      BANK ELEV
  Q          GLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        LEFT/RIGHT
  TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
  SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IOC        ICONT      CORAR      TOPWID     ENOST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      1134.00 ELREA=      1141.00

      UPSTREAMSIDE SANTA FE R R BRIDGE
   16.38      17.81    1130.01      0.00       0.00    1131.83       1.83       1.04       0.00    1125.50
   77775.         0.     77775.       0.         0.       7172.        0.      37868.      8729.    1126.70
    4.41       0.00      10.84      0.00      0.035      0.035      0.035      0.000    1112.20    9734.00
0.001727        15.        18.       18.         0.         0.         0.       0.00     466.00   10200.00

FLOW DISTRIBUTION FOR SECNO=      16.38          CWSEL=    1130.01

STA=     9734.    10200.
  PER Q=     100.0
  AREA=     7171.9
   VEL=       10.8

CCHV=    0.100 CEHV=    0.300
*SECNO 16.431

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=     9500.0    10738.8  TYPE=     1  TARGET=   -9500.000
   16.43      20.15    1130.95      0.00       0.00    1132.33       1.38       0.45       0.04    1125.10
  77945.       3595.    74329.      21.       1114.      7719.       37.      37923.      8734.    1150.60
    4.41       3.23      9.63      0.56      0.055      0.035      0.050      0.000    1110.80    9500.00
0.001330        350.      300.     230.          2          0          0       0.00     769.64   10732.67

FLOW DISTRIBUTION FOR SECNO=      16.43          CWSEL=    1130.95

STA=     9500.     9681.    10201.    10733.
  PER Q=       4.6      95.4       0.0
  AREA=     1113.7     7719.0      37.1
   VEL=       3.2       9.6       0.6

*SECNO 16.481

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9100.0    10695.6  TYPE=     1  TARGET=   -9100.000
```

```
                    TOTAL AFTER FLOW 30000 CFS DEDUCTED
                                0.00      0.00   1132.68      0.86      0.30      0.05   1126.70
                   8.02   1131.82        0.        4159.      8026.        0.   37988.      8739.   1150.30
          13591.  64619.        0.        0.055     0.035     0.050     0.000   1111.80   9100.00
   4.43    3.27    8.05     0.00        2         0         0      0.00   1078.65  10178.65
0.000982    270.     264.     263.
```

```
FLOW DISTRIBUTION FOR SECNO=     16.48          CWSEL=    1131.82
STA=    9100.    9119.    9153.    9163.    9173.    9206.    9579.    9613.    9639.    9647.   10200.
PER Q=     0.4      0.9      0.3      0.3      1.3     12.5      0.5      0.7      0.2     82.6
AREA=    119.5    229.2     71.1     76.9    285.9   2919.6    236.2    170.9     49.5   8025.6
VEL=       2.4      3.0      3.1      3.3      3.6      3.3      3.0      3.0      2.7      8.1
```

```
*SECNO 16.580
3470 ENCROACHMENT STATIONS=    6302.0   10439.5  TYPE=     1  TARGET=   -6302.000
          TOTAL FLOW IN MAIN CHANNEL AND OVERBANK
   16.58   21.10  1132.70     0.00      0.00   1133.10      0.40      0.37      0.05   1127.10
  108205.  58143.  50062.        0.     22934.     7219.        0.   38242.      8769.   1151.90
    4.46    2.54     6.93     0.00      0.055     0.035     0.050     0.000   1111.60   6354.37
0.000579    523.     525.     525.        2         0         0      0.00   3807.60  10161.97
```

```
FLOW DISTRIBUTION FOR SECNO=     16.58          CWSEL=    1132.70
STA=    6354.    6667.    6720.    6899.    7016.    7143.    7264.    7392.    7915.    8355.    8638.    8932.    9641.
PER Q=     4.1      3.1      4.3      4.0      4.9      5.1      3.6      3.1      3.5      3.7      3.9      9.2
AREA=   1834.1   1082.8   1432.0   1312.8   1554.8   1555.1   1276.5   2007.5   2045.0   1782.6   1875.4   4484.6
VEL=       2.4      3.1      3.2      3.3      3.4      3.6      3.1      1.7      1.8      2.2      2.2      2.2
STA=    9641.    9763.   10244.
PER Q=     1.3     46.3
AREA=    690.7   7218.9
VEL=       2.1      6.9
```

```
*SECNO 16.681
3301 HV CHANGED MORE THAN HVINS
3470 ENCROACHMENT STATIONS=    6150.0   10719.4  TYPE=     1  TARGET=   -6150.000
   16.68   19.10  1132.70     0.00      0.00   1133.76      1.06      0.46      0.20   1130.40
  108205.  43339.  64866.        0.     14872.     6234.        0.   38554.      8816.   1152.40
    4.48    2.91    10.41     0.00      0.055     0.035     0.050     0.000   1113.60   6150.00
0.001459    530.     528.     537.        2         0         0      0.00   3973.57  10123.57
```

```
FLOW DISTRIBUTION FOR SECNO=     16.68          CWSEL=    1132.70
STA=    6150.    7034.    7475.    7922.    8171.    8533.    8793.    8942.    9480.    9742.   10145.
PER Q=     3.5      3.0      4.6      3.1      4.3      4.7      3.1     11.8      1.9     59.9
AREA=   1994.2   1432.3   1852.4   1162.4   1621.4   1581.8    945.1   3581.7    860.9   6233.8
VEL=       1.9      2.3      2.7      2.9      2.9      3.4      3.6      3.6      2.4     10.4
```

RECEIVED
JAN 8 1987
BENSON AND GERDIN

```
$   $  $   $  $$$$          $>$$$  $$$$   $   $
$   $  $   $  $    $        $      $   $  $$ $$
$   $   $ $   $    $        $      $   $  $ $ $
$$$$$    $    $    $        $$$$   $$$$   $ $ $
$   $    $    $    $        $      $      $   $
$   $    $    $    $   $$   $      $      $   $
$   $    $    $$$$     $$   $      $      $   $

DEST=HYD.FPM  USER=HYD.FPM  QUEUE=LPT  DEVICE=BLPB
SEQ=2041  DPPI=120  LPP=66  CPL=136  COPIES=1  LIMIT=53

CREATED:   30-DEC-86  13:40:10
ENQUEUED:  30-DEC-86  13:42:16
PRINTING:  30-DEC-86  13:42:17

PATH=:UDD:HYDRO.DIR:FLOODPLAIN.DIR:MASTER.DIR:ARO

$     $$$$    $$$
$ $   $   $   $   $
$   $ $   $   $   $
$   $ $$$$   $   $
$$$$$ $ $    $   $
$   $ $   $  $   $
$   $ $   $   $$$
```

AOS/VS REV 6.04.00.00

AOS/VS REV 06.04
AOS/VS XLPT REV 06.01

EXCERPTS

OUTPUT FLOODPLAIN/FLOODWAY, 100-YEAR

SPLITFLOW (OVERFLOW ANALYSIS)

AGUA FRIA AT GRAND AVE.

SOURCE: MARICOPA COUNTY FLOOD CONTROL DISTRICT

THIS RUN EXECUTED 12/30/86 13:40:17

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**************************************************
HEC2 RELEASE DATED NOV 76 UPDATED DEC 1982
ERROR CODE - 01,02,03,04,05
MODIFICATION - 50,51,52,53,54,55
**************************************************
```

T1 AGUAPRIA RIVER AT GRAND AVENUE SPLIT FLOW ANALYSES
T2 CONTROL IS X-16.379 TOP A T S F RAILROAD WEST OF MAIN BRIDGE
T3 100 YR SPLIT FLOW 0=30000 CFS OVERFLOW

J1	ICHECK	INQ	NINV	IDIP	STRT	METRIC	HVINS	Q	WSEL	FQ
	1.	3.	0.	0.	.000000	.00	.0	0.	1113.350	.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1.000	.000	-1.000	.000	.000	.000	.000	.000	.000	15.000

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

	38.000	43.000	1.000	53.000	54.000	2.000	200.000	.000	.000	.000

QT	6.000	107775.000	107775.000	107775.000	107775.000	107775.000	107775.000	.000	.000	.000	.000
NC	.050	.050	.050	.100	.300	.000	.000	.000	.000	.000	.000
ET	.000	9.100	.000	.000	.000	.000	.000	.000	9321.000	.000	.000
X1	15.823	115.000	9322.000	11500.000	1100.000	9498.000	1101.000	9520.000	1105.000	9552.000	12300.000
GR	1133.000	9322.000	1100.000	9395.000	1103.000	9779.000	1109.000	9847.000	1109.000	9903.000	
GR	1105.000	9533.000	1108.000	9702.000	1109.000	10054.000	1107.000	10100.000	1104.000	10121.000	
GR	1108.000	9954.000	1106.000	10000.000	1107.000	10221.000	1103.000	10247.000	1105.000	10252.000	
GR	1108.000	10140.000	1108.000	10179.000	1104.000	10406.000	1103.000	10450.000	1107.000	10474.000	
GR	1108.000	10299.000	1103.000	10368.000	1108.000	10572.000	1108.000	10598.000	1111.000	10610.000	
GR	1105.000	10511.000	1111.000	10560.000	1111.000	10856.000	1110.000	10898.000	1109.000	10964.000	
GR	1111.000	10717.000	1107.000	10781.000	1106.000	11140.000	1104.000	11206.000	1102.000	11251.000	
GR	1106.000	11019.000	1108.000	11071.000	1106.000	11384.000	1107.000	11421.000	1106.000	11470.000	
GR	1105.000	11283.000	1110.000	11342.000	1110.000	11634.000	1110.000	11708.000	1110.000	11794.000	
GR	1110.000	11500.000	1109.000	11554.000	1109.000	12063.000	1109.000	12143.000	1109.000	12221.000	
GR	1110.000	11892.000	1109.000	11983.000	1109.000	12450.000	1109.000	12542.000	1110.000	12596.000	
GR	1109.000	12294.000	1110.000	12370.000	1110.000	12796.000	1110.000	12852.000	1110.000	12910.000	
GR	1110.000	12672.000	1110.000	12724.000	1111.000	13075.000	1111.000	13153.000	1111.000	13224.000	
GR	1110.000	12963.000	1110.000	13011.000	1111.000	13452.000	1111.000	13532.000	1112.000	13606.000	
GR	1111.000	13307.000	1111.000	13380.000	1112.000	13844.000	1112.000	13917.000	1112.000	13996.000	
GR	1112.000	13689.000	1112.000	13764.000	1114.000	14212.000	1114.000	14281.000	1114.000	14347.000	
GR	1113.000	14073.000	1114.000	14137.000	1114.000	14533.000	1114.000	14613.000	1114.000	14698.000	
GR	1114.000	14414.000	1114.000	14464.000	1116.000	14937.000	1117.000	15008.000	1117.000	15079.000	
GR	1115.000	14734.000	1115.000	14865.000	1119.000	15294.000	1119.000	15361.000	1119.000	15427.000	
GR	1117.000	15156.000	1118.000	15235.000	1122.000	15606.000	1123.000	15633.000	1121.000	15644.000	
GR	1121.000	15490.000	1122.000	15547.000	1123.000	15699.000	1123.000	15721.000	1123.000	15762.000	
GR	1121.000	15560.000	1123.000	15671.000	1125.000	15912.000	1125.000	15975.000	1125.000	16014.000	
GR	1124.000	15805.000	1125.000	15859.000							

ET	3.000	30000.000	30000.000	30000.000	.000	.000	.000	.000	.000	.000
ET	.000	9.100	.000	.000	.000	.000	.000	.000	10402.000	12250.000
X1	16.013	100.000	10843.000	11146.000	1000.000	950.000	1400.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1141.000	10402.000	1124.000	10449.000	1106.000	10500.000	1109.000	10529.000	1112.000	10549.000
GR	1112.000	10613.000	1109.000	10664.000	1106.000	10694.000	1111.000	10705.000	1112.000	10755.000
GR	1114.000	10843.000	1113.000	10905.000	1110.000	10955.000	1110.000	11005.000	1111.000	11055.000
GR	1115.000	11079.000	1114.000	11146.000	1113.000	11220.000	1113.000	11264.000	1113.000	11295.000
GR	1114.000	11317.000	1112.000	11399.000	1110.000	11452.000	1111.000	11471.000	1109.000	11493.000
GR	1109.000	11553.000	1110.000	11584.000	1110.000	11657.000	1110.000	11731.000	1110.000	11795.000
GR	1110.000	11870.000	1111.000	11941.000	1111.000	11990.000	1111.000	12036.000	1111.000	12085.000
GR	1112.000	12152.000	1112.000	12219.000	1112.000	12311.000	1112.000	12395.000	1112.000	12452.000
GR	1110.000	12555.000	1112.000	12620.000	1113.000	12690.000	1113.000	12743.000	1113.000	12808.000
GR	1112.000	12835.000	1112.000	12952.000	1112.000	13003.000	1114.000	13054.000	1114.000	13110.000
GR	1114.000	13169.000	1114.000	13237.000	1113.000	13306.000	1113.000	13382.000	1113.000	13465.000
GR	1114.000	13539.000	1114.000	13595.000	1114.000	13673.000	1114.000	13741.000	1114.000	13807.000
GR	1114.000	13865.000	1114.000	13940.000	1115.000	14024.000	1115.000	14095.000	1115.000	14176.000
GR	1115.000	14253.000	1116.000	14320.000	1116.000	14394.000	1117.000	14456.000	1117.000	14523.000
GR	1117.000	14551.000	1117.000	14601.000	1118.000	14671.000	1118.000	14729.000	1118.000	14791.000
GR	1115.000	14856.000	1119.000	14912.000	1120.000	14981.000	1121.000	15048.000	1121.000	15109.000
GR	1121.000	15185.000	1122.000	15259.000	1123.000	15327.000	1124.000	15395.000	1124.000	15467.000
GR	1125.000	15531.000	1125.000	15603.000	1127.000	15659.000	1125.000	15721.000	1126.000	15751.000
GR	1127.000	15763.000	1127.000	15784.000	1130.000	15799.000	1129.000	15824.000	1128.000	15838.000
GR	1129.000	15901.000	1129.000	15955.000	1127.000	15991.000	1127.000	16001.000	1127.000	16034.000
NC	.050	.100	.050	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	.000	.000	.000	.000	.000	.000	10434.000	12040.000
X1	16.153	100.000	11158.000	11182.000	750.000	800.000	750.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1151.000	10209.000	1151.000	10272.000	1148.000	10321.000	1149.000	10382.000	1147.000	10434.000
GR	1127.000	10430.000	1108.000	10536.000	1109.000	10561.000	1111.000	10620.000	1111.000	10692.000
GR	1111.000	10757.000	1112.000	10827.000	1112.000	10901.000	1112.000	10970.000	1112.000	11034.000
GR	1113.000	11101.000	1113.000	11158.000	1110.000	11171.000	1114.000	11152.000	1114.000	11250.000
GR	1114.000	11330.000	1114.000	11406.000	1113.000	11487.000	1113.000	11561.000	1113.000	11640.000
GR	1113.000	11714.000	1113.000	11788.000	1113.000	11843.000	1114.000	11900.000	1114.000	11963.000
GR	1114.000	12040.000	1114.000	12112.000	1113.000	12178.000	1113.000	12229.000	1113.000	12308.000
GR	1113.000	12382.000	1113.000	12451.000	1114.000	12513.000	1114.000	12558.000	1114.000	12588.000
GR	1114.000	12658.000	1114.000	12711.000	1114.000	12762.000	1114.000	12817.000	1114.000	12870.000
GR	1114.000	12930.000	1114.000	12979.000	1113.000	13031.000	1113.000	13092.000	1114.000	13153.000
GR	1114.000	13209.000	1115.000	13289.000	1116.000	13370.000	1116.000	13451.000	1116.000	13532.000
GR	1117.000	13603.000	1115.000	13685.000	1118.000	13765.000	1118.000	13840.000	1118.000	13912.000
GR	1118.000	13981.000	1119.000	14054.000	1118.000	14131.000	1118.000	14205.000	1118.000	14281.000
GR	1115.000	14348.000	1118.000	14421.000	1119.000	14481.000	1119.000	14547.000	1118.000	14605.000
GR	1115.000	14642.000	1118.000	14711.000	1118.000	14775.000	1121.000	14802.000	1123.000	14871.000
GR	1123.000	14938.000	1123.000	15000.000	1123.000	15070.000	1123.000	15137.000	1123.000	15209.000
GR	1123.000	15273.000	1123.000	15341.000	1124.000	15397.000	1124.000	15460.000	1125.000	15516.000
GR	1125.000	15587.000	1126.000	15663.000	1126.000	15731.000	1127.000	15771.000	1127.000	15798.000
GR	1126.000	15812.000	1129.000	15819.000	1129.000	15841.000	1128.000	15865.000	1126.000	15882.000
GR	1128.000	15894.000	1128.000	15925.000	1128.000	15956.000	1128.000	15983.000	1126.000	16023.000

ET	.000	9.100	.000	.000	.000	.000	.000	.000	10501.000	11950.000
X1	16.191	100.000	11194.000	11252.000	610.000	600.000	600.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1107.000	10183.000	1122.000	10243.000	1122.000	10311.000	1119.000	10364.000	1119.000	10441.000
GR	1120.000	10501.000	1119.000	10549.000	1116.000	10591.000	1115.000	10593.000	1113.000	10643.000
GR	1115.000	10674.000	1115.000	10744.000	1115.000	10817.000	1115.000	10860.000	1115.000	10931.000
GR	1114.000	10933.000	1114.000	10999.000	1113.000	11033.000	1115.000	11067.000	1114.000	11127.000
GR	1114.000	11194.000	1112.000	11226.000	1114.000	11252.000	1115.000	11293.000	1115.000	11369.000
GR	1115.000	11436.000	1117.000	11504.000	1115.000	11571.000	1114.000	11642.000	1114.000	11709.000
GR	1114.000	11764.000	1114.000	11832.000	1114.000	11911.000	1115.000	11956.000	1114.000	12005.000
GR	1115.000	12065.000	1115.000	12121.000	1115.000	12175.000	1116.000	12233.000	1116.000	12293.000
GR	1114.000	12370.000	1115.000	12433.000	1117.000	12500.000	1116.000	12556.000	1117.000	12609.000
GR	1117.000	12689.000	1117.000	12747.000	1117.000	12763.000	1117.000	12800.000	1117.000	12841.000
GR	1117.000	12939.000	1115.000	12999.000	1116.000	13044.000	1116.000	13122.000	1117.000	13192.000
GR	1117.000	13256.000	1118.000	13346.000	1119.000	13432.000	1119.000	13525.000	1119.000	13617.000
GR	1119.000	13703.000	1119.000	13791.000	1119.000	13888.000	1119.000	13972.000	1119.000	14062.000
GR	1119.000	14143.000	1119.000	14228.000	1118.000	14311.000	1120.000	14379.000	1121.000	14459.000
GR	1121.000	14534.000	1121.000	14606.000	1121.000	14662.000	1121.000	14739.000	1121.000	14828.000
GR	1121.000	14901.000	1121.000	14975.000	1121.000	15061.000	1121.000	15142.000	1122.000	15225.000
GR	1125.000	15304.000	1124.000	15371.000	1126.000	15435.000	1127.000	15519.000	1127.000	15600.000
GR	1126.000	15669.000	1128.000	15737.000	1128.000	15796.000	1129.000	15841.000	1125.000	15853.000
GR	1126.000	15861.000	1129.000	15872.000	1129.000	15899.000	1127.000	15920.000	1130.000	15944.000
GR	1130.000	15967.000	1130.000	16007.000	1130.000	16032.000	1130.000	16061.000	1131.000	16083.000

ET	.000	9.100	7.100	.000	.000	.000	10550.000	.000	10550.000	11750.000
X1	16.291	105.000	11065.000	11347.000	620.000	620.000	620.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1129.000	10107.000	1129.000	10172.000	1128.000	10232.000	1116.000	10270.000	1116.000	10321.000
GR	1113.000	10397.000	1118.000	10478.000	1118.000	10551.000	1117.000	10613.000	1117.000	10656.000
GR	1117.000	10704.000	1118.000	10729.000	1117.000	10804.000	1117.000	10854.000	1117.000	10914.000
GR	1117.000	10951.000	1117.000	11013.000	1118.000	11065.000	1115.000	11133.000	1115.000	11192.000
GR	1116.000	11246.000	1117.000	11296.000	1118.000	11347.000	1118.000	11389.000	1119.000	11441.000
GR	1118.000	11499.000	1117.000	11562.000	1117.000	11629.000	1116.000	11682.000	1117.000	11741.000
GR	1118.000	11792.000	1118.000	11854.000	1118.000	11916.000	1118.000	11982.000	1119.000	12014.000
GR	1119.000	12051.000	1118.000	12140.000	1119.000	12180.000	1119.000	12251.000	1119.000	12319.000
GR	1119.000	12377.000	1120.000	12449.000	1119.000	12507.000	1119.000	12543.000	1119.000	12578.000
GR	1118.000	12653.000	1118.000	12693.000	1118.000	12755.000	1118.000	12803.000	1118.000	12869.000
GR	1118.000	12931.000	1118.000	12997.000	1118.000	13070.000	1119.000	13131.000	1119.000	13175.000
GR	1119.000	13239.000	1120.000	13301.000	1120.000	13362.000	1120.000	13410.000	1120.000	13447.000
GR	1119.000	13472.000	1119.000	13545.000	1119.000	13618.000	1120.000	13696.000	1121.000	13760.000
GR	1121.000	13829.000	1121.000	13886.000	1121.000	13939.000	1122.000	14005.000	1122.000	14052.000
GR	1122.000	14141.000	1122.000	14223.000	1121.000	14301.000	1122.000	14375.000	1122.000	14456.000
GR	1123.000	14530.000	1123.000	14612.000	1124.000	14679.000	1124.000	14755.000	1124.000	14818.000
GR	1124.000	14844.000	1124.000	14923.000	1125.000	15001.000	1125.000	15082.000	1125.000	15160.000
GR	1125.000	15219.000	1126.000	15295.000	1126.000	15392.000	1127.000	15480.000	1128.000	15550.000
GR	1129.000	15634.000	1130.000	15692.000	1131.000	15771.000	1133.000	15810.000	1135.000	15871.000
GR	1135.000	15956.000	1134.000	16032.000	1135.000	16051.000	1135.000	16099.000	1135.000	16166.000
GR	1135.000	16214.000	1135.000	16271.000	1135.000	16324.000	1135.000	16382.000	1135.000	16445.000

NC	.050	.150	.050	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	7.100	.000	.000	.000	10800.000	.000	10800.000	11900.000
X1	16.334	24.300	11150.000	11200.000	300.000	950.000	450.000	.000	.000	.000
GR	1125.100	10147.000	1121.400	10371.000	1121.400	10430.000	1122.500	10539.000	1122.600	10625.000
GR	1122.600	10664.000	1121.700	10742.000	1121.700	10794.000	1121.200	10809.000	1121.700	10870.000
GR	1121.600	10933.000	1120.500	11150.000	1115.100	11180.000	1120.500	11200.000	1120.000	11600.000
GR	1121.000	11900.000	1123.000	12200.000	1123.500	12450.000	1123.000	12700.000	1122.600	13150.000
GR	1124.000	13350.000	1124.400	13650.000	1126.000	14000.000	1130.000	15000.000	.000	.000
NC	.050	.050	.030	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	.000	.000	.000	.000	.000	.000	10300.000	11900.000
X1	16.355	15.000	11143.000	11257.000	150.000	150.000	150.000	.000	.000	.000
GR	1132.400	10000.000	1125.000	10250.000	1124.000	10600.000	1123.900	10700.000	1124.000	10970.000
GR	1124.100	11140.000	1118.300	11144.000	1118.300	11256.000	1124.100	11257.000	1124.100	11640.000
GR	1124.000	12000.000	1125.300	12600.000	1124.600	13550.000	1126.000	14250.000	1131.500	15000.000
ET	.000	9.100	.000	.000	.000	.000	.000	.000	10700.000	11900.000
X1	16.379	8.000	11204.000	11316.000	150.000	150.000	150.000	.000	.000	.000
dT	2.000	11205.000	1130.600	1127.000	11315.000	1130.600	1127.000	.000	.000	.000
GR	1118.000	10000.000	1136.600	10500.000	1130.600	11204.000	1118.400	11205.000	1118.400	11315.000
GR	1130.600	11316.000	1130.900	13350.000	1134.700	14900.000	.000	.000	.000	.000
QT	3.000	108205.000	108205.000	108205.000	.000	.000	.000	.000	.000	.000
NC	.050	.050	.035	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	.000	.000	.000	.000	.000	.000	8120.000	10145.000
X1	16.621	90.000	9741.801	10144.602	530.000	536.670	1900.000	.000	.000	.000
XC	.000	1113.600	.000	.000	.000	.000	.000	.000	.000	.000
GR	1135.600	5149.199	1135.600	5216.901	1132.400	5245.102	1131.000	5274.602	1131.300	5296.199
GR	1131.800	5332.000	1131.700	5367.699	1135.000	5397.199	1136.500	5414.801	1136.500	5426.102
GR	1135.700	5447.699	1135.000	5455.102	1133.800	5465.301	1130.800	5503.898	1130.800	5559.500
GR	1131.500	6079.301	1131.700	6181.301	1131.700	6289.199	1130.600	6402.102	1130.200	6527.500
GR	1130.100	6692.602	1129.700	6791.898	1129.900	6934.898	1130.100	7034.199	1129.500	7143.102
GR	1129.400	7293.500	1129.400	7385.895	1129.000	7442.102	1129.000	7475.000	1130.400	7484.699
GR	1130.100	7497.699	1129.200	7511.301	1128.700	7693.801	1128.300	7683.301	1128.300	7781.398
GR	1128.100	7922.102	1128.100	8029.898	1127.900	8171.199	1128.100	8255.801	1129.200	8313.602
GR	1129.000	8377.801	1127.800	8433.898	1127.200	8532.699	1126.700	8684.699	1127.100	8792.500
GR	1125.500	8844.699	1126.200	8859.301	1126.500	8881.000	1126.500	8921.301	1126.900	8941.699
GR	1125.500	9077.398	1125.500	9166.396	1126.000	9256.102	1126.900	9341.801	1129.000	9432.000
GR	1130.400	9479.602	1130.100	9560.801	1130.100	9673.699	1130.400	9741.801	1113.600	9800.199
GR	1113.600	9831.398	1114.800	9862.602	1114.700	9893.398	1114.500	9951.699	1113.800	9996.000
GR	1113.800	9998.801	1113.800	10000.000	1115.500	10027.801	1116.100	10087.898	1120.000	10110.000
GR	1152.400	10144.602	1155.100	10170.199	1143.700	10194.602	1137.200	10223.500	1135.200	10247.898
GR	1148.100	10293.301	1158.600	10337.602	1158.100	10358.102	1155.200	10415.301	1153.800	10429.500
GR	1153.300	10445.398	1158.400	10468.602	1156.500	10498.699	1155.200	10512.898	1151.300	10522.000
GR	1156.800	10539.000	1158.200	10570.801	1156.400	10590.602	1158.400	10658.102	1159.000	10719.398
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

THIS RUN EXECUTED 12/30/86 13:40:31

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  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CODE -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

100 YR SPLIT FLOW PERIOD

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	SSTA	ENDST	CRIWS
	15.523	107775.00	1113.35	9365.47	14095.41	.00
	15.323	107775.00	1114.35	9363.25	12294.00	.00
	16.013	30000.00	1116.11	10474.16	14400.59	.00
	16.013	30000.00	1117.04	10471.18	12319.00	.00
	16.153	30000.00	1116.99	10509.51	13602.10	.00
	16.153	30000.00	1118.01	10506.50	11963.00	.00
	16.191	30000.00	1118.87	10549.50	14340.36	.00
	16.191	30000.00	1119.80	10510.64	11911.00	.00
	16.291	30000.00	1121.23	10550.00	14322.71	.00
	16.291	30000.00	1122.19	10550.00	11741.00	.00
	16.338	30000.00	1124.98	10800.00	13775.50	.00
	16.338	30000.00	1125.42	10800.00	11830.00	.00
*	16.355	30000.00	1126.16	10410.58	13872.15	1126.16
*	16.355	30000.00	1126.95	10341.74	11640.01	1126.95
*	16.379	30000.00	1132.39	10993.94	13957.95	1132.39
*	16.379	30000.00	1135.18	10700.00	11316.03	1135.18
	16.681	108205.00	1133.74	5233.23	10124.58	.00
	16.681	108205.00	1137.88	8119.99	10129.10	.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO=   16.355  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   16.355  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   14.355  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   14.355  PROFILE= 2  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=   16.379  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   16.379  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   16.379  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   16.379  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   16.379  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   16.379  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
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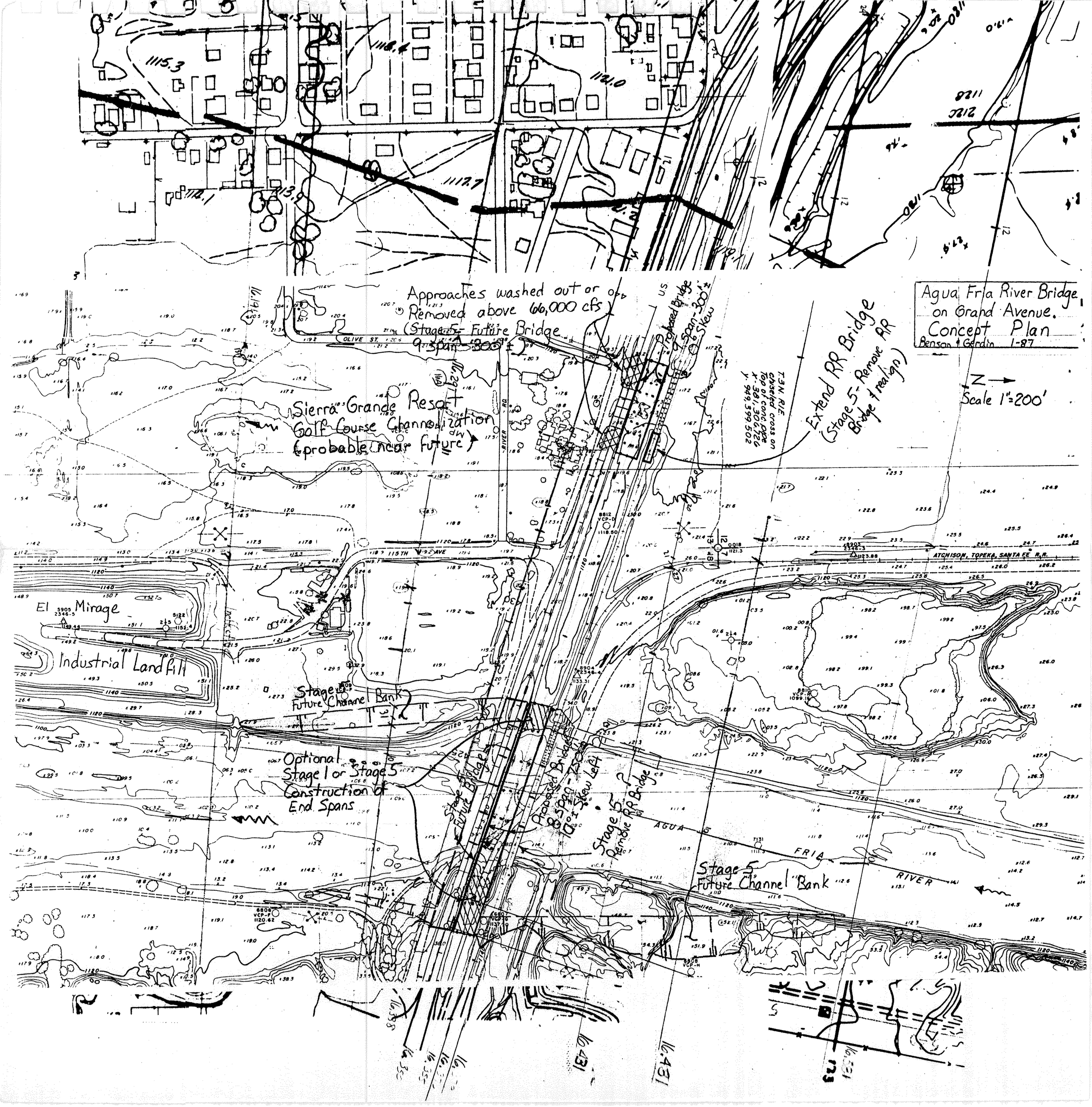
12/30/[illegible] 1[illegible]:[illegible]:16

FLOODWAY DATA 100 YR SPLIT FLOW Q=300
PROFILE NO. 2

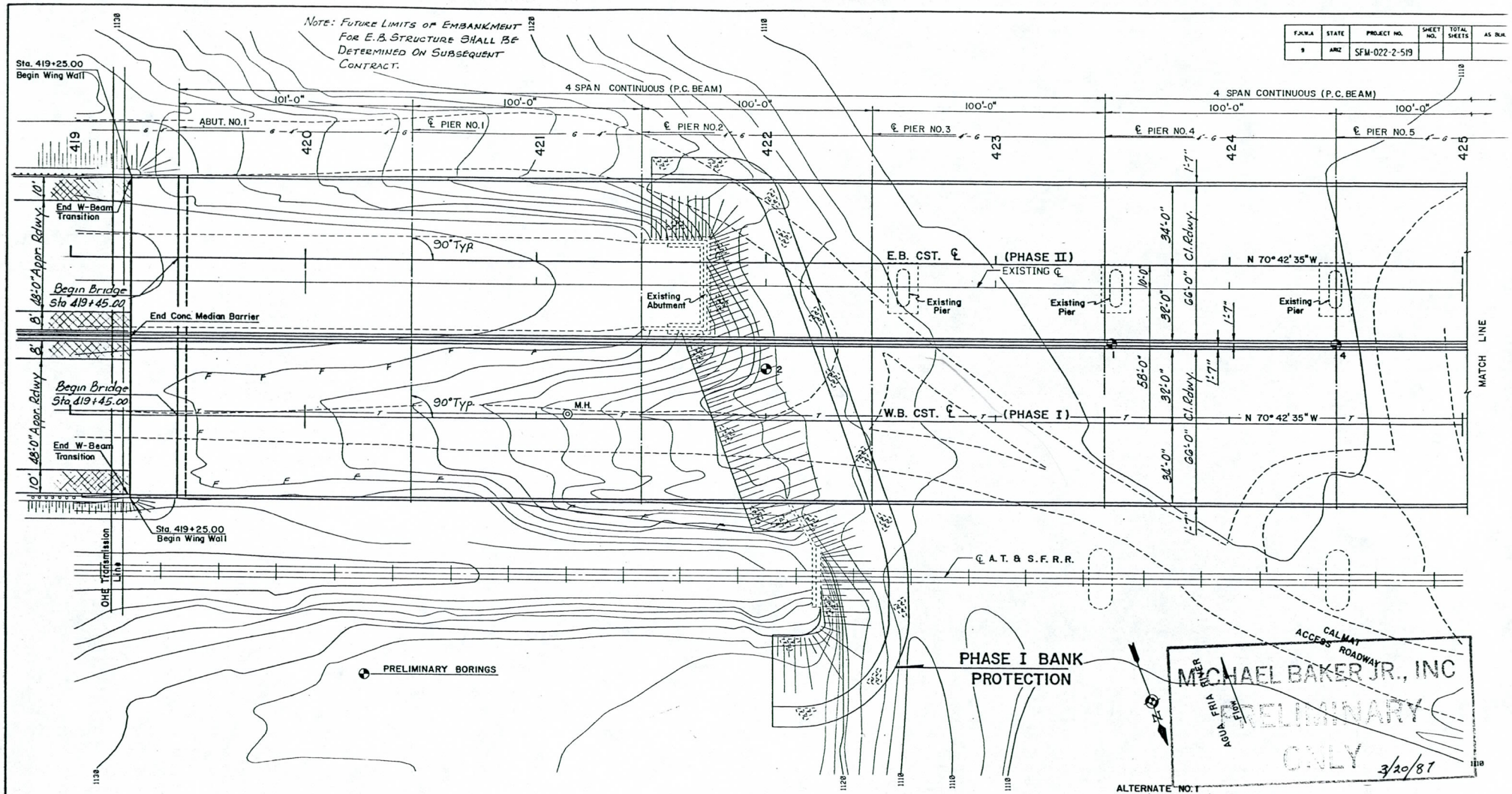
STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
15.[illegible]	[illegible]	13694.	5.5	1114.4	1113.4	1.0
15.[illegible]	1744.	10097.	3.0	1117.0	1116.1	.9
15.193	1452.	7999.	3.8	1118.0	1117.0	1.0
15.191	1[illegible].	5719.	4.4	1119.8	1118.9	.9
16.241	1171.	5115.	4.9	1122.2	1121.3	.9
16.338	1030.	5055.	5.9	1125.4	1125.0	.4
16.355	1095.	4066.	7.4	1127.0	1126.2	.8
16.379	616.	2696.	11.1	1135.2	1132.4	2.8
16.651	2099.	24646.	4.4	1137.8	1133.7	4.1

APPENDIX 2

AGUA FRIA RIVER HYDRAULIC ANALYSIS


Agua Fria River Bridge
on Grand Avenue.
Concept Plan
Benson & Gerdin 1-87
Scale 1"=200'
Approaches washed out or o
Removed above 66,000 cfs)
(Stage 5 - Future Bridge
9 span - 300' ±)
Proposed Bridge
9 span - 300'
0° Skew
Extend RR Bridge
(Stage 5 - Remove RR
Bridge & realign)
T.3 N. R.1 E
crossed cross on
top of conc. dome
Y. 948,399.502
X. 1,181,300.276
OLIVE ST.
Sierra Grande Resort
Golf Course Channelization
(probable near future)
RIVER RD.
115TH AVE
ATCHISON, TOPEKA, SANTA FE R.R.
El Mirage
Industrial Landfill
Stage 5
Future Channel Bank
Optional
Stage 1 or Stage 5
Construction of
End Spans
Future Bridge
Proposed Bridge
8 span - 250'
10° Skew Left
Stage 5
Remove RR Bridge
AGUA
FRIA
RIVER
Stage 5
Future Channel Bank

F.A.H.W.A.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	SFM-022-2-519			



PLAN

0 100' 200' 300' 400'

2' Countour Interval

RECEIVED
MAR 20 1987
BENSON AND GERDIN
Consulting Engineers

MICHAEL BAKER JR., INC
PRELIMINARY ONLY
3/20/87

ALTERNATE NO. I
(4-100' Cont.)(4-100' Cont.) Type V Mod.
Prestressed Concrete Beams, 66'-0" Cl. Rdwy.
w/Conc. Parapets Each Side.

ALTERNATE NO. I

	NAME	DATE
DESIGN		
DRAWN	CADD/ AV	
CHECKED		
APPROVED		

ARIZONA DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MICHAEL BAKER, JR., INC.

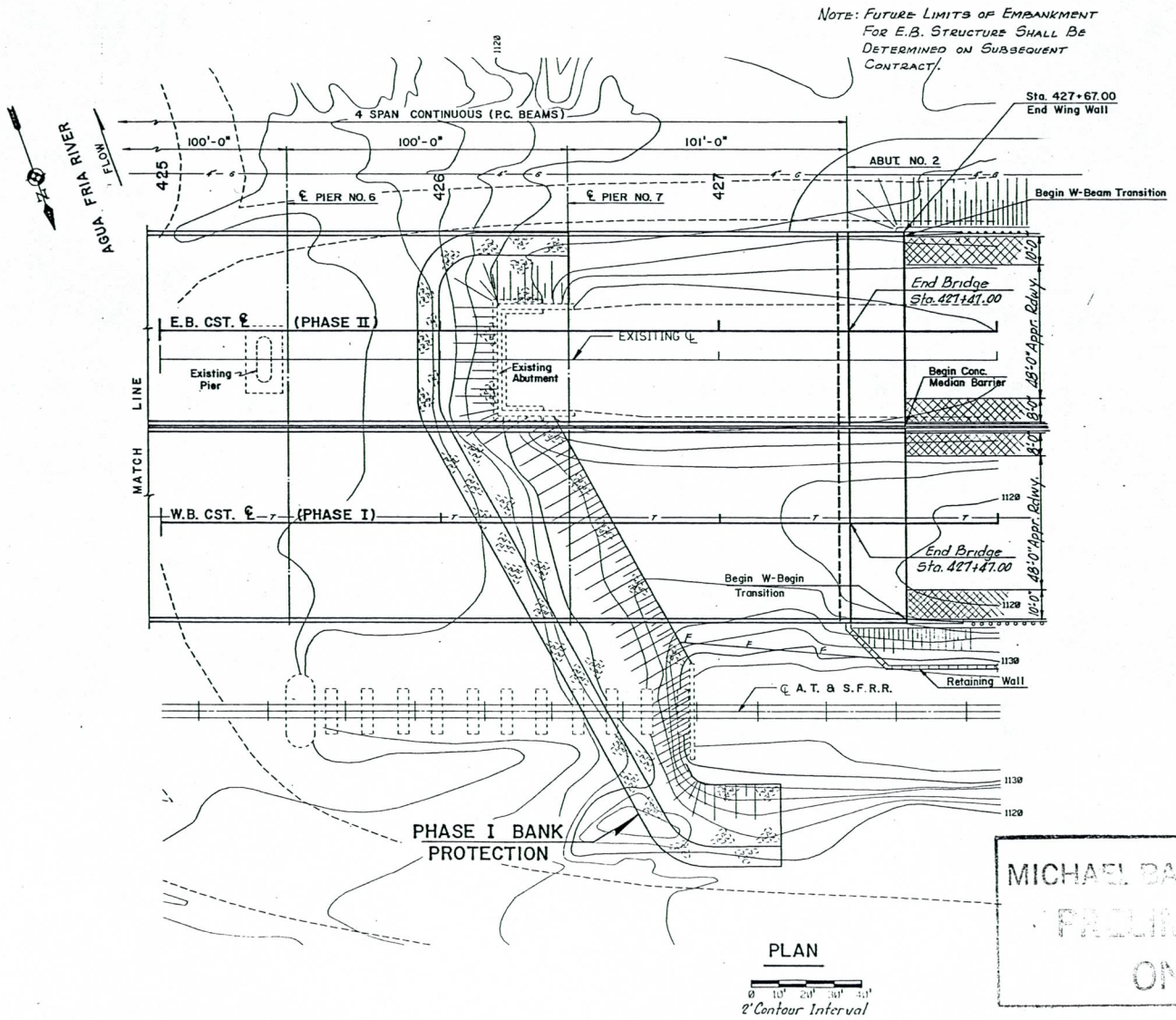
GENERAL PLAN LAYOUT

ROUTE U.S.-60 | MILEPOST | LOCATION AGUA FRIA RIVER BRIDGE | SHEET 11 OF

SHEET NO.	REVISIONS	LOCATION	DATE

Main Channel

F.H.W.A.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	SFM-022-2-519			



PLAN

GENERAL NOTES

a) Construction - ADOT "Standard Specifications for Road and Bridge Construction," 1982 Edition, and "1985 Supplemental Specifications."

b) Design - AASHTO "Standard Specifications for Highway Bridges," 1983 Edition and the 1984 and 1985 "Interim Specifications."

c) Dead Load - Dead load includes allowance of 25 pounds per square foot for future wearing surface.

d) Loading Class - HS 20-44

e) All concrete shall be Class S.

f) Reinforcing steel shall conform to ASTM Specification A615, Grades 40 and 60.

g) Stresses:

Deck Slab ..... f'_c = 4,500 psi
f'_c = 1,400 psi

Superstructure (other than curbs) and concrete barriers ..... f'_c = 4,500 psi

Pier caps and columns ..... f'_c = 3,500 psi

All other Class S Concrete ..... f'_c = 3,000 psi

Prestressed Concrete (Precast) ..... f'_c = 5,000 psi

Bar sizes #6 and smaller shall be Grade 40. Bar sizes #7 and larger shall be Grade 60.

f_s = 20,000 psi (Grade 40)
f_s = 24,000 psi (Grade 60)
f_s = 20,000 psi (Deck Slab)

Prestressing Steel (ASTM A416, 1/2"Ø, low relaxation, 7-wire strand) ..... f's = 270,000 psi

Precast girders shall be stressed by the pretensioning method only.

MICHAEL BAKER JR., INC
PRELIMINARY ONLY 3/20/87

ALTERNATE NO. 1

	NAME	DATE
DESIGN		
DRAWN	CADD/ AV	
CHECKED		
APPROVED		

ARIZONA DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MICHAEL BAKER, JR., INC.

GENERAL PLAN LAYOUT

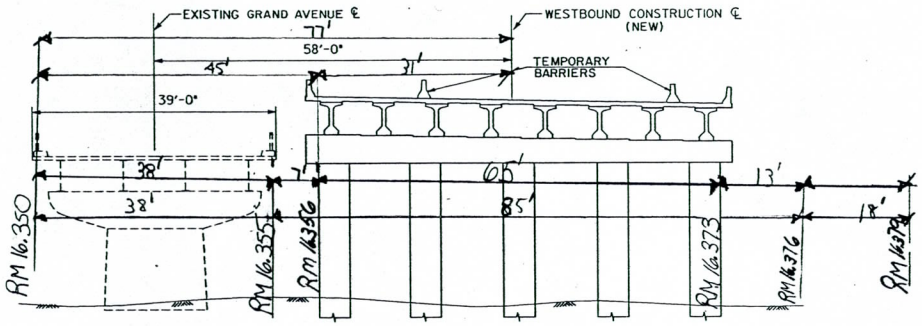
ROUTE U.S.-60 | MILEPOST | LOCATION AGUA FRIA RIVER BRIDGE

SHEET A2 OF 12

Main Channel

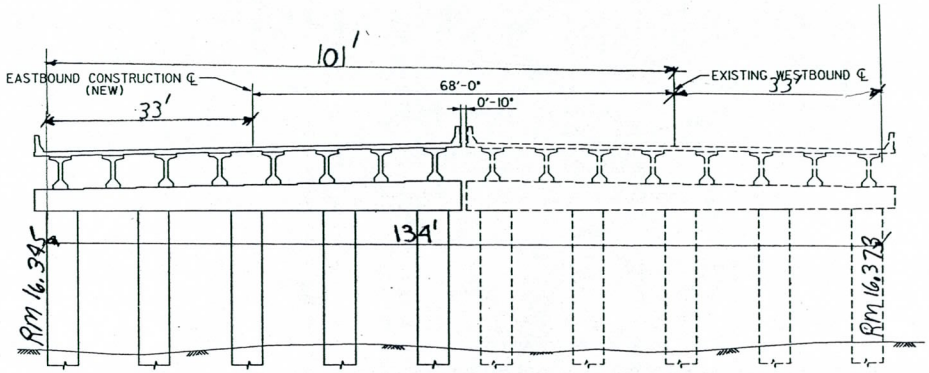
OF

F.H.W.A.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	SFM-022-2-519			



PHASE I CONSTRUCTION
(WESTBOUND)

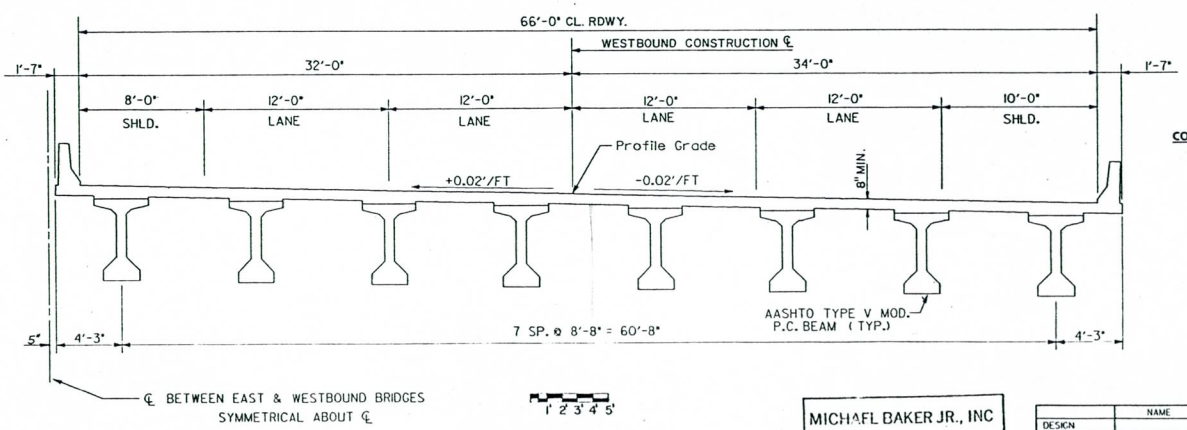
0 10' 20'



PHASE II CONSTRUCTION
(EASTBOUND)

0 10' 20'

MICHAEL BAKER JR., INC
PRELIMINARY
ONLY 3-20/87



TYPICAL SECTION OF BRIDGE
ALTERNATE NO. I

CONSTRUCTION SEQUENCE

1. Construct the westbound bridge to carry westbound traffic while the existing Grand Avenue bridge carries the eastbound traffic.

2. Transfer the eastbound traffic to the new westbound bridge and remove existing Grand Avenue bridge.

3. Construct a new eastbound bridge and transfer the eastbound traffic to the new eastbound bridge.

MICHAEL BAKER JR., INC
PRELIMINARY
ONLY

ALTERNATE NO. I

	NAME	DATE
DESIGN		
DRAWN	CADD/AV	
CHECKED		
APPROVED		

ARIZONA DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MICHAEL BAKER, JR., INC.

TYPICAL SECTIONS

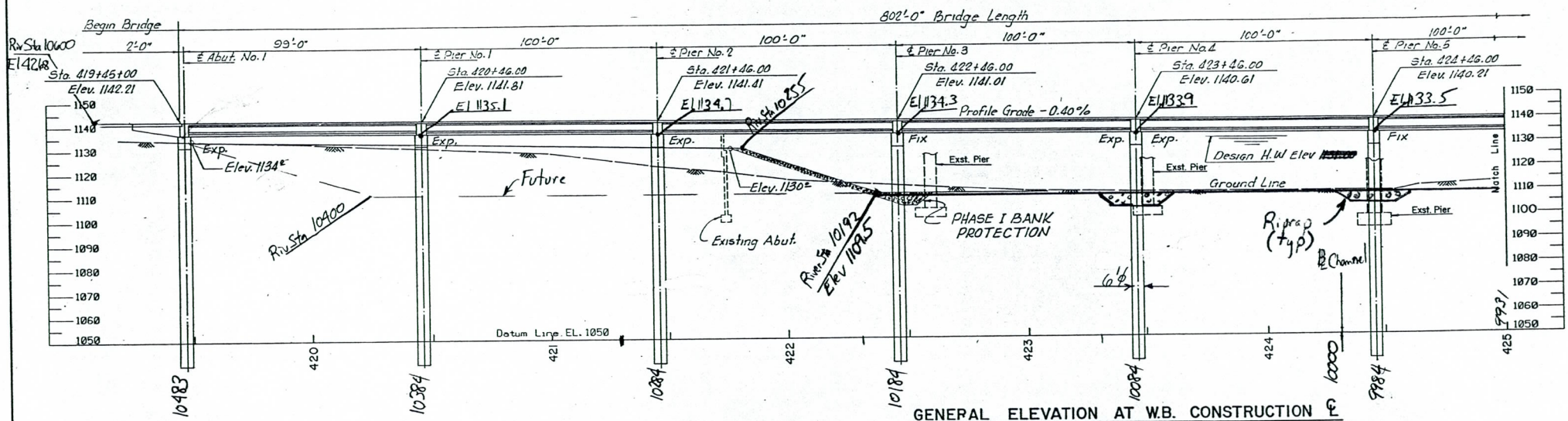
ROUTE U.S.-60 | MILEPOST | LOCATION AGUA FRIA RIVER BRIDGE

SHEET A1 OF 12

Main Channel

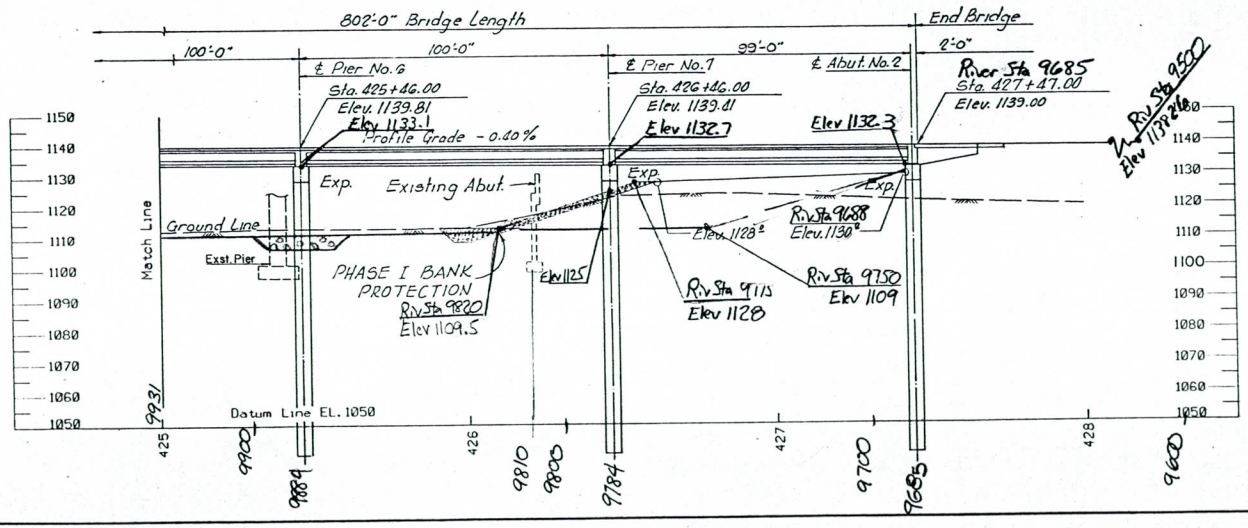
OF

F.A.H.W.A	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	SFM-022-2-519			



GENERAL ELEVATION AT W.B. CONSTRUCTION ℄

0 10' 20' 30' 40'



Depth of Superstructure

8" Deck	.67
2" Buildup	.17
5'-3" Girder	5.25
30.34' Cross-Slope	.61
Total Depth	6.70

ALTERNATE NO. I 3/20/87

	NAME	DATE
DESIGN		
DRAWN	CADD/AV	
CHECKED		
APPROVED		

ARIZONA DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MICHAEL BAKER, JR., INC.

GENERAL ELEVATION

ROUTE U.S.-60 | MILEPOST | LOCATION AGUA FRIA RIVER BRIDGE

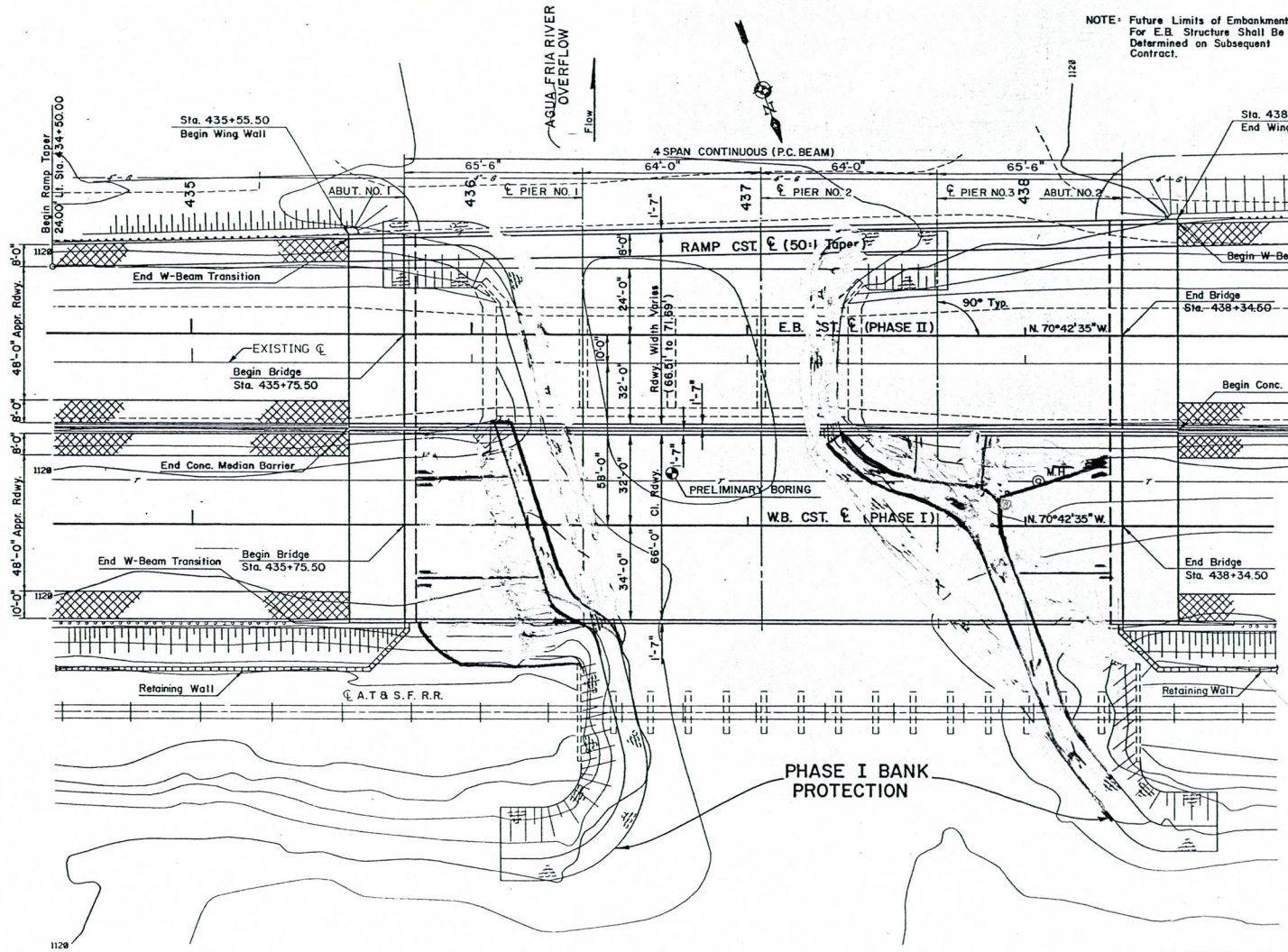
SHEET A3 OF 12

Main Channel

OF

F.H.W.A.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	SFM-022-2-519			

NOTE: Future Limits of Embankment For E.B. Structure Shall Be Determined on Subsequent Contract.



PLAN

0 10' 20' 30' 40'
2' Contour Interval

MICHAEL BAKER JR., INC.
PRELIMINARY ONLY

GENERAL NOTES

a) Construction - ADOT "Standard Specifications for Road and Bridge Construction," 1982 Edition, and "1985 Supplemental Specifications."

b) Design - AASHTO "Standard Specifications for Highway Bridges," 1983 Edition and the 1984 and 1985 "Interim Specifications."

c) Dead Load - Dead load includes allowance of 25 pounds per square foot for future wearing surface.

d) Loading Class - HS 20-44

e) All concrete shall be Class S.

f) Reinforcing steel shall conform to ASTM Specification A615, Grades 40 and 60.

g) Stresses:

Deck Slab ..... f'_c = 4,500 psi
f'_c = 1,400 psi

Superstructure (other than curbs) and concrete barriers ..... f'_c = 4,500 psi

Pier caps and columns ..... f'_c = 3,500 psi

All other Class S Concrete ..... f'_c = 3,000 psi

Prestressed Concrete (Precast) ..... f'_c = 5,000 psi

Bar sizes #6 and smaller shall be Grade 40. Bar sizes #7 and larger shall be Grade 60.

f_s = 20,000 psi (Grade 40)
f_s = 24,000 psi (Grade 60)
f_s = 20,000 psi (Deck Slab)

Prestressing Steel (ASTM A416, 1/2"Ø, low relaxation, 7-wire strand) ..... f'_s = 270,000 psi

Precast girders shall be stressed by the pretensioning method only.

CONSTRUCT: 4-64' Continuous, Type III P.C. Beam Spans.
W.B. Bridge - 66'-0" Cl. Rdwy.
E.B. Bridge - Variable Width Rdwy.
w/Concrete Parapets Ea. Side.

3-20-87

	NAME	DATE
DESIGN		
DRAWN	CADD/ AV	
CHECKED		
APPROVED		

ARIZONA DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MICHAEL BAKER, JR., INC.

GENERAL PLAN LAYOUT

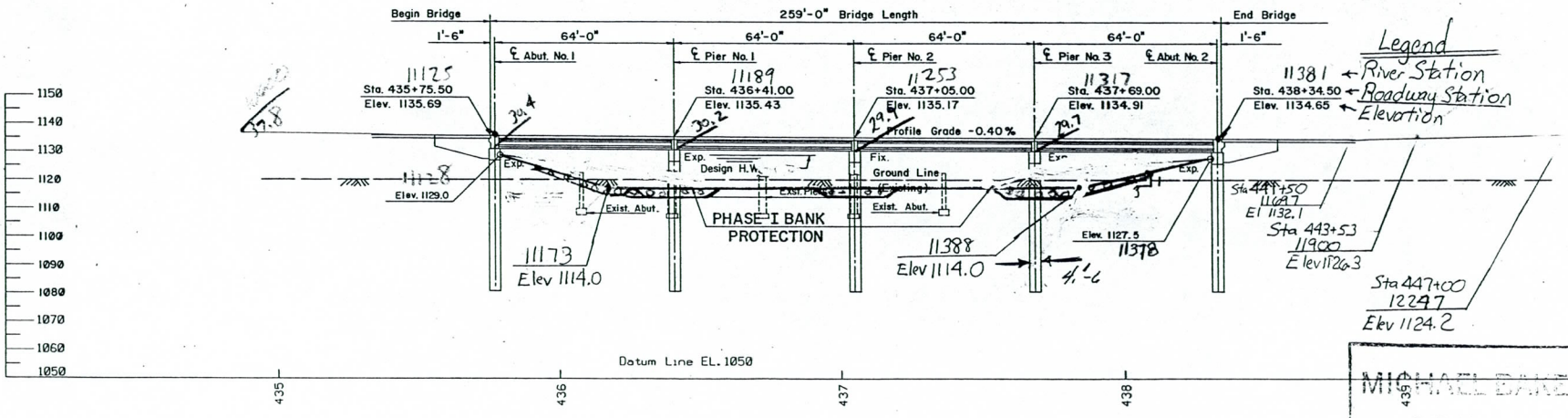
ROUTE: U.S.-60
MILEPOST:
LOCATION: AGUA FRIA RIVER OVERFLOW BRIDGE

SHEET A2 OF 12

Overflow Channel

OF

F.A.H.W.A	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	SFM-022-2-519			



GENERAL ELEVATION AT W.B. CONSTRUCTION

0 10' 20' 30' 40'

Superstructure Depth

3'-9" Girder	3.75
8" Deck	.67
2" Buildup	.17
32' Cross-slope	.64
	5.23

MICHAEL BAKER JR., INC
PRELIMINARY
ONLY 3-10-87

	NAME	DATE
DESIGN		
DRAWN	CADD/ AV	
CHECKED		
APPROVED		

ARIZONA DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MICHAEL BAKER, JR., INC.

GENERAL ELEVATION PLAN

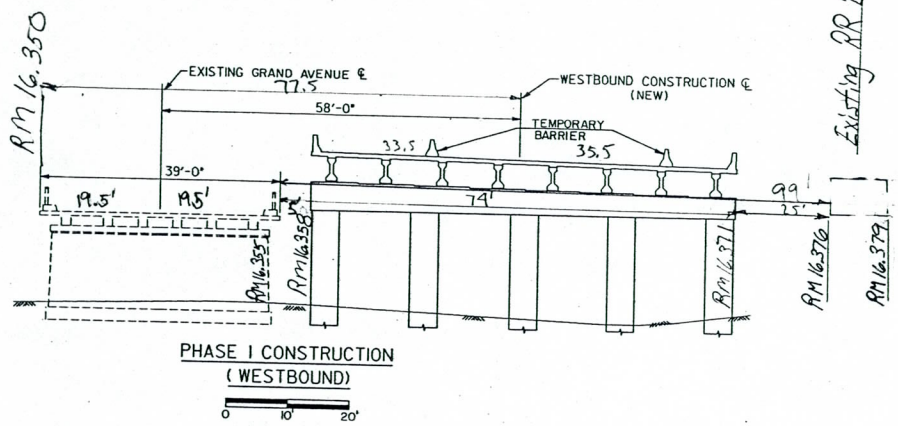
ROUTE U.S.-60 | MILEPOST | LOCATION AGUA FRIA RIVER OVERFLOW BRIDGE

SHEET A1 OF 12

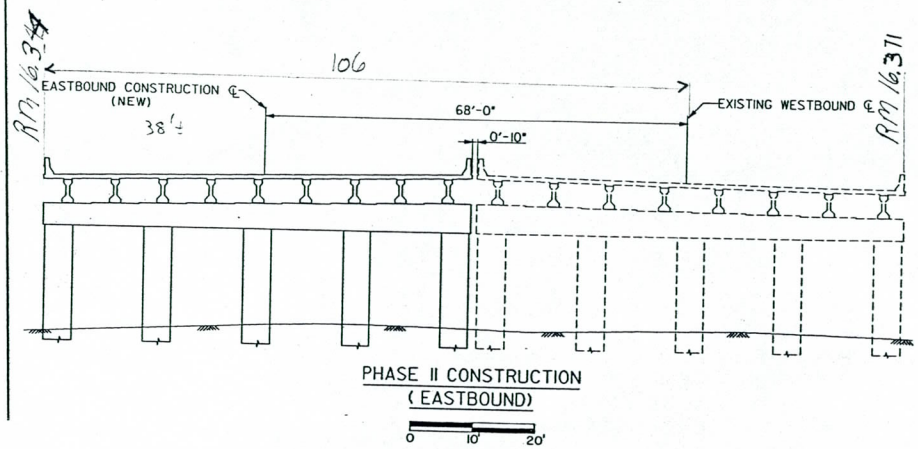
Overflow Channel

OF

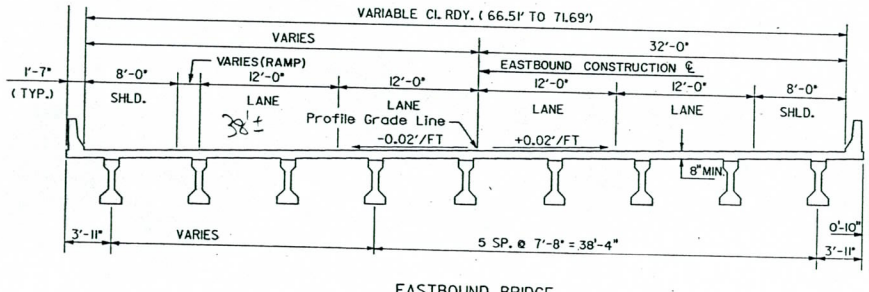
F.A.H.W.A	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	SFM-022-2-519			



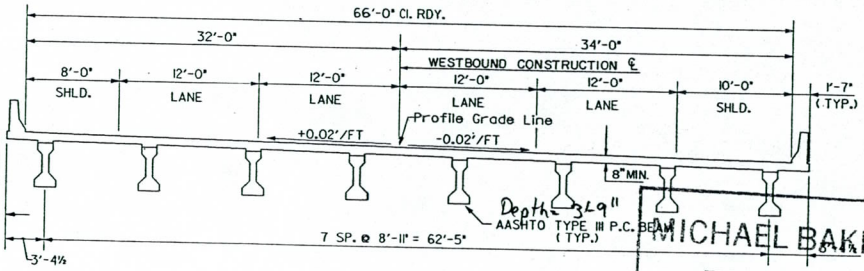
PHASE I CONSTRUCTION
(WESTBOUND)



PHASE II CONSTRUCTION
(EASTBOUND)



EASTBOUND BRIDGE



WESTBOUND BRIDGE

TYPICAL SECTION OF BRIDGES

MICHAEL BAKER JR., INC
PRELIMINARY
ONLY
3-20-87

CONSTRUCTION SEQUENCE

1. Construct the westbound bridge to carry westbound traffic while the existing Grand Avenue bridge carries the eastbound traffic.

2. Transfer the eastbound traffic to the new westbound bridge and remove existing Grand Avenue bridge.

3. Construct a new eastbound bridge and transfer the eastbound traffic to the new eastbound bridge.

0 5' 10'

MICHAEL BAKER JR., INC
PRELIMINARY
ONLY

	NAME	DATE
DESIGN		
DRAWN	CADD/AV	
CHECKED		
APPROVED		

ARIZONA DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MICHAEL BAKER, JR., INC.

TYPICAL SECTIONS

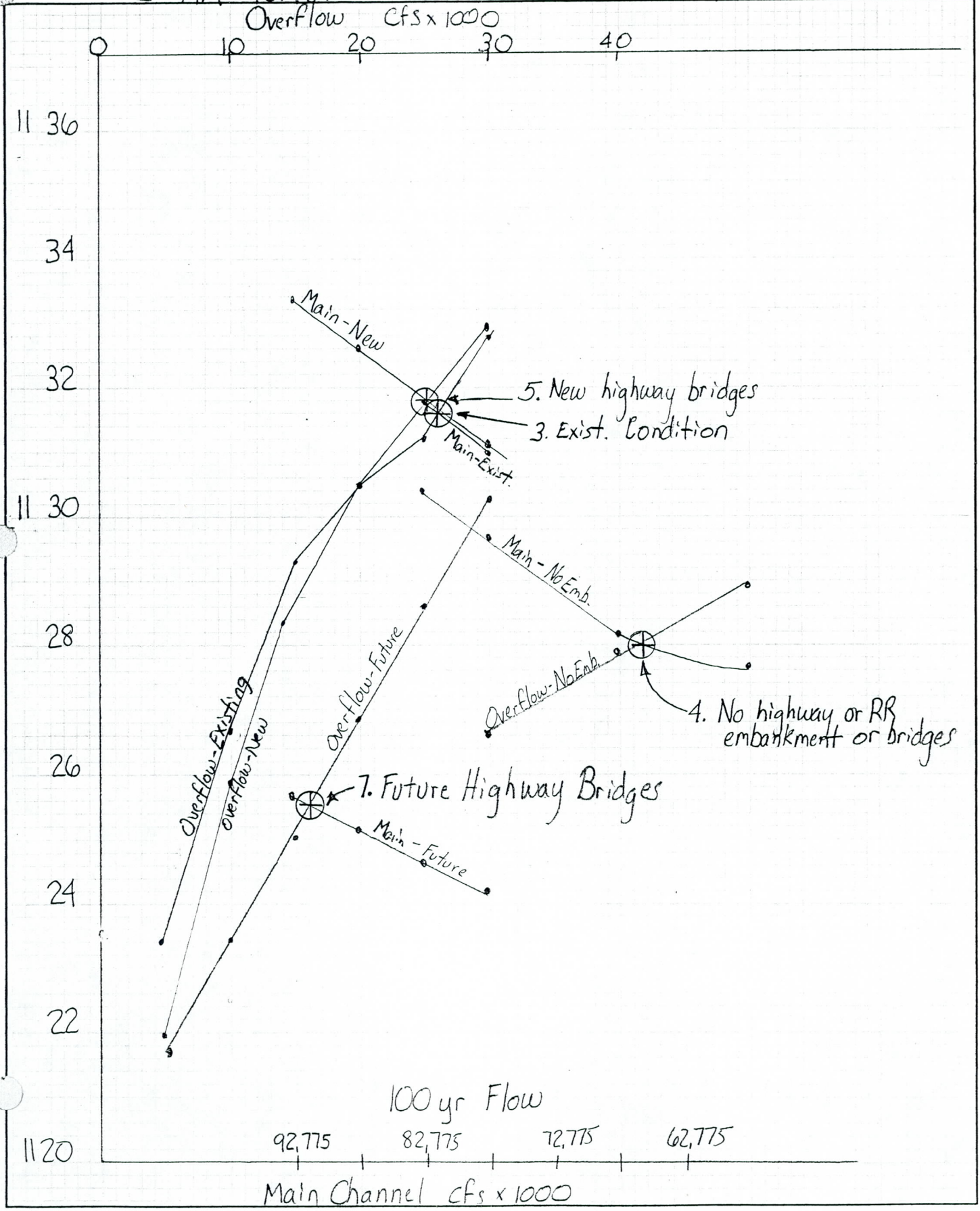
ROUTE: U.S.-60 | MILEPOST | LOCATION: AGUA FRIA RIVER OVERFLOW BRIDGE | SHEET 9A OF 12

Overflow Channel

OF

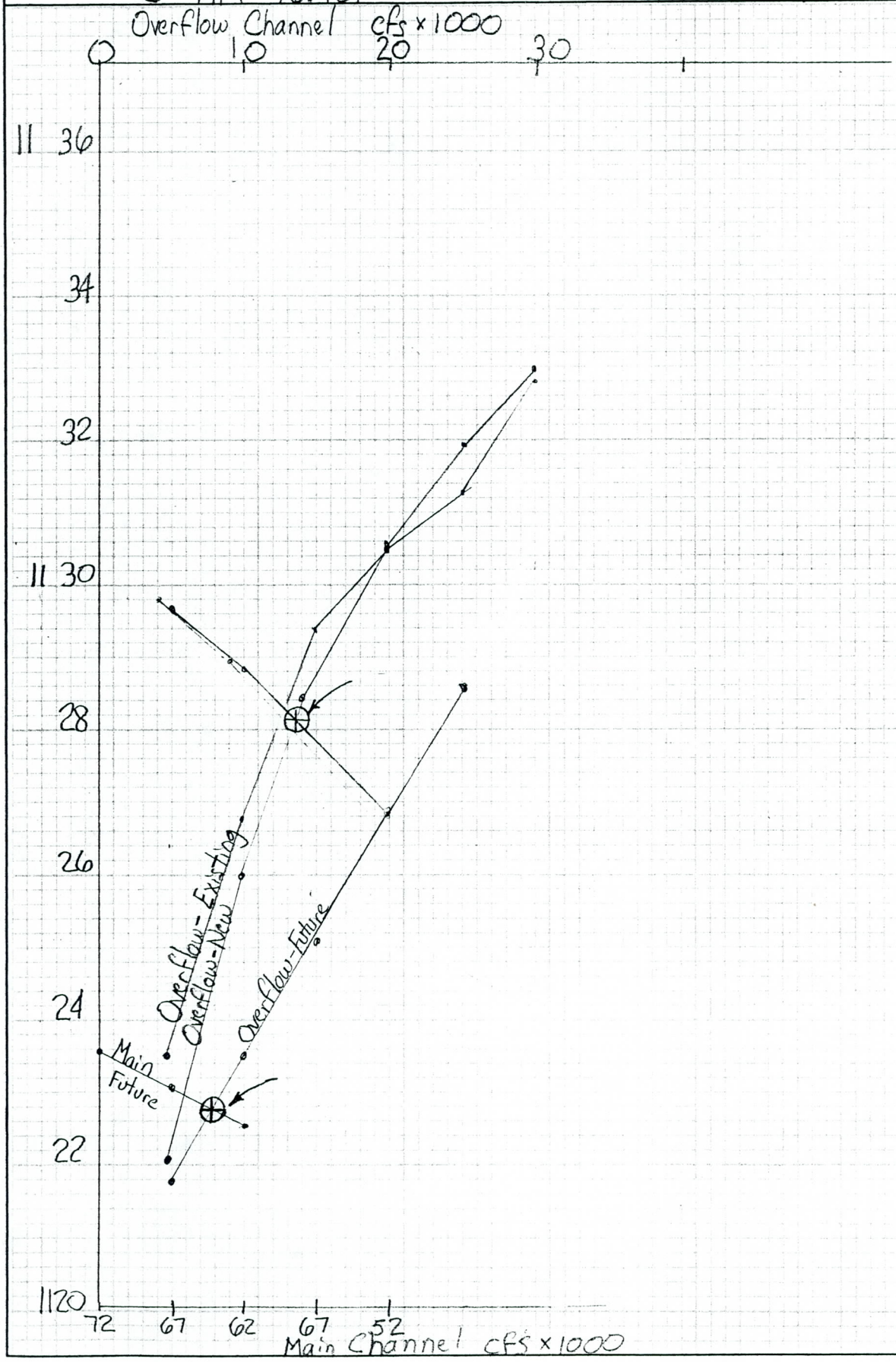
BENSON & GERDIN, INC. CONSULTING ENGINEERS PHONE (602) 264-0136	SHT. NO.	OF
	JOB NO.	2621
	BY RLH	DATE 3-87
	CHKD.	DATE
	REV.	

Q_{100} = 108,000±, Flow Split Interpolation @ RM 16481



BENSON & GERDIN, INC. CONSULTING ENGINEERS PHONE (602) 264-0136	SHT. NO.	OF
	JOB NO. 2621	
	BY RLH	DATE 3-87
	CHKD.	DATE
	REV.	

Q_{50} = 72,000 cfs, Flow Split Interpolation @ RM 16.481



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 * UPDATED MAY 1984                                  *
*
 * IBM-PC-XT VERSION AUGUST 1985                     *
*
 * RUN DATE  03-21-87   TIME  12:14:29               *
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*
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2 profiles
Split of
77775 #1
+82775 #2
only difference,

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*************************************
* U.S. ARMY CORPS OF ENGINEERS
* THE HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET, SUITE D
* DAVIS, CALIFORNIA 95616
* (916) 440-2105 (FTS) 448-2105
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XXXXXXX  XXXX     X          XXXXX   XXXXX
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X     X  XXXXXXX   XXXXX              XXXXXXX
1
 03-21-87     12:14:31                                                    PAGE    1

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  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
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T1      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
T2      SUBCRITICAL PROFILE
T3      MAIN CHANNEL - NEW FIELD DATA - VARIOUS FLOWS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     D         WSEL      FQ

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J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRADE

      .000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000


WT      3.000 105600.000 105600.000 105600.000      .000      .000      .000      .000      .000      .000
NC       .050      .050      .050      .100      .300      .000      .000      .000      .000      .000
ET       .000     9.100     9.100     9.100      .000      .000      .000      .000   9811.000  11600.000
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03-21-67 12:14:31 PAGE 2

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GR	1141.000	10402.000	1124.000	10443.000	1108.000	10500.000	1108.000	10529.000	1112.000	10549.000
GR	1112.000	10613.000	1109.000	10664.000	1108.000	10684.000	1111.000	10705.000	1112.000	10786.000
GR	1114.000	10843.000	1113.000	10905.000	1110.000	10955.000	1110.000	11005.000	1111.000	11055.000
GR	1113.000	11079.000	1114.000	11146.000	1113.000	11220.000	1113.000	11268.000	1113.000	11296.000
GR	1114.000	11317.000	1112.000	11399.000	1110.000	11452.000	1111.000	11471.000	1109.000	11493.000
GR	1109.000	11558.000	1110.000	11588.000	1110.000	11657.000	1110.000	11731.000	1110.000	11793.000
GR	1110.000	11870.000	1111.000	11941.000	1111.000	11990.000	1111.000	12036.000	1111.000	12085.000
GR	1112.000	12152.000	1112.000	12219.000	1112.000	12311.000	1112.000	12395.000	1112.000	12482.000
GR	1112.000	12555.000	1112.000	12620.000	1112.000	12690.000	1113.000	12743.000	1113.000	12809.000

GR	1114.000	13339.000	1114.000	13393.000	1114.000	13673.000	1114.000	13741.000	1114.000	13807.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	9252.000	12040.000
X1	16.153	90.000	9251.000	10209.000	710.000	770.000	740.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1142.000	9036.000	1141.000	9124.000	1141.000	9201.000	1141.000	9251.000	1115.000	9299.000
GR	1115.000	9364.000	1114.000	9435.000	1114.000	9511.000	1114.000	9534.000	1110.000	9568.000
GR	1109.000	9592.000	1110.000	9613.000	1117.000	9637.000	1115.000	9668.000	1109.000	9683.000
GR	1107.000	9741.000	1107.000	9802.000	1107.000	9857.000	1105.000	9906.000	1105.000	9942.000
GR	1103.000	10000.000	1102.000	10060.000	1102.000	10090.000	1126.000	10136.000	1147.000	10190.000
GR	1151.000	10209.000	1151.000	10272.000	1148.000	10321.000	1149.000	10382.000	1147.000	10434.000
GR	1127.000	10460.000	1108.000	10536.000	1108.000	10561.000	1111.000	10620.000	1111.000	10682.000
GR	1111.000	10757.000	1112.000	10827.000	1112.000	10901.000	1112.000	10970.000	1112.000	11034.000
GR	1113.000	11101.000	1113.000	11158.000	1110.000	11171.000	1114.000	11182.000	1114.000	11250.000
GR	1114.000	11330.000	1114.000	11406.000	1113.000	11487.000	1113.000	11561.000	1113.000	11640.000
GR	1113.000	11714.000	1113.000	11788.000	1113.000	11843.000	1114.000	11900.000	1114.000	11968.000
GR	1114.000	12040.000	1114.000	12112.000	1113.000	12178.000	1113.000	12229.000	1113.000	12308.000
GR	1113.000	12362.000	1113.000	12451.000	1114.000	12513.000	1114.000	12558.000	1114.000	12588.000
GR	1114.000	12658.000	1114.000	12711.000	1114.000	12762.000	1114.000	12817.000	1114.000	12870.000
GR	1114.000	12930.000	1114.000	12979.000	1113.000	13031.000	1113.000	13092.000	1114.000	13153.000

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GR	1114.000	13209.000	1115.000	13289.000	1116.000	13370.000	1116.000	13451.000	1116.000	13532.000
GR	1117.000	13603.000	1118.000	13685.000	1118.000	13765.000	1118.000	13840.000	1118.000	13912.000
GR	1118.000	13981.000	1119.000	14054.000	1118.000	14131.000	1118.000	14205.000	1118.000	14281.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	8638.000	10823.000
X1	16.191	54.000	9855.000	10622.800	200.000	200.000	200.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1121.000	8637.600	1122.100	8675.600	1122.000	8709.700	1120.100	8761.900	1118.400	8789.200
GR	1116.800	8830.000	1118.400	8865.300	1118.700	8914.700	1117.700	8942.500	1117.100	8970.900
GR	1110.200	8995.300	1109.900	9034.500	1109.300	9086.800	1111.100	9147.500	1119.800	9172.000
GR	1118.700	9260.500	1118.700	9343.500	1118.200	9378.700	1117.700	9389.500	1118.600	9428.600
GR	1123.500	9450.800	1123.700	9459.900	1120.900	9482.000	1124.400	9542.200	1125.600	9567.200
GR	1124.800	9593.300	1124.200	9633.700	1124.900	9686.500	1126.000	9722.800	1127.400	9783.000
GR	1128.500	9855.000	1108.610	9897.000	1103.590	9996.000	1109.090	10301.000	1112.920	10310.000
GR	1115.400	10320.200	1115.900	10401.500	1116.800	10445.200	1122.600	10472.400	1121.900	10498.000
GR	1121.900	10573.000	1121.700	10649.100	1120.000	10679.200	1120.100	10701.300	1123.700	10718.300
GR	1120.000	10749.600	1124.600	10766.000	1128.100	10796.100	1141.800	10822.800	1142.800	10869.400
GR	1143.900	10917.100	1144.600	10956.900	1144.800	10996.000	1145.100	11013.100	.000	.000
NC	.035	.035	.025	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	9076.000	10587.000
X1	16.291	39.000	9885.000	10586.000	533.000	475.000	528.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1119.300	9075.400	1119.600	9127.100	1120.500	9227.600	1121.700	9278.100	1120.900	9295.200
GR	1121.000	9337.800	1121.200	9350.300	1120.500	9421.300	1121.400	9553.000	1121.600	9655.800
GR	1121.600	9705.800	1119.800	9716.000	1119.600	9725.700	1124.400	9746.700	1132.400	9766.500
GR	1131.500	9768.300	1132.900	9885.000	1131.100	9891.500	1129.560	9896.000	1107.090	9944.000
GR	1105.500	10000.000	1112.800	10328.000	1115.930	10345.000	1120.970	10357.000	1124.000	10387.400
GR	1123.000	10427.600	1128.300	10450.300	1124.000	10480.400	1125.600	10528.700	1129.700	10557.600
GR	1137.900	10586.000	1136.300	10616.700	1136.600	10663.300	1136.500	10702.400	1140.300	10741.100
GR	1145.800	10779.700	1145.800	10813.800	1146.700	10859.800	1146.400	10886.400	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	9777.000	10223.000
X1	16.350	25.000	9778.000	10222.000	200.000	375.000	300.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1129.000	1134.000	.000
GR	1126.700	9272.500	1127.200	9320.200	1126.900	9421.800	1127.100	9529.200	1127.200	9658.100
GR	1126.000	9729.100	1126.000	9751.200	1126.000	9778.000	1113.600	9820.500	1113.200	9848.900
GR	1112.900	9892.600	1111.100	9935.800	1110.400	9960.200	1111.100	9992.600	1111.600	10000.000
GR	1112.400	10045.500	1113.100	10107.900	1113.600	10148.200	1116.800	10180.000	1120.000	10222.000
GR	1124.000	10250.000	1128.000	10350.000	1132.000	10400.000	1136.000	10470.000	1140.000	10520.000

SB	1.250	1.560	3.000	.000	444.000	28.000	6760.000	.000	1112.000	1112.000
X1	16.355	28.000	9778.000	10222.000	38.000	38.000	38.000	.000	.000	.000
X2	.000	.000	1.000	1131.000	1131.500	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1131.000	1137.000	.000
BT	-11.000	9300.000	1131.500	.000	9451.000	1131.500	.000	9591.000	1131.500	.000
BT	.000	9749.000	1131.500	.000	9749.100	1134.000	.000	9778.000	1134.000	1125.500
BT	.000	10222.000	1139.500	1131.000	10251.000	1140.000	.000	10251.100	1137.000	.000
BT	.000	10301.000	1137.500	.000	10401.000	1140.000	.000	.000	.000	.000
GR	1150.000	9300.200	1127.500	9301.200	1129.000	9451.200	1130.000	9591.200	1131.000	9751.100
GR	1125.000	9751.200	1125.000	9778.000	1118.400	9778.100	1113.400	9797.100	1112.800	9858.100
GR	1113.200	9862.600	1113.700	9891.600	1112.500	9920.600	1110.000	9951.600	1112.700	9956.100
GR	1111.500	10000.000	1110.300	10046.100	1110.400	10050.600	1112.400	10095.100	1113.900	10139.600

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GR	1113.500	10144.100	1116.300	10206.100	1122.400	10221.000	1122.400	10222.000	1128.000	10250.000
GR	1132.000	10350.000	1136.000	10450.000	1140.000	10650.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	9733.000	10201.000
X1	16.376	38.000	9734.000	10200.000	85.000	85.000	85.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1134.000	1137.500	.000
GR	1124.400	8350.200	1126.000	8408.700	1127.200	8513.800	1123.700	8585.300	1121.000	8643.200
GR	1118.600	8697.800	1118.200	8715.400	1118.200	8746.600	1127.100	8777.800	1128.800	8846.500
GR	1129.400	8963.000	1129.400	9062.300	1129.400	9181.000	1130.200	9272.500	1131.100	9379.200
GR	1132.400	9560.400	1134.300	9661.500	1134.000	9734.000	1122.100	9744.400	1115.900	9791.000
GR	1112.700	9846.000	1112.900	9872.700	1111.800	9932.900	1112.200	9970.400	1112.200	9998.200
GR	1112.200	10000.000	1112.200	10032.900	1112.200	10074.300	1113.100	10120.300	1113.800	10165.800
GR	1116.100	10183.900	1137.500	10200.000	1140.500	10261.200	1141.800	10372.500	1142.800	10517.900
GR	1143.200	10654.700	1143.400	10574.000	1143.500	10701.300	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	9733.000	10201.000
SB	1.250	1.560	3.000	.000	465.000	60.000	7607.000	.100	1112.200	1111.800
X1	16.379	31.000	9734.000	10200.000	15.000	18.330	18.000	.000	.000	.000
X2	.000	.000	1.000	1134.500	1134.000	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1134.000	1141.000	.000
BT	-11.000	9450.000	1134.400	.000	9490.000	1134.600	.000	9734.000	1136.600	1133.000
BT	.000	9873.000	1138.100	1134.500	9873.100	1138.100	1125.500	9975.000	1139.500	1126.500
BT	.000	9975.100	1139.100	1128.000	10075.000	1140.200	1129.100	10075.100	1140.200	1132.600
BT	.000	10200.000	1141.600	1134.000	10300.000	1142.100	.000	.000	.000	.000
GR	1131.700	9313.000	1133.100	9331.000	1132.600	9352.000	1128.500	9391.000	1125.100	9517.000
GR	1122.600	9589.000	1123.000	9652.000	1125.500	9734.000	1121.900	9739.000	1118.700	9750.000
GR	1116.400	9806.000	1115.200	9848.000	1114.300	9897.000	1113.600	9925.000	1112.900	9960.000
GR	1112.700	9989.000	1112.700	10033.000	1112.200	10084.000	1112.500	10120.000	1113.600	10173.000
GR	1126.700	10200.000	1127.900	10206.000	1128.800	10272.000	1131.800	10296.000	1130.800	10303.000
GR	1131.000	10321.000	1129.400	10354.000	1129.700	10401.000	1134.000	10478.000	1137.200	10547.000
GR	1141.800	10613.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.055	.050	.035	.100	.300	.000	.000	.000	.000	.000
GT	3.000	107945.000	107945.000	107945.000	.000	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	8100.000	10202.000
X1	16.431	85.000	9681.400	10201.000	350.000	230.000	300.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1127.600	6737.900	1128.100	6799.300	1127.800	6901.500	1127.100	6994.600	1127.100	7034.400
GR	1126.200	7086.100	1126.400	7121.800	1126.500	7155.900	1126.500	7203.600	1126.500	7253.000
GR	1126.700	7301.300	1129.200	7322.300	1129.500	7337.600	1128.300	7389.300	1127.100	7417.700
GR	1126.000	7460.300	1127.600	7465.300	1126.900	7504.600	1124.000	7535.300	1123.700	7575.600
GR	1123.700	7614.800	1129.400	7656.200	1132.400	7673.800	1132.700	7702.200	1131.700	7722.700
GR	1130.100	7753.300	1129.500	7771.500	1123.700	7831.100	1121.900	7891.300	1121.700	7962.300
GR	1121.700	8066.800	1121.900	8123.600	1124.200	8190.600	1121.900	8274.700	1123.200	8305.900
GR	1122.800	8333.700	1116.800	8367.800	1114.800	8385.400	1116.600	8403.000	1118.400	8445.600
GR	1120.900	8514.300	1125.100	8570.500	1123.900	8624.500	1122.100	8698.900	1122.100	8782.400
GR	1122.800	8883.500	1123.000	8966.900	1123.500	9062.900	1123.900	9137.300	1123.900	9157.200
GR	1129.400	9166.300	1128.700	9176.500	1123.300	9195.200	1123.700	9246.900	1124.600	9274.700

GR	1112.700	10065.800	1112.900	10107.900	1112.500	10148.700	1143.200	10185.700	1150.600	10201.000
GR	1150.800	10269.100	1150.800	10293.000	1147.100	10319.100	1149.700	10349.200	1148.100	10374.800
GR	1139.800	10399.800	1141.400	10411.700	1142.700	10422.500	1150.400	10433.800	1150.600	10484.900
GR	1151.500	10536.600	1150.600	10556.500	1135.700	10610.400	1130.200	10637.700	1131.000	10738.800

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GT	3.000	108205.000	108205.000	108205.000	.000	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	8200.000	10200.000
X1	16.481	90.000	9647.300	10199.900	270.000	263.330	264.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1130.200	6374.500	1130.200	6434.100	1128.300	6462.500	1129.400	6494.900	1129.500	6517.000
GR	1129.500	6586.900	1129.000	6638.500	1129.000	6689.100	1129.200	6740.800	1129.200	6773.700
GR	1129.200	6813.500	1129.700	6847.000	1130.100	6869.700	1130.200	6941.200	1128.100	6969.100
GR	1126.000	7007.100	1125.600	7057.700	1125.600	7088.500	1131.500	7124.700	1133.300	7142.300
GR	1132.900	7159.300	1130.800	7173.500	1129.900	7183.700	1124.900	7217.800	1123.500	7246.200
GR	1124.200	7275.700	1127.800	7316.600	1128.300	7338.600	1117.500	7384.800	1113.800	7417.100
GR	1113.100	7458.600	1108.500	7497.200	1106.500	7597.200	1106.300	7660.800	1106.300	7705.100
GR	1117.800	7787.400	1116.800	7874.300	1116.100	7937.900	1114.800	7998.100	1115.700	8053.800
GR	1116.400	8099.800	1114.800	8131.600	1116.400	8157.700	1115.500	8194.600	1117.300	8216.200
GR	1120.300	8229.200	1119.600	8238.900	1122.300	8273.500	1125.300	8296.300	1125.300	8383.700
GR	1124.900	8544.400	1124.400	8680.700	1124.400	8811.300	1124.400	8974.900	1124.900	9063.500
GR	1125.500	9118.600	1124.900	9153.200	1124.800	9163.400	1123.000	9173.100	1123.000	9205.500
GR	1125.000	9578.600	1125.000	9613.200	1125.300	9638.800	1126.700	9647.300	1126.500	9688.200
GR	1125.500	9755.800	1111.800	9816.000	1112.000	9860.200	1112.500	9923.900	1112.500	9960.800
GR	1113.400	9988.600	1113.600	10000.000	1114.100	10061.300	1112.900	10145.900	1115.700	10160.100
GR	1150.300	10199.900	1151.200	10218.600	1150.300	10247.000	1153.800	10275.400	1153.800	10349.200
GR	1152.200	10413.400	1153.300	10417.400	1153.300	10444.600	1153.300	10502.500	1153.300	10532.600
GR	1155.100	10554.800	1154.700	10566.700	1154.200	10592.300	1154.300	10661.600	1154.200	10695.600

GT	3.000	108205.000	108205.000	108205.000	.000	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	8295.000	10245.000
X1	16.580	85.000	9762.600	10244.100	523.330	523.330	523.330	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1128.300	6184.800	1129.400	6225.100	1132.400	6261.500	1135.900	6280.800	1136.300	6302.400
GR	1135.600	6321.700	1134.500	6334.200	1133.600	6346.100	1130.400	6375.600	1128.100	6402.300
GR	1127.200	6448.300	1131.500	6465.900	1129.500	6501.100	1125.600	6535.800	1124.000	6580.600
GR	1122.500	6666.900	1122.500	6700.500	1121.700	6770.300	1121.700	6840.200	1121.000	6898.600
GR	1121.600	6944.600	1121.600	7015.600	1120.300	7073.000	1120.100	7143.400	1119.600	7204.700
GR	1120.100	7264.400	1121.000	7309.800	1122.600	7343.300	1128.100	7392.200	1130.800	7416.600
GR	1130.800	7466.000	1129.400	7486.400	1129.500	7536.400	1129.000	7570.500	1129.000	7622.200
GR	1127.900	7678.400	1125.600	7690.300	1125.600	7703.400	1127.600	7720.400	1128.800	7774.900
GR	1128.300	7801.000	1129.200	7914.600	1128.800	8022.500	1128.100	8102.000	1127.600	8188.300
GR	1127.600	8266.700	1126.700	8354.700	1126.700	8441.600	1126.000	8552.900	1126.400	8638.100
GR	1126.200	8726.700	1126.200	8832.900	1126.200	8860.700	1126.900	8931.700	1126.200	8945.900
GR	1126.500	8978.900	1126.500	8992.500	1127.900	8997.600	1127.800	9005.000	1126.400	9025.400
GR	1126.700	9048.100	1127.100	9065.800	1125.500	9641.000	1130.600	9648.000	1126.200	9664.000
GR	1126.900	9724.000	1127.100	9762.600	1113.100	9806.300	1112.500	9837.500	1112.500	9850.300
GR	1113.100	9940.300	1111.600	9963.600	1112.200	9986.000	1113.100	10000.000	1113.900	10013.600
GR	1114.800	10061.300	1113.800	10136.800	1133.400	10162.900	1146.900	10191.300	1145.700	10211.800
GR	1151.900	10244.100	1153.300	10303.800	1155.400	10357.200	1152.800	10400.900	1154.200	10435.500

ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	8030.000	10145.000
X1	16.681	85.000	9741.800	10144.600	530.000	536.670	526.330	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1135.600	5149.200	1135.600	5216.800	1132.400	5245.100	1131.000	5274.600	1131.300	5296.200
GR	1131.800	5332.000	1131.700	5367.700	1135.000	5397.200	1136.500	5414.800	1136.500	5426.100
GR	1135.700	5447.700	1135.000	5455.100	1133.800	5465.300	1130.700	5503.900	1130.800	5559.500
GR	1131.500	6079.800	1131.700	6181.300	1131.700	6289.200	1130.600	6402.100	1130.200	6527.500
GR	1130.100	6692.600	1129.700	6791.900	1129.900	6934.700	1130.100	7034.200	1129.500	7143.100

1

GR	1129.400	7293.500	1129.400	7385.900	1129.000	7442.100	1129.000	7475.000	1130.400	7484.700
GR	1130.100	7497.700	1129.200	7511.300	1128.700	7603.800	1128.300	7683.300	1128.300	7781.400
GR	1128.100	7922.100	1128.100	8029.900	1127.900	8171.200	1128.100	8255.800	1129.200	8313.600
GR	1129.000	8377.800	1127.800	8433.900	1127.200	8532.700	1126.700	8684.700	1127.100	8792.500
GR	1125.500	8844.700	1126.200	8858.300	1126.500	8881.000	1126.500	8921.300	1126.900	8941.700
GR	1125.500	9479.600	1139.100	9560.800	1130.100	9673.700	1130.400	9741.800	1113.600	9800.200
GR	1113.600	9831.400	1114.800	9862.600	1114.700	9898.400	1114.500	9951.700	1113.800	9996.000
GR	1113.800	9998.800	1113.800	10000.000	1115.500	10027.800	1116.100	10087.900	1120.000	10110.000
GR	1152.400	10144.600	1155.100	10170.200	1143.700	10194.600	1137.200	10223.500	1135.200	10247.900
GR	1148.100	10293.300	1158.600	10337.600	1158.100	10388.100	1155.200	10415.300	1153.800	10429.500
GR	1153.300	10445.900	1158.400	10468.600	1156.500	10498.700	1155.200	10512.900	1151.300	10522.000
GR	1156.800	10539.000	1158.200	10570.800	1158.400	10590.600	1158.400	10658.100	1159.000	10719.400
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	7745.000	10110.000
X1	16.780	87.000	9678.200	10109.500	521.670	525.000	523.330	.000	.000	.000
GR	1136.300	4085.900	1135.700	4116.600	1135.600	4172.800	1136.600	4193.200	1136.800	4226.700
GR	1137.200	4302.100	1133.600	4345.200	1133.100	4389.500	1132.400	4425.800	1132.400	4454.200
GR	1138.400	4479.700	1139.600	4499.000	1138.000	4518.900	1135.000	4559.200	1134.100	4609.700
GR	1134.100	4706.100	1134.100	4798.600	1134.100	4895.100	1133.400	4998.300	1133.400	5145.400
GR	1133.400	5324.600	1133.400	5528.800	1133.100	5704.200	1133.100	5862.500	1132.700	5988.400
GR	1132.700	6209.700	1132.700	6372.000	1132.200	6511.600	1131.700	6677.300	1130.400	6793.000
GR	1130.100	7005.800	1130.100	7108.500	1130.100	7228.800	1129.700	7309.300	1130.400	7329.800
GR	1130.400	7344.500	1129.500	7371.800	1129.200	7481.800	1127.900	7514.200	1128.800	7526.700
GR	1128.800	7691.800	1129.000	7896.600	1129.000	8086.700	1129.000	8225.100	1128.500	8369.800
GR	1128.700	8506.000	1128.300	8641.000	1128.300	8675.600	1127.600	8705.100	1127.200	8732.900
GR	1127.400	8755.100	1127.800	8776.600	1127.600	8842.500	1121.700	8861.700	1122.100	8867.400
GR	1127.600	8886.100	1128.100	8984.300	1128.700	9130.700	1128.700	9243.600	1130.100	9360.500
GR	1130.600	9525.600	1130.800	9608.400	1131.000	9667.500	1131.000	9678.200	1127.400	9695.300
GR	1113.100	9745.800	1112.200	9767.900	1111.600	9817.200	1112.700	9876.300	1113.400	9905.200
GR	1113.600	9932.400	1112.500	9963.600	1112.900	9988.000	1112.900	10000.000	1112.000	10030.000
GR	1115.500	10072.000	1138.900	10102.600	1157.700	10109.500	1159.800	10179.200	1160.900	10246.200
GR	1160.700	10342.700	1158.600	10375.000	1159.000	10414.200	1159.800	10472.600	1161.100	10524.800
GR	1160.500	10617.800	1160.400	10643.600	.000	.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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03-21-87 12:14:31 PAGE 7

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

*PROF 1

CCHV= .100 CEHV= .300
*SECNO 15.647
3280 CROSS SECTION 15.65 EXTENDED .39 FEET

3470 ENCROACHMENT STATIONS= 9311.0 11600.0 TYPE= 1 TARGET= 2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1132.00 ELREA= 1107.00

15.65	14.39	1111.39	.00	.00	1112.31	.92	.00	.00	1132.00
105600.	0.	103126.	2474.	0.	13350.	413.	0.	0.	1107.00
.00	.00	7.72	6.00	.050	.050	.050	.000	1097.00	9341.77
.005995	0.	0.	0.	0	0	0	.00	2258.23	11600.00

0
*SECNO 15.823

3285 DIVIDED FLOW

```
3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    23.85  1115.70      .00      .00  1117.01     1.32     4.59      .12  1133.00
   77775.       0.   77775.       0.       0.    8446.       0.     237.      32. 100000.00
      .03      .00     9.21      .00     .050     .050     .050     .000  1091.85  9360.30
  .003883     900.     930.     960.        2        0        0      .00   750.17 10145.57
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      4.22 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000
1
  03-21-87     12:14:31                                                                    PAGE    8


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    18.22  1118.22      .00      .00  1118.91      .69     1.63      .06100000.00
   77775.       0.   77775.       0.       0.   11702.       0.     468.      51.   1146.00
      .07      .00     6.65      .00     .048     .040     .048     .000  1100.00  9289.17
  .001064    1000.    1000.     980.        3        0        0      .00   901.09 10190.27
0
 *SECNO 16.153
 3280 CROSS SECTION     16.15 EXTENDED       .96 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    16.96  1118.96      .00      .00  1120.48     1.52     1.32      .25100000.00
   77775.       0.   77775.       0.       0.    7870.       0.     625.      66.   1151.00
      .09      .00     5.88      .00     .048     .040     .048     .000  1102.00  9251.69
  .003574     710.     740.     770.        3        0        0      .00   830.62 10122.51
0
 *SECNO 16.191

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    15.38  1118.97      .00      .00  1121.80     2.83      .93      .40  1128.50
   77775.       0.   77775.       0.       0.    5756.       0.     666.      69.   1141.80
```

0
CCHV= .300 CEHV= .500
1
03-21-87 12:14:31 PAGE 9

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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 16.291

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9076.0 10587.0 TYPE= 1 TARGET= 1511.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1132.90 ELREA= 1137.90

16.29	15.99	1121.49	.00	.00	1124.86	3.38	2.79	.27	1132.90
77775.	0.	77775.	0.	0.	5274.	0.	733.	75.	1137.90
.10	.00	14.75	.00	.035	.035	.035	.000	1105.50	9913.25
.004532	533.	528.	476.	0	0	0	.00	445.51	10358.76

0
*SECNO 16.350

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1129.00 ELREA= 1134.00

16.35	13.12	1123.52	1123.52	.00	1128.57	5.05	1.62	.84	1126.00
77775.	0.	77775.	0.	0.	4313.	0.	766.	78.	1120.00
.11	.00	18.03	.00	.035	.035	.035	.000	1110.40	9786.49
.008525	200.	300.	375.	4	15	0	.00	435.51	10222.00

0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1120.08 ,NOT 1123.52 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SS	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELC-D
	1.25	1.56	3.00	.00	444.00	28.00	6760.00	.00	1112.00	1112.00

*SECNO 16.355
6110 EGLWC OF 1128.39 LESS THAN XEG OF 1128.57

3301 HV CHANGED MORE THAN HVINS

1
03-21-87 12:14:31 PAGE 10

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

3420 BRIDGE W.S.= 1122.28 BRIDGE VELOCITY=, 18.19 CALCULATED CHANNEL AREA=, 4276.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1128.39	.00	0.	77775.	6760.	7904.	1131.00	1131.50

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1131.00 ELREA= 1137.00

16.35	15.11	1125.11	.00	.00	1128.57	3.29	.00	.00	1125.00
77775.	0.	77775.	0.	0.	5346.	0.	770.	79.	1122.40
.11	.00	14.55	.00	.000	.035	.000	.000	1110.00	9778.00
.004374	38.	38.	38.	0	0	0	.00	444.00	10222.00

0

*SECNO 16.376

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1137.50

16.38	13.99	1125.79	.00	.00	1128.97	3.18	.36	.03	1134.00
77775.	0.	77775.	0.	0.	5438.	0.	781.	80.	1137.50
.11	.00	14.30	.00	.035	.035	.035	.000	1111.80	9741.17
.004179	85.	85.	85.	2	0	0	.00	450.02	10191.19

0

SPECIAL BRIDGE

SB	XK	XKOR	CDFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	465.00	60.00	7607.00	.10	1118.20	1111.80

*SECNO 16.379

3301 HV CHANGED MORE THAN HVINS

1

03-21-87 12:14:31 PAGE 11

SECNO	DEPTH	DWSEL	CHIWS	WSELK	EG	HV	HL	QLOBS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTA	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	IDONT	CORAR	TOPWID	ENDST

CLASS A LOW FLOW

3420 BRIDGE W.S.= 1124.42 BRIDGE VELOCITY=, 15.41 CALCULATED CHANNEL AREA=, 4964.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1131.00	3.08	0.	77775.	7607.	9081.	1134.50	1134.00

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1141.00

16.38	16.67	1128.67	.00	.00	1121.00	2.13	2.03	.00	1125.50

```
 .002230      15.      18.      18.       0        0        0      .00   466.00 10200.00
0
 DCHV=    .100 DEHV=    .300
 *SECNO 16.431

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8100.0   10202.0  TYPE=     1  TARGET=    2102.000
    16.43    20.03  1130.83      .00      .00  1131.56      .73      .42      .14  1125.10
  107945.   43515.   64430.       0.   12385.    7659.       0.     882.      89.   1150.60
      .13     3.51     8.41      .00     .055     .035     .050     .000  1110.80  8100.00
 .001025     350.     300.     230.        3        0        0      .00  2070.79 10170.79
0
 *SECNO 16.481

 3470 ENCROACHMENT STATIONS=    8200.0   10200.0  TYPE=     1  TARGET=    2000.000
    16.48    19.16  1130.96      .00      .00  1131.97     1.01      .33      .08  1126.70
  108205.   36020.   72185.       0.    9691.    7566.       0.     997.     102.   1150.30
      .14     3.72     9.54      .00     .055     .035     .050     .000  1111.80  8200.00
 .001487     270.     264.     263.        2        0        0      .00  1977.65 10177.65
0
1
 03-21-87     12:14:31                                                                PAGE   12


   SECNO    DEPTH    CWSEL    CRIWS    WSELR    EG       HV       HL       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 16.580

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    18.63  1131.23      .00      .00  1133.17     1.94      .92      .28  1127.10
  108205.   24791.   63414.       0.    7024.    6635.       0.    1182.     125.   1151.90
      .15     3.53    12.57      .00     .055     .035     .050     .000  1111.60  8295.00
 .002111     523.     523.     523.        2        0        0      .00  1865.02 10160.02
0
 *SECNO 16.681

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    19.01  1132.61      .00      .00  1134.30     1.69     1.10      .02  1130.40
  108205.   32526.   75677.       0.    6439.    6195.       0.    1354.     148.   1152.40
      .16     3.85    12.22      .00     .055     .035     .050     .000  1113.60  8030.00
 .002069     530.     528.     527.        3        0        0      .00  1973.27 10123.46
0
 *SECNO 16.780

 3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    22.30  1133.90      .00      .00  1135.15     1.24      .60      .04  1131.00
  108205.   27468.   80737.       0.    9798.    7900.       0.    1548.     174.   1157.70
      .18     2.80    10.22      .00     .055     .035     .050     .000  1111.60  7745.00
 .001182     528.     523.     525.        2        0        0      .00  2351.07 10096.07
0
1
 03-21-87     12:14:31                                                                PAGE   13
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**************************************************
  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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
T2      SUBCRITICAL PROFILE
T3      MAIN CHANNEL - NEW FIELD DATA - VARIOUS FLOWS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        3.        0.        0.   .000000       .00        .0        0.  1111.290      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     15.000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000

1
 03-21-87     12:14:31                                                                                    PAGE   14


   SECNO     DEPTH     OWSEL     CRIWS     WSELK     EG        HV        HL        DLOSS   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


*PROF 2

CCHV=    .100 CEHV=    .300
*SECNO 15.647
3280 CROSS SECTION     15.65 EXTENDED       .39 FEET


3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    14.39  1111.39      .00  1111.39  1112.31      .92      .00      .00  1132.00
   105600.       0.  103126.    2474.       0.   13350.     413.       0.       0.   1107.00
      .00      .00     7.72     6.00     .050     .050     .050     .000  1097.00  9341.77
  .005995       0.       0.       0.        0        0        0      .00  2208.23 11600.00
0
*SECNO 15.623

3265 DIVIDED FLOW

3280 CROSS SECTION     15.62 EXTENDED      1.78 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.62    23.94  1115.79      .00  1115.70  1117.25     1.47     4.78      .16  1133.00
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 .004290     900.     930.     960.        2        0        0      .00   751.53 10145.77
0
DCHV=    .100 DEHV=    .300
*SECNO 16.013
3280 CROSS SECTION     16.01 EXTENDED      4.54 FEET

1
 03-21-87     12:14:31                                                                          PAGE   15

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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    DORAR    TOPWID     ENDST


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    18.54  1118.54      .00  1118.22  1119.28      .74     1.95      .07100000.00
   82775.       0.   82775.       0.       0.   11989.       0.     473.      51.   1146.00
      .07      .00     6.90      .00     .048     .040     .048     .000  1100.00  9288.75
  .001114    1000.    1000.     980.        3        0        0      .00   902.22 10190.98
0
*SECNO 16.153
3280 CROSS SECTION     16.15 EXTENDED      1.30 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    17.30  1119.30      .00  1116.96  1120.90     1.60     1.36      .26100000.00
   82775.       0.   82775.       0.       0.    8154.       0.     644.      66.   1151.00
      .09      .00    10.15      .00     .048     .040     .048     .000  1102.00  9251.06
  .003606     710.     740.     770.        3        0        0      .00   832.10 10123.16
0
*SECNO 16.191

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    15.65  1119.24      .00  1118.67  1122.28     3.04      .95      .43  1128.50
   82775.       0.   82775.       0.       0.    5919.       0.     677.      68.   1141.80
      .09      .00    13.98      .00     .048     .040     .048     .000  1103.59  9874.53
  .006489     200.     200.     200.        2        0        0      .00   582.17 10456.70
0
1
 03-21-87     12:14:31                                                                          PAGE   16

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   BANK ELEV
```

```
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CDRAR    TOPWID     ENDST


CCHV=    .300 CEHV=    .500
*SECNO 16.291

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9076.0   10587.0  TYPE=     1  TARGET=    1511.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1138.90 ELREA=     1137.90

    16.29    16.35  1121.85      .00  1121.49  1125.45     3.60     8.89      .28  1132.90
   82775.       0.   82775.       0.       0.    5433.       0.     746.      75.   1137.90
      .10      .00    15.23      .00     .035     .035     .035     .000  1105.50  9912.49
  .004679     533.     528.     476.        1        0        0      .00   447.50 10359.99
0
*SECNO 16.350

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9777.0   10223.0  TYPE=     1  TARGET=     446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.00 ELREA=     1134.00

    16.35    13.56  1123.96  1123.96  1123.52  1129.20     5.25     1.84      .82  1126.00
   82775.       0.   82775.       0.       0.    4503.       0.     780.      78.   1120.00
      .11      .00    18.38      .00     .035     .035     .035     .000  1110.40  9785.01
  .008408     200.     300.     375.        4       15        0      .00   435.99 10222.00
0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS   1120.42 ,NOT   1123.96 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHC     ELCHD
     1.25      1.56      3.00       .00    444.00     28.00   6760.00       .00   1112.00   1112.00

*SECNO 16.355
1
 03-21-87     12:14:31                                                                                PAGE   17


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       CLOSS   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    CDRAR    TOPWID     ENDST


6110 EGLWC OF 1129.06 LESS THAN XEG OF 1129.20

3301 HV CHANGED MORE THAN HVINS

CLASS B LOW FLOW

3420 BRIDGE W.S.=   1122.71 BRIDGE VELOCITY=,     18.58     CALCULATED CHANNEL AREA=,     4455.

 EGPRS     EGLWC      H3       QWEIR     QLOW      BAREA   TRAPEZOID      ELLC     ELTRD
                                                            AREA
      .00   1129.06      .00        0.   82775.     6760.     7904.     1131.00   1131.50
```

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1131.00 ELREA= 1137.00

16.35	15.66	1125.66	.00	1125.11	1129.20	3.40	.00	.00	1125.00
82775.	0.	82775.	0.	0.	5593.	0.	784.	79.	1122.40
.11	.00	14.80	.00	.000	.035	.000	.000	1110.00	9778.00
.004263	38.	38.	38.	0	0	0	.00	444.00	10222.00

0

*SECNO 16.376

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1137.50

16.38	14.41	1126.21	.00	1125.79	1129.58	3.37	.36	.01	1134.00
82775.	0.	82775.	0.	0.	5621.	0.	795.	80.	1137.50
.11	.00	14.73	.00	.035	.035	.035	.000	1111.80	9740.82
.004252	85.	85.	85.	0	0	0	.00	450.68	10191.50

0

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	465.00	60.00	7607.00	.10	1112.20	1111.80

*SECNO 16.379

1

03-21-87 12:14:31 PAGE 18

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

3301 HV CHANGED MORE THAN HVINS

CLASS A LOW FLOW

3420 BRIDGE W.S.= 1124.64 BRIDGE VELOCITY=. 16.12 CALCULATED CHANNEL AREA=. 5064.

EGPRB	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1131.74	3.34	0.	82775.	7607.	9081.	1134.50	1134.00

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1141.00

16.38	17.35	1129.55	.00	1128.87	1131.74	2.80	2.17	.00	1125.50
82775.	0.	82775.	0.	0.	6858.	0.	796.	80.	1126.70
.11	.00	11.90	.00	.000	.035	.000	.000	1112.20	9734.00
.002164	15.	18.	18.	0	0	0	.00	466.00	10200.00

0

CCHV= .100 CE-V= .300

*SECNO 16.431

3280 CROSS SECTION 16.43 EXTENDED .66 FEET

```
3470 ENCROACHMENT STATIONS=    8100.0   10202.0  TYPE=     1  TARGET=    2102.000
    16.43    20.86  1131.66      .00  1130.83  1132.27      .61      .36      .16  1125.10
  107945.   45528.   62417.       0.   13695.    8065.       0.     904.      90.   1150.60
      .12     3.32     7.74      .00     .055     .035     .050     .000  1110.80  8100.00
  .000813     350.     300.     230.        3        0        0      .00  2071.79 10171.79
0
*SECNO 16.481

3470 ENCROACHMENT STATIONS=    8200.0   10200.0  TYPE=     1  TARGET=    2000.000
    16.48    19.96  1131.76      .00  1130.96  1132.59      .83      .86      .07  1126.70
  106205.   38353.   65852.       0.   10846.    7990.       0.    1029.     102.   1150.30
      .13     3.54     8.74      .00     .055     .035     .050     .000  1111.80  8200.00
  .001165     270.     264.     263.        2        0        0      .00  1978.57 10178.57
0
1
 03-21-87     12:14:31                                                                    PAGE   19

   SECNO     DEPTH    DWSEL    DRIWS    WSELK    EG       HV       HL       DLOSS   BANK ELEV
   ID        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    CONAR    TOPWID     ENDST

*SECNO 16.560

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    20.36  1131.96      .00  1131.82  1133.55     1.59      .73      .23  1127.10
  106205.   38077.   80128.       0.    6085.    6923.       0.    -1832.     125.   1151.90
      .15     3.47    11.58      .00     .055     .035     .050     .000  1111.60  8295.00
  .001698     523.     523.     523.        2        0        0      .00  1865.98 10160.98
0
*SECNO 16.681

3865 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    19.36  1132.86      .00  1132.61  1134.49     1.53      .94      .01  1130.40
  106205.   34092.   74113.       0.    8003.    6330.       0.    1417.     148.   1152.40
      .16     3.79    11.71      .00     .055     .035     .050     .000  1113.60  8030.00
  .001850     530.     528.     527.        3        0        0      .00  1980.19 10123.84
0
*SECNO 16.780

3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    22.48  1134.06      .00  1133.90  1135.27     1.18      .74      .03  1131.00
  106205.   63320.   79885.       0.   10147.    7976.       0.    1617.     174.   1157.70
      .18     2.79    10.02      .00     .055     .035     .050     .000  1111.60  7745.00
  .001123     522.     523.     525.        2        0        0      .00  2351.30 10096.30
0
1
 03-21-87     12:14:31                                                                    PAGE   20

                                                                                THIS RUN EXECUTED 03-21-87
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MODIFICATION - 50,51,52,53,54,55,56
IBM-PC-XT VERSION AUGUST 1985
****

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

MAIN CHANNEL - NEW FIELD

SUMMARY PRINTOUT TABLE 150

	SECNO	XLOF	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	SS	10X*S	VCH	AREA	.01K
	15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
	15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
	15.823	930.00	.00	.00	1091.85	77775.00	1115.70	.00	1117.01	38.83	9.21	8446.23	12481.76
	15.823	930.00	.00	.00	1091.85	82775.00	1115.79	.00	1117.25	42.90	9.72	8515.62	12637.45
	16.013	1000.00	.00	.00	1100.00	77775.00	1118.22	.00	1118.91	10.64	6.65	11702.08	23845.53
	16.013	1000.00	.00	.00	1100.00	82775.00	1118.54	.00	1119.28	11.14	6.90	11989.12	24804.63
	16.153	740.00	.00	.00	1102.00	77775.00	1118.96	.00	1120.46	35.74	9.88	7869.97	13008.91
	16.153	740.00	.00	.00	1102.00	82775.00	1119.30	.00	1120.90	36.06	10.15	8153.95	13784.72
	16.191	200.00	.00	.00	1103.59	77775.00	1118.97	.00	1121.80	62.59	13.51	5756.22	9830.40
	16.191	200.00	.00	.00	1103.59	82775.00	1119.24	.00	1122.28	64.89	13.98	5919.25	10275.39
	16.291	528.00	.00	.00	1105.50	77775.00	1121.49	.00	1124.86	45.32	14.75	5274.39	11552.67
	16.291	528.00	.00	.00	1105.50	82775.00	1121.85	.00	1125.45	46.79	15.23	5433.43	12101.25
*	16.350	300.00	.00	.00	1110.40	77775.00	1123.52	1123.52	1128.57	85.25	18.03	4313.40	8423.59
*	16.350	300.00	.00	.00	1110.40	82775.00	1123.96	1123.96	1129.20	84.08	18.38	4502.55	9026.93
*	16.355	38.00	1131.50	1131.00	1110.00	77775.00	1125.11	.00	1128.57	43.74	14.55	5346.18	11759.38
*	16.355	38.00	1131.50	1131.00	1110.00	82775.00	1125.66	.00	1129.20	42.63	14.80	5592.78	12677.28
	16.376	85.00	.00	.00	1111.80	77775.00	1125.79	.00	1128.97	41.79	14.30	5437.86	12030.68
	16.376	85.00	.00	.00	1111.80	82775.00	1126.21	.00	1129.58	42.52	14.73	5621.04	12694.26
	16.379	18.00	1134.00	1134.50	1112.20	77775.00	1128.87	.00	1131.00	22.30	11.71	6642.65	16470.59
	16.379	18.00	1134.00	1134.50	1112.20	82775.00	1129.55	.00	1131.74	21.64	11.90	6958.19	17795.13
	16.431	300.00	.00	.00	1110.80	107845.00	1130.83	.00	1131.56	10.25	8.41	20044.30	33716.48
	16.431	300.00	.00	.00	1110.80	107845.00	1131.66	.00	1132.27	8.13	7.74	21759.58	37864.70

	SECNO	XLOF	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	SS	10X*S	VCH	AREA	.01K
	16.461	864.00	.00	.00	1111.80	108205.00	1130.96	.00	1131.97	14.87	9.54	17257.15	28061.50
	16.461	864.00	.00	.00	1111.80	108205.00	1131.76	.00	1132.59	11.65	8.74	18836.12	31707.66
	16.560	583.33	.00	.00	1111.80	108205.00	1131.23	.00	1133.17	21.11	12.57	13658.76	23550.70
	16.560	583.33	.00	.00	1111.80	108205.00	1131.96	.00	1133.55	16.98	11.58	15007.79	26262.15
	16.661	528.33	.00	.00	1113.80	108205.00	1130.81	.00	1134.30	20.69	12.22	14633.95	23750.00
	16.661	528.33	.00	.00	1113.80	108205.00	1132.96	.00	1134.49	18.50	11.71	15332.75	25158.50

16.780	523.33	.00	.00	1111.60	108205.00	1134.08	.00	1135.27	11.23	10.02	18122.48	32293.42

MAIN CHANNEL - NEW FIELD

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	DWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
	15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
	15.823	77775.00	1115.70	.00	4.31	.00	750.17	930.00
	15.823	82775.00	1115.79	.09	4.40	.09	751.53	930.00
	16.013	77775.00	1118.22	.00	2.53	.00	901.09	1000.00
	16.013	82775.00	1118.54	.32	2.75	.32	902.22	1000.00
	16.153	77775.00	1118.96	.00	.74	.00	830.82	740.00
	16.153	82775.00	1119.30	.34	.76	.34	832.10	740.00
	16.191	77775.00	1118.97	.00	.00	.00	580.26	200.00
	16.191	82775.00	1119.24	.28	-.06	.28	582.17	200.00
	16.291	77775.00	1121.49	.00	2.52	.00	445.51	528.00
	16.291	82775.00	1121.85	.36	2.61	.36	447.50	528.00
*	16.350	77775.00	1123.52	.00	2.03	.00	435.51	300.00
*	16.350	82775.00	1123.96	.43	2.11	.43	436.99	300.00
*	16.355	77775.00	1125.11	.00	1.58	.00	444.00	38.00
*	16.355	82775.00	1125.66	.56	1.70	.56	444.00	38.00
	16.376	77775.00	1125.79	.00	.63	.00	450.02	85.00
	16.376	82775.00	1126.21	.42	.55	.42	450.68	85.00
	16.379	77775.00	1128.87	.00	3.08	.00	466.00	18.00
	16.379	82775.00	1129.55	.68	3.34	.68	466.00	18.00
	16.431	107945.00	1130.83	.00	1.96	.00	2070.79	300.00
	16.431	107945.00	1131.66	.83	2.11	.83	2071.79	300.00
	16.481	108205.00	1130.96	.00	.13	.00	1977.65	264.00
	16.481	108205.00	1131.76	.80	.10	.80	1978.57	264.00
	16.580	108205.00	1131.23	.00	.27	.00	1865.02	523.33
	16.580	108205.00	1131.96	.73	.20	.73	1865.98	523.33
	16.681	108205.00	1132.61	.00	1.38	.00	1973.27	528.33
	16.681	108205.00	1132.96	.35	1.00	.35	1980.19	528.33
	16.780	108205.00	1133.90	.00	1.30	.00	2351.07	523.33
	16.780	108205.00	1134.08	.18	1.12	.18	2351.30	523.33

```
CAUTION  SECNO=    16.350  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.350  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 2  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    16.355  PROFILE= 1  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 2  HYDRAULIC JUMP D.S.
```

1

THIS RUN EXECUTED 03-21-87

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

C)type afm40a.out

```
1*****************************************************
*
 * WATER SURFACE PROFILES                            *
*
 * VERSION OF NOVEMBER 1976                          *
*
 * UPDATED MAY 1984                                  *
*
 * IBM-PC-XT VERSION AUGUST 1985                     *
*
 * RUN DATE  03-27-87   TIME  19:28:25                *
 *
*****************************************************
```

3 profiles
Splits resulting
in 77775
67775
57775 qs

Existing Grand
bridge dropped

```
*************************************
* U.S. ARMY CORPS OF ENGINEERS
* THE HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET, SUITE D
* DAVIS, CALIFORNIA 95616
* (916) 440-2105 (FTS) 448-2105
*************************************
```

*2. Main Channel - No Embankment

```
X     X  XXXXXXX   XXXXX            XXXXX
X     X  X        X     X          X     X
X     X  X        X                      X
XXXXXXX  XXXX     X         XXXXX   XXXXX
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX           XXXXXXX
```

1

03-27-87 19:28:26 PAGE 1

THIS RUN EXECUTED 03-27-87

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**************************************************
  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 AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
T2 PROFILE NUMBER 1 - SUBCRITICAL PROFILE
T3 MAIN CHAN. - VAR. FLOWS - DROP SEC. 16.350,.355,.376

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	2.	0.	0.	.000000	.00	.0	0.	1111.390	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

QT	3.000	105600.000	105600.000	105600.000	.000	.000	.000	.000	.000	.000
NC	.050	.050	.050	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	9311.000	11600.000
X1	15.647	90.000	9312.000	11506.000	.000	.000	.000	.000	.000	.000

GR	1133.000	8960.000	1132.000	9020.000	1129.000	9053.000	1116.000	9102.000	1112.000	9132.000
GR	1111.000	9180.000	1117.000	9218.000	1121.000	9247.000	1132.000	9282.000	1132.000	9312.000
GR	1105.000	9351.000	1097.000	9377.000	1097.000	9442.000	1097.000	9507.000	1097.000	9552.000
GR	1100.000	9589.000	1102.000	9625.000	1106.000	9645.000	1106.000	9697.000	1103.000	9744.000
GR	1104.000	9760.000	1108.000	9783.000	1108.000	9832.000	1108.000	9886.000	1108.000	9941.000
GR	1107.000	10000.000	1107.000	10026.000	1103.000	10033.000	1103.000	10080.000	1103.000	10134.000
GR	1105.000	10152.000	1105.000	10213.000	1104.000	10262.000	1103.000	10293.000	1103.000	10387.000
GR	1106.000	10402.000	1107.000	10463.000	1107.000	10531.000	1109.000	10588.000	1109.000	10650.000
GR	1109.000	10717.000	1108.000	10775.000	1108.000	10857.000	1110.000	10925.000	1108.000	10993.000
GR	1108.000	11065.000	1108.000	11134.000	1108.000	11178.000	1104.000	11194.000	1104.000	11251.000
GR	1104.000	11297.000	1103.000	11348.000	1103.000	11402.000	1102.000	11441.000	1106.000	11460.000
GR	1107.000	11506.000	1107.000	11566.000	1107.000	11644.000	1107.000	11712.000	1107.000	11791.000
GR	1107.000	11868.000	1107.000	11941.000	1107.000	12010.000	1107.000	12080.000	1107.000	12151.000
GR	1107.000	12223.000	1107.000	12302.000	1107.000	12391.000	1108.000	12469.000	1108.000	12532.000
GR	1108.000	12610.000	1108.000	12703.000	1108.000	12785.000	1109.000	12845.000	1108.000	12930.000
GR	1109.000	13028.000	1109.000	13119.000	1109.000	13215.000	1109.000	13335.000	1110.000	13438.000
GR	1110.000	13541.000	1111.000	13647.000	1111.000	13742.000	1111.000	13867.000	1111.000	13948.000
QT	3.000	77775.000	67775.000	57775.000	.000	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	9322.000	10204.000
X1	15.823	85.000	9322.000	10204.000	900.000	960.000	930.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1133.000	9322.000	1100.000	9395.000	1100.000	9498.000	1101.000	9520.000	1105.000	9552.000
GR	1105.000	9633.000	1108.000	9702.000	1108.000	9779.000	1109.000	9847.000	1110.280	9858.000
GR	1119.100	9888.000	1107.040	9971.000	1099.220	10000.000	1091.850	10093.000	1142.180	10204.000
GR	1142.600	10295.000	1008.300	10388.000	1104.000	10406.000	1103.000	10450.000	1107.000	10474.000
GR	1105.000	10511.000	1103.000	10560.000	1108.000	10572.000	1108.000	10598.000	1111.000	10610.000

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GR	1111.000	10717.000	1111.000	10781.000	1111.000	10856.000	1110.000	10898.000	1109.000	10964.000
GR	1106.000	11019.000	1107.000	11071.000	1106.000	11140.000	1104.000	11206.000	1102.000	11251.000
GR	1105.000	11283.000	1108.000	11342.000	1106.000	11384.000	1107.000	11421.000	1108.000	11470.000
GR	1110.000	11500.000	1110.000	11554.000	1110.000	11634.000	1110.000	11708.000	1110.000	11794.000
GR	1110.000	11892.000	1109.000	11983.000	1109.000	12063.000	1109.000	12143.000	1109.000	12221.000
GR	1109.000	12294.000	1109.000	12370.000	1109.000	12450.000	1109.000	12542.000	1110.000	12596.000
GR	1110.000	12672.000	1110.000	12726.000	1110.000	12796.000	1110.000	12852.000	1110.000	12910.000
GR	1110.000	12983.000	1110.000	13011.000	1111.000	13075.000	1111.000	13153.000	1111.000	13224.000
GR	1111.000	13307.000	1111.000	13380.000	1111.000	13452.000	1111.000	13532.000	1112.000	13608.000
GR	1112.000	13689.000	1112.000	13764.000	1112.000	13844.000	1112.000	13917.000	1112.000	13998.000
GR	1113.000	14073.000	1114.000	14137.000	1114.000	14212.000	1114.000	14281.000	1114.000	14347.000
GR	1114.000	14414.000	1114.000	14464.000	1114.000	14533.000	1114.000	14613.000	1114.000	14698.000
NC	.048	.048	.040	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	9264.000	12250.000
X1	16.013	90.000	9263.000	10275.000	1000.000	980.000	1000.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1141.000	9001.000	1141.000	9081.000	1139.000	9141.000	1139.000	9236.000	1138.000	9263.000
GR	1104.000	9308.000	1104.000	9343.000	1109.000	9358.000	1109.000	9421.000	1110.000	9496.000
GR	1110.000	9568.000	1106.000	9615.000	1103.000	9664.000	1104.000	9689.000	1105.000	9724.000
GR	1107.000	9750.000	1104.000	9792.000	1100.000	9823.000	1100.000	9855.000	1103.000	9883.000
GR	1102.000	9947.000	1102.000	10000.000	1102.000	10052.000	1102.000	10114.000	1102.000	10154.000
GR	1119.000	10192.000	1136.000	10240.000	1146.000	10275.000	1147.000	10323.000	1147.000	10379.000
GR	1141.000	10402.000	1124.000	10449.000	1108.000	10500.000	1108.000	10529.000	1112.000	10549.000
GR	1112.000	10613.000	1109.000	10664.000	1108.000	10694.000	1111.000	10705.000	1112.000	10786.000
GR	1114.000	10843.000	1113.000	10905.000	1110.000	10955.000	1110.000	11005.000	1111.000	11055.000
GR	1113.000	11079.000	1114.000	11146.000	1113.000	11220.000	1113.000	11268.000	1113.000	11296.000
GR	1114.000	11317.000	1112.000	11399.000	1110.000	11452.000	1111.000	11471.000	1109.000	11493.000
GR	1109.000	11558.000	1110.000	11588.000	1110.000	11657.000	1110.000	11731.000	1110.000	11799.000
GR	1110.000	11870.000	1111.000	11941.000	1111.000	11990.000	1111.000	12036.000	1111.000	12085.000
GR	1112.000	12152.000	1112.000	12219.000	1112.000	12311.000	1112.000	12395.000	1112.000	12482.000
GR	1112.000	12555.000	1112.000	12620.000	1113.000	12690.000	1113.000	12743.000	1113.000	12809.000
GR	1113.000	12885.000	1113.000	12952.000	1113.000	13007.000	1114.000	13054.000	1114.000	13110.000

GR	1114.000	13339.000	1114.000	13353.000	1114.000	13873.000	1114.000	13741.000	1114.000	13807.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	9252.000	12040.000
X1	16.153	90.000	9251.000	10209.000	710.000	770.000	740.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1142.000	9036.000	1141.000	9124.000	1141.000	9201.000	1141.000	9251.000	1115.000	9299.000
GR	1115.000	9364.000	1114.000	9435.000	1114.000	9511.000	1114.000	9534.000	1110.000	9568.000
GR	1109.000	9592.000	1110.000	9613.000	1117.000	9637.000	1115.000	9668.000	1109.000	9683.000
GR	1107.000	9741.000	1107.000	9802.000	1107.000	9857.000	1105.000	9906.000	1105.000	9942.000
GR	1103.000	10000.000	1102.000	10060.000	1102.000	10090.000	1126.000	10136.000	1147.000	10190.000
GR	1151.000	10209.000	1151.000	10272.000	1148.000	10321.000	1149.000	10382.000	1147.000	10434.000
GR	1127.000	10480.000	1108.000	10536.000	1109.000	10561.000	1111.000	10620.000	1111.000	10682.000
GR	1111.000	10757.000	1112.000	10827.000	1112.000	10901.000	1112.000	10970.000	1112.000	11034.000
GR	1113.000	11101.000	1113.000	11158.000	1110.000	11171.000	1114.000	11182.000	1114.000	11250.000
GR	1114.000	11330.000	1114.000	11406.000	1113.000	11487.000	1113.000	11561.000	1113.000	11640.000
GR	1113.000	11714.000	1113.000	11788.000	1113.000	11843.000	1114.000	11900.000	1114.000	11968.000
GR	1114.000	12040.000	1114.000	12112.000	1113.000	12178.000	1113.000	12229.000	1113.000	12308.000
GR	1113.000	12382.000	1113.000	12451.000	1114.000	12513.000	1114.000	12558.000	1114.000	12588.000
GR	1114.000	12658.000	1114.000	12711.000	1114.000	12762.000	1114.000	12817.000	1114.000	12870.000
GR	1114.000	12930.000	1114.000	12979.000	1113.000	13031.000	1113.000	13092.000	1114.000	13153.000

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GR	1114.000	13209.000	1115.000	13289.000	1116.000	13370.000	1116.000	13451.000	1116.000	13532.000
GR	1117.000	13603.000	1118.000	13685.000	1118.000	13765.000	1118.000	13840.000	1118.000	13912.000
GR	1118.000	13981.000	1119.000	14054.000	1118.000	14131.000	1118.000	14205.000	1118.000	14281.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	8638.000	10823.000
X1	16.191	54.000	9855.000	10822.800	200.000	200.000	200.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1121.000	8637.600	1122.100	8675.600	1122.000	8709.700	1120.100	8761.900	1116.400	8789.200
GR	1116.800	8830.000	1118.400	8865.300	1118.700	8914.700	1117.700	8942.500	1117.100	8970.900
GR	1110.200	8995.300	1109.900	9034.500	1109.300	9086.800	1111.100	9147.500	1119.800	9172.000
GR	1118.700	9260.500	1118.700	9343.500	1118.200	9378.700	1117.700	9389.500	1118.600	9428.600
GR	1123.500	9450.800	1123.700	9459.900	1120.900	9482.000	1124.400	9542.200	1125.600	9567.200
GR	1124.800	9593.300	1124.200	9633.700	1124.900	9686.500	1126.000	9722.800	1127.400	9783.000
GR	1128.500	9855.000	1108.610	9897.000	1103.590	9996.000	1109.090	10301.000	1112.920	10310.000
GR	1115.400	10320.200	1115.900	10401.500	1116.800	10445.200	1122.600	10472.400	1121.900	10498.000
GR	1121.900	10573.000	1121.700	10649.100	1120.000	10679.200	1120.100	10701.300	1123.700	10718.300
GR	1120.000	10749.600	1124.600	10766.000	1128.100	10796.100	1141.800	10822.800	1142.800	10869.400
GR	1143.900	10917.100	1144.600	10956.900	1144.800	10996.000	1145.100	11013.100	.000	.000
NC	.035	.035	.035	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	9076.000	10587.000
X1	16.291	39.000	9885.000	10586.000	533.000	476.000	528.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1119.300	9075.400	1119.600	9127.100	1120.900	9227.600	1121.700	9278.100	1120.900	9295.200
GR	1121.000	9337.800	1121.200	9350.300	1120.500	9421.300	1121.400	9553.000	1121.600	9655.800
GR	1121.600	9705.800	1119.800	9716.000	1119.800	9725.700	1124.400	9746.700	1132.400	9766.500
GR	1131.500	9789.300	1132.900	9885.000	1131.100	9891.500	1129.560	9896.000	1107.090	9944.000
GR	1105.500	10000.000	1112.800	10328.000	1115.990	10345.000	1120.970	10357.000	1124.000	10367.400
GR	1123.000	10427.600	1122.300	10450.300	1124.000	10480.400	1125.600	10528.700	1129.700	10557.600
GR	1137.900	10586.000	1136.300	10616.700	1136.600	10663.300	1136.500	10702.400	1140.300	10741.100
GR	1145.800	10779.700	1145.800	10813.800	1146.700	10859.800	1146.400	10886.400	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	9733.000	10201.000
SB	1.250	1.560	3.000	.000	465.000	60.000	7607.000	.100	1112.200	1111.800
X1	16.379	31.000	9734.000	10200.000	15.000	18.330	18.000	.000	.000	.000
X2	.000	.000	1.000	1134.500	1134.000	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1134.000	1141.000	.000
BT	-11.000	9450.000	1134.400	.000	9490.000	1134.600	.000	9734.000	1136.600	1133.000
BT	.000	9873.000	1138.100	1134.500	9873.100	1138.100	1125.500	9975.000	1139.500	1126.500
BT	.000	9975.100	1139.100	1128.000	10075.000	1140.200	1129.100	10075.100	1140.200	1132.600
BT	.000	10200.000	1141.600	1134.000	10300.000	1142.100	.000	.000	.000	.000

GR	1122.800	9389.000	1123.000	9632.000	1123.300	9734.000	1121.900	9735.000	1118.700	9750.000
GR	1116.400	9806.000	1115.200	9848.000	1114.300	9897.000	1113.600	9925.000	1112.900	9960.000
GR	1112.700	9989.000	1112.700	10033.000	1112.200	10084.000	1112.500	10120.000	1113.600	10173.000
GR	1126.700	10200.000	1127.900	10206.000	1128.800	10272.000	1131.800	10296.000	1130.800	10303.000
GR	1131.000	10321.000	1129.400	10354.000	1129.700	10401.000	1134.000	10478.000	1137.200	10547.000
GR	1141.800	10613.000	.000	.000	.000	.000	.000	.000	.000	.000

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NC	.055	.050	.035	.100	.300	.000	.000	.000	.000	.000
QT	3.000	107945.000	107945.000	107945.000	.000	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	8100.000	10202.000
X1	16.431	85.000	9681.400	10201.000	350.000	230.000	300.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1127.800	6737.900	1128.100	6799.300	1127.800	6901.500	1127.100	6994.600	1127.100	7034.400
GR	1126.200	7086.100	1126.400	7121.800	1126.500	7155.900	1126.500	7203.600	1126.500	7253.000
GR	1126.700	7301.300	1129.200	7322.300	1129.500	7337.600	1128.300	7389.300	1127.100	7417.700
GR	1126.000	7460.300	1127.600	7485.300	1126.900	7504.600	1124.000	7535.300	1123.700	7575.600
GR	1123.700	7614.800	1129.400	7656.200	1132.400	7673.800	1132.700	7702.200	1131.700	7722.700
GR	1130.100	7753.300	1129.500	7771.500	1123.700	7831.100	1121.900	7891.300	1121.700	7962.300
GR	1121.700	8066.800	1121.900	8123.600	1124.200	8190.600	1121.900	8274.700	1123.200	8305.900
GR	1122.800	8333.700	1116.800	8367.200	1114.800	8385.400	1116.600	8403.000	1118.400	8445.600
GR	1120.900	8514.300	1125.100	8570.500	1123.900	8624.500	1122.100	8698.900	1122.100	8782.400
GR	1122.800	8883.500	1123.000	8966.900	1123.500	9062.900	1123.900	9137.300	1123.900	9157.200
GR	1129.400	9166.300	1128.700	9176.500	1123.300	9195.200	1123.700	9246.900	1124.600	9274.700
GR	1124.000	9335.000	1125.100	9681.400	1124.000	9738.700	1123.500	9766.000	1110.800	9818.800
GR	1111.100	9871.000	1111.600	9904.000	1112.000	9951.700	1112.500	9990.300	1112.500	10000.000
GR	1112.700	10065.800	1112.900	10107.900	1112.500	10148.700	1143.200	10185.700	1150.600	10201.000
GR	1150.800	10269.100	1150.800	10293.000	1147.100	10319.100	1149.700	10349.200	1148.100	10374.800
GR	1139.800	10399.800	1141.400	10411.700	1142.700	10422.500	1150.400	10433.800	1150.800	10484.900
GR	1151.500	10536.600	1150.600	10556.500	1135.700	10610.400	1130.200	10637.700	1131.000	10738.800
QT	3.000	108205.000	108205.000	108205.000	.000	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	8200.000	10200.000
X1	16.481	90.000	9647.300	10199.900	270.000	263.330	264.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1130.200	6374.500	1130.200	6434.100	1128.300	6462.500	1129.400	6494.900	1129.500	6517.000
GR	1129.500	6586.900	1129.000	6638.500	1129.000	6689.100	1129.200	6740.800	1129.200	6773.700
GR	1129.200	6813.500	1129.700	6847.000	1130.100	6869.700	1130.200	6941.200	1128.100	6969.100
GR	1126.000	7007.100	1125.800	7057.700	1125.600	7088.900	1131.500	7124.700	1133.300	7142.300
GR	1132.900	7159.300	1130.800	7173.500	1129.900	7183.700	1124.900	7217.800	1123.500	7246.200
GR	1124.200	7275.700	1127.800	7316.600	1128.300	7338.800	1117.500	7384.800	1113.800	7417.100
GR	1113.100	7458.600	1108.500	7497.200	1106.500	7597.200	1106.300	7660.800	1106.300	7705.100
GR	1117.800	7787.400	1116.800	7874.300	1116.100	7937.900	1114.800	7998.100	1115.700	8053.800
GR	1116.400	8099.800	1114.800	8131.600	1116.400	8157.700	1115.500	8194.600	1117.300	8216.200
GR	1120.300	8229.200	1119.600	8238.900	1122.300	8273.500	1125.300	8296.300	1125.300	8383.700
GR	1124.900	8544.400	1124.400	8680.700	1124.400	8811.300	1124.400	8974.900	1124.900	9063.500
GR	1125.500	9118.600	1124.900	9153.200	1124.800	9163.400	1123.000	9173.100	1123.000	9205.500
GR	1125.000	9578.600	1125.000	9613.200	1125.300	9638.800	1126.700	9647.300	1126.500	9688.200
GR	1125.500	9755.800	1111.800	9816.000	1112.000	9860.200	1112.500	9923.900	1112.500	9960.800
GR	1113.400	9988.600	1113.600	10000.000	1114.100	10061.300	1112.900	10145.900	1115.700	10160.100
GR	1150.300	10199.900	1151.200	10218.600	1150.300	10247.000	1153.800	10275.400	1153.800	10349.200
GR	1152.200	10413.400	1153.300	10417.400	1153.300	10444.600	1153.300	10502.500	1153.300	10532.600
GR	1155.100	10554.800	1154.700	10566.700	1154.200	10592.300	1154.300	10661.600	1154.200	10695.600
QT	3.000	108205.000	108205.000	108205.000	.000	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	8295.000	10245.000
X1	16.580	85.000	9762.600	10244.100	523.330	523.330	523.330	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1128.300	6184.800	1129.400	6225.100	1132.400	6261.500	1135.900	6280.800	1136.300	6302.400
GR	1135.600	6321.700	1134.500	6334.200	1133.600	6346.100	1130.400	6375.600	1128.100	6402.300
GR	1127.200	6448.300	1131.500	6465.900	1129.500	6501.100	1125.600	6535.800	1124.000	6580.600

GR	1122.500	6666.900	1122.500	6700.500	1121.700	6770.300	1121.700	6840.200	1121.000	6898.600
GR	1121.600	6944.600	1121.600	7015.600	1120.300	7073.000	1120.100	7143.400	1119.600	7204.700
GR	1120.100	7264.400	1121.000	7309.800	1122.600	7343.300	1128.100	7392.200	1130.800	7416.600
GR	1130.800	7466.000	1129.400	7486.400	1129.500	7536.400	1129.000	7570.500	1129.000	7622.200
GR	1127.900	7678.400	1125.600	7690.300	1125.600	7703.400	1127.600	7720.400	1128.800	7774.900
GR	1128.300	7801.000	1129.200	7914.600	1128.800	8022.500	1128.100	8102.000	1127.600	8188.300
GR	1127.600	8266.700	1126.700	8354.700	1126.700	8441.600	1126.000	8552.900	1126.400	8638.100
GR	1126.200	8726.700	1126.200	8832.900	1126.200	8860.700	1126.900	8931.700	1126.200	8945.900
GR	1126.500	8978.900	1126.500	8992.500	1127.900	8997.600	1127.800	9005.000	1126.400	9025.400
GR	1126.700	9048.100	1127.100	9065.800	1125.500	9641.000	1130.600	9648.000	1126.200	9664.000
GR	1126.900	9724.000	1127.100	9762.600	1113.100	9806.300	1112.500	9837.500	1112.500	9890.300
GR	1113.100	9940.300	1111.600	9963.600	1112.200	9986.000	1113.100	10000.000	1113.900	10013.600
GR	1114.800	10061.300	1113.800	10136.800	1133.400	10162.900	1146.900	10191.300	1145.700	10211.800
GR	1151.900	10244.100	1153.300	10303.800	1155.400	10357.200	1152.800	10400.900	1154.200	10439.500
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	8030.000	10145.000
X1	16.681	85.000	9741.800	10144.600	530.000	536.670	528.330	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1135.600	5149.200	1135.600	5216.800	1132.400	5245.100	1131.000	5274.600	1131.300	5296.200
GR	1131.800	5332.000	1131.700	5367.700	1135.000	5397.200	1136.500	5414.800	1136.500	5426.100
GR	1135.700	5447.700	1135.000	5455.100	1133.800	5465.300	1130.700	5503.900	1130.800	5559.500
GR	1131.500	6079.800	1131.700	6181.300	1131.700	6289.200	1130.600	6402.100	1130.200	6527.500
GR	1130.100	6692.600	1129.700	6791.900	1129.900	6934.700	1130.100	7034.200	1129.500	7143.100
GR	1129.400	7293.500	1129.400	7385.900	1129.000	7442.100	1129.000	7475.000	1130.400	7484.700
GR	1130.100	7497.700	1129.200	7511.300	1128.700	7603.800	1128.300	7683.300	1128.300	7781.400
GR	1128.100	7922.100	1128.100	8029.900	1127.900	8171.200	1128.100	8255.800	1129.200	8313.600
GR	1129.000	8377.800	1127.800	8433.900	1127.200	8532.700	1126.700	8684.700	1127.100	8792.500
GR	1125.500	8844.700	1126.200	8858.300	1126.500	8881.000	1126.500	8921.300	1126.900	8941.700
GR	1125.500	9479.600	1139.100	9560.800	1130.100	9673.700	1130.400	9741.800	1113.600	9800.200
GR	1113.600	9831.400	1114.800	9862.600	1114.700	9898.400	1114.500	9951.700	1113.800	9996.000
GR	1113.800	9998.800	1113.800	10000.000	1115.500	10027.800	1116.100	10087.900	1120.000	10110.000
GR	1152.400	10144.600	1155.100	10170.200	1143.700	10194.600	1137.200	10223.500	1135.200	10247.900
GR	1148.100	10293.300	1158.600	10337.600	1158.100	10388.100	1155.200	10415.300	1153.800	10429.500
GR	1153.300	10445.900	1158.400	10468.600	1156.500	10498.700	1155.200	10512.900	1151.300	10522.000
GR	1156.800	10539.000	1158.200	10570.800	1158.400	10590.600	1158.400	10658.100	1159.000	10719.400
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	7745.000	10110.000
X1	16.780	87.000	9678.200	10109.500	521.670	525.000	523.330	.000	.000	.000
GR	1136.300	4085.900	1135.700	4116.600	1135.600	4172.800	1136.600	4193.200	1136.800	4226.700
GR	1137.200	4302.100	1133.600	4345.200	1133.100	4389.500	1132.400	4425.800	1132.400	4454.200
GR	1138.400	4479.700	1139.600	4499.000	1138.000	4518.900	1135.000	4559.200	1134.100	4609.700
GR	1134.100	4706.100	1134.100	4798.600	1134.100	4895.100	1133.400	4998.300	1133.400	5146.400
GR	1133.400	5324.600	1133.400	5528.800	1133.100	5704.200	1133.100	5862.500	1132.700	5988.400
GR	1132.700	6209.700	1132.700	6372.000	1132.200	6511.600	1131.700	6677.300	1130.400	6793.000
GR	1130.100	7005.800	1130.100	7108.500	1130.100	7228.800	1129.700	7309.300	1130.400	7329.800
GR	1130.400	7344.500	1129.500	7371.800	1129.200	7481.800	1127.900	7514.200	1128.800	7526.700
GR	1128.800	7691.800	1129.000	7896.600	1129.000	8086.700	1129.000	8229.100	1128.500	8369.800
GR	1128.700	8506.000	1128.300	8641.000	1128.300	8675.600	1127.600	8705.100	1127.200	8732.900
GR	1127.400	8755.100	1127.800	8776.600	1127.600	8842.500	1121.700	8861.700	1122.100	8867.400
GR	1127.600	8886.100	1128.100	8984.300	1128.700	9130.700	1128.700	9243.600	1130.100	9360.500
GR	1130.600	9525.600	1130.800	9608.400	1131.000	9667.500	1131.000	9678.200	1127.400	9695.300
GR	1113.100	9745.800	1112.200	9767.900	1111.600	9817.200	1112.700	9876.300	1113.400	9905.200
GR	1113.600	9932.400	1112.500	9963.600	1112.900	9988.000	1112.900	10000.000	1112.000	10030.000
GR	1115.500	10072.000	1138.900	10102.600	1157.700	10109.500	1159.800	10179.200	1160.900	10246.200

1

GR	1160.700	10342.700	1158.600	10375.000	1159.000	10414.200	1159.800	10472.600	1161.100	10524.800
GR	1160.500	10617.800	1160.400	10649.600	.000	.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

1

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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


*PROF 1

CCHV=    .100 CEHV=    .300
*SECNO 15.647
3280 CROSS SECTION     15.65 EXTENDED       .39 FEET


3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    14.39  1111.39      .00      .00  1112.31      .92      .00      .00  1132.00
   105600.       0.  103126.    2474.       0.   13350.     413.       0.       0.   1107.00
      .00      .00     7.72     6.00     .050     .050     .050     .000  1097.00  9341.77
   .005995       0.       0.       0.        0        0        0      .00  2258.23 11600.00
0
 *SECNO 15.823

 3265 DIVIDED FLOW

 3280 CROSS SECTION     15.82 EXTENDED      1.69 FEET


 3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    23.85  1115.70      .00      .00  1117.01     1.32     4.59      .12  1133.00
   77775.       0.   77775.       0.       0.    8446.       0.     237.      32. 100000.00
      .03      .00     9.21      .00     .050     .050     .050     .000  1091.85  9360.30
   .003883     900.     930.     960.        2        0        0      .00   750.17 10145.57
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      4.22 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000
1
  03-27-87     19:28:26                                                                PAGE    8


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


  3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    18.22  1118.22      .00      .00  1118.91      .69     1.83      .06100000.00
   77775.       0.   77775.       0.       0.   11702.       0.     468.      51.   1146.00
      .07      .00     6.65      .00     .048     .040     .048     .000  1100.00  9289.17
```

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1129.60	.00	0.	77775.	7607.	9081.	1134.50	1134.00

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1141.00

16.38	14.39	1126.59	.00	.00	1129.60	3.02	4.74	.00	1125.50
77775.	0.	77775.	0.	0.	5579.	0.	735.	75.	1126.70
.11	.00	13.94	.00	.000	.035	.000	.000	1112.20	9734.00
.003986	15.	18.	18.	0	0	0	.00	465.77	10199.77

0

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

CCHV= .100 CEHV= .300

*SECNO 16.431

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 8100.0 10202.0 TYPE= 1 TARGET= 2102.000

16.43	18.65	1129.45	.00	.00	1130.48	1.03	.68	.20	1125.10
107945.	39514.	68431.	0.	10200.	6984.	0.	819.	85.	1150.60
.12	3.87	9.80	.00	.055	.035	.050	.000	1110.80	8100.00
.001564	350.	300.	230.	3	0	0	.00	2069.13	10169.13

0

*SECNO 16.481

3470 ENCROACHMENT STATIONS= 8200.0 10200.0 TYPE= 1 TARGET= 2000.000

16.48	17.87	1129.67	.00	.00	1131.10	1.44	.50	.12	1126.70
108205.	31533.	76672.	0.	7829.	6885.	0.	917.	98.	1150.30
.12	4.03	11.14	.00	.055	.035	.050	.000	1111.80	8200.00
.002287	270.	264.	263.	2	0	0	.00	1976.17	10176.17

0

*SECNO 16.580

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 8295.0 10245.0 TYPE= 1 TARGET= 1950.000

16.58	18.58	1130.18	.00	.00	1132.82	2.63	1.35	.36	1127.10
108205.	19429.	88776.	0.	5478.	6217.	0.	1076.	121.	1151.90
.14	3.55	14.28	.00	.055	.035	.050	.000	1111.60	8295.00
.002953	523.	523.	523.	3	0	0	.00	1861.53	10158.62

0

*SECNO 16.681

3265 DIVIDED FLOW

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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    18.87  1132.47      .00      .00  1134.23     1.76     1.33      .09  1130.40
   108205.   31856.   76349.      0.    8206.    6139.      0.    1234.     144.   1152.40
      .15     3.88    12.44      .00     .055     .035    .050     .000  1113.60  8030.00
   .002169    530.     528.     537.        3        0       0      .00  1970.40 10123.31
0
*SECNO 16.780

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    22.25  1133.85      .00      .00  1135.11     1.26      .83      .05  1131.00
   108205.   27198.   81007.      0.    9690.    7877.      0.    1425.     170.   1157.70
      .17     2.81    10.28      .00     .055     .035    .050     .000  1111.60  7745.00
   .001202    522.     523.     525.        2        0       0      .00  2351.00 10096.00
0
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THIS RUN EXECUTED 03-27-87

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**************************************************
  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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
T2      PROFILE NUMBER 2 - SUBCRITICAL PROFILE
T3      MAIN CHAN. - VAR. FLOWS - DROP SEC. 16.350,.355,.376

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

       0.       3.       0.       0.  .000000      .00       .0       0.  1111.390     .000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     2.000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000

1
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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
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*PROF 2

CCHV=    .100 CEHV=    .300
*SECND 15.647
3280 CROSS SECTION     15.65 EXTENDED       .39 FEET


3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    14.39  1111.39      .00  1111.39  1112.31      .92      .00      .00  1132.00
   105600.       0.  103126.    2474.       0.   13350.     413.       0.       0.   1107.00
      .00      .00     7.72     6.00     .050     .050     .050     .000  1097.00  9341.77
   .005995       0.       0.       0.        0        0        0      .00  2258.23 11600.00
0
*SECND 15.823

3265 DIVIDED FLOW

3280 CROSS SECTION     15.82 EXTENDED      1.51 FEET


3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    23.66  1115.51      .00  1115.70  1116.54     1.03     4.20      .03  1133.00
   67775.       0.   67775.       0.       0.    8311.       0.     236.      32. 100000.00
      .03      .00     8.16      .00     .050     .050     .050     .000  1091.85  9360.70
   .003097     900.     930.     960.        3        0        0      .00   747.50 10145.17
0
CCHV=    .100 CEHV=    .300
*SECND 16.013
3280 CROSS SECTION     16.01 EXTENDED      3.58 FEET


3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

1
 03-27-87     19:28:26                                                                    PAGE   14


   SECND    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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


    16.01    17.58  1117.58      .00  1118.22  1118.16      .58     1.58      .05100000.00
   67775.       0.   67775.       0.       0.   11126.       0.     459.      51.   1146.00
      .08      .00     6.09      .00     .048     .040     .048     .000  1100.00  9290.02
   .000952    1000.    1000.     980.        3        0        0      .00   898.81 10188.83
0
*SECND 16.153
3280 CROSS SECTION     16.15 EXTENDED       .27 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=    100000.00 ELREA=      1151.00

   16.15    16.26  1118.26      .00  1118.96  1119.60     1.34     1.21      .23100000.00
  67775.       0.   67775.       0.       0.    7298.       0.     615.      66.   1151.00
     .10      .00     9.29      .00     .048     .040     .048     .000  1102.00  9292.96
 .003475     710.     740.     770.        2        0        0      .00   828.22 10121.19
0
 *SECNO 16.191

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

   16.19    14.79  1118.38      .00  1118.97  1120.81     2.43      .88      .33  1128.50
  67775.       0.   67775.       0.       0.    5416.       0.     645.      69.   1141.80
     .10      .00    12.51      .00     .048     .040     .048     .000  1103.59  9876.36
 .005767     200.     200.     200.        2        0        0      .00   576.26 10452.62
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.291

 3470 ENCROACHMENT STATIONS=    9076.0   10587.0  TYPE=     1  TARGET=    1511.000
1
 03-27-87     19:28:26                                                                    PAGE   15


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=    1132.90 ELREA=     1137.90

   16.29    15.23  1120.73      .00  1121.49  1123.65     2.92     2.59      .25  1132.90
  67775.       0.   67775.       0.       0.    4939.       0.     707.      75.   1137.90
     .11      .00    13.72      .00     .035     .035     .035     .000  1105.50  9914.87
 .004232     533.     528.     476.        2        0        0      .00   441.54 10356.41
0

 SPECIAL BRIDGE

 5227 DOWNSTREAM ELEV IS   1118.40 ,NOT   1120.73 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

 SB  XK       XKOR     COFQ     RDLEN    BWC      BWP      BAREA    SS       ELCHU    ELCHD
     1.25     1.56     3.00      .00   465.00    60.00  7607.00     .10   1112.20  1111.80

 *SECNO 16.379
 CLASS B LOW FLOW

 3420 BRIDGE W.S.=   1121.54 BRIDGE VELOCITY=,     17.50     CALCULATED CHANNEL AREA=,     3791.

  EGPRS     EGLWC     H3       QWEIR    QLOW     BAREA   TRAPEZOID     ELLC     ELTRD
                                                          AREA
      .00  1128.19     .00        0.   67775.    7607.     9081.    1134.50  1134.00


 3470 ENCROACHMENT STATIONS=    9733.0   10201.0  TYPE=     1  TARGET=     468.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1134.00 ELREA=     1141.00
```

```
   16.58    13.13   1123.33      .00  1123.33  1128.13      2.88      4.34       .00  1123.30
   67775.       0.   67775.       0.       0.    4994.       0.      709.       75.   1126.70
      .11      .00    13.57      .00     .000     .035     .000      .000   1112.20   9734.24
  .004339      15.      18.      18.        0        0        0       .00    462.93  10197.17
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3265 DIVIDED FLOW

1
 03-27-87     19:28:26                                                                          PAGE   16


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8100.0   10202.0  TYPE=     1  TARGET=    2102.000
    16.43    16.79  1127.59      .00  1129.45  1129.35     1.77     1.05       .11  1125.10
  107945.   32498.   75447.       0.    7276.    6078.       0.      777.       85.   1150.60
      .12     4.47    12.41      .00     .055     .035     .050     .000   1110.80   8100.00
  .002996     350.     300.     230.        4        0        0      .00   2049.82  10166.88
0
 *SECNO 16.481

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8200.0   10200.0  TYPE=     1  TARGET=    2000.000
    16.48    16.30  1128.10      .00  1129.67  1130.46     2.37      .93       .18  1126.70
  108205.   24488.   83717.       0.    5549.    6053.       0.      853.       97.   1150.30
      .13     4.41    13.83      .00     .055     .035     .050     .000   1111.80   8200.00
  .004162     270.     264.     263.        3        0        0      .00   1974.36  10174.36
0
 *SECNO 16.580

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    17.96  1129.56  1129.46  1130.18  1132.74     3.18     2.03       .24  1127.10
  108205.   15991.   92214.       0.    4575.    5973.       0.      986.      120.   1151.90
      .14     3.50    15.44      .00     .055     .035     .050     .000   1111.60   8295.00
  .003629     523.     523.     523.        4        8        0      .00   1857.62  10157.80
0
 *SECNO 16.681

 3265 DIVIDED FLOW

1
 03-27-87     19:28:26                                                                          PAGE   17


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
```

```
3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    19.02  1132.62      .00  1132.47  1134.31     1.69     1.42      .15  1130.40
   108205.   32552.   75653.      0.    8447.    6197.      0.    1139.     144.   1152.40
      .16     3.85    12.21      .00     .055     .035    .050     .000  1113.60  8030.00
   .002065    530.     528.     537.        3        0       0      .00  1973.38 10123.47
0
 *SECNO 16.780

 3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    22.32  1133.92      .00  1133.85  1135.15     1.24      .80      .05  1131.00
   108205.   27521.   80684.      0.    9820.    7905.      0.    1333.     169.   1157.70
      .17     2.80    10.21      .00     .055     .035    .050     .000  1111.60  7745.00
   .001179    522.     523.     525.        2        0       0      .00  2351.08 10096.08
0
1
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                                                                THIS RUN EXECUTED 03-27-87

 ***************************************************
   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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
 T2      PROFILE NUMBER 3 - SUBCRITICAL PROFILE
 T3      MAIN CHAN. - VAR. FLOWS - DROP SEC. 16.350,.355,.376

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        4.        0.        0.   .000000      .00       .0        0.  1111.390      .000

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     15.000     .000    -1.000     .000      .000      .000      .000      .000      .000      .000

1
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```
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 *PROF 3

 CCHV=    .100 CEHV=    .300
 *SECNO 15.647
 3280 CROSS SECTION     15.65 EXTENDED       .39 FEET
```

```
3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    14.39  1111.39      .00  1111.39  1112.31      .92      .00      .00  1132.00
   105600.       0.  103126.    2474.       0.   13350.     413.       0.       0.   1107.00
      .00      .00     7.72     6.00     .050     .050     .050     .000  1097.00  9341.77
  .005995       0.       0.       0.        0        0        0      .00  2258.23 11600.00
0
*SECNO 15.823

3265 DIVIDED FLOW

3280 CROSS SECTION     15.82 EXTENDED      1.35 FEET


3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    23.50  1115.35      .00  1115.70  1116.12      .77     3.80      .01  1133.00
   57775.       0.   57775.       0.       0.    8195.       0.     235.      32. 100000.00
      .04      .00     7.05      .00     .050     .050     .050     .000  1091.85  9361.04
  .002348     900.     930.     960.        3        0        0      .00   745.24 10144.83
0
CCHV=    .100 CEHV=    .300
*SECNO 16.013
3280 CROSS SECTION     16.01 EXTENDED      2.98 FEET


3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

1
 03-27-87     19:28:26                                                                    PAGE   20


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


    16.01    16.98  1116.98      .00  1118.22  1117.44      .46     1.29      .03100000.00
   57775.       0.   57775.       0.       0.   10585.       0.     450.      51.   1146.00
      .09      .00     5.46      .00     .048     .040     .048     .000  1100.00  9290.82
  .000814     1000.    1000.     980.        3        0        0      .00   896.67 10187.49
0
*SECNO 16.153

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    15.58  1117.58      .00  1118.96  1118.72     1.14     1.08      .20100000.00
   57775.       0.   57775.       0.       0.    6729.       0.     597.      66.   1151.00
      .11      .00     8.59      .00     .048     .040     .048     .000  1102.00  9294.23
  .003294     710.     740.     770.        2        0        0      .00   825.63 10119.87
0
*SECNO 16.191

3301 HV CHANGED MORE THAN HVINS
```

3470 ENCROACHMENT STATIONS= 8638.0 10823.0 TYPE= 1 TARGET= 2185.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1128.50 ELREA= 1141.80

16.19	14.19	1117.78	.00	1118.97	1119.80	2.01	.81	.26	1128.50
57775.	0.	57775.	0.	0.	5073.	0.	624.	69.	1141.80
.12	.00	11.39	.00	.048	.040	.048	.000	1103.59	9877.63
.005161	200.	200.	200.	2	0	0	.00	572.20	10449.82

0

CCHV= .300 CEHV= .500

*SECNO 16.291

3470 ENCROACHMENT STATIONS= 9076.0 10587.0 TYPE= 1 TARGET= 1511.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1132.90 ELREA= 1137.90

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	DLOSS	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
16.29	14.41	1119.91	.00	1121.49	1122.38	2.47	2.36	.23	1132.90
57775.	0.	57775.	0.	0.	4582.	0.	683.	75.	1137.90
.13	.00	12.61	.00	.035	.035	.035	.000	1105.50	9916.60
.003901	533.	528.	476.	2	0	0	.00	437.85	10354.46

0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1117.73 ,NOT 1119.91 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	465.00	60.00	7607.00	.10	1112.20	1111.80

*SECNO 16.379

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1120.58 BRIDGE VELOCITY=, 16.60 CALCULATED CHANNEL AREA=, 3400.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1126.70	.00	0.	57775.	7607.	9081.	1134.50	1134.00

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1141.00

16.38	11.80	1124.00	.00	1126.59	1126.70	2.70	4.32	.00	1125.50
57775.	0.	57775.	0.	0.	4385.	0.	685.	75.	1126.70
.13	.00	13.18	.00	.000	.035	.000	.000	1112.20	9736.08
.004792	15.	18.	18.	0	0	0	.00	458.37	10194.45

0

CCHV= .100 CEHV= .300

*SECNO 16.431

3265 DIVIDED FLOW

3633 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 8100.0 10202.0 TYPE= 1 TARGET= 2102.000

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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
16.43	15.46	1126.26	1126.26	1129.45	1129.03	2.77	1.53	.02	1125.10
107945.	26052.	81893.	0.	5202.	5434.	0.	739.	85.	1150.60
.14	5.01	15.07	.00	.055	.035	.050	.000	1110.80	8100.00
.005099	350.	300.	230.	20	15	0	.00	2041.42	10165.28

0

*SECNO 16.481

3470 ENCROACHMENT STATIONS= 8200.0 10200.0 TYPE= 1 TARGET= 2000.000

16.48	15.76	1127.56	1127.52	1129.67	1130.42	2.86	1.37	.03	1126.70
108205.	21627.	86578.	0.	4772.	5770.	0.	804.	97.	1150.30
.14	4.53	15.00	.00	.055	.035	.050	.000	1111.80	8200.00
.005211	270.	264.	263.	4	8	0	.00	1973.74	10173.74

0

*SECNO 16.580

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 8295.0 10245.0 TYPE= 1 TARGET= 1950.000

16.58	18.00	1129.60	1129.45	1130.18	1132.74	3.14	2.24	.08	1127.10
108205.	16247.	91958.	0.	4640.	5990.	0.	931.	120.	1151.90
.15	3.50	15.35	.00	.055	.035	.050	.000	1111.60	8295.00
.003575	523.	523.	523.	6	8	0	.00	1857.91	10157.86

0

*SECNO 16.681

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 8030.0 10145.0 TYPE= 1 TARGET= 2115.000

16.68	19.01	1132.61	.00	1132.47	1134.30	1.69	1.41	.14	1130.40
108205.	32522.	75683.	0.	8437.	6195.	0.	1085.	143.	1152.40
.17	3.85	12.22	.00	.055	.035	.050	.000	1113.60	8030.00
.002070	530.	528.	537.	3	0	0	.00	1973.25	10123.46

0

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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 16.780

3470 ENCROACHMENT STATIONS= 7745.0 10110.0 TYPE= 1 TARGET= 2365.000

.18	2.80	10.22	.00	.055	.035	.050	.000	1111.60	7745.00
.001182	522.	523.	525.	2	0	0	.00	2351.07	10096.07

0

1

THIS RUN EXECUTED 03-27-87

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

MAIN CHAN. - VAR. FLOWS

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
	15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
	15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
	15.823	930.00	.00	.00	1091.85	77775.00	1115.70	.00	1117.01	38.83	9.21	8446.23	12481.76
	15.823	930.00	.00	.00	1091.85	67775.00	1115.51	.00	1116.54	30.97	8.16	8310.66	12179.29
	15.823	930.00	.00	.00	1091.85	57775.00	1115.35	.00	1116.12	23.48	7.05	8195.42	11923.93
	16.013	1000.00	.00	.00	1100.00	77775.00	1118.22	.00	1118.91	10.64	6.65	11702.08	23845.53
	16.013	1000.00	.00	.00	1100.00	67775.00	1117.58	.00	1118.16	9.52	6.09	11125.99	21963.53
	16.013	1000.00	.00	.00	1100.00	57775.00	1116.98	.00	1117.44	8.14	5.46	10585.06	20249.59
	16.153	740.00	.00	.00	1102.00	77775.00	1118.96	.00	1120.48	35.74	9.88	7869.97	13008.91
	16.153	740.00	.00	.00	1102.00	67775.00	1118.26	.00	1119.60	34.75	9.29	7297.75	11497.84
	16.153	740.00	.00	.00	1102.00	57775.00	1117.58	.00	1118.72	32.94	8.59	6728.53	10065.88
	16.191	200.00	.00	.00	1103.59	77775.00	1118.97	.00	1121.80	62.59	13.51	5756.22	9830.40
	16.191	200.00	.00	.00	1103.59	67775.00	1118.38	.00	1120.81	57.67	12.51	5416.19	8924.52
	16.191	200.00	.00	.00	1103.59	57775.00	1117.78	.00	1119.80	51.61	11.39	5073.21	8042.05
	16.291	528.00	.00	.00	1105.50	77775.00	1121.49	.00	1124.86	45.32	14.75	5274.39	11552.67
	16.291	528.00	.00	.00	1105.50	67775.00	1120.73	.00	1123.65	42.32	13.72	4938.55	10418.69
	16.291	528.00	.00	.00	1105.50	57775.00	1119.91	.00	1122.38	39.01	12.61	4581.52	9249.65
*	16.379	18.00	1134.00	1134.50	1112.20	77775.00	1126.59	.00	1129.60	39.86	13.94	5579.14	12319.01
*	16.379	18.00	1134.00	1134.50	1112.20	67775.00	1125.33	.00	1128.19	43.39	13.57	4994.33	10289.30
*	16.379	18.00	1134.00	1134.50	1112.20	57775.00	1124.00	.00	1126.70	47.92	13.18	4384.72	8345.63
	16.431	300.00	.00	.00	1110.80	107945.00	1129.45	.00	1130.48	15.64	9.80	17183.45	27298.16
	16.431	300.00	.00	.00	1110.80	107945.00	1127.59	.00	1129.35	29.96	12.41	13353.52	19719.51
*	16.431	300.00	.00	.00	1110.80	107945.00	1126.26	1126.26	1129.03	50.99	15.07	10635.69	15116.46

1

SECNO	XLCH	ELTRD	ELOB	ELMIN	Q	CWSEL	CRIWS	EB	TOR*S	VCH	AREA	.01R
16.481	264.00	.00	.00	1111.80	108205.00	1129.67	.00	1131.10	22.87	11.14	14713.13	22628.13
16.481	264.00	.00	.00	1111.80	108205.00	1128.10	.00	1130.46	41.62	13.83	11601.95	16772.34
16.481	264.00	.00	.00	1111.80	108205.00	1127.56	1127.52	1130.42	52.11	15.00	10541.90	14990.13
16.580	523.33	.00	.00	1111.60	108205.00	1130.18	.00	1132.82	29.53	14.28	11694.51	19910.80
16.580	523.33	.00	.00	1111.60	108205.00	1129.56	1129.46	1132.74	36.29	15.44	10547.25	17961.21
16.580	523.33	.00	.00	1111.60	108205.00	1129.60	1129.45	1132.74	35.75	15.35	10630.48	18098.12
16.681	528.33	.00	.00	1113.60	108205.00	1132.47	.00	1134.23	21.69	12.44	14345.10	23235.49
16.681	528.33	.00	.00	1113.60	108205.00	1132.62	.00	1134.31	20.65	12.21	14644.54	23810.46
16.681	528.33	.00	.00	1113.60	108205.00	1132.61	.00	1134.30	20.70	12.22	14631.54	23785.34
16.780	523.33	.00	.00	1111.60	108205.00	1133.85	.00	1135.11	12.02	10.28	17566.56	31210.13
16.780	523.33	.00	.00	1111.60	108205.00	1133.92	.00	1135.15	11.79	10.21	17725.26	31517.08
16.780	523.33	.00	.00	1111.60	108205.00	1133.91	.00	1135.15	11.82	10.22	17699.72	31467.56

1

MAIN CHAN. - VAR. FLOWS

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
	15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
	15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
	15.823	77775.00	1115.70	.00	4.31	.00	750.17	930.00
	15.823	67775.00	1115.51	-.19	4.12	-.19	747.50	930.00
	15.823	57775.00	1115.35	-.15	3.96	-.35	745.24	930.00
	16.013	77775.00	1118.22	.00	2.53	.00	901.09	1000.00
	16.013	67775.00	1117.58	-.64	2.08	-.64	898.81	1000.00
	16.013	57775.00	1116.98	-.60	1.63	-1.24	896.67	1000.00
	16.153	77775.00	1118.96	.00	.74	.00	830.82	740.00
	16.153	67775.00	1118.26	-.70	.68	-.70	828.22	740.00
	16.153	57775.00	1117.58	-.69	.60	-1.38	825.63	740.00
	16.191	77775.00	1118.97	.00	.00	.00	580.26	200.00
	16.191	67775.00	1118.38	-.58	.12	-.58	576.26	200.00
	16.191	57775.00	1117.78	-.60	.21	-1.18	572.20	200.00
	16.291	77775.00	1121.49	.00	2.52	.00	445.51	528.00
	16.291	67775.00	1120.73	-.76	2.35	-.76	441.54	528.00
	16.291	57775.00	1119.91	-.81	2.13	-1.57	437.85	528.00
*	16.379	77775.00	1126.59	.00	5.10	.00	465.77	18.00
*	16.379	67775.00	1125.33	-1.26	4.60	-1.26	462.93	18.00
*	16.379	57775.00	1124.00	-1.32	4.09	-2.58	458.37	18.00
	16.431	107945.00	1129.45	.00	2.87	.00	2069.13	300.00
	16.431	107945.00	1127.59	-1.87	2.26	-1.87	2049.82	300.00
*	16.431	107945.00	1126.26	-1.33	2.25	-3.20	2041.42	300.00
	16.481	108205.00	1129.67	.00	.21	.00	1976.17	264.00
	16.481	108205.00	1128.10	-1.57	.51	-1.57	1974.36	264.00
	16.481	108205.00	1127.56	-.54	1.20	-2.11	1973.74	264.00

16.580	108205.00	1129.56	-.63	1.46	-.63	1857.62	523.33
16.580	108205.00	1129.60	.05	2.04	-.58	1857.91	523.33
16.681	108205.00	1132.47	.00	2.29	.00	1970.40	528.33
16.681	108205.00	1132.62	.15	3.06	.15	1973.38	528.33
16.681	108205.00	1132.61	-.01	3.00	.14	1973.25	528.33
16.780	108205.00	1133.85	.00	1.38	.00	2351.00	523.33
16.780	108205.00	1133.92	.07	1.30	.07	2351.08	523.33
16.780	108205.00	1133.91	-.01	1.30	.06	2351.07	523.33

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SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 16.379 PROFILE= 1 HYDRAULIC JUMP D.S.
CAUTION SECNO= 16.379 PROFILE= 2 HYDRAULIC JUMP D.S.
CAUTION SECNO= 16.379 PROFILE= 3 HYDRAULIC JUMP D.S.

CAUTION SECNO= 16.431 PROFILE= 3 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 16.431 PROFILE= 3 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 16.431 PROFILE= 3 20 TRIALS ATTEMPTED TO BALANCE WSEL

1

THIS RUN EXECUTED 03-27-87

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**************************************************
  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
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*SECNO 16.155
3280 CROSS SECTION     16.15 EXTENDED       .96 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    16.96  1118.96      .00      .00  1120.48     1.52     1.32      .25100000.00
   77775.       0.   77775.       0.       0.    7870.       0.     635.      66.   1151.00
      .09      .00     9.88      .00     .048     .040     .048     .000  1102.00  9291.69
  .003574     710.     740.     770.        3        0        0      .00   830.82 10122.51
0
*SECNO 16.191

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    15.38  1118.97      .00      .00  1121.80     2.83      .93      .40  1128.50
   77775.       0.   77775.       0.       0.    5756.       0.     666.      69.   1141.80
      .09      .00    13.51      .00     .048     .040     .048     .000  1103.59  9875.12
  .006259     200.     200.     200.        2        0        0      .00   580.26 10455.38
0
 CCHV=    .300 CEHV=    .500
1
  03-27-87     19:28:26                                                                    PAGE    9


    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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 16.291

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9076.0   10587.0  TYPE=     1  TARGET=    1511.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.90 ELREA=     1137.90

    16.29    15.99  1121.49      .00      .00  1124.86     3.38     2.79      .27  1132.90
   77775.       0.   77775.       0.       0.    5274.       0.     733.      75.   1137.90
      .10      .00    14.75      .00     .035     .035     .035     .000  1105.50  9913.25
  .004532     533.     528.     476.        0        0        0      .00   445.51 10358.76
0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS   1119.03 ,NOT   1121.49 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.56      3.00       .00    465.00     60.00   7607.00      .10   1112.20   1111.80

*SECNO 16.379
CLASS B LOW FLOW
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type afm50a.out
1*************************************************
*
 * WATER SURFACE PROFILES                        *
*
 * VERSION OF NOVEMBER 1976                      *
*
 * UPDATED MAY 1984                              *
*
 * IBM-PC-XT VERSION AUGUST 1985                 *
*
 * RUN DATE  03-27-87   TIME  18:51:24            *
  *
 *************************************************
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*************************************
* U.S. ARMY CORPS OF ENGINEERS
* THE HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET, SUITE D
* DAVIS, CALIFORNIA 95616
  * (916) 440-2105 (FTS) 448-2105
*************************************
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3. Main Channel - Proposed Condition (New bridge)

```
X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX   XXXXX            XXXXXXX
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1
 03-27-87     18:51:25                                                                    PAGE    1
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THIS RUN EXECUTED 03-27-87

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*************************************************
  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
*************************************************
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T1      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
T2      PROFILE NUMBER 1 - SUBCRITICAL PROFILE
T3      MAIN CHAN.- NEW BRIDGE  - VARIOUS FLOWS

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC    HVINS     Q        WSEL     FQ

       0.      2.       0.       0.   .000000     .00       .0       0.  1111.390     .000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

      .000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000


QT     7.000 105600.000 105600.000 105600.000 105600.000  72000.000  72000.000  72000.000      .000      .000
NC      .050      .050      .050      .100      .300      .000      .000      .000      .000      .000
ET      .000     9.100     9.100     9.100     9.100     9.100     9.100     9.100  9311.000 11600.000
X1    15.647    90.000  9312.000 11506.000      .000      .000      .000      .000      .000      .000
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GR	1133.000	8473.000	1133.000	8529.000	1133.000	8701.000	1132.000	8742.000	1133.000	8778.000
GR	1133.000	8960.000	1132.000	9020.000	1129.000	9053.000	1116.000	9102.000	1112.000	9132.000
GR	1111.000	9180.000	1117.000	9218.000	1121.000	9247.000	1132.000	9282.000	1132.000	9312.000
GR	1105.000	9351.000	1097.000	9377.000	1097.000	9442.000	1097.000	9507.000	1097.000	9552.000
GR	1100.000	9589.000	1102.000	9625.000	1106.000	9645.000	1106.000	9697.000	1103.000	9744.000
GR	1104.000	9760.000	1108.000	9783.000	1108.000	9832.000	1108.000	9886.000	1108.000	9941.000
GR	1107.000	10000.000	1107.000	10026.000	1103.000	10033.000	1103.000	10080.000	1103.000	10134.000
GR	1105.000	10152.000	1105.000	10213.000	1104.000	10262.000	1103.000	10293.000	1103.000	10387.000
GR	1106.000	10402.000	1107.000	10463.000	1107.000	10531.000	1109.000	10588.000	1109.000	10650.000
GR	1109.000	10717.000	1108.000	10775.000	1108.000	10857.000	1110.000	10925.000	1108.000	10993.000
GR	1108.000	11065.000	1108.000	11134.000	1108.000	11178.000	1104.000	11194.000	1104.000	11251.000
GR	1104.000	11297.000	1103.000	11348.000	1103.000	11402.000	1102.000	11441.000	1106.000	11460.000
GR	1107.000	11506.000	1107.000	11566.000	1107.000	11644.000	1107.000	11712.000	1107.000	11791.000
GR	1107.000	11868.000	1107.000	11941.000	1107.000	12010.000	1107.000	12080.000	1107.000	12151.000
GR	1107.000	12223.000	1107.000	12302.000	1107.000	12391.000	1108.000	12469.000	1108.000	12532.000
GR	1108.000	12610.000	1108.000	12703.000	1108.000	12785.000	1109.000	12845.000	1108.000	12930.000
GR	1109.000	13028.000	1109.000	13119.000	1109.000	13215.000	1109.000	13335.000	1110.000	13438.000
GR	1110.000	13541.000	1111.000	13647.000	1111.000	13742.000	1111.000	13867.000	1111.000	13948.000
QT	7.000	77775.000	82775.000	87775.000	92775.000	52000.000	62000.000	72000.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9322.000	10204.000
X1	15.823	85.000	9322.000	10204.000	900.000	960.000	930.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1133.000	9322.000	1100.000	9395.000	1100.000	9498.000	1101.000	9520.000	1105.000	9552.000
GR	1105.000	9633.000	1108.000	9702.000	1108.000	9779.000	1109.000	9847.000	1110.280	9858.000
GR	1119.100	9888.000	1107.040	9971.000	1099.220	10000.000	1091.850	10093.000	1142.180	10204.000
GR	1142.600	10295.000	1008.300	10388.000	1104.000	10406.000	1103.000	10450.000	1107.000	10474.000
GR	1105.000	10511.000	1103.000	10560.000	1108.000	10572.000	1108.000	10598.000	1111.000	10610.000

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GR	1111.000	10717.000	1111.000	10781.000	1111.000	10856.000	1110.000	10898.000	1109.000	10964.000
GR	1106.000	11019.000	1107.000	11071.000	1106.000	11140.000	1104.000	11206.000	1102.000	11251.000
GR	1105.000	11283.000	1108.000	11342.000	1106.000	11384.000	1107.000	11421.000	1108.000	11470.000
GR	1110.000	11500.000	1110.000	11554.000	1110.000	11634.000	1110.000	11708.000	1110.000	11794.000
GR	1110.000	11892.000	1109.000	11983.000	1109.000	12063.000	1109.000	12143.000	1109.000	12221.000
GR	1109.000	12294.000	1109.000	12370.000	1109.000	12450.000	1109.000	12542.000	1110.000	12596.000
GR	1110.000	12672.000	1110.000	12726.000	1110.000	12796.000	1110.000	12852.000	1110.000	12910.000
GR	1110.000	12983.000	1110.000	13011.000	1111.000	13075.000	1111.000	13153.000	1111.000	13224.000
GR	1111.000	13307.000	1111.000	13380.000	1111.000	13452.000	1111.000	13532.000	1112.000	13608.000
GR	1112.000	13689.000	1112.000	13764.000	1112.000	13844.000	1112.000	13917.000	1112.000	13998.000
GR	1113.000	14073.000	1114.000	14137.000	1114.000	14212.000	1114.000	14281.000	1114.000	14347.000
GR	1114.000	14414.000	1114.000	14464.000	1114.000	14533.000	1114.000	14613.000	1114.000	14698.000
NC	.048	.048	.040	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9264.000	12250.000
X1	16.013	90.000	9263.000	10275.000	1000.000	980.000	1000.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1141.000	9001.000	1141.000	9081.000	1139.000	9141.000	1139.000	9236.000	1138.000	9263.000
GR	1104.000	9308.000	1104.000	9343.000	1109.000	9358.000	1109.000	9421.000	1110.000	9496.000
GR	1110.000	9568.000	1106.000	9615.000	1103.000	9664.000	1104.000	9689.000	1105.000	9724.000
GR	1107.000	9750.000	1104.000	9792.000	1100.000	9823.000	1100.000	9855.000	1103.000	9883.000
GR	1102.000	9947.000	1102.000	10000.000	1102.000	10052.000	1102.000	10114.000	1102.000	10154.000
GR	1119.000	10192.000	1136.000	10240.000	1146.000	10275.000	1147.000	10323.000	1147.000	10379.000
GR	1141.000	10402.000	1124.000	10449.000	1108.000	10500.000	1108.000	10529.000	1112.000	10549.000
GR	1112.000	10613.000	1109.000	10664.000	1108.000	10694.000	1111.000	10705.000	1112.000	10786.000
GR	1114.000	10843.000	1113.000	10905.000	1110.000	10955.000	1110.000	11005.000	1111.000	11055.000
GR	1113.000	11079.000	1114.000	11146.000	1113.000	11220.000	1113.000	11268.000	1113.000	11296.000
GR	1114.000	11317.000	1112.000	11399.000	1110.000	11452.000	1111.000	11471.000	1109.000	11493.000
GR	1109.000	11558.000	1110.000	11588.000	1110.000	11657.000	1110.000	11731.000	1110.000	11799.000
GR	1110.000	11870.000	1111.000	11941.000	1111.000	11990.000	1111.000	12036.000	1111.000	12085.000
GR	1112.000	12152.000	1112.000	12219.000	1112.000	12311.000	1112.000	12395.000	1112.000	12482.000
GR	1112.000	12555.000	1112.000	12620.000	1113.000	12690.000	1113.000	12743.000	1113.000	12809.000
GR	1112.000	12885.000	1112.000	12952.000	1112.000	13003.000	1114.000	13054.000	1114.000	13110.000

ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9252.000	12040.000
X1	16.153	90.000	9251.000	10209.000	710.000	770.000	740.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1142.000	9036.000	1141.000	9124.000	1141.000	9201.000	1141.000	9251.000	1115.000	9299.000
GR	1115.000	9364.000	1114.000	9435.000	1114.000	9511.000	1114.000	9534.000	1110.000	9568.000
GR	1109.000	9592.000	1110.000	9613.000	1117.000	9637.000	1115.000	9668.000	1109.000	9683.000
GR	1107.000	9741.000	1107.000	9802.000	1107.000	9857.000	1105.000	9906.000	1105.000	9942.000
GR	1103.000	10000.000	1102.000	10060.000	1102.000	10090.000	1126.000	10136.000	1147.000	10190.000
GR	1151.000	10209.000	1151.000	10272.000	1148.000	10321.000	1149.000	10382.000	1147.000	10434.000
GR	1127.000	10480.000	1108.000	10536.000	1109.000	10561.000	1111.000	10620.000	1111.000	10682.000
GR	1111.000	10757.000	1112.000	10827.000	1112.000	10901.000	1112.000	10970.000	1112.000	11034.000
GR	1113.000	11101.000	1113.000	11158.000	1110.000	11171.000	1114.000	11182.000	1114.000	11250.000
GR	1114.000	11330.000	1114.000	11406.000	1113.000	11487.000	1113.000	11561.000	1113.000	11640.000
GR	1113.000	11714.000	1113.000	11788.000	1113.000	11843.000	1114.000	11900.000	1114.000	11968.000
GR	1114.000	12040.000	1114.000	12112.000	1113.000	12178.000	1113.000	12229.000	1113.000	12308.000
GR	1113.000	12382.000	1113.000	12451.000	1114.000	12513.000	1114.000	12558.000	1114.000	12588.000
GR	1114.000	12658.000	1114.000	12711.000	1114.000	12762.000	1114.000	12817.000	1114.000	12870.000
GR	1114.000	12930.000	1114.000	12979.000	1113.000	13031.000	1113.000	13092.000	1114.000	13153.000

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GR	1114.000	13209.000	1115.000	13289.000	1116.000	13370.000	1116.000	13451.000	1116.000	13532.000
GR	1117.000	13603.000	1118.000	13685.000	1118.000	13765.000	1118.000	13840.000	1118.000	13912.000
GR	1118.000	13981.000	1119.000	14054.000	1118.000	14131.000	1118.000	14205.000	1118.000	14281.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	8638.000	10823.000
X1	16.191	54.000	9855.000	10822.800	200.000	200.000	200.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1121.000	8637.600	1122.100	8675.600	1122.000	8709.700	1120.100	8761.900	1116.400	8789.200
GR	1116.800	8830.000	1118.400	8865.300	1118.700	8914.700	1117.700	8942.500	1117.100	8970.900
GR	1110.200	8995.300	1109.900	9034.500	1109.300	9086.800	1111.100	9147.500	1119.800	9172.000
GR	1118.700	9260.500	1118.700	9343.500	1118.200	9378.700	1117.700	9389.500	1118.600	9428.600
GR	1123.500	9450.800	1123.700	9459.900	1120.900	9482.000	1124.400	9542.200	1125.600	9567.200
GR	1124.800	9593.300	1124.200	9633.700	1124.900	9686.500	1126.000	9722.800	1127.400	9783.000
GR	1128.500	9855.000	1108.610	9897.000	1103.590	9996.000	1109.090	10301.000	1112.920	10310.000
GR	1115.400	10320.200	1115.900	10401.500	1116.800	10445.200	1122.600	10472.400	1121.900	10498.000
GR	1121.900	10573.000	1121.700	10649.100	1120.000	10679.200	1120.100	10701.300	1123.700	10718.300
GR	1120.000	10749.600	1124.600	10766.000	1128.100	10796.100	1141.800	10822.800	1142.800	10869.400
GR	1143.900	10917.100	1144.600	10956.900	1144.800	10996.000	1145.100	11013.100	.000	.000
NC	.035	.035	.035	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9076.000	10587.000
X1	16.291	39.000	9885.000	10586.000	533.000	476.000	528.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1119.300	9075.400	1119.600	9127.100	1120.900	9227.600	1121.700	9278.100	1120.900	9295.200
GR	1121.000	9337.800	1121.200	9350.300	1120.500	9421.300	1121.400	9553.000	1121.600	9655.800
GR	1121.600	9705.800	1119.800	9716.000	1119.800	9725.700	1124.400	9746.700	1132.400	9766.500
GR	1131.500	9789.300	1132.900	9885.000	1131.100	9891.500	1129.560	9896.000	1107.090	9944.000
GR	1105.500	10000.000	1112.800	10328.000	1115.990	10345.000	1120.970	10357.000	1124.000	10367.400
GR	1123.000	10427.600	1122.300	10450.300	1124.000	10480.400	1125.600	10528.700	1129.700	10557.600
GR	1137.900	10586.000	1136.300	10616.700	1136.600	10663.300	1136.500	10702.400	1140.300	10741.100
GR	1145.800	10779.700	1145.800	10813.800	1146.700	10859.800	1146.400	10886.400	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9777.000	10223.000
X1	16.350	25.000	9778.000	10222.000	200.000	375.000	300.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1129.000	1134.000	.000
GR	1126.700	9272.500	1127.200	9320.200	1126.900	9421.800	1127.100	9529.200	1127.200	9658.100
GR	1126.000	9729.100	1126.000	9751.200	1126.000	9778.000	1113.600	9820.500	1113.200	9848.900
GR	1112.900	9892.600	1111.100	9935.800	1110.400	9960.200	1111.100	9992.600	1111.600	10000.000
GR	1112.400	10045.500	1113.100	10107.900	1113.600	10148.200	1116.800	10180.000	1120.000	10222.000
GR	1124.000	10250.000	1128.000	10350.000	1132.000	10400.000	1136.000	10470.000	1140.000	10520.000

X1	16.355	28.000	9778.000	10222.000	38.000	38.000	38.000	.000	.000	.000
X2	.000	.000	1.000	1131.000	1131.500	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1131.000	1137.000	.000
BT	-11.000	9300.000	1131.500	.000	9451.000	1131.500	.000	9591.000	1131.500	.000
BT	.000	9749.000	1131.500	.000	9749.100	1134.000	.000	9778.000	1134.000	1125.500
BT	.000	10222.000	1139.500	1131.000	10251.000	1140.000	.000	10251.100	1137.000	.000
BT	.000	10301.000	1137.500	.000	10401.000	1140.000	.000	.000	.000	.000
GR	1150.000	9300.200	1127.500	9301.200	1129.000	9451.200	1130.000	9591.200	1131.000	9751.100
GR	1125.000	9751.200	1125.000	9778.000	1118.400	9778.100	1113.400	9797.100	1112.800	9858.100
GR	1113.200	9862.600	1113.700	9891.600	1112.500	9920.600	1110.000	9951.600	1112.700	9956.100
GR	1111.500	10000.000	1110.300	10046.100	1110.400	10050.600	1112.400	10095.100	1113.900	10139.600

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GR	1113.500	10144.100	1116.300	10206.100	1122.400	10221.000	1122.400	10222.000	1128.000	10250.000
GR	1132.000	10350.000	1136.000	10450.000	1140.000	10650.000	.000	.000	.000	.000
X1	16.356	31.000	9688.000	10284.000	7.000	7.000	7.000	.000	.000	.000
GR	1138.300	9500.000	1139.000	9685.000	1130.000	9688.000	1128.000	9775.000	1126.000	9781.000
GR	1132.700	9781.010	1132.700	9787.000	1124.000	9787.010	1112.000	9820.000	1112.000	9881.000
GR	1133.100	9881.010	1133.100	9887.000	1109.500	9887.010	1109.500	9981.000	1133.500	9981.010
GR	1135.500	9987.000	1109.500	9987.010	1109.500	10081.000	1133.900	10081.010	1133.900	10087.000
GR	1109.500	10087.010	1109.500	10181.000	1134.300	10181.010	1134.300	10187.000	1109.000	10187.100
GR	1109.500	10192.000	1130.000	10255.000	1130.000	10281.000	1134.700	10281.010	1141.400	10284.000
GR	1142.700	10600.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	16.373	.000	.000	.000	65.000	65.000	65.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9733.000	10201.000
X1	16.376	38.000	9734.000	10200.000	13.000	13.000	13.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1134.000	1137.500	.000
GR	1124.400	8350.200	1126.000	8408.700	1127.200	8513.800	1123.700	8585.300	1121.000	8643.200
GR	1118.600	8697.800	1118.200	8715.400	1118.200	8746.600	1127.100	8777.800	1128.800	8846.500
GR	1129.400	8963.000	1129.400	9062.300	1129.400	9181.000	1130.200	9272.500	1131.100	9379.200
GR	1132.400	9560.400	1134.300	9661.500	1134.000	9734.000	1122.100	9744.400	1115.900	9791.000
GR	1112.700	9846.000	1112.900	9872.700	1111.800	9932.900	1112.200	9970.400	1112.200	9998.200
GR	1112.200	10000.000	1112.200	10032.900	1112.200	10074.300	1113.100	10120.300	1113.800	10165.800
GR	1116.100	10183.900	1137.500	10200.000	1140.500	10261.200	1141.800	10372.500	1142.800	10517.900
GR	1143.200	10654.700	1143.400	10674.000	1143.500	10701.300	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9733.000	10201.000
SB	1.250	1.560	3.000	.000	465.000	60.000	7607.000	.100	1112.200	1111.800
X1	16.379	31.000	9734.000	10200.000	15.000	18.330	18.000	.000	.000	.000
X2	.000	.000	1.000	1134.500	1134.000	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1134.000	1141.000	.000
BT	-11.000	9450.000	1134.400	.000	9490.000	1134.600	.000	9734.000	1136.600	1133.000
BT	.000	9873.000	1138.100	1134.500	9873.100	1138.100	1125.500	9975.000	1139.500	1126.500
BT	.000	9975.100	1139.100	1128.000	10075.000	1140.200	1129.100	10075.100	1140.200	1132.600
BT	.000	10200.000	1141.600	1134.000	10300.000	1142.100	.000	.000	.000	.000
GR	1131.700	9313.000	1133.100	9331.000	1132.600	9352.000	1128.500	9391.000	1125.100	9517.000
GR	1122.600	9589.000	1123.000	9652.000	1125.500	9734.000	1121.900	9739.000	1118.700	9750.000
GR	1116.400	9806.000	1115.200	9848.000	1114.300	9897.000	1113.600	9925.000	1112.900	9960.000
GR	1112.700	9989.000	1112.700	10033.000	1112.200	10084.000	1112.500	10120.000	1113.600	10173.000
GR	1126.700	10200.000	1127.900	10206.000	1128.800	10272.000	1131.800	10296.000	1130.800	10303.000
GR	1131.000	10321.000	1129.400	10354.000	1129.700	10401.000	1134.000	10478.000	1137.200	10547.000
GR	1141.800	10613.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.055	.050	.035	.100	.300	.000	.000	.000	.000	.000
QT	7.000	107945.000	107945.000	107945.000	107945.000	52000.000	62000.000	72000.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	8100.000	10202.000
X1	16.431	85.000	9681.400	10201.000	350.000	230.000	300.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1127.800	6737.900	1128.100	6799.300	1127.800	6901.500	1127.100	6994.600	1127.100	7034.400

GR	1126.700	7301.300	1129.200	7322.300	1129.300	7337.600	1128.300	7369.300	1127.100	7417.700
GR	1126.000	7460.300	1127.600	7485.300	1126.900	7504.600	1124.000	7535.300	1123.700	7575.600
GR	1123.700	7614.800	1129.400	7656.200	1132.400	7673.800	1132.700	7702.200	1131.700	7722.700
GR	1130.100	7753.300	1129.500	7771.500	1123.700	7831.100	1121.900	7891.300	1121.700	7962.300

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GR	1121.700	8066.800	1121.900	8123.600	1124.200	8190.600	1121.900	8274.700	1123.200	8305.900
GR	1122.800	8333.700	1116.800	8367.200	1114.800	8385.400	1116.600	8403.000	1118.400	8445.600
GR	1120.900	8514.300	1125.100	8570.500	1123.900	8624.500	1122.100	8698.900	1122.100	8782.400
GR	1122.800	8883.500	1123.000	8966.900	1123.500	9062.900	1123.900	9137.300	1123.900	9157.200
GR	1129.400	9166.300	1128.700	9176.500	1123.300	9195.200	1123.700	9246.900	1124.600	9274.700
GR	1124.000	9335.000	1125.100	9681.400	1124.000	9738.700	1123.500	9766.000	1110.800	9818.800
GR	1111.100	9871.000	1111.600	9904.000	1112.000	9951.700	1112.500	9990.300	1112.500	10000.000
GR	1112.700	10065.800	1112.900	10107.900	1112.500	10148.700	1143.200	10185.700	1150.600	10201.000
GR	1150.800	10269.100	1150.800	10293.000	1147.100	10319.100	1149.700	10349.200	1148.100	10374.800
GR	1139.800	10399.800	1141.400	10411.700	1142.700	10422.500	1150.400	10433.800	1150.800	10484.900
GR	1151.500	10536.600	1150.600	10556.500	1135.700	10610.400	1130.200	10637.700	1131.000	10738.800
QT	7.000	108205.000	108205.000	108205.000	108205.000	72000.000	72000.000	72000.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	8200.000	10200.000
X1	16.481	90.000	9647.300	10199.900	270.000	263.330	264.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1130.200	6374.500	1130.200	6434.100	1128.300	6462.500	1129.400	6494.900	1129.500	6517.000
GR	1129.500	6586.900	1129.000	6638.500	1129.000	6689.100	1129.200	6740.800	1129.200	6773.700
GR	1129.200	6813.500	1129.700	6847.000	1130.100	6869.700	1130.200	6941.200	1128.100	6969.100
GR	1126.000	7007.100	1125.800	7057.700	1125.600	7088.900	1131.500	7124.700	1133.300	7142.300
GR	1132.900	7159.300	1130.800	7173.500	1129.900	7183.700	1124.900	7217.800	1123.500	7246.200
GR	1124.200	7275.700	1127.800	7316.600	1128.300	7338.800	1117.500	7384.800	1113.800	7417.100
GR	1113.100	7458.600	1108.500	7497.200	1106.500	7597.200	1106.300	7660.800	1106.300	7705.100
GR	1117.800	7787.400	1116.800	7874.300	1116.100	7937.900	1114.800	7998.100	1115.700	8053.800
GR	1116.400	8099.800	1114.800	8131.600	1116.400	8157.700	1115.500	8194.600	1117.300	8216.200
GR	1120.300	8229.200	1119.600	8238.900	1122.300	8273.500	1125.300	8296.300	1125.300	8383.700
GR	1124.900	8544.400	1124.400	8680.700	1124.400	8811.300	1124.400	8974.900	1124.900	9063.500
GR	1125.500	9118.600	1124.900	9153.200	1124.800	9163.400	1123.000	9173.100	1123.000	9205.500
GR	1125.000	9578.600	1125.000	9613.200	1125.300	9638.800	1126.700	9647.300	1126.500	9688.200
GR	1125.500	9755.800	1111.800	9816.000	1112.000	9860.200	1112.500	9923.900	1112.500	9960.800
GR	1113.400	9988.600	1113.600	10000.000	1114.100	10061.300	1112.900	10145.900	1115.700	10160.100
GR	1150.300	10199.900	1151.200	10218.600	1150.300	10247.000	1153.800	10275.400	1153.800	10349.200
GR	1152.200	10413.400	1153.300	10417.400	1153.300	10444.600	1153.300	10502.500	1153.300	10532.600
GR	1155.100	10554.800	1154.700	10566.700	1154.200	10592.300	1154.300	10661.600	1154.200	10695.600
QT	7.000	108205.000	108205.000	108205.000	108205.000	72000.000	72000.000	72000.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	8295.000	10245.000
X1	16.580	85.000	9762.600	10244.100	523.330	523.330	523.330	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1128.300	6184.800	1129.400	6225.100	1132.400	6261.500	1135.900	6280.800	1136.300	6302.400
GR	1135.600	6321.700	1134.500	6334.200	1133.600	6346.100	1130.400	6375.600	1128.100	6402.300
GR	1127.200	6448.300	1131.500	6465.900	1129.500	6501.100	1125.600	6535.800	1124.000	6580.600
GR	1122.500	6666.900	1122.500	6700.500	1121.700	6770.300	1121.700	6840.200	1121.000	6898.600
GR	1121.600	6944.600	1121.600	7015.600	1120.300	7073.000	1120.100	7143.400	1119.600	7204.700
GR	1120.100	7264.400	1121.000	7309.800	1122.600	7343.300	1128.100	7392.200	1130.800	7416.600
GR	1130.800	7466.000	1129.400	7486.400	1129.500	7536.400	1129.000	7570.500	1129.000	7622.200
GR	1127.900	7678.400	1125.600	7690.300	1125.600	7703.400	1127.600	7720.400	1128.800	7774.900
GR	1128.300	7801.000	1129.200	7914.600	1128.800	8022.500	1128.100	8102.000	1127.600	8188.300
GR	1127.600	8266.700	1126.700	8354.700	1126.700	8441.600	1126.000	8552.900	1126.400	8638.100
GR	1126.200	8726.700	1126.200	8832.900	1126.200	8860.700	1126.900	8931.700	1126.200	8945.900
GR	1126.500	8978.900	1126.500	8992.500	1127.900	8997.600	1127.800	9005.000	1126.400	9025.400
GR	1126.700	9048.100	1127.100	9065.800	1125.500	9641.000	1130.600	9648.000	1126.200	9664.000
GR	1126.900	9724.000	1127.100	9762.600	1113.100	9806.300	1112.500	9837.500	1112.500	9890.300
GR	1113.100	9940.300	1111.600	9963.600	1112.200	9986.000	1113.100	10000.000	1113.900	10013.600

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GR	1151.900	10244.100	1153.300	10303.800	1155.400	10357.200	1152.800	10400.900	1154.200	10439.500
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	8030.000	10145.000
X1	16.681	85.000	9741.800	10144.600	530.000	536.670	528.330	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1135.600	5149.200	1135.600	5216.800	1132.400	5245.100	1131.000	5274.600	1131.300	5296.200
GR	1131.800	5332.000	1131.700	5367.700	1135.000	5397.200	1136.500	5414.800	1136.500	5426.100
GR	1135.700	5447.700	1135.000	5455.100	1133.800	5465.300	1130.700	5503.900	1130.800	5559.500
GR	1131.500	6079.800	1131.700	6181.300	1131.700	6289.200	1130.600	6402.100	1130.200	6527.500
GR	1130.100	6692.600	1129.700	6791.900	1129.900	6934.700	1130.100	7034.200	1129.500	7143.100
GR	1129.400	7293.500	1129.400	7385.900	1129.000	7442.100	1129.000	7475.000	1130.400	7484.700
GR	1130.100	7497.700	1129.200	7511.300	1128.700	7603.800	1128.300	7683.300	1128.300	7781.400
GR	1128.100	7922.100	1128.100	8029.900	1127.900	8171.200	1128.100	8255.800	1129.200	8313.600
GR	1129.000	8377.800	1127.800	8433.900	1127.200	8532.700	1126.700	8684.700	1127.100	8792.500
GR	1125.500	8844.700	1126.200	8858.300	1126.500	8881.000	1126.500	8921.300	1126.900	8941.700
GR	1125.500	9479.600	1139.100	9560.800	1130.100	9673.700	1130.400	9741.800	1113.600	9800.200
GR	1113.600	9831.400	1114.800	9862.600	1114.700	9898.400	1114.500	9951.700	1113.800	9996.000
GR	1113.800	9998.800	1113.800	10000.000	1115.500	10027.800	1116.100	10087.900	1120.000	10110.000
GR	1152.400	10144.600	1155.100	10170.200	1143.700	10194.600	1137.200	10223.500	1135.200	10247.900
GR	1148.100	10293.300	1158.600	10337.600	1158.100	10388.100	1155.200	10415.300	1153.800	10429.500
GR	1153.300	10445.900	1158.400	10468.600	1156.500	10498.700	1155.200	10512.900	1151.300	10522.000
GR	1156.800	10539.000	1158.200	10570.800	1158.400	10590.600	1158.400	10658.100	1159.000	10719.400
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	7745.000	10110.000
X1	16.780	87.000	9678.200	10109.500	521.670	525.000	523.330	.000	.000	.000
GR	1136.300	4085.900	1135.700	4116.600	1135.600	4172.800	1136.600	4193.200	1136.800	4226.700
GR	1137.200	4302.100	1133.600	4345.200	1133.100	4389.500	1132.400	4425.800	1132.400	4454.200
GR	1138.400	4479.700	1139.600	4499.000	1138.000	4518.900	1135.000	4559.200	1134.100	4609.700
GR	1134.100	4706.100	1134.100	4798.600	1134.100	4895.100	1133.400	4998.300	1133.400	5146.400
GR	1133.400	5324.600	1133.400	5528.800	1133.100	5704.200	1133.100	5862.500	1132.700	5988.400
GR	1132.700	6209.700	1132.700	6372.000	1132.200	6511.600	1131.700	6677.300	1130.400	6793.000
GR	1130.100	7005.800	1130.100	7108.500	1130.100	7228.800	1129.700	7309.300	1130.400	7329.800
GR	1130.400	7344.500	1129.500	7371.800	1129.200	7481.800	1127.900	7514.200	1128.800	7526.700
GR	1128.800	7691.800	1129.000	7896.600	1129.000	8086.700	1129.000	8229.100	1128.500	8369.800
GR	1128.700	8506.000	1128.300	8641.000	1128.300	8675.600	1127.600	8705.100	1127.200	8732.900
GR	1127.400	8755.100	1127.800	8776.600	1127.600	8842.500	1121.700	8861.700	1122.100	8867.400
GR	1127.600	8886.100	1128.100	8984.300	1128.700	9130.700	1128.700	9243.600	1130.100	9360.500
GR	1130.600	9525.600	1130.800	9608.400	1131.000	9667.500	1131.000	9678.200	1127.400	9695.300
GR	1113.100	9745.800	1112.200	9767.900	1111.600	9817.200	1112.700	9876.300	1113.400	9905.200
GR	1113.600	9932.400	1112.500	9963.600	1112.900	9988.000	1112.900	10000.000	1112.000	10030.000
GR	1115.500	10072.000	1138.900	10102.600	1157.700	10109.500	1159.800	10179.200	1160.900	10246.200
GR	1160.700	10342.700	1158.600	10375.000	1159.000	10414.200	1159.800	10472.600	1161.100	10524.800
GR	1160.500	10617.800	1160.400	10649.600	.000	.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

*PROF 1

CCHV= .100 CEHV= .300
*SECNO 15.647
3280 CROSS SECTION 15.65 EXTENDED .39 FEET

3470 ENCROACHMENT STATIONS= 9311.0 11600.0 TYPE= 1 TARGET= 2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE.ELLEA= 1132.00 ELREA= 1107.00

```
  105600.      0.  103126.    2474.      0.   13350.     413.      0.      0.   1107.00
     .00     .00     7.72     6.00    .050     .050     .050    .000  1097.00  9341.77
  .005995      0.       0.       0.       0        0        0     .00  2258.23 11600.00
0
 *SECNO 15.823

 3265 DIVIDED FLOW

 3280 CROSS SECTION     15.82 EXTENDED      1.69 FEET


 3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    23.85  1115.70      .00      .00  1117.01     1.32     4.59      .12  1133.00
   77775.       0.   77775.       0.       0.    8446.       0.     237.      32. 100000.00
      .03      .00     9.21      .00     .050     .050     .050    .000  1091.85  9360.30
  .003883     900.     930.     960.        2        0        0     .00   750.17 10145.57
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      4.22 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000
1
  03-27-87     18:51:25                                                                  PAGE    8


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    18.22  1118.22      .00      .00  1118.91      .69     1.83      .06100000.00
   77775.       0.   77775.       0.       0.   11702.       0.     468.      51.   1146.00
      .07      .00     6.65      .00     .048     .040     .048    .000  1100.00  9289.17
  .001064    1000.    1000.     980.        3        0        0     .00   901.09 10190.27
0
 *SECNO 16.153
 3280 CROSS SECTION     16.15 EXTENDED       .96 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    16.96  1118.96      .00      .00  1120.48     1.52     1.32      .25100000.00
   77775.       0.   77775.       0.       0.    7870.       0.     635.      66.   1151.00
      .09      .00     9.88      .00     .048     .040     .048    .000  1102.00  9291.69
  .003574     710.     740.     770.        3        0        0     .00   830.82 10122.51
0
 *SECNO 16.191
```

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 8638.0 10823.0 TYPE= 1 TARGET= 2185.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1128.50 ELREA= 1141.80

16.19	15.38	1118.97	.00	.00	1121.80	2.83	.93	.40	1128.50
77775.	0.	77775.	0.	0.	5756.	0.	666.	69.	1141.80
.09	.00	13.51	.00	.048	.040	.048	.000	1103.59	9875.12
.006259	200.	200.	200.	2	0	0	.00	580.26	10455.38

0

CCHV= .300 CEHV= .500

1

03-27-87 18:51:25 PAGE 9

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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 16.291

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9076.0 10587.0 TYPE= 1 TARGET= 1511.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1132.90 ELREA= 1137.90

16.29	15.99	1121.49	.00	.00	1124.86	3.38	2.79	.27	1132.90
77775.	0.	77775.	0.	0.	5274.	0.	733.	75.	1137.90
.10	.00	14.75	.00	.035	.035	.035	.000	1105.50	9913.25
.004532	533.	528.	476.	0	0	0	.00	445.51	10358.76

0

*SECNO 16.350

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1129.00 ELREA= 1134.00

16.35	13.12	1123.52	1123.52	.00	1128.57	5.05	1.82	.84	1126.00
77775.	0.	77775.	0.	0.	4313.	0.	766.	78.	1120.00
.11	.00	18.03	.00	.035	.035	.035	.000	1110.40	9786.49
.008525	200.	300.	375.	4	15	0	.00	435.51	10222.00

0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1120.08 ,NOT 1123.52 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	444.00	28.00	6760.00	.00	1112.00	1112.00

*SECNO 16.355
6110 EGLWC OF 1128.39 LESS THAN XEG OF 1128.57

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1122.28 BRIDGE VELOCITY=, 18.19 CALCULATED CHANNEL AREA=, 4276.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1128.39	.00	0.	77775.	6760.	7904.	1131.00	1131.50

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1131.00 ELREA= 1137.00

16.35	15.11	1125.11	.00	.00	1128.57	3.29	.00	.00	1125.00
77775.	0.	77775.	0.	0.	5346.	0.	770.	79.	1122.40
.11	.00	14.55	.00	.000	.035	.000	.000	1110.00	9778.00
.004374	38.	38.	38.	0	0	0	.00	444.00	10222.00

0

*SECNO 16.356

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

16.36	17.79	1126.79	.00	.00	1128.94	2.15	.03	.34	1130.00
77775.	0.	77775.	0.	0.	6610.	0.	771.	79.	1141.40
.11	.00	11.77	.00	.035	.035	.035	.000	1109.00	9778.66
.003001	7.	7.	7.	3	0	0	.00	436.43	10245.10

0

*SECNO 16.373

3265 DIVIDED FLOW

16.37	18.09	1127.09	.00	.00	1129.15	2.06	.19	.03	1130.00
77775.	0.	77775.	0.	0.	6745.	0.	781.	79.	1141.40
.11	.00	11.53	.00	.035	.035	.035	.000	1109.00	9777.74
.002839	65.	65.	65.	2	0	0	.00	438.30	10246.05

0

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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 16.376

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1137.50

16.38	15.01	1126.81	.00	.00	1129.51	2.70	.04	.32	1134.00
77775.	0.	77775.	0.	0.	5897.	0.	783.	80.	1137.50
.11	.00	13.19	.00	.035	.035	.035	.000	1111.80	9740.28
.003215	13.	13.	13.	2	0	0	.00	451.67	10191.96

0

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	465.00	60.00	7607.00	.10	1112.20	1111.80

*SECNO 16.379

3301 HV CHANGED MORE THAN HVINS

CLASS A LOW FLOW

3420 BRIDGE W.S.= 1125.91 BRIDGE VELOCITY=, 13.76 CALCULATED CHANNEL AREA=, 5572.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1131.09	2.20	0.	77775.	7607.	9081.	1134.50	1134.00

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1141.00

16.38	16.80	1129.00	.00	.00	1131.09	2.09	1.58	.00	1125.50
77775.	0.	77775.	0.	0.	6706.	0.	786.	80.	1126.70
.11	.00	11.60	.00	.000	.035	.000	.000	1112.20	9734.00
.002161	15.	18.	18.	0	0	0	.00	466.00	10200.00

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	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

CCHV= .100 CEHV= .300
*SECNO 16.431

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 8100.0 10202.0 TYPE= 1 TARGET= 2102.000

16.43	20.13	1130.93	.00	.00	1131.64	.72	.41	.14	1125.10
107945.	43764.	64181.	0.	12538.	7706.	0.	886.	89.	1150.60
.13	3.49	8.33	.00	.055	.035	.050	.000	1110.80	8100.00
.000997	350.	300.	230.	3	0	0	.00	2070.91	10170.91

0
*SECNO 16.481

3470 ENCROACHMENT STATIONS= 8200.0 10200.0 TYPE= 1 TARGET= 2000.000

16.48	19.25	1131.05	.00	.00	1132.04	.99	.32	.08	1126.70
108205.	36307.	71898.	0.	9825.	7615.	0.	1001.	102.	1150.30
.14	3.70	9.44	.00	.055	.035	.050	.000	1111.80	8200.00

```
*SECNO 16.580

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    19.72  1131.32      .00       .00  1133.21     1.89      .90      .27  1127.10
   108205.   25179.   83026.      0.     7144.     6667.      0.     1189.     125.   1151.90
      .15     3.52    12.45      .00      .055      .035    .050     .000  1111.60  8295.00
   .002058    523.     523.     523.        2         0       0      .00  1865.13 10160.13
0
*SECNO 16.681

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    19.04  1132.64      .00       .00  1134.32     1.67     1.09      .02  1130.40
   108205.   32673.   75532.      0.     8490.     6207.      0.     1362.     148.   1152.40
      .17     3.85    12.17      .00      .055      .035    .050     .000  1113.60  8030.00
   .002048    530.     528.     537.        3         0       0      .00  1973.90 10123.50
0
1
 03-27-87     18:51:25                                                                    PAGE   13


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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 16.780

3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    22.32  1133.92      .00       .00  1135.16     1.24      .80      .04  1131.00
   108205.   27537.   80668.      0.     9827.     7906.      0.     1557.     174.   1157.70
      .18     2.80    10.20      .00      .055      .035    .050     .000  1111.60  7745.00
   .001178    522.     523.     525.        2         0       0      .00  2351.09 10096.09
0
1
 03-27-87     18:51:25                                                                    PAGE   14



                                                                          THIS RUN EXECUTED 03-27-87

 ************************************************
   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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
 T2      PROFILE NUMBER 2 - SUBCRITICAL PROFILE
 T3      MAIN CHAN. - NEW BRIDGE  - VARIOUS FLOWS

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        3.        0.        0.   .000000      .00       .0        0.   1111.390     .000

 J2  NDAYS     IPLOT     PRFVS     XSFCV     XSFCH     FN        ALLDC     IBW       CHNIM     ITRACE
```

2.000 .000 1.000 .000 .000 .000 .000 .000 .000 .000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

*PROF 2

CCHV= .100 CEHV= .300
*SECNO 15.647
3280 CROSS SECTION 15.65 EXTENDED .39 FEET

3470 ENCROACHMENT STATIONS= 9311.0 11600.0 TYPE= 1 TARGET= 2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1132.00 ELREA= 1107.00

15.65	14.39	1111.39	.00	1111.39	1112.31	.92	.00	.00	1132.00
105600.	0.	103126.	2474.	0.	13350.	413.	0.	0.	1107.00
.00	.00	7.72	6.00	.050	.050	.050	.000	1097.00	9341.77
.005995	0.	0.	0.	0	0	0	.00	2258.23	11600.00

0
*SECNO 15.823

3265 DIVIDED FLOW

3280 CROSS SECTION 15.82 EXTENDED 1.78 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9322.0 10204.0 TYPE= 1 TARGET= 882.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1133.00 ELREA= 100000.00

15.82	23.94	1115.79	.00	1115.70	1117.25	1.47	4.78	.16	1133.00
82775.	0.	82775.	0.	0.	8516.	0.	238.	32.	100000.00
.03	.00	9.72	.00	.050	.050	.050	.000	1091.85	9360.09
.004290	900.	930.	960.	2	0	0	.00	751.53	10145.77

0
CCHV= .100 CEHV= .300
*SECNO 16.013
3280 CROSS SECTION 16.01 EXTENDED 4.54 FEET

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

3301 HV CHANGED MORE THAN HVINS

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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    18.54  1118.54      .00  1118.22  1119.28      .74     1.95      .07100000.00
   82775.       0.   82775.       0.       0.   11989.       0.     473.       51.   1146.00
      .07      .00     6.90      .00     .048     .040     .048     .000  1100.00  9288.75
  .001114    1000.    1000.     980.        3        0        0      .00   902.22 10190.98
0
*SECNO 16.153
3280 CROSS SECTION     16.15 EXTENDED      1.30 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    17.30  1119.30      .00  1118.96  1120.90     1.60     1.36      .26100000.00
   82775.       0.   82775.       0.       0.    8154.       0.     644.       66.   1151.00
      .09      .00    10.15      .00     .048     .040     .048     .000  1102.00  9291.06
  .003606     710.     740.     770.        3        0        0      .00   832.10 10123.16
0
*SECNO 16.191

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    15.65  1119.24      .00  1118.97  1122.28     3.04      .95      .43  1128.50
   82775.       0.   82775.       0.       0.    5919.       0.     677.       69.   1141.80
      .09      .00    13.98      .00     .048     .040     .048     .000  1103.59  9874.53
  .006489     200.     200.     200.        2        0        0      .00   582.17 10456.70
0
1
  03-27-87     18:51:25                                                                    PAGE   17


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


CCHV=    .300 CEHV=    .500
*SECNO 16.291

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9076.0   10587.0  TYPE=     1  TARGET=    1511.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.90 ELREA=     1137.90

    16.29    16.35  1121.85      .00  1121.49  1125.45     3.60     2.89      .28  1132.90
   82775.       0.   82775.       0.       0.    5433.       0.     746.       75.   1137.90
      .10      .00    15.23      .00     .035     .035     .035     .000  1105.50  9912.49
  .004679     533.     528.     476.        1        0        0      .00   447.50 10359.99
0
*SECNO 16.350
```

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1129.00 ELREA= 1134.00

16.35	13.56	1123.96	1123.96	1123.52	1129.20	5.25	1.84	.82	1126.00
82775.	0.	82775.	0.	0.	4503.	0.	780.	78.	1120.00
.11	.00	18.38	.00	.035	.035	.035	.000	1110.40	9785.01
.008408	200.	300.	375.	4	15	0	.00	436.99	10222.00

0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1120.42 ,NOT 1123.96 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	444.00	28.00	6760.00	.00	1112.00	1112.00

*SECNO 16.355

1

03-27-87 18:51:25 PAGE 18

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

6110 EGLWC OF 1129.06 LESS THAN XEG OF 1129.20

3301 HV CHANGED MORE THAN HVINS

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1122.71 BRIDGE VELOCITY=, 18.58 CALCULATED CHANNEL AREA=, 4455.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1129.06	.00	0.	82775.	6760.	7904.	1131.00	1131.50

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1131.00 ELREA= 1137.00

16.35	15.66	1125.66	.00	1125.11	1129.20	3.40	.00	.00	1125.00
82775.	0.	82775.	0.	0.	5593.	0.	784.	79.	1122.40
.11	.00	14.80	.00	.000	.035	.000	.000	1110.00	9778.00
.004263	38.	38.	38.	0	0	0	.00	444.00	10222.00

0

*SECNO 16.356

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

16.36	18.28	1127.28	.00	1126.79	1129.57	2.28	.03	.34	1130.00
82775.	0.	82775.	0.	0.	6828.	0.	785.	79.	1141.40
.11	.00	12.12	.00	.035	.035	.035	.000	1109.00	9777.17

*SECNO 16.373

3265 DIVIDED FLOW

16.37	18.60	1127.60	.00	1127.09	1129.79	2.19	.20	.03	1130.00
82775.	0.	82775.	0.	0.	6970.	0.	795.	80.	1141.40
.11	.00	11.88	.00	.035	.035	.035	.000	1109.00	9776.20
.002937	65.	65.	65.	2	0	0	.00	441.41	10247.62

0

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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 16.376

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1137.50

16.38	15.52	1127.32	.00	1126.81	1130.15	2.83	.04	.32	1134.00
82775.	0.	82775.	0.	0.	6126.	0.	797.	80.	1137.50
.11	.00	13.51	.00	.035	.035	.035	.000	1111.80	9739.84
.003218	13.	13.	13.	2	0	0	.00	452.50	10192.34

0

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	465.00	60.00	7607.00	.10	1112.20	1111.80

*SECNO 16.379

3301 HV CHANGED MORE THAN HVINS

CLASS A LOW FLOW

3420 BRIDGE W.S.= 1126.35 BRIDGE VELOCITY=, 14.19 CALCULATED CHANNEL AREA=, 5752.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1131.81	2.33	0.	82775.	7607.	9081.	1134.50	1134.00

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1141.00

16.38	17.45	1129.65	.00	1129.00	1131.81	2.17	1.66	.00	1125.50
82775.	0.	82775.	0.	0.	7005.	0.	800.	80.	1126.70
.11	.00	11.82	.00	.000	.035	.000	.000	1112.20	9734.00
.002116	15.	18.	18.	0	0	0	.00	466.00	10200.00

0

1

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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


CCHV=    .100 CEHV=    .300
*SECNO 16.431
3280 CROSS SECTION     16.43 EXTENDED       .73 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8100.0   10202.0  TYPE=     1  TARGET=    2102.000
    16.43    20.93  1131.73      .00  1130.93  1132.33      .60      .36      .16  1125.10
  107945.   45688.   62257.       0.   13806.    8099.       0.     908.      89.   1150.60
      .12     3.31     7.69      .00     .055     .035     .050     .000  1110.80  8100.00
  .000797     350.     300.     230.        3        0        0      .00  2071.87 10171.87
0
*SECNO 16.481

3470 ENCROACHMENT STATIONS=    8200.0   10200.0  TYPE=     1  TARGET=    2000.000
    16.48    20.03  1131.83      .00  1131.05  1132.65      .82      .25      .07  1126.70
  108205.   38538.   69667.       0.   10945.    8026.       0.    1033.     102.   1150.30
      .13     3.52     8.68      .00     .055     .035     .050     .000  1111.80  8200.00
  .001141     270.     264.     263.        2        0        0      .00  1978.65 10178.65
0
*SECNO 16.580

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    20.42  1132.02      .00  1131.32  1133.58     1.56      .72      .22  1127.10
  108205.   28350.   79855.       0.    8178.    6948.       0.    1238.     125.   1151.90
      .15     3.47    11.49      .00     .055     .035     .050     .000  1111.60  8295.00
  .001666     523.     523.     523.        2        0        0      .00  1866.07 10161.07
0
*SECNO 16.681

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    19.40  1133.00      .00  1132.64  1134.51     1.51      .92      .01  1130.40
  108205.   34255.   73950.       0.    9063.    6345.       0.    1423.     148.   1152.40
      .17     3.78    11.66      .00     .055     .035     .050     .000  1113.60  8030.00
  .001828     530.     528.     537.        3        0        0      .00  1980.94 10123.88
0
1
  03-27-87     18:51:25                                                                    PAGE   21


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.780

  3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    20.51  1134.11      .00  1133.92  1135.28     1.17      .74      .07  1131.00
```

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   .10      2.75      3.33      .00      .033      .033      .030      .000  1111.00  7745.00
  .001116    522.      523.      525.       2         0         0       .00  2351.33 10096.33
0
1
 03-27-87     18:51:25                                                                          PAGE   22


                                                                                THIS RUN EXECUTED 03-27-87

*************************************************
  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
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T1      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
T2      PROFILE NUMBER 3 - SUBCRITICAL PROFILE
T3      MAIN CHAN. - NEW BRIDGE  - VARIOUS FLOWS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        4.        0.        0.   .000000       .00        .0        0.  1111.390     .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     3.000     .000    -1.000     .000      .000      .000      .000      .000      .000      .000

1
 03-27-87     18:51:25                                                                          PAGE   23


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


*PROF 3

CCHV=    .100 CEHV=    .300
*SECNO 15.647
3280 CROSS SECTION     15.65 EXTENDED       .39 FEET


3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    14.39  1111.39      .00  1111.39  1112.31      .92      .00      .00  1132.00
  105600.       0.  103126.     2474.       0.   13350.     413.       0.       0.   1107.00
     .00      .00     7.72     6.00     .050     .050     .050     .000  1097.00  9341.77
  .005995       0.       0.       0.        0        0        0      .00  2258.23 11600.00
0
*SECNO 15.823

3265 DIVIDED FLOW

3280 CROSS SECTION     15.82 EXTENDED      1.87 FEET


3301 HV CHANGED MORE THAN HVINS
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3470 ENCROACHMENT STATIONS=    9261.0   10204.0  TYPE=     1  TARGET=    [illegible]

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    24.03  1115.88      .00  1115.70  1117.50     1.62     4.98      .21  1133.00
   87775.       0.   87775.       0.       0.    8584.       0.     239.      32. 100000.00
      .03      .00    10.23      .00     .050     .050     .050     .000  1091.85  9359.89
  .004709     900.     930.     960.        2        0        0      .00   752.86 10145.97
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      4.86 FEET

1
  03-27-87     18:51:25                                                                    PAGE   24

    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    18.86  1118.86      .00  1118.22  1119.65      .79     2.07      .08100000.00
   87775.       0.   87775.       0.       0.   12277.       0.     478.      51.   1146.00
      .06      .00     7.15      .00     .048     .040     .048     .000  1100.00  9288.33
  .001159    1000.    1000.     980.        3        0        0      .00   903.36 10191.69
0
 *SECNO 16.153
 3280 CROSS SECTION     16.15 EXTENDED      1.64 FEET

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    17.64  1119.64      .00  1118.96  1121.32     1.68     1.40      .27100000.00
   87775.       0.   87775.       0.       0.    8436.       0.     654.      66.   1151.00
      .08      .00    10.41      .00     .048     .040     .048     .000  1102.00  9290.43
  .003629     710.     740.     770.        3        0        0      .00   833.38 10123.81
0
 *SECNO 16.191

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    15.92  1119.51      .00  1118.97  1122.76     3.25      .97      .47  1128.50
   87775.       0.   87775.       0.       0.    6069.       0.     687.      69.   1141.80
      .09      .00    14.46      .00     .048     .040     .048     .000  1103.59  9873.99
  [illegible]
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


CCHV=    .300 CEHV=    .500
*SECNO 16.291

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9076.0   10587.0  TYPE=     1  TARGET=    1511.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.90 ELREA=     1137.90

    16.29    16.70  1122.20      .00  1121.49  1126.02     3.82     2.98      .29  1132.90
   87775.       0.   87775.       0.       0.    5597.       0.     758.      75.   1137.90
      .10      .00    15.68      .00     .035     .035     .035     .000  1105.50  9911.71
  .004797     533.     528.     476.        2        0        0      .00   449.52 10361.24
0
*SECNO 16.350

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9777.0   10223.0  TYPE=     1  TARGET=     446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.00 ELREA=     1134.00

    16.35    13.98  1124.38  1124.38  1123.52  1129.82     5.44     1.86      .81  1126.00
   87775.       0.   87775.       0.       0.    4688.       0.     793.      79.   1120.00
      .10      .00    18.72      .00     .035     .035     .035     .000  1110.40  9783.55
  .008304     200.     300.     375.        4       15        0      .00   438.45 10222.00
0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS   1120.76 ,NOT   1124.38 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.56      3.00       .00    444.00     28.00   6760.00       .00   1112.00   1112.00

*SECNO 16.355
1
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


6110 EGLWC OF 1129.72 LESS THAN XEG OF 1129.82

3301 HV CHANGED MORE THAN HVINS

CLASS B LOW FLOW
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3470 BRIDGE W.S.= 1123.14 BRIDGE VELOCITY= 10.34 CALCULATED CHANNEL AREA= 4034.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1129.72	.00	0.	87775.	6760.	7904.	1131.00	1131.50

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1131.00 ELREA= 1137.00

16.35	16.21	1126.21	.00	1125.11	1129.82	3.51	.00	.00	1125.00
87775.	0.	87775.	0.	0.	5835.	0.	798.	79.	1122.40
.10	.00	15.04	.00	.000	.035	.000	.000	1110.00	9778.00
.004162	38.	38.	38.	0	0	0	.00	444.00	10222.00

0

*SECNO 16.356

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

16.36	18.77	1127.77	.00	1126.79	1130.18	2.41	.03	.33	1130.00
87775.	0.	87775.	0.	0.	7041.	0.	799.	79.	1141.40
.10	.00	12.47	.00	.035	.035	.035	.000	1109.00	9775.72
.003212	7.	7.	7.	3	0	0	.00	442.39	10248.12

0

*SECNO 16.373

3265 DIVIDED FLOW

16.37	19.10	1128.10	.00	1127.09	1130.41	2.31	.20	.03	1130.00
87775.	0.	87775.	0.	0.	7192.	0.	810.	80.	1141.40
.10	.00	12.20	.00	.035	.035	.035	.000	1109.00	9770.64
.003057	65.	65.	65.	2	0	0	.00	448.52	10249.16

0

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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 16.376

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1137.50

16.38	16.01	1127.81	.00	1126.81	1130.78	2.97	.04	.33	1134.00
87775.	0.	87775.	0.	0.	6352.	0.	812.	80.	1137.50
.10	.00	13.82	.00	.035	.035	.035	.000	1111.80	9739.41
.003220	13.	13.	13.	2	0	0	.00	453.31	10192.71

0

SPECIAL BRIDGE

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*SECNO 16.379

3301 HV CHANGED MORE THAN HVINS

CLASS A LOW FLOW

3420 BRIDGE W.S.=   1126.76 BRIDGE VELOCITY=,     14.63     CALCULATED CHANNEL AREA=,     5918.

 EGPRS      EGLWC       H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                                 AREA
      .00   1132.52     2.46        0.    87775.     7607.     9081.     1134.50   1134.00


3470 ENCROACHMENT STATIONS=    9733.0   10201.0  TYPE=     1  TARGET=     468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1134.00 ELREA=     1141.00

    16.38    18.08  1130.28      .00  1129.00  1132.52     2.25     1.74      .00  1125.50
   87775.       0.   87775.       0.       0.    7298.       0.     815.      80.   1126.70
      .10      .00    12.03      .00     .000     .035     .000     .000  1112.20  9734.00
  .002076      15.      18.      18.        0        0        0      .00   466.00 10200.00
0
1
 03-27-87     18:51:25                                                                          PAGE   28


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS    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


CCHV=    .100 CEHV=    .300
*SECNO 16.431
3280 CROSS SECTION     16.43 EXTENDED      1.50 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8100.0   10202.0  TYPE=     1  TARGET=    2102.000
    16.43    21.70  1132.50      .00  1130.93  1133.01      .51      .31      .17  1125.10
  107945.   47327.   60618.       0.   15021.    8476.       0.     929.      90.   1150.60
      .12     3.15     7.15      .00     .055     .035     .050     .000  1110.80  8100.00
  .000652     350.     300.     230.        3        0        0      .00  2072.80 10172.80
0
 *SECNO 16.481

3470 ENCROACHMENT STATIONS=    8200.0   10200.0  TYPE=     1  TARGET=    2000.000
    16.48    20.77  1132.57      .00  1131.05  1133.27      .69      .20      .05  1126.70
  108205.   40449.   67756.       0.   12029.    8424.       0.    1064.     102.   1150.30
      .13     3.36     8.04      .00     .055     .035     .050     .000  1111.80  8200.00
  .000921     270.     264.     263.        2        0        0      .00  1979.51 10179.51
0
 *SECNO 16.580

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    21.13  1132.73      .00  1131.32  1134.03     1.30      .58      .18  1127.10
  108205.   31231.   76974.       0.    9213.    7229.       0.    1286.     125.   1151.90
```

```
 .001582    530.     528.     537.       2        0        0      .00  1887.01 10182.01
0
 *SECNO 16.681

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    19.89  1133.49      .00  1132.64  1134.81     1.32      .77      .01  1130.40
   108205.   36277.   71928.       0.    9847.    6531.       0.    1485.     149.   1152.40
      .17     3.68    11.01      .00     .055     .035     .050     .000  1113.60  8030.00
   .001574     530.     528.     537.       2        0        0      .00  1990.51 10124.40
0
1
  03-27-87     18:51:25                                                                    PAGE   29


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.780

 3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    22.81  1134.41      .00  1133.92  1135.49     1.08      .66      .02  1131.00
   108205.   29788.   78417.       0.   10766.    8110.       0.    1697.     175.   1157.70
      .19     2.77     9.67      .00     .055     .035     .050     .000  1111.60  7745.00
   .001025     522.     523.     525.       2        0        0      .00  2351.72 10096.72
0
1
  03-27-87     18:51:25                                                                    PAGE   30


                                                                        THIS RUN EXECUTED 03-27-87

 ************************************************
   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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
 T2      PROFILE NUMBER 4 - SUBCRITICAL PROFILE
 T3      MAIN CHAN. - NEW BRIDGE  - VARIOUS FLOWS

 J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

       0.       5.       0.       0.   .000000     .00      .0       0.   1111.390    .000

 J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     4.000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000

1
  03-27-87     18:51:25                                                                    PAGE   31


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
    Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
    TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
```

```
*PROF 4

CCHV=    .100 CEHV=    .300
*SECNO 15.647
3280 CROSS SECTION     15.65 EXTENDED       .39 FEET


3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    14.39  1111.39      .00  1111.39  1112.31      .92      .00      .00  1132.00
   105600.       0.  103126.    2474.       0.   13350.     413.       0.       0.   1107.00
      .00      .00     7.72     6.00     .050     .050     .050     .000  1097.00  9341.77
   .005995       0.       0.       0.        0        0        0      .00  2258.23 11600.00
0
*SECNO 15.823

3265 DIVIDED FLOW

3280 CROSS SECTION     15.82 EXTENDED      1.96 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    24.11  1115.96      .00  1115.70  1117.75     1.79     5.18      .26  1133.00
    92775.       0.   92775.       0.       0.    8651.       0.     239.      32. 100000.00
      .02      .00    10.72      .00     .050     .050     .050     .000  1091.85  9359.70
   .005138     900.     930.     960.        2        0        0      .00   754.17 10146.17
0
CCHV=    .100 CEHV=    .300
*SECNO 16.013
3280 CROSS SECTION     16.01 EXTENDED      5.18 FEET

1
 03-27-87     18:51:25                                                                  PAGE   32

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    19.18  1119.18      .00  1118.22  1120.03      .85     2.18      .09100000.00
    92775.       0.   92775.       0.       0.   12566.       0.     483.      51.   1146.00
      .06      .00     7.38      .00     .048     .040     .048     .000  1100.00  9287.91
   .001201    1000.    1000.     980.        3        0        0      .00   904.60 10192.51
0
```

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9252.0 12040.0 TYPE= 1 TARGET= 2788.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 100000.00 ELREA= 1151.00

```
    16.15    17.98  1119.98      .00  1118.96  1121.74     1.76     1.43      .27100000.00
   92775.       0.   92775.       0.       0.    8716.       0.     664.      66.   1151.00
      .08      .00    10.64      .00     .048     .040     .048     .000  1102.00  9289.81
  .003644     710.     740.     770.        3        0        0      .00   834.64 10124.46
0
*SECNO 16.191
```

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 8638.0 10823.0 TYPE= 1 TARGET= 2185.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1128.50 ELREA= 1141.80

```
    16.19    16.18  1119.77      .00  1118.97  1123.22     3.45      .98      .51  1128.50
   92775.       0.   92775.       0.       0.    6223.       0.     698.      69.   1141.80
      .08      .00    14.91      .00     .048     .040     .048     .000  1103.59  9873.43
  .006958     200.     200.     200.        3        0        0      .00   585.70 10459.13
0
1
```



```
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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
```

CCHV= .300 CEHV= .500

*SECNO 16.291

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9076.0 10587.0 TYPE= 1 TARGET= 1511.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1132.90 ELREA= 1137.90

```
    16.29    17.11  1122.61      .00  1121.49  1126.61     3.99     3.11      .27  1132.90
   92775.       0.   92775.       0.       0.    5784.       0.     771.      76.   1137.90
      .09      .00    16.04      .00     .035     .035     .035     .000  1105.50  9910.84
  .005060     533.     528.     476.        2        0        0      .00   467.58 10455.87
0
*SECNO 16.350
```

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

```
   16.35    14.39  1124.79  1124.79  1123.52  1130.43     5.64     1.91      .82  1126.00
  92775.       0.   92775.       0.       0.    4870.       0.     807.      79.   1120.00
     .10      .00    19.05      .00     .035     .035     .035     .000  1110.40  9782.13
 .008206     200.     300.     375.        4       15        0      .00   439.87 10222.00
0

SPECIAL BRIDGE

1                                                                                          PAGE   34
 03-27-87     18:51:25


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


5227 DOWNSTREAM ELEV IS   1121.09 ,NOT   1124.79 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
    1.25      1.56      3.00       .00    444.00     28.00   6760.00      .00   1112.00   1112.00

*SECNO 16.355
6110 EGLWC OF 1130.37 LESS THAN XEG OF 1130.43

3301 HV CHANGED MORE THAN HVINS

CLASS B LOW FLOW

3420 BRIDGE W.S.=   1123.56 BRIDGE VELOCITY=,      19.30      CALCULATED CHANNEL AREA=,      4808.

 EGPRS     EGLWC      H3       QWEIR     QLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                            AREA
      .00  1130.37     .00        0.    92775.     6760.     7904.     1131.00   1131.50


3470 ENCROACHMENT STATIONS=    9777.0   10223.0  TYPE=     1  TARGET=     446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1131.00 ELREA=     1137.00

   16.35    16.74  1126.74      .00  1125.11  1130.43     3.62      .00      .00  1125.00
  92775.       0.   92775.       0.       0.    6072.       0.     812.      79.   1122.40
     .10      .00    15.28      .00     .000     .035     .000     .000  1110.00  9778.00
 .004072      38.      38.      38.        0        0        0      .00   444.00 10222.00
0
 *SECNO 16.356

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS

   16.36    19.24  1128.24      .00  1126.79  1130.78     2.54      .03      .33  1130.00
  92775.       0.   92775.       0.       0.    7254.       0.     813.      79.   1141.40
     .10      .00    12.79      .00     .035     .035     .035     .000  1109.00  9764.71
 .003376       7.       7.       7.        3        0        0      .00   454.87 10249.58
0
 *SECNO 16.373
1                                                                                          PAGE   35
  03-27-87     18:51:25
```

TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3265 DIVIDED FLOW

16.37	19.61	1128.61	.00	1127.09	1131.03	2.42	.22	.03	1130.00
92775.	0.	92775.	0.	0.	7426.	0.	824.	80.	1141.40
.10	.00	12.49	.00	.035	.035	.035	.000	1109.00	9748.54
.003266	65.	65.	65.	2	0	0	.00	472.18	10250.72

0

*SECNO 16.376

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1137.50

16.38	16.52	1128.32	.00	1126.81	1131.41	3.09	.04	.33	1134.00
92775.	0.	92775.	0.	0.	6580.	0.	826.	80.	1137.50
.10	.00	14.10	.00	.035	.035	.035	.000	1111.80	9738.96
.003209	13.	13.	13.	2	0	0	.00	454.13	10193.09

0

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	465.00	60.00	7607.00	.10	1112.20	1111.80

*SECNO 16.379

3301 HV CHANGED MORE THAN HVINS

CLASS A LOW FLOW

3420 BRIDGE W.S.= 1127.18 BRIDGE VELOCITY=, 15.03 CALCULATED CHANNEL AREA=, 6091.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1133.22	2.58	0.	92775.	7607.	9081.	1134.50	1134.00

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1141.00

16.38	18.70	1130.90	.00	1129.00	1133.22	2.32	1.81	.00	1125.50
92775.	0.	92775.	0.	0.	7587.	0.	829.	80.	1126.70
.10	.00	12.23	.00	.000	.035	.000	.000	1112.20	9734.00
.002077	15.	18.	18.	0	0	0	.00	466.00	10200.00

```
*SECNO 16.431
3280 CROSS SECTION     16.43 EXTENDED      2.24 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8100.0   10202.0  TYPE=     1  TARGET=    2102.000
    16.43    22.44  1133.24      .00  1130.93  1133.69      .45      .28      .19  1125.10
  107945.   48753.   59192.       0.   16199.    8843.       0.     951.      90.   1150.60
     .12     3.01     6.69      .00     .055     .035     .050     .000  1110.80  8100.00
  .000541     350.     300.     230.        3        0        0      .00  2073.70 10173.70
0
*SECNO 16.481

3470 ENCROACHMENT STATIONS=    8200.0   10200.0  TYPE=     1  TARGET=    2000.000
    16.48    21.50  1133.30      .00  1131.05  1133.90      .60      .17      .05  1126.70
  108205.   42112.   66093.       0.   13085.    8813.       0.    1095.     102.   1150.30
     .13     3.22     7.50      .00     .055     .035     .050     .000  1111.80  8200.00
  .000756     270.     264.     263.        2        0        0      .00  1980.35 10180.35
0
*SECNO 16.580

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    21.83  1133.43      .00  1131.32  1134.53     1.10      .48      .15  1127.10
  108205.   33830.   74375.       0.   10241.    7509.       0.    1333.     126.   1151.90
     .15     3.30     9.90      .00     .055     .035     .050     .000  1111.60  8295.00
  .001124     523.     523.     523.        2        0        0      .00  1867.96 10162.96
0
1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.681

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    20.45  1134.05      .00  1132.64  1135.19     1.14      .65      .01  1130.40
  108205.   38414.   69791.       0.   10747.    6745.       0.    1547.     149.   1152.40
     .17     3.57    10.35      .00     .055     .035     .050     .000  1113.60  8030.00
  .001335     530.     528.     537.        2        0        0      .00  2001.44 10125.00
0
*SECNO 16.780

3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    23.20  1134.80      .00  1133.92  1135.78      .98      .57      .02  1131.00
  108205.   31514.   76691.       0.   11527.    8274.       0.    1771.     175.   1157.70
     .19     2.73     9.27      .00     .055     .035     .050     .000  1111.60  7745.00
  .000919     522.     523.     525.        2        0        0      .00  2352.24 10097.24
0
1
```

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**************************************************
  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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
T2      PROFILE NUMBER 5 - SUBCRITICAL PROFILE
T3      MAIN CHAN. - NEW BRIDGE  - VARIOUS FLOWS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        6.        0.        0.   .005000       .00        .0        0.  1110.000      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     5.000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000

1
 03-27-87     18:51:25                                                                          PAGE   39


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


 *PROF 5

 CCHV=    .100 CEHV=    .300
 *SECNO 15.647

 3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    13.40  1110.40      .00  1111.39  1111.01      .61      .00      .00  1132.00
   72000.       0.   70513.    1487.       0.   11211.     320.       0.       0.  1107.00
      .00      .00     6.29     4.65     .050     .050     .050     .000  1097.00  9343.20
  .005011       0.       0.       0.        0        0        4      .00  2256.80 11600.00
0
 *SECNO 15.823

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    22.04  1113.89      .00  1115.70  1114.72      .83     3.65      .07  1133.00
   52000.       0.   52000.       0.       0.    7126.       0.     199.      32. 100000.00
      .04      .00     7.30      .00     .050     .050     .050     .000  1091.85  9364.26
  .002913     900.     930.     960.        3        0        0      .00   723.83 10141.62
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      1.81 FEET
```

3470 ENCROACHMENT STATIONS= 9284.0 12230.0 TYPE= 1 TARGET= 2988.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 100000.00 ELREA= 1146.00

```
   16.01    15.81  1115.81      .00  1118.22  1116.27      .46     1.51      .04100000.00
  52000.       0.   52000.       0.       0.    9539.       0.     391.       50.   1146.00
     .09      .00     5.45      .00     .048     .040     .048     .000  1100.00  9292.37
 .000926    1000.    1000.     980.        3        0        0      .00   892.51 10184.87
0
1
```


03-27-87 18:51:25

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.153

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9252.0 12040.0 TYPE= 1 TARGET= 2788.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 100000.00 ELREA= 1151.00

```
   16.15    14.54  1116.54      .00  1118.96  1117.76     1.21     1.26      .23100000.00
  52000.       0.   52000.       0.       0.    5883.       0.     522.       65.   1151.00
     .11      .00     8.84      .00     .048     .040     .048     .000  1102.00  9296.13
 .004089     710.     740.     770.        2        0        0      .00   813.31 10117.89
0
```

*SECNO 16.191

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 8638.0 10823.0 TYPE= 1 TARGET= 2185.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1128.50 ELREA= 1141.80

```
   16.19    13.38  1116.97      .00  1118.97  1118.94     1.98      .96      .23  1128.50
  52000.       0.   52000.       0.       0.    4607.       0.     546.       68.   1141.80
     .11      .00    11.29      .00     .048     .040     .048     .000  1103.59  9879.35
 .005688     200.     200.     200.        2        0        0      .00   566.63 10445.98
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.291
```

3470 ENCROACHMENT STATIONS= 9076.0 10587.0 TYPE= 1 TARGET= 1511.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1132.90 ELREA= 1137.90

```
   16.29    13.77  1119.27      .00  1121.49  1121.54     2.27     2.45      .15  1132.90
  52000.       0.   52000.       0.       0.    4301.       0.     600.       74.   1137.90
     .13      .00    12.09      .00     .035     .035     .035     .000  1105.50  9917.98
 .003863     533.     528.     476.        2        0        0      .00   434.93 10352.91
0
1
```


03-27-87 18:51:25

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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 16.350

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1129.00 ELREA= 1134.00

16.35	10.72	1121.12	1121.12	1123.52	1125.03	3.91	1.71	.82	1126.00
52000.	0.	52000.	0.	0.	3276.	0.	626.	77.	1120.00
.13	.00	15.87	.00	.035	.035	.035	.000	1110.40	9794.74
.009288	200.	300.	375.	4	15	0	.00	427.26	10222.00

0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1118.18 ,NOT 1121.12 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	444.00	28.00	6760.00	.00	1112.00	1112.00

*SECNO 16.355
6110 EGLWC OF 1124.67 LESS THAN XEG OF 1125.03

3301 HV CHANGED MORE THAN HVINS

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1119.86 BRIDGE VELOCITY=, 15.91 CALCULATED CHANNEL AREA=, 3269.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1124.67	.00	0.	52000.	6760.	7904.	1131.00	1131.50

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1131.00 ELREA= 1137.00

16.35	12.02	1122.02	.00	1125.11	1125.03	2.65	.00	.00	1125.00
52000.	0.	52000.	0.	0.	3977.	0.	629.	77.	1122.40
.13	.00	13.08	.00	.000	.035	.000	.000	1110.00	9778.04
.005166	38.	38.	38.	0	0	0	.00	442.03	10220.07

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

3301 HV CHANGED MORE THAN HVINS

16.36	14.98	1123.98	.00	1126.79	1125.42	1.44	.02	.36	1130.00
52000.	0.	52000.	0.	0.	5402.	0.	630.	78.	1141.40
.13	.00	9.63	.00	.035	.035	.035	.000	1109.00	9787.09
.002405	7.	7.	7.	3	0	0	.00	425.34	10236.47

0

*SECNO 16.373

3265 DIVIDED FLOW

16.37	15.20	1124.20	.00	1127.09	1125.59	1.39	.15	.02	1130.00
52000.	0.	52000.	0.	0.	5498.	0.	638.	78.	1141.40
.13	.00	9.46	.00	.035	.035	.035	.000	1109.00	9787.01
.002283	65.	65.	65.	2	0	0	.00	426.13	10237.17

0

*SECNO 16.376

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1137.50

16.38	12.14	1123.94	.00	1126.81	1125.92	1.98	.03	.30	1134.00
52000.	0.	52000.	0.	0.	4606.	0.	639.	78.	1137.50
.14	.00	11.29	.00	.035	.035	.035	.000	1111.80	9742.79
.003203	13.	13.	13.	2	0	0	.00	447.00	10189.80

0

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	465.00	60.00	7607.00	.10	1112.20	1111.80

*SECNO 16.379

CLASS A LOW FLOW

3420 BRIDGE W.S.= 1123.46 BRIDGE VELOCITY=, 11.17 CALCULATED CHANNEL AREA=, 4575.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1127.09	1.50	0.	52000.	7607.	9081.	1134.50	1134.00

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1141.00

16.38	13.24	1125.44	.00	1129.00	1127.09	1.65	1.17	.00	1125.50

```
   .14      .00     10.51      .00      .000      .035      .000      .000  1112.20  9734.05
  .002474     15.      18.      18.        0         0         0       .00   463.30 10197.39
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8100.0   10202.0  TYPE=     1  TARGET=    2102.000
    16.43    16.34  1127.14      .00  1130.93  1127.61      .47      .41      .12  1125.10
   52000.   14676.   37325.       0.    6575.    5860.       0.     705.      88.   1150.60
      .15     2.23     6.37      .00     .055     .035     .050     .000  1110.80  8100.00
  .000827     350.     300.     230.        3        0        0      .00  2046.98 10166.34
0
 *SECNO 16.481
1
  03-27-87     18:51:25                                                                    PAGE   44


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8200.0   10200.0  TYPE=     1  TARGET=    2000.000
    16.48    14.87  1126.67      .00  1131.05  1128.44     1.77      .44      .39  1126.70
   72000.   10859.   61141.       0.    3489.    5304.       0.     770.     100.   1150.30
      .16     3.11    11.53      .00     .055     .035     .050     .000  1111.80  8200.00
  .003385     270.     264.     263.        3        0        0      .00  1967.43 10172.72
0
 *SECNO 16.580

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    16.25  1127.85  1124.32  1131.32  1130.28     2.43     1.64      .20  1127.10
   72000.    3916.   68084.       0.    2075.    5297.       0.     867.     123.   1151.90
      .17     1.89    12.85      .00     .055     .035     .050     .000  1111.60  8295.00
  .002924     523.     523.     523.        4        9        0      .00  1843.06 10155.51
0
 *SECNO 16.681

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
```

```
   72000.    12000.    53914.      0.     4323.     5193.      0.      370.     140.   11132.40
     .19      2.79     11.54     .00      .055      .035     .050     .000  1113.60   8030.00
  .002292     530.      528.     537.         3         0        0      .00  1853.66  10120.65
0
1
 03-27-87     18:51:25                                                                          PAGE   45


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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 16.780

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    19.86  1131.46      .00  1133.92  1132.58     1.12      .81      .06  1131.00
   72000.     9489.   62511.       0.     5076.     6883.      0.     1099.     171.   1157.70
      .20     1.87     9.08      .00      .055      .035     .050     .000  1111.60   7745.00
  .001108     522.      523.     525.         2         0        0      .00  2347.88  10092.88
0
1
 03-27-87     18:51:25                                                                          PAGE   46



                                                                                THIS RUN EXECUTED 03-27-87

 ************************************************
   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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
 T2      PROFILE NUMBER 6 - SUBCRITICAL PROFILE
 T3      MAIN CHAN. - NEW BRIDGE  - VARIOUS FLOWS

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        7.        0.        0.   .005000      .00       .0        0.   1110.000     .000

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      6.000     .000    -1.000     .000      .000      .000      .000      .000      .000      .000

 1
 03-27-87     18:51:25                                                                          PAGE   47


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


 *PROF 6

 CCHV=    .100 CEHV=    .300
```

```
3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    13.40  1110.40      .00  1111.39  1111.01      .61      .00      .00  1132.00
   72000.       0.   70513.    1487.       0.   11211.     320.       0.       0.   1107.00
      .00      .00     6.29     4.65     .050     .050     .050     .000  1097.00  9343.20
  .005011       0.       0.       0.        0        0        4      .00  2256.80 11600.00
0
 *SECNO 15.823

 3265 DIVIDED FLOW

 3280 CROSS SECTION     15.82 EXTENDED       .14 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    22.30  1114.15      .00  1115.70  1115.27     1.12     4.10      .15  1133.00
   62000.       0.   62000.       0.       0.    7304.       0.     201.      32. 100000.00
      .03      .00     8.49      .00     .050     .050     .050     .000  1091.85  9363.72
  .003839     900.     930.     960.        2        0        0      .00   727.44 10142.16
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      2.56 FEET


 3301 HV CHANGED MORE THAN HVINS

1
  03-27-87     18:51:25                                                                    PAGE   48


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    16.56  1116.56      .00  1118.22  1117.14      .57     1.82      .05100000.00
   62000.       0.   62000.       0.       0.   10211.       0.     402.      51.   1146.00
      .08      .00     6.07      .00     .048     .040     .048     .000  1100.00  9291.37
  .001054    1000.    1000.     980.        3        0        0      .00   895.18 10186.56
0
 *SECNO 16.153

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00
```

```
 62000.      0.   62000.      0.      0.   5033.      0.    543.     63.   1131.00
    .10     .00    9.46     .00    .048    .040    .048    .000  1102.00  9294.63
 .004137    710.    740.    770.       3       0       0     .00   824.83 10119.46
0
 *SECNO 16.191

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

   16.19    14.09  1117.68     .00  1118.97  1120.06    2.37    1.00     .30  1128.50
 62000.       0.   62000.      0.       0.    5014.      0.    571.     68.   1141.80
    .10     .00    12.36     .00    .048    .040    .048    .000  1103.59  9877.84
 .006169    200.    200.    200.       2       0       0     .00   571.50 10449.34
0
 CCHV=    .300 CEHV=    .500
1
 03-27-87     18:51:25                                                          PAGE   49


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.291

 3470 ENCROACHMENT STATIONS=    9076.0   10587.0  TYPE=     1  TARGET=    1511.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.90 ELREA=     1137.90

   16.29    14.66  1120.16     .00  1121.49  1122.88    2.71    2.65     .17  1132.90
 62000.       0.   62000.      0.       0.    4691.      0.    630.     74.   1137.90
    .11     .00    13.22     .00    .035    .035    .035    .000  1105.50  9916.07
 .004169    533.    528.    476.       2       0       0     .00   438.99 10355.06
0
 *SECNO 16.350

 3301 HV CHANGED MORE THAN HVINS

 7185 MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=    9777.0   10223.0  TYPE=     1  TARGET=     446.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.00 ELREA=     1134.00

   16.35    11.69  1122.09  1122.09  1123.52  1126.47    4.38    1.77     .83  1126.00
 62000.       0.   62000.      0.       0.    3693.      0.    659.     77.   1120.00
    .12     .00    16.79     .00    .035    .035    .035    .000  1110.40  9791.40
 .008951    200.    300.    375.       4      15       0     .00   430.60 10222.00
0

 SPECIAL BRIDGE

 5227 DOWNSTREAM ELEV IS   1118.95 ,NOT   1122.09 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.56      3.00       .00    444.00     28.00   6760.00      .00   1112.00   1112.00

 *SECNO 16.355
```

3301 HV CHANGED MORE THAN HVINS

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1120.83 BRIDGE VELOCITY=, 16.87 CALCULATED CHANNEL AREA=, 3675.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1126.18	.00	0.	62000.	6760.	7904.	1131.00	1131.50

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1131.00 ELREA= 1137.00

16.35	13.27	1123.27	.00	1125.11	1126.47	2.91	.00	.00	1125.00
62000.	0.	62000.	0.	0.	4530.	0.	662.	78.	1122.40
.12	.00	13.69	.00	.000	.035	.000	.000	1110.00	9778.03
.004805	38.	38.	38.	0	0	0	.00	443.97	10222.00

0

*SECNO 16.356

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

16.36	16.13	1125.13	.00	1126.79	1126.85	1.72	.02	.36	1130.00
62000.	0.	62000.	0.	0.	5893.	0.	663.	78.	1141.40
.12	.00	10.52	.00	.035	.035	.035	.000	1109.00	9787.01
.002647	7.	7.	7.	3	0	0	.00	428.97	10240.00

0

*SECNO 16.373

3265 DIVIDED FLOW

16.37	16.38	1125.38	.00	1127.09	1127.03	1.66	.17	.02	1130.00
62000.	0.	62000.	0.	0.	6001.	0.	672.	79.	1141.40
.12	.00	10.33	.00	.035	.035	.035	.000	1109.00	9787.01
.002510	65.	65.	65.	0	0	0	.00	429.75	10240.78

0

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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 16.376

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1137.50

16.38	13.31	1125.11	.00	1126.81	1127.38	2.27	.04	.30	1134.00
62000.	0.	62000.	0.	0.	5131.	0.	674.	79.	1137.50
.12	.00	12.08	.00	.035	.035	.035	.000	1111.80	9741.77
.003207	13.	13.	13.	2	0	0	.00	448.91	10190.68

0

SPECIAL BRIDGE

SB	XK	XKOR	CDFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	465.00	60.00	7607.00	.10	1112.20	1111.80

*SECNO 16.379
CLASS A LOW FLOW

3420 BRIDGE W.S.= 1124.48 BRIDGE VELOCITY=, 12.23 CALCULATED CHANNEL AREA=, 4989.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1128.71	1.77	0.	62000.	7607.	9081.	1134.50	1134.00

3470 ENCROACHMENT STATIONS= 9733.0 10201.0 TYPE= 1 TARGET= 468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1134.00 ELREA= 1141.00

16.38	14.68	1126.88	.00	1129.00	1128.71	1.83	1.33	.00	1125.50
62000.	0.	62000.	0.	0.	5715.	0.	676.	79.	1126.70
.12	.00	10.85	.00	.000	.035	.000	.000	1112.20	9734.00
.002339	15.	18.	18.	0	0	0	.00	466.00	10200.00

0
CCHV= .100 CEHV= .300
*SECNO 16.431
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 8100.0 10202.0 TYPE= 1 TARGET= 2102.000

16.43	17.98	1128.78	.00	1130.93	1129.19	.41	.34	.14	1125.10
62000.	21397.	40603.	0.	9153.	6660.	0.	755.	88.	1150.60
.14	2.34	6.10	.00	.055	.035	.050	.000	1110.80	8100.00
.000643	350.	300.	230.	3	0	0	.00	2058.32	10168.33

0
*SECNO 16.481

3470 ENCROACHMENT STATIONS= 8200.0 10200.0 TYPE= 1 TARGET= 2000.000

```
   .15     2.84     8.40      .00     .055     .035     .050     .000  1111.80  8200.00
 .001434    270.     264.     263.        2        0        0      .00  1975.09 10175.09
0
 *SECNO 16.580

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    17.42  1129.02      .00  1131.32  1130.69     1.68      .87      .25  1127.10
   72000.     8507.   63493.      0.     3773.    5756.      0.     978.     124.   1151.90
      .16     2.25    11.03      .00     .055     .035     .050     .000  1111.60  8295.00
 .001940     523.     523.     523.        2        0        0      .00  1854.14 10157.07
0
 *SECNO 16.681

 3265 DIVIDED FLOW

1
 03-27-87     18:51:25                                                                    PAGE   53


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    16.52  1130.12      .00  1132.64  1131.78     1.66     1.08      .00  1130.40
   72000.    12691.   59309.      0.     4539.    5248.      0.    1095.     146.   1152.40
      .18     2.80    11.30      .00     .055     .035     .050     .000  1113.60  8030.00
 .002174     530.     528.     537.        2        0        0      .00  1859.16 10120.80
0
 *SECNO 16.780

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    19.91  1131.51      .00  1133.92  1132.62     1.10      .78      .06  1131.00
   72000.     9696.   62304.      0.     5179.    6906.      0.    1226.     172.   1157.70
      .20     1.87     9.02      .00     .055     .035     .050     .000  1111.60  7745.00
 .001089     522.     523.     525.        2        0        0      .00  2347.94 10092.94
0
1
 03-27-87     18:51:25                                                                    PAGE   54


                                                                        THIS RUN EXECUTED 03-27-87

 ************************************************
   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
 ************************************************
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T3 MAIN CHAN. - NEW BRIDGE - VARIOUS FLOWS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	8.	0.	0.	.005000	.00	.0	0.	1110.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

*PROF 7

CCHV= .100 CEHV= .300
*SECNO 15.647

3470 ENCROACHMENT STATIONS= 9311.0 11600.0 TYPE= 1 TARGET= 2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1132.00 ELREA= 1107.00

15.65	13.40	1110.40	.00	1111.39	1111.01	.61	.00	.00	1132.00
72000.	0.	70513.	1487.	0.	11211.	320.	0.	0.	1107.00
.00	.00	6.29	4.65	.050	.050	.050	.000	1097.00	9343.20
.005011	0.	0.	0.	0	0	4	.00	2256.80	11600.00

0
*SECNO 15.823

3265 DIVIDED FLOW

3280 CROSS SECTION 15.82 EXTENDED .38 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9322.0 10204.0 TYPE= 1 TARGET= 882.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1133.00 ELREA= 100000.00

15.82	22.54	1114.39	.00	1115.70	1115.83	1.44	4.57	.25	1133.00
72000.	0.	72000.	0.	0.	7482.	0.	203.	32.	100000.00
.03	.00	9.62	.00	.050	.050	.050	.000	1091.85	9363.18
.004811	900.	930.	960.	2	0	0	.00	731.03	10142.70

0
CCHV= .100 CEHV= .300
*SECNO 16.013
3280 CROSS SECTION 16.01 EXTENDED 3.31 FEET

3301 HV CHANGED MORE THAN HVINS

1

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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


3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

   16.01    17.30  1117.30      .00  1118.22  1117.99      .68     2.08      .08100000.00
  72000.       0.   72000.       0.       0.   10876.       0.     414.      51.   1146.00
     .07      .00     6.62      .00     .048     .040     .048     .000  1100.00  9290.39
 .001157    1000.    1000.     980.        3        0        0      .00   897.82 10188.21
0
*SECNO 16.153
3280 CROSS SECTION     16.15 EXTENDED       .16 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

   16.15    16.16  1118.16      .00  1118.96  1119.71     1.55     1.46      .26100000.00
  72000.       0.   72000.       0.       0.    7202.       0.     567.      65.   1151.00
     .09      .00    10.00      .00     .048     .040     .048     .000  1102.00  9293.17
 .004094     710.     740.     770.        3        0        0      .00   827.79 10120.96
0
*SECNO 16.191

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

   16.19    14.74  1118.33      .00  1118.97  1121.10     2.78     1.03      .37  1128.50
  72000.       0.   72000.       0.       0.    5385.       0.     596.      69.   1141.80
     .09      .00    13.37      .00     .048     .040     .048     .000  1103.59  9876.48
 .006628     200.     200.     200.        2        0        0      .00   575.89 10452.37
0
1
 03-27-87     18:51:25                                                                  PAGE   57


SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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


CCHV=    .300 CEHV=    .500
*SECNO 16.291

3470 ENCROACHMENT STATIONS=    9076.0   10587.0  TYPE=     1  TARGET=    1511.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.90 ELREA=     1137.90

   16.29    15.47  1120.97      .00  1121.49  1124.13     3.16     2.84      .19  1132.90
  72000.       0.   72000.       0.       0.    5048.       0.     659.      75.   1137.90
     .10      .00    14.26      .00     .035     .035     .035     .000  1105.50  9914.34
```

*SECNO 16.350

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1129.00 ELREA= 1134.00

16.35	12.61	1123.01	1123.01	1123.52	1127.82	4.81	1.81	.83	1126.00
72000.	0.	72000.	0.	0.	4091.	0.	691.	78.	1120.00
.11	.00	17.60	.00	.035	.035	.035	.000	1110.40	9788.24
.008666	200.	300.	375.	4	15	0	.00	433.76	10222.00

0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1119.68 ,NOT 1123.01 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	CDFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	444.00	28.00	6760.00	.00	1112.00	1112.00

*SECNO 16.355
6110 EGLWC OF 1127.60 LESS THAN XEG OF 1127.82

3301 HV CHANGED MORE THAN HVINS

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1121.76 BRIDGE VELOCITY=, 17.73 CALCULATED CHANNEL AREA=, 4060.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1127.60	.00	0.	72000.	6760.	7904.	1131.00	1131.50

3470 ENCROACHMENT STATIONS= 9777.0 10223.0 TYPE= 1 TARGET= 446.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1131.00 ELREA= 1137.00

16.35	14.45	1124.45	.00	1125.11	1127.82	3.15	.00	.00	1125.00
72000.	0.	72000.	0.	0.	5055.	0.	695.	78.	1122.40
.11	.00	14.24	.00	.000	.035	.000	.000	1110.00	9778.01
.004512	38.	38.	38.	0	0	0	.00	443.99	10222.00

0
*SECNO 16.356

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

```
  72000.      0.   72000.      0.      0.   6354.      0.    696.     78.   1141.40
    .11     .00    11.33     .00    .035    .035    .035    .000  1109.00  9780.43
 .002870      7.      7.      7.       3       0       0     .00   432.84 10243.29
0
*SECNO 16.373

3265 DIVIDED FLOW

   16.37    17.48  1126.48     .00  1127.09  1128.40    1.92     .18     .02  1130.00
  72000.      0.   72000.      0.      0.   6480.      0.    705.     79.   1141.40
    .11     .00    11.11     .00    .035    .035    .035    .000  1109.00  9779.56
 .002718     65.     65.     65.       2       0       0     .00   434.60 10244.18
0
1
 03-27-87     18:51:25                                                          PAGE   59

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.376

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9733.0   10201.0  TYPE=     1  TARGET=     468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1134.00 ELREA=     1137.50

   16.38    14.40  1126.20     .00  1126.81  1128.75    2.55     .04     .31  1134.00
  72000.      0.   72000.      0.      0.   5624.      0.    707.     79.   1137.50
    .11     .00    12.80     .00    .035    .035    .035    .000  1111.80  9740.81
 .003212     13.     13.     13.       2       0       0     .00   450.69 10191.50
0

SPECIAL BRIDGE

SB  XK       XKOR     COFQ     RDLEN    BWC      BWP      BAREA    SS       ELCHU    ELCHD
    1.25     1.56     3.00      .00   465.00    60.00  7607.00     .10   1112.20  1111.80

*SECNO 16.379

3301 HV CHANGED MORE THAN HVINS

CLASS A LOW FLOW

3420 BRIDGE W.S.=   1125.42 BRIDGE VELOCITY=,     13.21     CALCULATED CHANNEL AREA=,     5370.

 EGPRS     EGLWC     H3      QWEIR     QLOW     BAREA   TRAPEZOID     ELLC     ELTRD
                                                          AREA
     .00  1130.24    2.04       0.   72000.     7607.     9081.    1134.50  1134.00


3470 ENCROACHMENT STATIONS=    9733.0   10201.0  TYPE=     1  TARGET=     468.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1134.00 ELREA=     1141.00

   16.38    16.05  1128.25     .00  1129.00  1130.24    2.00    1.49     .00  1125.50
  72000.      0.   72000.      0.      0.   6352.      0.    710.     79.   1126.70
    .11     .00    11.74     .00    .000    .035    .000    .000  1112.20  9734.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


CCHV=    .100 CEHV=    .300
*SECNO 16.431

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8100.0   10202.0  TYPE=     1  TARGET=    2102.000
    16.43    19.53  1130.33      .00  1130.93  1130.70      .37      .30      .16  1125.10
   72000.   28132.   43868.       0.   11600.    7416.       0.     804.      89.   1150.60
      .13     2.43     5.92      .00     .055     .035     .050     .000  1110.80  8100.00
  .000528     350.     300.     230.        3        0        0      .00  2070.19 10170.19
0
*SECNO 16.481

3470 ENCROACHMENT STATIONS=    8200.0   10200.0  TYPE=     1  TARGET=    2000.000
    16.48    18.59  1130.39      .00  1131.05  1130.92      .52      .17      .05  1126.70
   72000.   22740.   49260.       0.    8875.    7267.       0.     912.     101.   1150.30
      .14     2.56     6.78      .00     .055     .035     .050     .000  1111.80  8200.00
  .000790     270.     264.     263.        2        0        0      .00  1977.00 10177.00
0
*SECNO 16.580

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    18.92  1130.52      .00  1131.32  1131.57     1.05      .50      .16  1127.10
   72000.   14115.   57885.       0.    5971.    6350.       0.    1083.     124.   1151.90
      .16     2.36     9.12      .00     .055     .035     .050     .000  1111.60  8295.00
  .001172     523.     523.     523.        2        0        0      .00  1863.67 10159.07
0
*SECNO 16.681

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


    16.68    17.53  1131.13      .00  1132.64  1132.31     1.18      .70      .04  1130.40
   72000.   16690.   55310.       0.    6112.    5634.       0.    1229.     147.   1152.40
      .18     2.73     9.82      .00     .055     .035     .050     .000  1113.60  8030.00
  .001506     530.     528.     537.        2        0        0      .00  1944.40 10121.89
```

```
3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
   16.78    20.39  1131.99      .00  1133.92  1132.95      .95      .61      .02  1131.00
  72000.   11525.   60475.       0.    6097.    7103.       0.    1378.     173.   1157.70
     .20     1.89     8.51      .00     .055     .035     .050     .000  1111.60  7745.00
 .000937     522.     523.     525.        2        0        0      .00  2348.57 10093.57
0
1
 03-27-87     18:51:25                                                                    PAGE   62
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THIS RUN EXECUTED 03-27-87

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

MAIN CHAN.- NEW BRIDGE

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
15.647	.00	.00	.00	1097.00	72000.00	1110.40	.00	1111.01	50.11	6.29	11530.97	10170.68
15.647	.00	.00	.00	1097.00	72000.00	1110.40	.00	1111.01	50.11	6.29	11530.97	10170.68
15.647	.00	.00	.00	1097.00	72000.00	1110.40	.00	1111.01	50.11	6.29	11530.97	10170.68
15.823	930.00	.00	.00	1091.85	77775.00	1115.70	.00	1117.01	38.83	9.21	8446.23	12481.76
15.823	930.00	.00	.00	1091.85	82775.00	1115.79	.00	1117.25	42.90	9.72	8515.62	12637.45
15.823	930.00	.00	.00	1091.85	87775.00	1115.88	.00	1117.50	47.09	10.23	8583.84	12791.10
15.823	930.00	.00	.00	1091.85	92775.00	1115.96	.00	1117.75	51.38	10.72	8650.90	12942.67
15.823	930.00	.00	.00	1091.85	52000.00	1113.89	.00	1114.72	29.13	7.30	7125.81	9635.41
15.823	930.00	.00	.00	1091.85	62000.00	1114.15	.00	1115.27	38.39	8.49	7304.12	10006.37
15.823	930.00	.00	.00	1091.85	72000.00	1114.39	.00	1115.83	48.11	9.62	7482.06	10380.88
16.013	1000.00	.00	.00	1100.00	77775.00	1118.22	.00	1118.91	10.64	6.65	11702.08	23845.53
16.013	1000.00	.00	.00	1100.00	82775.00	1118.54	.00	1119.28	11.14	6.90	11989.12	24804.63
16.013	1000.00	.00	.00	1100.00	87775.00	1118.86	.00	1119.65	11.59	7.15	12277.10	25780.88
16.013	1000.00	.00	.00	1100.00	92775.00	1119.18	.00	1120.03	12.01	7.38	12565.98	26772.31
16.013	1000.00	.00	.00	1100.00	52000.00	1115.81	.00	1116.27	9.26	5.45	9539.12	17086.18
16.013	1000.00	.00	.00	1100.00	62000.00	1116.56	.00	1117.14	10.54	6.07	10211.36	19096.22
16.013	1000.00	.00	.00	1100.00	72000.00	1117.30	.00	1117.99	11.57	6.62	10875.85	21164.50
16.153	740.00	.00	.00	1102.00	77775.00	1118.96	.00	1120.48	35.74	9.88	7869.97	13008.91
16.153	740.00	.00	.00	1102.00	82775.00	1119.30	.00	1120.90	36.06	10.15	8153.95	13784.72
16.153	740.00	.00	.00	1102.00	87775.00	1119.64	.00	1121.32	36.29	10.41	8435.73	14571.13
16.153	740.00	.00	.00	1102.00	92775.00	1119.98	.00	1121.74	36.44	10.64	8715.82	15368.91
16.153	740.00	.00	.00	1102.00	52000.00	1116.54	.00	1117.76	40.89	8.84	5883.08	8131.72
16.153	740.00	.00	.00	1102.00	62000.00	1117.37	.00	1118.76	41.37	9.46	6552.94	9638.89
16.153	740.00	.00	.00	1102.00	72000.00	1118.15	.00	1119.71	40.94	10.00	7202.43	11253.04

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	16.191	200.00	.00	.00	1103.59	77775.00	1118.97	.00	1121.80	62.59	13.51	5756.22	9830.40
	16.191	200.00	.00	.00	1103.59	82775.00	1119.24	.00	1122.28	64.89	13.98	5919.25	10275.39
	16.191	200.00	.00	.00	1103.59	87775.00	1119.51	.00	1122.76	67.42	14.46	6069.07	10690.22
	16.191	200.00	.00	.00	1103.59	92775.00	1119.77	.00	1123.22	69.58	14.91	6222.84	11121.82
	16.191	200.00	.00	.00	1103.59	52000.00	1116.97	.00	1118.94	56.88	11.29	4606.95	6895.02
	16.191	200.00	.00	.00	1103.59	62000.00	1117.68	.00	1120.06	61.69	12.36	5014.29	7893.72
	16.191	200.00	.00	.00	1103.59	72000.00	1118.33	.00	1121.10	66.28	13.37	5385.25	8843.60
	16.291	528.00	.00	.00	1105.50	77775.00	1121.49	.00	1124.86	45.32	14.75	5274.39	11552.67
	16.291	528.00	.00	.00	1105.50	82775.00	1121.85	.00	1125.45	46.79	15.23	5433.43	12101.25
	16.291	528.00	.00	.00	1105.50	87775.00	1122.20	.00	1126.02	47.97	15.68	5596.91	12673.80
	16.291	528.00	.00	.00	1105.50	92775.00	1122.61	.00	1126.61	50.60	16.04	5784.18	13042.11
	16.291	528.00	.00	.00	1105.50	52000.00	1119.27	.00	1121.54	38.63	12.09	4301.37	8366.62
	16.291	528.00	.00	.00	1105.50	62000.00	1120.16	.00	1122.88	41.69	13.22	4690.86	9602.55
	16.291	528.00	.00	.00	1105.50	72000.00	1120.97	.00	1124.13	44.55	14.26	5048.39	10787.74
*	16.350	300.00	.00	.00	1110.40	77775.00	1123.52	1123.52	1128.57	85.25	18.03	4313.40	8423.59
*	16.350	300.00	.00	.00	1110.40	82775.00	1123.96	1123.96	1129.20	84.08	18.38	4502.55	9026.93
*	16.350	300.00	.00	.00	1110.40	87775.00	1124.38	1124.38	1129.82	83.04	18.72	4687.80	9632.30
*	16.350	300.00	.00	.00	1110.40	92775.00	1124.79	1124.79	1130.43	82.06	19.05	4869.96	10241.23
*	16.350	300.00	.00	.00	1110.40	52000.00	1121.12	1121.12	1125.03	92.88	15.87	3275.69	5395.63
*	16.350	300.00	.00	.00	1110.40	62000.00	1122.09	1122.09	1126.47	89.51	16.79	3692.73	6553.16
*	16.350	300.00	.00	.00	1110.40	72000.00	1123.01	1123.01	1127.82	86.66	17.60	4091.14	7734.23
*	16.355	38.00	1131.50	1131.00	1110.00	77775.00	1125.11	.00	1128.57	43.74	14.55	5346.18	11759.38
*	16.355	38.00	1131.50	1131.00	1110.00	82775.00	1125.66	.00	1129.20	42.63	14.80	5592.78	12677.28
*	16.355	38.00	1131.50	1131.00	1110.00	87775.00	1126.21	.00	1129.82	41.62	15.04	5834.89	13605.09
*	16.355	38.00	1131.50	1131.00	1110.00	92775.00	1126.74	.00	1130.43	40.72	15.28	6072.12	14539.46
*	16.355	38.00	1131.50	1131.00	1110.00	52000.00	1122.02	.00	1125.03	51.66	13.08	3977.02	7234.98
*	16.355	38.00	1131.50	1131.00	1110.00	62000.00	1123.27	.00	1126.47	48.05	13.69	4529.85	8944.55
*	16.355	38.00	1131.50	1131.00	1110.00	72000.00	1124.45	.00	1127.82	45.12	14.24	5054.53	10718.45
	16.356	7.00	.00	.00	1109.00	77775.00	1126.79	.00	1128.94	30.01	11.77	6610.42	14196.88
	16.356	7.00	.00	.00	1109.00	82775.00	1127.28	.00	1129.57	31.09	12.12	6827.63	14844.69
	16.356	7.00	.00	.00	1109.00	87775.00	1127.77	.00	1130.18	32.12	12.47	7040.82	15486.66
	16.356	7.00	.00	.00	1109.00	92775.00	1128.24	.00	1130.78	33.76	12.79	7253.66	15966.70
	16.356	7.00	.00	.00	1109.00	52000.00	1123.98	.00	1125.42	24.05	9.63	5401.61	10602.95
	16.356	7.00	.00	.00	1109.00	62000.00	1125.13	.00	1126.85	26.47	10.52	5892.79	12050.24
	16.356	7.00	.00	.00	1109.00	72000.00	1126.20	.00	1128.19	28.70	11.33	6353.95	13440.36
	16.373	65.00	.00	.00	1109.00	77775.00	1127.09	.00	1129.15	28.39	11.53	6745.17	14598.01
	16.373	65.00	.00	.00	1109.00	82775.00	1127.60	.00	1129.79	29.37	11.88	6970.10	15273.04
	16.373	65.00	.00	.00	1109.00	87775.00	1128.10	.00	1130.41	30.57	12.20	7192.07	15874.93
	16.373	65.00	.00	.00	1109.00	92775.00	1128.61	.00	1131.03	32.66	12.49	7425.93	16234.36
	16.373	65.00	.00	.00	1109.00	52000.00	1124.20	.00	1125.59	22.83	9.46	5498.44	10883.72
	16.373	65.00	.00	.00	1109.00	62000.00	1125.38	.00	1127.03	25.10	10.33	6001.03	12375.82
	16.373	65.00	.00	.00	1109.00	72000.00	1126.48	.00	1128.40	27.18	11.11	6479.59	13809.81

1

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
16.376	13.00	.00	.00	1111.80	77775.00	1126.81	.00	1129.51	32.15	13.19	5896.80	13717.67
16.376	13.00	.00	.00	1111.80	82775.00	1127.32	.00	1130.15	32.18	13.51	6126.26	14591.16
16.376	13.00	.00	.00	1111.80	87775.00	1127.81	.00	1130.78	32.20	13.82	6351.66	15468.16

16.376	13.00	.00	.00	1111.80	62000.00	1125.11	.00	1127.38	32.07	12.08	5131.05	10948.89
16.376	13.00	.00	.00	1111.80	72000.00	1126.20	.00	1128.75	32.12	12.80	5623.79	12704.33
16.379	18.00	1134.00	1134.50	1112.20	77775.00	1129.00	.00	1131.09	21.61	11.60	6705.56	16731.40
16.379	18.00	1134.00	1134.50	1112.20	82775.00	1129.65	.00	1131.81	21.16	11.82	7004.66	17993.67
16.379	18.00	1134.00	1134.50	1112.20	87775.00	1130.28	.00	1132.52	20.76	12.03	7297.79	19266.11
16.379	18.00	1134.00	1134.50	1112.20	92775.00	1130.90	.00	1133.22	20.37	12.23	7587.39	20557.15
16.379	18.00	1134.00	1134.50	1112.20	52000.00	1125.44	.00	1127.09	24.74	10.31	5043.96	10453.90
16.379	18.00	1134.00	1134.50	1112.20	62000.00	1126.88	.00	1128.71	23.39	10.85	5715.31	12819.51
16.379	18.00	1134.00	1134.50	1112.20	72000.00	1128.25	.00	1130.24	22.18	11.34	6351.85	15286.47
16.431	300.00	.00	.00	1110.80	107945.00	1130.93	.00	1131.64	9.97	8.33	20244.75	34189.89
16.431	300.00	.00	.00	1110.80	107945.00	1131.73	.00	1132.33	7.97	7.69	21905.25	38227.03
16.431	300.00	.00	.00	1110.80	107945.00	1132.50	.00	1133.01	6.52	7.15	23497.20	42286.92
16.431	300.00	.00	.00	1110.80	107945.00	1133.24	.00	1133.69	5.41	6.69	25042.01	46399.06
16.431	300.00	.00	.00	1110.80	52000.00	1127.14	.00	1127.61	8.27	6.37	12434.84	18086.96
16.431	300.00	.00	.00	1110.80	62000.00	1128.78	.00	1129.19	6.43	6.10	15813.53	24451.32
16.431	300.00	.00	.00	1110.80	72000.00	1130.33	.00	1130.70	5.28	5.92	19015.61	31335.20
16.481	264.00	.00	.00	1111.80	108205.00	1131.05	.00	1132.04	14.44	9.44	17440.63	28474.64
16.481	264.00	.00	.00	1111.80	108205.00	1131.83	.00	1132.65	11.41	8.68	18970.89	32028.29
16.481	264.00	.00	.00	1111.80	108205.00	1132.57	.00	1133.27	9.21	8.04	20452.79	35649.26
16.481	264.00	.00	.00	1111.80	108205.00	1133.30	.00	1133.90	7.56	7.50	21898.34	39346.87
16.481	264.00	.00	.00	1111.80	72000.00	1126.67	.00	1128.44	33.85	11.53	8793.71	12375.76
16.481	264.00	.00	.00	1111.80	72000.00	1128.73	.00	1129.58	14.34	8.40	12851.33	19014.96
16.481	264.00	.00	.00	1111.80	72000.00	1130.39	.00	1130.92	7.90	6.78	16142.01	25611.36
16.580	523.33	.00	.00	1111.60	108205.00	1131.32	.00	1133.21	20.58	12.45	13811.52	23849.32
16.580	523.33	.00	.00	1111.60	108205.00	1132.02	.00	1133.58	16.66	11.49	15126.23	26508.13
16.580	523.33	.00	.00	1111.60	108205.00	1132.73	.00	1134.03	13.62	10.65	16441.83	29323.65
16.580	523.33	.00	.00	1111.60	108205.00	1133.43	.00	1134.53	11.24	9.90	17750.57	32272.04
16.580	523.33	.00	.00	1111.60	72000.00	1127.85	1124.32	1130.28	29.24	12.85	7371.81	13314.97
16.580	523.33	.00	.00	1111.60	72000.00	1129.02	.00	1130.69	19.40	11.03	9529.15	16345.95
16.580	523.33	.00	.00	1111.60	72000.00	1130.52	.00	1131.57	11.72	9.12	12321.36	21031.32
16.681	528.33	.00	.00	1113.60	108205.00	1132.64	.00	1134.32	20.48	12.17	14697.31	23912.51
16.681	528.33	.00	.00	1113.60	108205.00	1133.00	.00	1134.51	18.28	11.66	15407.70	25307.51
16.681	528.33	.00	.00	1113.60	108205.00	1133.49	.00	1134.81	15.74	11.01	16378.26	27275.38
16.681	528.33	.00	.00	1113.60	108205.00	1134.05	.00	1135.19	13.35	10.35	17492.22	29619.18
16.681	528.33	.00	.00	1113.60	72000.00	1129.97	.00	1131.71	22.92	11.54	9518.22	15038.88
16.681	528.33	.00	.00	1113.60	72000.00	1130.12	.00	1131.78	21.74	11.30	9786.96	15440.44
16.681	528.33	.00	.00	1113.60	72000.00	1131.13	.00	1132.31	15.06	9.82	11745.67	18555.00

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
16.780	523.33	.00	.00	1111.60	108205.00	1133.92	.00	1135.16	11.78	10.20	17733.30	31532.68
16.780	523.33	.00	.00	1111.60	108205.00	1134.11	.00	1135.28	11.16	9.99	18172.43	32391.85
16.780	523.33	.00	.00	1111.60	108205.00	1134.41	.00	1135.49	10.25	9.67	18875.13	33795.73
16.780	523.33	.00	.00	1111.60	108205.00	1134.80	.00	1135.78	9.19	9.27	19801.34	35699.74
16.780	523.33	.00	.00	1111.60	72000.00	1131.46	.00	1132.58	11.08	9.08	11959.40	21629.81
16.780	523.33	.00	.00	1111.60	72000.00	1131.51	.00	1132.62	10.89	9.02	12084.65	21814.88
16.780	523.33	.00	.00	1111.60	72000.00	1131.99	.00	1132.95	9.37	8.51	13200.01	23525.37

MAIN CHAN.- NEW BRIDGE

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
15.647	72000.00	1110.40	-.99	.00	-.99	2256.80	.00
15.647	72000.00	1110.40	.00	.00	-.99	2256.80	.00
15.647	72000.00	1110.40	.00	.00	-.99	2256.80	.00
15.823	77775.00	1115.70	.00	4.31	.00	750.17	930.00
15.823	82775.00	1115.79	.09	4.40	.09	751.53	930.00
15.823	87775.00	1115.88	.09	4.49	.18	752.86	930.00
15.823	92775.00	1115.96	.09	4.57	.27	754.17	930.00
15.823	52000.00	1113.89	-2.07	3.49	-1.80	723.83	930.00
15.823	62000.00	1114.15	.25	3.75	-1.55	727.44	930.00
15.823	72000.00	1114.39	.24	3.99	-1.31	731.03	930.00
16.013	77775.00	1118.22	.00	2.53	.00	901.09	1000.00
16.013	82775.00	1118.54	.32	2.75	.32	902.22	1000.00
16.013	87775.00	1118.86	.32	2.98	.64	903.36	1000.00
16.013	92775.00	1119.18	.32	3.22	.96	904.60	1000.00
16.013	52000.00	1115.81	-3.37	1.92	-2.41	892.51	1000.00
16.013	62000.00	1116.56	.75	2.42	-1.66	895.18	1000.00
16.013	72000.00	1117.30	.74	2.92	-.92	897.82	1000.00
16.153	77775.00	1118.96	.00	.74	.00	830.82	740.00
16.153	82775.00	1119.30	.34	.76	.34	832.10	740.00
16.153	87775.00	1119.64	.34	.78	.68	833.38	740.00
16.153	92775.00	1119.98	.34	.80	1.02	834.64	740.00
16.153	52000.00	1116.54	-3.43	.73	-2.42	813.31	740.00
16.153	62000.00	1117.37	.83	.81	-1.59	824.83	740.00
16.153	72000.00	1118.16	.79	.85	-.81	827.79	740.00
16.191	77775.00	1118.97	.00	.00	.00	580.26	200.00
16.191	82775.00	1119.24	.28	-.06	.28	582.17	200.00
16.191	87775.00	1119.51	.27	-.13	.54	583.91	200.00
16.191	92775.00	1119.77	.26	-.20	.81	585.70	200.00
16.191	52000.00	1116.97	-2.81	.42	-2.00	566.63	200.00
16.191	62000.00	1117.68	.71	.31	-1.28	571.50	200.00
16.191	72000.00	1118.33	.64	.17	-.64	575.89	200.00
16.291	77775.00	1121.49	.00	2.52	.00	445.51	528.00
16.291	82775.00	1121.85	.36	2.61	.36	447.50	528.00
16.291	87775.00	1122.20	.35	2.70	.72	449.52	528.00
16.291	92775.00	1122.61	.41	2.84	1.13	467.58	528.00
16.291	52000.00	1119.27	-3.34	2.31	-2.22	434.93	528.00
16.291	62000.00	1120.16	.89	2.48	-1.32	438.99	528.00
16.291	72000.00	1120.97	.81	2.65	-.51	442.68	528.00

1

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	16.350	77775.00	1123.52	.00	2.03	.00	435.51	300.00
*	16.350	82775.00	1123.96	.43	2.11	.43	436.99	300.00
*	16.350	87775.00	1124.38	.42	2.17	.86	438.45	300.00
*	16.350	92775.00	1124.79	.41	2.18	1.27	439.87	300.00
*	16.350	52000.00	1121.12	-3.68	1.84	-2.41	427.26	300.00
*	16.350	62000.00	1122.09	.97	1.93	-1.43	430.60	300.00
*	16.350	72000.00	1123.01	.92	2.04	-.51	433.76	300.00

*	16.355	77775.00	1125.11	.00	1.58	.00	444.00	38.00
*	16.355	82775.00	1125.66	.56	1.70	.56	444.00	38.00
*	16.355	87775.00	1126.21	.55	1.83	1.10	444.00	38.00
*	16.355	92775.00	1126.74	.53	1.95	1.64	444.00	38.00
*	16.355	52000.00	1122.02	-4.72	.90	-3.09	442.03	38.00
*	16.355	62000.00	1123.27	1.25	1.18	-1.84	443.97	38.00
*	16.355	72000.00	1124.45	1.18	1.44	-.66	443.99	38.00
	16.356	77775.00	1126.79	.00	1.68	.00	436.43	7.00
	16.356	82775.00	1127.28	.50	1.62	.50	439.45	7.00
	16.356	87775.00	1127.77	.48	1.56	.98	442.39	7.00
	16.356	92775.00	1128.24	.47	1.50	1.45	454.87	7.00
	16.356	52000.00	1123.98	-4.26	1.96	-2.81	425.34	7.00
	16.356	62000.00	1125.13	1.15	1.86	-1.66	428.97	7.00
	16.356	72000.00	1126.20	1.07	1.75	-.59	432.84	7.00
	16.373	77775.00	1127.09	.00	.30	.00	438.30	65.00
	16.373	82775.00	1127.60	.51	.32	.51	441.41	65.00
	16.373	87775.00	1128.10	.50	.33	1.01	448.52	65.00
	16.373	92775.00	1128.61	.51	.37	1.52	472.18	65.00
	16.373	52000.00	1124.20	-4.41	.22	-2.89	426.13	65.00
	16.373	62000.00	1125.38	1.18	.25	-1.71	429.75	65.00
	16.373	72000.00	1126.48	1.10	.28	-.61	434.60	65.00
	16.376	77775.00	1126.81	.00	-.28	.00	451.67	13.00
	16.376	82775.00	1127.32	.51	-.28	.51	452.50	13.00
	16.376	87775.00	1127.81	.50	-.29	1.01	453.31	13.00
	16.376	92775.00	1128.32	.50	-.29	1.51	454.13	13.00
	16.376	52000.00	1123.94	-4.38	-.26	-2.87	447.00	13.00
	16.376	62000.00	1125.11	1.17	-.27	-1.70	448.91	13.00
	16.376	72000.00	1126.20	1.10	-.28	-.60	450.69	13.00
	16.379	77775.00	1129.00	.00	2.20	.00	466.00	18.00
	16.379	82775.00	1129.65	.64	2.33	.64	466.00	18.00
	16.379	87775.00	1130.28	.63	2.46	1.27	466.00	18.00
	16.379	92775.00	1130.90	.62	2.58	1.89	466.00	18.00
	16.379	52000.00	1125.44	-5.46	1.50	-3.57	463.30	18.00
	16.379	62000.00	1126.88	1.44	1.77	-2.13	466.00	18.00
	16.379	72000.00	1128.25	1.37	2.04	-.76	466.00	18.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
16.431	107945.00	1130.93	.00	1.92	.00	2070.91	300.00
16.431	107945.00	1131.73	.80	2.08	.80	2071.87	300.00
16.431	107945.00	1132.50	.77	2.22	1.57	2072.80	300.00
16.431	107945.00	1133.24	.74	2.34	2.31	2073.70	300.00
16.431	52000.00	1127.14	-6.10	1.70	-3.79	2046.98	300.00
16.431	62000.00	1128.78	1.65	1.90	-2.14	2058.32	300.00
16.431	72000.00	1130.33	1.55	2.09	-.59	2070.19	300.00
16.481	108205.00	1131.05	.00	.13	.00	1977.76	264.00
16.481	108205.00	1131.83	.77	.10	.77	1978.65	264.00
16.481	108205.00	1132.57	.75	.08	1.52	1979.51	264.00
16.481	108205.00	1133.30	.73	.06	2.25	1980.35	264.00
16.481	72000.00	1126.67	-6.64	-.47	-4.39	1967.43	264.00
16.481	72000.00	1128.73	2.06	-.06	-2.32	1975.09	264.00
16.481	72000.00	1130.39	1.67	.06	-.66	1977.00	264.00
16.580	108205.00	1131.32	.00	.26	.00	1865.13	523.33
16.580	108205.00	1132.02	.71	.20	.71	1866.07	523.33
16.580	108205.00	1132.73	.71	.15	1.41	1867.01	523.33

16.580	72000.00	1129.02	1.16	.29	-2.30	1854.14	523.33
16.580	72000.00	1130.52	1.50	.13	-.80	1863.67	523.33
16.681	108205.00	1132.64	.00	1.33	.00	1973.90	528.33
16.681	108205.00	1133.00	.36	.98	.36	1980.94	528.33
16.681	108205.00	1133.49	.49	.76	.85	1990.51	528.33
16.681	108205.00	1134.05	.56	.62	1.41	2001.44	528.33
16.681	72000.00	1129.97	-4.07	2.12	-2.67	1853.66	528.33
16.681	72000.00	1130.12	.15	1.11	-2.52	1859.16	528.33
16.681	72000.00	1131.13	1.01	.61	-1.51	1944.40	528.33
16.780	108205.00	1133.92	.00	1.28	.00	2351.09	523.33
16.780	108205.00	1134.11	.19	1.11	.19	2351.33	523.33
16.780	108205.00	1134.41	.30	.92	.49	2351.72	523.33
16.780	108205.00	1134.80	.39	.75	.88	2352.24	523.33
16.780	72000.00	1131.46	-3.34	1.49	-2.46	2347.88	523.33
16.780	72000.00	1131.51	.05	1.39	-2.41	2347.94	523.33
16.780	72000.00	1131.99	.48	.86	-1.93	2348.57	523.33

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SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION  SECNO=    16.350  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.350  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 2  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.350  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 3  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.350  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 4  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.350  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 5  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.350  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 6  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.350  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 7  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    16.355  PROFILE= 1  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 2  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 3  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 4  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 5  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 6  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 7  HYDRAULIC JUMP D.S.
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THIS RUN EXECUTED 03-27-87

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

C)type afm70.out

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1*****************************************************
*
 * WATER SURFACE PROFILES                            *
*
 * VERSION OF NOVEMBER 1976                          *
*
 * UPDATED MAY 1984                                  *
*
 * IBM-PC-XT VERSION AUGUST 1985                     *
*
 * RUN DATE  03-24-87   TIME  19:17:10                *
 *
*****************************************************
```

HEC 2
OUTPUT

AFM70.OUT

```
*****************************************
* U.S. ARMY CORPS OF ENGINEERS
* THE HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET, SUITE D
* DAVIS, CALIFORNIA 95616
 * (916) 440-2105 (FTS) 448-2105
*****************************************
```

*4. Main Channel - Future Condition

```
X     X  XXXXXXX   XXXXX             XXXXX
X     X  X       X     X           X     X
X     X  X       X                       X
XXXXXXX  XXXX    X         XXXXX    XXXXX
X     X  X       X                 X
X     X  X       X     X           X
X     X  XXXXXXX   XXXXX            XXXXXXX
```

1

03-24-87 19:17:11 PAGE 1

THIS RUN EXECUTED 03-24-87

```
**************************************************
  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
**************************************************
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T1 AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
T2 SUBCRITICAL PROFILE
T3 AGUAFRIA - MAIN CHANNEL - FUTURE BRIDGE - VARIOUS FLOWS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	2.	0.	0.	.000000	.00	.0	0.	1111.390	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

QT	7.000	105600.000	105600.000	105600.000	105600.000	72000.000	72000.000	72000.000	.000	.000
NC	.050	.050	.050	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9311.000	11500.000
XI	15.547	90.000	9312.000	11505.000	.000	.000	.000	.000	.000	.000

GR	1133.000	8960.000	1132.000	9020.000	1129.000	9053.000	1116.000	9102.000	1112.000	9132.000
GR	1111.000	9180.000	1117.000	9218.000	1121.000	9247.000	1132.000	9282.000	1132.000	9312.000
GR	1105.000	9351.000	1097.000	9377.000	1097.000	9442.000	1097.000	9507.000	1097.000	9552.000
GR	1100.000	9589.000	1102.000	9625.000	1106.000	9645.000	1106.000	9697.000	1103.000	9744.000
GR	1104.000	9760.000	1108.000	9783.000	1108.000	9832.000	1108.000	9886.000	1108.000	9941.000
GR	1107.000	10000.000	1107.000	10026.000	1103.000	10033.000	1103.000	10080.000	1103.000	10134.000
GR	1105.000	10152.000	1105.000	10213.000	1104.000	10262.000	1103.000	10293.000	1103.000	10387.000
GR	1106.000	10402.000	1107.000	10463.000	1107.000	10531.000	1109.000	10588.000	1109.000	10650.000
GR	1109.000	10717.000	1108.000	10775.000	1108.000	10857.000	1110.000	10925.000	1108.000	10993.000
GR	1108.000	11065.000	1108.000	11134.000	1108.000	11178.000	1104.000	11194.000	1104.000	11251.000
GR	1104.000	11297.000	1103.000	11348.000	1103.000	11402.000	1102.000	11441.000	1106.000	11460.000
GR	1107.000	11506.000	1107.000	11566.000	1107.000	11644.000	1107.000	11712.000	1107.000	11791.000
GR	1107.000	11868.000	1107.000	11941.000	1107.000	12010.000	1107.000	12080.000	1107.000	12151.000
GR	1107.000	12223.000	1107.000	12302.000	1107.000	12391.000	1108.000	12469.000	1108.000	12532.000
GR	1108.000	12610.000	1108.000	12703.000	1108.000	12785.000	1109.000	12845.000	1108.000	12930.000
GR	1109.000	13028.000	1109.000	13119.000	1109.000	13215.000	1109.000	13335.000	1110.000	13438.000
GR	1110.000	13541.000	1111.000	13647.000	1111.000	13742.000	1111.000	13867.000	1111.000	13948.000
QT	7.000	77775.000	82775.000	87775.000	92775.000	62000.000	67000.000	72000.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9322.000	10204.000
X1	15.823	85.000	9322.000	10204.000	900.000	960.000	930.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1133.000	9322.000	1100.000	9395.000	1100.000	9498.000	1101.000	9520.000	1105.000	9552.000
GR	1105.000	9633.000	1108.000	9702.000	1108.000	9779.000	1109.000	9847.000	1110.280	9858.000
GR	1119.100	9888.000	1107.040	9971.000	1099.220	10000.000	1091.850	10093.000	1142.180	10204.000
GR	1142.600	10295.000	1008.300	10388.000	1104.000	10406.000	1103.000	10450.000	1107.000	10474.000
GR	1105.000	10511.000	1103.000	10560.000	1108.000	10572.000	1108.000	10598.000	1111.000	10610.000

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GR	1111.000	10717.000	1111.000	10781.000	1111.000	10856.000	1110.000	10898.000	1109.000	10964.000
GR	1106.000	11019.000	1107.000	11071.000	1106.000	11140.000	1104.000	11206.000	1102.000	11251.000
GR	1105.000	11283.000	1108.000	11342.000	1106.000	11384.000	1107.000	11421.000	1108.000	11470.000
GR	1110.000	11500.000	1110.000	11554.000	1110.000	11634.000	1110.000	11708.000	1110.000	11794.000
GR	1110.000	11892.000	1109.000	11983.000	1109.000	12063.000	1109.000	12143.000	1109.000	12221.000
GR	1109.000	12294.000	1109.000	12370.000	1109.000	12450.000	1109.000	12542.000	1110.000	12596.000
GR	1110.000	12672.000	1110.000	12726.000	1110.000	12796.000	1110.000	12852.000	1110.000	12910.000
GR	1110.000	12983.000	1110.000	13011.000	1111.000	13075.000	1111.000	13153.000	1111.000	13224.000
GR	1111.000	13307.000	1111.000	13380.000	1111.000	13452.000	1111.000	13532.000	1112.000	13608.000
GR	1112.000	13689.000	1112.000	13764.000	1112.000	13844.000	1112.000	13917.000	1112.000	13998.000
GR	1113.000	14073.000	1114.000	14137.000	1114.000	14212.000	1114.000	14281.000	1114.000	14347.000
GR	1114.000	14414.000	1114.000	14464.000	1114.000	14533.000	1114.000	14613.000	1114.000	14698.000
NC	.048	.048	.040	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9264.000	12250.000
X1	16.013	90.000	9263.000	10275.000	1000.000	980.000	1000.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1141.000	9001.000	1141.000	9081.000	1139.000	9141.000	1139.000	9236.000	1138.000	9263.000
GR	1104.000	9308.000	1104.000	9343.000	1109.000	9358.000	1109.000	9421.000	1110.000	9496.000
GR	1110.000	9568.000	1106.000	9615.000	1103.000	9664.000	1104.000	9689.000	1105.000	9724.000
GR	1107.000	9750.000	1104.000	9792.000	1100.000	9823.000	1100.000	9855.000	1103.000	9883.000
GR	1102.000	9947.000	1102.000	10000.000	1102.000	10052.000	1102.000	10114.000	1102.000	10154.000
GR	1119.000	10192.000	1136.000	10240.000	1146.000	10275.000	1147.000	10323.000	1147.000	10379.000
GR	1141.000	10402.000	1124.000	10449.000	1108.000	10500.000	1108.000	10529.000	1112.000	10549.000
GR	1112.000	10613.000	1109.000	10664.000	1108.000	10694.000	1111.000	10705.000	1112.000	10786.000
GR	1114.000	10843.000	1113.000	10905.000	1110.000	10955.000	1110.000	11005.000	1111.000	11055.000
GR	1113.000	11079.000	1114.000	11146.000	1113.000	11220.000	1113.000	11268.000	1113.000	11296.000
GR	1114.000	11317.000	1112.000	11399.000	1110.000	11452.000	1111.000	11471.000	1109.000	11493.000
GR	1109.000	11558.000	1110.000	11588.000	1110.000	11657.000	1110.000	11731.000	1110.000	11799.000
GR	1110.000	11870.000	1111.000	11941.000	1111.000	11990.000	1111.000	12036.000	1111.000	12085.000
GR	1112.000	12152.000	1112.000	12219.000	1112.000	12311.000	1112.000	12395.000	1112.000	12482.000
GR	1112.000	12555.000	1112.000	12620.000	1113.000	12690.000	1113.000	12743.000	1113.000	12809.000
GR	1112.000	12885.000	1112.000	12952.000	1112.000	13003.000	1114.000	13054.000	1114.000	13110.000

ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9252.000	12040.000
X1	16.153	90.000	9251.000	10209.000	710.000	770.000	740.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1142.000	9036.000	1141.000	9124.000	1141.000	9201.000	1141.000	9251.000	1115.000	9299.000
GR	1115.000	9364.000	1114.000	9435.000	1114.000	9511.000	1114.000	9534.000	1110.000	9568.000
GR	1109.000	9592.000	1110.000	9613.000	1117.000	9637.000	1115.000	9668.000	1109.000	9683.000
GR	1107.000	9741.000	1107.000	9802.000	1107.000	9857.000	1105.000	9906.000	1105.000	9942.000
GR	1103.000	10000.000	1102.000	10060.000	1102.000	10090.000	1126.000	10136.000	1147.000	10190.000
GR	1151.000	10209.000	1151.000	10272.000	1148.000	10321.000	1149.000	10382.000	1147.000	10434.000
GR	1127.000	10480.000	1108.000	10536.000	1109.000	10561.000	1111.000	10620.000	1111.000	10682.000
GR	1111.000	10757.000	1112.000	10827.000	1112.000	10901.000	1112.000	10970.000	1112.000	11034.000
GR	1113.000	11101.000	1113.000	11158.000	1110.000	11171.000	1114.000	11182.000	1114.000	11250.000
GR	1114.000	11330.000	1114.000	11406.000	1113.000	11487.000	1113.000	11561.000	1113.000	11640.000
GR	1113.000	11714.000	1113.000	11788.000	1113.000	11843.000	1114.000	11900.000	1114.000	11968.000
GR	1114.000	12040.000	1114.000	12112.000	1113.000	12178.000	1113.000	12229.000	1113.000	12308.000
GR	1113.000	12382.000	1113.000	12451.000	1114.000	12513.000	1114.000	12558.000	1114.000	12588.000
GR	1114.000	12658.000	1114.000	12711.000	1114.000	12762.000	1114.000	12817.000	1114.000	12870.000
GR	1114.000	12930.000	1114.000	12979.000	1113.000	13031.000	1113.000	13092.000	1114.000	13153.000

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GR	1114.000	13209.000	1115.000	13289.000	1116.000	13370.000	1116.000	13451.000	1116.000	13532.000
GR	1117.000	13603.000	1118.000	13685.000	1118.000	13765.000	1118.000	13840.000	1118.000	13912.000
GR	1118.000	13981.000	1119.000	14054.000	1118.000	14131.000	1118.000	14205.000	1118.000	14281.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	8638.000	10823.000
X1	16.191	54.000	9855.000	10822.800	200.000	200.000	200.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1121.000	8637.600	1122.100	8675.600	1122.000	8709.700	1120.100	8761.900	1116.400	8789.200
GR	1116.800	8830.000	1118.400	8865.300	1118.700	8914.700	1117.700	8942.500	1117.100	8970.900
GR	1110.200	8995.300	1109.900	9034.500	1109.300	9086.800	1111.100	9147.500	1119.800	9172.000
GR	1118.700	9260.500	1118.700	9343.500	1118.200	9378.700	1117.700	9389.500	1118.600	9428.600
GR	1123.500	9450.800	1123.700	9459.900	1120.900	9482.000	1124.400	9542.200	1125.600	9567.200
GR	1124.800	9593.300	1124.200	9633.700	1124.900	9686.500	1126.000	9722.800	1127.400	9783.000
GR	1128.500	9855.000	1108.610	9897.000	1103.590	9996.000	1109.090	10301.000	1112.920	10310.000
GR	1115.400	10320.200	1115.900	10401.500	1116.800	10445.200	1122.600	10472.400	1121.900	10498.000
GR	1121.900	10573.000	1121.700	10649.100	1120.000	10679.200	1120.100	10701.300	1123.700	10718.300
GR	1120.000	10749.600	1124.600	10766.000	1128.100	10796.100	1141.800	10822.800	1142.800	10869.400
GR	1143.900	10917.100	1144.600	10956.900	1144.800	10996.000	1145.100	11013.100	.000	.000
NC	.035	.035	.035	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9820.000	10586.000
X1	16.291	8.000	9820.000	10462.000	533.000	476.000	528.000	.000	.000	.000
GR	1129.000	9820.000	1109.000	9883.000	1109.000	10420.000	1122.000	10462.000	1124.000	10480.400
GR	1125.600	10528.700	1129.700	10557.600	1137.900	10586.000	.000	.000	.000	.000
X1	16.344	6.000	9688.000	10480.000	270.000	270.000	270.000	.000	.000	.000
GR	1139.000	9687.000	1130.000	9688.000	1109.500	9750.000	1109.500	10400.000	1134.000	10480.000
GR	1142.000	10481.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	16.345	36.000	9688.000	10483.000	6.000	6.000	6.000	.000	.000	.000
GR	1138.300	9500.000	1139.000	9685.000	1130.000	9688.000	1109.500	9750.000	1109.500	9781.000
GR	1132.700	9781.010	1132.700	9787.000	1109.500	9787.010	1109.500	9881.000	1133.100	9881.010
GR	1133.100	9887.000	1109.500	9887.010	1109.500	9981.000	1133.500	9981.010	1133.500	9987.000
GR	1109.500	9987.010	1109.500	10081.000	1133.900	10081.010	1133.900	10087.000	1109.500	10087.100
GR	1109.500	10181.000	1134.300	10181.010	1134.300	10187.000	1109.500	10187.010	1109.500	10281.000
GR	1134.700	10281.010	1134.700	10287.000	1109.500	10287.010	1109.500	10381.000	1135.100	10381.100
GR	1135.100	10387.000	1109.500	10387.010	1109.500	10400.000	1130.000	10480.000	1142.200	10483.000
GR	1142.700	10600.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	16.373	.000	.000	.000	134.000	134.000	134.000	.000	.000	.000

GR	1142.000	10481.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	16.481	5.000	9790.000	10390.000	595.000	595.000	595.000	.000	.000	.000
GR	1125.500	9755.000	1125.500	9790.000	1111.000	9820.000	1111.000	10260.000	1152.000	10390.000
QT	7.000	108205.000	108205.000	108205.000	108205.000	72000.000	72000.000	72000.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	8295.000	10245.000

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X1	16.580	85.000	9762.600	10244.100	523.330	523.330	523.330	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1128.300	6184.800	1129.400	6225.100	1132.400	6261.500	1135.900	6280.800	1136.300	6302.400
GR	1135.600	6321.700	1134.500	6334.200	1133.600	6346.100	1130.400	6375.600	1128.100	6402.300
GR	1127.200	6448.300	1131.500	6465.900	1129.500	6501.100	1125.600	6535.800	1124.000	6580.600
GR	1122.500	6666.900	1122.500	6700.500	1121.700	6770.300	1121.700	6840.200	1121.000	6898.600
GR	1121.600	6944.600	1121.600	7015.600	1120.300	7073.000	1120.100	7143.400	1119.600	7204.700
GR	1120.100	7264.400	1121.000	7309.800	1122.600	7343.300	1128.100	7392.200	1130.800	7416.600
GR	1130.800	7466.000	1129.400	7486.400	1129.500	7536.400	1129.000	7570.500	1129.000	7622.200
GR	1127.900	7678.400	1125.600	7690.300	1125.600	7703.400	1127.600	7720.400	1128.800	7774.900
GR	1128.300	7801.000	1129.200	7914.600	1128.800	8022.500	1128.100	8102.000	1127.600	8188.300
GR	1127.600	8266.700	1126.700	8354.700	1126.700	8441.600	1126.000	8552.900	1126.400	8638.100
GR	1126.200	8726.700	1126.200	8832.900	1126.200	8860.700	1126.900	8931.700	1126.200	8945.900
GR	1126.500	8978.900	1126.500	8992.500	1127.900	8997.600	1127.800	9005.000	1126.400	9025.400
GR	1126.700	9048.100	1127.100	9065.800	1125.500	9641.000	1130.600	9648.000	1126.200	9664.000
GR	1126.900	9724.000	1127.100	9762.600	1113.100	9806.300	1112.500	9837.500	1112.500	9890.300
GR	1113.100	9940.300	1111.600	9963.600	1112.200	9986.000	1113.100	10000.000	1113.900	10013.600
GR	1114.800	10061.300	1113.800	10136.800	1133.400	10162.900	1146.900	10191.300	1145.700	10211.800
GR	1151.900	10244.100	1153.300	10303.800	1155.400	10357.200	1152.800	10400.900	1154.200	10439.500
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	8030.000	10145.000
X1	16.681	85.000	9741.800	10144.600	530.000	536.670	528.330	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1135.600	5149.200	1135.600	5216.800	1132.400	5245.100	1131.000	5274.600	1131.300	5296.200
GR	1131.800	5332.000	1131.700	5367.700	1135.000	5397.200	1136.500	5414.800	1136.500	5426.100
GR	1135.700	5447.700	1135.000	5455.100	1133.800	5465.300	1130.700	5503.900	1130.800	5559.500
GR	1131.500	6079.800	1131.700	6181.300	1131.700	6289.200	1130.600	6402.100	1130.200	6527.500
GR	1130.100	6692.600	1129.700	6791.900	1129.900	6934.700	1130.100	7034.200	1129.500	7143.100
GR	1129.400	7293.500	1129.400	7385.900	1129.000	7442.100	1129.000	7475.000	1130.400	7484.700
GR	1130.100	7497.700	1129.200	7511.300	1128.700	7603.800	1128.300	7683.300	1128.300	7781.400
GR	1128.100	7922.100	1128.100	8029.900	1127.900	8171.200	1128.100	8255.800	1129.200	8313.600
GR	1129.000	8377.800	1127.800	8433.900	1127.200	8532.700	1126.700	8684.700	1127.100	8792.500
GR	1125.500	8844.700	1126.200	8858.300	1126.500	8881.000	1126.500	8921.300	1126.900	8941.700
GR	1125.500	9479.600	1139.100	9560.800	1130.100	9673.700	1130.400	9741.800	1113.600	9800.200
GR	1113.600	9831.400	1114.800	9862.600	1114.700	9898.400	1114.500	9951.700	1113.800	9996.000
GR	1113.800	9998.800	1113.800	10000.000	1115.500	10027.800	1116.100	10087.900	1120.000	10110.000
GR	1152.400	10144.600	1155.100	10170.200	1143.700	10194.600	1137.200	10223.500	1135.200	10247.900
GR	1148.100	10293.300	1158.600	10337.600	1158.100	10388.100	1155.200	10415.300	1153.800	10429.500
GR	1153.300	10445.900	1158.400	10468.600	1156.500	10498.700	1155.200	10512.900	1151.300	10522.000
GR	1156.800	10539.000	1158.200	10570.800	1158.400	10590.600	1158.400	10658.100	1159.000	10719.400
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	7745.000	10110.000
X1	16.780	87.000	9678.200	10109.500	521.670	525.000	523.330	.000	.000	.000
GR	1136.300	4085.900	1135.700	4116.600	1135.600	4172.800	1136.600	4193.200	1136.800	4226.700
GR	1137.200	4302.100	1133.600	4345.200	1133.100	4389.500	1132.400	4425.800	1132.400	4454.200
GR	1138.400	4479.700	1139.600	4499.000	1138.000	4518.900	1135.000	4559.200	1134.100	4609.700
GR	1134.100	4706.100	1134.100	4798.600	1134.100	4895.100	1133.400	4998.300	1133.400	5146.400
GR	1133.400	5324.600	1133.400	5528.800	1133.100	5704.200	1133.100	5862.500	1132.700	5988.400
GR	1132.700	6209.700	1132.700	6372.000	1132.200	6511.600	1131.700	6677.300	1130.400	6793.000
GR	1130.100	7005.800	1130.100	7108.500	1130.100	7228.800	1129.700	7309.300	1130.400	7329.800
GR	1130.400	7344.500	1129.500	7371.800	1129.200	7481.800	1127.900	7514.200	1128.800	7526.700
GR	1128.800	7691.800	1129.000	7896.600	1129.000	8086.700	1129.000	8229.100	1128.500	8369.800
GR	1128.700	8506.000	1128.300	8641.000	1128.300	8675.600	1127.600	8705.100	1127.200	8732.900

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GR   1127.600   8886.100   1128.100   8984.300   1128.700   9130.700   1128.700   9243.600   1130.100   9360.500
GR   1130.600   9525.600   1130.800   9608.400   1131.000   9667.500   1131.000   9678.200   1127.400   9695.300
GR   1113.100   9745.800   1112.200   9767.900   1111.600   9817.200   1112.700   9876.300   1113.400   9905.200
GR   1113.600   9932.400   1112.500   9963.600   1112.900   9988.000   1112.900  10000.000   1112.000  10030.000
GR   1115.500  10072.000   1138.900  10102.600   1157.700  10109.500   1159.800  10179.200   1160.900  10246.200
GR   1160.700  10342.700   1158.600  10375.000   1159.000  10414.200   1159.800  10472.600   1161.100  10524.800
GR   1160.500  10617.800   1160.400  10649.600       .000       .000       .000       .000       .000       .000
EJ       .000       .000       .000       .000       .000       .000       .000       .000       .000       .000
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


*PROF 1

CCHV=    .100 CEHV=    .300
*SECNO 15.647
3280 CROSS SECTION     15.65 EXTENDED       .39 FEET


3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    14.39  1111.39      .00      .00  1112.31      .92      .00      .00  1132.00
   105600.       0.  103126.    2474.       0.   13350.     413.       0.       0.   1107.00
      .00      .00     7.72     6.00     .050     .050     .050     .000  1097.00  9341.77
   .005995       0.       0.       0.        0        0        0      .00  2258.23 11600.00
0
*SECNO 15.823

3265 DIVIDED FLOW

3280 CROSS SECTION     15.82 EXTENDED      1.69 FEET


3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    23.85  1115.70      .00      .00  1117.01     1.32     4.59      .12  1133.00
   77775.       0.   77775.       0.       0.    8446.       0.     237.      32. 100000.00
      .03      .00     9.21      .00     .050     .050     .050     .000  1091.85  9360.30
   .003883     900.     930.     960.        2        0        0      .00   750.17 10145.57
0
CCHV=    .100 CEHV=    .300
*SECNO 16.013
3280 CROSS SECTION     16.01 EXTENDED      4.22 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    18.22  1118.22      .00       .00  1118.91      .69      1.83      .06100000.00
   77775.       0.   77775.       0.        0.   11702.       0.      468.       51.   1146.00
      .07      .00     6.65      .00      .048     .040     .048     .000  1100.00  9289.17
  .001064    1000.    1000.     980.         3        0        0      .00   901.09 10190.27
0
 *SECNO 16.153
 3280 CROSS SECTION     16.15 EXTENDED       .96 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    16.96  1118.96      .00       .00  1120.48     1.52      1.32      .25100000.00
   77775.       0.   77775.       0.        0.    7870.       0.      635.       66.   1151.00
      .09      .00     9.88      .00      .048     .040     .048     .000  1102.00  9291.69
  .003574     710.     740.     770.         3        0        0      .00   830.82 10122.51
0
 *SECNO 16.191

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    15.38  1118.97      .00       .00  1121.80     2.83       .93       .40  1128.50
   77775.       0.   77775.       0.        0.    5756.       0.      666.       69.   1141.80
      .09      .00    13.51      .00      .048     .040     .048     .000  1103.59  9875.12
  .006259     200.     200.     200.         2        0        0      .00   580.26 10455.38
0
 CCHV=    .300 CEHV=    .500
1
  03-24-87     19:17:11                                                                    PAGE    8


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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 16.291

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9820.0   10586.0  TYPE=     1  TARGET=     766.000
    16.29    13.31  1122.31      .00       .00  1123.89     1.58      1.71       .38  1129.00
   77775.       0.   77775.       0.        0.    7717.       0.      748.       76.   1122.00
      .11      .00    10.08      .55      .035     .035     .035     .000  1109.00  9841.05
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*SECNO 16.344

3301 HV CHANGED MORE THAN HVINS

    16.34    13.96  1123.46      .00      .00  1124.46     1.00      .40      .17  1130.00
   77775.       0.   77775.       0.       0.    9688.       0.     802.      81.   1134.00
      .12      .00     8.03      .00     .035     .035     .035     .000  1109.50  9707.78
  .001163     270.     270.     270.        2        0        0      .00   737.81 10445.59
0
*SECNO 16.345

3265 DIVIDED FLOW

    16.34    13.91  1123.41      .00      .00  1124.53     1.13      .01      .06  1130.00
   77775.       0.   77775.       0.       0.    9124.       0.     803.      81.   1142.20
      .12      .00     8.52      .00     .035     .035     .035     .000  1109.50  9707.94
  .001845       6.       6.       6.        2        0        0      .00   704.35 10454.27
0
*SECNO 16.373

3265 DIVIDED FLOW

    16.37    14.21  1123.71      .00      .00  1124.79     1.08      .24      .02  1130.00
   77775.       0.   77775.       0.       0.    9340.       0.     831.      83.   1142.20
      .12      .00     8.33      .00     .035     .035     .035     .000  1109.50  9707.02
  .001723     134.     134.     134.        2        0        0      .00   706.47 10455.46
0
1
  03-24-87     19:17:11                                                                    PAGE    9


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.374
    16.37    14.95  1123.95      .00      .00  1124.85      .90      .01      .05  1130.00
   77775.       0.   77775.       0.       0.   10231.       0.     833.      83.   1134.00
      .12      .00     7.60      .00     .035     .035     .035     .000  1109.00  9706.29
  .000977       6.       6.       6.        2        0        0      .00   741.56 10447.85
0
*SECNO 16.481

3301 HV CHANGED MORE THAN HVINS

    16.48    13.15  1124.15      .00      .00  1126.56     2.41      .95      .76  1125.50
   77775.       0.   77775.       0.       0.    6239.       0.     945.      91.   1152.00
      .14      .00    12.47      .00     .035     .035     .035     .000  1111.00  9792.79
  .003089     595.     595.     595.        2        0        0      .00   508.91 10301.70
0
*SECNO 16.580

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    17.80  1129.40  1129.40      .00  1132.13     2.72     1.68      .16  1127.10
  108205.   21895.   86310.       0.    4334.    5908.       0.    1044.     106.   1151.90
      .15     5.05    14.61      .00     .035     .035     .035     .000  1111.60  8295.00
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*SECNO 16.681

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    18.93  1132.53      .00       .00  1133.74     1.20      1.15      .46  1130.40
   108205.   43215.   64990.       0.     8315.    6165.       0.     1194.     129.   1152.40
      .17     5.20    10.54      .00      .035     .035     .035      .000  1113.60  8030.00
   .001550     530.     528.     537.         4        0        0       .00  1971.75 10123.38
0
1
 03-24-87     19:17:11                                                                          PAGE   10


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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 16.780

3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    21.82  1133.42      .00       .00  1134.45     1.03       .66       .05  1131.00
   108205.   34822.   73383.       0.     8867.    7699.       0.     1380.     155.   1157.70
      .18     3.93     9.53      .00      .035     .035     .035      .000  1111.60  7745.00
   .001062     522.     523.     525.         2        0        0       .00  2350.44 10095.44
0
1
 03-24-87     19:17:11                                                                          PAGE   11



                                                                                THIS RUN EXECUTED 03-24-87

 ************************************************
   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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
 T2      SUBCRITICAL PROFILE
 T3      AGUAFRIA - MAIN CHANNEL - FUTURE BRIDGE - VARIOUS FLOWS

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        3.        0.        0.   .000000       .00        .0        0.  1111.390      .000

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      2.000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000

 1
  03-24-87     19:17:11                                                                          PAGE   12


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
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 TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
 SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*PROF 2

CCHV=    .100 CEHV=    .300
*SECNO 15.647
3280 CROSS SECTION     15.65 EXTENDED       .39 FEET


3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    14.39  1111.39      .00  1111.39  1112.31      .92      .00      .00  1132.00
   105600.       0.  103126.    2474.       0.   13350.     413.       0.       0.   1107.00
      .00      .00     7.72     6.00     .050     .050     .050     .000  1097.00  9341.77
   .005995       0.       0.       0.        0        0        0      .00  2258.23 11600.00
0
 *SECNO 15.823

3265 DIVIDED FLOW

3280 CROSS SECTION     15.82 EXTENDED      1.78 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    23.94  1115.79      .00  1115.70  1117.25     1.47     4.78      .16  1133.00
   82775.       0.   82775.       0.       0.    8516.       0.     238.      32. 100000.00
      .03      .00     9.72      .00     .050     .050     .050     .000  1091.85  9360.09
   .004290     900.     930.     960.        2        0        0      .00   751.53 10145.77
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      4.54 FEET

1
  03-24-87     19:17:11                                                          PAGE   13


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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



 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    18.54  1118.54      .00  1118.22  1119.28      .74     1.95      .07100000.00
   82775.       0.   82775.       0.       0.   11989.       0.     473.      51.   1146.00
      .07      .00     6.90      .00     .048     .040     .048     .000  1100.00  9288.75
   .001114    1000.    1000.     980.        3        0        0      .00   902.22 10190.98
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*SECNO 16.155
3280 CROSS SECTION     16.15 EXTENDED      1.30 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    17.30  1119.30      .00  1118.96  1120.90     1.60     1.36      .26100000.00
   82775.       0.   82775.       0.       0.    8154.       0.     644.      66.   1151.00
      .09      .00    10.15      .00     .048     .040     .048     .000  1102.00  9291.06
  .003606     710.     740.     770.        3        0        0      .00   832.10 10123.16
0
 *SECNO 16.191

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    15.65  1119.24      .00  1118.97  1122.28     3.04      .95      .43  1128.50
   82775.       0.   82775.       0.       0.    5919.       0.     677.      69.   1141.80
      .09      .00    13.98      .00     .048     .040     .048     .000  1103.59  9874.53
  .006489     200.     200.     200.        2        0        0      .00   582.17 10456.70
0
1
  03-24-87     19:17:11                                                                    PAGE   14


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 CCHV=    .300 CEHV=    .500
 *SECNO 16.291

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9820.0   10586.0  TYPE=     1  TARGET=     766.000
    16.29    13.77  1122.77      .00  1122.31  1124.43     1.66     1.74      .41  1129.00
   82775.       0.   82772.       3.       0.    8004.       3.     761.      76.   1122.00
      .11      .00    10.34     1.01     .035     .035     .035     .000  1109.00  9839.59
  .001986     533.     528.     476.        2        0        0      .00   629.58 10469.17
0
 *SECNO 16.344

 3301 HV CHANGED MORE THAN HVINS

    16.34    14.47  1123.97      .00  1123.46  1125.02     1.05      .40      .18  1130.00
   82775.       0.   82775.       0.       0.   10062.       0.     817.      81.   1134.00
      .11      .00     8.23      .00     .035     .035     .035     .000  1109.50  9706.25
  .001168     270.     270.     270.        2        0        0      .00   741.00 10447.24
0
 *SECNO 16.345

 3265 DIVIDED FLOW
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   82775.      0.   82775.      0.      0.    9475.      0.    848.     83.   1142.20
     .11     .00     8.73     .00    .035     .035    .035    .000  1109.50  9706.42
  .001869      6.       6.      6.       2        0       0     .00   707.84 10456.23
0
 *SECNO 16.373

 3265 DIVIDED FLOW

    16.37   14.72  1124.22     .00  1123.71  1125.35    1.13     .24     .02  1130.00
   82775.      0.   82775.      0.      0.    9700.      0.    848.     83.   1142.20
     .12     .00     8.53     .00    .035     .035    .035    .000  1109.50  9705.48
  .001747    134.     134.    134.       2        0       0     .00   710.00 10457.45
0
1
 03-24-87     19:17:11                                                                PAGE   15


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.374
    16.37   15.47  1124.47     .00  1123.95  1125.42     .94     .01     .06  1130.00
   82775.      0.   82775.      0.      0.   10616.      0.    849.     83.   1134.00
     .12     .00     7.80     .00    .035     .035    .035    .000  1109.00  9704.72
  .000984      6.       6.      6.       2        0       0     .00   744.79 10449.51
0
 *SECNO 16.481

 3301 HV CHANGED MORE THAN HVINS

    16.48   13.64  1124.64     .00  1124.15  1127.16    2.53     .96     .79  1125.50
   82775.      0.   82775.      0.      0.    6490.      0.    966.     92.   1152.00
     .13     .00    12.75     .00    .035     .035    .035    .000  1111.00  9791.78
  .003091    595.     595.    595.       2        0       0     .00   511.48 10303.25
0
 *SECNO 16.580

 3265 DIVIDED FLOW

 3685 20 TRIALS ATTEMPTED WSEL,CWSEL
 3693 PROBABLE MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58   17.72  1129.32  1129.32  1129.40  1132.13    2.81    1.71     .14  1127.10
  108205.   21238.   86967.      0.    4212.    5875.      0.    1066.    106.   1151.90
     .14    5.04    14.80     .00    .035     .035    .035    .000  1111.60  8295.00
  .003407    523.     523.    523.      20       12       0     .00  1856.05 10157.47
0
 *SECNO 16.681

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68   18.99  1132.59     .00  1132.53  1133.77    1.18    1.15     .49  1130.40
  108205.   43540.   64665.      0.    8414.    6189.      0.    1216.    129.   1152.40
     .16    5.17    10.45     .00    .035     .035    .035    .000  1113.60  8030.00
  .001515    530.     528.    537.       4        0       0     .00  1972.96 10123.45
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```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.780

3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
   16.78    21.85  1133.45      .00  1133.42  1134.48     1.02      .65      .05  1131.00
 108205.   35058.   73147.       0.    8940.    7715.       0.    1403.     155.   1157.70
     .18     3.92     9.48      .00     .035     .035     .035     .000  1111.60  7745.00
 .001048     522.     523.     525.        2        0        0      .00  2350.49 10095.49
0
1
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                                                                    THIS RUN EXECUTED 03-24-87

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  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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
T2      SUBCRITICAL PROFILE
T3      AGUAFRIA - MAIN CHANNEL - FUTURE BRIDGE - VARIOUS FLOWS

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       4.       0.       0.   .000000     .00      .0       0.  1111.390    .000

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     3.000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000

1
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


*PROF 3

CCHV=    .100 CEHV=    .300
*SECNO 15.647
3280 CROSS SECTION     15.65 EXTENDED       .39 FEET


3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE.ELEFA=     1132.00 ELREA=     1107.00
```

```
  15.00    14.55   1111.55      .00  1111.55  1112.51      .92      .00      .00  1132.00
 105600.       0.  103126.    2474.       0.   13350.     413.       0.       0.   1107.00
    .00      .00     7.72     6.00     .050     .050     .050     .000  1097.00  9341.77
 .005995       0.       0.       0.       0        0        0      .00  2258.23 11600.00
0
 *SECNO 15.823

 3265 DIVIDED FLOW

 3280 CROSS SECTION     15.82 EXTENDED      1.87 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    24.03  1115.88      .00  1115.70  1117.50     1.62     4.98      .21  1133.00
   87775.       0.   87775.       0.       0.    8584.       0.     239.      32. 100000.00
      .03      .00    10.23      .00     .050     .050     .050     .000  1091.85  9359.89
 .004709     900.     930.     960.        2        0        0      .00   752.86 10145.97
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      4.86 FEET

1
  03-24-87     19:17:11                                                                    PAGE   19


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    18.86  1118.86      .00  1118.22  1119.65      .79     2.07      .08100000.00
   87775.       0.   87775.       0.       0.   12277.       0.     478.      51.   1146.00
      .06      .00     7.15      .00     .048     .040     .048     .000  1100.00  9288.33
 .001159    1000.    1000.     980.        3        0        0      .00   903.36 10191.69
0
 *SECNO 16.153
 3280 CROSS SECTION     16.15 EXTENDED      1.64 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    17.64  1119.64      .00  1118.96  1121.32     1.68     1.40      .27100000.00
   87775.       0.   87775.       0.       0.    8436.       0.     654.      66.   1151.00
      .08      .00    10.41      .00     .048     .040     .048     .000  1102.00  9290.43
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*SECNO 16.191

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    15.92  1119.51      .00  1118.97  1122.76     3.25      .97      .47  1128.50
   87775.       0.   87775.       0.       0.    6069.       0.     687.      69.   1141.80
      .09      .00    14.46      .00     .048     .040     .048     .000  1103.59  9873.99
  .006742     200.     200.     200.        3        0        0      .00   583.91 10457.90
0
1
 03-24-87     19:17:11                                                                    PAGE   20


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


CCHV=    .300 CEHV=    .500
*SECNO 16.291

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9820.0   10586.0  TYPE=     1  TARGET=     766.000
    16.29    14.24  1123.24      .00  1122.31  1124.97     1.74     1.76      .45  1129.00
   87775.       0.   87765.      10.       0.    8295.       7.     774.      77.   1122.00
      .10      .00    10.58     1.38     .035     .035     .035     .000  1109.00  9838.13
  .001989     533.     528.     476.        2        0        0      .00   635.33 10473.46
0
*SECNO 16.344

3301 HV CHANGED MORE THAN HVINS

    16.34    14.97  1124.47      .00  1123.46  1125.57     1.10      .40      .19  1130.00
   87775.       0.   87775.       0.       0.   10437.       0.     833.      81.   1134.00
      .11      .00     8.41      .00     .035     .035     .035     .000  1109.50  9704.72
  .001169     270.     270.     270.        2        0        0      .00   744.17 10448.89
0
*SECNO 16.345

3265 DIVIDED FLOW

    16.34    14.91  1124.41      .00  1123.41  1125.65     1.24      .01      .07  1130.00
   87775.       0.   87775.       0.       0.    9836.       0.     834.      81.   1142.20
      .11      .00     8.92      .00     .035     .035     .035     .000  1109.50  9704.90
  .001887       6.       6.       6.        2        0        0      .00   711.33 10458.19
0
*SECNO 16.373

3265 DIVIDED FLOW

    16.37    15.23  1124.73      .00  1123.71  1125.91     1.18      .24      .02  1130.00
   87775.       0.   87775.       0.       0.   10061.       0.     865.      83.   1142.20
      .11      .00     8.72      .00     .035     .035     .035     .000  1109.50  9703.94
  .001767     134.     134.     134.        2        0        0      .00   713.52 10459.43
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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 16.374
    16.37     15.99  1124.99       .00  1123.95  1125.98       .99       .01       .06  1130.00
   87775.        0.   87775.        0.       0.    11001.       0.      866.       83.   1134.00
      .12       .00     7.98       .00      .035      .035     .035      .000  1109.00   9703.16
  .000988        6.       6.        6.        2         0        0       .00   748.00  10451.16
0
 *SECNO 16.481

 3301 HV CHANGED MORE THAN HVINS

    16.48     14.12  1125.12       .00  1124.15  1127.76      2.63       .96       .82  1125.50
   87775.        0.   87775.        0.       0.     6739.       0.      987.       92.   1152.00
      .13       .00    13.02       .00      .035      .035     .035      .000  1111.00   9790.77
  .003086      595.     595.      595.        2         0        0       .00   514.03  10304.80
0
 *SECNO 16.580

 3265 DIVIDED FLOW

 3685 20 TRIALS ATTEMPTED WSEL,CWSEL
 3693 PROBABLE MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58     17.68  1129.28  1129.28  1129.40  1132.14      2.86      1.72       .11  1127.10
  108205.    20916.   87289.        0.    4152.     5859.       0.     1088.      106.   1151.90
      .14      5.04    14.90       .00      .035      .035     .035      .000  1111.60   8295.00
  .003462      523.     523.      523.       20        12        0       .00  1855.79  10157.41
0
 *SECNO 16.681

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68     19.03  1132.63       .00  1132.53  1133.79      1.17      1.15       .51  1130.40
  108205.    43705.   64500.        0.    8464.     6201.       0.     1238.      129.   1152.40
      .16      5.16    10.40       .00      .035      .035     .035      .000  1113.60   8030.00
  .001498      530.     528.      537.        4         0        0       .00  1973.59  10123.48
0
1
  03-24-87     19:17:11                                                                    PAGE   22


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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 16.780

 3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78     21.87  1133.47       .00  1133.42  1134.49      1.01       .65       .05  1131.00
```

```
     .18      3.52      5.43      .00      .033      .033      .033      .000  1111.60  7743.00
  .001041     522.      523.      525.        2         0         0       .00  2350.52 10095.52
0
1
 03-24-87     19:17:11                                                                          PAGE   23


                                                                                THIS RUN EXECUTED 03-24-87
*************************************************
  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      AGUAFRIA RIVER - MAIN CHANNEL HYDRSULIC STUDY
T2      SUBCRITICAL PROFILE
T3      AGUAFRIA - MAIN CHANNEL - FUTURE BRIDGE - VARIOUS FLOWS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        5.        0.        0.   .000000       .00        .0        0.  1111.390      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     4.000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000

1
 03-24-87     19:17:11                                                                          PAGE   24


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


*PROF 4

CCHV=    .100 CEHV=    .300
*SECNO 15.647
3280 CROSS SECTION     15.65 EXTENDED       .39 FEET


3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    14.39  1111.39      .00  1111.39  1112.31      .92      .00      .00  1132.00
   105600.       0.  103126.    2474.       0.   13350.     413.       0.       0.   1107.00
      .00      .00     7.72     6.00     .050     .050     .050     .000  1097.00  9341.77
   .005995       0.       0.       0.        0        0        0      .00  2258.23 11600.00
0
*SECNO 15.823

3265 DIVIDED FLOW

3280 CROSS SECTION     15.82 EXTENDED      1.96 FEET


3301 HV CHANGED MORE THAN HVINS
```

3470 ENCROACHMENT STATIONS= 9322.0 10204.0 TYPE= 1 TARGET= 882.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1133.00 ELREA= 100000.00

```
    15.82    24.11  1115.96      .00  1115.70  1117.75     1.79     5.18      .26  1133.00
   92775.       0.   92775.       0.       0.    8651.       0.     239.      32. 100000.00
      .02      .00    10.72      .00     .050     .050     .050     .000  1091.85  9359.70
  .005138     900.     930.     960.        2        0        0      .00   754.17 10146.17
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      5.18 FEET

1
 03-24-87     19:17:11                                                                    PAGE   25

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    19.18  1119.18      .00  1118.22  1120.03      .85     2.18      .09100000.00
   92775.       0.   92775.       0.       0.   12566.       0.     483.      51.   1146.00
      .06      .00     7.38      .00     .048     .040     .048     .000  1100.00  9287.91
  .001201    1000.    1000.     980.        3        0        0      .00   904.60 10192.51
0
 *SECNO 16.153
 3280 CROSS SECTION     16.15 EXTENDED      1.98 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    17.98  1119.98      .00  1118.96  1121.74     1.76     1.43      .27100000.00
   92775.       0.   92775.       0.       0.    8716.       0.     664.      66.   1151.00
      .08      .00    10.64      .00     .048     .040     .048     .000  1102.00  9289.81
  .003644     710.     740.     770.        3        0        0      .00   834.64 10124.46
0
 *SECNO 16.191

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    16.18  1119.77      .00  1118.97  1123.22     3.45      .98      .51  1128.50
   92775.       0.   92775.       0.       0.    6223.       0.     698.      69.   1141.80
      .08      .00    14.91      .00     .048     .040     .048     .000  1103.59  9873.43
  .006958     200.     200.     200.        3        0        0      .00   585.70 10459.13
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


CCHV=    .300 CEHV=    .500
*SECNO 16.291

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9820.0   10586.0  TYPE=     1  TARGET=     766.000
    16.29    14.68  1123.68      .00  1122.31  1125.50     1.82     1.79      .49  1129.00
   92775.       0.   92753.      22.       0.    8569.      13.     788.      77.   1122.00
      .10      .00    10.82     1.69     .035     .035     .035     .000  1109.00  9836.74
  .001999     533.     528.     476.        3        0        0      .00   640.75 10477.50
0
*SECNO 16.344

3301 HV CHANGED MORE THAN HVINS

    16.34    15.47  1124.97      .00  1123.46  1126.11     1.14      .41      .20  1130.00
   92775.       0.   92775.       0.       0.   10806.       0.     848.      81.   1134.00
      .11      .00     8.59      .00     .035     .035     .035     .000  1109.50  9703.22
  .001171     270.     270.     270.        2        0        0      .00   747.28 10450.50
0
*SECNO 16.345

3265 DIVIDED FLOW

    16.34    15.40  1124.90      .00  1123.41  1126.19     1.29      .01      .07  1130.00
   92775.       0.   92775.       0.       0.   10187.       0.     849.      81.   1142.20
      .11      .00     9.11      .00     .035     .035     .035     .000  1109.50  9703.41
  .001904       6.       6.       6.        2        0        0      .00   714.74 10460.11
0
*SECNO 16.373

3265 DIVIDED FLOW

    16.37    15.72  1125.22      .00  1123.71  1126.46     1.23      .25      .02  1130.00
   92775.       0.   92775.       0.       0.   10416.       0.     881.      83.   1142.20
      .11      .00     8.91      .00     .035     .035     .035     .000  1109.50  9702.44
  .001785     134.     134.     134.        2        0        0      .00   716.96 10461.36
0
1
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.374
    16.37    16.49  1125.49      .00  1123.95  1126.52     1.03      .01      .06  1130.00
   92775.       0.   92775.       0.       0.   11380.       0.     882.      83.   1134.00
      .11      .00     8.15      .00     .035     .035     .035     .000  1109.00  9701.63
  .000992       6.       6.       6.        2        0        0      .00   751.14 10452.78
0
```

```
3301 HV CHANGED MORE THAN HVINS

    16.48    14.60  1125.60      .00  1124.15  1128.34     2.74      .96      .85  1125.50
   92775.       2.   92773.       0.       4.    6984.       0.    1008.      92.   1152.00
      .12      .52    13.28      .00     .035     .035     .035     .000  1111.00  9755.00
  .003080     595.     595.     595.        2        0        0      .00   551.30 10306.30
0
 *SECNO 16.580

 3265 DIVIDED FLOW

 7185 MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    18.16  1129.76  1129.76  1129.40  1132.14     2.38     1.55      .11  1127.10
  108205.   24656.   83549.       0.    4862.    6050.       0.    1115.     107.   1151.90
      .14     5.07    13.81      .00     .035     .035     .035     .000  1111.60  8295.00
  .002857     523.     523.     523.        4       13        0      .00  1858.87 10158.06
0
 *SECNO 16.681

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    18.71  1132.31      .00  1132.53  1133.60     1.29     1.14      .33  1130.40
  108205.   42040.   66165.       0.    7969.    6082.       0.    1267.     130.   1152.40
      .15     5.28    10.88      .00     .035     .035     .035     .000  1113.60  8030.00
  .001679     530.     528.     537.        4        0        0      .00  1967.48 10123.15
0
1
  03-24-87     19:17:11                                                                    PAGE   28


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.780

 3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    21.70  1133.30      .00  1133.42  1134.37     1.08      .71      .06  1131.00
  108205.   34039.   74166.       0.    8625.    7647.       0.    1449.     156.   1157.70
      .17     3.95     9.70      .00     .035     .035     .035     .000  1111.60  7745.00
  .001109     522.     523.     525.        2        0        0      .00  2350.28 10095.28
0
1
  03-24-87     19:17:11                                                                    PAGE   29


                                                                          THIS RUN EXECUTED 03-24-87

 ***************************************************
   HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
   ERROR CORR -  01.02.03.04.05.06
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BT      .000  11292.000   1124.600   1122.000  11390.000   1124.500      .000      .000      .000      .000
GR   1129.300  10185.000   1126.400  10600.000   1124.200  11164.000   1115.900  11165.000   1114.300  11198.000
GR   1114.800  11291.000   1124.200  11292.000   1124.800  11390.000   1124.000  12050.000      .000      .000

ET      .000      9.100      9.100      9.100      9.100      9.100      9.100      9.100  10600.000  11900.000
X1    16.366      5.000  11190.000  11330.000     50.000     50.000     50.000      .000      .000      .000
GR   1118.400  10600.000   1119.000  11190.000   1116.700  11240.000   1117.600  11330.000   1121.000  11900.000

ET      .000      9.100      9.100      9.100      9.100      9.100      9.100      9.100  10600.000  11900.000
X1    16.376      9.000  11180.000  11380.000     50.000     50.000     50.000      .000      .000      .000
X3    10.000      .000      .000      .000      .000      .000      .000   1128.000   1128.000      .000
GR   1132.400  10500.000   1129.700  11120.000   1128.000  11180.000   1115.300  11230.000   1119.000  11350.000
GR   1128.000  11380.000   1129.600  11400.000   1129.200  11750.000   1129.900  12250.000      .000      .000

ET      .000      9.100      9.100      9.100      9.100      9.100      9.100      9.100  10600.000  11900.000
SB     1.050      1.560      3.000      .000    201.000     20.000   1600.000      5.000   1116.700   1116.700
X1    16.379      8.000  11190.000  11391.000     14.000     14.000     14.000      .000      .000      .000
X2      .000      .000      1.000   1126.200   1129.700      .000      .000      .000      .000      .000
X3    10.000      .000      .000      .000      .000      .000      .000      .000      .000      .000
BT    -6.000  10120.000   1135.100      .000  10510.000   1132.400      .000  11190.000   1129.600   1126.200
BT      .000  11391.000   1129.600   1126.200  11750.000   1129.200      .000  12250.000   1129.900      .000
GR   1135.100  10120.000   1132.400  10510.000   1129.600  11190.000   1115.300  11190.000   1119.000  11350.000
GR   1129.600  11391.000   1129.200  11750.000   1129.900  12250.000      .000      .000      .000      .000

NC      .050      .050      .050      .100      .300      .000      .000      .000      .000      .000
ET      .000      9.100      9.100      9.100      9.100      9.100      9.100      9.100  10770.000  12210.000
X1    16.431     15.000  11050.000  11500.000     50.000    150.000    100.000      .000      .000      .000
X3      .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
GR   1127.000  10770.000   1121.000  10800.000   1120.000  10980.000   1120.000  11050.000   1118.000  11100.000
GR   1121.000  11200.000   1117.000  11250.000   1120.500  11310.000   1119.500  11370.000   1120.000  11430.000
GR   1118.000  11500.000   1118.000  11660.000   1120.000  11870.000   1128.000  12130.000   1129.900  12210.000
1
 03-30-87     11:08:10                                                                                    PAGE    4


ET      .000      9.100      9.100      9.100      9.100      9.100      9.100      9.100  10860.000  12820.000
X1    16.481     21.000  10930.000  12580.000    260.000    260.000    260.000      .000      .000      .000
X3      .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
GR   1123.800  10860.000   1123.200  10930.000   1121.700  11100.000   1121.800  11240.000   1122.200  11440.000
GR   1122.000  11540.000   1122.400  11630.000   1122.000  11680.000   1116.000  11720.000   1104.000  11810.000
GR   1112.000  11820.000   1111.300  11840.000   1112.000  11870.000   1112.800  11920.000   1114.000  12070.000
GR   1104.000  12220.000   1104.000  12310.000   1112.000  12540.000   1124.000  12580.000   1128.000  12760.000
GR   1130.600  12820.000      .000      .000      .000      .000      .000      .000      .000      .000
EJ      .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
1
 03-30-87     11:08:10                                                                                    PAGE    5


   SECND    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


*PROF 1

CCHV=    .100 DEHV=    .300
*SECND 15.823

3265 DIVIDED FLOW


TWO ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000
```

```
    15.82   105.05  1113.35      .00      .00  1113.78      .43      .00      .00  1133.00
   107775.      0.   98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
  .001857       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.81  1115.81      .00      .00  1116.03      .22     2.22      .02  1114.00
   30000.    6779.    3695.   19526.    1753.    1162.    5151.     417.      60.   1114.00
      .09     3.87     3.18     3.79     .050     .050     .050     .000  1108.00 10475.10
  .001911    1000.    1400.     950.        2        0        0      .00  1774.90 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     9.57  1117.57      .00      .00  1117.95      .38     1.87      .05  1113.00
   30000.   21778.     741.    7482.    3885.     140.    3486.     557.      90.   1114.00
      .13     5.61     5.29     2.15     .050     .050     .100     .000  1108.00 10507.80
  .003185     750.     750.     800.        2        0        0      .00  1532.20 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      6.78 FEET

1
  03-30-87     11:08:10                                                                    PAGE     6

    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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

 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19    11.78  1119.78      .00      .00  1120.22      .44     2.25      .02  1116.00
   30000.     148.   21372.    8480.      49.    3547.    2984.     654.     110.   1116.00
      .17     3.01     6.03     2.84     .050     .050     .100     .000  1108.00 10554.02
  .004440     610.     600.     600.        2        0        0      .00  1369.83 11950.00
0
 *SECNO 16.291
 3280 CROSS SECTION     16.29 EXTENDED      4.94 FEET

 3470 ENCROACHMENT STATIONS=   10550.0   11750.0  TYPE=     1  TARGET=    1200.000
    16.29     6.94  1122.94      .00      .00  1123.52      .58     3.25      .04  1119.20
   30000.    2197.   22125.    5678.     401.    3298.    1792.     740.     128.   1118.00
      .20     5.48     6.71     3.17     .050     .050     .100     .000  1116.00 10550.00
  .006303     620.     620.     620.        2        0        0      .00  1200.00 11750.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
 3280 CROSS SECTION     16.34 EXTENDED      1.00 FEET

 3470 ENCROACHMENT STATIONS=   10800.0   11900.0  TYPE=     1  TARGET=    1100.000
    16.34    14.60  1125.00      .00      .00  1125.67      .68     2.11      .05  1110.40
   30000.   17150.    8710.    4140.    2401.    1256.    2367.     795.     139.   1120.00
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T1      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
T2      SUBCRITICAL PROFILE
T3      AGUAFRIA - MAIN CHANNEL - FUTURE BRIDGE - VARIOUS FLOWS

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       6.       0.       0.   .005000     .00      .0       0.  1110.000    .000

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     5.000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000

1
 03-24-87     19:17:11                                                                          PAGE   30

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 *PROF 5

 CCHV=    .100 CEHV=    .300
 *SECNO 15.647

 3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1132.00 ELREA=     1107.00

    15.65    13.40  1110.40      .00  1111.39  1111.01      .61      .00      .00  1132.00
   72000.       0.   70513.    1487.       0.   11211.     320.       0.       0.   1107.00
      .00      .00     6.29     4.65     .050     .050     .050     .000  1097.00  9343.20
  .005011       0.       0.       0.        0        0        4      .00  2256.80 11600.00
0
 *SECNO 15.823

 3265 DIVIDED FLOW

 3280 CROSS SECTION     15.82 EXTENDED       .14 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    22.30  1114.15      .00  1115.70  1115.27     1.12     4.10      .15  1133.00
   62000.       0.   62000.       0.       0.    7304.       0.     201.      32. 100000.00
      .03      .00     8.49      .00     .050     .050     .050     .000  1091.85  9363.72
  .003839     900.     930.     960.        2        0        0      .00   727.44 10142.16
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      2.56 FEET


 3301 HV CHANGED MORE THAN HVINS
```

```
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=  100000.00 ELREA=     1146.00

    16.01    16.56  1116.56      .00  1118.22  1117.14      .57     1.82      .05100000.00
   62000.       0.   62000.       0.       0.   10211.       0.     402.      51.   1146.00
      .08      .00     6.07      .00     .048     .040     .048     .000  1100.00  9291.37
  .001054    1000.    1000.     980.        3        0        0      .00   895.18 10186.56
0
 *SECNO 16.153

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    15.37  1117.37      .00  1118.96  1118.76     1.39     1.38      .25100000.00
   62000.       0.   62000.       0.       0.    6553.       0.     545.      65.   1151.00
      .10      .00     9.46      .00     .048     .040     .048     .000  1102.00  9294.63
  .004137     710.     740.     770.        3        0        0      .00   824.83 10119.46
0
 *SECNO 16.191

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    14.09  1117.68      .00  1118.97  1120.06     2.37     1.00      .30  1128.50
   62000.       0.   62000.       0.       0.    5014.       0.     571.      68.   1141.80
      .10      .00    12.36      .00     .048     .040     .048     .000  1103.59  9877.84
  .006169     200.     200.     200.        2        0        0      .00   571.50 10449.34
0
 CCHV=    .300 CEHV=    .500
1
```



```
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.291

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9820.0   10586.0  TYPE=     1  TARGET=     766.000
```

```
   62000.      0.   62000.      0.      0.   874L.      0.    84L.     7b.   1122.00
     .12     .00     9.20     .00    .035    .035    .035    .000  1109.00  9846.03
  .001928    533.    528.    476.       2       0       0     .00   611.89 10457.92
0
 *SECNO 16.344
    16.34   12.25  1121.75     .00  1123.46  1122.59     .84     .40     .14  1130.00
   62000.      0.   62000.      0.      0.    8432.      0.    689.     80.   1134.00
     .13     .00     7.35     .00    .035    .035    .035    .000  1109.50  9712.96
  .001150    270.    270.    270.       2       0       0     .00   727.03 10439.99
0
 *SECNO 16.345

 3265 DIVIDED FLOW

    16.34   12.20  1121.70     .00  1123.41  1122.65     .95     .01     .05  1130.00
   62000.      0.   62000.      0.      0.    7933.      0.    691.     80.   1142.20
     .13     .00     7.82     .00    .035    .035    .035    .000  1109.50  9713.10
  .001770      6.      6.      6.       2       0       0     .00   692.51 10447.61
0
 *SECNO 16.373

 3265 DIVIDED FLOW

    16.37   12.49  1121.99     .00  1123.71  1122.89     .90     .23     .01  1130.00
   62000.      0.   62000.      0.      0.    8133.      0.    715.     82.   1142.20
     .13     .00     7.62     .00    .035    .035    .035    .000  1109.50  9712.23
  .001644    134.    134.    134.       2       0       0     .00   694.51 10448.74
0
 *SECNO 16.374
    16.37   13.20  1122.20     .00  1123.95  1122.95     .75     .01     .05  1130.00
   62000.      0.   62000.      0.      0.    8940.      0.    716.     82.   1134.00
     .13     .00     6.94     .00    .035    .035    .035    .000  1109.00  9711.59
  .000953      6.      6.      6.       2       0       0     .00   730.65 10442.24
0
1
  03-24-87     19:17:11                                                          PAGE   33


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.481

 3301 HV CHANGED MORE THAN HVINS

    16.48   11.49  1122.49     .00  1124.15  1124.53    2.05     .94     .65  1125.50
   62000.      0.   62000.      0.      0.    5402.      0.    814.     90.   1152.00
     .15     .00    11.48     .00    .035    .035    .035    .000  1111.00  9796.23
  .003097    595.    595.    595.       2       0       0     .00   500.21 10296.43
0
 *SECNO 16.580

 3301 HV CHANGED MORE THAN HVINS

 7185 MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58   12.71  1124.31  1124.31  1129.40  1129.53    5.22    2.61    1.59  1127.10
   72000.      0.   72000.      0.      0.    3926.      0.    870.     96.   1151.90
     .16     .00    18.34     .00    .035    .035    .035    .000  1111.60  9771.31
  .008433    523.    523.    523.       2       8       0     .00   379.49 10150.80
```

```
*SECNO 16.001

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    17.70  1131.30      .00  1132.53  1132.11      .81     1.25     1.32  1130.40
   72000.   23890.   48110.       0.    6368.    5696.       0.     968.     110.   1152.40
      .18     3.75     8.45      .00     .035     .035     .035     .000  1113.60  8030.00
  .001099     530.     528.     537.        4        0        0      .00  1947.60 10122.06
0
 *SECNO 16.780

3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    20.21  1131.81      .00  1133.42  1132.61      .80      .50      .00  1131.00
   72000.   15715.   56285.       0.    5763.    7031.       0.    1117.     136.   1157.70
      .20     2.73     8.01      .00     .035     .035     .035     .000  1111.60  7745.00
  .000839     522.     523.     525.        3        0        0      .00  2348.34 10093.34
0
1
 03-24-87     19:17:11                                                                    PAGE   34


                                                                        THIS RUN EXECUTED 03-24-87
 ************************************************
   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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
 T2      SUBCRITICAL PROFILE
 T3      AGUAFRIA - MAIN CHANNEL - FUTURE BRIDGE - VARIOUS FLOWS

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        7.        0.        0.   .005000       .00        .0        0.  1110.000      .000

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      6.000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000

1
 03-24-87     19:17:11                                                                    PAGE   35


    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


 *PROF 6

 CCHV=    .100 CEHV=    .300
 *SECNO 15.647

 3470 ENCROACHMENT STATIONS=    9311.0   11600.0  TYPE=     1  TARGET=    2289.000
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1102.00 ELREA= 1107.00

```
    15.65    13.40  1110.40      .00  1111.39  1111.01      .61      .00      .00  1132.00
   72000.       0.   70513.    1487.       0.   11211.     320.       0.       0.   1107.00
      .00      .00     6.29     4.65     .050     .050     .050     .000  1097.00  9343.20
  .005011       0.       0.       0.        0        0        4      .00  2256.80 11600.00
0
 *SECNO 15.823

 3265 DIVIDED FLOW

 3280 CROSS SECTION     15.82 EXTENDED       .26 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9322.0   10204.0  TYPE=     1  TARGET=     882.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=   100000.00

    15.82    22.42  1114.27      .00  1115.70  1115.54     1.28     4.33      .20  1133.00
   67000.       0.   67000.       0.       0.    7394.       0.     202.      32. 100000.00
      .03      .00     9.06      .00     .050     .050     .050     .000  1091.85  9363.45
  .004319     900.     930.     960.        2        0        0      .00   729.25 10142.43
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      2.94 FEET


 3301 HV CHANGED MORE THAN HVINS

1
  03-24-87     19:17:11                                                                    PAGE   36


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    16.94  1116.94      .00  1118.22  1117.56      .63     1.95      .06100000.00
   67000.       0.   67000.       0.       0.   10544.       0.     408.      51.   1146.00
      .07      .00     6.35      .00     .048     .040     .048     .000  1100.00  9290.88
  .001109    1000.    1000.     980.        3        0        0      .00   896.51 10187.39
0
 *SECNO 16.153

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    15.77  1117.77      .00  1118.96  1119.24     1.47     1.42      .25100000.00
   67000.       0.   67000.       0.       0.    6880.       0.     556.      65.   1151.00
      .09      .00     9.74      .00     .048     .040     .048     .000  1102.00  9293.89
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*SECNO 16.191

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    14.42  1118.01      .00  1118.97  1120.58     2.58     1.01      .33  1128.50
   67000.       0.   67000.       0.       0.    5202.       0.     584.      68.   1141.80
      .10      .00    12.88      .00     .048     .040     .048     .000  1103.59  9877.15
  .006406     200.     200.     200.        2        0        0      .00   573.73 10450.88
0
 CCHV=    .300 CEHV=    .500
1
  03-24-87     19:17:11                                                                    PAGE   37


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       QLOSS   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 16.291

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9820.0   10586.0  TYPE=     1  TARGET=     766.000
    16.29    12.25  1121.25      .00  1122.31  1122.65     1.40     1.71      .35  1129.00
   67000.       0.   67000.       0.       0.    7056.       0.     658.      76.   1122.00
      .11      .00     9.50      .00     .035     .035     .035     .000  1109.00  9844.42
  .001949     533.     528.     476.        2        0        0      .00   615.15 10459.57
0
 *SECNO 16.344

 3301 HV CHANGED MORE THAN HVINS

    16.34    12.81  1122.31      .00  1123.46  1123.20      .89      .40      .15  1130.00
   67000.       0.   67000.       0.       0.    8839.       0.     707.      80.   1134.00
      .12      .00     7.58      .00     .035     .035     .035     .000  1109.50  9711.27
  .001156     270.     270.     270.        2        0        0      .00   730.54 10441.81
0
 *SECNO 16.345

 3265 DIVIDED FLOW

    16.34    12.76  1122.26      .00  1123.41  1123.26     1.01      .01      .06  1130.00
   67000.       0.   67000.       0.       0.    8318.       0.     709.      80.   1142.20
      .12      .00     8.05      .00     .035     .035     .035     .000  1109.50  9711.42
  .001796       6.       6.       6.        2        0        0      .00   696.36 10449.78
0
 *SECNO 16.373

 3265 DIVIDED FLOW

    16.37    13.05  1122.55      .00  1123.71  1123.51      .96      .23      .01  1130.00
   67000.       0.   67000.       0.       0.    8524.       0.     734.      82.   1142.20
      .13      .00     7.86      .00     .035     .035     .035     .000  1109.50  9710.53
  .001672     134.     134.     134.        2        0        0      .00   698.41 10450.93
0
1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.374
    16.37    13.77  1122.77      .00  1123.95  1123.57      .80      .01      .05  1130.00
   67000.       0.   67000.       0.       0.    9359.       0.     736.      82.   1134.00
      .13      .00     7.16      .00     .035     .035     .035     .000  1109.00  9709.86
  .000962       6.       6.       6.        2        0        0      .00   734.21 10444.07
0
 *SECNO 16.481

 3301 HV CHANGED MORE THAN HVINS

    16.48    12.03  1123.03      .00  1124.15  1125.20     2.17      .94      .68  1125.50
   67000.       0.   67000.       0.       0.    5674.       0.     838.      91.   1152.00
      .14      .00    11.81      .00     .035     .035     .035     .000  1111.00  9795.11
  .003096     595.     595.     595.        2        0        0      .00   503.05 10298.15
0
 *SECNO 16.580

 3301 HV CHANGED MORE THAN HVINS

 7185 MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58    12.69  1124.29  1124.29  1129.40  1129.53     5.24     2.56     1.54  1127.10
   72000.       0.   72000.       0.       0.    3918.       0.     896.      96.   1151.90
      .15      .00    18.38      .00     .035     .035     .035     .000  1111.60  9771.37
  .008490     523.     523.     523.        2        8        0      .00   379.39 10150.77
0
 *SECNO 16.681

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68    17.71  1131.31      .00  1132.53  1132.12      .81     1.25     1.33  1130.40
   72000.   23931.   48069.       0.    6383.    5699.       0.     993.     110.   1152.40
      .17     3.75     8.43      .00     .035     .035     .035     .000  1113.60  8030.00
  .001095     530.     528.     537.        4        0        0      .00  1947.78 10122.07
0
1
  03-24-87     19:17:11                                                                PAGE   39


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.780

 3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78    20.22  1131.82      .00  1133.42  1132.62      .80      .50      .00  1131.00
   72000.   15749.   56251.       0.    5776.    7034.       0.    1142.     136.   1157.70
```

0
1

THIS RUN EXECUTED 03-24-87

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**************************************************
  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
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T1 AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
T2 SUBCRITICAL PROFILE
T3 AGUAFRIA - MAIN CHANNEL - FUTURE BRIDGE - VARIOUS FLOWS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	8.	0.	0.	.005000	.00	.0	0.	1110.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

*PROF 7

CCHV= .100 CEHV= .300
*SECNO 15.647

3470 ENCROACHMENT STATIONS= 9311.0 11600.0 TYPE= 1 TARGET= 2289.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1132.00 ELREA= 1107.00

15.65	13.40	1110.40	.00	1111.39	1111.01	.61	.00	.00	1132.00
72000.	0.	70513.	1487.	0.	11211.	320.	0.	0.	1107.00
.00	.00	6.29	4.65	.050	.050	.050	.000	1097.00	9343.20
.005011	0.	0.	0.	0	0	4	.00	2256.80	11600.00

0
*SECNO 15.823

3265 DIVIDED FLOW

3280 CROSS SECTION 15.82 EXTENDED .38 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9322.0 10204.0 TYPE= 1 TARGET= 882.000

```
    15.82    22.54  1114.39      .00  1115.70  1115.83     1.44     4.57      .25  1133.00
   72000.       0.   72000.       0.       0.    7482.       0.     203.      32. 100000.00
      .03      .00     9.62      .00     .050     .050     .050     .000  1091.85  9363.18
  .004811     900.     930.     960.        2        0        0      .00   731.03 10142.70
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.013
 3280 CROSS SECTION     16.01 EXTENDED      3.31 FEET


 3301 HV CHANGED MORE THAN HVINS

1
 03-24-87     19:17:11                                                                    PAGE   42


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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



 3470 ENCROACHMENT STATIONS=    9264.0   12250.0  TYPE=     1  TARGET=    2986.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1146.00

    16.01    17.30  1117.30      .00  1118.22  1117.99      .68     2.08      .08100000.00
   72000.       0.   72000.       0.       0.   10876.       0.     414.      51.   1146.00
      .07      .00     6.62      .00     .048     .040     .048     .000  1100.00  9290.39
  .001157    1000.    1000.     980.        3        0        0      .00   897.82 10188.21
0
 *SECNO 16.153
 3280 CROSS SECTION     16.15 EXTENDED       .16 FEET


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9252.0   12040.0  TYPE=     1  TARGET=    2788.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1151.00

    16.15    16.16  1118.16      .00  1118.96  1119.71     1.55     1.46      .26100000.00
   72000.       0.   72000.       0.       0.    7202.       0.     567.      65.   1151.00
      .09      .00    10.00      .00     .048     .040     .048     .000  1102.00  9293.17
  .004094     710.     740.     770.        3        0        0      .00   827.79 10120.96
0
 *SECNO 16.191

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8638.0   10823.0  TYPE=     1  TARGET=    2185.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.50 ELREA=     1141.80

    16.19    14.74  1118.33      .00  1118.97  1121.10     2.78     1.03      .37  1128.50
   72000.       0.   72000.       0.       0.    5385.       0.     596.      69.   1141.80
      .09      .00    13.37      .00     .048     .040     .048     .000  1103.59  9876.48
  .006628     200.     200.     200.        2        0        0      .00   575.89 10452.37
0
1
 03-24-87     19:17:11                                                                    PAGE   43
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


CCHV=    .300 CEHV=    .500
*SECNO 16.291

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9820.0   10586.0  TYPE=     1  TARGET=     766.000
    16.29    12.74  1121.74      .00  1122.31  1123.23     1.48     1.74      .39  1129.00
   72000.       0.   72000.       0.       0.    7364.       0.     674.      76.   1122.00
      .11      .00     9.78      .00     .035     .035     .035     .000  1109.00  9842.85
  .001966     533.     528.     476.        2        0        0      .00   618.34 10461.18
0
*SECNO 16.344

3301 HV CHANGED MORE THAN HVINS

    16.34    13.35  1122.85      .00  1123.46  1123.79      .94      .40      .16  1130.00
   72000.       0.   72000.       0.       0.    9237.       0.     725.      80.   1134.00
      .12      .00     7.79      .00     .035     .035     .035     .000  1109.50  9709.63
  .001160     270.     270.     270.        2        0        0      .00   733.96 10443.59
0
*SECNO 16.345

3265 DIVIDED FLOW

    16.34    13.30  1122.80      .00  1123.41  1123.86     1.06      .01      .06  1130.00
   72000.       0.   72000.       0.       0.    8696.       0.     726.      80.   1142.20
      .12      .00     8.28      .00     .035     .035     .035     .000  1109.50  9709.79
  .001820       6.       6.       6.        2        0        0      .00   700.12 10451.89
0
*SECNO 16.373

3265 DIVIDED FLOW

    16.37    13.60  1123.10      .00  1123.71  1124.11     1.01      .24      .01  1130.00
   72000.       0.   72000.       0.       0.    8906.       0.     753.      82.   1142.20
      .12      .00     8.08      .00     .035     .035     .035     .000  1109.50  9708.88
  .001697     134.     134.     134.        2        0        0      .00   702.20 10453.06
0
1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.374
    16.37    14.33  1123.33      .00  1123.95  1124.17      .84      .01      .05  1130.00
   72000.       0.   72000.       0.       0.    9768.       0.     755.      82.   1134.00
      .12      .00     7.37      .00     .035     .035     .035     .000  1109.00  9708.18
  .000970       6.       6.       6.        2        0        0      .00   737.67 10445.85
0
*SECNO 16.481

3301 HV CHANGED MORE THAN HVINS
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   72000.      0.   72000.      0.      0.   5939.      0.    862.     91.   1152.00
     .14     .00    12.12     .00    .035    .035    .035    .000  1111.00   9794.02
  .003093    595.     595.    595.       2       0       0     .00   505.80  10299.82
0
 *SECNO 16.580

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8295.0   10245.0  TYPE=     1  TARGET=    1950.000
    16.58   13.07  1124.67     .00  1129.40  1129.55    4.88     2.41     1.30  1127.10
   72000.      0.   72000.      0.      0.   4062.      0.     922.     96.   1151.90
     .15     .00    17.73     .00    .035    .035    .035    .000  1111.60   9770.19
  .007576    523.     523.    523.       2       0       0     .00   381.08  10151.27
0
 *SECNO 16.681

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8030.0   10145.0  TYPE=     1  TARGET=    2115.000
    16.68   17.57  1131.17     .00  1132.53  1132.02     .85     1.26     1.21  1130.40
   72000.  23322.  48678.      0.    6169.    5647.      0.    1018.    110.   1152.40
     .17    3.78     8.62     .00    .035    .035    .035    .000  1113.60   8030.00
  .001157    530.     528.    537.       5       0       0     .00  1945.11  10121.93
0
1
  03-24-87     19:17:11                                                                    PAGE   45


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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 16.780

 3470 ENCROACHMENT STATIONS=    7745.0   10110.0  TYPE=     1  TARGET=    2365.000
    16.78   20.12  1131.72     .00  1133.42  1132.55     .83      .52      .01  1131.00
   72000.  15217.  56783.      0.    5576.    6991.      0.    1165.    136.   1157.70
     .19    2.73     8.12     .00    .035    .035    .035    .000  1111.60   7745.00
  .000870    522.     523.    525.       3       0       0     .00  2348.21  10093.21
0
1
  03-24-87     19:17:11                                                                    PAGE   46


                                                                                THIS RUN EXECUTED 03-24-87

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


 NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST
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SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
15.647	.00	.00	.00	1097.00	105600.00	1111.39	.00	1112.31	59.95	7.72	13763.13	13638.18
15.647	.00	.00	.00	1097.00	72000.00	1110.40	.00	1111.01	50.11	6.29	11530.97	10170.68
15.647	.00	.00	.00	1097.00	72000.00	1110.40	.00	1111.01	50.11	6.29	11530.97	10170.68
15.647	.00	.00	.00	1097.00	72000.00	1110.40	.00	1111.01	50.11	6.29	11530.97	10170.68
15.823	930.00	.00	.00	1091.85	77775.00	1115.70	.00	1117.01	38.83	9.21	8446.23	12481.76
15.823	930.00	.00	.00	1091.85	82775.00	1115.79	.00	1117.25	42.90	9.72	8515.62	12637.45
15.823	930.00	.00	.00	1091.85	87775.00	1115.88	.00	1117.50	47.09	10.23	8583.84	12791.10
15.823	930.00	.00	.00	1091.85	92775.00	1115.96	.00	1117.75	51.38	10.72	8650.90	12942.67
15.823	930.00	.00	.00	1091.85	62000.00	1114.15	.00	1115.27	38.39	8.49	7304.12	10006.37
15.823	930.00	.00	.00	1091.85	67000.00	1114.27	.00	1115.54	43.19	9.06	7393.74	10194.46
15.823	930.00	.00	.00	1091.85	72000.00	1114.39	.00	1115.83	48.11	9.62	7482.06	10380.88
16.013	1000.00	.00	.00	1100.00	77775.00	1118.22	.00	1118.91	10.64	6.65	11702.08	23845.53
16.013	1000.00	.00	.00	1100.00	82775.00	1118.54	.00	1119.28	11.14	6.90	11989.12	24804.63
16.013	1000.00	.00	.00	1100.00	87775.00	1118.86	.00	1119.65	11.59	7.15	12277.10	25780.88
16.013	1000.00	.00	.00	1100.00	92775.00	1119.18	.00	1120.03	12.01	7.38	12565.98	26772.31
16.013	1000.00	.00	.00	1100.00	62000.00	1116.56	.00	1117.14	10.54	6.07	10211.36	19096.22
16.013	1000.00	.00	.00	1100.00	67000.00	1116.94	.00	1117.56	11.09	6.35	10544.13	20122.02
16.013	1000.00	.00	.00	1100.00	72000.00	1117.30	.00	1117.99	11.57	6.62	10875.85	21164.50
16.153	740.00	.00	.00	1102.00	77775.00	1118.96	.00	1120.48	35.74	9.88	7869.97	13008.91
16.153	740.00	.00	.00	1102.00	82775.00	1119.30	.00	1120.90	36.06	10.15	8153.95	13784.72
16.153	740.00	.00	.00	1102.00	87775.00	1119.64	.00	1121.32	36.29	10.41	8435.73	14571.13
16.153	740.00	.00	.00	1102.00	92775.00	1119.98	.00	1121.74	36.44	10.64	8715.82	15368.91
16.153	740.00	.00	.00	1102.00	62000.00	1117.37	.00	1118.76	41.37	9.46	6552.94	9638.89
16.153	740.00	.00	.00	1102.00	67000.00	1117.77	.00	1119.24	41.18	9.74	6880.27	10440.54
16.153	740.00	.00	.00	1102.00	72000.00	1118.16	.00	1119.71	40.94	10.00	7202.43	11253.04

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
16.191	200.00	.00	.00	1103.59	77775.00	1118.97	.00	1121.80	62.59	13.51	5756.22	9830.40
16.191	200.00	.00	.00	1103.59	82775.00	1119.24	.00	1122.28	64.89	13.98	5919.25	10275.39
16.191	200.00	.00	.00	1103.59	87775.00	1119.51	.00	1122.76	67.42	14.46	6069.07	10690.22
16.191	200.00	.00	.00	1103.59	92775.00	1119.77	.00	1123.22	69.58	14.91	6222.84	11121.82
16.191	200.00	.00	.00	1103.59	62000.00	1117.68	.00	1120.06	61.69	12.36	5014.29	7893.72
16.191	200.00	.00	.00	1103.59	67000.00	1118.01	.00	1120.58	64.06	12.88	5202.47	8370.85
16.191	200.00	.00	.00	1103.59	72000.00	1118.33	.00	1121.10	66.28	13.37	5385.25	8843.60
16.291	528.00	.00	.00	1109.00	77775.00	1122.31	.00	1123.89	19.74	10.08	7717.71	17505.79
16.291	528.00	.00	.00	1109.00	82775.00	1122.77	.00	1124.43	19.86	10.34	8007.28	18575.52
16.291	528.00	.00	.00	1109.00	87775.00	1123.24	.00	1124.97	19.89	10.58	8301.89	19681.05
16.291	528.00	.00	.00	1109.00	92775.00	1123.68	.00	1125.50	19.99	10.82	8582.05	20748.13
16.291	528.00	.00	.00	1109.00	62000.00	1120.74	.00	1122.05	19.28	9.20	6741.86	14119.15
16.291	528.00	.00	.00	1109.00	67000.00	1121.25	.00	1122.65	19.49	9.50	7055.73	15175.46
16.291	528.00	.00	.00	1109.00	72000.00	1121.74	.00	1123.23	19.66	9.78	7363.65	16236.92
16.344	270.00	.00	.00	1109.50	77775.00	1123.46	.00	1124.46	11.63	8.03	9687.74	22805.07
16.344	270.00	.00	.00	1109.50	82775.00	1123.97	.00	1125.02	11.68	8.23	10061.96	24219.48

16.344	270.00	.00	.00	1109.50	62000.00	1121.75	.00	1122.59	11.50	7.35	8432.11	18281.05
16.344	270.00	.00	.00	1109.50	67000.00	1122.31	.00	1123.20	11.56	7.58	8838.95	19708.44
16.344	270.00	.00	.00	1109.50	72000.00	1122.85	.00	1123.79	11.60	7.79	9236.80	21140.30
16.345	6.00	.00	.00	1109.50	77775.00	1123.41	.00	1124.53	18.45	8.52	9123.65	18107.43
16.345	6.00	.00	.00	1109.50	82775.00	1123.91	.00	1125.09	18.69	8.73	9479.26	19148.18
16.345	6.00	.00	.00	1109.50	87775.00	1124.41	.00	1125.65	18.87	8.92	9835.86	20206.83
16.345	6.00	.00	.00	1109.50	92775.00	1124.90	.00	1126.19	19.04	9.11	10186.64	21262.38
16.345	6.00	.00	.00	1109.50	62000.00	1121.70	.00	1122.65	17.70	7.82	7932.68	14738.28
16.345	6.00	.00	.00	1109.50	67000.00	1122.26	.00	1123.26	17.96	8.05	8318.36	15808.87
16.345	6.00	.00	.00	1109.50	72000.00	1122.80	.00	1123.86	18.20	8.28	8695.89	16876.12
16.373	134.00	.00	.00	1109.50	77775.00	1123.71	.00	1124.79	17.23	8.33	9339.52	18737.40
16.373	134.00	.00	.00	1109.50	82775.00	1124.22	.00	1125.35	17.47	8.53	9700.03	19801.84
16.373	134.00	.00	.00	1109.50	87775.00	1124.73	.00	1125.91	17.67	8.72	10061.11	20883.07
16.373	134.00	.00	.00	1109.50	92775.00	1125.22	.00	1126.46	17.85	8.91	10415.69	21958.97
16.373	134.00	.00	.00	1109.50	62000.00	1121.99	.00	1122.89	16.44	7.62	8132.71	15290.99
16.373	134.00	.00	.00	1109.50	67000.00	1122.55	.00	1123.51	16.72	7.86	8523.97	16387.80
16.373	134.00	.00	.00	1109.50	72000.00	1123.10	.00	1124.11	16.97	8.08	8906.26	17478.81
16.374	6.00	.00	.00	1109.00	77775.00	1123.95	.00	1124.85	9.77	7.60	10230.67	24884.93
16.374	6.00	.00	.00	1109.00	82775.00	1124.47	.00	1125.42	9.84	7.80	10616.23	26387.65
16.374	6.00	.00	.00	1109.00	87775.00	1124.99	.00	1125.98	9.88	7.98	11001.27	27918.30
16.374	6.00	.00	.00	1109.00	92775.00	1125.49	.00	1126.52	9.92	8.15	11379.63	29450.90
16.374	6.00	.00	.00	1109.00	62000.00	1122.20	.00	1122.95	9.53	6.94	8939.71	20080.92
16.374	6.00	.00	.00	1109.00	67000.00	1122.77	.00	1123.57	9.62	7.16	9358.58	21600.26
16.374	6.00	.00	.00	1109.00	72000.00	1123.33	.00	1124.17	9.70	7.37	9767.87	23121.74

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	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	16.481	595.00	.00	.00	1111.00	77775.00	1124.15	.00	1126.56	30.89	12.47	6239.41	13994.28
	16.481	595.00	.00	.00	1111.00	82775.00	1124.64	.00	1127.16	30.91	12.75	6489.72	14889.18
	16.481	595.00	.00	.00	1111.00	87775.00	1125.12	.00	1127.76	30.86	13.02	6739.46	15800.58
	16.481	595.00	.00	.00	1111.00	92775.00	1125.60	.00	1128.34	30.80	13.28	6987.74	16716.34
	16.481	595.00	.00	.00	1111.00	62000.00	1122.49	.00	1124.53	30.97	11.48	5401.77	11140.63
	16.481	595.00	.00	.00	1111.00	67000.00	1123.03	.00	1125.20	30.96	11.81	5673.59	12042.13
	16.481	595.00	.00	.00	1111.00	72000.00	1123.56	.00	1125.84	30.93	12.12	5939.10	12945.71
*	16.580	523.33	.00	.00	1111.60	108205.00	1129.40	1129.40	1132.13	32.95	14.61	10241.21	18851.09
*	16.580	523.33	.00	.00	1111.60	108205.00	1129.32	1129.32	1132.13	34.07	14.80	10086.22	18539.17
*	16.580	523.33	.00	.00	1111.60	108205.00	1129.28	1129.28	1132.14	34.62	14.90	10011.00	18389.15
*	16.580	523.33	.00	.00	1111.60	108205.00	1129.76	1129.76	1132.14	28.57	13.81	10912.46	20244.80
*	16.580	523.33	.00	.00	1111.60	72000.00	1124.31	1124.31	1129.53	84.33	18.34	3925.91	7840.29
*	16.580	523.33	.00	.00	1111.60	72000.00	1124.29	1124.29	1129.53	84.90	18.38	3917.62	7814.17
	16.580	523.33	.00	.00	1111.60	72000.00	1124.67	.00	1129.55	75.76	17.73	4061.64	8272.01
	16.681	528.33	.00	.00	1113.60	108205.00	1132.53	.00	1133.74	15.50	10.54	14480.57	27486.56
	16.681	528.33	.00	.00	1113.60	108205.00	1132.59	.00	1133.77	15.15	10.45	14602.88	27797.38
	16.681	528.33	.00	.00	1113.60	108205.00	1132.63	.00	1133.79	14.98	10.40	14665.51	27957.21
	16.681	528.33	.00	.00	1113.60	108205.00	1132.31	.00	1133.60	16.79	10.88	14050.68	26408.06
	16.681	528.33	.00	.00	1113.60	72000.00	1131.30	.00	1132.11	10.99	8.45	12063.51	21716.28
	16.681	528.33	.00	.00	1113.60	72000.00	1131.31	.00	1132.12	10.95	8.43	12081.82	21757.21
	16.681	528.33	.00	.00	1113.60	72000.00	1131.17	.00	1132.02	11.57	8.62	11815.94	21167.12
	16.780	523.33	.00	.00	1111.60	108205.00	1133.42	.00	1134.45	10.62	9.53	16565.67	33202.88
	16.780	523.33	.00	.00	1111.60	108205.00	1133.45	.00	1134.48	10.48	9.48	16655.47	33421.76
	16.780	523.33	.00	.00	1111.60	108205.00	1133.47	.00	1134.49	10.41	9.45	16702.53	33536.80
	16.780	523.33	.00	.00	1111.60	108205.00	1133.30	.00	1134.37	11.09	9.70	16271.87	32493.13
	16.780	523.33	.00	.00	1111.60	72000.00	1131.81	.00	1132.61	8.39	8.01	12793.80	24862.99

AGUAFRIA - MAIN CHANNEL

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
15.647	105600.00	1111.39	.00	.00	.00	2258.23	.00
15.647	72000.00	1110.40	-.99	.00	-.99	2256.80	.00
15.647	72000.00	1110.40	.00	.00	-.99	2256.80	.00
15.647	72000.00	1110.40	.00	.00	-.99	2256.80	.00
15.823	77775.00	1115.70	.00	4.31	.00	750.17	930.00
15.823	82775.00	1115.79	.09	4.40	.09	751.53	930.00
15.823	87775.00	1115.88	.09	4.49	.18	752.86	930.00
15.823	92775.00	1115.96	.09	4.57	.27	754.17	930.00
15.823	62000.00	1114.15	-1.82	3.75	-1.55	727.44	930.00
15.823	67000.00	1114.27	.12	3.87	-1.43	729.25	930.00
15.823	72000.00	1114.39	.12	3.99	-1.31	731.03	930.00
16.013	77775.00	1118.22	.00	2.53	.00	901.09	1000.00
16.013	82775.00	1118.54	.32	2.75	.32	902.22	1000.00
16.013	87775.00	1118.86	.32	2.98	.64	903.36	1000.00
16.013	92775.00	1119.18	.32	3.22	.96	904.60	1000.00
16.013	62000.00	1116.56	-2.62	2.42	-1.66	895.18	1000.00
16.013	67000.00	1116.94	.37	2.67	-1.29	896.51	1000.00
16.013	72000.00	1117.30	.37	2.92	-.92	897.82	1000.00
16.153	77775.00	1118.96	.00	.74	.00	830.82	740.00
16.153	82775.00	1119.30	.34	.76	.34	832.10	740.00
16.153	87775.00	1119.64	.34	.78	.68	833.38	740.00
16.153	92775.00	1119.98	.34	.80	1.02	834.64	740.00
16.153	62000.00	1117.37	-2.61	.81	-1.59	824.83	740.00
16.153	67000.00	1117.77	.40	.83	-1.19	826.33	740.00
16.153	72000.00	1118.16	.39	.85	-.81	827.79	740.00
16.191	77775.00	1118.97	.00	.00	.00	580.26	200.00
16.191	82775.00	1119.24	.28	-.06	.28	582.17	200.00
16.191	87775.00	1119.51	.27	-.13	.54	583.91	200.00
16.191	92775.00	1119.77	.26	-.20	.81	585.70	200.00
16.191	62000.00	1117.68	-2.09	.31	-1.28	571.50	200.00
16.191	67000.00	1118.01	.33	.24	-.96	573.73	200.00
16.191	72000.00	1118.33	.32	.17	-.64	575.89	200.00
16.291	77775.00	1122.31	.00	3.34	.00	623.87	528.00
16.291	82775.00	1122.77	.46	3.53	.46	629.58	528.00
16.291	87775.00	1123.24	.47	3.73	.93	635.33	528.00
16.291	92775.00	1123.68	.45	3.91	1.38	640.75	528.00
16.291	62000.00	1120.74	-2.95	3.05	-1.57	611.89	528.00
16.291	67000.00	1121.25	.51	3.24	-1.06	615.15	528.00
16.291	72000.00	1121.74	.50	3.42	-.57	618.34	528.00

	16.344	77775.00	1123.46	.00	1.15	.00	737.81	270.00
	16.344	82775.00	1123.97	.51	1.20	.51	741.00	270.00
	16.344	87775.00	1124.47	.51	1.24	1.01	744.17	270.00
	16.344	92775.00	1124.97	.49	1.28	1.51	747.28	270.00
	16.344	62000.00	1121.75	-3.22	1.01	-1.71	727.03	270.00
	16.344	67000.00	1122.31	.56	1.06	-1.16	730.54	270.00
	16.344	72000.00	1122.85	.54	1.10	-.61	733.96	270.00
	16.345	77775.00	1123.41	.00	-.06	.00	704.35	6.00
	16.345	82775.00	1123.91	.50	-.06	.50	707.84	6.00
	16.345	87775.00	1124.41	.50	-.06	1.01	711.33	6.00
	16.345	92775.00	1124.90	.49	-.06	1.50	714.74	6.00
	16.345	62000.00	1121.70	-3.20	-.05	-1.70	692.51	6.00
	16.345	67000.00	1122.26	.56	-.05	-1.15	696.36	6.00
	16.345	72000.00	1122.80	.54	-.05	-.61	700.12	6.00
	16.373	77775.00	1123.71	.00	.31	.00	706.47	134.00
	16.373	82775.00	1124.22	.51	.31	.51	710.00	134.00
	16.373	87775.00	1124.73	.51	.32	1.02	713.52	134.00
	16.373	92775.00	1125.22	.50	.32	1.51	716.96	134.00
	16.373	62000.00	1121.99	-3.23	.29	-1.72	694.51	134.00
	16.373	67000.00	1122.55	.56	.29	-1.16	698.41	134.00
	16.373	72000.00	1123.10	.55	.30	-.61	702.20	134.00
	16.374	77775.00	1123.95	.00	.24	.00	741.56	6.00
	16.374	82775.00	1124.47	.52	.25	.52	744.79	6.00
	16.374	87775.00	1124.99	.52	.26	1.03	748.00	6.00
	16.374	92775.00	1125.49	.50	.27	1.54	751.14	6.00
	16.374	62000.00	1122.20	-3.29	.21	-1.75	730.65	6.00
	16.374	67000.00	1122.77	.57	.22	-1.18	734.21	6.00
	16.374	72000.00	1123.33	.56	.23	-.63	737.67	6.00
	16.481	77775.00	1124.15	.00	.19	.00	508.91	595.00
	16.481	82775.00	1124.64	.49	.17	.49	511.48	595.00
	16.481	87775.00	1125.12	.49	.14	.98	514.03	595.00
	16.481	92775.00	1125.60	.48	.11	1.45	551.30	595.00
	16.481	62000.00	1122.49	-3.11	.29	-1.66	500.21	595.00
	16.481	67000.00	1123.03	.54	.26	-1.12	503.05	595.00
	16.481	72000.00	1123.56	.53	.23	-.59	505.80	595.00
*	16.580	108205.00	1129.40	.00	5.25	.00	1856.58	523.33
*	16.580	108205.00	1129.32	-.08	4.68	-.08	1856.05	523.33
*	16.580	108205.00	1129.28	-.04	4.15	-.12	1855.79	523.33
*	16.580	108205.00	1129.76	.49	4.16	.36	1858.87	523.33
*	16.580	72000.00	1124.31	-5.45	1.82	-5.09	379.49	523.33
*	16.580	72000.00	1124.29	-.02	1.26	-5.11	379.39	523.33
	16.580	72000.00	1124.67	.38	1.11	-4.73	381.08	523.33

1

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
16.681	108205.00	1132.53	.00	3.13	.00	1971.75	528.33
16.681	108205.00	1132.59	.06	3.28	.06	1972.96	528.33
16.681	108205.00	1132.63	.03	3.35	.09	1973.59	528.33
16.681	108205.00	1132.31	-.31	2.55	-.22	1967.48	528.33
16.681	72000.00	1131.30	-1.01	6.99	-1.23	1947.60	528.33
16.681	72000.00	1131.31	.01	7.02	-1.22	1947.78	528.33
16.681	72000.00	1131.17	-.14	6.50	-1.36	1945.11	528.33
16.780	108205.00	1133.42	.00	.89	.00	2350.44	523.33
16.780	108205.00	1133.45	.04	.86	.04	2350.49	523.33

16.780	72000.00	1131.81	-1.49	.51	-1.61	2348.34	523.33
16.780	72000.00	1131.82	.01	.51	-1.60	2348.35	523.33
16.780	72000.00	1131.72	-.10	.55	-1.70	2348.21	523.33

1

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION  SECNO=    16.580  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.580  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.580  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.580  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.580  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.580  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.580  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.580  PROFILE= 3  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.580  PROFILE= 3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.580  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.580  PROFILE= 4  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.580  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.580  PROFILE= 5  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.580  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.580  PROFILE= 6  MINIMUM SPECIFIC ENERGY
```

1

THIS RUN EXECUTED 03-24-87

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**************************************************
  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
**************************************************
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TYPE AF030D.OUT

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1*****************************************************
*
 * WATER SURFACE PROFILES                          *
*
 * VERSION OF NOVEMBER 1976                        *
*
 * UPDATED MAY 1984                                *
*
 * IBM-PC-XT VERSION AUGUST 1985                   *
*
 * RUN DATE  03-30-87   TIME  11:08:09               *
  *
 *****************************************************
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*************************************
* U.S. ARMY CORPS OF ENGINEERS
* THE HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET, SUITE D
* DAVIS, CALIFORNIA 95616
  * (916) 440-2105 (FTS) 448-2105
*************************************
```

* 1. Overflow Channel - Existing Condition

```
X     X  XXXXXXX   XXXXX             XXXXX
X     X  X       X     X           X     X
X     X  X       X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X       X                 X
X     X  X       X     X           X
X     X  XXXXXXX   XXXXX            XXXXXXX
```

1

03-30-87 11:08:10 PAGE 1

THIS RUN EXECUTED 03-30-87

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*****************************************************
  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
*****************************************************
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T1 AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2 PROFILE NUMBER 1 - SUBCRITICAL PROFILE
T3 OVERFLOW CH. VAR. FLOWS - NEW FIELD DATA

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	2.	0.	0.	.000000	.00	.0	0.	1113.350	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

QT	7.000	107775.000	107775.000	107775.000	107775.000	72000.000	72000.000	72000.000	.000	.000
NC	.050	.050	.050	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9322.000	12300.000
X1	15.823	90.000	9322.000	11500.000	.000	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1133.000	9322.000	1100.000	9395.000	1100.000	9498.000	1101.000	9520.000	1105.000	9552.000
GR	1105.000	9633.000	1108.000	9702.000	1108.000	9779.000	1109.000	9847.000	1110.280	9858.000
GR	1119.100	9888.000	1107.040	9971.000	1099.220	10000.000	1091.850	10093.000	1142.180	10204.000
GR	1142.600	10295.000	1008.300	10388.000	1104.000	10406.000	1103.000	10450.000	1107.000	10474.000
GR	1105.000	10511.000	1103.000	10560.000	1108.000	10572.000	1108.000	10598.000	1111.000	10610.000
GR	1111.000	10717.000	1111.000	10781.000	1111.000	10856.000	1110.000	10898.000	1109.000	10964.000
GR	1106.000	11019.000	1107.000	11071.000	1106.000	11140.000	1104.000	11206.000	1102.000	11251.000
GR	1105.000	11283.000	1108.000	11342.000	1106.000	11384.000	1107.000	11421.000	1108.000	11470.000
GR	1110.000	11500.000	1110.000	11554.000	1110.000	11634.000	1110.000	11708.000	1110.000	11794.000
GR	1110.000	11892.000	1109.000	11983.000	1109.000	12063.000	1109.000	12143.000	1109.000	12221.000
GR	1109.000	12294.000	1109.000	12370.000	1109.000	12450.000	1109.000	12542.000	1110.000	12596.000
GR	1110.000	12672.000	1110.000	12726.000	1110.000	12796.000	1110.000	12852.000	1110.000	12910.000
GR	1110.000	12983.000	1110.000	13011.000	1111.000	13075.000	1111.000	13153.000	1111.000	13224.000
GR	1111.000	13307.000	1111.000	13380.000	1111.000	13452.000	1111.000	13532.000	1112.000	13608.000
GR	1112.000	13689.000	1112.000	13764.000	1112.000	13844.000	1112.000	13917.000	1112.000	13998.000
GR	1113.000	14073.000	1114.000	14137.000	1114.000	14212.000	1114.000	14281.000	1114.000	14347.000
GR	1114.000	14414.000	1114.000	14464.000	1114.000	14533.000	1114.000	14613.000	1114.000	14698.000
GR	1115.000	14784.000	1115.000	14865.000	1116.000	14937.000	1117.000	15008.000	1117.000	15079.000
QT	7.000	30000.000	25000.000	20000.000	15000.000	2000.000	10000.000	5000.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10402.000	12250.000
X1	16.013	90.000	10643.000	11146.000	1000.000	950.000	1400.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1141.000	10402.000	1124.000	10449.000	1108.000	10500.000	1108.000	10529.000	1112.000	10549.000
GR	1112.000	10613.000	1109.000	10664.000	1108.000	10694.000	1111.000	10705.000	1112.000	10786.000
GR	1114.000	10843.000	1113.000	10905.000	1110.000	10955.000	1110.000	11005.000	1111.000	11055.000
GR	1113.000	11079.000	1114.000	11146.000	1113.000	11220.000	1113.000	11268.000	1113.000	11296.000
GR	1114.000	11317.000	1112.000	11399.000	1110.000	11452.000	1111.000	11471.000	1109.000	11493.000

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GR	1109.000	11558.000	1110.000	11588.000	1110.000	11657.000	1110.000	11731.000	1110.000	11799.000
GR	1110.000	11870.000	1111.000	11941.000	1111.000	11990.000	1111.000	12036.000	1111.000	12085.000
GR	1112.000	12152.000	1112.000	12219.000	1112.000	12311.000	1112.000	12395.000	1112.000	12482.000
GR	1112.000	12555.000	1112.000	12620.000	1113.000	12690.000	1113.000	12743.000	1113.000	12809.000
GR	1112.000	12885.000	1112.000	12952.000	1112.000	13003.000	1114.000	13054.000	1114.000	13110.000
GR	1114.000	13169.000	1114.000	13237.000	1113.000	13306.000	1113.000	13382.000	1113.000	13465.000
GR	1114.000	13539.000	1114.000	13595.000	1114.000	13673.000	1114.000	13741.000	1114.000	13807.000
GR	1114.000	13865.000	1114.000	13940.000	1115.000	14024.000	1115.000	14095.000	1115.000	14176.000
GR	1115.000	14253.000	1116.000	14320.000	1116.000	14394.000	1117.000	14456.000	1117.000	14523.000
GR	1117.000	14551.000	1117.000	14601.000	1118.000	14671.000	1118.000	14729.000	1118.000	14791.000
GR	1118.000	14856.000	1119.000	14912.000	1120.000	14981.000	1121.000	15048.000	1121.000	15109.000
GR	1121.000	15185.000	1122.000	15259.000	1123.000	15327.000	1124.000	15395.000	1124.000	15467.000

NC	.050	.100	.050	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10434.000	12040.000
X1	16.153	90.000	11158.000	11182.000	750.000	800.000	750.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1151.000	10209.000	1151.000	10272.000	1148.000	10321.000	1149.000	10382.000	1147.000	10434.000
GR	1127.000	10480.000	1108.000	10536.000	1109.000	10561.000	1111.000	10620.000	1111.000	10682.000
GR	1111.000	10757.000	1112.000	10827.000	1112.000	10901.000	1112.000	10970.000	1112.000	11034.000
GR	1113.000	11101.000	1113.000	11158.000	1110.000	11171.000	1114.000	11182.000	1114.000	11250.000
GR	1114.000	11330.000	1114.000	11406.000	1113.000	11487.000	1113.000	11561.000	1113.000	11640.000
GR	1113.000	11714.000	1113.000	11788.000	1113.000	11843.000	1114.000	11900.000	1114.000	11968.000
GR	1114.000	12040.000	1114.000	12112.000	1113.000	12178.000	1113.000	12229.000	1113.000	12308.000
GR	1113.000	12382.000	1113.000	12451.000	1114.000	12513.000	1114.000	12558.000	1114.000	12588.000
GR	1114.000	12658.000	1114.000	12711.000	1114.000	12762.000	1114.000	12817.000	1114.000	12870.000
GR	1114.000	12930.000	1114.000	12979.000	1113.000	13031.000	1113.000	13092.000	1114.000	13153.000
GR	1114.000	13209.000	1115.000	13289.000	1116.000	13370.000	1116.000	13451.000	1116.000	13532.000
GR	1117.000	13603.000	1118.000	13685.000	1118.000	13765.000	1118.000	13840.000	1118.000	13912.000
GR	1118.000	13981.000	1119.000	14054.000	1118.000	14131.000	1118.000	14205.000	1118.000	14281.000
GR	1118.000	14348.000	1118.000	14421.000	1119.000	14481.000	1119.000	14547.000	1118.000	14605.000
GR	1118.000	14642.000	1118.000	14711.000	1118.000	14775.000	1121.000	14802.000	1123.000	14871.000
GR	1123.000	14938.000	1123.000	15000.000	1123.000	15070.000	1123.000	15137.000	1123.000	15209.000
GR	1123.000	15273.000	1123.000	15341.000	1124.000	15397.000	1124.000	15460.000	1125.000	15516.000
GR	1125.000	15587.000	1126.000	15663.000	1126.000	15731.000	1127.000	15771.000	1127.000	15798.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10501.000	11950.000
X1	16.191	27.000	10580.000	11245.000	610.000	600.000	600.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1150.000	10470.000	1124.000	10525.000	1116.000	10580.000	1113.800	10600.000	1116.000	10620.000
GR	1116.300	10730.000	1116.000	10840.000	1112.000	10855.000	1108.000	10890.000	1117.000	10960.000
GR	1108.000	11015.000	1112.000	11030.000	1116.000	11070.000	1116.000	11120.000	1113.200	11200.000
GR	1116.000	11245.000	1120.500	11320.000	1118.000	11369.000	1116.000	11436.000	1117.000	11504.000
GR	1115.000	11571.000	1114.000	11642.000	1114.000	11709.000	1114.000	11764.000	1114.000	11832.000
GR	1114.000	11911.000	1113.000	11956.000	.000	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	10550.000	11347.000	10550.000	11750.000
X1	16.291	16.000	10660.000	11347.000	620.000	620.000	620.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1131.000	10140.000	1128.000	10210.000	1120.000	10250.000	1119.400	10540.000	1119.200	10660.000
GR	1118.500	10790.000	1118.200	10900.000	1116.000	11110.000	1116.400	11180.000	1120.000	11260.000
GR	1121.400	11320.000	1121.700	11340.000	1118.000	11347.000	1118.000	11389.000	1119.000	11441.000
GR	1118.000	11792.000	.000	.000	.000	.000	.000	.000	.000	.000

1

NC	.050	.150	.050	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	10800.000	11900.000
X1	16.338	20.000	11150.000	11340.000	300.000	450.000	450.000	.000	.000	.000
GR	1124.000	10220.000	1124.000	10300.000	1120.000	10350.000	1120.000	10460.000	1120.700	10610.000
GR	1120.000	10700.000	1120.000	10750.000	1118.800	10880.000	1117.800	11020.000	1118.000	11130.000
GR	1110.400	11150.000	1118.000	11170.000	1118.700	11250.000	1120.000	11340.000	1120.000	11370.000
GR	1120.000	11460.000	1120.900	11720.000	1122.500	11890.000	1124.000	11980.000	1124.000	12080.000
NC	.030	.030	.030	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10600.000	11900.000
X1	16.350	10.000	11164.000	11292.000	1100.000	110.000	110.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1124.200	1124.200	.000
GR	1129.300	10185.000	1126.400	10600.000	1124.200	11164.000	1115.400	11165.000	1116.700	11228.000
GR	1117.100	11291.000	1124.200	11292.000	1124.800	11390.000	1124.800	11820.000	1125.800	12050.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10600.000	11900.000
SB	1.250	1.560	3.000	.000	128.000	6.000	745.000	.000	1115.400	1116.600
X1	16.355	9.000	11164.000	11292.000	40.000	40.000	40.000	.000	.000	.000
X2	.000	.000	1.000	1122.000	1124.600	.000	.000	.000	.000	.000

0

CDHV= .300 CEHV= .500

*SECNO 16.350

3280 CROSS SECTION 16.35 EXTENDED 1.77 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

1

03-30-87 11:08:10 PAGE 7

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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
16.35	12.17	1127.57	1127.57	.00	1128.83	1.26	1.58	.29	1124.20
30000.	5462.	16199.	8339.	1278.	1412.	1697.	850.	153.	1124.20
.23	4.27	11.47	4.91	.030	.030	.030	.000	1115.40	10600.00
.002508	1100.	110.	110.	20	10	0	.00	1300.00	11900.00

0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1126.68 ,NOT 1127.57 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	CDFO	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	128.00	6.00	745.00	.00	1115.40	1116.60

*SECNO 16.355

3280 CROSS SECTION 16.35 EXTENDED 5.11 FEET

3301 HV CHANGED MORE THAN HVINS

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
1166.85	1131.93	.00	23275.	6739.	745.	805.	1122.00	1124.60

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

16.35	14.80	1129.10	.00	.00	1129.55	.45	.72	.00	1124.20
30000.	6816.	13080.	10103.	2147.	1835.	2806.	855.	154.	1124.20
.23	3.17	7.13	3.60	.030	.030	.030	.000	1114.30	10600.00
.000695	40.	40.	40.	2	0	6	.00	1300.00	11900.00

0

*SECNO 16.366

3280 CROSS SECTION 16.37 EXTENDED 8.60 FEET

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

16.37	12.90	1129.60	.00	.00	1129.67	.07	.01	.11	1119.00
30000.	13817.	4005.	12178.	6430.	1708.	5870.	867.	156.	1117.60

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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 16.376

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3593 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

16.38	12.78	1128.08	1128.08	.00	1132.54	4.45	.01	2.19	1128.00
30000.	0.	30000.	0.	0.	1771.	0.	876.	156.	1128.00
.24	.48	16.94	.04	.030	.030	.030	.000	1115.30	11177.06
.006508	50.	50.	50.	20	6	0	.00	203.98	11381.04

0

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.56	3.00	.00	201.00	20.00	1600.00	5.00	1116.70	1116.70

*SECNO 16.379
6870 D.S. ENERGY OF 1132.54 HIGHER THAN COMPUTED ENERGY OF 1131.57
3280 CROSS SECTION 16.38 EXTENDED .39 FEET

3301 HV CHANGED MORE THAN HVINS

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
1136.60	1135.73	3.19	10834.	19201.	1600.	2171.	1126.20	1129.70

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

16.38	14.99	1130.29	.00	.00	1132.54	2.25	.00	.00	1129.60
30000.	72.	28818.	1110.	58.	2348.	468.	876.	157.	1129.60
.24	1.24	12.27	2.37	.030	.030	.030	.000	1115.30	11021.85
.002558	14.	14.	14.	4	0	0	.00	878.15	11900.00

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

CCHV= .100 CEHV= .300

```
3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43    15.75  1132.75      .00      .00  1132.79      .05      .03      .22  1120.00
   30000.     5675.   11035.   13290.    3359.    6046.    7824.     902.     160.   1118.00
      .26     1.69     1.83     1.70     .050     .050     .050     .000  1117.00 10770.00
  .000118      50.     100.     150.        2        0        0      .00  1440.00 12210.00
0
 *SECNO 16.481
 3280 CROSS SECTION     16.48 EXTENDED      2.19 FEET


 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    28.79  1132.79      .00      .00  1132.81      .02      .01      .00  1123.20
   30000.     407.   28847.     746.     650.   28306.    1432.    1044.     170.   1124.00
      .33      .63     1.02      .52     .050     .050     .050     .000  1104.00 10860.00
  .000027     260.     260.     260.        2        0        0      .00  1960.00 12820.00
0
1
  03-30-87     11:08:10                                                                    PAGE   10


                                                                          THIS RUN EXECUTED 03-30-87

 ***************************************************
   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      AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
 T2      PROFILE NUMBER 2 - SUBCRITICAL PROFILE
 T3      OVERFLOW CH. VAR. FLOWS - NEW FIELD DATA

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        3.        0.        0.   .000000      .00       .0        0.  1113.350      .000

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      2.000     .000    -1.000     .000      .000      .000      .000      .000      .000      .000

1
  03-30-87     11:08:10                                                                    PAGE   11


    SECNO    DEPTH    DWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
    Q        OLOB     OCH      OROB     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


 *PROF 2

 CCHV=    .100 CEHV=    .300
 *SECNO 15.823

 3265 DIVIDED FLOW
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3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.78      .43      .00      .00  1133.00
  107775.       0.   98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
  .001857       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.74  1115.74      .00  1115.81  1115.90      .16     2.08      .03  1114.00
   25000.    5658.    3060.   16282.    1727.    1140.    5074.     416.      60.   1114.00
      .10     3.28     2.68     3.21     .050     .050     .050     .000  1108.00 10475.32
  .001394    1000.    1400.     950.        2        0        0      .00  1774.68 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     9.13  1117.13      .00  1117.57  1117.45      .32     1.51      .05  1113.00
   25000.   18439.     623.    5938.    3601.     130.    3110.     548.      90.   1114.00
      .15     5.12     4.81     1.91     .050     .050     .100     .000  1108.00 10509.09
  .002922     750.     750.     800.        2        0        0      .00  1530.91 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      6.23 FEET

1
  03-30-87     11:08:10                                                                    PAGE   12

    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19    11.24  1119.24      .00  1119.78  1119.63      .38     2.15      .02  1116.00
   25000.       98.   17901.    7001.      36.    3185.    2620.     636.     110.   1116.00
      .19     2.72     5.62     2.67     .050     .050     .100     .000  1108.00 10557.76
  .004459     610.     600.     600.        2        0        0      .00  1346.36 11950.00
0
 *SECNO 16.291
 3280 CROSS SECTION     16.29 EXTENDED      4.44 FEET

 3470 ENCROACHMENT STATIONS=   10550.0   11750.0  TYPE=     1  TARGET=    1200.000
    16.29     6.44  1122.44      .00  1122.94  1122.94      .51     3.28      .04  1119.20
   25000.    1739.   18565.    4696.     347.    2957.    1592.     712.     128.   1118.00
      .22     5.01     6.28     2.95     .050     .050     .100     .000  1116.00 10550.00
  .006384     620.     620.     620.        2        0        0      .00  1200.00 11750.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
 3280 CROSS SECTION     16.34 EXTENDED       .45 FEET
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  25000.    14500.     7303.     3197.     2208.     1151.     2059.      761.      139.   1120.00
     .24      6.57      6.34      1.55      .050      .050      .150      .000   1110.40  10800.00
 .004161      300.      450.      450.         2         0         0       .00   1100.00  11900.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.350
 3280 CROSS SECTION     16.35 EXTENDED      1.39 FEET


 3301 HV CHANGED MORE THAN HVINS

 3685 20 TRIALS ATTEMPTED WSEL,CWSEL
 3693 PROBABLE MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
1
 03-30-87     11:08:10                                                                          PAGE   13


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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


    16.35    11.79  1127.19  1127.19  1127.57  1128.37     1.18     1.45      .30  1124.20
   25000.     3895.    14777.     6328.     1064.     1364.     1467.      810.      152.   1124.20
      .26      3.66     10.84      4.31      .030      .030      .030      .000   1115.40  10600.00
  .002345     1100.      110.      110.        20        10         0       .00   1300.00  11900.00
0

 SPECIAL BRIDGE

 5227 DOWNSTREAM ELEV IS   1125.52 ,NOT   1127.19 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

 SB  XK        XKOR      CDFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      1.25      1.56      3.00       .00    128.00      6.00    745.00       .00   1115.40   1116.60

 *SECNO 16.355
 3280 CROSS SECTION     16.35 EXTENDED      4.64 FEET


 3301 HV CHANGED MORE THAN HVINS

 PRESSURE AND WEIR FLOW


  EGPRS     EGLWC      H3       QWEIR     QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                             AREA
   1154.46   1130.10       .00    18734.     6492.      745.      805.     1122.00   1124.60



 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.35    14.33  1128.63       .00  1129.10  1129.03      .40      .66      .00  1124.20
   25000.     5203.    11764.     8032.     1882.     1774.     2519.      815.      154.   1124.20
      .26      2.77      6.63      3.19      .030      .030      .030      .000   1114.30  10600.00
  .000628       40.       40.       40.         2         0         5       .00   1300.00  11900.00
0
 *SECNO 16.366
 3280 CROSS SECTION     16.37 EXTENDED      8.08 FEET
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  25000.    11524.    3368.    10108.    6125.    1635.    5576.    826.     155.    1117.60
     .26     1.88     2.06     1.81      .030     .030     .030     .000  1116.70 10600.00
 .000065     50.      50.      50.        2        0        0      .00  1300.00 11900.00
0
1
 03-30-87     11:08:10                                                                          PAGE   14


  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.376

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.00 ELREA=     1128.00

    16.38    11.93  1127.23      .00  1128.08  1131.01     3.78      .01     1.86  1128.00
   25000.       0.   25000.       0.       0.    1603.       0.     834.     156.   1128.00
      .27      .00     15.60     .00     .030     .030     .030     .000  1115.30 11183.03
  .006064     50.      50.      50.        4        0        0      .00   194.41 11377.44
0

SPECIAL BRIDGE

SB  XK       XKOR     COFQ     RDLEN    BWC      BWP      BAREA    SS       ELCHU    ELCHD
     1.05     1.56     3.00      .00   201.00    20.00  1600.00     5.00  1116.70  1116.70

*SECNO 16.379
 PRESS FLOW BECAUSE EGLWC OF   1133.55  EXCEEDS 1.5 DEPTH
6870 D.S. ENERGY OF 1131.01 HIGHER THAN COMPUTED ENERGY OF 1130.87

3301 HV CHANGED MORE THAN HVINS

PRESSURE AND WEIR FLOW


 EGPRS     EGLWC      H3      QWEIR     QPR      BAREA   TRAPEZOID     ELLC     ELTRD
                                                          AREA
  1133.15  1133.55     2.54    5554.    19621.    1600.    2171.     1126.20  1129.70


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.60 ELREA=     1129.60

    16.38    13.32  1128.62      .00  1130.29  1131.01     2.39      .00      .00  1129.60
   25000.       0.   25000.       0.       0.    2014.       0.     835.     156.   1129.60
      .27      .00     12.41     .00     .000     .030     .000     .000  1115.30 11190.00
  .003118     14.      14.      14.        3        0        3      .00   197.20 11387.20
0
1
 03-30-87     11:08:10                                                                          PAGE   15


  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
```

```
CCHV=    .100 CEHV=    .300
*SECNO 16.431
3280 CROSS SECTION     16.43 EXTENDED      1.34 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43    14.24  1131.24      .00  1132.75  1131.28      .04      .04      .24  1120.00
   25000.     4700.    9341.   10959.    2936.    5367.    6752.     857.     158.   1118.00
      .28     1.60     1.74     1.62     .050     .050     .050     .000  1117.00 10770.00
  .000126      50.     100.     150.        2        0        0      .00  1440.00 12210.00
0
*SECNO 16.481
3280 CROSS SECTION     16.48 EXTENDED       .68 FEET


3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    27.28  1131.28      .00  1132.79  1131.30      .01      .01      .00  1123.20
   25000.      301.   24237.     462.     545.   25814.    1070.     983.     168.   1124.00
      .36      .55      .94      .43     .050     .050     .050     .000  1104.00 10860.00
  .000026     260.     260.     260.        2        0        0      .00  1960.00 12820.00
0
1
 03-30-87     11:08:10                                                                    PAGE   16


                                                                          THIS RUN EXECUTED 03-30-87

 ***************************************************
  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      ARJAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
 T2      PROFILE NUMBER 3 - SUBCRITICAL PROFILE
 T3      OVERFLOW CH. VAR. FLOWS - NEW FIELD DATA

 J1  ICHECK    INJ      NINV     IDIR     STAT     METRIC   HVINS    Q        WSEL     FQ

       0.       4.       0.       0.   .000000     .00      .0       0.  1113.350     .000

 J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    AN       ALLDC    IBW      CHNIM    ITRACE

      3.000     .000    -1.000     .000     .000     .000     .000     .000     .000     .000

1
 03-30-87     11:08:10                                                                    PAGE   17


    SECNO    DEPTH    OWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
    Q        QLOB     QCH      QROB     ALOB     ACH      ARUB     VOL      TWA   LEFT/RIGHT
    TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
    SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


 *PROF 3
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*SECNO 15.823

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.78      .43      .00      .00  1133.00
   107775.      0.   98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
   .001857      0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
*SECNO 16.013

3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.67  1115.67      .00  1115.81  1115.77      .10     1.95      .03  1114.00
   20000.    4535.    2430.   13035.    1700.    1117.    4990.     414.      60.   1114.00
      .13     2.67     2.18     2.61     .050     .050     .050     .000  1108.00 10475.56
   .000941   1000.    1400.     950.        2        0        0      .00  1774.43 12250.00
0
CCHV=    .100 CEHV=    .300
*SECNO 16.153

3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     8.68  1116.68      .00  1117.57  1116.94      .26     1.12      .05  1113.00
   20000.   15032.     504.    4465.    3310.     119.    2726.     539.      50.   1114.00
      .18     4.54     4.24     1.64     .050     .050     .100     .000  1108.00 10510.41
   .002548    750.     750.     800.        2        0        0      .00  1529.59 12040.00
0
*SECNO 16.191

3265 DIVIDED FLOW

3280 CROSS SECTION     16.19 EXTENDED      5.63 FEET

1
 03-30-87     11:08:10                                                                    PAGE   18


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       ULOSS   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


3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19    10.64  1118.64      .00  1119.78  1118.97      .33     2.01      .02  1116.00
   20000.      57.   14400.    5544.      24.    2784.    2229.     616.     110.   1116.00
      .22     2.38     5.17     2.49     .050     .050     .100     .000  1108.00 10561.91
   .004519    610.     600.     600.        2        0        0      .00  1320.34 11950.00
0
*SECNO 16.291
3280 CROSS SECTION     16.29 EXTENDED      3.90 FEET


3470 ENCROACHMENT STATIONS=   10550.0   11750.0  TYPE=     1  TARGET=    1200.000
    16.29     5.90  1121.90      .00  1122.94  1122.34      .43     3.34      .03  1119.20
   20000.    1288.   14996.    3717.     287.    2585.    1374.     683.     188.   1118.00
      .25     4.48     5.80     2.71     .050     .050     .100     .000  1116.00 10550.00
   .006518    620.     620.     620.        3        0        0      .00  1200.00 11750.00
0
```

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3470 ENCROACHMENT STATIONS=   10800.0   11900.0  TYPE=     1  TARGET=    1100.000
    16.34    13.45  1123.85      .00  1125.00  1124.32      .47     1.97      .02  1110.40
   20000.    11817.    5885.    2298.    1998.    1037.    1722.     725.     139.   1120.00
      .28     5.91     5.67     1.33     .050     .050     .150     .000  1110.40 10800.00
  .003827     300.     450.     450.        2        0        0      .00  1100.00 11900.00
0
CCHV=    .300 CEHV=    .500
*SECNO 16.350
3280 CROSS SECTION     16.35 EXTENDED       .95 FEET


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL.CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.35    11.35  1126.75  1126.75  1127.57  1127.86     1.11     1.30      .32  1124.20
   20000.     2413.   13227.    4360.     818.    1308.    1201.     767.     152.   1124.20
      .29     2.95    10.11     3.63     .030     .030     .030     .000  1115.40 10600.00
  .002160    1100.     110.     110.       20       10        0      .00  1300.00 11900.00
0
1
 03-30-87     11:08:10                                                                    PAGE   19


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS   1124.29 ,NOT   1126.75 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.56      3.00       .00    128.00      6.00    745.00       .00   1115.40   1116.60

*SECNO 16.355
3280 CROSS SECTION     16.35 EXTENDED      4.05 FEET


3301 HV CHANGED MORE THAN HVINS

PRESSURE AND WEIR FLOW


 EGPRS     EGLWC      H3       QWEIR     QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                            AREA
   1144.21   1128.16      .00    13900.     6145.      745.      805.     1122.00   1124.60


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.35    13.74  1128.04      .00  1129.10  1128.40      .36      .54      .00  1124.20
   20000.     3599.   10454.    5947.    1549.    1699.    2161.     771.     153.   1124.20
      .29     2.32     6.15     2.75     .030     .030     .030     .000  1114.30 10600.00
  .000574      40.      40.      40.        2        0        5      .00  1300.00 11900.00
0
*SECNO 16.366
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3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37    11.76  1128.46      .00  1129.60  1128.50      .04      .01      .10  1119.00
   20000.     9230.     2727.     8043.     5759.     1548.     5221.     782.     155.   1117.60
      .30     1.60      1.76      1.54      .030      .030      .030     .000  1116.70 10600.00
  .000051      50.       50.       50.         2         0         0      .00  1300.00 11900.00
0
 *SECNO 16.376

 3301 HV CHANGED MORE THAN HVINS

1
 03-30-87     11:08:10                                                                                                PAGE   20


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.00 ELREA=     1128.00

    16.38    12.00  1127.30      .00  1128.08  1129.68     2.38      .01     1.17  1128.00
   20000.       0.   20000.       0.       0.    1617.       0.     790.     156.   1128.00
      .30      .00     12.37      .00     .030     .030     .030     .000  1115.30 11182.75
  .003787      50.       50.       50.         3         0         0      .00   194.92 11377.67
0

 SPECIAL BRIDGE

 SB  XK        XKOR      CDFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      1.05      1.56      3.00       .00    201.00     20.00   1600.00      5.00   1116.70   1116.70

 *SECNO 16.379

 3301 HV CHANGED MORE THAN HVINS

 PRESSURE AND WEIR FLOW


  EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC     ELTRD
                                                                AREA
    1131.08   1129.98     1.07     2344.    17801.     1600.     2171.     1126.20   1129.70



 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.60 ELREA=     1129.60

    16.38    13.53  1128.83      .00  1130.29  1130.30     1.47      .62      .00  1129.60
   20000.       0.   20000.       0.       0.    2055.       0.     790.     156.   1129.60
      .30      .00      9.73      .00     .000     .030     .000     .000  1115.30 11190.00
  .001876      14.       14.       14.         3         0         2      .00   198.02 11388.02
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431
 3280 CROSS SECTION     16.43 EXTENDED       .54 FEET

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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43    13.44  1130.44      .00  1132.75  1130.47      .03      .03      .14  1120.00
   20000.     3742.    7542.    8716.    2713.    5007.    6185.     811.     158.   1118.00
      .33     1.38     1.51     1.41     .050     .050     .050     .000  1117.00 10770.00
  .000104      50.     100.     150.        2        0        0      .00  1440.00 12210.00
0
 *SECNO 16.481

3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    26.47  1130.47      .00  1132.79  1130.48      .01      .01      .00  1123.20
   20000.     222.   19479.     300.     488.   24479.     876.     929.     168.   1124.00
      .42      .45      .80      .34     .050     .050     .050     .000  1104.00 10860.00
  .000020     260.     260.     260.        2        0        0      .00  1957.08 12817.08
0
1
 03-30-87     11:08:10                                                                    PAGE   22


                                                                          THIS RUN EXECUTED 03-30-87

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  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
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T1      AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2      PROFILE NUMBER 4 - SUBCRITICAL PROFILE
T3      OVERFLOW CH. VAR. FLOWS - NEW FIELD DATA

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       5.       0.       0.   .000000      .00      .0       0.  1113.350     .000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH     FN      ALLDC    IBW      CHNIM    ITRACE

    4.000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000

1
 03-30-87     11:08:10                                                                    PAGE   23


  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 *PROF 4
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3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.78      .43      .00      .00  1133.00
  107775.       0.    98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
  .001857       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.58  1115.58      .00  1115.81  1115.64      .06     1.82      .04  1114.00
   15000.    3408.    1808.    9784.    1670.    1093.    4901.     413.      60.   1114.00
      .17     2.04     1.65     2.00     .050     .050     .050     .000  1108.00 10475.82
  .000561    1000.    1400.     950.        2        0        0      .00  1774.18 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     8.24  1116.24      .00  1117.57  1116.42      .18      .74      .04  1113.00
   15000.   11522.     382.    3096.    3024.     108.    2346.     530.      90.   1114.00
      .23     3.81     3.53     1.32     .050     .050     .100     .000  1108.00 10511.72
  .002005     750.     750.     800.        2        0        0      .00  1528.28 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      4.94 FEET

1
  03-30-87     11:08:10                                                                    PAGE   24


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19     9.95  1117.95      .00  1119.78  1118.22      .27     1.77      .03  1116.00
   15000.      26.    10859.    4115.      13.    2325.    1798.     597.     109.   1116.00
      .27     1.98     4.67     2.29     .050     .050     .100     .000  1108.00 10566.65
  .004686     610.     600.     600.        2        0        0      .00  1289.75 11950.00
0
 *SECNO 16.291

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.29 EXTENDED      3.17 FEET

    16.29     5.17  1121.17      .00  1122.94  1121.46      .29     3.24      .01  1119.20
   15000.    2036.    10293.    2671.     654.    2091.    1210.     654.     129.   1118.00
      .32     3.11     4.92     2.21     .050     .050     .100     .000  1116.00 10244.15
  .005857     620.     620.     620.        4        0        0      .00  1517.04 11792.00
0
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   16.34    12.36  1122.76      .00  1125.00  1122.98      .22     1.49      .02  1110.40
  15000.   10607.    3422.     971.    2827.     829.    1109.      693.     143.  1120.00
     .35     3.75     4.13      .88     .050     .050     .150     .000  1110.40 10315.61
 .002729     300.     450.     450.       2        0        0      .00  1589.48 11905.09
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.350
 3280 CROSS SECTION     16.35 EXTENDED       .34 FEET


 3301 HV CHANGED MORE THAN HVINS

 7185 MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.35    10.74  1126.14  1126.14  1127.57  1127.24     1.11     1.17      .44  1124.20
  15000.    1058.   11644.    2298.     481.    1229.     828.     740.     162.  1124.20
     .36     2.20     9.47     2.77     .030     .030     .030     .000  1115.40 10667.38
 .002058    1100.     110.     110.       5        9        0      .00  1232.62 11900.00
0
1
 03-30-87     11:08:10                                                                    PAGE   25


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       QLOSS   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


 SPECIAL BRIDGE

 SB  XK       XKOR     COPO     RDLEN    BWC      BWP      BAREA    SS       ELCHU    ELCHD
     1.25     1.56     3.00      .00   128.00     6.00   745.00      .00  1115.40  1116.60

 *SECNO 16.355
 3280 CROSS SECTION     16.35 EXTENDED       3.33 FEET


 3301 HV CHANGED MORE THAN HVINS

 PRESSURE AND WEIR FLOW


  EGPRS    EGLWC     H3      QWEIR    QPR      BAREA   TRAPEZOID    ELLC     ELTRD
                                                          AREA
   1135.96  1127.48     .23     9111.    5893.     745.     805.   1122.00  1124.60


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.35    13.03  1127.33      .00  1129.10  1127.65      .32      .41      .00  1124.20
  15000.    2071.    9042.    3887.    1148.    1608.    1728.     743.     163.  1124.20
     .37     1.80     5.62     2.25     .030     .030     .030     .000  1114.30 10600.00
 .000516      40.      40.      40.       2        0        5      .00  1300.00 11900.00
0
 *SECNO 16.366
 3280 CROSS SECTION     16.37 EXTENDED       6.72 FEET


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37    11.02  1127.72      .00  1129.60  1127.75      .03      .00      .09  1115.00
```

```
 .000038      50.      50.      50.       2       0       0     .00  1300.00 11900.00
0
*SECNO 16.376

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
1
 03-30-87     11:08:10                                                                                                PAGE   26


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.00 ELREA=     1128.00

    16.38    11.73  1127.03      .00  1128.08  1128.45     1.43      .01      .70  1128.00
   15000.       0.   15000.       0.       0.    1564.       0.     760.     165.   1128.00
      .38      .00     9.59      .00     .030     .030     .030     .000  1115.30 11183.81
  .002344      50.      50.      50.       2       0       0      .00   192.96 11376.77
0

SPECIAL BRIDGE

SB  XK        XKOR      CDFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.05      1.56      3.00       .00    201.00     20.00   1600.00      5.00   1116.70   1116.70

*SECNO 16.379
PRESSURE FLOW


 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLO     ELTRD
                                                              AREA
   1129.15   1128.56      .44        0.    15000.     1600.     2171.     1126.20   1129.70


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.60 ELREA=     1129.60

    16.38    12.92  1128.22      .00  1130.29  1129.15      .93      .70      .00  1129.60
   15000.       0.   15000.       0.       0.    1936.       0.     760.     166.   1129.60
      .38      .00     7.75      .00     .000     .030     .000     .000  1115.30 11190.00
  .001264      14.      14.      14.       3       0       0      .00   195.67 11385.67
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43    12.24  1128.24      .00  1132.75  1129.27      .02      .02      .09  1120.00
   15000.     2775.     5741.     6484.     2379.     4470.     5347.     778.     168.   1118.00
      .40     1.17     1.28     1.21      .050     .050     .050     .000  1117.00 10770.00
  .000088      50.     100.     150.       2       0       0      .00  1412.42 12182.42
0
```

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.481

3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
   16.48    25.27  1129.27      .00  1132.79  1129.28      .01      .01      .00  1123.20
   15000.     142.   14707.     151.     404.   22496.     608.     885.     178.   1124.00
     .51      .35      .65      .25     .050     .050     .050     .000  1104.00 10860.00
  .000015     260.     260.     260.        2        0        0      .00  1929.34 12789.34
0
1
 03-30-87     11:08:10                                                                    PAGE   28



                                                                    THIS RUN EXECUTED 03-30-87
*************************************************
  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      AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2      PROFILE NUMBER 5 - SUBCRITICAL PROFILE
T3      OVERFLOW CH. VAR. FLOWS - NEW FIELD DATA

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        6.        0.        0.   .000000      .00       .0        0.  1113.350      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     5.000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000

1
 03-30-87     11:08:10                                                                    PAGE   29


  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


*PROF 5

CCHV=    .100 CEHV=    .300
*SECNO 15.623

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00
```

```
     .00      .00     3.64     2.10     .050     .050     .050     .000  1006.30  9365.47
  .000829       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     6.34  1114.34      .00  1115.81  1114.35      .00      .78      .02  1114.00
    2000.     474.     200.    1326.    1216.     717.    3530.     386.      60.   1114.00
      .89      .39      .28      .38     .050     .050     .050     .000  1108.00 10479.78
  .000028    1000.    1400.     950.        2        0        0      .00  1770.22 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     6.38  1114.38      .00  1117.57  1114.40      .01      .05      .00  1113.00
    2000.    1767.      53.     180.    1829.      64.     754.     459.      90.   1114.00
     1.13      .97      .84      .24     .050     .050     .100     .000  1108.00 10517.19
  .000230     750.     750.     600.        2        0        0      .00  1522.81 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      1.64 FEET

1
  03-30-87     11:08:10                                                                    PAGE   30


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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



 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1116.00 ELREA=     1116.00

    16.19     6.63  1114.63      .00  1119.78  1114.79      .15      .35      .04  1116.00
    2000.       0.    2000.       0.       0.     638.       0.     482.     102.   1116.00
     1.18      .00     3.14      .00     .050     .050     .100     .000  1108.00 10592.41
  .003368     610.     600.     600.        2        0        0      .00   257.67 11223.07
0
 *SECNO 16.291

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.29 EXTENDED       .40 FEET


 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1119.20 ELREA=     1118.00

    16.29     2.40  1118.40  1117.93  1122.94  1118.66      .26     3.84      .03  1119.20
    2000.       0.    1964.      36.       0.     478.      49.     490.     108.   1118.00
     1.22      .00     4.11      .74     .050     .050     .100     .000  1116.00 10827.37
  .014948     620.     620.     620.       12       17        0      .00   600.21 11792.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338

 3265 DIVIDED FLOW
```

```
   2000.    1451.     548.       1.     719.     325.      13.     497.     115.   1120.00
    1.28     2.02     1.69     .08     .050     .050     .150     .000  1110.40 10348.79
 .001592     300.     450.     450.       4        0        0      .00   932.52 11488.04
0
CCHV=    .300 CEHV=    .500
*SECND 16.350

3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
1
 03-30-87     11:08:10                                                                    PAGE   31


   SECND    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.20

    16.35     5.19  1120.59      .00  1127.57  1120.82      .23      .58      .09  1124.20
    2000.       0.    2000.       0.       0.     521.       0.     507.     123.   1124.20
     1.32      .00     3.84      .00     .030     .030     .030     .000  1115.40 11164.41
 .000987     1100.     110.     110.        3        0        0      .00   127.08 11291.49
0

SPECIAL BRIDGE

SB  XK        XKOR      CDFD      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.56      3.00       .00    128.00      6.00    745.00       .00   1115.40   1116.60

*SECND 16.355
6110 EGLWC OF 1120.73 LESS THAN XEG OF 1120.82
CLASS A LOW FLOW

3420 BRIDGE W.S.=   1119.96 BRIDGE VELOCITY=,       4.14      CALCULATED CHANNEL AREA=,       556.

 EGPRS      EGLWC       H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                                 AREA
       .00   1120.73      .03        0.     2000.      745.      805.     1122.00   1124.60



3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.20

    16.35     6.32  1120.62      .00  1129.10  1120.82      .11      .00      .00  1124.20
    2000.       0.    2000.       0.       0.     750.       0.     508.     123.   1124.20
     1.32      .00     2.67      .00     .000     .030     .000     .000  1114.30 11164.43
 .000299      40.      40.      40.        0        0        0      .00   127.19 11291.62
0
*SECND 16.366

3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37     4.14  1120.84      .00  1129.60  1120.85      .01      .01      .03  1119.00
    2000.     950.     438.     552.    1265.     482.     882.     509.     124.   1117.60
     1.34      .75     1.03      .63     .030     .030     .030     .000  1116.70 10600.00
 .000084      50.      50.      50.        2        0        0      .00  1273.91 11873.91
0
1
 03-30-87     11:08:10                                                                    PAGE   32
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   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 16.376

3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.00 ELREA=     1128.00

    16.38     5.43  1120.73      .00  1128.08  1120.99      .26      .01      .12  1128.00
    2000.       0.    2000.       0.       0.     493.       0.     511.     125.   1128.00
     1.34      .00     4.06      .00     .030     .030     .030     .000  1115.30 11208.61
  .001351      50.      50.      50.        2        0        0      .00   147.16 11355.77
0

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.05      1.56      3.00       .00   201.00     20.00   1600.00      5.00   1116.70   1116.70

*SECNO 16.379
6110 EGLWC OF 1120.97 LESS THAN XEG OF 1120.99
CLASS A LOW FLOW

3420 BRIDGE W.S.=   1120.71 BRIDGE VELOCITY=,      2.48      CALCULATED CHANNEL AREA=,      807.

 EGPRS     EGLWC      H3       QWEIR     QLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                            AREA
       .00   1120.97      .05        0.     2000.     1600.     2171.     1126.20   1129.70



3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.60 ELREA=     1129.60

    16.38     5.49  1120.79      .00  1130.29  1120.99      .18      .00      .00  1129.60
    2000.       0.    2000.       0.       0.     588.       0.     511.     125.   1129.60
     1.34      .00     3.40      .00     .000     .030     .000     .000  1115.30 11190.00
  .000921      14.      14.      14.        0        0        0      .00   166.91 11356.91
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43     4.06  1121.06      .00  1132.75  1121.08      .02      .07      .02  1120.00
    2000.      96.     753.    1151.     175.     787.     940.     515.     127.   1118.00
     1.37      .55      .96     1.22     .050     .050     .050     .000  1117.00 10799.70
  .000493      50.     100.     150.        2        0        0      .00  1104.72 11904.43
0
1
  03-30-87     11:08:10                                                                    PAGE   33


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.481
```

```
   2000.      0.    2000.      0.      0.    9768.      0.     550.     133.   1124.00
    1.72     .00      .20     .00    .050     .050     .050     .000  1104.00 11686.13
 .000002    260.     260.    260.       2        0        0      .00   884.15 12570.27
0
1
 03-30-87     11:08:10                                                                          PAGE   34


                                                                          THIS RUN EXECUTED 03-30-87

*************************************************
  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      AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2      PROFILE NUMBER 6 - SUBCRITICAL PROFILE
T3      OVERFLOW CH. VAR. FLOWS - NEW FIELD DATA

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    AVINS     Q         WSEL      FQ

       0.       7.        0.        0.   .000000       .00        .0        0.  1113.350     .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     6.000     .000    -1.000     .000      .000      .000      .000      .000      .000      .000

1
 03-30-87     11:08:10                                                                          PAGE   35


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


*PROF 6

CCHV=    .100 CEHV=    .300
*SECNO 15.823

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=      1  TARGET=    2576.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.54      .19      .00      .00  1133.00
   72000.       0.   65623.    6377.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     3.64     2.10     .050     .050     .050     .000  1008.30  9365.47
  .000829       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=      1  TARGET=    1848.000
    16.01     6.46  1114.46      .00  1115.81  1114.51      .05      .95      .01  1114.00
   10000.    2358.    1085.    6617.    1257.     751.    3655.     389.      60.   1114.00
      .18     1.87     1.37     1.81     .050     .050     .050     .000  1108.00 10475.42
```

```
CCHV=    .100 CEHV=    .300
*SECNO 16.153

3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     7.21  1115.21      .00  1117.57  1115.37      .16      .83      .03  1113.00
   10000.     8211.     263.    1527.     2359.      83.    1462.     474.      90.   1114.00
      .25     3.48     3.14     1.04      .050     .050     .100     .000  1108.00 10514.75
  .002247     750.     750.     800.         2        0        0      .00  1525.24 12040.00
0
*SECNO 16.191

3265 DIVIDED FLOW

3280 CROSS SECTION     16.19 EXTENDED      4.13 FEET

1
 03-30-87     11:08:10                                                                          PAGE   36

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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

3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19     9.13  1117.13      .00  1119.78  1117.33      .20     1.95      .01  1116.00
   10000.       6.    7253.    2740.       4.    1785.    1319.     523.     105.   1116.00
      .30     1.43     4.06     2.08      .050     .050     .100     .000  1108.00 10572.23
  .005040     610.     600.     600.         3        0        0      .00  1243.48 11950.00
0
*SECNO 16.291

3265 DIVIDED FLOW

3280 CROSS SECTION     16.29 EXTENDED      2.52 FEET

    16.29     4.52  1120.52      .00      .00  1120.76      .24     3.41      .01  1119.20
   10000.     863.    7419.    1718.     384.    1672.     919.     566.     128.   1118.00
      .35     2.25     4.44     1.87      .050     .050     .100     .000  1116.00 10247.42
  .006037     620.     620.     620.         4        0        0      .00  1484.50 11792.00
0
CCHV=    .300 CEHV=    .500
*SECNO 16.338
    16.34    11.65  1122.05      .00      .00  1122.21      .16     1.42      .03  1110.40
   10000.    7091.    2413.     496.    2246.     696.     733.     596.     142.   1120.00
      .38     3.16     3.47      .68      .050     .050     .150     .000  1110.40 10324.36
  .002431     300.     450.     450.         3        0        0      .00  1517.96 11842.32
0
CCHV=    .300 CEHV=    .500
*SECNO 16.350

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.20

    16.35     7.20  1122.60      .00  1127.57  1125.17     2.57     1.76     1.21  1124.20
   10000.       0.   10000.       0.       0.     777.       0.     627.     153.   1124.20
      .39      .00    12.88      .00      .030     .030     .030     .000  1115.40 11164.18
  .006804    1100.     110.     110.         3        0        0      .00   127.59 11291.77
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1121.44 ,NOT 1122.60 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	CDFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	128.00	6.00	745.00	.00	1115.40	1116.60

*SECNO 16.355
3280 CROSS SECTION 16.35 EXTENDED .96 FEET

3301 HV CHANGED MORE THAN HVINS

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
1126.96	1124.23	.00	1397.	8541.	745.	805.	1122.00	1124.60

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

16.35	10.66	1124.96	.00	1129.10	1125.78	.82	.61	.00	1124.20
10000.	67.	9638.	295.	75.	1304.	287.	628.	154.	1124.20
.39	.89	7.39	1.03	.030	.030	.030	.000	1114.30	10968.13
.001177	40.	40.	40.	3	0	0	.00	931.86	11900.00

0
*SECNO 16.366
3280 CROSS SECTION 16.37 EXTENDED 5.01 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

16.37	9.31	1126.01	.00	1129.60	1126.03	.02	.00	.24	1119.00
10000.	4642.	1459.	3899.	4312.	1205.	3824.	634.	155.	1117.60
.41	1.08	1.21	1.02	.020	.030	.030	.000	1116.70	10600.00
.000034	50.	50.	50.	2	0	0	.00	1300.00	11900.00

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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 16.376

3301 HV CHANGED MORE THAN HVINS

```
3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1128.00 ELREA=     1128.00

   16.38    10.25  1125.55      .00  1128.08  1126.49      .94      .01      .46  1128.00
  10000.       0.   10000.       0.       0.    1287.       0.     640.     156.   1128.00
     .41      .00     7.77      .00     .030     .030     .030     .000  1115.30 11189.62
 .001844      50.      50.      50.        2        0        0      .00   182.23 11371.85
0

SPECIAL BRIDGE

SB  XK        XKOR      CDFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
    1.05      1.56      3.00       .00    201.00     20.00   1600.00     5.00   1116.70   1116.70

*SECNO 16.379
CLASS A LOW FLOW

3420 BRIDGE W.S.=   1125.48 BRIDGE VELOCITY=,      5.07      CALCULATED CHANNEL AREA=,     1974.

 EGPRS      EGLWC       H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                               AREA
  1126.50   1126.51      .24        0.    10000.     1600.     2171.     1126.20   1129.70


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.60 ELREA=     1129.60

   16.38    10.50  1125.80      .00  1130.29  1126.51      .72      .02      .00  1129.60
  10000.       0.   10000.       0.       0.    1473.       0.     641.     156.   1129.60
     .41      .00     6.79      .00     .000     .030     .000     .000  1115.30 11190.00
 .001291      14.      14.      14.        0        0        0      .00   186.29 11376.29
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431
1
 03-30-87     11:08:10                                                                    PAGE   39


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
   16.43     9.59  1126.59      .00  1132.75  1126.61      .02      .03      .07  1120.00
  10000.    1740.     3940.    4320.    1636.    3276.    3674.     654.     158.   1118.00
     .43     1.06     1.20     1.18     .050     .050     .050     .000  1117.00 10772.05
 .000116      50.     100.     150.        2        0        0      .00  1312.13 12084.18
0
 *SECNO 16.481

3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
   16.48    22.62  1126.62      .00  1132.79  1126.62      .00      .01      .00  1123.20
  10000.      50.     9929.      20.     218.   18116.     154.     734.     167.   1124.00
     .57     .23      .55      .13     .050     .050     .050     .000  1104.00 10860.00
 .000014     260.     260.     260.        2        0        0      .00  1837.76 12697.76
```

THIS RUN EXECUTED 03-30-87

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**************************************************
 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      AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2      PROFILE NUMBER 7 - SUBCRITICAL PROFILE
T3      OVERFLOW CH. VAR. FLOWS - NEW FIELD DATA

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       8.       0.       0.   .000000      .00       .0       0.  1113.350    .000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH     FN      ALLDC    IBW     CHNIM    ITRACE

    15.000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000

1
 03-30-87     11:08:10                                                                    PAGE 41


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


*PROF 7

CCHV=    .100 CEHV=    .300
*SECNO 15.823

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2976.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.54      .19      .00      .00  1133.00
   72000.       0.   65623.    6377.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     3.64     2.10     .050     .050     .050     .000  1008.30  9365.47
  .000829       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     6.39  1114.39      .00  1115.81  1114.40      .01      .84      .02  1114.00
    5000.    1182.     506.    3312.    1234.     731.    3583.     387.      60.   1114.00
      .36      .96      .69      .92     .050     .050     .050     .000  1108.00 10479.63
  .000168    1000.    1400.     950.        2        0        0      .00  1770.37 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10474.0   12060.0  TYPE=     1  TARGET=    1606.000
```

```
   5000.    4319.     133.     548.    1981.      69.     956.     464.      90.   1114.00
     .47     2.18     1.92      .57     .050     .050     .100     .000  1108.00 10516.49
 .001075     750.     750.     800.       2        0        0      .00  1523.51 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      2.76 FEET

1
 03-30-87     11:08:10                                                                          PAGE   42

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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

 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1116.00 ELREA=     1116.00

    16.19     7.76  1115.76      .00  1119.78  1116.16      .40     1.38      .10  1116.00
    5000.       0.    5000.       0.       0.     985.       0.     491.     103.   1116.00
      .50      .00     5.08      .00     .050     .050     .100     .000  1108.00 10582.18
  .007697     610.     600.     600.        3        0        0      .00   359.42 11241.15
0
 *SECNO 16.291

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.29 EXTENDED      1.80 FEET

    16.29     3.80  1119.80      .00      .00  1119.95      .15     3.76      .03  1119.20
    5000.     104.    4137.     755.      97.    1231.     597.     512.     115.   1118.00
      .56     1.07     3.36     1.27     .050     .050     .100     .000  1116.00 10348.89
  .004900     620.     620.     620.        3        0        0      .00  1354.96 11792.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
    16.34    10.67  1121.07      .00      .00  1121.16      .09     1.20      .02  1110.40
    5000.    3556.    1329.     115.    1447.     511.     293.     531.     127.   1120.00
      .60     2.46     2.60      .39     .050     .050     .150     .000  1110.40 10336.55
  .002069     300.     450.     450.        3        0        0      .00  1402.11 11738.66
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.350

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE.ELLEA=     1124.20 ELREA=     1124.20

    16.35     6.38  1121.78      .00  1127.57  1122.64      .86     1.09      .38  1124.20
    5000.       0.    5000.       0.       0.     672.       0.     551.     139.   1124.20
      .62      .00     7.45      .00     .030     .030     .030     .000  1115.40 11164.28
  .002717    1100.     110.     110.        2        0        0      .00   127.38 11291.66
0
1
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	128.00	6.00	745.00	.00	1115.40	1116.60

*SECNO 16.355
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
1122.87	1122.46	.23	0.	5000.	745.	805.	1122.00	1124.60

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1124.20 ELREA= 1124.20

16.35	8.17	1122.47	.00	1129.10	1122.87	.40	.23	.00	1124.20
5000.	0.	5000.	0.	0.	985.	0.	552.	139.	1124.20
.62	.00	5.07	.00	.000	.030	.000	.000	1114.30	11164.21
.000780	40.	40.	40.	2	0	0	.00	127.61	11291.82

0
*SECNO 16.366
3280 CROSS SECTION 16.37 EXTENDED 1.58 FEET

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

16.37	6.28	1122.98	.00	1129.60	1122.99	.01	.01	.12	1119.00
5000.	2354.	874.	1773.	2523.	781.	2096.	556.	139.	1117.60
.64	.93	1.12	.85	.030	.030	.030	.000	1116.70	10600.00
.000052	50.	50.	50.	2	0	0	.00	1300.00	11900.00

0
*SECNO 16.376

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1128.00 ELREA= 1128.00

16.38	7.38	1122.68	.00	1128.08	1123.30	.62	.01	.30	1128.00
5000.	0.	5000.	0.	0.	794.	0.	589.	140.	1128.00
.64	.00	6.30	.00	.030	.030	.030	.000	1115.30	11200.92
.001854	50.	50.	50.	2	0	0	.00	[illegible]	[illegible]

SPECIAL BRIDGE

SB	XK	XKOR	CDFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.56	3.00	.00	201.00	20.00	1600.00	5.00	1116.70	1116.70

*SECNO 16.379
CLASS A LOW FLOW

3420 BRIDGE W.S.= 1122.63 BRIDGE VELOCITY=, 4.00 CALCULATED CHANNEL AREA=, 1250.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1123.29	.17	0.	5000.	1600.	2171.	1126.20	1129.70

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1129.60 ELREA= 1129.60

16.38	7.55	1122.85	.00	1130.29	1123.29	.44	-.01	.00	1129.60
5000.	0.	5000.	0.	0.	941.	0.	559.	140.	1129.60
.64	.00	5.32	.00	.000	.030	.000	.000	1115.30	11190.00
.001298	14.	14.	14.	0	0	0	.00	174.89	11364.89

0
CCHV= .100 CEHV= .300
*SECNO 16.431

3470 ENCROACHMENT STATIONS= 10770.0 12210.0 TYPE= 1 TARGET= 1440.000

16.43	6.36	1123.36	.00	1132.75	1123.38	.02	.05	.04	1120.00
5000.	685.	2005.	2310.	763.	1821.	1956.	566.	142.	1118.00
.67	.90	1.10	1.18	.050	.050	.050	.000	1117.00	10788.21
.000213	50.	100.	150.	2	0	0	.00	1190.92	11979.13

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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 16.481

3470 ENCROACHMENT STATIONS= 10860.0 12820.0 TYPE= 1 TARGET= 1960.000

16.48	19.38	1123.38	.00	1132.79	1123.39	.00	.01	.00	1123.20
5000.	0.	5000.	0.	2.	12783.	0.	618.	151.	1124.00
.85	.02	.39	.00	.050	.050	.050	.000	1104.00	10908.44
.000011	260.	260.	260.	2	0	0	.00	1669.51	12577.95

0
1

THIS RUN EXECUTED 03-30-87

****
HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR - 01,02,03,04,05,06
MODIFICATION - 50,51,52,53,54,55,56

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

OVERFLOW CH. VAR. FLOWS

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
15.823	.00	.00	.00	1008.30	107775.00	1113.35	.00	1113.78	18.57	5.46	21045.96	25011.44
15.823	.00	.00	.00	1008.30	107775.00	1113.35	.00	1113.78	18.57	5.46	21045.96	25011.44
15.823	.00	.00	.00	1008.30	107775.00	1113.35	.00	1113.78	18.57	5.46	21045.96	25011.44
15.823	.00	.00	.00	1008.30	107775.00	1113.35	.00	1113.78	18.57	5.46	21045.96	25011.44
15.823	.00	.00	.00	1008.30	72000.00	1113.35	.00	1113.54	8.29	3.64	21045.96	25011.44
15.823	.00	.00	.00	1008.30	72000.00	1113.35	.00	1113.54	8.29	3.64	21045.96	25011.44
15.823	.00	.00	.00	1008.30	72000.00	1113.35	.00	1113.54	8.29	3.64	21045.96	25011.44
16.013	1400.00	.00	.00	1108.00	30000.00	1115.81	.00	1116.03	19.11	3.18	8066.28	6862.99
16.013	1400.00	.00	.00	1108.00	25000.00	1115.74	.00	1115.90	13.94	2.68	7941.49	6696.72
16.013	1400.00	.00	.00	1108.00	20000.00	1115.67	.00	1115.77	9.41	2.18	7807.40	6520.02
16.013	1400.00	.00	.00	1108.00	15000.00	1115.58	.00	1115.64	5.61	1.65	7663.15	6332.22
16.013	1400.00	.00	.00	1108.00	2000.00	1114.34	.00	1114.35	.28	.28	5462.83	3776.12
16.013	1400.00	.00	.00	1108.00	10000.00	1114.46	.00	1114.51	6.30	1.37	5662.95	3983.53
16.013	1400.00	.00	.00	1108.00	5000.00	1114.39	.00	1114.40	1.68	.65	5547.33	3863.05
16.153	750.00	.00	.00	1108.00	30000.00	1117.57	.00	1117.95	31.85	5.29	7511.67	5315.87
16.153	750.00	.00	.00	1108.00	25000.00	1117.13	.00	1117.45	29.22	4.81	6840.49	4624.69
16.153	750.00	.00	.00	1108.00	20000.00	1116.68	.00	1116.94	25.48	4.24	6155.69	3962.06
16.153	750.00	.00	.00	1108.00	15000.00	1116.24	.00	1116.42	20.05	3.53	5478.01	3350.28
16.153	750.00	.00	.00	1108.00	2000.00	1114.38	.00	1114.40	2.30	.84	2646.47	1318.79
16.153	750.00	.00	.00	1108.00	10000.00	1115.21	.00	1115.37	22.47	3.14	3904.09	2109.52
16.153	750.00	.00	.00	1108.00	5000.00	1114.62	.00	1114.68	10.75	1.92	3006.25	1525.00
16.191	600.00	.00	.00	1108.00	30000.00	1119.78	.00	1120.22	44.40	6.03	6579.71	4502.34
16.191	600.00	.00	.00	1108.00	25000.00	1119.24	.00	1119.63	44.59	5.62	5840.81	3744.05
16.191	600.00	.00	.00	1108.00	20000.00	1118.64	.00	1118.97	45.19	5.17	5036.44	2975.12
16.191	600.00	.00	.00	1108.00	15000.00	1117.95	.00	1118.22	46.86	4.67	4135.62	2191.33
16.191	600.00	.00	.00	1108.00	2000.00	1114.63	.00	1114.79	33.68	3.14	637.63	344.61
16.191	600.00	.00	.00	1108.00	10000.00	1117.13	.00	1117.33	50.40	4.06	3108.20	1408.55
16.191	600.00	.00	.00	1108.00	5000.00	1115.76	.00	1116.16	76.97	5.08	984.68	569.93

1

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
16.291	620.00	.00	.00	1116.00	30000.00	1122.94	.00	1123.52	63.03	6.71	5491.36	3778.63
16.291	620.00	.00	.00	1116.00	25000.00	1122.44	.00	1122.94	63.84	6.28	4896.05	3128.82
16.291	620.00	.00	.00	1116.00	20000.00	1121.90	.00	1122.34	65.18	5.80	4246.69	2477.19
16.291	620.00	.00	.00	1116.00	15000.00	1121.17	.00	1121.46	58.57	4.92	3955.48	1960.03
16.291	620.00	.00	.00	1116.00	2000.00	1118.40	1117.93	1118.66	149.48	4.11	526.82	163.58
16.291	620.00	.00	.00	1116.00	10000.00	1120.52	.00	1120.76	60.37	4.44	2974.08	1267.04
16.291	620.00	.00	.00	1116.00	5000.00	1119.60	.00	1119.95	48.00	3.36	1925.46	714.29
16.338	450.00	.00	.00	1110.40	30000.00	1125.00	.00	1125.67	44.30	6.93	6023.83	4507.36
16.338	450.00	.00	.00	1110.40	25000.00	1124.45	.00	1125.02	41.61	6.34	5418.11	3875.48
16.338	450.00	.00	.00	1110.40	20000.00	1123.85	.00	1124.32	38.27	5.67	4757.46	3238.92
16.338	450.00	.00	.00	1110.40	15000.00	1122.76	.00	1122.98	27.29	4.13	4765.96	2871.40

	16.338	450.00	.00	.00	1110.40	5000.00	1121.07	.00	1121.16	20.69	2.60	2251.05	1099.36
*	16.350	110.00	.00	.00	1115.40	30000.00	1127.57	1127.57	1128.83	25.08	11.47	4387.42	5990.14
*	16.350	110.00	.00	.00	1115.40	25000.00	1127.19	1127.19	1128.37	23.45	10.84	3894.85	5162.48
*	16.350	110.00	.00	.00	1115.40	20000.00	1126.75	1126.75	1127.86	21.60	10.11	3327.21	4302.87
*	16.350	110.00	.00	.00	1115.40	15000.00	1126.14	1126.14	1127.24	20.58	9.47	2538.80	3306.73
	16.350	110.00	.00	.00	1115.40	2000.00	1120.59	.00	1120.82	9.87	3.84	521.39	636.49
	16.350	110.00	.00	.00	1115.40	10000.00	1122.60	.00	1125.17	68.04	12.88	776.59	1212.35
	16.350	110.00	.00	.00	1115.40	5000.00	1121.78	.00	1122.64	27.17	7.45	671.53	959.18
*	16.355	40.00	1124.60	1122.00	1114.30	30000.00	1129.10	.00	1129.55	6.95	7.13	6788.21	11379.42
*	16.355	40.00	1124.60	1122.00	1114.30	25000.00	1128.63	.00	1129.03	6.28	6.63	6175.50	9972.37
*	16.355	40.00	1124.60	1122.00	1114.30	20000.00	1128.04	.00	1128.40	5.74	6.15	5409.66	8350.58
	16.355	40.00	1124.60	1122.00	1114.30	15000.00	1127.33	.00	1127.65	5.16	5.62	4483.54	6605.08
	16.355	40.00	1124.60	1122.00	1114.30	2000.00	1120.62	.00	1120.82	2.99	2.67	749.96	1155.89
*	16.355	40.00	1124.60	1122.00	1114.30	10000.00	1124.96	.00	1125.78	11.77	7.39	1665.92	2915.18
	16.355	40.00	1124.60	1122.00	1114.30	5000.00	1122.47	.00	1122.87	7.80	5.07	985.43	1789.72
	16.366	50.00	.00	.00	1116.70	30000.00	1129.60	.00	1129.67	.80	2.35	14007.58	33570.34
	16.366	50.00	.00	.00	1116.70	25000.00	1129.08	.00	1129.14	.65	2.06	13336.48	30953.60
	16.366	50.00	.00	.00	1116.70	20000.00	1128.46	.00	1128.50	.51	1.76	12528.58	27915.51
	16.366	50.00	.00	.00	1116.70	15000.00	1127.72	.00	1127.75	.38	1.44	11566.28	24460.34
	16.366	50.00	.00	.00	1116.70	2000.00	1120.84	.00	1120.85	.84	1.03	2629.70	2187.28
	16.366	50.00	.00	.00	1116.70	10000.00	1126.01	.00	1126.03	.34	1.21	9340.31	17179.08
	16.366	50.00	.00	.00	1116.70	5000.00	1122.98	.00	1122.99	.52	1.12	5399.53	6959.05
*	16.376	50.00	.00	.00	1115.30	30000.00	1128.08	1128.08	1132.54	65.08	16.94	1771.31	3718.82
	16.376	50.00	.00	.00	1115.30	25000.00	1127.23	.00	1131.01	60.64	15.60	1602.96	3210.48
	16.376	50.00	.00	.00	1115.30	20000.00	1127.30	.00	1129.68	37.87	12.37	1616.50	3250.06
	16.376	50.00	.00	.00	1115.30	15000.00	1127.03	.00	1128.45	23.44	9.59	1564.37	3098.47
	16.376	50.00	.00	.00	1115.30	2000.00	1120.73	.00	1120.99	13.51	4.06	492.95	544.23
	16.376	50.00	.00	.00	1115.30	10000.00	1125.55	.00	1126.49	18.44	7.77	1287.48	2328.67
	16.376	50.00	.00	.00	1115.30	5000.00	1122.68	.00	1123.30	19.54	6.30	794.20	1131.24

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	16.379	14.00	1129.70	1126.20	1115.30	30000.00	1130.29	.00	1132.54	25.58	12.27	2875.15	5931.17
	16.379	14.00	1129.70	1126.20	1115.30	25000.00	1128.62	.00	1131.01	31.18	12.41	2013.79	4477.36
	16.379	14.00	1129.70	1126.20	1115.30	20000.00	1128.83	.00	1130.30	18.76	9.73	2055.37	4617.25
	16.379	14.00	1129.70	1126.20	1115.30	15000.00	1128.22	.00	1129.15	12.64	7.75	1936.09	4219.45
	16.379	14.00	1129.70	1126.20	1115.30	2000.00	1120.79	.00	1120.99	9.21	3.40	587.83	658.97
	16.379	14.00	1129.70	1126.20	1115.30	10000.00	1125.80	.00	1126.51	12.91	6.79	1472.91	2783.27
	16.379	14.00	1129.70	1126.20	1115.30	5000.00	1122.85	.00	1123.29	12.98	5.32	940.70	1388.07
	16.431	100.00	.00	.00	1117.00	30000.00	1132.75	.00	1132.79	1.18	1.83	17228.02	27590.86
	16.431	100.00	.00	.00	1117.00	25000.00	1131.24	.00	1131.28	1.26	1.74	15055.36	22272.33
	16.431	100.00	.00	.00	1117.00	20000.00	1130.44	.00	1130.47	1.04	1.51	13905.23	19658.39
	16.431	100.00	.00	.00	1117.00	15000.00	1129.24	.00	1129.27	.88	1.28	12196.00	16033.43
	16.431	100.00	.00	.00	1117.00	2000.00	1121.06	.00	1121.08	4.93	.96	1901.72	900.50
	16.431	100.00	.00	.00	1117.00	10000.00	1126.59	.00	1126.61	1.16	1.20	8585.40	9276.06
	16.431	100.00	.00	.00	1117.00	5000.00	1123.36	.00	1123.38	2.13	1.10	4540.09	3425.53
	16.481	260.00	.00	.00	1104.00	30000.00	1132.79	.00	1132.81	.27	1.02	30388.98	58052.31
	16.481	260.00	.00	.00	1104.00	25000.00	1131.28	.00	1131.30	.26	.94	27428.88	49379.77
	16.481	260.00	.00	.00	1104.00	20000.00	1130.47	.00	1130.48	.20	.80	25843.03	44989.85
	16.481	260.00	.00	.00	1104.00	15000.00	1129.27	.00	1129.28	.15	.65	23507.48	38819.63
	16.481	260.00	.00	.00	1104.00	2000.00	1121.08	.00	1121.08	.02	.20	9767.68	14337.95
	16.481	260.00	.00	.00	1104.00	10000.00	1126.62	.00	1126.62	.14	.55	18488.01	26720.15
	16.481	260.00	.00	.00	1104.00	5000.00	1123.38	.00	1123.39	.11	.39	12785.49	14851.68

OVERFLOW CH. VAR. FLOWS

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	72000.00	1113.35	.00	.00	.00	2700.56	.00
15.823	72000.00	1113.35	.00	.00	.00	2700.56	.00
15.823	72000.00	1113.35	.00	.00	.00	2700.56	.00
16.013	30000.00	1115.81	.00	2.46	.00	1774.50	1400.00
16.013	25000.00	1115.74	-.07	2.39	-.07	1774.68	1400.00
16.013	20000.00	1115.67	-.07	2.32	-.14	1774.43	1400.00
16.013	15000.00	1115.58	-.08	2.23	-.23	1774.18	1400.00
16.013	2000.00	1114.34	-1.24	.99	-1.47	1770.22	1400.00
16.013	10000.00	1114.46	.11	1.11	-1.35	1770.58	1400.00
16.013	5000.00	1114.39	-.06	1.04	-1.42	1770.37	1400.00
16.153	30000.00	1117.57	.00	1.76	.00	1532.20	750.00
16.153	25000.00	1117.13	-.44	1.39	-.44	1530.91	750.00
16.153	20000.00	1116.68	-.45	1.02	-.89	1529.59	750.00
16.153	15000.00	1116.24	-.44	.65	-1.33	1528.28	750.00
16.153	2000.00	1114.38	-1.86	.04	-3.19	1522.81	750.00
16.153	10000.00	1115.21	.83	.75	-2.36	1525.24	750.00
16.153	5000.00	1114.62	-.59	.23	-2.95	1523.51	750.00
16.191	30000.00	1119.78	.00	2.22	.00	1369.83	600.00
16.191	25000.00	1119.24	-.54	2.11	-.54	1346.36	600.00
16.191	20000.00	1118.64	-.60	1.96	-1.14	1320.34	600.00
16.191	15000.00	1117.95	-.69	1.71	-1.83	1289.75	600.00
16.191	2000.00	1114.63	-3.32	.25	-5.15	257.67	600.00
16.191	10000.00	1117.13	2.50	1.92	-2.65	1243.48	600.00
16.191	5000.00	1115.76	-1.37	1.14	-4.02	359.42	600.00
16.291	30000.00	1122.94	.00	3.16	.00	1200.00	620.00
16.291	25000.00	1122.44	-.50	3.19	-.50	1200.00	620.00
16.291	20000.00	1121.90	-.53	3.26	-1.04	1200.00	620.00
16.291	15000.00	1121.17	-.73	3.22	-1.77	1517.04	620.00
16.291	2000.00	1118.40	-2.77	3.77	-4.54	600.21	620.00
16.291	10000.00	1120.52	2.11	3.39	.00	1484.50	620.00
16.291	5000.00	1119.80	-.72	4.04	.00	1354.96	620.00
16.338	30000.00	1125.00	.00	2.06	.00	1100.00	450.00
16.338	25000.00	1124.45	-.55	2.01	-.55	1100.00	450.00
16.338	20000.00	1123.85	-.60	1.95	-1.15	1100.00	450.00
16.338	15000.00	1122.76	-1.09	1.59	-2.24	1589.48	450.00
16.338	2000.00	1120.09	-2.67	1.69	-4.90	932.52	450.00
16.338	10000.00	1122.05	1.96	1.53	.00	1517.96	450.00
16.338	5000.00	1121.07	-.98	1.27	.00	1402.11	450.00

1

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
* 16.250	70000.00	1127.57	.00	2.57	.00	1700.00	110.00

*	16.350	20000.00	1126.75	-.44	2.90	-.82	1300.00	110.00
*	16.350	15000.00	1126.14	-.61	3.38	-1.43	1232.62	110.00
	16.350	2000.00	1120.59	-5.55	.49	-6.98	127.08	110.00
	16.350	10000.00	1122.60	2.01	.55	-4.97	127.59	110.00
	16.350	5000.00	1121.78	-.82	.71	-5.79	127.38	110.00
*	16.355	30000.00	1129.10	.00	1.53	.00	1300.00	40.00
*	16.355	25000.00	1128.63	-.47	1.44	-.47	1300.00	40.00
*	16.355	20000.00	1128.04	-.59	1.29	-1.06	1300.00	40.00
	16.355	15000.00	1127.33	-.71	1.19	-1.77	1300.00	40.00
	16.355	2000.00	1120.62	-6.71	.03	-8.48	127.19	40.00
*	16.355	10000.00	1124.96	4.34	2.37	-4.14	931.86	40.00
	16.355	5000.00	1122.47	-2.49	.69	-6.63	127.61	40.00
	16.366	30000.00	1129.60	.00	.50	.00	1300.00	50.00
	16.366	25000.00	1129.08	-.52	.45	-.52	1300.00	50.00
	16.366	20000.00	1128.46	-.62	.42	-1.14	1300.00	50.00
	16.366	15000.00	1127.72	-.74	.39	-1.88	1300.00	50.00
	16.366	2000.00	1120.84	-6.88	.22	-8.75	1273.91	50.00
	16.366	10000.00	1126.01	5.16	1.04	-3.59	1300.00	50.00
	16.366	5000.00	1122.98	-3.03	.51	-6.62	1300.00	50.00
*	16.376	30000.00	1128.08	.00	-1.51	.00	203.98	50.00
	16.376	25000.00	1127.23	-.85	-1.85	-.85	194.41	50.00
	16.376	20000.00	1127.30	.07	-1.16	-.78	194.92	50.00
	16.376	15000.00	1127.03	-.27	-.69	-1.06	192.96	50.00
	16.376	2000.00	1120.73	-6.29	-.11	-7.35	147.16	50.00
	16.376	10000.00	1125.55	4.82	-.45	-2.53	182.23	50.00
	16.376	5000.00	1122.68	-2.87	-.29	-5.40	161.36	50.00
	16.379	30000.00	1130.29	.00	2.21	.00	878.15	14.00
	16.379	25000.00	1128.62	-1.67	1.38	-1.67	197.20	14.00
	16.379	20000.00	1128.83	.21	1.53	-1.46	198.02	14.00
	16.379	15000.00	1128.22	-.61	1.20	-2.07	195.67	14.00
	16.379	2000.00	1120.79	-7.44	.05	-9.50	166.91	14.00
	16.379	10000.00	1125.80	5.01	.24	-4.49	186.29	14.00
	16.379	5000.00	1122.85	-2.95	.17	-7.44	174.89	14.00
	16.431	30000.00	1132.75	.00	2.46	.00	1440.00	100.00
	16.431	25000.00	1131.24	-1.51	2.62	-1.51	1440.00	100.00
	16.431	20000.00	1130.44	-.80	1.61	-2.31	1440.00	100.00
	16.431	15000.00	1129.24	-1.19	1.02	-3.50	1412.42	100.00
	16.431	2000.00	1121.06	-8.19	.27	-11.69	1104.72	100.00
	16.431	10000.00	1126.59	5.53	.79	-6.16	1312.13	100.00
	16.431	5000.00	1123.36	-3.23	.51	-9.39	1190.92	100.00

SECNO	Q	DWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
16.481	30000.00	1132.79	.00	.05	.00	1960.00	260.00
16.481	25000.00	1131.28	-1.51	.05	-1.51	1960.00	260.00
16.481	20000.00	1130.47	-.81	.03	-2.32	1957.08	260.00
16.481	15000.00	1129.27	-1.20	.03	-3.52	1929.34	260.00
16.481	2000.00	1121.08	-8.19	.02	-11.71	884.15	260.00
16.481	10000.00	1126.62	5.54	.03	-6.18	1837.76	260.00
16.481	5000.00	1123.38	-3.23	.03	-9.41	1669.51	260.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION  SECNO=    16.350  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.350  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.350  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.350  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.350  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 3  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.350  PROFILE= 3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.350  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.350  PROFILE= 4  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    16.355  PROFILE= 1  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 2  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 3  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 6  HYDRAULIC JUMP D.S.

CAUTION  SECNO=    16.376  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.376  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.376  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
```

1

THIS RUN EXECUTED 03-30-87

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*************************************************
  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
*************************************************
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type afo40b.out
1*****************************************************
*
 * WATER SURFACE PROFILES                          *
*
 * VERSION OF NOVEMBER 1976                        *
*
 * UPDATED MAY 1984                                *
*
 * IBM-PC-XT VERSION AUGUST 1985                   *
*
 * RUN DATE  03-27-87   TIME  20:12:34               *
  *
 *****************************************************
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*************************************
* U.S. ARMY CORPS OF ENGINEERS
* THE HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET, SUITE D
* DAVIS, CALIFORNIA 95616
  * (916) 440-2105 (FTS) 448-2105
*************************************
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* 2. Overflow Channel - No Embankment

```
X     X  XXXXXXX   XXXXX            XXXXX
X     X  X       X     X           X     X
X     X  X       X                       X
XXXXXXX  XXXX    X         XXXXX    XXXXX
X     X  X       X                 X
X     X  X       X     X           X
X     X  XXXXXXX   XXXXX            XXXXXXX
```

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1
 03-27-87     20:12:36                                                    PAGE    1
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THIS RUN EXECUTED 03-27-87

```
 ***************************************************
  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
 ***************************************************
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T1      AGUAFRIA RIVER -  OVERFLOW CHANNEL HYDRAULIC STUDY
T2      PROFILE NUMBER 1 - SUBCRITICAL PROFILE
T3      OVERFLOW CH. VAR. FLOWS - NEW FIELD DATA - DROP SEC. 16.355, 16.379

J1  ICHECK    ING      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       2.       0.       0.   .000000     .00      .0       0.   1113.350    .000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     .000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000


GT     3.000 107775.000 107775.000 107775.000     .000     .000     .000     .000     .000     .000
ND      .050     .050     .050     .100     .300     .000     .000     .000     .000     .000
ET      .000    9.100    9.100    9.100     .000     .000     .000     .000 9322.000 12300.000
X1    15.823   90.000 9322.000 11500.000     .000     .000     .000     .000     .000     .000
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GR	1105.000	9633.000	1108.000	9702.000	1108.000	9779.000	1109.000	9847.000	1110.280	9858.000
GR	1119.100	9888.000	1107.040	9971.000	1099.220	10000.000	1091.850	10093.000	1142.180	10204.000
GR	1142.600	10295.000	1008.300	10388.000	1104.000	10406.000	1103.000	10450.000	1107.000	10474.000
GR	1105.000	10511.000	1103.000	10560.000	1108.000	10572.000	1108.000	10598.000	1111.000	10610.000
GR	1111.000	10717.000	1111.000	10781.000	1111.000	10856.000	1110.000	10898.000	1109.000	10964.000
GR	1106.000	11019.000	1107.000	11071.000	1106.000	11140.000	1104.000	11206.000	1102.000	11251.000
GR	1105.000	11283.000	1108.000	11342.000	1106.000	11384.000	1107.000	11421.000	1108.000	11470.000
GR	1110.000	11500.000	1110.000	11554.000	1110.000	11634.000	1110.000	11708.000	1110.000	11794.000
GR	1110.000	11892.000	1109.000	11983.000	1109.000	12063.000	1109.000	12143.000	1109.000	12221.000
GR	1109.000	12294.000	1109.000	12370.000	1109.000	12450.000	1109.000	12542.000	1110.000	12596.000
GR	1110.000	12672.000	1110.000	12726.000	1110.000	12796.000	1110.000	12852.000	1110.000	12910.000
GR	1110.000	12983.000	1110.000	13011.000	1111.000	13075.000	1111.000	13153.000	1111.000	13224.000
GR	1111.000	13307.000	1111.000	13380.000	1111.000	13452.000	1111.000	13532.000	1112.000	13608.000
GR	1112.000	13689.000	1112.000	13764.000	1112.000	13844.000	1112.000	13917.000	1112.000	13998.000
GR	1113.000	14073.000	1114.000	14137.000	1114.000	14212.000	1114.000	14281.000	1114.000	14347.000
GR	1114.000	14414.000	1114.000	14464.000	1114.000	14533.000	1114.000	14613.000	1114.000	14698.000
GR	1115.000	14784.000	1115.000	14865.000	1116.000	14937.000	1117.000	15008.000	1117.000	15079.000
GT	3.000	30000.000	40000.000	50000.000	.000	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	10402.000	12250.000
X1	16.013	90.000	10843.000	11146.000	1000.000	950.000	1400.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1141.000	10402.000	1124.000	10449.000	1108.000	10500.000	1108.000	10529.000	1112.000	10549.000
GR	1112.000	10613.000	1109.000	10664.000	1108.000	10694.000	1111.000	10705.000	1112.000	10786.000
GR	1114.000	10843.000	1113.000	10905.000	1110.000	10955.000	1110.000	11005.000	1111.000	11055.000
GR	1113.000	11079.000	1114.000	11146.000	1113.000	11220.000	1113.000	11268.000	1113.000	11296.000
GR	1114.000	11317.000	1112.000	11399.000	1110.000	11452.000	1111.000	11471.000	1109.000	11493.000

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GR	1109.000	11558.000	1110.000	11588.000	1110.000	11657.000	1110.000	11731.000	1110.000	11799.000
GR	1110.000	11870.000	1111.000	11941.000	1111.000	11990.000	1111.000	12036.000	1111.000	12085.000
GR	1112.000	12152.000	1112.000	12219.000	1112.000	12311.000	1112.000	12395.000	1112.000	12482.000
GR	1112.000	12555.000	1112.000	12620.000	1113.000	12690.000	1113.000	12743.000	1113.000	12809.000
GR	1112.000	12885.000	1112.000	12952.000	1112.000	13003.000	1114.000	13054.000	1114.000	13110.000
GR	1114.000	13169.000	1114.000	13237.000	1113.000	13306.000	1113.000	13382.000	1113.000	13465.000
GR	1114.000	13539.000	1114.000	13595.000	1114.000	13673.000	1114.000	13741.000	1114.000	13807.000
GR	1114.000	13865.000	1114.000	13940.000	1115.000	14024.000	1115.000	14095.000	1115.000	14176.000
GR	1115.000	14253.000	1116.000	14320.000	1116.000	14394.000	1117.000	14456.000	1117.000	14523.000
GR	1117.000	14551.000	1117.000	14601.000	1118.000	14671.000	1118.000	14729.000	1118.000	14791.000
GR	1118.000	14856.000	1119.000	14912.000	1120.000	14981.000	1121.000	15048.000	1121.000	15109.000
GR	1121.000	15185.000	1122.000	15259.000	1123.000	15327.000	1124.000	15395.000	1124.000	15467.000
GR	1125.000	15531.000	1125.000	15603.000	1127.000	15659.000	1128.000	15721.000	1126.000	15751.000
NC	.050	.100	.050	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	10434.000	12040.000
X1	16.153	90.000	11158.000	11182.000	750.000	800.000	750.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1151.000	10209.000	1151.000	10272.000	1148.000	10321.000	1149.000	10382.000	1147.000	10434.000
GR	1127.000	10480.000	1108.000	10536.000	1109.000	10561.000	1111.000	10620.000	1111.000	10682.000
GR	1111.000	10757.000	1112.000	10827.000	1112.000	10901.000	1112.000	10970.000	1112.000	11034.000
GR	1113.000	11101.000	1113.000	11158.000	1110.000	11171.000	1114.000	11182.000	1114.000	11250.000
GR	1114.000	11330.000	1114.000	11406.000	1113.000	11487.000	1113.000	11561.000	1113.000	11640.000
GR	1113.000	11714.000	1113.000	11788.000	1113.000	11843.000	1114.000	11900.000	1114.000	11968.000
GR	1114.000	12040.000	1114.000	12112.000	1113.000	12178.000	1113.000	12229.000	1113.000	12308.000
GR	1113.000	12382.000	1113.000	12451.000	1114.000	12513.000	1114.000	12558.000	1114.000	12588.000
GR	1114.000	12658.000	1114.000	12711.000	1114.000	12762.000	1114.000	12817.000	1114.000	12870.000
GR	1114.000	12930.000	1114.000	12979.000	1113.000	13031.000	1113.000	13092.000	1114.000	13153.000
GR	1114.000	13209.000	1115.000	13289.000	1116.000	13370.000	1116.000	13451.000	1116.000	13532.000
GR	1117.000	13603.000	1118.000	13685.000	1118.000	13765.000	1118.000	13840.000	1118.000	13912.000
GR	1118.000	13981.000	1119.000	14054.000	1118.000	14131.000	1118.000	14205.000	1118.000	14281.000
GR	1118.000	14348.000	1118.000	14421.000	1119.000	14481.000	1119.000	14547.000	1118.000	14605.000
GR	1118.000	14649.000	1118.000	14711.000	1118.000	14775.000	1121.000	14802.000	1123.000	14871.000

GR	1125.000	15587.000	1126.000	15663.000	1126.000	15731.000	1127.000	15771.000	1127.000	15798.000

ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	10501.000	11950.000
X1	16.191	27.000	10580.000	11245.000	610.000	600.000	600.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1150.000	10470.000	1124.000	10525.000	1116.000	10580.000	1113.800	10600.000	1116.000	10620.000
GR	1116.300	10730.000	1116.000	10840.000	1112.000	10855.000	1108.000	10890.000	1117.000	10960.000
GR	1108.000	11015.000	1112.000	11030.000	1116.000	11070.000	1116.000	11120.000	1113.200	11200.000
GR	1116.000	11245.000	1120.500	11320.000	1118.000	11369.000	1116.000	11436.000	1117.000	11504.000
GR	1115.000	11571.000	1114.000	11642.000	1114.000	11709.000	1114.000	11764.000	1114.000	11832.000
GR	1114.000	11911.000	1113.000	11956.000	.000	.000	.000	.000	.000	.000

ET	.000	9.100	9.100	9.100	.000	.000	10550.000	11347.000	10550.000	11750.000
X1	16.291	16.000	10660.000	11347.000	620.000	620.000	620.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1131.000	10140.000	1128.000	10210.000	1120.000	10250.000	1119.400	10540.000	1119.200	10660.000
GR	1118.500	10790.000	1118.200	10900.000	1116.000	11110.000	1116.400	11180.000	1120.000	11260.000
GR	1121.400	11320.000	1121.700	11340.000	1118.000	11347.000	1118.000	11389.000	1119.000	11441.000
GR	1118.000	11792.000	.000	.000	.000	.000	.000	.000	.000	.000

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NC	.050	.150	.050	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	10800.000	11900.000
X1	16.338	20.000	11150.000	11340.000	300.000	450.000	450.000	.000	.000	.000
GR	1124.000	10220.000	1124.000	10300.000	1120.000	10350.000	1120.000	10460.000	1120.700	10610.000
GR	1120.000	10700.000	1120.000	10750.000	1118.800	10880.000	1117.800	11020.000	1118.000	11130.000
GR	1110.400	11150.000	1118.000	11170.000	1118.700	11250.000	1120.000	11340.000	1120.000	11370.000
GR	1120.000	11460.000	1120.900	11720.000	1122.500	11890.000	1124.000	11980.000	1124.000	12080.000

NC	.050	.050	.050	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	10770.000	12210.000
X1	16.431	15.000	11050.000	11500.000	370.000	370.000	370.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1127.000	10770.000	1121.000	10800.000	1120.000	10980.000	1120.000	11050.000	1118.000	11100.000
GR	1121.000	11200.000	1117.000	11250.000	1120.500	11310.000	1119.500	11370.000	1120.000	11430.000
GR	1118.000	11500.000	1118.000	11660.000	1120.000	11870.000	1128.000	12130.000	1129.900	12210.000

ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	10860.000	12820.000
X1	16.481	21.000	10930.000	12580.000	260.000	260.000	260.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1123.800	10860.000	1123.200	10930.000	1121.700	11100.000	1121.800	11240.000	1122.200	11440.000
GR	1122.000	11540.000	1122.400	11630.000	1122.000	11680.000	1116.000	11720.000	1104.000	11810.000
GR	1112.000	11820.000	1111.300	11840.000	1112.000	11870.000	1112.800	11920.000	1114.000	12070.000
GR	1104.000	12220.000	1104.000	12310.000	1112.000	12540.000	1124.000	12580.000	1128.000	12760.000
GR	1130.600	12820.000	.000	.000	.000	.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

*PROF 1

CCHV= .100 CEHV= .300

*SECNO 15.823

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3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00      .00  1113.78      .43      .00      .00  1133.00
   107775.      0.   98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
  .001857       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
*SECNO 16.013

3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.81  1115.81      .00      .00  1116.03      .22     2.22      .02  1114.00
   30000.    6779.    3695.   19526.    1753.    1162.    5151.     417.      60.   1114.00
      .09     3.87     3.18     3.79     .050     .050     .050     .000  1108.00 10475.10
  .001911    1000.    1400.     950.        2        0        0      .00  1774.90 12250.00
0
CCHV=    .100 CEHV=    .300
*SECNO 16.153

3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     9.57  1117.57      .00      .00  1117.95      .38     1.87      .05  1113.00
   30000.   21778.     741.    7482.    3885.     140.    3486.     557.      90.   1114.00
      .13     5.61     5.29     2.15     .050     .050     .100     .000  1108.00 10507.80
  .003185     750.     750.     800.        2        0        0      .00  1532.20 12040.00
0
*SECNO 16.191

3265 DIVIDED FLOW

3280 CROSS SECTION     16.19 EXTENDED      6.78 FEET

1
 03-27-87     20:12:36                                                                    PAGE    5


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19    11.78  1119.78      .00      .00  1120.22      .44     2.25      .02  1116.00
   30000.     148.   21372.    8480.      49.    3547.    2984.     654.     110.   1116.00
      .17     3.01     6.03     2.84     .050     .050     .100     .000  1108.00 10554.02
  .004440     610.     600.     600.        2        0        0      .00  1369.83 11950.00
0
*SECNO 16.291
3280 CROSS SECTION     16.29 EXTENDED      4.94 FEET


3470 ENCROACHMENT STATIONS=   10550.0   11750.0  TYPE=     1  TARGET=    1200.000
    16.29     6.94  1122.94      .00      .00  1123.52      .58     3.25      .04  1119.20
   30000.    2197.   22125.    5678.     401.    3298.    1792.     740.     128.   1118.00
      .20     5.48     6.71     3.17     .050     .050     .100     .000  1116.00 10550.00
  .006303     620.     620.     620.        2        0        0      .00  1200.00 11750.00
0
CCHV=    .300 CEHV=    .500
*SECNO 16.338
3280 CROSS SECTION     16.34 EXTENDED      1.00 FEET
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3470 ENCROACHMENT STATIONS=   10800.0   11900.0  TYPE=     1  TARGET=    1100.000
    16.34    14.60  1125.00      .00      .00  1125.67      .68     2.11      .05  1110.40
   30000.    17150.    8710.    4140.    2401.    1256.    2367.     795.     139.   1120.00
      .21     7.14     6.93     1.75     .050     .050     .150     .000  1110.40 10800.00
  .004430     300.     450.     450.        2        0        0      .00  1100.00 11900.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43     9.29  1126.29      .00      .00  1126.50      .21      .77      .05  1120.00
   30000.    5159.   11849.   12992.    1550.    3136.    3494.     855.     150.   1118.00
      .24     3.33     3.78     3.72     .050     .050     .050     .000  1117.00 10773.60
  .001216     370.     370.     370.        2        0        0      .00  1300.49 12074.09
0
 *SECNO 16.481
1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    22.55  1126.55      .00      .00  1126.59      .04      .08      .02  1123.20
   30000.     147.   29795.      58.     213.   18000.     146.     934.     159.   1124.00
      .28      .69     1.66     .40     .050     .050     .050     .000  1104.00 10860.00
  .000129     260.     260.     260.        2        0        0      .00  1834.59 12694.59
0
1
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                                                                    THIS RUN EXECUTED 03-27-87

 ***************************************************
   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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
 T2      PROFILE NUMBER 2 - SUBCRITICAL PROFILE
 T3      OVERFLOW CH. VAR. FLOWS - NEW FIELD DATA - DROP SEC. 16.355 ,16.376

 J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

       0.       3.       0.       0.   .000000     .00      .0       0.  1113.350     .000

 J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     2.000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000

 1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    BANK ELEV
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  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 2

CCHV=    .100 CEHV=    .300
*SECNO 15.823

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.78      .43      .00      .00  1133.00
   107775.      0.   98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
  .001857       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
*SECNO 16.013

3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.93  1115.93      .00  1115.81  1116.30      .37     2.51      .01  1114.00
   40000.    9015.    4978.   26007.    1798.    1198.    5286.     420.      60.   1114.00
      .07     5.01     4.15     4.92     .050     .050     .050     .000  1108.00 10474.71
  .003125    1000.    1400.     950.        2        0        0      .00  1775.29 12250.00
0
CCHV=    .100 CEHV=    .300
*SECNO 16.153

3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15    10.41  1118.41      .00  1117.57  1118.90      .49     2.56      .04  1113.00
   40000.   28320.     973.   10707.    4430.     160.    4204.     572.      90.   1114.00
      .11     6.39     6.07     2.55     .050     .050     .100     .000  1108.00 10505.34
  .003516     750.     750.     800.        2        0        0      .00  1534.66 12040.00
0
*SECNO 16.191
3280 CROSS SECTION     16.19 EXTENDED      7.75 FEET


3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19    12.75  1120.75      .00  1119.78  1121.29      .54     2.38      .02  1116.00
   40000.     271.   28228.   11500.      77.    4190.    3657.     688.     110.   1116.00
      .14     3.50     6.74     3.14     .050     .050     .100     .000  1108.00 10547.37
  .004443     610.     600.     600.        2        0        0      .00  1402.63 11950.00
0
1
  03-27-87     20:12:36                                                                    PAGE    9


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.291
3280 CROSS SECTION     16.29 EXTENDED      5.85 FEET


3470 ENCROACHMENT STATIONS=   10550.0   11750.0  TYPE=     1  TARGET=    1200.000
    16.29     7.85  1123.85      .00  1122.94  1124.57      .71     3.22      .05  1119.20
   40000.    3133.   29222.    7645.     501.    3922.    2158.     791.     129.   1118.00
```

```
 7030171    GEO.    GEO.    GEO.      2       0       0     .00  1200.00 11750.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
 3280 CROSS SECTION     16.34 EXTENDED      1.97 FEET


 3470 ENCROACHMENT STATIONS=   10800.0   11900.0  TYPE=     1  TARGET=    1100.000
     16.34    15.57  1125.97      .00  1125.00  1126.85      .87     2.20      .08  1110.40
    40000.   22384.   11505.    6111.    2743.    1442.    2914.     856.     140.   1120.00
       .18     8.16     7.98     2.10     .050     .050     .150     .000  1110.40 10800.00
   .004882     300.     450.     450.        0        0        0      .00  1100.00 11900.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
     16.43    10.46  1127.46      .00  1126.29  1127.73      .26      .82      .06  1120.00
    40000.    7159.   15641.   17200.    1879.    3667.    4195.     928.     150.   1118.00
       .20     3.81     4.27     4.10     .050     .050     .050     .000  1117.00 10770.00
   .001257     370.     370.     370.        2        0        0      .00  1342.46 12112.46
0
 *SECNO 16.481

 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
     16.48    23.78  1127.78      .00  1126.55  1127.84      .06      .09      .02  1123.20
    40000.     285.   39532.     184.     299.   20029.     321.    1019.     160.   1124.00
       .24      .95     1.97     .57     .050     .050     .050     .000  1104.00 10860.00
   .000159     260.     260.     260.        2        0        0      .00  1889.94 12749.94
0
1
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                                                                THIS RUN EXECUTED 03-27-87

 ***************************************************
   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      AGUAFRIA RIVER - MAIN CHANNEL HYDRAULIC STUDY
 T2      PROFILE NUMBER 3 - SUBCRITICAL PROFILE
 T3      OVERFLOW CH. VAR FLOWS - NEW FIELD DATA - DROP SEC. 16.355, 16.376

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.       4.        0.        0.   .000000       .00       .0        0.  1113.350      .000

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     15.000     .000    -1.000     .000      .000      .000      .000      .000      .000      .000

 1
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   SECNO    DEPTH    DWSEL    CRIWS    WSELK    EG       HV       HL       CLOSS    BANK ELEV
```

```
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 3

CCHV=    .100 CEHV=    .300
*SECNO 15.823

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.78      .43      .00      .00  1133.00
   107775.      0.   98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
   .001857      0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
*SECNO 16.013

3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     8.08  1116.08      .00  1115.81  1116.61      .54     2.80      .03  1114.00
   50000.   11234.    6298.   32468.    1854.    1244.    5452.     423.      60.   1114.00
      .06     6.06     5.06     5.96     .050     .050     .050     .000  1108.00 10474.23
   .004417   1000.    1400.     950.        2        0        0      .00  1775.77 12250.00
0
CCHV=    .100 CEHV=    .300
*SECNO 16.153

3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15    11.17  1119.17      .00  1117.57  1119.76      .59     3.14      .02  1113.00
   50000.   34762.    1202.   14037.    4930.     179.    4860.     589.      90.   1114.00
      .09     7.05     6.73     2.89     .050     .050     .100     .000  1108.00 10503.08
   .003738    750.     750.     800.        2        0        0      .00  1536.92 12040.00
0
*SECNO 16.191
3280 CROSS SECTION     16.19 EXTENDED      8.60 FEET


3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19    13.60  1121.60      .00  1119.78  1122.24      .64     2.46      .02  1116.00
   50000.     422.   34981.   14596.     108.    4757.    4258.     721.     110.   1116.00
      .12     3.92     7.35     3.43     .050     .050     .100     .000  1108.00 10541.50
   .004469    610.     600.     600.        2        0        0      .00  1408.50 11950.00
0
1
 03-27-87     20:12:36                                                                    PAGE   12


  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.291
3280 CROSS SECTION     16.29 EXTENDED      6.67 FEET


3470 ENCROACHMENT STATIONS=   10550.0   11750.0  TYPE=     1  TARGET=    1200.000
    16.29     8.67  1124.67      .00  1122.94  1125.52      .84     3.21      .06  1119.20
   50000.    4081.   36304.    9615.     592.    4487.    2489.     839.     129.   1118.00
```

```
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
 3280 CROSS SECTION     16.34 EXTENDED      2.84 FEET


 3470 ENCROACHMENT STATIONS=   10800.0   11900.0  TYPE=     1  TARGET=    1100.000
     16.34    16.44  1126.84      .00  1125.00  1127.90     1.07     2.27      .11  1110.40
    50000.   27557.   14284.    8159.    3044.    1605.    3396.     914.     140.   1120.00
       .16     9.05     8.90     2.40     .050     .050     .150     .000  1110.40 10800.00
   .005261     300.     450.     450.        2        0        0      .00  1100.00 11900.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
     16.43    11.51  1128.51      .00  1126.29  1128.83      .31      .85      .08  1120.00
    50000.    9157.   19319.   21524.    2174.    4141.    4859.     995.     151.   1118.00
       .18     4.21     4.67     4.43     .050     .050     .050     .000  1117.00 10770.00
   .001279     370.     370.     370.        2        0        0      .00  1381.62 12151.62
0
 *SECNO 16.481

 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
     16.48    24.87  1128.87      .00  1126.55  1128.95      .08      .10      .02  1123.20
    50000.     444.   49133.     423.     376.   21839.     526.    1097.     160.   1124.00
       .21     1.18     2.25      .80     .050     .050     .050     .000  1104.00 10860.00
   .000184     260.     260.     260.        2        0        0      .00  1920.16 12780.16
0
1
  03-27-87     20:12:36                                                                    PAGE   13


                                                                    THIS RUN EXECUTED 03-27-87

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


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


 OVERFLOW CH. VAR. FLOWS

 SUMMARY PRINTOUT TABLE  150

      SECNO     XLCH     ELTRD     ELLC      ELMIN      Q        CWSEL     CRIWS     EG       10K*S     VCH      AREA      .01K


      15.823      .00       .00       .00   1008.30 107775.00   1113.35       .00   1113.78     18.57      5.46  21045.96 25011.44
      15.823      .00       .00       .00   1008.30 107775.00   1113.35       .00   1113.78     18.57      5.46  21045.96 25011.44
      15.823      .00       .00       .00   1008.30 107775.00   1113.35       .00   1113.78     18.57      5.46  21045.96 25011.44

      16.013  1400.00       .00       .00   1108.00  30000.00   1115.81       .00   1116.03     19.11      3.18   8066.28  6862.99
      16.013  1400.00       .00       .00   1108.00  40000.00   1115.93       .00   1116.30     31.85      4.15   8282.32  7154.99
```

16.153	750.00	.00	.00	1108.00	30000.00	1117.57	.00	1117.95	31.85	5.29	7511.67	5315.87
16.153	750.00	.00	.00	1108.00	40000.00	1118.41	.00	1118.90	35.16	6.07	8793.52	6745.90
16.153	750.00	.00	.00	1108.00	50000.00	1119.17	.00	1119.76	37.38	6.73	9968.24	8177.60
16.191	600.00	.00	.00	1108.00	30000.00	1119.78	.00	1120.22	44.40	6.03	6579.71	4502.34
16.191	600.00	.00	.00	1108.00	40000.00	1120.75	.00	1121.29	44.43	6.74	7924.50	6001.24
16.191	600.00	.00	.00	1108.00	50000.00	1121.60	.00	1122.24	44.69	7.35	9122.80	7479.26
16.291	620.00	.00	.00	1116.00	30000.00	1122.94	.00	1123.52	63.03	6.71	5491.36	3778.63
16.291	620.00	.00	.00	1116.00	40000.00	1123.85	.00	1124.57	61.71	7.45	6581.50	5091.98
16.291	620.00	.00	.00	1116.00	50000.00	1124.67	.00	1125.52	60.84	8.09	7567.34	6410.25
16.338	450.00	.00	.00	1110.40	30000.00	1125.00	.00	1125.67	44.30	6.93	6023.83	4507.36
16.338	450.00	.00	.00	1110.40	40000.00	1125.97	.00	1126.85	48.82	7.98	7098.59	5724.63
16.338	450.00	.00	.00	1110.40	50000.00	1126.84	.00	1127.90	52.61	8.90	8044.84	6893.58
16.431	370.00	.00	.00	1117.00	30000.00	1126.29	.00	1126.50	12.16	3.78	8179.89	8604.59
16.431	370.00	.00	.00	1117.00	40000.00	1127.46	.00	1127.73	12.57	4.27	9740.94	11281.86
16.431	370.00	.00	.00	1117.00	50000.00	1128.51	.00	1128.83	12.79	4.67	11173.81	13980.43
16.481	260.00	.00	.00	1104.00	30000.00	1126.55	.00	1126.59	1.29	1.66	18358.68	26428.29
16.481	260.00	.00	.00	1104.00	40000.00	1127.78	.00	1127.84	1.59	1.97	20649.46	31735.32
16.481	260.00	.00	.00	1104.00	50000.00	1128.87	.00	1128.95	1.84	2.25	22741.52	36868.38

1

OVERFLOW CH. VAR. FLOWS

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
16.013	30000.00	1115.81	.00	2.46	.00	1774.90	1400.00
16.013	40000.00	1115.93	.12	2.58	.12	1775.29	1400.00
16.013	50000.00	1116.08	.14	2.73	.27	1775.77	1400.00
16.153	30000.00	1117.57	.00	1.76	.00	1532.20	750.00
16.153	40000.00	1118.41	.84	2.47	.84	1534.66	750.00
16.153	50000.00	1119.17	.77	3.10	1.61	1536.92	750.00
16.191	30000.00	1119.78	.00	2.22	.00	1369.83	600.00
16.191	40000.00	1120.75	.96	2.34	.96	1402.63	600.00
16.191	50000.00	1121.60	.85	2.43	1.81	1408.50	600.00
16.291	30000.00	1122.94	.00	3.16	.00	1200.00	620.00
16.291	40000.00	1123.85	.91	3.10	.91	1200.00	620.00
16.291	50000.00	1124.67	.82	3.07	1.73	1200.00	620.00
16.338	30000.00	1125.00	.00	2.06	.00	1100.00	450.00
16.338	40000.00	1125.97	.97	2.12	.97	1100.00	450.00
16.338	50000.00	1126.84	.86	2.16	1.84	1100.00	450.00
16.431	30000.00	1126.29	.00	1.29	.00	1300.49	370.00
16.431	40000.00	1127.46	1.18	1.49	1.18	1342.46	370.00
16.431	50000.00	1128.51	1.05	1.68	2.23	1381.62	370.00
16.481	30000.00	1126.55	.00	.26	.00	1834.59	260.00

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03-27-87 20:12:36 PAGE 15

SUMMARY OF ERRORS AND SPECIAL NOTES

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03-27-87 20:18:35 PAGE 1

THIS RUN EXECUTED 03-27-87

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**************************************************
  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
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type a:fo50b.out
1*****************************************************
*
 * WATER SURFACE PROFILES                          *
*
 * VERSION OF NOVEMBER 1976                        *
*
 * UPDATED MAY 1984                                *
*
 * IBM-PC-XT VERSION AUGUST 1985                   *
*
 * RUN DATE  03-26-87   TIME  20:15:53               *
  *
*****************************************************
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*************************************
* U.S. ARMY CORPS OF ENGINEERS
* THE HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET, SUITE D
* DAVIS, CALIFORNIA 95616
  * (916) 440-2105 (FTS) 448-2105
*************************************
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* 3. Overflow Channel - Proposed Condition

```
X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX   XXXXX            XXXXXXX
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03-26-87 20:15:54 PAGE 1

THIS RUN EXECUTED 03-26-87

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*************************************************
  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
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T1 AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2 PROFILE NUMBER 1 - SUBCRITICAL PROFILE
T3 OVERFLOW CH. NEW BRIDGE - VAR. FLOWS - NEW FIELD DATA

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	2.	0.	0.	.000000	.00	.0	0.	1113.350	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

QT	7.000	107775.000	107775.000	107775.000	107775.000	72000.000	72000.000	72000.000	.000	.000
NC	.050	.050	.050	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	9322.000	12300.000
X1	15.823	90.000	9322.000	11500.000	.000	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

GR	1119.100	9888.000	1107.040	9971.000	1099.220	10000.000	1091.850	10093.000	1142.180	10204.000
GR	1142.600	10295.000	1008.300	10388.000	1104.000	10406.000	1103.000	10450.000	1107.000	10474.000
GR	1105.000	10511.000	1103.000	10560.000	1108.000	10572.000	1108.000	10598.000	1111.000	10610.000
GR	1111.000	10717.000	1111.000	10781.000	1111.000	10856.000	1110.000	10898.000	1109.000	10964.000
GR	1106.000	11019.000	1107.000	11071.000	1106.000	11140.000	1104.000	11206.000	1102.000	11251.000
GR	1105.000	11283.000	1108.000	11342.000	1106.000	11384.000	1107.000	11421.000	1108.000	11470.000
GR	1110.000	11500.000	1110.000	11554.000	1110.000	11634.000	1110.000	11708.000	1110.000	11794.000
GR	1110.000	11892.000	1109.000	11983.000	1109.000	12063.000	1109.000	12143.000	1109.000	12221.000
GR	1109.000	12294.000	1109.000	12370.000	1109.000	12450.000	1109.000	12542.000	1110.000	12596.000
GR	1110.000	12672.000	1110.000	12726.000	1110.000	12796.000	1110.000	12852.000	1110.000	12910.000
GR	1110.000	12983.000	1110.000	13011.000	1111.000	13075.000	1111.000	13153.000	1111.000	13224.000
GR	1111.000	13307.000	1111.000	13380.000	1111.000	13452.000	1111.000	13532.000	1112.000	13608.000
GR	1112.000	13689.000	1112.000	13764.000	1112.000	13844.000	1112.000	13917.000	1112.000	13998.000
GR	1113.000	14073.000	1114.000	14137.000	1114.000	14212.000	1114.000	14281.000	1114.000	14347.000
GR	1114.000	14414.000	1114.000	14464.000	1114.000	14533.000	1114.000	14613.000	1114.000	14698.000
GR	1115.000	14784.000	1115.000	14865.000	1116.000	14937.000	1117.000	15008.000	1117.000	15079.000
QT	7.000	30000.000	25000.000	20000.000	15000.000	15000.000	10000.000	5000.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10402.000	12250.000
X1	16.013	90.000	10843.000	11146.000	1000.000	950.000	1400.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1141.000	10402.000	1124.000	10449.000	1108.000	10500.000	1108.000	10529.000	1112.000	10549.000
GR	1112.000	10613.000	1109.000	10664.000	1108.000	10694.000	1111.000	10705.000	1112.000	10786.000
GR	1114.000	10843.000	1113.000	10905.000	1110.000	10955.000	1110.000	11005.000	1111.000	11055.000
GR	1113.000	11079.000	1114.000	11146.000	1113.000	11220.000	1113.000	11268.000	1113.000	11296.000
GR	1114.000	11317.000	1112.000	11399.000	1110.000	11452.000	1111.000	11471.000	1109.000	11493.000

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GR	1109.000	11558.000	1110.000	11588.000	1110.000	11657.000	1110.000	11731.000	1110.000	11799.000
GR	1110.000	11870.000	1111.000	11941.000	1111.000	11990.000	1111.000	12036.000	1111.000	12085.000
GR	1112.000	12152.000	1112.000	12219.000	1112.000	12311.000	1112.000	12395.000	1112.000	12482.000
GR	1112.000	12555.000	1112.000	12620.000	1113.000	12690.000	1113.000	12743.000	1113.000	12809.000
GR	1112.000	12885.000	1112.000	12952.000	1112.000	13003.000	1114.000	13054.000	1114.000	13110.000
GR	1114.000	13169.000	1114.000	13237.000	1113.000	13306.000	1113.000	13382.000	1113.000	13465.000
GR	1114.000	13539.000	1114.000	13595.000	1114.000	13673.000	1114.000	13741.000	1114.000	13807.000
GR	1114.000	13865.000	1114.000	13940.000	1115.000	14024.000	1115.000	14095.000	1115.000	14176.000
GR	1115.000	14253.000	1116.000	14320.000	1116.000	14394.000	1117.000	14456.000	1117.000	14523.000
GR	1117.000	14551.000	1117.000	14601.000	1118.000	14671.000	1118.000	14729.000	1118.000	14791.000
GR	1118.000	14856.000	1119.000	14912.000	1120.000	14981.000	1121.000	15048.000	1121.000	15109.000
GR	1121.000	15185.000	1122.000	15259.000	1123.000	15327.000	1124.000	15395.000	1124.000	15467.000
GR	1125.000	15531.000	1125.000	15603.000	1127.000	15659.000	1128.000	15721.000	1126.000	15751.000
NC	.050	.100	.050	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10434.000	12040.000
X1	16.153	90.000	11158.000	11182.000	750.000	800.000	750.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1151.000	10209.000	1151.000	10272.000	1148.000	10321.000	1149.000	10382.000	1147.000	10434.000
GR	1127.000	10480.000	1108.000	10536.000	1109.000	10561.000	1111.000	10620.000	1111.000	10682.000
GR	1111.000	10757.000	1112.000	10827.000	1112.000	10901.000	1112.000	10970.000	1112.000	11034.000
GR	1113.000	11101.000	1113.000	11158.000	1110.000	11171.000	1114.000	11182.000	1114.000	11250.000
GR	1114.000	11330.000	1114.000	11406.000	1113.000	11487.000	1113.000	11561.000	1113.000	11640.000
GR	1113.000	11714.000	1113.000	11788.000	1113.000	11843.000	1114.000	11900.000	1114.000	11968.000
GR	1114.000	12040.000	1114.000	12112.000	1113.000	12178.000	1113.000	12229.000	1113.000	12308.000
GR	1113.000	12382.000	1113.000	12451.000	1114.000	12513.000	1114.000	12558.000	1114.000	12588.000
GR	1114.000	12658.000	1114.000	12711.000	1114.000	12762.000	1114.000	12817.000	1114.000	12870.000
GR	1114.000	12930.000	1114.000	12979.000	1113.000	13031.000	1113.000	13092.000	1114.000	13153.000
GR	1114.000	13209.000	1115.000	13289.000	1116.000	13370.000	1116.000	13451.000	1116.000	13532.000
GR	1117.000	13603.000	1118.000	13685.000	1118.000	13765.000	1118.000	13840.000	1118.000	13912.000
GR	1118.000	13981.000	1119.000	14054.000	1118.000	14131.000	1118.000	14205.000	1118.000	14281.000
GR	1118.000	14348.000	1118.000	14421.000	1119.000	14481.000	1119.000	14547.000	1118.000	14605.000
GR	1118.000	14642.000	1118.000	14711.000	1118.000	14775.000	1121.000	14802.000	1123.000	14871.000
GR	1123.000	14938.000	1123.000	15000.000	1123.000	15070.000	1123.000	15137.000	1123.000	15209.000
GR	1123.000	15272.000	1123.000	15341.000	1124.000	15397.000	1124.000	15460.000	1125.000	15515.000

ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10501.000	11950.000
X1	16.191	27.000	10580.000	11245.000	610.000	600.000	600.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1150.000	10470.000	1124.000	10525.000	1116.000	10580.000	1113.800	10600.000	1116.000	10620.000
GR	1116.300	10730.000	1116.000	10840.000	1112.000	10855.000	1108.000	10890.000	1117.000	10960.000
GR	1108.000	11015.000	1112.000	11030.000	1116.000	11070.000	1116.000	11120.000	1113.200	11200.000
GR	1116.000	11245.000	1120.500	11320.000	1118.000	11369.000	1116.000	11436.000	1117.000	11504.000
GR	1115.000	11571.000	1114.000	11642.000	1114.000	11709.000	1114.000	11764.000	1114.000	11832.000
GR	1114.000	11911.000	1113.000	11956.000	.000	.000	.000	.000	.000	.000

ET	.000	9.100	9.100	9.100	.000	.000	10550.000	11347.000	10550.000	11750.000
X1	16.291	16.000	10660.000	11347.000	620.000	620.000	620.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1131.000	10140.000	1128.000	10210.000	1120.000	10250.000	1119.400	10540.000	1119.200	10660.000
GR	1118.500	10790.000	1118.200	10900.000	1116.000	11110.000	1116.400	11180.000	1120.000	11260.000
GR	1121.400	11320.000	1121.700	11340.000	1118.000	11347.000	1118.000	11389.000	1119.000	11441.000
GR	1118.000	11792.000	.000	.000	.000	.000	.000	.000	.000	.000

1

NC	.050	.150	.050	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	10800.000	11900.000
X1	16.338	20.000	11150.000	11340.000	300.000	450.000	450.000	.000	.000	.000
GR	1124.000	10220.000	1124.000	10300.000	1120.000	10350.000	1120.000	10460.000	1120.700	10610.000
GR	1120.000	10700.000	1120.000	10750.000	1118.800	10880.000	1117.800	11020.000	1118.000	11130.000
GR	1110.400	11150.000	1118.000	11170.000	1118.700	11250.000	1120.000	11340.000	1120.000	11370.000
GR	1120.000	11460.000	1120.900	11720.000	1122.500	11890.000	1124.000	11980.000	1124.000	12080.000

X1	16.350	8.000	11100.000	11400.000	110.000	110.000	110.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1124.200	1124.800	.000
GR	1129.300	10185.000	1126.400	10600.000	1124.200	11100.000	1115.000	11100.000	1115.000	11400.000
GR	1124.800	11400.000	1124.800	11820.000	1125.800	12050.000	.000	.000	.000	.000

ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10600.000	11900.000
SB	1.250	1.560	3.000	.000	128.000	6.000	976.000	.000	1114.000	1114.000
X1	16.355	12.000	11100.000	11400.000	40.000	40.000	40.000	.000	.000	.000
X2	.000	.000	1.000	1122.000	1124.600	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BT	-9.000	9900.000	1133.100	.000	10600.000	1126.400	.000	11100.000	1124.600	.000
BT	.000	11100.000	1114.000	.000	11159.000	1114.000	.000	11159.000	1124.600	1122.000
BT	.000	11292.000	1124.600	1122.000	11292.000	1114.000	.000	11400.000	1114.000	.000
GR	1133.100	9900.000	1129.300	10185.000	1126.400	10600.000	1124.200	11100.000	1114.000	11100.000
GR	1114.000	11159.000	1124.200	11159.000	1124.200	11292.000	1114.000	11292.000	1114.000	11400.000
GR	1124.800	11400.000	1124.000	12050.000	.000	.000	.000	.000	.000	.000

ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10600.000	11900.000
X1	16.356	22.000	11128.000	11378.000	5.000	5.000	5.000	.000	.000	.000
GR	1137.800	10600.000	1135.700	11125.000	1129.000	11128.000	1114.000	11173.000	1114.000	11187.000
GR	1130.000	11187.000	1130.000	11191.000	1114.000	11191.000	1114.000	11251.000	1130.000	11251.000
GR	1130.000	11255.000	1114.000	11255.000	1114.000	11315.000	1130.000	11315.000	1130.000	11319.000
GR	1114.000	11319.000	1114.000	11328.000	1127.500	11378.000	1134.600	11381.000	1132.100	11697.000
GR	1126.300	11900.000	1124.200	12247.000	.000	.000	.000	.000	.000	.000

ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10600.000	11900.000
X1	16.371	.000	.000	.000	69.000	69.000	69.000	.000	.000	.000

ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10600.000	11900.000
X1	16.376	9.000	11180.000	11380.000	25.000	25.000	25.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1129.700	1129.600	.000
GR	1132.400	10500.000	1129.700	11120.000	1128.000	11180.000	1115.300	11230.000	1119.000	11350.000
GR	1128.000	11380.000	1129.600	11400.000	1129.200	11750.000	1129.900	12250.000	.000	.000

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SB      1.050      1.560      3.000       .000    116.000     20.000   1600.000      5.000   1116.700   1116.700
X1     16.379      8.000  11190.000  11391.000     14.000     14.000     14.000       .000       .000       .000
X2       .000       .000      1.000   1126.200   1129.700       .000       .000       .000       .000       .000
X3     10.000       .000       .000       .000       .000       .000       .000       .000       .000       .000
BT     -6.000  10120.000   1135.600       .000  10510.000   1132.400       .000  11191.000   1129.600   1126.200
BT      .000   11391.000   1129.600   1126.200  11750.000   1129.200       .000  12250.000   1129.900       .000
GR   1135.100  10120.000   1132.400  10510.000   1129.600  11190.000   1115.300  11190.000   1119.000  11350.000
GR   1129.600  11391.000   1129.200  11750.000   1129.900  12250.000       .000       .000       .000       .000
1
 03-26-87     20:15:54                                                                                    PAGE    4


NC       .050       .050       .050       .100       .300       .000       .000       .000       .000       .000
ET       .000      9.100      9.100      9.100      9.100      9.100      9.100      9.100  10770.000  12210.000
X1     16.431     15.000  11050.000  11500.000     50.000    150.000    100.000       .000       .000       .000
X3       .000       .000       .000       .000       .000       .000       .000       .000       .000       .000
GR   1127.000  10770.000   1121.000  10800.000   1120.000  10980.000   1120.000  11050.000   1118.000  11100.000
GR   1121.000  11200.000   1117.000  11250.000   1120.500  11310.000   1119.500  11370.000   1120.000  11430.000
GR   1118.000  11500.000   1118.000  11660.000   1120.000  11870.000   1128.000  12130.000   1129.900  12210.000

ET       .000      9.100      9.100      9.100      9.100      9.100      9.100      9.100  10860.000  12820.000
X1     16.481     21.000  10930.000  12580.000    260.000    260.000    260.000       .000       .000       .000
X3       .000       .000       .000       .000       .000       .000       .000       .000       .000       .000
GR   1123.800  10860.000   1123.200  10930.000   1121.700  11100.000   1121.800  11240.000   1122.200  11440.000
GR   1122.000  11540.000   1122.400  11630.000   1122.000  11680.000   1116.000  11720.000   1104.000  11810.000
GR   1112.000  11820.000   1111.300  11840.000   1112.000  11870.000   1112.800  11920.000   1114.000  12070.000
GR   1104.000  12220.000   1104.000  12310.000   1112.000  12540.000   1124.000  12580.000   1128.000  12760.000
GR   1130.600  12820.000       .000       .000       .000       .000       .000       .000       .000       .000
EJ       .000       .000       .000       .000       .000       .000       .000       .000       .000       .000
1
 03-26-87     20:15:54                                                                                    PAGE    5


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 *PROF 1

 CCHV=    .100 CEHV=    .300
 *SECNO 15.823

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

     15.82   105.05  1113.35      .00      .00  1113.78      .43      .00      .00  1133.00
   107775.       0.    98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
       .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
   .001857       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
     16.01     7.81  1115.81      .00      .00  1116.03      .22     2.22      .02  1114.00
    30000.    6779.    3695.   19526.    1753.    1162.    5151.     417.      60.   1114.00
       .09     3.87     3.18     3.79     .050     .050     .050     .000  1108.00 10475.10
   .001911    1000.    1400.     950.        2        0        0      .00  1774.90 12250.00
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*SECNO 16.153

3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     9.57  1117.57      .00      .00  1117.95      .38     1.87      .05  1113.00
   30000.    21778.     741.    7482.    3885.     140.    3486.     557.      90.   1114.00
      .13     5.61     5.29     2.15     .050     .050     .100     .000  1108.00 10507.80
  .003185     750.     750.     800.        2        0        0      .00  1532.20 12040.00
0
*SECNO 16.191

3265 DIVIDED FLOW

3280 CROSS SECTION     16.19 EXTENDED      6.78 FEET

1
 03-26-87     20:15:54                                                                    PAGE    6

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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

3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19    11.78  1119.78      .00      .00  1120.22      .44     2.25      .02  1116.00
   30000.      148.    21372.    8480.      49.    3547.    2984.     654.     110.   1116.00
      .17     3.01     6.03     2.84     .050     .050     .100     .000  1108.00 10554.02
  .004440     610.     600.     600.        2        0        0      .00  1369.83 11950.00
0
*SECNO 16.291
3280 CROSS SECTION     16.29 EXTENDED      4.94 FEET

3470 ENCROACHMENT STATIONS=   10550.0   11750.0  TYPE=     1  TARGET=    1200.000
    16.29     6.94  1122.94      .00      .00  1123.52      .58     3.25      .04  1119.20
   30000.     2197.    22125.    5678.     401.    3298.    1792.     740.     128.   1118.00
      .20     5.48     6.71     3.17     .050     .050     .100     .000  1116.00 10550.00
  .006303     620.     620.     620.        2        0        0      .00  1200.00 11750.00
0
CCHV=    .300 CEHV=    .500
*SECNO 16.338
3280 CROSS SECTION     16.34 EXTENDED      1.00 FEET

3470 ENCROACHMENT STATIONS=   10800.0   11900.0  TYPE=     1  TARGET=    1100.000
    16.34    14.60  1125.00      .00      .00  1125.67      .68     2.11      .05  1110.40
   30000.    17150.    8710.    4140.    2401.    1256.    2367.     795.     139.   1120.00
      .21     7.14     6.93     1.75     .050     .050     .150     .000  1110.40 10800.00
  .004430     300.     450.     450.        2        0        0      .00  1100.00 11900.00
0
*SECNO 16.350

3301 HV CHANGED MORE THAN HVINS

    16.35    10.13  1125.13      .00      .00  1126.62     1.49      .54      .41  1124.20
   30000.      129.    29821.     51.      98.    3039.     151.     806.     142.   1124.80
      .22     1.31     9.81     .34     .050     .050     .150     .000  1115.00 10888.77
  .005398     110.     110.     110.        2        0        0      .00  1006.98 11895.75
0
1
 03-26-87     20:15:54                                                                    PAGE    7
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  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



SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS   1124.08 ,NOT   1125.13 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB  XK        XKOR      CDFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.56      3.00       .00    128.00      6.00    976.00       .00   1114.00   1114.00

*SECNO 16.355
3280 CROSS SECTION     16.35 EXTENDED      2.40 FEET

PRESSURE AND WEIR FLOW


 EGPRS      ZGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                              AREA
   1148.02   1130.75      .00    21362.     8622.      976.      976.     1122.00   1124.60


3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3710 WSEL ASSUMED BASED ON MIN DIFF

3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.35    12.40  1126.40  1126.35      .00  1128.17     1.77      .30      -.30  1124.20
   30000.     1813.   26677.    1510.     548.    2362.     951.     810.      143.   1124.80
      .22     3.31    11.29     1.59     .050     .050     .150     .000  1114.00 10601.08
  .010953      40.      40.      40.       20       12        0      .00  1298.92 11900.00
0
*SECNO 16.356

3265 DIVIDED FLOW

3280 CROSS SECTION     16.36 EXTENDED      1.67 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.36    11.86  1125.86      .00      .00  1128.83     2.97      .06       .60  1129.00
   30000.       0.   30000.       0.       0.    2170.       0.     810.      143.   1127.50
      .22      .00    13.83      .00     .050     .050     .150     .000  1114.00 11137.39
  .015289       5.       5.       5.        2        0        0      .00   222.57 11371.96
0
1
 03-26-87     20:15:54                                                                    PAGE     8


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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 16.371

3265 DIVIDED FLOW

3280 CROSS SECTION     16.37 EXTENDED      3.70 FEET
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3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

16.37	13.90	1127.90	.00	.00	1129.91	2.01	.79	.29	1129.00
30000.	0.	29965.	35.	0.	2634.	45.	814.	144.	1127.50
.22	.00	11.37	.79	.050	.050	.150	.000	1114.00	11131.31
.008888	69.	69.	69.	3	0	0	.00	290.78	11900.00

0

*SECNO 16.376

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1129.70 ELREA= 1129.60

16.38	12.74	1128.04	1128.04	.00	1132.54	4.50	.31	1.25	1128.00
30000.	0.	30000.	0.	0.	1763.	0.	815.	144.	1128.00
.22	.00	17.02	.00	.050	.050	.150	.000	1115.30	11180.00
.018369	25.	25.	25.	20	12	0	.00	200.00	11380.00

0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1125.49 ,NOT 1128.04 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.56	3.00	.00	116.00	20.00	1600.00	5.00	1116.70	1116.70

*SECNO 16.379
6870 D.S. ENERGY OF 1132.54 HIGHER THAN COMPUTED ENERGY OF 1131.56

3301 HV CHANGED MORE THAN HVINS

PRESSURE AND WEIR FLOW

SBARS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
1136.56	1135.93	.00	10743.	19290.	1600.	1363.	1126.20	1129.70

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

16.38	14.52	1129.82	.00	.00	1132.54	2.71	.00	.00	1129.60
30000.	4.	29870.	126.	6.	2254.	230.	816.	144.	1129.60
.22	.65	13.25	.55	.050	.050	.150	.000	1115.30	11135.72
.008752	14.	14.	14.	3	0	0	.00	764.28	11900.00

0

```
3280 CROSS SECTION     16.43 EXTENDED      2.90 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43    15.80  1132.80      .00      .00  1132.85      .05      .04      .27  1120.00
   30000.     5676.   11030.   13294.    3373.    6069.    7861.     841.     147.   1118.00
      .24     1.68     1.82     1.69     .050     .050     .050     .000  1117.00 10770.00
  .000117      50.     100.     150.        2        0        0      .00  1440.00 12210.00
0
 *SECNO 16.481
 3280 CROSS SECTION     16.48 EXTENDED      2.25 FEET


 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    28.85  1132.85      .00      .00  1132.86      .02      .01      .00  1123.20
   30000.     409.   28839.     752.     654.   28393.    1445.     984.     157.   1124.00
      .31      .63     1.02      .52     .050     .050     .050     .000  1104.00 10860.00
  .000026     260.     260.     260.        2        0        0      .00  1960.00 12820.00
0
1
 03-26-87     20:15:54                                                                    PAGE   10


                                                                          THIS RUN EXECUTED 03-26-87

 ***************************************************
   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     AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
 T2     PROFILE NUMBER 2 - SUBCRITICAL PROFILE
 T3     OVERFLOW CH. NEW BRIDGE - VAR. FLOWS - NEW FIELD DATA

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        3.        0.        0.   .000000      .00       .0        0.  1113.350      .000

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      2.000     .000    -1.000     .000      .000      .000      .000      .000      .000      .000

1
 03-26-87     20:15:54                                                                    PAGE   11


    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


 *PROF 2

 CCHV=    .100 CEHV=    .300
 *SECNO 15.823
```

```
3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.78      .43      .00      .00  1133.00
  107775.       0.   98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
  .001857       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.74  1115.74      .00  1115.81  1115.90      .16     2.08      .03  1114.00
   25000.    5658.    3060.   16282.    1727.    1140.    5074.     416.      60.   1114.00
      .10     3.28     2.68     3.21     .050     .050     .050     .000  1108.00 10475.32
  .001394    1000.    1400.     950.        2        0        0      .00  1774.68 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     9.13  1117.13      .00  1117.57  1117.45      .32     1.51      .05  1113.00
   25000.   18439.     623.    5938.    3601.     130.    3110.     548.      90.   1114.00
      .15     5.12     4.81     1.91     .050     .050     .100     .000  1108.00 10509.09
  .002922     750.     750.     800.        2        0        0      .00  1530.91 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      6.23 FEET

1
  03-26-87     20:15:54                                                                    PAGE   12

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19    11.24  1119.24      .00  1119.78  1119.63      .38     2.15      .02  1116.00
   25000.      98.   17901.    7001.      36.    3185.    2620.     636.     110.   1116.00
      .19     2.72     5.62     2.67     .050     .050     .100     .000  1108.00 10557.76
  .004459     610.     600.     600.        2        0        0      .00  1346.36 11950.00
0
 *SECNO 16.291
 3280 CROSS SECTION     16.29 EXTENDED      4.44 FEET


 3470 ENCROACHMENT STATIONS=   10550.0   11750.0  TYPE=     1  TARGET=    1200.000
    16.29     6.44  1122.44      .00  1122.94  1122.94      .51     3.28      .04  1119.20
   25000.    1739.   18565.    4696.     347.    2957.    1592.     712.     128.   1118.00
      .22     5.01     6.28     2.95     .050     .050     .100     .000  1116.00 10550.00
  .006384     620.     620.     620.        2        0        0      .00  1200.00 11750.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
 3280 CROSS SECTION     16.34 EXTENDED       .45 FEET
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   16.34    14.05  1124.45      .00  1125.00  1125.02      .58     2.04      .03  1110.40
  25000.   14500.     7303.    3197.    2208.    1151.    2059.     761.     139.   1120.00
     .24     6.57     6.34     1.55     .050     .050     .150     .000  1110.40 10800.00
 .004161     300.     450.     450.        2        0        0      .00  1100.00 11900.00
0
 *SECNO 16.350

 3301 HV CHANGED MORE THAN HVINS


 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.80

   16.35     9.63  1124.63      .00  1125.13  1125.79     1.16      .47      .29  1124.20
  25000.      15.    24985.       0.      21.    2889.       0.     771.     141.   1124.80
     .24      .71     8.65      .00     .050     .050     .150     .000  1115.00 11002.35
 .004482     110.     110.     110.        2        0        0      .00   397.65 11400.00
0
1
 03-26-87     20:15:54                                                                          PAGE   13


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 SPECIAL BRIDGE

 5227 DOWNSTREAM ELEV IS   1122.92 ,NOT   1124.63 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.56      3.00       .00    128.00      6.00    976.00      .00   1114.00   1114.00

 *SECNO 16.355

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS

 PRESSURE AND WEIR FLOW


  EGPRS     EGLWC      H3       QWEIR     QPR       BAREA   TRAPEZOID      ELLC     ELTRD
                                                             AREA
   1140.52   1128.68      .00    16982.     8031.      976.      976.     1122.00   1124.60


 3685 20 TRIALS ATTEMPTED WSEL,CWSEL
 3710 WSEL ASSUMED BASED ON MIN DIFF

 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.80

   16.35     8.96  1122.96  1122.83  1126.40  1127.29     4.33      .34     -.34  1124.20
  25000.       0.    25000.       0.       0.    1497.       0.     774.     141.   1124.80
     .24      .00     16.70      .00     .000     .050     .000     .000  1114.00 11100.00
 .021973      40.      40.      40.       20       12        0      .00   167.00 11400.00
0
 *SECNO 16.356
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3280 CROSS SECTION     16.36 EXTENDED      1.91 FEET


3301 HV CHANGED MORE THAN HVINS

1
 03-26-87     20:15:54                                                                                                PAGE   14


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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



3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.36    12.11  1126.11      .00  1125.86  1128.08     1.96      .07      .71  1129.00
   25000.       0.   25000.       0.       0.    2224.       0.     774.     141.   1127.50
      .24      .00    11.24      .00     .050     .050     .150     .000  1114.00 11136.66
  .009913       5.       5.       5.        8        0        0      .00   224.21 11372.87
0
 *SECNO 16.371

3265 DIVIDED FLOW

3280 CROSS SECTION     16.37 EXTENDED      2.99 FEET


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37    13.18  1127.18      .00  1127.90  1128.78     1.59      .59      .11  1129.00
   25000.       0.   24993.       7.       0.    2468.      14.     777.     142.   1127.50
      .25      .00    10.13      .49     .050     .050     .150     .000  1114.00 11133.44
  .007439      69.      69.      69.        2        0        0      .00   262.37 11900.00
0
 *SECNO 16.376

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.70 ELREA=     1129.60

    16.38    11.61  1126.91  1126.91  1128.04  1131.00     4.09      .28     1.25  1128.00
   25000.       0.   25000.       0.       0.    1541.       0.     779.     142.   1128.00
      .25      .00    16.22      .00     .050     .050     .150     .000  1115.30 11184.28
  .018886      25.      25.      25.       20       12        0      .00   192.09 11376.38
0
1
 03-26-87     20:15:54                                                                                                PAGE   15


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


SPECIAL BRIDGE
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0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      5.63 FEET

1
  03-26-87     20:15:54                                                                                    PAGE   19

    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
     16.19    10.64  1118.64      .00  1119.78  1118.97      .33     2.01      .02  1116.00
    20000.      57.   14400.    5544.      24.    2784.    2229.     616.     110.   1116.00
       .22     2.38     5.17     2.49     .050     .050     .100     .000  1108.00 10561.91
   .004519     610.     600.     600.        2        0        0      .00  1320.34 11950.00
0
 *SECNO 16.291
 3280 CROSS SECTION     16.29 EXTENDED      3.90 FEET


 3470 ENCROACHMENT STATIONS=   10550.0   11750.0  TYPE=     1  TARGET=    1200.000
     16.29     5.90  1121.90      .00  1122.94  1122.34      .43     3.34      .03  1119.20
    20000.    1288.   14996.    3717.     287.    2585.    1374.     683.     128.   1118.00
       .25     4.48     5.80     2.71     .050     .050     .100     .000  1116.00 10550.00
   .006518     620.     620.     620.        3        0        0      .00  1200.00 11750.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338

 3470 ENCROACHMENT STATIONS=   10800.0   11900.0  TYPE=     1  TARGET=    1100.000
     16.34    13.45  1123.85      .00  1125.00  1124.32      .47     1.97      .02  1110.40
    20000.   11817.    5885.    2298.    1998.    1037.    1722.     725.     139.   1120.00
       .28     5.91     5.67     1.33     .050     .050     .150     .000  1110.40 10800.00
   .003827     300.     450.     450.        2        0        0      .00  1100.00 11900.00
0
 *SECNO 16.350

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.80

     16.35     9.07  1124.07      .00  1125.13  1124.91      .84      .40      .18  1124.20
    20000.       0.   20000.       0.       0.    2721.       0.     735.     140.   1124.80
       .28      .00     7.35      .00     .050     .050     .150     .000  1115.00 11100.00
   .003497     110.     110.     110.        2        0        0      .00   300.00 11400.00
0
1
  03-26-87     20:15:54                                                                                    PAGE   20

    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 SPECIAL BRIDGE
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```
SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.56      3.00       .00    128.00      6.00    976.00       .00   1114.00   1114.00

*SECNO 16.355

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

PRESSURE AND WEIR FLOW


 EGPRS      EGLWC       H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
   1134.24   1126.49      .00    12956.     7091.      976.      976.     1122.00   1124.60


3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.80

    16.35     7.63  1121.63  1121.63  1126.40  1125.46     3.82      .29     -.29  1124.20
   20000.       0.   20000.       0.       0.    1275.       0.     736.      141.   1124.80
      .28      .00     15.69      .00     .000     .050     .000     .000  1114.00 11100.00
  .023189      40.      40.      40.       20       11        0      .00   167.00 11400.00
0
 *SECNO 16.356

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
1
  03-26-87     20:15:54                                                                          PAGE   21


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


    16.36    10.21  1124.21       .00  1125.86  1126.11     1.90      .08      .58  1129.00
   20000.       0.   20000.       0.       0.    1807.       0.     737.      141.   1127.50
      .28      .00     11.07      .00     .050     .050     .150     .000  1114.00 11142.40
  .011296       5.       5.       5.        5        0        0      .00   211.37 11365.77
0
 *SECNO 16.371

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.37 EXTENDED      1.24 FEET


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37    11.44  1125.44       .00  1127.90  1126.88     1.44      .64      .14  1129.00
```

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  .007687      69.      69.      69.        2        0        0      .00   219.71 11370.38
0
 *SECNO 16.376

 3301 HV CHANGED MORE THAN HVINS

 3685 20 TRIALS ATTEMPTED WSEL,CWSEL
 3693 PROBABLE MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.70 ELREA=     1129.60

    16.38    10.36  1125.66  1125.66  1128.04  1129.30     3.63      .29     1.10  1128.00
   20000.       0.   20000.       0.       0.    1307.       0.     741.     141.   1128.00
      .28      .00    15.30      .00     .050     .050     .150     .000  1115.30 11189.20
  .019593      25.      25.      25.       20       11        0      .00   183.02 11372.21
0
1
 03-26-87     20:15:54                                                                          PAGE   22


   SECND     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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



 SPECIAL BRIDGE

 5227 DOWNSTREAM ELEV IS   1123.54 ,NOT   1125.66 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      1.05      1.56      3.00       .00    116.00     20.00   1600.00      5.00   1116.70   1116.70

 *SECND 16.379
 6840,FLOW IS BY WEIR AND LOW FLOW

 3301 HV CHANGED MORE THAN HVINS

 3420 BRIDGE W.S.=   1129.04 BRIDGE VELOCITY=,      9.06      CALCULATED CHANNEL AREA=,     1947.

  EGPRS      EGLWC      H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                                 AREA
    1129.45   1130.32      3.38     2423.    17626.     1600.     1363.     1126.20   1129.70



 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.60 ELREA=     1129.60

    16.38    13.55  1128.85      .00  1129.82  1130.32     1.46     1.02      .00  1129.60
   20000.       0.   20000.       0.       0.    2060.       0.     741.     141.   1129.60
      .28      .00     9.71      .00     .000     .050     .000     .000  1115.30 11190.00
  .005177      14.      14.      14.        3        0        3      .00   198.10 11388.10
0
 CCHV=    .100 CEHV=    .300
 *SECND 16.431
 3280 CROSS SECTION     16.43 EXTENDED       .56 FEET
```

```
3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43    13.46  1130.46      .00  1132.80  1130.49      .03      .03      .14  1120.00
   20000.     3742.     7540.    8717.     2719.     5017.    6201.     762.     143.   1118.00
      .30     1.38     1.50     1.41      .050      .050     .050     .000  1117.00 10770.00
  .000103      50.      100.     150.         2         0        0      .00  1440.00 12210.00
0
1
 03-26-87     20:15:54                                                                          PAGE   23

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.481

 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    26.49  1130.49      .00  1132.85  1130.50      .01      .01      .00  1123.20
   20000.      222.    19477.     301.      490.    24515.     881.     880.     153.   1124.00
      .40      .45      .79      .34      .050      .050     .050     .000  1104.00 10860.00
  .000020     260.     260.     260.         2         0        0      .00  1957.58 12817.58
0
1
 03-26-87     20:15:54                                                                          PAGE   24


                                                                                THIS RUN EXECUTED 03-26-87

 ***************************************************
   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     AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
 T2     PROFILE NUMBER 4 - SUBCRITICAL PROFILE
 T3     OVERFLOW CH. NEW BRIDGE - VAR. FLOWS - NEW FIELD DATA

 J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

       0.       5.       0.       0.   .000000     .00      .0       0.   1113.350    .000

 J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     4.000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000

 1
 03-26-87     20:15:54                                                                          PAGE   25

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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

 *PROF 4
```

```
3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.78      .43      .00      .00  1133.00
  107775.       0.    98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
  .001857       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.58  1115.58      .00  1115.81  1115.64      .06     1.82      .04  1114.00
   15000.    3408.    1808.    9784.    1670.    1093.    4901.     413.      60.   1114.00
      .17     2.04     1.65     2.00     .050     .050     .050     .000  1108.00 10475.82
  .000561    1000.    1400.     950.        2        0        0      .00  1774.18 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     8.24  1116.24      .00  1117.57  1116.42      .18      .74      .04  1113.00
   15000.   11522.     382.    3096.    3024.     108.    2346.     530.      90.   1114.00
      .23     3.81     3.53     1.32     .050     .050     .100     .000  1108.00 10511.72
  .002005     750.     750.     800.        2        0        0      .00  1528.28 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      4.94 FEET

1
  03-26-87     20:15:54                                                                    PAGE   26


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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



 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19     9.95  1117.95      .00  1119.78  1118.22      .27     1.77      .03  1116.00
   15000.      26.    10859.    4115.      13.    2325.    1798.     597.     109.   1116.00
      .27     1.98     4.67     2.29     .050     .050     .100     .000  1108.00 10566.65
  .004686     610.     600.     600.        2        0        0      .00  1289.75 11950.00
0
 *SECNO 16.291

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.29 EXTENDED      3.17 FEET

    16.29     5.17  1121.17      .00  1122.94  1121.46      .29     3.24      .01  1119.20
   15000.    2036.    10293.    2671.     654.    2091.    1210.     654.     129.   1118.00
      .32     3.11     4.92     2.21     .050     .050     .100     .000  1116.00 10244.15
  .005857     620.     620.     620.        4        0        0      .00  1517.04 11792.00
0
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   16.34    12.36  1122.76      .00  1125.00  1122.98      .22     1.49      .02  1110.40
  15000.   10607.     3422.     971.     2827.     829.    1109.     693.     143.   1120.00
     .35     3.75     4.13      .88      .050     .050     .150     .000  1110.40 10315.61
 .002729     300.     450.     450.         2        0        0      .00  1589.48 11905.09
0
 *SECNO 16.350

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.80

   16.35     7.88  1122.88      .00  1125.13  1123.50      .63      .32      .21  1124.20
  15000.       0.   15000.       0.        0.    2363.       0.     702.     146.   1124.80
     .35      .00     6.35      .00      .050     .050     .150     .000  1115.00 11100.00
 .003116     110.     110.     110.         2        0        0      .00   300.00 11400.00
0
1
 03-26-87     20:15:54                                                                          PAGE   27

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 SPECIAL BRIDGE

 5227 DOWNSTREAM ELEV IS   1120.35 ,NOT   1122.88 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

 SB  XK       XKOR     COFQ     RDLEN    BWC      BWP      BAREA    SS       ELCHU    ELCHD
      1.25     1.56     3.00      .00   128.00     6.00   976.00      .00   1114.00  1114.00

 *SECNO 16.355

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS

 PRESSURE AND WEIR FLOW


  EBPRS     EGLWC     H3       QWEIR     QPR      BAREA   TRAPEZOID     ELLC     ELTRD
                                                            AREA
   1128.60  1124.97      .00     9196.     5808.     976.     976.     1122.00  1124.60


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.80

    16.35     7.52  1121.52      .00  1126.40  1123.73     2.21      .23      .00  1124.20
   15000.       0.   15000.       0.        0.    1256.       0.     704.     146.   1124.80
      .35      .00    11.94      .00      .000     .050     .000     .000  1114.00 11100.00
  .013651     40.      40.      40.         4        0        3      .00   167.00 11400.00
0
 *SECNO 16.356

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.36     8.02  1122.02      .00  1125.86  1123.90     1.88      .07      .10  1129.00
```

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 .014101      5.      5.      5.       4       0       0     .00   196.76 11357.70
0
1
 03-26-87    20:15:54                                                                                                PAGE   28

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.371

 3265 DIVIDED FLOW

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37     9.56  1123.56      .00  1127.90  1124.81     1.25      .71      .19  1129.00
   15000.       0.   15000.       0.       0.    1673.       0.     706.     146.   1127.50
      .35      .00     8.97      .00     .050     .050     .150     .000  1114.00 11144.33
  .007891      69.      69.      69.        3        0        0      .00   207.06 11363.39
0
 *SECNO 16.376

 3301 HV CHANGED MORE THAN HVINS

 3685 20 TRIALS ATTEMPTED WSEL,CWSEL
 3693 PROBABLE MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.70 ELREA=     1129.60

    16.38     8.96  1124.26  1124.26  1128.04  1127.39     3.12      .30      .94  1128.00
   15000.       0.   15000.       0.       0.    1058.       0.     707.     146.   1128.00
      .35      .00    14.18      .00     .050     .050     .150     .000  1115.30 11194.71
  .020620      25.      25.      25.       20       11        0      .00   172.84 11367.55
0

 SPECIAL BRIDGE

 5227 DOWNSTREAM ELEV IS   1122.41 ,NOT   1124.26 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      1.05      1.56      3.00       .00    116.00     20.00   1600.00      5.00   1116.70   1116.70

 *SECNO 16.379

 3301 HV CHANGED MORE THAN HVINS

1
 03-26-87    20:15:54                                                                                                PAGE   29

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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
```

3420 BRIDGE W.S.= 1124.59 BRIDGE VELOCITY=, 14.03 CALCULATED CHANNEL AREA=, 1069.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
1126.39	1128.12	.00	0.	15000.	1600.	1363.	1126.20	1129.70

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1129.60 ELREA= 1129.60

16.38	11.57	1126.87	.00	1129.82	1128.12	1.24	.73	.00	1129.60
15000.	0.	15000.	0.	0.	1675.	0.	708.	146.	1129.60
.35	.00	8.95	.00	.000	.050	.000	.000	1115.30	11190.00
.005442	14.	14.	14.	0	0	0	.00	190.45	11380.45

0

CCHV= .100 CEHV= .300

*SECND 16.431

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 10770.0 12210.0 TYPE= 1 TARGET= 1440.000

16.43	11.25	1128.25	.00	1132.80	1128.28	.03	.04	.12	1120.00
15000.	2735.	5817.	6448.	2100.	4022.	4689.	723.	148.	1118.00
.38	1.30	1.45	1.38	.050	.050	.050	.000	1117.00	10770.00
.000128	50.	100.	150.	2	0	0	.00	1370.51	12140.51

0

*SECND 16.481

3470 ENCROACHMENT STATIONS= 10860.0 12820.0 TYPE= 1 TARGET= 1960.000

16.48	24.28	1128.28	.00	1132.85	1128.29	.01	.01	.00	1123.20
15000.	119.	14787.	93.	335.	20867.	412.	820.	158.	1124.00
.48	.36	.71	.23	.050	.050	.050	.000	1104.00	10860.00
.000019	260.	260.	260.	2	0	0	.00	1906.56	12766.56

0

1

THIS RUN EXECUTED 03-26-87

****
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 AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2 PROFILE NUMBER 5 - SUBCRITICAL PROFILE
T3 OVERFLOW CH. NEW BRIDGE - VAR. FLOWS - NEW FIELD DATA

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	6.	0.	0.	.000000	.00	.0	0.	1113.350	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	5.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


*PROF 5

CCHV=    .100 CEHV=    .300
*SECNO 15.823

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.54      .19      .00      .00  1133.00
   72000.       0.   65623.    6377.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     3.64     2.10     .050     .050     .050     .000  1008.30  9365.47
  .000829       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     6.50  1114.50      .00  1115.81  1114.61      .11     1.06      .01  1114.00
   15000.    3529.     1553.    9918.     1275.     766.    3709.     390.      60.   1114.00
      .13     2.77     2.03     2.67     .050     .050     .050     .000  1108.00 10479.26
  .001355    1000.     1400.     950.        2        0        0      .00  1770.73 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     7.86  1115.86      .00  1117.57  1116.09      .23     1.44      .04  1113.00
   15000.   11774.      386.    2840.     2778.      99.    2020.     485.      90.   1114.00
      .18     4.24     3.90     1.41     .050     .050     .100     .000  1108.00 10512.84
  .002747     750.      750.     800.        2        0        0      .00  1527.16 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      4.95 FEET

1
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19     9.96  1117.96      .00  1119.78  1118.22      .27     2.12      .01  1116.00
   15000.      26.   10859.    4115.       13.    2331.    1804.     547.     109.   1116.00
      .23     1.98     4.66     2.28     .050     .050     .100     .000  1108.00 10566.59
```

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*SECNO 16.291

3265 DIVIDED FLOW

3280 CROSS SECTION     16.29 EXTENDED      3.17 FEET

    16.29     5.17  1121.17      .00  1122.94  1121.46      .29     3.23      .01  1119.20
   15000.    2032.   10297.     2671.     653.     2089.    1208.     605.     129.   1118.00
      .27     3.11     4.93     2.21     .050      .050     .100     .000  1116.00 10244.17
  .005883     620.     620.     620.        4         0        0      .00  1516.84 11792.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
    16.34    12.36  1122.76      .00  1125.00  1122.98      .22     1.49      .02  1110.40
   15000.   10607.    3422.      971.    2828.     829.    1109.     644.     143.   1120.00
      .30     3.75     4.13      .88     .050      .050     .150     .000  1110.40 10315.60
  .002728     300.     450.     450.        2         0        0      .00  1589.50 11905.10
0
 *SECNO 16.350

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.80

    16.35     7.88  1122.88      .00  1125.13  1123.50      .63      .32      .21  1124.20
   15000.       0.   15000.       0.       0.    2363.       0.     653.     146.   1124.80
      .30      .00     6.35      .00     .050      .050     .150     .000  1115.00 11100.00
  .003116     110.     110.     110.        2         0        0      .00   300.00 11400.00
0
1
  03-26-87     20:15:54                                                                    PAGE   33


    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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



 SPECIAL BRIDGE

 5227 DOWNSTREAM ELEV IS   1120.35 ,NOT   1122.88 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      1.25      1.56      3.00       .00    128.00      6.00    976.00       .00   1114.00   1114.00

 *SECNO 16.355

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS

 PRESSURE AND WEIR FLOW


  EGPRS     EGLWC      H3       QWEIR     QPR       BAREA   TRAPEZOID      ELLC     ELTRD
                                                             AREA
    1128.60   1124.97      .00     9196.     5808.      976.      976.     1122.00   1124.60



 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.80
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   15000.       0.    15000.       0.       0.    1256.       0.     655.     146.   1124.80
     .30      .00     11.94      .00     .000     .050     .000     .000  1114.00 11100.00
  .013651      40.       40.      40.        4        0        3      .00   167.00 11400.00
0
 *SECNO 16.356

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.36     8.02  1122.02      .00  1125.86  1123.90     1.88      .07      .10  1129.00
   15000.       0.    15000.       0.       0.    1362.       0.     655.     146.   1127.50
     .30      .00     11.01      .00     .050     .050     .150     .000  1114.00 11148.94
  .014101       5.        5.       5.        4        0        0      .00   196.76 11357.70
0
1
 03-26-87     20:15:54                                                                          PAGE   34


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.371

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37     9.56  1123.56      .00  1127.90  1124.81     1.25      .71      .19  1129.00
   15000.       0.    15000.       0.       0.    1673.       0.     657.     146.   1127.50
     .30      .00      8.97      .00     .050     .050     .150     .000  1114.00 11144.33
  .007891      69.       69.      69.        3        0        0      .00   207.06 11363.39
0
 *SECNO 16.376

 3301 HV CHANGED MORE THAN HVINS

 3685 20 TRIALS ATTEMPTED WSEL,CWSEL
 3693 PROBABLE MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.70 ELREA=     1129.60

    16.38     8.96  1124.26  1124.26  1128.04  1127.39     3.12      .30      .94  1128.00
   15000.       0.    15000.       0.       0.    1058.       0.     658.     146.   1128.00
     .30      .00     14.18      .00     .050     .050     .150     .000  1115.30 11194.71
  .020620      25.       25.      25.       20       11        0      .00   172.84 11367.55
0

 SPECIAL BRIDGE

 5227 DOWNSTREAM ELEV IS   1122.41 ,NOT   1124.26 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.05      1.56      3.00       .00    116.00     20.00   1600.00      5.00   1116.70   1116.70
```

3301 HV CHANGED MORE THAN HVINS

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1124.59 BRIDGE VELOCITY=, 14.03 CALCULATED CHANNEL AREA=, 1069.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
1126.39	1128.12	.00	0.	15000.	1600.	1363.	1126.20	1129.70

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1129.60 ELREA= 1129.60

16.38	11.57	1126.87	.00	1129.82	1128.12	1.24	.73	.00	1129.60
15000.	0.	15000.	0.	0.	1675.	0.	659.	146.	1129.60
.30	.00	8.95	.00	.000	.050	.000	.000	1115.30	11190.00
.005442	14.	14.	14.	0	0	0	.00	190.45	11380.45

0

CCHV= .100 CEHV= .300

*SECNO 16.431

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 10770.0 12210.0 TYPE= 1 TARGET= 1440.000

16.43	11.25	1128.25	.00	1132.80	1128.28	.03	.04	.12	1120.00
15000.	2735.	5817.	6448.	2100.	4022.	4689.	674.	148.	1118.00
.33	1.30	1.45	1.38	.050	.050	.050	.000	1117.00	10770.00
.000128	50.	100.	150.	2	0	0	.00	1370.51	12140.51

0

*SECNO 16.481

3470 ENCROACHMENT STATIONS= 10860.0 12820.0 TYPE= 1 TARGET= 1960.000

16.48	24.28	1128.28	.00	1132.85	1128.29	.01	.01	.00	1123.20
15000.	119.	14787.	93.	335.	20867.	412.	771.	158.	1124.00
.43	.36	.71	.23	.050	.050	.050	.000	1104.00	10860.00
.000019	260.	260.	260.	2	0	0	.00	1906.56	12766.56

0

1

THIS RUN EXECUTED 03-26-87

****
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
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T1     AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2     PROFILE NUMBER 6 - SUBCRITICAL PROFILE
T3     OVERFLOW CH. NEW BRIDGE - VAR. FLOWS - NEW FIELD DATA

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        7.        0.        0.   .000000      .00       .0        0.  1113.350     .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     6.000     .000    -1.000     .000      .000      .000      .000      .000      .000      .000

1
 03-26-87     20:15:54                                                                                PAGE   37

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLDSS   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

 *PROF 6

 CCHV=    .100 CEHV=    .300
 *SECNO 15.823

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

     15.82   105.05  1113.35      .00  1113.35  1113.54      .19      .00      .00  1133.00
    72000.       0.   65623.    6377.       0.   18003.    3042.       0.       0.   1110.00
       .00      .00     3.64     2.10     .050     .050     .050     .000  1008.30  9365.47
   .000829       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
     16.01     6.46  1114.46      .00  1115.81  1114.51      .05      .95      .01  1114.00
    10000.    2358.    1025.    6617.    1257.     751.    3655.     389.      60.   1114.00
       .18     1.87     1.37     1.81     .050     .050     .050     .000  1108.00 10479.42
   .000630    1000.    1400.     950.        2        0        0      .00  1770.58 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
     16.15     7.21  1115.21      .00  1117.57  1115.37      .16      .83      .03  1113.00
    10000.    8211.     263.    1527.    2359.      83.    1462.     474.      90.   1114.00
       .25     3.48     3.14     1.04     .050     .050     .100     .000  1108.00 10514.75
   .002247     750.     750.     800.        2        0        0      .00  1525.24 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      4.13 FEET

1
 03-26-87     20:15:54                                                                                PAGE   38
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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



3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19      9.13  1117.13      .00  1119.78  1117.33      .20      1.95      .01  1116.00
   10000.        6.    7253.    2740.       4.    1785.    1319.      523.     109.   1116.00
      .30      1.43     4.06     2.08     .050     .050     .100      .000  1108.00 10572.23
  .005040      610.     600.     600.        3        0        0       .00  1243.48 11950.00
0
 *SECNO 16.291

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.29 EXTENDED      2.52 FEET

    16.29      4.52  1120.52      .00      .00  1120.76      .24      3.41      .01  1119.20
   10000.      863.    7419.    1718.     384.    1672.     919.      566.     128.   1118.00
      .35      2.25     4.44     1.87     .050     .050     .100      .000  1116.00 10247.42
  .006037      620.     620.     620.        4        0        0       .00  1484.50 11792.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
    16.34     11.65  1122.05      .00      .00  1122.21      .16      1.42      .03  1110.40
   10000.     7091.    2413.     496.    2246.     696.     733.      596.     142.   1120.00
      .38      3.16     3.47     .68     .050     .050     .150      .000  1110.40 10324.36
  .002431      300.     450.     450.        3        0        0       .00  1517.96 11842.32
0
 *SECNO 16.350

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.80

    16.35      7.19  1122.19      .00      .00  1122.53      .33       .23      .09  1124.20
   10000.        0.   10000.       0.       0.    2158.       0.      603.     144.   1124.80
      .39       .00     4.63      .00     .050     .050     .150      .000  1115.00 11100.00
  .001862      110.     110.     110.        2        0        0       .00   300.00 11400.00
0
1
  03-26-87     20:15:54                                                                          PAGE   39


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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



 SPECIAL BRIDGE

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      1.25      1.56      3.00       .00    128.00      6.00    976.00       .00   1114.00   1114.00

 *SECNO 16.355

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS

 PRESSURE AND WEIR FLOW
```

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
1124.74	1123.06	.04	5567.	4441.	976.	976.	1122.00	1124.60

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1124.20 ELREA= 1124.80

```
   16.35     7.78  1121.78      .00  1126.40  1122.70      .92      .17      .00  1124.20
  10000.       0.   10000.       0.       0.    1299.       0.     605.     144.   1124.80
     .39      .00     7.70      .00     .000     .050     .000     .000  1114.00 11100.00
 .005472      40.      40.      40.        3        0        7      .00   167.00 11400.00
0
*SECNO 16.356
```

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

```
   16.36     7.86  1121.86      .00  1125.86  1122.74      .88      .03      .01  1129.00
  10000.       0.   10000.       0.       0.    1332.       0.     605.     144.   1127.50
     .39      .00     7.51      .00     .050     .050     .150     .000  1114.00 11149.41
 .006682       5.       5.       5.        2        0        0      .00   195.72 11357.13
0
1
```


SECNO	DEPTH	CWSEL	CRIWS	WSELK	EB	HV	HL	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 16.371

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

```
   16.37     8.45  1122.45      .00  1127.90  1123.19      .74      .41      .04  1129.00
  10000.       0.   10000.       0.       0.    1447.       0.     607.     145.   1127.50
     .39      .00     6.91      .00     .050     .050     .150     .000  1114.00 11147.66
 .005277      69.      69.      69.        2        0        0      .00   199.63 11359.29
0
*SECNO 16.376
```

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1129.70 ELREA= 1129.60

```
   16.38     7.35  1122.65  1122.65  1128.04  1125.15     2.50      .24      .88  1128.00
  10000.       0.   10000.       0.       0.     788.       0.     608.     145.   1128.00
     .39      .00    12.69      .00     .050     .050     .150     .000  1115.30 11201.07
 .022216      25.      25.      25.       20       15        0      .00   161.08 11362.16
0
```

5227 DOWNSTREAM ELEV IS 1121.10 ,NOT 1122.65 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.56	3.00	.00	116.00	20.00	1600.00	5.00	1116.70	1116.70

*SECNO 16.379

3301 HV CHANGED MORE THAN HVINS

1

03-26-87 20:15:54 PAGE 41

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	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

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1122.91 BRIDGE VELOCITY=, 12.67 CALCULATED CHANNEL AREA=, 789.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	1125.74	.00	0.	10000.	1600.	1363.	1126.20	1129.70

3470 ENCROACHMENT STATIONS= 10600.0 11900.0 TYPE= 1 TARGET= 1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1129.60 ELREA= 1129.60

16.38	9.51	1124.81	.00	1129.82	1125.74	.93	.60	.00	1129.60
10000.	0.	10000.	0.	0.	1291.	0.	608.	145.	1129.60
.39	.00	7.75	.00	.000	.050	.000	.000	1115.30	11190.00
.005379	14.	14.	14.	0	0	0	.00	182.48	11372.48

0

CCHV= .100 CEHV= .300

*SECNO 16.431

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 10770.0 12210.0 TYPE= 1 TARGET= 1440.000

16.43	8.86	1125.86	.00	1132.80	1125.88	.03	.05	.09	1120.00
10000.	1688.	3963.	4349.	1433.	2946.	3255.	619.	147.	1118.00
.42	1.18	1.35	1.34	.050	.050	.050	.000	1117.00	10775.71
.000167	50.	100.	150.	2	0	0	.00	1284.66	12060.37

0

*SECNO 16.481

3470 ENCROACHMENT STATIONS= 10860.0 12820.0 TYPE= 1 TARGET= 1960.000

16.48	21.89	1125.89	.00	1132.85	1125.90	.01	.01	.00	1123.20
10000.	37.	9954.	10.	167.	16920.	81.	693.	156.	1124.00
.54	.22	.59	.12	.050	.050	.050	.000	1104.00	10860.00
.000018	260.	260.	260.	2	0	0	.00	1805.13	12665.13

0

1

03-26-87 20:15:54 PAGE 42

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**************************************************
  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
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T1     AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2     PROFILE NUMBER 7 - SUBCRITICAL PROFILE
T3     OVERFLOW CH. NEW BRIDGE - VAR. FLOWS - NEW FIELD DATA

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        8.        0.        0.   .000000       .00        .0        0.  1113.350      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    15.000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000

1
 03-26-87     20:15:54                                                                          PAGE   43


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 *PROF 7

 CCHV=    .100 CEHV=    .300
 *SECNO 15.823

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.54      .19      .00      .00  1133.00
   72000.       0.   65623.    6377.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     3.64     2.10     .050     .050     .050     .000  1008.30  9365.47
  .000829       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     6.39  1114.39      .00  1115.81  1114.40      .01      .84      .02  1114.00
    5000.    1182.     506.    3312.    1234.     731.    3583.     387.      60.   1114.00
      .36      .96      .69      .92     .050     .050     .050     .000  1108.00 10479.63
  .000168    1000.    1400.     950.        2        0        0      .00  1770.37 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     6.62  1114.62      .00  1117.57  1114.68      .07      .26      .02  1113.00
    5000.    4319.     133.     548.    1981.      69.     956.     464.      90.   1114.00
      .47     2.18     1.92      .57     .050     .050     .100     .000  1108.00 10516.49
  .001075     750.     750.     800.        2        0        0      .00  1523.51 12040.00
0
```

3265 DIVIDED FLOW

3280 CROSS SECTION 16.19 EXTENDED 2.76 FEET

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	DLOSS	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

3470 ENCROACHMENT STATIONS= 10501.0 11950.0 TYPE= 1 TARGET= 1449.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1116.00 ELREA= 1116.00

16.19	7.76	1115.76	.00	1119.78	1116.16	.40	1.38	.10	1116.00
5000.	0.	5000.	0.	0.	985.	0.	491.	103.	1116.00
.50	.00	5.08	.00	.050	.050	.100	.000	1108.00	10582.18
.007697	610.	600.	600.	3	0	0	.00	359.42	11241.15

0

*SECNO 16.291

3265 DIVIDED FLOW

3280 CROSS SECTION 16.29 EXTENDED 1.80 FEET

16.29	3.80	1119.80	.00	.00	1119.95	.15	3.76	.03	1119.20
5000.	104.	4137.	759.	97.	1231.	597.	512.	115.	1118.00
.56	1.07	3.36	1.27	.050	.050	.100	.000	1116.00	10348.89
.004900	620.	620.	620.	3	0	0	.00	1354.96	11792.00

0

CCHV= .300 CEHV= .500

*SECNO 16.338

16.34	10.67	1121.07	.00	.00	1121.16	.09	1.20	.02	1110.40
5000.	3556.	1329.	115.	1447.	511.	293.	531.	127.	1120.00
.60	2.46	2.60	.39	.050	.050	.150	.000	1110.40	10336.55
.002069	300.	450.	450.	3	0	0	.00	1402.11	11738.66

0

*SECNO 16.350

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 1124.20 ELREA= 1124.80

16.35	6.19	1121.19	.00	.00	1121.30	.11	.13	.01	1124.20
5000.	0.	5000.	0.	0.	1857.	0.	536.	130.	1124.80
.62	.00	2.69	.00	.050	.050	.150	.000	1115.00	11100.00
.000762	110.	110.	110.	2	0	0	.00	300.00	11400.00

0

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	DLOSS	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

SPECIAL BRIDGE

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*SECNO 16.355

3265 DIVIDED FLOW

CLASS A LOW FLOW

3420 BRIDGE W.S.=   1121.14 BRIDGE VELOCITY=,      5.74      CALCULATED CHANNEL AREA=,      871.

 EGPRS      EGLWC       H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                                 AREA
      .00   1121.47      .01        0.      5000.      976.      976.     1122.00   1124.60


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1124.20 ELREA=     1124.80

    16.35     7.20  1121.20      .00  1126.40  1121.47      .27      .17      .00  1124.20
    5000.       0.    5000.       0.       0.    1203.       0.     538.     130.   1124.80
      .62      .00     4.16      .00     .000     .050     .000     .000  1114.00 11100.00
  .001740      40.      40.      40.        0        0        0      .00   167.00 11400.00
0
 *SECNO 16.356

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.36     7.21  1121.21      .00  1125.86  1121.48      .27      .01      .00  1129.00
    5000.       0.    5000.       0.       0.    1205.       0.     538.     130.   1127.50
      .62      .00     4.15      .00     .050     .050     .150     .000  1114.00 11151.38
  .002227       5.       5.       5.        0        0        0      .00   191.31 11354.69
0
 *SECNO 16.371
1
  03-26-87     20:15:54                                                                          PAGE   46


    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        DLOSS    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


 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37     7.38  1121.38      .00  1127.90  1121.63      .25      .15      .00  1129.00
    5000.       0.    5000.       0.       0.    1237.       0.     540.     130.   1127.50
      .62      .00     4.04      .00     .050     .050     .150     .000  1114.00 11150.87
  .002062      69.      69.      69.        2        0        0      .00   192.46 11355.33
0
 *SECNO 16.376

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.70 ELREA=     1129.60
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    5000.       0.    5000.       0.       0.     518.       0.     540.     130.   1128.00
      .62     .00     9.65     .00     .050     .050     .150     .000  1115.30 11207.95
  .020119     25.      25.      25.        3        0        0      .00   148.39 11356.34
0

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS   1119.50 ,NOT   1120.90 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB  XK        XKOR      CDFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
    1.05      1.56      3.00       .00    116.00     20.00   1600.00      5.00   1116.70   1116.70

*SECNO 16.379

3301 HV CHANGED MORE THAN HVINS

CLASS B LOW FLOW

3420 BRIDGE W.S.=   1120.77 BRIDGE VELOCITY=,      10.56      CALCULATED CHANNEL AREA=,       473.
1
 03-26-87     20:15:54                                                                                PAGE   47


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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



 EGPRS      EGLWC      H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                              AREA
       .00   1122.72      .00        0.     5000.     1600.     1363.     1126.20   1129.70



 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1129.60 ELREA=     1129.60

    16.38     6.84  1122.14      .00  1129.82  1122.72      .58      .37      .00  1129.60
    5000.       0.    5000.       0.       0.     818.       0.     540.     130.   1129.60
      .62     .00     6.12     .00     .000     .050     .000     .000  1115.30 11190.00
  .005604     14.      14.      14.        0        0        0      .00   172.15 11362.15
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43     5.85  1122.85      .00  1132.80  1122.87      .03      .09      .06  1120.00
    5000.     626.    2002.    2372.     629.    1589.    1713.     546.     132.   1118.00
      .65     .99     1.26     1.38     .050     .050     .050     .000  1117.00 10790.79
  .000335     50.     100.     150.        2        0        0      .00  1171.58 11962.37
0
 *SECNO 16.481

 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    18.88  1122.88      .00  1132.85  1122.88      .00      .01      .00  1123.20
    5000.       0.    5000.       0.       0.   11959.       0.     594.     140.   1124.00
      .82     .00      .42     .00     .050     .050     .050     .000  1104.00 10966.16
  .000014    260.     260.     260.        2        0        0      .00  1610.11 12576.27
^
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THIS RUN EXECUTED 03-26-87

****
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
****

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

OVERFLOW CH. NEW BRIDGE

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
15.823	.00	.00	.00	1008.30	107775.00	1113.35	.00	1113.78	18.57	5.46	21045.96	25011.44
15.823	.00	.00	.00	1008.30	107775.00	1113.35	.00	1113.78	18.57	5.46	21045.96	25011.44
15.823	.00	.00	.00	1008.30	107775.00	1113.35	.00	1113.78	18.57	5.46	21045.96	25011.44
15.823	.00	.00	.00	1008.30	107775.00	1113.35	.00	1113.78	18.57	5.46	21045.96	25011.44
15.823	.00	.00	.00	1008.30	72000.00	1113.35	.00	1113.54	8.29	3.64	21045.96	25011.44
15.823	.00	.00	.00	1008.30	72000.00	1113.35	.00	1113.54	8.29	3.64	21045.96	25011.44
15.823	.00	.00	.00	1008.30	72000.00	1113.35	.00	1113.54	8.29	3.64	21045.96	25011.44
16.013	1400.00	.00	.00	1108.00	30000.00	1115.81	.00	1116.03	19.11	3.18	8066.28	6862.99
16.013	1400.00	.00	.00	1108.00	25000.00	1115.74	.00	1115.90	13.94	2.68	7941.49	6696.72
16.013	1400.00	.00	.00	1108.00	20000.00	1115.67	.00	1115.77	9.41	2.18	7807.40	6520.02
16.013	1400.00	.00	.00	1108.00	15000.00	1115.58	.00	1115.64	5.61	1.65	7663.15	6332.22
16.013	1400.00	.00	.00	1108.00	15000.00	1114.50	.00	1114.61	13.55	2.03	5749.63	4074.99
16.013	1400.00	.00	.00	1108.00	10000.00	1114.46	.00	1114.51	6.30	1.37	5662.95	3983.53
16.013	1400.00	.00	.00	1108.00	5000.00	1114.39	.00	1114.40	1.68	.69	5547.33	3863.05
16.153	750.00	.00	.00	1108.00	30000.00	1117.57	.00	1117.95	31.85	5.29	7511.67	5315.87
16.153	750.00	.00	.00	1108.00	25000.00	1117.13	.00	1117.45	29.22	4.81	6840.49	4624.69
16.153	750.00	.00	.00	1108.00	20000.00	1116.68	.00	1116.94	25.48	4.24	6155.69	3962.06
16.153	750.00	.00	.00	1108.00	15000.00	1116.24	.00	1116.42	20.05	3.53	5478.01	3350.28
16.153	750.00	.00	.00	1108.00	15000.00	1115.86	.00	1116.09	27.47	3.90	4897.10	2862.11
16.153	750.00	.00	.00	1108.00	10000.00	1115.21	.00	1115.37	22.47	3.14	3904.09	2109.52
16.153	750.00	.00	.00	1108.00	5000.00	1114.62	.00	1114.68	10.75	1.92	3006.25	1525.00
16.191	600.00	.00	.00	1108.00	30000.00	1119.78	.00	1120.22	44.40	6.03	6579.71	4502.34
16.191	600.00	.00	.00	1108.00	25000.00	1119.24	.00	1119.63	44.59	5.62	5840.81	3744.05
16.191	600.00	.00	.00	1108.00	20000.00	1118.64	.00	1118.97	45.19	5.17	5036.44	2975.12
16.191	600.00	.00	.00	1108.00	15000.00	1117.95	.00	1118.22	46.86	4.67	4135.62	2191.33
16.191	600.00	.00	.00	1108.00	15000.00	1117.96	.00	1118.22	46.44	4.66	4147.59	2201.14
16.191	600.00	.00	.00	1108.00	10000.00	1117.13	.00	1117.33	50.40	4.06	3108.20	1408.55
16.191	600.00	.00	.00	1108.00	5000.00	1115.76	.00	1116.16	76.97	5.08	984.68	569.93

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K

	16.291	620.00	.00	.00	1116.00	20000.00	1121.90	.00	1122.34	65.18	5.)	4246.69	2477.19
	16.291	620.00	.00	.00	1116.00	15000.00	1121.17	.00	1121.46	58.57	4.92	3955.48	1960.03
	16.291	620.00	.00	.00	1116.00	15000.00	1121.17	.00	1121.46	58.83	4.93	3949.56	1955.61
	16.291	620.00	.00	.00	1116.00	10000.00	1120.52	.00	1120.76	60.37	4.44	2974.08	1287.04
	16.291	620.00	.00	.00	1116.00	5000.00	1119.80	.00	1119.95	49.00	3.36	1925.46	714.29
	16.338	450.00	.00	.00	1110.40	30000.00	1125.00	.00	1125.67	44.30	6.93	6023.83	4507.36
	16.338	450.00	.00	.00	1110.40	25000.00	1124.45	.00	1125.02	41.61	6.34	5418.11	3875.48
	16.338	450.00	.00	.00	1110.40	20000.00	1123.85	.00	1124.32	38.27	5.67	4757.46	3232.92
	16.338	450.00	.00	.00	1110.40	15000.00	1122.76	.00	1122.98	27.29	4.13	4765.96	2871.40
	16.338	450.00	.00	.00	1110.40	15000.00	1122.76	.00	1122.98	27.28	4.13	4766.35	2871.72
	16.338	450.00	.00	.00	1110.40	10000.00	1122.05	.00	1122.21	24.31	3.47	3675.44	2028.30
	16.338	450.00	.00	.00	1110.40	5000.00	1121.07	.00	1121.16	20.69	2.60	2251.05	1099.36
	16.350	110.00	.00	.00	1115.00	30000.00	1125.13	.00	1126.62	53.98	9.81	3287.78	4083.19
	16.350	110.00	.00	.00	1115.00	25000.00	1124.63	.00	1125.79	44.82	8.65	2909.87	3734.11
	16.350	110.00	.00	.00	1115.00	20000.00	1124.07	.00	1124.91	34.97	7.35	2720.95	3382.22
	16.350	110.00	.00	.00	1115.00	15000.00	1122.88	.00	1123.50	31.16	6.35	2363.09	2687.27
	16.350	110.00	.00	.00	1115.00	15000.00	1122.88	.00	1123.50	31.16	6.35	2363.12	2687.34
	16.350	110.00	.00	.00	1115.00	10000.00	1122.19	.00	1122.53	18.62	4.63	2158.48	2317.46
	16.350	110.00	.00	.00	1115.00	5000.00	1121.19	.00	1121.30	7.62	2.69	1857.02	1811.26
*	16.355	40.00	1124.60	1122.00	1114.00	30000.00	1126.40	1126.35	1128.17	109.53	11.29	3861.10	2866.48
*	16.355	40.00	1124.60	1122.00	1114.00	25000.00	1122.96	1122.83	1127.29	219.73	16.70	1497.01	1686.52
*	16.355	40.00	1124.60	1122.00	1114.00	20000.00	1121.63	1121.63	1125.46	231.89	15.69	1274.80	1313.37
*	16.355	40.00	1124.60	1122.00	1114.00	15000.00	1121.52	.00	1123.73	136.51	11.94	1256.39	1283.82
*	16.355	40.00	1124.60	1122.00	1114.00	15000.00	1121.52	.00	1123.73	136.51	11.94	1256.39	1283.82
	16.355	40.00	1124.60	1122.00	1114.00	10000.00	1121.78	.00	1122.70	54.72	7.70	1298.59	1351.87
	16.355	40.00	1124.60	1122.00	1114.00	5000.00	1121.20	.00	1121.47	17.40	4.16	1202.55	1198.68
	16.356	5.00	.00	.00	1114.00	30000.00	1125.86	.00	1128.83	152.89	13.83	2169.65	2426.26
	16.356	5.00	.00	.00	1114.00	25000.00	1126.11	.00	1128.08	99.13	11.24	2224.22	2510.97
	16.356	5.00	.00	.00	1114.00	20000.00	1124.21	.00	1126.11	112.96	11.07	1807.14	1881.78
	16.356	5.00	.00	.00	1114.00	15000.00	1122.02	.00	1123.90	141.01	11.01	1362.34	1263.18
	16.356	5.00	.00	.00	1114.00	15000.00	1122.02	.00	1123.90	141.01	11.01	1362.34	1263.18
	16.356	5.00	.00	.00	1114.00	10000.00	1121.86	.00	1122.74	66.82	7.51	1332.03	1223.33
	16.356	5.00	.00	.00	1114.00	5000.00	1121.21	.00	1121.48	22.27	4.15	1204.73	1059.52
	16.371	69.00	.00	.00	1114.00	30000.00	1127.90	.00	1129.91	88.88	11.37	2679.18	3182.22
	16.371	69.00	.00	.00	1114.00	25000.00	1127.18	.00	1128.78	74.39	10.13	2481.93	2898.60
	16.371	69.00	.00	.00	1114.00	20000.00	1125.44	.00	1126.88	76.87	9.64	2075.11	2281.15
	16.371	69.00	.00	.00	1114.00	15000.00	1123.56	.00	1124.81	78.91	8.97	1672.70	1688.59
	16.371	69.00	.00	.00	1114.00	15000.00	1123.56	.00	1124.81	78.91	8.97	1672.70	1688.59
	16.371	69.00	.00	.00	1114.00	10000.00	1122.45	.00	1123.19	52.77	6.91	1447.26	1376.53
	16.371	69.00	.00	.00	1114.00	5000.00	1121.38	.00	1121.63	20.62	4.04	1237.45	1101.06

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	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
*	16.376	25.00	.00	.00	1115.30	30000.00	1128.04	1128.04	1132.54	183.69	17.02	1762.65	2213.48
*	16.376	25.00	.00	.00	1115.30	25000.00	1126.91	1126.91	1131.00	188.86	16.22	1541.27	1819.16
*	16.376	25.00	.00	.00	1115.30	20000.00	1125.66	1125.66	1129.30	195.93	15.30	1307.19	1428.83
*	16.376	25.00	.00	.00	1115.30	15000.00	1124.26	1124.26	1127.39	206.20	14.18	1058.10	1044.58
*	16.376	25.00	.00	.00	1115.30	15000.00	1124.26	1124.26	1127.39	206.20	14.18	1058.10	1044.58
*	16.376	25.00	.00	.00	1115.30	10000.00	1122.65	1122.65	1125.15	222.16	12.69	788.13	670.91
	16.376	25.00	.00	.00	1115.30	5000.00	1120.90	.00	1122.35	201.19	9.65	517.88	352.50
*	16.379	14.00	1129.70	1126.20	1115.30	30000.00	1129.82	.00	1132.54	87.52	13.25	2490.10	3206.75
*	16.379	14.00	1129.70	1126.20	1115.30	25000.00	1128.59	.00	1131.00	87.33	12.45	2008.18	2675.15
*	16.379	14.00	1129.70	1126.20	1115.30	20000.00	1128.85	.00	1130.32	51.77	9.71	2059.92	2779.57

*	16.379	14.00	1129.70	1126.20	1115.30	10000.00	1124.81	.00	1125.74	53.79	7.75	1291.07	1363.43
*	16.379	14.00	1129.70	1126.20	1115.30	5000.00	1122.14	.00	1122.72	56.04	6.12	817.64	667.94
	16.431	100.00	.00	.00	1117.00	30000.00	1132.80	.00	1132.85	1.17	1.82	17303.25	27783.66
	16.431	100.00	.00	.00	1117.00	25000.00	1131.23	.00	1131.28	1.26	1.74	15049.92	22259.61
	16.431	100.00	.00	.00	1117.00	20000.00	1130.46	.00	1130.49	1.03	1.50	13936.52	19727.59
	16.431	100.00	.00	.00	1117.00	15000.00	1128.25	.00	1128.28	1.28	1.45	10810.65	13271.01
	16.431	100.00	.00	.00	1117.00	15000.00	1128.25	.00	1128.28	1.28	1.45	10810.65	13271.01
	16.431	100.00	.00	.00	1117.00	10000.00	1125.86	.00	1125.88	1.67	1.35	7634.11	7728.02
	16.431	100.00	.00	.00	1117.00	5000.00	1122.85	.00	1122.87	3.35	1.26	3930.72	2732.91
	16.481	260.00	.00	.00	1104.00	30000.00	1132.85	.00	1132.86	.26	1.02	30492.34	58366.07
	16.481	260.00	.00	.00	1104.00	25000.00	1131.28	.00	1131.29	.26	.94	27421.46	49358.80
	16.481	260.00	.00	.00	1104.00	20000.00	1130.49	.00	1130.50	.20	.79	25885.32	45104.55
	16.481	260.00	.00	.00	1104.00	15000.00	1128.28	.00	1128.29	.19	.71	21614.11	34064.02
	16.481	260.00	.00	.00	1104.00	15000.00	1128.28	.00	1128.29	.19	.71	21614.11	34064.02
	16.481	260.00	.00	.00	1104.00	10000.00	1125.89	.00	1125.90	.18	.59	17167.51	23785.87
	16.481	260.00	.00	.00	1104.00	5000.00	1122.88	.00	1122.88	.14	.42	11959.28	13497.22

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OVERFLOW CH. NEW BRIDGE

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	72000.00	1113.35	.00	.00	.00	2700.56	.00
15.823	72000.00	1113.35	.00	.00	.00	2700.56	.00
15.823	72000.00	1113.35	.00	.00	.00	2700.56	.00
16.013	30000.00	1115.81	.00	2.46	.00	1774.90	1400.00
16.013	25000.00	1115.74	-.07	2.39	-.07	1774.68	1400.00
16.013	20000.00	1115.67	-.07	2.32	-.14	1774.43	1400.00
16.013	15000.00	1115.58	-.08	2.23	-.23	1774.18	1400.00
16.013	15000.00	1114.50	-1.08	1.15	-1.31	1770.73	1400.00
16.013	10000.00	1114.46	-.05	1.11	-1.35	1770.58	1400.00
16.013	5000.00	1114.39	-.06	1.04	-1.42	1770.37	1400.00
16.153	30000.00	1117.57	.00	1.76	.00	1532.20	750.00
16.153	25000.00	1117.13	-.44	1.39	-.44	1530.91	750.00
16.153	20000.00	1116.68	-.45	1.02	-.89	1529.59	750.00
16.153	15000.00	1116.24	-.44	.65	-1.33	1528.28	750.00
16.153	15000.00	1115.86	-.38	1.36	-1.71	1527.16	750.00
16.153	10000.00	1115.21	-.65	.75	-2.36	1525.24	750.00
16.153	5000.00	1114.62	-.59	.23	-2.95	1523.51	750.00
16.191	30000.00	1119.78	.00	2.22	.00	1369.83	600.00
16.191	25000.00	1119.24	-.54	2.11	-.54	1346.36	600.00
16.191	20000.00	1118.64	-.60	1.96	-1.14	1320.34	600.00
16.191	15000.00	1117.95	-.69	1.71	-1.83	1289.75	600.00
16.191	15000.00	1117.96	.01	2.10	-1.83	1290.28	600.00
16.191	10000.00	1117.13	-.83	1.92	-2.65	1243.48	600.00
16.191	5000.00	1115.76	-1.37	1.14	-4.02	359.42	600.00
16.291	30000.00	1122.94	.00	3.16	.00	1200.00	620.00
16.291	25000.00	1122.44	-.50	3.19	-.50	1200.00	620.00

16.291	15000.00	1121.17	.00	3.21	-1.77	1516.84	620.00
16.291	10000.00	1120.52	-.65	3.39	.00	1484.50	620.00
16.291	5000.00	1119.80	-.72	4.04	.00	1354.96	620.00
16.338	30000.00	1125.00	.00	2.06	.00	1100.00	450.00
16.338	25000.00	1124.45	-.55	2.01	-.55	1100.00	450.00
16.338	20000.00	1123.85	-.60	1.95	-1.15	1100.00	450.00
16.338	15000.00	1122.76	-1.09	1.59	-2.24	1589.48	450.00
16.338	15000.00	1122.76	.00	1.59	-2.24	1589.50	450.00
16.338	10000.00	1122.05	-.71	1.53	.00	1517.96	450.00
16.338	5000.00	1121.07	-.98	1.27	.00	1402.11	450.00

1

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	16.350	30000.00	1125.13	.00	.13	.00	1006.98	110.00
	16.350	25000.00	1124.63	-.50	.18	-.50	397.65	110.00
	16.350	20000.00	1124.07	-.56	.22	-1.06	300.00	110.00
	16.350	15000.00	1122.88	-1.19	.12	-2.25	300.00	110.00
	16.350	15000.00	1122.88	.00	.12	-2.25	300.00	110.00
	16.350	10000.00	1122.19	-.68	.14	.00	300.00	110.00
	16.350	5000.00	1121.19	-1.00	.12	.00	300.00	110.00
*	16.355	30000.00	1126.40	.00	1.27	.00	1298.92	40.00
*	16.355	25000.00	1122.96	-3.43	-1.67	-3.43	167.00	40.00
*	16.355	20000.00	1121.63	-1.33	-2.44	-4.76	167.00	40.00
*	16.355	15000.00	1121.52	-.11	-1.36	-4.87	167.00	40.00
*	16.355	15000.00	1121.52	.00	-1.36	-4.87	167.00	40.00
	16.355	10000.00	1121.78	.25	-.42	-4.62	167.00	40.00
	16.355	5000.00	1121.20	-.57	.01	-5.19	167.00	40.00
	16.356	30000.00	1125.86	.00	-.53	.00	222.57	5.00
	16.356	25000.00	1126.11	.25	3.15	.25	224.21	5.00
	16.356	20000.00	1124.21	-1.91	2.57	-1.65	211.37	5.00
	16.356	15000.00	1122.02	-2.19	.50	-3.84	196.76	5.00
	16.356	15000.00	1122.02	.00	.50	-3.84	196.76	5.00
	16.356	10000.00	1121.86	-.16	.09	-4.00	195.72	5.00
	16.356	5000.00	1121.21	-.65	.01	-4.65	191.31	5.00
	16.371	30000.00	1127.90	.00	2.04	.00	290.78	69.00
	16.371	25000.00	1127.18	-.72	1.07	-.72	262.37	69.00
	16.371	20000.00	1125.44	-1.74	1.23	-2.46	219.71	69.00
	16.371	15000.00	1123.56	-1.89	1.54	-4.35	207.06	69.00
	16.371	15000.00	1123.56	.00	1.54	-4.35	207.06	69.00
	16.371	10000.00	1122.45	-1.11	.58	-5.46	199.63	69.00
	16.371	5000.00	1121.38	-1.07	.17	-6.52	192.46	69.00
*	16.376	30000.00	1128.04	.00	.14	.00	200.00	25.00
*	16.376	25000.00	1126.91	-1.13	-.27	-1.13	192.09	25.00
*	16.376	20000.00	1125.66	-1.25	.22	-2.38	183.02	25.00
*	16.376	15000.00	1124.26	-1.40	.71	-3.78	172.84	25.00
*	16.376	15000.00	1124.26	.00	.71	-3.78	172.84	25.00
*	16.376	10000.00	1122.65	-1.62	.20	-5.39	161.08	25.00
	16.376	5000.00	1120.90	-1.75	-.48	-7.14	148.39	25.00
*	16.379	30000.00	1129.82	.00	1.78	.00	764.28	14.00
*	16.379	25000.00	1128.59	-1.23	1.68	-1.23	197.09	14.00
*	16.379	20000.00	1128.85	.26	3.19	-.97	198.10	14.00
*	16.379	15000.00	1126.87	-1.98	2.61	-2.95	190.45	14.00
*	16.379	15000.00	1126.87	.00	2.61	-2.95	190.45	14.00
*	16.379	10000.00	1124.81	-2.06	2.16	-5.01	182.48	14.00
*	16.379	5000.00	1122.14	-2.67	1.24	-7.68	172.15	14.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
16.431	30000.00	1132.80	.00	2.97	.00	1440.00	100.00
16.431	25000.00	1131.23	-1.56	2.64	-1.56	1440.00	100.00
16.431	20000.00	1130.46	-.77	1.61	-2.34	1440.00	100.00
16.431	15000.00	1128.25	-2.21	1.38	-4.55	1370.51	100.00
16.431	15000.00	1128.25	.00	1.38	-4.55	1370.51	100.00
16.431	10000.00	1125.86	-2.39	1.05	-6.94	1284.66	100.00
16.431	5000.00	1122.85	-3.01	.70	-9.95	1171.58	100.00
16.481	30000.00	1132.85	.00	.05	.00	1960.00	260.00
16.481	25000.00	1131.28	-1.57	.05	-1.57	1960.00	260.00
16.481	20000.00	1130.49	-.78	.03	-2.35	1957.58	260.00
16.481	15000.00	1128.28	-2.21	.04	-4.56	1906.56	260.00
16.481	15000.00	1128.28	.00	.04	-4.56	1906.56	260.00
16.481	10000.00	1125.89	-2.39	.03	-6.95	1805.13	260.00
16.481	5000.00	1122.88	-3.01	.04	-9.96	1610.11	260.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO=    16.355  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=    16.355  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.355  PROFILE= 1  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=    16.355  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.355  PROFILE= 2  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.355  PROFILE= 3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.355  PROFILE= 3  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 4  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.355  PROFILE= 5  HYDRAULIC JUMP D.S.

CAUTION  SECNO=    16.376  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.376  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.376  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.376  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.376  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.376  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.376  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.376  PROFILE= 3  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.376  PROFILE= 3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.376  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.376  PROFILE= 4  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.376  PROFILE= 4  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.376  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.376  PROFILE= 5  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.376  PROFILE= 5  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    16.376  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    16.376  PROFILE= 6  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    16.376  PROFILE= 6  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=    16.379  PROFILE= 1  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.379  PROFILE= 2  HYDRAULIC JUMP D.S.
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CAUTION  SECNO=    16.379  PROFILE= 5  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.379  PROFILE= 6  HYDRAULIC JUMP D.S.
CAUTION  SECNO=    16.379  PROFILE= 7  HYDRAULIC JUMP D.S.
```

1

THIS RUN EXECUTED 03-26-87

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**************************************************
  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
**************************************************
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C)type afo79b  0b.out
1*****************************************************
*
 *  WATER SURFACE PROFILES                          *
*
 *  VERSION OF NOVEMBER 1976                        *
*
 *  UPDATED MAY 1984                                *
*
 *  IBM-PC-XT VERSION AUGUST 1985                   *
*
 *  RUN DATE  03-26-87   TIME  21:42:19               *
  *
 *****************************************************
*
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*************************************
* U.S. ARMY CORPS OF ENGINEERS
* THE HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET, SUITE D
* DAVIS, CALIFORNIA 95616
  * (916) 440-2105 (FTS) 448-2105
*************************************
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X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX   XXXXX            XXXXXXX
```

1

03-26-87 21:42:20 PAGE 1

THIS RUN EXECUTED 03-26-87

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*************************************************
  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
*************************************************
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T1      AGUAFRIA RIVER -  OVERFLOW CHANNEL HYDRAULIC STUDY
T2      PROFILE NUMBER 1 - SUBCRITICAL PROFILE
T3      OVERFLOW CH. FUT. BRIDGE - VAR. FLOWS - NEW FIELD DATA

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     D         WSEL      FQ

      0.        2.        0.        0.   .000000      .00       .0        0.  1113.350      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      .000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000


QT      7.000 107775.000 107775.000  107775.000  107775.000   72000.000   72000.000   72000.000       .000       .000
NC       .050       .050       .050       .100       .300       .000       .000       .000       .000       .000
ET       .000      9.100      9.100      9.100      9.100      9.100      9.100      9.100   9322.000  12300.000
X1     15.823     90.000   9322.000  11500.000       .000       .000       .000       .000       .000       .000
X3     10.000       .000       .000       .000       .000       .000       .000       .000       .000       .000
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GR	1119.100	9888.000	1107.040	9971.000	1099.220	10000.000	1091.850	10093.000	1142.180	10204.000
GR	1142.600	10295.000	1008.300	10388.000	1104.000	10406.000	1103.000	10450.000	1107.000	10474.000
GR	1105.000	10511.000	1103.000	10560.000	1108.000	10572.000	1108.000	10598.000	1111.000	10610.000
GR	1111.000	10717.000	1111.000	10781.000	1111.000	10856.000	1110.000	10898.000	1109.000	10964.000
GR	1106.000	11019.000	1107.000	11071.000	1106.000	11140.000	1104.000	11206.000	1102.000	11251.000
GR	1105.000	11283.000	1108.000	11342.000	1106.000	11384.000	1107.000	11421.000	1108.000	11470.000
GR	1110.000	11500.000	1110.000	11554.000	1110.000	11634.000	1110.000	11708.000	1110.000	11794.000
GR	1110.000	11892.000	1109.000	11983.000	1109.000	12063.000	1109.000	12143.000	1109.000	12221.000
GR	1109.000	12294.000	1109.000	12370.000	1109.000	12450.000	1109.000	12542.000	1110.000	12596.000
GR	1110.000	12672.000	1110.000	12726.000	1110.000	12796.000	1110.000	12852.000	1110.000	12910.000
GR	1110.000	12983.000	1110.000	13011.000	1111.000	13075.000	1111.000	13153.000	1111.000	13224.000
GR	1111.000	13307.000	1111.000	13380.000	1111.000	13452.000	1111.000	13532.000	1112.000	13608.000
GR	1112.000	13689.000	1112.000	13764.000	1112.000	13844.000	1112.000	13917.000	1112.000	13998.000
GR	1113.000	14073.000	1114.000	14137.000	1114.000	14212.000	1114.000	14281.000	1114.000	14347.000
GR	1114.000	14414.000	1114.000	14464.000	1114.000	14533.000	1114.000	14613.000	1114.000	14698.000
GR	1115.000	14784.000	1115.000	14865.000	1116.000	14937.000	1117.000	15008.000	1117.000	15079.000
QT	7.000	30000.000	25000.000	20000.000	15000.000	15000.000	10000.000	5000.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10402.000	12250.000
X1	16.013	90.000	10843.000	11146.000	1000.000	950.000	1400.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1141.000	10402.000	1124.000	10449.000	1108.000	10500.000	1108.000	10529.000	1112.000	10549.000
GR	1112.000	10613.000	1109.000	10664.000	1108.000	10694.000	1111.000	10705.000	1112.000	10786.000
GR	1114.000	10843.000	1113.000	10905.000	1110.000	10955.000	1110.000	11005.000	1111.000	11055.000
GR	1113.000	11079.000	1114.000	11146.000	1113.000	11220.000	1113.000	11268.000	1113.000	11296.000
GR	1114.000	11317.000	1112.000	11399.000	1110.000	11452.000	1111.000	11471.000	1109.000	11493.000

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GR	1109.000	11558.000	1110.000	11588.000	1110.000	11657.000	1110.000	11731.000	1110.000	11799.000
GR	1110.000	11870.000	1111.000	11941.000	1111.000	11990.000	1111.000	12036.000	1111.000	12085.000
GR	1112.000	12152.000	1112.000	12219.000	1112.000	12311.000	1112.000	12395.000	1112.000	12482.000
GR	1112.000	12555.000	1112.000	12620.000	1113.000	12690.000	1113.000	12743.000	1113.000	12809.000
GR	1112.000	12885.000	1112.000	12952.000	1112.000	13003.000	1114.000	13054.000	1114.000	13110.000
GR	1114.000	13169.000	1114.000	13237.000	1113.000	13306.000	1113.000	13382.000	1113.000	13465.000
GR	1114.000	13539.000	1114.000	13595.000	1114.000	13673.000	1114.000	13741.000	1114.000	13807.000
GR	1114.000	13865.000	1114.000	13940.000	1115.000	14024.000	1115.000	14095.000	1115.000	14176.000
GR	1115.000	14253.000	1116.000	14320.000	1116.000	14394.000	1117.000	14456.000	1117.000	14523.000
GR	1117.000	14551.000	1117.000	14601.000	1118.000	14671.000	1118.000	14729.000	1118.000	14791.000
GR	1118.000	14856.000	1119.000	14912.000	1120.000	14981.000	1121.000	15048.000	1121.000	15109.000
GR	1121.000	15185.000	1122.000	15259.000	1123.000	15327.000	1124.000	15395.000	1124.000	15467.000
GR	1125.000	15531.000	1125.000	15603.000	1127.000	15659.000	1128.000	15721.000	1126.000	15751.000
NC	.050	.100	.050	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10434.000	12040.000
X1	16.153	90.000	11158.000	11182.000	750.000	800.000	750.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1151.000	10209.000	1151.000	10272.000	1148.000	10321.000	1149.000	10382.000	1147.000	10434.000
GR	1127.000	10480.000	1108.000	10536.000	1109.000	10561.000	1111.000	10620.000	1111.000	10682.000
GR	1111.000	10757.000	1112.000	10827.000	1112.000	10901.000	1112.000	10970.000	1112.000	11034.000
GR	1113.000	11101.000	1113.000	11158.000	1110.000	11171.000	1114.000	11182.000	1114.000	11250.000
GR	1114.000	11330.000	1114.000	11406.000	1113.000	11487.000	1113.000	11561.000	1113.000	11640.000
GR	1113.000	11714.000	1113.000	11788.000	1113.000	11843.000	1114.000	11900.000	1114.000	11968.000
GR	1114.000	12040.000	1114.000	12112.000	1113.000	12178.000	1113.000	12229.000	1113.000	12308.000
GR	1113.000	12382.000	1113.000	12451.000	1114.000	12513.000	1114.000	12558.000	1114.000	12588.000
GR	1114.000	12658.000	1114.000	12711.000	1114.000	12762.000	1114.000	12817.000	1114.000	12870.000
GR	1114.000	12930.000	1114.000	12979.000	1113.000	13031.000	1113.000	13092.000	1114.000	13153.000
GR	1114.000	13209.000	1115.000	13289.000	1116.000	13370.000	1116.000	13451.000	1116.000	13532.000
GR	1117.000	13603.000	1118.000	13685.000	1118.000	13765.000	1118.000	13840.000	1118.000	13912.000
GR	1118.000	13981.000	1119.000	14054.000	1118.000	14131.000	1118.000	14205.000	1118.000	14281.000
GR	1118.000	14348.000	1118.000	14421.000	1119.000	14481.000	1119.000	14547.000	1118.000	14605.000
GR	1118.000	14642.000	1118.000	14711.000	1118.000	14775.000	1121.000	14802.000	1123.000	14871.000
GR	1123.000	14938.000	1123.000	15000.000	1123.000	15070.000	1123.000	15137.000	1123.000	15209.000

ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10501.000	11950.000
X1	16.191	27.000	10580.000	11245.000	610.000	600.000	600.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1150.000	10470.000	1124.000	10525.000	1116.000	10580.000	1113.800	10600.000	1116.000	10620.000
GR	1116.300	10730.000	1116.000	10840.000	1112.000	10855.000	1108.000	10890.000	1117.000	10960.000
GR	1108.000	11015.000	1112.000	11030.000	1116.000	11070.000	1116.000	11120.000	1113.200	11200.000
GR	1116.000	11245.000	1120.500	11320.000	1118.000	11369.000	1116.000	11436.000	1117.000	11504.000
GR	1115.000	11571.000	1114.000	11642.000	1114.000	11709.000	1114.000	11764.000	1114.000	11832.000
GR	1114.000	11911.000	1113.000	11956.000	.000	.000	.000	.000	.000	.000

ET	.000	9.100	9.100	9.100	.000	.000	10550.000	11347.000	10550.000	11750.000
X1	16.291	16.000	10660.000	11347.000	620.000	620.000	620.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1131.000	10140.000	1128.000	10210.000	1120.000	10250.000	1119.400	10540.000	1119.200	10660.000
GR	1118.500	10790.000	1118.200	10900.000	1116.000	11110.000	1116.400	11180.000	1120.000	11260.000
GR	1121.400	11320.000	1121.700	11340.000	1118.000	11347.000	1118.000	11389.000	1119.000	11441.000
GR	1118.000	11792.000	.000	.000	.000	.000	.000	.000	.000	.000

1

NC	.050	.150	.050	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	.000	.000	.000	.000	10800.000	11900.000
X1	16.338	20.000	11150.000	11340.000	300.000	450.000	450.000	.000	.000	.000
GR	1124.000	10220.000	1124.000	10300.000	1120.000	10350.000	1120.000	10460.000	1120.700	10610.000
GR	1120.000	10700.000	1120.000	10750.000	1118.800	10880.000	1117.800	11020.000	1118.000	11130.000
GR	1110.400	11150.000	1118.000	11170.000	1118.700	11250.000	1120.000	11340.000	1120.000	11370.000
GR	1120.000	11460.000	1120.900	11720.000	1122.500	11890.000	1124.000	11980.000	1124.000	12080.000

NC	.030	.030	.030	.300	.500	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10600.000	11900.000
X1	16.344	20.000	11128.000	11378.000	80.000	80.000	80.000	.000	.000	.000
GR	1137.800	10600.000	1135.700	11125.000	1129.000	11128.000	1114.000	11173.000	1114.000	11187.000
GR	1130.000	11187.000	1130.000	11191.000	1114.000	11191.000	1114.000	11251.000	1130.000	11251.000
GR	1130.000	11255.000	1114.000	11255.000	1114.000	11315.000	1130.000	11315.000	1130.000	11319.000
GR	1114.000	11319.000	1114.000	11328.000	1127.500	11378.000	1134.600	11381.000	1140.000	11900.000

ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10600.000	11900.000
X1	16.371	.000	.000	.000	142.000	142.000	142.000	.000	.000	.000

NC	.050	.050	.050	.100	.300	.000	.000	.000	.000	.000
ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10770.000	12210.000
X1	16.431	15.000	11050.000	11500.000	90.000	190.000	140.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1127.000	10770.000	1121.000	10800.000	1120.000	10980.000	1120.000	11050.000	1118.000	11100.000
GR	1121.000	11200.000	1117.000	11250.000	1120.500	11310.000	1119.500	11370.000	1120.000	11430.000
GR	1118.000	11500.000	1118.000	11660.000	1120.000	11870.000	1128.000	12130.000	1129.900	12210.000

ET	.000	9.100	9.100	9.100	9.100	9.100	9.100	9.100	10860.000	12820.000
X1	16.481	21.000	10930.000	12580.000	260.000	260.000	260.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1123.800	10860.000	1123.200	10930.000	1121.700	11100.000	1121.800	11240.000	1122.200	11440.000
GR	1122.000	11540.000	1122.400	11630.000	1122.000	11680.000	1116.000	11720.000	1104.000	11810.000
GR	1112.000	11820.000	1111.300	11840.000	1112.000	11870.000	1112.800	11920.000	1114.000	12070.000
GR	1104.000	12220.000	1104.000	12310.000	1112.000	12540.000	1124.000	12580.000	1128.000	12760.000
GR	1130.600	12820.000	.000	.000	.000	.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

1

SECNO	DEPTH	DWSEL	DRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*PROF 1

CCHV=    .100 CEHV=    .300
*SECNO 15.823

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00      .00  1113.78      .43      .00      .00  1133.00
  107775.       0.   98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.45     3.14     .050     .050     .050     .000  1008.30  9365.47
  .001857       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
*SECNO 16.013

3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.81  1115.81      .00      .00  1116.03      .22     2.22      .02  1114.00
   30000.    6779.    3695.   19526.    1753.    1162.    5151.     417.      60.   1114.00
      .09     3.87     3.18     3.79     .050     .050     .050     .000  1108.00 10475.10
  .001911    1000.    1400.     950.        2        0        0      .00  1774.90 12250.00
0
CCHV=    .100 CEHV=    .300
*SECNO 16.153

3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     9.57  1117.57      .00      .00  1117.95      .38     1.87      .05  1113.00
   30000.   21778.     741.    7482.    3385.     140.    3486.     557.      90.   1114.00
      .13     5.61     5.29     2.15     .050     .050     .100     .000  1108.00 10507.80
  .003185     750.     750.     800.        2        0        0      .00  1532.20 12040.00
0
*SECNO 16.191

3265 DIVIDED FLOW

3280 CROSS SECTION     16.19 EXTENDED      6.78 FEET

1
  03-26-87     21:42:20                                                                    PAGE    5


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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



3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19    11.78  1119.78      .00      .00  1120.22      .44     2.25      .02  1116.00
   30000.      148.   21372.    8480.      49.    3547.    2984.     654.     110.   1116.00
      .17     3.01     6.03     2.84     .050     .050     .100     .000  1108.00 10554.02
  .004440     610.     600.     600.        2        0        0      .00  1369.83 11950.00
0
*SECNO 16.291
3280 CROSS SECTION     16.29 EXTENDED      4.94 FEET
```

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  30000.    2197.   22125.    5678.     401.    3298.    1792.     740.     128.   1118.00
     .20     5.48     6.71     3.17     .050     .050     .100     .000  1116.00 10550.00
 .006303     620.     620.     620.        2        0        0      .00  1200.00 11750.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
 3280 CROSS SECTION     16.34 EXTENDED      1.00 FEET


 3470 ENCROACHMENT STATIONS=   10800.0   11900.0  TYPE=     1  TARGET=    1100.000
    16.34    14.60  1125.00      .00      .00  1125.67      .68     2.11      .05  1110.40
  30000.   17150.    8710.    4140.    2401.    1256.    2367.     795.     139.   1120.00
     .21     7.14     5.93     1.75     .050     .050     .150     .000  1110.40 10800.00
 .004430     300.     450.     450.        2        0        0      .00  1100.00 11900.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.344

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS

 7185 MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
1
  03-26-87     21:42:20                                                                    PAGE    5


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


    16.34    10.16  1124.16  1124.16      .00  1128.48     4.32      .50     1.82  1129.00
  30000.       0.   30000.       0.       0.    1799.       0.     802.     141.   1127.50
     .21      .00    16.67      .00     .030     .030     .030     .000  1114.00 11142.51
 .009259      80.      80.      80.        4       19        0      .00   211.13 11365.64
0
 *SECNO 16.371

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37    13.86  1127.86      .00      .00  1129.89     2.03      .73      .69  1129.00
  30000.       0.   30000.       0.       0.    2625.       0.     809.     141.   1127.50
     .22      .00    11.43      .03     .030     .030     .030     .000  1114.00 11131.43
 .003242     142.     142.     142.        4        0        0      .00   234.72 11378.15
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.421
 3280 CROSS SECTION     16.43 EXTENDED       .20 FEET


 3301 HV CHANGED MORE THAN HVINS
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  30000.    5598.   11361.   13041.    2618.    4855.    5945.     837.     144.   1118.00
     .24     2.14     2.34     2.19     .050     .050     .050     .000  1117.00 10770.00
 .000260     90.     140.     190.        2        0        0      .00  1440.00 12210.00
0
 *SECNO 16.481

 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    26.19  1130.19      .00      .00  1130.21      .02      .02      .01  1123.20
  30000.     321.   29265.     413.     468.   24006.     809.     952.     154.   1124.00
     .30      .69     1.22      .51     .050     .050     .050     .000  1104.00 10860.00
 .000048     260.     260.     260.        2        0        0      .00  1950.46 12810.46
0
1
 03-26-87     21:42:20                                                                    PAGE    7


                                                                          THIS RUN EXECUTED 03-26-87

 ************************************************
   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     AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
 T2     PROFILE NUMBER 2 - SUBCRITICAL PROFILE
 T3     OVERFLOW CH. FUT. BRIDGE - VAR. FLOWS - NEW FIELD DATA

 J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

       0.       3.       0.       0.   .000000     .00      .0       0.   1113.350    .000

 J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     2.000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000

1
 03-26-87     21:42:20                                                                    PAGE    8


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 *PROF 2

 CCHV=    .100 CEHV=    .300
 *SECNO 15.823

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    8978.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.78      .43      .00      .00  1133.00
  107775.       0.   98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
     .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  5365.47
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*SECNO 16.013

3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.74  1115.74      .00  1115.81  1115.90      .16     2.08      .03  1114.00
   25000.    5658.    3060.   16282.    1727.    1140.    5074.     416.      60.   1114.00
      .10     3.28     2.68     3.21     .050     .050     .050     .000  1108.00 10475.32
  .001394    1000.    1400.     950.        2        0        0      .00  1774.58 12250.00
0
CCHV=    .100 CEHV=    .300
*SECNO 16.153

3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     9.13  1117.13      .00  1117.57  1117.45      .32     1.51      .05  1113.00
   25000.   18439.     623.    5938.    3601.     130.    3110.     548.      90.   1114.00
      .15     5.12     4.81     1.91     .050     .050     .100     .000  1108.00 10509.09
  .002922     750.     750.     800.        2        0        0      .00  1530.91 12040.00
0
*SECNO 16.191

3265 DIVIDED FLOW

3280 CROSS SECTION     16.19 EXTENDED      6.23 FEET
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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

3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19    11.24  1119.24      .00  1119.78  1119.63      .38     2.15      .02  1116.00
   25000.      98.    17901.    7001.      36.    3185.    2620.     636.     110.   1116.00
      .19     2.72     5.62     2.67     .050     .050     .100     .000  1108.00 10557.76
  .004459     610.     600.     600.        2        0        0      .00  1346.36 11950.00
0
*SECNO 16.291
3280 CROSS SECTION     16.29 EXTENDED      4.44 FEET

3470 ENCROACHMENT STATIONS=   10550.0   11750.0  TYPE=     1  TARGET=    1200.000
    16.29     6.44  1122.44      .00  1122.94  1122.94      .51     3.28      .04  1119.20
   25000.    1739.    18565.    4696.     347.    2957.    1592.     712.     128.   1118.00
      .22     5.01     6.28     2.95     .050     .050     .100     .000  1116.00 10550.00
  .006384     620.     620.     620.        2        0        0      .00  1200.00 11750.00
0
CCHV=    .300 CEHV=    .500
*SECNO 16.338
3280 CROSS SECTION     16.34 EXTENDED       .45 FEET

3470 ENCROACHMENT STATIONS=   10800.0   11900.0  TYPE=     1  TARGET=    1100.000
    16.34    14.05  1124.45      .00  1125.00  1125.02      .58     2.04      .03  1110.40
   25000.   14500.     7303.    3197.    2208.    1151.    2059.     761.     139.   1120.00
      .24     6.57     6.34     1.55     .050     .050     .150     .000  1110.40 10800.00
  .004161     300.     450.     450.        2        0        0      .00  1100.00 11900.00
0
CCHV=    .300 CEHV=    .500
*SECNO 16.344

3265 DIVIDED FLOW
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3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
   16.34     9.39  1123.39      .00  1124.16  1127.00     3.61      .46     1.52  1129.00
  25000.       0.   25000.       0.       0.    1639.       0.     767.     140.   1127.50
     .24      .00    15.26      .00     .030     .030     .030     .000  1114.00 11144.82
 .008360      80.      80.      80.        3        0        0      .00   205.96 11362.78
0
1
 03-26-87     21:42:20                                                                    PAGE   10


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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 16.371

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
   16.37    12.37  1126.37      .00  1127.86  1128.24     1.87      .71      .52  1129.00
  25000.       0.   25000.       0.       0.    2281.       0.     774.     141.   1127.50
     .24      .00    10.96      .00     .030     .030     .030     .000  1114.00 11135.90
 .003330     142.     142.     142.        4        0        0      .00   225.89 11373.80
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
   16.43    11.45  1128.45      .00  1130.10  1128.53      .08      .11      .18  1120.00
  25000.     4573.    9668.   10758.    2155.    4110.    4815.     797.     144.   1118.00
     .26     2.12     2.35     2.23     .050     .050     .050     .000  1117.00 10770.00
 .000328      90.     140.     190.        2        0        0      .00  1378.74 12148.74
0
 *SECNO 16.481

 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
   16.48    24.54  1128.54      .00  1130.19  1128.56      .02      .02      .01  1123.20
  25000.     209.   24612.     179.     353.   21286.     460.     896.     154.   1124.00
     .32      .59     1.16      .39     .050     .050     .050     .000  1104.00 10860.00
 .000050     260.     260.     260.        2        0        0      .00  1912.41 12772.41
0
1
 03-26-87     21:42:20                                                                    PAGE   11


                                                                    THIS RUN EXECUTED 03-26-87

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   HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
   ERROR CORR -  01,02,03,04,05,06
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T1     AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2     PROFILE NUMBER 3 - SUBCRITICAL PROFILE
T3     OVERFLOW CH. FUT. BRIDGE - VAR. FLOWS - NEW FIELD DATA

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        4.        0.        0.   .000000       .00        .0        0.  1113.350      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     3.000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000

1
 03-26-87     21:42:20                                                                                    PAGE   12

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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


 *PROF 3

 CCHV=    .100 CEHV=    .300
 *SECNO 15.823

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.78      .43      .00      .00  1133.00
  107775.       0.   98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
  .001857       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.67  1115.67      .00  1115.81  1115.77      .10     1.95      .03  1114.00
   20000.    4535.    2430.   13035.    1700.    1117.    4990.     414.      60.   1114.00
      .13     2.67     2.18     2.61     .050     .050     .050     .000  1108.00 10475.56
  .000941    1000.    1400.     950.        2        0        0      .00  1774.43 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     8.68  1116.68      .00  1117.57  1116.94      .26     1.12      .05  1113.00
   20000.   15032.     504.    4465.    3310.     119.    2726.     539.      90.   1114.00
      .18     4.54     4.24     1.64     .050     .050     .100     .000  1108.00 10510.41
  .002548     750.     750.     600.        2        0        0      .00  1529.59 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      5.63 FEET
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19    10.64  1118.64      .00  1119.78  1118.97      .33     2.01      .02  1116.00
   20000.      57.   14400.    5544.      24.    2784.    2229.     616.     110.   1116.00
      .22     2.38     5.17     2.49     .050     .050     .100     .000  1108.00 10561.91
  .004519     610.     600.     600.        2        0        0      .00  1320.34 11950.00
0
 *SECNO 16.291
 3280 CROSS SECTION     16.29 EXTENDED      3.90 FEET


3470 ENCROACHMENT STATIONS=   10550.0   11750.0  TYPE=     1  TARGET=    1200.000
    16.29     5.90  1121.90      .00  1122.94  1122.34      .43     3.34      .03  1119.20
   20000.    1288.   14996.    3717.     287.    2585.    1374.     683.     128.   1118.00
      .25     4.48     5.80     2.71     .050     .050     .100     .000  1116.00 10550.00
  .006518     620.     620.     620.        3        0        0      .00  1200.00 11750.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338

3470 ENCROACHMENT STATIONS=   10800.0   11900.0  TYPE=     1  TARGET=    1100.000
    16.34    13.45  1123.85      .00  1125.00  1124.32      .47     1.97      .02  1110.40
   20000.   11817.    5885.    2298.    1998.    1037.    1722.     725.     139.   1120.00
      .28     5.91     5.67     1.33     .050     .050     .150     .000  1110.40 10800.00
  .003827     300.     450.     450.        2        0        0      .00  1100.00 11900.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.344

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.34     9.26  1123.26      .00  1124.16  1125.65     2.39      .37      .96  1129.00
   20000.       0.   20000.       0.       0.    1611.       0.     731.     140.   1127.50
      .28      .00    12.41      .00     .030     .030     .030     .000  1114.00 11145.22
  .005610      80.      80.      80.        3        0        0      .00   205.07 11362.29
0
1
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.371

 3265 DIVIDED FLOW
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3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37    10.83  1124.83      .00  1127.86  1126.48     1.65      .60      .22  1129.00
   20000.       0.   20000.       0.       0.    1940.       0.     737.     141.   1127.50
      .28      .00    10.31      .00     .030     .030     .030     .000  1114.00 11140.53
  .003335     142.     142.     142.        3        0        0      .00   215.55 11368.08
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43     9.69  1126.69      .00  1130.10  1126.77      .08      .14      .16  1120.00
   20000.     3492.    7873.    8635.    1663.    3319.    3731.     755.     143.   1118.00
      .30     2.10     2.37     2.31     .050     .050     .050     .000  1117.00 10771.56
  .000444      90.     140.     190.        2        0        0      .00  1315.78 12087.34
0
 *SECNO 16.481

 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    22.79  1126.79      .00  1130.19  1126.81      .02      .03      .01  1123.20
   20000.     107.   19845.      47.     230.   18405.     175.     837.     153.   1124.00
      .37      .47     1.08      .27     .050     .050     .050     .000  1104.00 10860.00
  .000053     260.     260.     260.        2        0        0      .00  1845.65 12705.65
0
1
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                                                                    THIS RUN EXECUTED 03-26-87

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   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     AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
 T2     PROFILE NUMBER 4 - SUBCRITICAL PROFILE
 T3     OVERFLOW CH. FUT. BRIDGE - VAR. FLOWS - NEW FIELD DATA

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        5.        0.        0.   .000000       .00        .0        0.  1113.350      .000

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      4.000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000

1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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
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```
CCHV=    .100 CEHV=    .300
*SECNO 15.823

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.78      .43      .00      .00  1133.00
   107775.      0.   98229.    9546.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     5.46     3.14     .050     .050     .050     .000  1008.30  9365.47
   .001857      0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     7.58  1115.58      .00  1115.81  1115.84      .06     1.82      .04  1114.00
   15000.    3408.    1808.    9784.    1670.    1093.    4901.     413.      60.   1114.00
      .17     2.04     1.65     2.00     .050     .050     .050     .000  1108.00 10475.82
   .000561   1000.    1400.     950.        2        0        0      .00  1774.18 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     8.24  1116.24      .00  1117.57  1116.42      .18      .74      .04  1113.00
   15000.   11522.     382.    3096.    3024.     108.    2346.     530.      90.   1114.00
      .23     3.81     3.53     1.32     .050     .050     .100     .000  1108.00 10511.72
   .002005    750.     750.     800.        2        0        0      .00  1528.28 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      4.94 FEET

1
 03-26-87     21:42:20                                                                    PAGE   17


   SECNO    DEPTH    DWSEL    CRIWS    WSELK    EG       HV       HL       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


 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19     9.95  1117.95      .00  1119.78  1118.22      .27     1.77      .02  1116.00
   15000.      26.   10859.    4115.      13.    2325.    1798.     587.     109.   1116.00
      .27     1.98     4.67     2.29     .050     .050     .100     .000  1108.00 10566.65
   .004686    610.     600.     600.        2        0        0      .00  1289.75 11950.00
0
 *SECNO 16.291

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.29 EXTENDED      3.17 FEET

    16.29     5.17  1121.17      .00  1122.94  1121.46      .29     3.24      .01  1119.20
   15000.    2036.   10893.    2671.     654.    2091.    1210.     654.     189.   1118.00
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0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
    16.34    12.36  1122.76      .00  1125.00  1122.98      .22     1.49      .02  1110.40
   15000.   10607.     3422.     971.     2827.     829.    1109.     693.     143.   1120.00
      .35     3.75     4.13      .88      .050     .050     .150     .000  1110.40 10315.61
  .002729     300.     450.     450.        2        0        0      .00  1589.46 11905.09
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.344

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.34     8.27  1122.27      .00  1124.16  1124.02     1.75      .28      .77  1129.00
   15000.       0.   15000.       0.       0.    1412.       0.     699.     145.   1127.50
      .35      .00    10.62      .00     .030     .030     .030     .000  1114.00 11148.19
  .004583      80.      80.      80.        3        0        0      .00   198.45 11358.63
0
1
 03-26-87     21:42:20                                                                    PAGE   18


   SECNO    DEPTH    DWSEL    CRIWS    WSELK    EG       HV       HL       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 16.371

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37     9.37  1123.37      .00  1127.86  1124.68     1.31      .52      .13  1129.00
   15000.       0.   15000.       0.       0.    1635.       0.     704.     146.   1127.50
      .35      .00     9.18      .00     .030     .030     .030     .000  1114.00 11144.88
  .003031     142.     142.     142.        3        0        0      .00   205.83 11362.71
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43     7.90  1124.90      .00  1130.10  1124.98      .09      .18      .12  1120.00
   15000.    2398.     5983.    6619.     1171.     2511.    2728.     718.     148.   1118.00
      .37     2.05     2.38     2.43      .050     .050     .050     .000  1117.00 10780.54
  .000650      90.     140.     190.        2        0        0      .00  1248.41 12028.96
0
 *SECNO 16.481

 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    21.01  1125.01      .00  1130.19  1125.02      .01      .03      .01  1123.20
   15000.      30.   14967.       3.      106.   15460.      23.     783.     157.   1124.00
      .44      .28      .97      .14      .050     .050     .050     .000  1104.00 10860.00
  .000054     260.     260.     260.        2        0        0      .00  1765.33 12625.33
0
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THIS RUN EXECUTED 03-26-87

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  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
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T1     AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2     PROFILE NUMBER 5 - SUBCRITICAL PROFILE
T3     OVERFLOW CH. FUT BRIDGE - VAR. FLOWS - NEW FIELD DATA

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        6.        0.        0.   .000000       .00        .0        0.  1113.350      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     5.000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000

1
 03-26-87     21:42:20                                                                                PAGE   20


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        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


 *PROF 5

 CCHV=    .100 CEHV=    .300
 *SECNO 15.823

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.54      .19      .00      .00  1133.00
   72000.       0.   65623.    6377.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     3.64     2.10     .050     .050     .050     .000  1008.30  9365.47
  .000629       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     6.50  1114.50      .00  1115.81  1114.61      .11     1.06      .01  1114.00
   15000.    3529.    1553.    9918.    1275.     766.    3709.     390.      60.   1114.00
      .13     2.77     2.03     2.67     .050     .050     .050     .000  1108.00 10479.26
  .001355    1000.    1400.     950.        2        0        0      .00  1770.73 12250.00
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
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     .18      4.24      3.90      1.41      .050      .050      .100      .000  1108.00 10512.84
  .002747     750.      750.      800.         2         0         0       .00  1527.16 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      4.95 FEET

1
  03-26-87     21:42:20                                                                          PAGE   21


    SECNO     DEPTH     DWSEL     CRIWS     WSELK     EG        HV        HL        DLOSS   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


 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
     16.19      9.96  1117.96       .00  1119.78  1118.22       .27      2.12       .01  1116.00
    15000.       26.   10859.     4115.       13.     2331.     1804.      547.      109.   1116.00
       .23      1.98      4.66      2.28      .050      .050      .100      .000  1108.00 10566.59
   .004644      610.      600.      600.         2         0         0       .00  1290.28 11950.00
0
 *SECNO 16.291

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.29 EXTENDED      3.17 FEET

     16.29      5.17  1121.17       .00  1122.94  1121.46       .29      3.23       .01  1119.20
    15000.     2032.   10297.     2671.      653.     2089.     1208.      605.      129.   1118.00
       .27      3.11      4.93      2.21      .050      .050      .100      .000  1116.00 10244.17
   .005883      620.      620.      620.         4         0         0       .00  1516.84 11792.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
     16.34     12.36  1122.76       .00  1125.00  1122.98       .22      1.49       .02  1110.40
    15000.    10607.     3422.      971.     2828.      829.     1109.      644.      143.   1120.00
       .30      3.75      4.13       .88      .050      .050      .150      .000  1110.40 10315.60
   .002728      300.      450.      450.         2         0         0       .00  1589.50 11905.10
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.344

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
     16.34      8.27  1122.27       .00  1124.16  1124.02      1.75       .28       .77  1129.00
    15000.        0.   15000.        0.        0.     1412.        0.      650.      145.   1127.50
       .30       .00     10.62       .00      .030      .030      .030      .000  1114.00 11148.19
   .004583       80.       80.       80.         3         0         0       .00   198.45 11358.64
0
1
  03-26-87     21:42:20                                                                          PAGE   22


    SECNO     DEPTH     DWSEL     CRIWS     WSELK     EG        HV        HL        DLOSS   BANK ELEV
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  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


*SECNO 16.371

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37     9.37  1123.37      .00  1127.86  1124.68     1.31      .52      .13  1129.00
   15000.       0.   15000.       0.       0.    1635.       0.     655.     146.   1127.50
      .30      .00     9.18      .00     .030     .030     .030     .000  1114.00 11144.89
  .003031     142.     142.     142.        3        0        0      .00   205.82 11362.71
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.431

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43     7.90  1124.90      .00  1130.10  1124.98      .09      .18      .12  1120.00
   15000.    2398.    5983.    6619.    1171.    2511.    2728.     669.     148.   1118.00
      .32     2.05     2.38     2.43     .050     .050     .050     .000  1117.00 10780.54
  .000650      90.     140.     190.        2        0        0      .00  1248.41 12028.96
0
 *SECNO 16.481

 3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    21.01  1125.01      .00  1130.19  1125.02      .01      .03      .01  1123.20
   15000.      30.   14967.       3.     106.   15460.      23.     734.     157.   1124.00
      .39      .28      .97      .14     .050     .050     .050     .000  1104.00 10860.00
  .000054     260.     260.     260.        2        0        0      .00  1765.33 12625.33
0
1
 03-26-87     21:42:20                                                                    PAGE   23


                                                                          THIS RUN EXECUTED 03-26-87

 ***************************************************
   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     AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
 T2     PROFILE NUMBER 6 - SUBCRITICAL PROFILE
 T3     OVERFLOW CH. FUT. BRIDGE - VAR. FLOWS - NEW FIELD DATA

 J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

       0.       7.       0.       0.   .000000     .00      .0       0.   1113.350    .000

 J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

      6.000    .000   -1.000    .000     .000     .000     .000     .000     .000     .000

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 03-26-87     21:42:20                                                                    PAGE   24
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  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


*PROF 6

DCHV=    .100 CEHV=    .300
*SECNO 15.823

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.54      .19      .00      .00  1133.00
   72000.       0.   65623.    6377.       0.   18003.    3042.       0.       0.   1110.00
      .00      .00     3.64     2.10     .050     .050     .050     .000  1008.30  9365.47
  .000829       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     6.46  1114.46      .00  1115.81  1114.51      .05      .95      .01  1114.00
   10000.    2358.    1025.    6617.    1257.     751.    3655.     389.      60.   1114.00
      .18     1.87     1.37     1.81     .050     .050     .050     .000  1108.00 10479.42
  .000630    1000.    1400.     950.        2        0        0      .00  1770.58 12250.00
0
 DCHV=    .100 CEHV=    .300
 *SECNO 16.153

 3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     7.21  1115.21      .00  1117.57  1115.37      .16      .83      .03  1113.00
   10000.    8211.     263.    1527.    2359.      83.    1462.     474.      90.   1114.00
      .25     3.48     3.14     1.04     .050     .050     .100     .000  1108.00 10514.75
  .002247     750.     750.     800.        2        0        0      .00  1525.24 12040.00
0
 *SECNO 16.191

 3265 DIVIDED FLOW

 3280 CROSS SECTION     16.19 EXTENDED      4.13 FEET

1
  03-26-87     21:42:20                                                                    PAGE   25


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


 3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000
    16.19     9.13  1117.13      .00  1119.78  1117.33      .20     1.95      .01  1116.00
   10000.       6.    7253.    2740.       4.    1785.    1319.     523.     109.   1116.00
      .30     1.43     4.06     2.08     .050     .050     .100     .000  1108.00 10572.23
  .005040     610.     600.     600.        3        0        0      .00  1243.48 11950.00
0
 *SECNO 16.291

 3265 DIVIDED FLOW
```

```
3280 CROSS SECTION     16.29 EXTENDED      2.52 FEET

    16.29      4.52  1120.52      .00      .00  1120.76      .24      3.41      .01  1119.20
   10000.      863.     7419.    1718.     384.     1672.     919.      566.     128.   1118.00
      .35      2.25      4.44     1.87     .050      .050     .100      .000  1116.00 10247.42
  .006037      620.      620.     620.        4         0        0       .00  1484.50 11792.00
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.338
    16.34     11.65  1122.05      .00      .00  1122.21      .16      1.42      .03  1110.40
   10000.     7091.     2413.     496.    2246.     696.     733.      596.     142.   1120.00
      .38      3.16      3.47     .68     .050      .050     .150      .000  1110.40 10324.36
  .002431      300.      450.     450.        3         0        0       .00  1517.96 11842.32
0
 CCHV=    .300 CEHV=    .500
 *SECNO 16.344

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.34      7.89  1121.89      .00  1124.16  1122.76      .87       .19      .36  1129.00
   10000.        0.    10000.       0.       0.    1337.       0.      600.     143.   1127.50
      .38       .00      7.48      .00     .030      .030     .030      .000  1114.00 11149.33
  .002381       80.       80.      80.        2         0        0       .00   195.89 11357.22
0
1
 03-26-87     21:42:20                                                                    PAGE   26


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        DLOSS    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 16.371

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37      8.33  1122.33      .00  1127.86  1123.09      .77       .31      .03  1129.00
   10000.        0.    10000.       0.       0.    1424.       0.      605.     144.   1127.50
      .39       .00      7.02      .00     .030      .030     .030      .000  1114.00 11148.01
  .001991      142.      142.     142.        2         0        0       .00   198.83 11358.85
0
 CCHV=    .100 CEHV=    .300
 *SECNO 16.421

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43      6.28  1123.28      .00  1130.10  1123.36      .08       .19      .07  1120.00
   10000.     1352.     4010.    4638.     741.     1783.    1916.      615.     146.   1118.00
      .41      1.82      2.25     2.42     .050      .050     .050      .000  1117.00 10788.63
  .000914       90.      140.     190.        2         0        0       .00  1187.78 11976.41
0
 *SECNO 16.481
```

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  10000.      0.   10000.      0.      2.   12784.      0.     666.     155.   1124.00
    .50     .04     .78     .00    .050     .050    .050     .000  1104.00 10908.40
 .000045    260.    260.    260.       2        0       0      .00  1669.55 12577.95
0
1
 03-26-87    21:42:20                                                                    PAGE   27


                                                                    THIS RUN EXECUTED 03-26-87

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  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
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T1     AGUAFRIA RIVER - OVERFLOW CHANNEL HYDRAULIC STUDY
T2     PROFILE NUMBER 7 - SUBCRITICAL PROFILE
T3     OVERFLOW CH. FUT. BRIDGE - VAR. FLOWS - NEW FIELD DATA

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       8.       0.       0.   .000000     .00      .0       0.   1113.350   .000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

    15.000    .000   -1.000    .000     .000     .000     .000     .000     .000     .000

1
 03-26-87    21:42:20                                                                    PAGE   28


   SECNO    DEPTH    OWSEL    CRIWS    WSELK    EG       HV       HL       DLOSS   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


 *PROF 7

 CCHV=    .100 CEHV=    .300
 *SECNO 15.823

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=    9322.0   12300.0  TYPE=     1  TARGET=    2978.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1133.00 ELREA=     1110.00

    15.82   105.05  1113.35      .00  1113.35  1113.54      .19      .00      .00  1133.00
   72000.       0.   65623.    6377.       0.   18003.    3042.       0.       0.   1110.00
     .00      .00     3.64     2.10     .050     .050     .050     .000  1008.30  9365.47
  .000829       0.       0.       0.        0        0        0      .00  2700.56 12300.00
0
 *SECNO 16.013

 3470 ENCROACHMENT STATIONS=   10402.0   12250.0  TYPE=     1  TARGET=    1848.000
    16.01     6.39  1114.39      .00  1115.81  1114.40      .01      .84      .02  1114.00
    5000.    1182.     508.    3312.    1234.     731.    3583.     387.      60.   1114.00
     .36      .96      .69      .92     .050     .050     .050     .000  1108.00 10479.63
```

```
CCHV=    .100 CEHV=    .300
*SECNO 16.153

3470 ENCROACHMENT STATIONS=   10434.0   12040.0  TYPE=     1  TARGET=    1606.000
    16.15     6.62  1114.62      .00  1117.57  1114.68      .07      .26      .02  1113.00
    5000.    4319.     133.     548.    1981.      69.     956.     464.      90.   1114.00
      .47     2.18     1.92      .57     .050     .050     .100     .000  1108.00 10516.49
  .001075     750.     750.     800.        2        0        0      .00  1523.51 12040.00
0
*SECNO 16.191

3265 DIVIDED FLOW

3280 CROSS SECTION     16.19 EXTENDED      2.76 FEET

1
 03-26-87     21:42:20                                                                                PAGE   29

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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


3470 ENCROACHMENT STATIONS=   10501.0   11950.0  TYPE=     1  TARGET=    1449.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1116.00 ELREA=     1116.00

    16.19     7.76  1115.76      .00  1119.78  1116.16      .40     1.38      .10  1116.00
    5000.       0.    5000.       0.       0.     985.       0.     491.     103.   1116.00
      .50      .00     5.08      .00     .050     .050     .100     .000  1108.00 10582.18
  .007697     610.     600.     600.        3        0        0      .00   359.42 11241.15
0
*SECNO 16.291

3265 DIVIDED FLOW

3280 CROSS SECTION     16.29 EXTENDED      1.80 FEET

    16.29     3.80  1119.80      .00      .00  1119.95      .15     3.76      .03  1119.20
    5000.     104.    4137.     759.      97.    1231.     597.     512.     115.   1118.00
      .56     1.07     3.36     1.27     .050     .050     .100     .000  1116.00 10348.89
  .004900     620.     620.     620.        3        0        0      .00  1354.96 11792.00
0
CCHV=    .300 CEHV=    .500
*SECNO 16.338
    16.34    10.67  1121.07      .00      .00  1121.16      .09     1.20      .02  1110.40
    5000.    3556.    1329.     115.    1447.     511.     293.     531.     127.   1120.00
      .60     2.46     2.60      .39     .050     .050     .150     .000  1110.40 10336.55
  .002069     300.     450.     450.        3        0        0      .00  1402.11 11738.66
0
CCHV=    .300 CEHV=    .500
*SECNO 16.344

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.34     7.08  1121.08      .00  1124.16  1121.36      .28      .10      .09  1129.00
    5000.       0.    5000.       0.       0.    1180.       0.     534.     129.   1127.50
      .61      .00     4.24      .00     .030     .030     .030     .000  1114.00 11151.76
  .000851      80.      80.      80.        2        0        0      .00   190.45 11354.22
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       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 16.371

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=   10600.0   11900.0  TYPE=     1  TARGET=    1300.000
    16.37     7.21  1121.21      .00  1127.86  1121.48      .27      .12      .00  1129.00
    5000.       0.    5000.       0.       0.    1205.       0.     538.     129.   1127.50
      .62      .00     4.15      .00     .030     .030     .030     .000  1114.00 11151.37
  .000801     142.     142.     142.        2        0        0      .00   191.33 11354.70
0
CCHV=    .100 CEHV=    .300
*SECNO 16.431

3470 ENCROACHMENT STATIONS=   10770.0   12210.0  TYPE=     1  TARGET=    1440.000
    16.43     4.59  1121.59      .00  1130.10  1121.65      .07      .16      .02  1120.00
    5000.     395.    1953.    2651.     308.    1024.    1158.     545.     132.   1118.00
      .64     1.28     1.91     2.29     .050     .050     .050     .000  1117.00 10797.06
  .001377      90.     140.     190.        2        0        0      .00  1124.52 11921.59
0
*SECNO 16.481

3470 ENCROACHMENT STATIONS=   10860.0   12820.0  TYPE=     1  TARGET=    1960.000
    16.48    17.67  1121.67      .00  1130.19  1121.67      .00      .01      .01  1123.20
    5000.       0.    5000.       0.       0.   10286.       0.     583.     138.   1124.00
      .79      .00      .49      .00     .050     .050     .050     .000  1104.00 11682.23
  .000010     260.     260.     260.        2        0        0      .00   889.99 12572.22
0
1
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THIS RUN EXECUTED 03-26-87

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


OVERFLOW CH. PUT. BRIDGE

SUMMARY PRINTOUT TABLE  150


     SECNO     XLCH      ELTRD     ELLC      ELMIN      Q        CWSEL     CRIWS     EG        10X*S     VCH       AREA      .01K


     15.823     .00       .00       .00   1008.30 107775.00   1113.35       .00   1113.78     18.57      5.46  21045.96 25011.44
     15.827     .00       .00       .00   1008.30 107775.00   1113.35       .00   1113.78     18.57      5.46  21045.96 25011.44
```

15.823	.00	.00	.00	1008.30	107775.00	1113.35	.00	1113.78	18.57	5.46	21045.96	25011.44
15.823	.00	.00	.00	1008.30	72000.00	1113.35	.00	1113.54	8.29	3.64	21045.96	25011.44
15.823	.00	.00	.00	1008.30	72000.00	1113.35	.00	1113.54	8.29	3.64	21045.96	25011.44
15.823	.00	.00	.00	1008.30	72000.00	1113.35	.00	1113.54	8.29	3.64	21045.96	25011.44
16.013	1400.00	.00	.00	1108.00	30000.00	1115.81	.00	1116.03	19.11	3.18	8066.28	6862.99
16.013	1400.00	.00	.00	1108.00	25000.00	1115.74	.00	1115.90	13.94	2.68	7941.49	6696.72
16.013	1400.00	.00	.00	1108.00	20000.00	1115.67	.00	1115.77	9.41	2.18	7807.40	6520.02
16.013	1400.00	.00	.00	1108.00	15000.00	1115.58	.00	1115.64	5.61	1.65	7663.15	6332.22
16.013	1400.00	.00	.00	1108.00	15000.00	1114.50	.00	1114.61	13.55	2.03	5749.63	4074.99
16.013	1400.00	.00	.00	1108.00	10000.00	1114.46	.00	1114.51	6.30	1.37	5662.95	3983.53
16.013	1400.00	.00	.00	1108.00	5000.00	1114.39	.00	1114.40	1.68	.69	5547.33	3863.05
16.153	750.00	.00	.00	1108.00	30000.00	1117.57	.00	1117.95	31.85	5.29	7511.67	5315.87
16.153	750.00	.00	.00	1108.00	25000.00	1117.13	.00	1117.45	29.22	4.81	6840.49	4624.69
16.153	750.00	.00	.00	1108.00	20000.00	1116.68	.00	1116.94	25.48	4.24	6155.69	3962.06
16.153	750.00	.00	.00	1108.00	15000.00	1116.24	.00	1116.42	20.05	3.53	5478.01	3350.28
16.153	750.00	.00	.00	1108.00	15000.00	1115.86	.00	1116.09	27.47	3.90	4897.10	2862.11
16.153	750.00	.00	.00	1108.00	10000.00	1115.21	.00	1115.37	22.47	3.14	3904.09	2109.52
16.153	750.00	.00	.00	1108.00	5000.00	1114.62	.00	1114.68	10.75	1.92	3006.25	1525.00
16.191	600.00	.00	.00	1108.00	30000.00	1119.78	.00	1120.22	44.40	6.03	6579.71	4502.34
16.191	600.00	.00	.00	1108.00	25000.00	1119.24	.00	1119.63	44.59	5.62	5840.81	3744.05
16.191	600.00	.00	.00	1108.00	20000.00	1118.64	.00	1118.97	45.19	5.17	5036.44	2975.12
16.191	600.00	.00	.00	1108.00	15000.00	1117.95	.00	1118.22	46.86	4.67	4135.62	2191.33
16.191	600.00	.00	.00	1108.00	15000.00	1117.96	.00	1118.22	46.44	4.66	4147.59	2201.14
16.191	600.00	.00	.00	1108.00	10000.00	1117.13	.00	1117.33	50.40	4.06	3108.20	1408.55
16.191	600.00	.00	.00	1108.00	5000.00	1115.76	.00	1116.16	76.97	5.08	984.68	569.93

1

03-26-87 21:42:20 PAGE 32

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	16.291	620.00	.00	.00	1116.00	30000.00	1122.94	.00	1123.52	63.03	6.71	5491.36	3778.63
	16.291	620.00	.00	.00	1116.00	25000.00	1122.44	.00	1122.94	63.84	6.28	4896.05	3128.82
	16.291	620.00	.00	.00	1116.00	20000.00	1121.90	.00	1122.34	65.18	5.80	4246.69	2477.19
	16.291	620.00	.00	.00	1116.00	15000.00	1121.17	.00	1121.46	58.57	4.92	3955.48	1960.03
	16.291	620.00	.00	.00	1116.00	15000.00	1121.17	.00	1121.46	58.83	4.93	3949.56	1955.61
	16.291	620.00	.00	.00	1116.00	10000.00	1120.52	.00	1120.76	60.37	4.44	2974.08	1287.04
	16.291	620.00	.00	.00	1116.00	5000.00	1119.80	.00	1119.95	49.00	3.36	1925.46	714.29
	16.338	450.00	.00	.00	1110.40	30000.00	1125.00	.00	1125.67	44.20	6.93	6023.83	4507.36
	16.338	450.00	.00	.00	1110.40	25000.00	1124.45	.00	1125.02	41.61	6.34	5418.11	3875.48
	16.338	450.00	.00	.00	1110.40	20000.00	1123.85	.00	1124.32	38.27	5.67	4757.46	3232.92
	16.338	450.00	.00	.00	1110.40	15000.00	1122.76	.00	1122.98	27.29	4.13	4765.96	2871.40
	16.338	450.00	.00	.00	1110.40	15000.00	1122.76	.00	1122.98	27.28	4.13	4766.35	2871.72
	16.338	450.00	.00	.00	1110.40	10000.00	1122.05	.00	1122.21	24.31	3.47	3675.44	2028.30
	16.338	450.00	.00	.00	1110.40	5000.00	1121.07	.00	1121.16	20.69	2.60	2251.05	1099.35
*	16.344	80.00	.00	.00	1114.00	30000.00	1124.16	1124.16	1128.48	92.59	16.67	1799.48	3117.73
	16.344	80.00	.00	.00	1114.00	25000.00	1123.39	.00	1127.00	83.60	15.26	1638.69	2734.22
	16.344	80.00	.00	.00	1114.00	20000.00	1123.26	.00	1125.65	56.10	12.41	1511.35	2670.22
	16.344	80.00	.00	.00	1114.00	15000.00	1122.27	.00	1124.02	45.83	10.62	1412.15	2215.63
	16.344	80.00	.00	.00	1114.00	15000.00	1122.27	.00	1124.02	45.83	10.62	1412.17	2215.68
	16.344	80.00	.00	.00	1114.00	10000.00	1121.89	.00	1122.76	23.81	7.48	1336.74	2049.17
	16.344	80.00	.00	.00	1114.00	5000.00	1121.08	.00	1121.36	8.51	4.24	1180.17	1714.35
	16.371	142.00	.00	.00	1114.00	30000.00	1127.86	.00	1129.89	32.42	11.43	2624.76	5269.02
	16.371	142.00	.00	.00	1114.00	25000.00	1126.37	.00	1128.24	33.30	10.96	2280.72	4332.32
	16.371	142.00	.00	.00	1114.00	20000.00	1124.83	.00	1126.48	33.35	10.31	1940.31	3463.29
	16.371	142.00	.00	.00	1114.00	15000.00	1123.37	.00	1124.68	30.31	9.18	1634.54	2724.49
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

16.371	142.00	.00	.00	1114.00	5000.00	1121.21	.00	1121.48	8.01	4.15	1205.31	1767.10
16.431	140.00	.00	.00	1117.00	30000.00	1130.10	.00	1130.18	2.60	2.34	13417.96	18594.84
16.431	140.00	.00	.00	1117.00	25000.00	1128.45	.00	1128.53	3.28	2.35	11079.63	13795.43
16.431	140.00	.00	.00	1117.00	20000.00	1126.69	.00	1126.77	4.44	2.37	8713.08	9490.93
16.431	140.00	.00	.00	1117.00	15000.00	1124.90	.00	1124.98	6.50	2.38	6409.94	5882.49
16.431	140.00	.00	.00	1117.00	15000.00	1124.90	.00	1124.98	6.50	2.38	6409.94	5882.49
16.431	140.00	.00	.00	1117.00	10000.00	1123.28	.00	1123.36	9.14	2.25	4440.35	3308.22
16.431	140.00	.00	.00	1117.00	5000.00	1121.59	.00	1121.65	13.77	1.91	2490.19	1347.52
16.481	260.00	.00	.00	1104.00	30000.00	1130.19	.00	1130.21	.48	1.22	25282.32	43478.57
16.481	260.00	.00	.00	1104.00	25000.00	1128.54	.00	1128.56	.50	1.16	22098.47	35258.83
16.481	260.00	.00	.00	1104.00	20000.00	1126.79	.00	1126.81	.53	1.08	18810.85	27452.86
16.481	260.00	.00	.00	1104.00	15000.00	1125.01	.00	1125.02	.54	.97	15588.43	20415.66
16.481	260.00	.00	.00	1104.00	15000.00	1125.01	.00	1125.02	.54	.97	15588.43	20415.66
16.481	260.00	.00	.00	1104.00	10000.00	1123.39	.00	1123.39	.45	.78	12786.10	14852.84
16.481	260.00	.00	.00	1104.00	5000.00	1121.67	.00	1121.67	.10	.49	10285.82	15558.38

OVERFLOW CH. FUT. BRIDGE

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFWS	TOPWID	XLCH
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	107775.00	1113.35	.00	.00	.00	2700.56	.00
15.823	72000.00	1113.35	.00	.00	.00	2700.56	.00
15.823	72000.00	1113.35	.00	.00	.00	2700.56	.00
15.823	72000.00	1113.35	.00	.00	.00	2700.56	.00
16.013	30000.00	1115.81	.00	2.46	.00	1774.90	1400.00
16.013	25000.00	1115.74	-.07	2.39	-.07	1774.68	1400.00
16.013	20000.00	1115.67	-.07	2.32	-.14	1774.43	1400.00
16.013	15000.00	1115.58	-.08	2.23	-.23	1774.18	1400.00
16.013	15000.00	1114.50	-1.08	1.15	-1.31	1770.73	1400.00
16.013	10000.00	1114.46	-.05	1.11	-1.35	1770.58	1400.00
16.013	5000.00	1114.39	-.06	1.04	-1.42	1770.37	1400.00
16.153	30000.00	1117.57	.00	1.76	.00	1532.20	750.00
16.153	25000.00	1117.13	-.44	1.39	-.44	1530.91	750.00
16.153	20000.00	1116.68	-.45	1.02	-.89	1529.59	750.00
16.153	15000.00	1116.24	-.44	.55	-1.33	1528.28	750.00
16.153	15000.00	1115.86	-.38	1.36	-1.71	1527.15	750.00
16.153	10000.00	1115.21	-.65	.75	-2.36	1525.24	750.00
16.153	5000.00	1114.62	-.59	.22	-2.95	1523.51	750.00
16.191	30000.00	1119.78	.00	2.32	.00	1369.83	600.00
16.191	25000.00	1119.24	-.54	2.11	-.54	1346.35	600.00
16.191	20000.00	1118.64	-.60	1.85	-1.14	1320.34	600.00
16.191	15000.00	1117.95	-.69	1.71	-1.83	1289.75	600.00
16.191	15000.00	1117.95	.01	3.10	-1.83	1290.88	600.00
16.191	10000.00	1117.13	-.82	1.92	-2.65	1243.48	600.00
16.191	5000.00	1115.76	-1.37	1.14	-4.02	359.42	600.00
16.281	30000.00	1122.94	.00	3.15	.00	1200.00	620.00
16.281	25000.00	1122.44	-.50	3.19	-.50	1200.00	620.00
16.281	20000.00	1121.90	-.53	2.86	-1.04	1200.00	620.00

16.351	10000.00	1120.02	-.65	3.39	.00	1484.50	620.00
16.351	5000.00	1119.80	-.72	4.04	.00	1354.95	620.00
16.338	30000.00	1125.00	.00	2.06	.00	1100.00	450.00
16.338	25000.00	1124.45	-.55	2.01	-.55	1100.00	450.00
16.338	20000.00	1123.85	-.60	1.95	-1.15	1100.00	450.00
16.338	15000.00	1122.75	-1.09	1.59	-2.24	1589.48	450.00
16.338	15000.00	1122.75	.00	1.59	-2.24	1589.50	450.00
16.338	10000.00	1122.05	-.71	1.53	.00	1517.96	450.00
16.338	5000.00	1121.07	-.98	1.27	.00	1402.11	450.00

	BEDNO	Q	DWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	16.344	30000.00	1124.16	.00	-.84	.00	211.13	80.00
	16.344	25000.00	1123.39	-.78	-1.06	-.78	205.96	80.00
	16.344	20000.00	1122.86	-.13	-.59	-.90	205.07	80.00
	16.344	15000.00	1122.27	-.99	-.49	-1.89	198.45	80.00
	16.344	15000.00	1122.27	.00	-.49	-1.89	198.45	80.00
	16.344	10000.00	1121.89	-.38	-.16	-2.28	195.89	80.00
	16.344	5000.00	1121.08	-.81	.01	-3.08	190.45	80.00
	16.371	30000.00	1127.86	.00	3.70	.00	234.72	142.00
	16.371	25000.00	1126.37	-1.49	2.98	-1.49	225.89	142.00
	16.371	20000.00	1124.83	-1.54	1.57	-3.04	215.55	142.00
	16.371	15000.00	1123.27	-1.45	1.10	-4.49	205.83	142.00
	16.371	15000.00	1123.37	.00	1.10	-4.49	205.82	142.00
	16.371	10000.00	1122.33	-1.04	.44	-5.53	198.83	142.00
	16.371	5000.00	1121.21	-1.12	.13	-6.65	191.33	142.00
	16.431	30000.00	1130.10	.00	2.84	.00	1440.00	140.00
	16.431	25000.00	1128.45	-1.65	2.08	-1.65	1378.74	140.00
	16.431	20000.00	1126.69	-1.75	1.36	-3.41	1315.78	140.00
	16.431	15000.00	1124.90	-1.80	1.52	-5.21	1248.41	140.00
	16.431	15000.00	1124.90	.00	1.52	-5.21	1248.41	140.00
	16.431	10000.00	1123.28	-1.62	.95	-6.83	1187.78	140.00
	16.431	5000.00	1121.59	-1.69	.38	-8.51	1124.52	140.00
	16.481	30000.00	1130.19	.00	.08	.00	1950.46	260.00
	16.481	25000.00	1128.54	-1.65	.09	-1.65	1912.41	260.00
	16.481	20000.00	1126.79	-1.75	.10	-3.39	1845.65	260.00
	16.481	15000.00	1125.01	-1.78	.11	-5.18	1765.33	260.00
	16.481	15000.00	1125.01	.00	.11	-5.18	1765.33	260.00
	16.481	10000.00	1123.39	-1.62	.11	-6.80	1669.55	260.00
	16.481	5000.00	1121.67	-1.72	.08	-8.52	889.99	260.00

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION BEDNO= 16.344 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION BEDNO= 16.344 PROFILE= 1 MINIMUM SPECIFIC ENERGY

THIS RUN EXECUTED 03-26-87

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  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
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