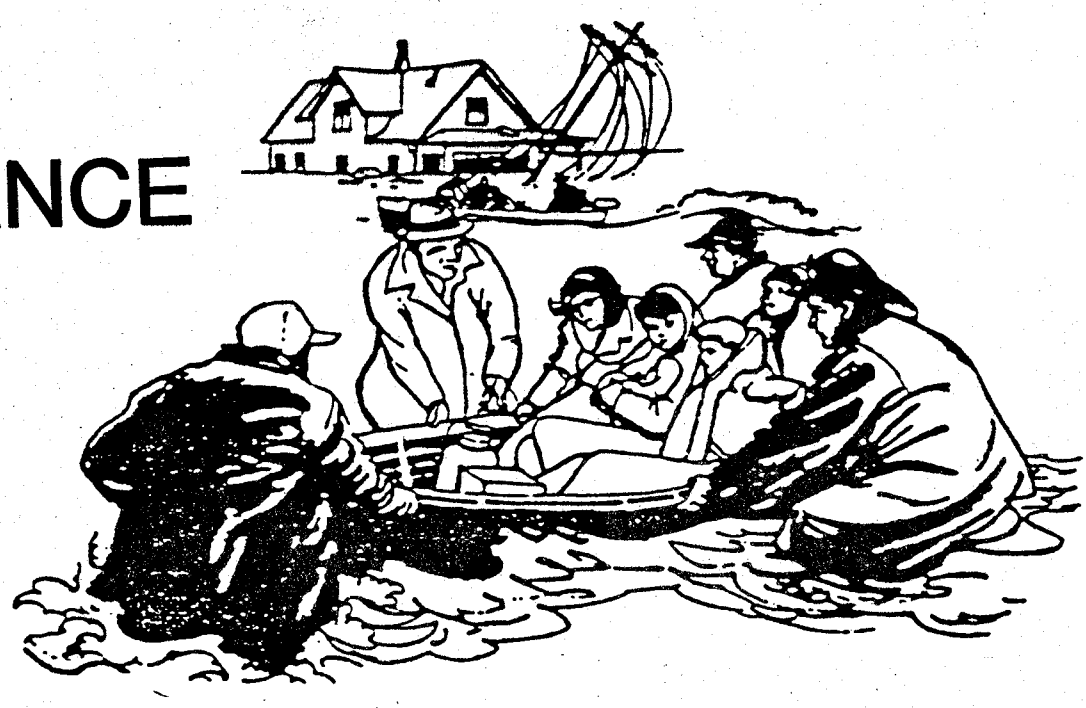
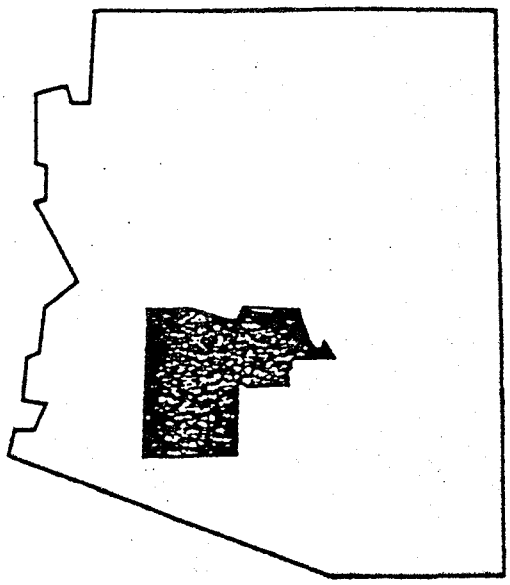
FLOOD INSURANCE STUDY



TOWN OF SURPRISE
ARIZONA
MARICOPA COUNTY



REQUEST FOR:
LETTER OF MAP REVISION
AGUA FRIA RIVER
FLOODWAY
(Brookview Country Club)

PREPARED BY
WILLDAN ASSOCIATES
December 1987

Federal Emergency Management Agency

FLOOD CONTROL DISTRICT
of
Maricopa County

3335 West Durango Street • Phoenix, Arizona 85009
Telephone (602) 262-1501

D. E. Sagramoso, P.E., Chief Engineer and General Manager

BOARD of DIRECTORS
Tom Freestone, Chairman
George L. Campbell
Carole Carpenter
Fred Koory, Jr.
Ed Pastor

Brian R. Mrazik, Ph.D.
Chief, Risk Studies Division
Federal Insurance Administration
Federal Emergency Management Agency
Washington, D. C. 20472

Attn: William Judkins

Re: Part II of LOMR Request of Agua Fria River
Brookview Country Club
Panel 0005C (Town of Surprise) and Panel 1165 (Revised Preliminary)
Town of Surprise and Maricopa County, Arizona

Dear Dr. Mrazik:

Attached is a request for the remaining portion of a letter of map revision from Willdan Associates, engineers for the Town of Surprise based upon information prepared by Anderson-Nelson, Incorporated for the Del Coor Company concerning the Brookview Country Club development. A previous submittal dated January 8, 1988 was for Part I of Brookview Country Club.

As stated in our previous correspondence on this matter, we only recently became involved in floodplain management for the Town of Surprise and therefore have not reviewed this request in depth and do not necessarily endorse nor confirm the technical findings or interpretation of the results.

Jerry Jones and Associates are under contract to restudy the Agua Fria River. Their recent analysis which incorporates Brookview Country Club concurs with Willdan Associates moving the floodway boundary to the east of Brookview Country Club development.

Should additional information be required, please contact either Mr. Don Anderson, P.E. of Anderson-Nelson, Inc., 1-602-273-1850, Mr. Jim Gillespie of the Del Coor Company, 1-602-228-3294 or Mr. Joe Tram of this office.

Sincerely,

D. E. Sagramoso, P.E.
Floodplain Administrator

Joe Tram

Joe Tram,
Floodplain Management Hydrologist

Enclosures

Copy to: Jim Morris, State Coordinator, NFIP
Arizona Department of Water Resources
Nick D. Bacon, Town Manager
Town of Surprise
Jim Gillespie
Don Anderson, P.E.

DES/rgn

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- LETTERS OF TRANSMITTAL AND NOTIFICATIONS

LIST OF CONTENTS

Letters of Transmittal and Notifications

Engineering Certification

Project Description and Exhibit A

Preliminary (1986) Flood Insurance Study HEC-II Data for B.F.E.'s

Preliminary (1986) Flood Insurance Study HEC-II Data for Floodway

Preliminary (1986) Flood Insurance Study Tables and Profile

HEC-II Printout for Natural Conditions Confirming B.F.E.'s

HEC-II Printout for Original Floodway Boundary Conditions

HEC-II Printout for Proposed Floodway Boundary Revision and Encroachment Condition

Exhibit B (Sht. 1) Floodway Boundary Encroachment and Proposed Revision

Exhibit B (Sht. 2)

Exhibit C Project Legal Description

Town of Surprise

12604 SANTA FE DRIVE • SURPRISE, ARIZONA 85374 • (602) 977-8369

December 23, 1987

Federal Emergency Management Agency
Regional Office
Presido of San Francisco
Building 105
San Francisco, CA 94179

Maricopa County Flood Control District
3335 West Durango Street
Phoenix, Arizona 85009

Attention: Mr. Ronald Nevitt
Floodplain Representative

Arizona Department of Water Resources
2702 North 3rd Street
Suite 2010
Phoenix, Arizona 85004

Attention: Mr. James Morris

Reference: Federal Emergency Management Agency
Letter Dated September 2, 1987

Gentlemen:

Enclosed for your review, comment and approval is a copy of the revised request for a Letter of Map Revision for a portion of the Agua Fria River floodway. The east boundary of the floodway is within the corporate limits of the Town of Surprise and the west boundary of the floodway is on Arizona State Land and within the jurisdiction of the Maricopa County Flood Control District.

This submittal has been prepared by Willdan Associates as the Engineer for the Town of Surprise and is in response to a request by the owners of the Brookview Country Club property.

If you have any questions regarding this submittal, please contact the undersigned directly at (602) 870-7600.

Sincerely,

John A. Lewis, P.E.
WILLDAN ASSOCIATES

For Nick Bacon, Town Manager

JAL:sb
04-30A-1

Enclosures

cc: Mr. Steven Barr, Wallace & Associates
Mr. Jim Gillespie, Del Coor
Mr. Max Sears, Worthen Bank & Trust
Mr. Doug Diamond, Transbrook Corporation
Mr. John C. O'Brien, BCC Development of Penn., Inc.
Mr. Michael Burnett, Worthen Bank & Trust
Mr. Nick Bacon, Town of Surprise

Federal Emergency Management Agency

Washington, D.C. 20472

SEP 2 1987

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable George Cumbie
Mayor, Town of Surprise
12604 Santa Fe Drive
Surprise, Arizona 85374

Dear Mayor Cumbie:

This is in response to a letter dated June 26, 1987, from Mr. Nick D. Bacon, Floodplain Administrator, concerning the effective Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) for the Town of Surprise, Arizona. In his letter, Mr. Bacon requested a revision to the base (100-year) flood elevations (BFEs) and floodplain and floodway boundary delineations along the Agua Fria River, shown on FIRM and FBFM Panel 0005 C, dated March 1, 1983. Mr. Bacon's request was based on updated topographic information and a revised hydraulic analysis of the Agua Fria River. With his request, Mr. Bacon submitted a report entitled "Brookview Country Club, Town of Surprise Request for LOMR," dated June 1, 1987, prepared by Ellis-Murphy, Inc.

Please note that a Type 19 restudy of Maricopa County, Arizona and Incorporated Areas has been prepared. As a result of this restudy, the 10-, 50-, 100-, and 500-year recurrence interval flood discharges for the Agua Fria River at Bell Road (16,000, 40,000, 54,000, and 74,000 cubic feet per second (cfs), respectively) have been increased to 23,000, 87,000, 115,000, and 182,000 cfs, respectively. As a result of the increased flood discharges, the 100-year floodplain and floodway have been widened and the BFEs have been increased up to 5 feet along the Agua Fria River in the vicinity of the Brookview Country Club. These increases are shown in the Preliminary copies of the Flood Insurance Study (FIS) report, FIRM, and FBFM for Maricopa County and Incorporated Areas that were forwarded to your community on September 30, 1986. The FIS report, FIRM, and FBFM for Maricopa County and Incorporated Areas are scheduled to become effective in March 1988 and will supersede the effective FIS report, FIRM, and FBFM for the Town of Surprise.

To reflect current flooding conditions along the Agua Fria River, any revised hydraulic analysis should utilize the cross section information and the flood discharges shown in the Preliminary FIS report for Maricopa County and Incorporated Areas. The report submitted by Mr. Bacon included a revised hydraulic analysis of the Agua Fria River that utilized the original cross section information and the flood discharges shown in the effective FIS report for the Town of Surprise. Because the report submitted by Mr. Bacon was not based on the updated cross section information and flood discharges, we have determined that no revision to the FIRM or FBFM is warranted at this time. If a revised hydraulic analysis of the Agua Fria

River is submitted that uses the cross section information and discharges contained in the Preliminary FIS report for Maricopa County and Incorporated Areas, we will reconsider a revision to the FIS report, FIRM, and FBFM.

Appeals to the Preliminary FIS report, FIRM, and FBFM for Maricopa County and Incorporated Areas were received during the 90-day appeal period, which ended on January 29, 1987. However, no appeals regarding the revised BFEs along the Agua Fria River in the vicinity of the Town of Surprise were received.

Please note that copies of the hydraulic computer model printouts representing the new 10-, 50-, 100-, and 500-year flood and floodway profiles for the Agua Fria River that were used to prepare the Preliminary FIS report, FIRM, and FBFM for Maricopa County and Incorporated Areas were forwarded to Mr. John Lewis, Ellis-Murphy, Inc., on August 11, 1987.

Should you have any questions regarding this matter, please call Mr. Philip Myers of my staff in Washington, D.C., at (202) 646-2755.

Sincerely,

John L. Matticks
Chief, Risk Studies Division
Federal Insurance Administration

Enclosures

cc: Mr. Nick D. Bacon, Floodplain Administrator
Mr. John A. Lewis, Ellis-Murphy, Inc.

Town of Surprise

12604 SANTA FE DRIVE • SURPRISE, ARIZONA 85374 • (602) 977-8369

Maricopa County Flood Control District
3335 West Durango
Phoenix, Arizona 85009

The purpose of this letter is to provide official notification that the Town of Surprise is submitting a request to FEMA for revision of the Agua Fria floodway boundaries. This notification is being sent to MCFCD as the adjacent jurisdiction in accordance with FEMA regulations.

Further information regarding this request may be obtained from John A. Lewis, P.E., Willdan Associates at (602) 870-7600.

John A. Lewis

WILLDAN ASSOCIATES
TOWN ENGINEER

12/31/87
Date

FOR NICK D. BACON, TOWN MANAGER

04-M-3

Town of Surprise

12604 SANTA FE DRIVE • SURPRISE, ARIZONA 85374 • (602) 977-8369

Arizona Department of Water Resources
2702 North 3rd Street, Suite 2010
Phoenix, Arizona 85004

Attention: Mr. James Morris

Reference: Floodway Revision, Agua Fria River

This letter is to confirm that the Town of Surprise is adopting a revised floodway boundary as incorporated in our requested LOMR, and we are providing you notification in accordance with FEMA regulation 65.7(b)(2).

John Morris P.E.

WILLDAN ASSOCIATES
TOWN ENGINEER

12/31/87
Date

FOR NICK D. BACON, TOWN MANAGER

Attachment: Resolution No. 88-3

TOS ref #8-88-R

RESOLUTION NO. 88-13

A RESOLUTION OF THE MAYOR AND COMMON COUNCIL OF THE TOWN OF SURPRISE, MARICOPA COUNTY, ARIZONA APPROVING PROVISIONS FOR REVISION OF THE AGUA FRIA RIVER FLOODWAY BOUNDARY WITHIN THE TOWN OF SURPRISE AND DIRECTING THAT SUCH REVISION BE FORWARDED TO THE MARICOPA COUNTY FLOOD CONTROL DISTRICT FOR SUBMITTAL TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR CONSIDERATION

WHEREAS, the Town of Surprise, by enacting Resolution 87-60, has elected to return jurisdiction for floodplain management within the boundaries of the Town to the Maricopa County Flood Control District; and

WHEREAS, the Town has received a proposal for development adjacent to the floodplain management area which calls for a modification and clarification of the existing floodway limit boundary; and

WHEREAS, said proposed development plan requires a modification of the floodway map in order to ensure that the development area is outside the contemplated floodway area for the Agua Fria River, and meets the requirement of the Federal Emergency Management Agency, and

WHEREAS, the proposed floodway revision has been prepared for the Town by Willdan Associates as the Town's Engineer which has issued it's opinion to the Town that the proposed floodway map revision is within the requirements of federal and state law.

NOW THEREFORE, be it resolved by the Mayor and Common Council of the Town of Surprise as follows:

Section 1: Approving the proposed revisions to the floodway boundary map for the Agua Fria River as detailed in Willdan Associates Job No. 39010 for and on behalf of the Town of Surprise and recommending such revisions to the Maricopa County Flood Control District for adoption.

Section 2: Directing that notice of such proposed revision be forwarded to the Maricopa County Flood Control District, by the Town of Surprise.

Section 3: Authorizing upon the approval of the Maricopa County Flood Control District, the filing of the revision approved herein with the Federal Emergency Management Agency, with the request that said revision be incorporated into the floodway boundary map.

PASSED AND ADOPTED by the Mayor and Common Council of the Town of Surprise this 14th day of January, 1988.

MAYOR

ATTEST:

Deputy TOWN CLERK

APPROVED AS TO FORM:

TOWN ATTORNEY

Town of Surprise

12604 SANTA FE DRIVE • SURPRISE, ARIZONA 85374 • (602) 977-8369

Floodway Revision

Confirmation of Notification (65.7(b)(1))

This is to confirm that the Town of Surprise has notified all affected property owner's and affected adjacent jurisdictions of the Floodway Revision incorporated in this requested LOMR.

John A Lewis P.E.

WILLDAN ASSOCIATES
TOWN ENGINEER

12/31/87
Date

FOR NICK D. BACON, TOWN MANAGER

04-M-5

Town of Surprise

12604 SANTA FE DRIVE • SURPRISE, ARIZONA 85374 • (602) 977-8369

December 28, 1987

Mr. M.J. Hassell
Commissioner
Arizona State Land Department
1624 West Adams
Phoenix, Arizona 85007

Reference: Application of Town of Surprise
Maricopa County for a Letter of Map Revision

Dear Mr. Hassell:

The purpose of this letter is to provide official notification that the Town of Surprise is submitting a request to the Federal Emergency Management Agency (FEMA) for approval of a revision to the Agua Fria floodway boundary. This notification is in accordance with FEMA regulations.

The State Land Department was fully apprised of the Town's intentions to revise the floodway boundaries, and of the revision's impact, at a meeting with Mr. Glendon Collins on December 1, 1987. (A copy of our record of the meeting is attached for your information.) The meeting concluded with a verbal agreement from Mr. Collins that the Department had no objection to the proposed adjustment of the floodway boundaries further west on the State land.

Although FEMA regulations do not require consent from the affected land owners, such a consent would be beneficial and a positive step to help expedite this application. Therefore, we have prepared the following consent statement and request it be signed and returned to us.

If you have any additional questions, please contact John A. Lewis, P.E., Willdan Associates at (602) 870-7600.

Sincerely,

John A. Lewis, P.E.
WILLDAN ASSOCIATES

For Nick Bacon, Town Manager

JAL:sb
04-40A-1

Attachment

CONSENT

The Arizona State Land Department hereby consents to such revision, which it acknowledges will increase the amount of state acreage in Section 25, T4N, R1W, G&SRB&M, designated as within the floodway.

Given under my hand and the official seal of the Arizona State Land Department this _____ day of _____, 1987.

M.J. Hassell, Commissioner
Arizona State Land Department

By_____

LAW OFFICES

FENNEMORE CRAIG

A PROFESSIONAL CORPORATION

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JAMES POWERS
C. WEBB CROCKETT
KENNETH J. SHERK
MICHAEL PRESTON GREEN
LOUIS F. COMUS, JR.
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J. GREGORY OSBORNE
PAUL J. MOONEY
RITA A. EISENFELD
MARGARET R. GALLOGLY
SCOTT M. FINICAL
J. MICHAEL IVENS
CHRISTOPHER SKELLY
PETER M. GERSTMAN
MICHAEL J. ALLEN
JAMES P. O'SULLIVAN
JAMES J. TRIMBLE
PHILIP H. DARROW
JIM L. WRIGHT
J. BARRY SHELLEY
NIKOLAS T. NIKAS
JEFFREY A. GRABOWSKI
DIANE M. EVANS
GARY H. ASHBY
ELLEN KEEZER
MARC T. STEADMAN

KENT A. BLAKE
ARTHUR D. EHRENREICH
WILLIAM T. BOUTELL, JR.
ROBERT P. ROBINSON
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LAWRENCE A. PESHKIN
C. OWEN PAEPKE
NANCY L. ROWEN
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ROSEMARY J. SHOCKMAN
DAVID A. WEATHERWAX
MARC L. SPITZER
ROLF R. VON OPPENFELD
WILLIAM T. BURGHART
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E. J. KOTALIK, JR.
WILLIAM D. PITTS
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CHRISTOPHER L. CALLAHAN
MARY K. SIMMONS
BRENDA K. CHURCH
STEVEN P. KRAMER
CATHERINE L. POTTER
MARTIN P. CLARE
PAUL SALA
JAMES MORROW
JOHN RANDALL JEFFERIES

DEC 1987
Received
Willdan Associates
Phoenix

PHOENIX OFFICE
SUITE 2200
TWO NORTH CENTRAL AVENUE
PHOENIX, ARIZONA 85004-2390
(602) 257-8700
TELECOPIER: 602-257-8527
TWX: 910-950-4608

SCOTTSDALE OFFICE
SUITE A201
6991 EAST CAMELBACK ROAD
SCOTTSDALE, ARIZONA 85251-2466
(602) 257-5400
TELECOPIER: 602-945-4932

WRITER'S DIRECT LINE
257-5428

December 1, 1987

Mr. Glendon Collins
Deputy Commissioner
Arizona State Land Department
1624 West Adams
Phoenix, Arizona 85007

Re: Adjustment of Floodway Boundaries in Section 25, T4N, R1W

Dear Mr. Collins:

This letter will confirm our discussions at the November 24, 1987 meeting attended by you, Dale Altshul and Art Cornelius of the State Land Department, and by Steve Baer of Wallace Associates, John Lewis of Willdan Associates, Jim Gillespie of Del Coor Company, Don Anderson of Anderson-Nelson, Inc. and Scot Butler and me from Fennemore Craig. The purpose of the meeting was to consult with the Department regarding an application to be filed with the Federal Emergency Management Agency ("FEMA") by the Town of Surprise, to adjust the boundaries of the 100-year floodway in Section 25, T4N, R1W. The intent is to file the application in cooperation with the Department and BCC Limited Partnership ("BCC"), one of the owners of the east half of the east half of that section ("Brookview"). BCC is a consortium of lenders on Brookview which now owns an undivided interest in the property.

Steve Baer explained the origin of the problem. Brookview was originally planned for a residential development including patio homes, a golf course and a hotel. Prior to any development, Cella Barr Associates conducted a detailed topographic study and a HEC-2 analysis of the flow of the Agua

Fria River above Bell Road, which study was apparently based on data which was available from FEMA as a result of its preparation of floodway maps under a re-study of flood flows. At the time Cella Barr prepared its detailed analysis, FEMA's more general study had not been finalized.

After Cella Barr completed its detailed study, FEMA completed its more broadbrush mapping in establishing floodway lines. The results of the FEMA general study have been published, but not finally approved. The essence of the application to be submitted to FEMA by the Town of Surprise is to apply Cella Barr's more detailed analysis on a particular stretch of the river, moving a portion of the proposed FEMA floodway lines in a northwesterly direction. The effect is to decrease on the map the portion of Brookview shown as within the floodway and to increase the portion of state land in the west half of Section 25 shown within the floodway.

We reviewed with you and the Department personnel a topographic map during the meeting. The affected portion of the state land is a narrow strip of low land along the river, backed by a high cliff. Several engineers, including those at the meeting, have examined the detailed study and concluded that the actual flow of the river, even under topographic conditions prior to any development at Brookview, would most likely push against the cliff, conforming to the floodway lines as proposed in the town's application to adjust the boundary. As one step in the application process, however, FEMA has requested some form of acknowledgment and consent from the affected landowner, in this case the State Land Department.

Art Cornelius recalled that he had worked with Cella Barr Associates on this same problem several years ago and that the State Land Department had at that time reviewed the detailed analysis of Cella Barr and agreed that the floodway line should be drawn on the map as proposed in the application. However, as with many preliminary matters, the Department's position was not memorialized at that time.

After confirming the Department's involvement and position with Mr. Cornelius and Mr. Altshul, who saw no objection to the proposed floodway line adjustment, you indicated that the State Land Department would not object to the Town of Surprise's application to adjust the FEMA floodway map. John Lewis, the consulting engineer for the Town of Surprise who is preparing the FEMA application in conjunction with BCC, will cooperate with the Department in fulfilling FEMA's consent requirements. Also, Mr. Lewis will provide copies of the application to Dale Altshul.

Please let us know if our description of the discussions and understandings is inaccurate. We anticipate that Mr. Lewis will be providing you with a form of consent and a copy of the application in the near future. We thank you and the Department for taking the time to meet with us, and for your cooperation in this matter.

Sincerely,

Philip H. Darrow
For the Firm

PHD:jes
bcc: Mr. John Lewis

Arizona
State Land Department

EVAN MECHAM
GOVERNOR

1616 WEST ADAMS
PHOENIX, ARIZONA 85007

M. J. HASSELL
STATE LAND COMMISSIONER

FEB 1988
Received
Willdan Associates
Phoenix

February 3, 1988

Mr. Don Lawrence
Chief of the Engineering Division
Federal Emergency Mapping Agency
Arizona Department of Water Resources
99 E. Virginia
Phoenix, Az. 85004

Dear Mr. Lawrence:

It is our understanding that the Town of Surprise will submit a request to the Federal Emergency Mapping Agency (FEMA) to revise the Agua Fria River floodway boundaries. We have been asked by the Town of Surprise to comment on this action.

On November 24, 1987, discussions were held with the Arizona State Land Department, consultants representing the Town of Surprise, and BBC Limited Partnership. During our conference, we reviewed the proposal, and our staff has also reviewed the engineering study prepared by Cella Barr Associates. We concur with the findings in the engineering study and the proposal to change the floodway boundaries on the FEMA map.

It is further the Department's understanding that this letter of support is only for the floodway boundary re-designation. This support does not imply that the Department automatically consents to or supports any physical alterations to the floodway or the river channel itself, nor does it assume any liabilities as a result of this concurrence.

We feel that the Town of Suprise has presented some viable alternatives that should be favorably considered when reviewing the re-designation of the Agua Fria River Floodway.

Sincerely,

Glendon E. Collins

Glendon E. Collins
Deputy State Land Commissioner

c: Mr. Nick Bacon, Town Manager for the Town of Surprise
Mr. John A. Lewis, P.E. Willdan Associates
Mr. Phil Darrow, Attorney Fennemore Craig
The Engineering Division, Maricopa County Flood Control District
Ms. Denise Fuerst, Chief of Hydrology, Arizona State Land Department
Mr. Art Cornelius, Land Mapping Technician, Arizona State Land Department

GEC:DMF:ma

RESOLUTION NO. 87-30

A RESOLUTION OF THE MAYOR AND COMMON COUNCIL OF THE TOWN OF SURPRISE, MARICOPA COUNTY, ARIZONA APPROVING AND ADOPTING PROVISIONS FOR REVISION OF THE AGUA FRIA RIVER FLOODWAY BOUNDARY WITHIN THE TOWN OF SURPRISE AND DIRECTING THAT SUCH REVISION BE FORWARDED TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR CONSIDERATION

WHEREAS, the Town of Surprise, by enacting Resolution 84-6 on or about June 14, 1984, has elected to retain jurisdiction for floodplain management within the boundaries of the Town as permitted by A.R.S. Section 48-3610 (formerly Section 45-2350); and

WHEREAS, the Town has received a proposal for development within the floodplain management area which calls for an encroachment upon the existing floodway limit boundary; and

WHEREAS, said proposed encroachment calls for modification to be made to the existing topography to ensure that the development area is outside the contemplated floodway area for the Agua Fria River, and meets the requirement of the Federal Emergency Management Agency, and

WHEREAS, the proposed floodway revision has been reviewed for the Town by Town Staff and by Ellis-Murphy Consulting Engineers which has issued it's opinion to the Town that the proposed floodway map revision is within the requirements of federal and state law.

NOW THEREFORE, be it resolved by the Mayor and Common Council of the Town of Surprise as follows:

Section 1: Approving and adopting the proposed revisions to the floodway boundary map for the Agua Fria River as detailed in Ellis-Murphy Consulting Engineers Job No. 25013 dated June 19, 1987 for and on behalf of the Town of Surprise.

Section 2: Directing that notice of such revision be forwarded to the Arizona Department of Water Resources, and to the Maricopa County Flood Control District, by the Town of Surprise Floodplain Administrator.

Section 3: Authorizing the filing of the revision approved herein with the Federal Emergency Management Agency, with the request that said revision be incorporated into the floodway boundary map.

PASSED AND ADOPTED by the Mayor and Common Council of the Town of Surprise this 25th day of June, 1987.

_____
MAYOR

ATTEST:

_____
TOWN CLERK

APPROVED AS TO FORM:

_____
TOWN ATTORNEY

ENGINEERING CERTIFICATION

WILLDAN ASSOCIATES ☐ ENGINEERS & PLANNERS

CERTIFICATION

In accordance with the requirements of FEMA regulations the enclosed HEC-II analysis was made under the supervision of a civil engineer registered in the State of Arizona.

Registered Professional Engineer (Civil)
CERTIFICATE NO.
16723
JOHN A.
LEWIS
Date Signed 12/31/
ARIZONA, U.S.A.

1717 WEST NORTHERN AVENUE • SUITE 112 • PHOENIX, ARIZONA 85021 • (602) 870-7600

PROJECT DESCRIPTION AND EXHIBIT A

PROJECT DESCRIPTION

HISTORY

The Brookview Country Club project, which is a combined residential and golf course community, was started in 1978 by its original owner and developer, the Helzer Development Corporation. At that time, Cella Barr Associates were retained as the developer's civil engineer. The project is located along the east floodplain of the Agua Fria River with 115th Avenue as the eastern boundary and extends from Bell Road north to Beardsley Road, it is within the corporate boundaries of the Town of Surprise. (See Vicinity Map and Exhibit A.)

Cella Barr prepared and submitted grading plans to the Town of Surprise for approval in 1983. Approval was given by the Town of Surprise based on a review by the Flood Control District of Maricopa County. One of the intentions of the grading design was that it conform with the applicable regulations which would permit the entire development to be removed from the floodplain.

At this time, the project was sold to GWB/LC1/JV5, who in turn hired Mountain View Development as their general contractor and to serve as agent for the owner.

Early 1984, Mountain View went out to bid for construction of the development, including site grading. Markham Contracting was awarded a design-build contract and in turn retained Moore-Knickerbocker as their engineer and surveyor. Grading construction was started by Markham's subcontractor M.M. Sundt in May, 1984, and finished in September, 1984, to current elevations. Compaction tests were run during grading and filling by Construction Inspection and Testing Company.

In late 1985, the project went into foreclosure and was purchased by the participant lenders, represented by Worthern Bank. In February, 1986, the lenders contracted to have embankment protection constructed along the Agua Fria River which was completed in February, 1987. The embankment protection was designed by Anderson-Nelson, Inc. for Moore-Knickerbocker prior to the foreclosure on the property. The current owners verified with 1) the Building Safety Department, Town of Surprise, and 2) the Flood Control District, Maricopa County, that the original permits which had been issued were current and valid. It was also verified that permits were not required from the Corp of Engineers, Los Angeles, California.

In May 1987, Ellis-Murphy, Inc. on behalf of the Town of Surprise, prepared the necessary information for the floodway portion of this request and reviewed documentation from the applicant for the floodplain portion for this request for LOMR. This submittal was forwarded for review in June of 1987. FEMA responded to this request in their letter dated September, 1987 to the Town of Surprise, a copy of which is enclosed for reference.

PRESENT STATUS

The project, at this time, sits idle. The present owner is not in the development business and as such is trying to sell the property to someone who will complete the improvements and finish the development. Almost all of the underground utilities have been installed and the road improvements on 115th Avenue along the east boundary of the property have been completed. The interior streets have been rough graded, but are not paved. Several model homes have been completed and are sitting vacant. Half of the golf course has been constructed and is being maintained at a very minimal level.

This request for a letter of Map Revision is being made for social and economic reasons to revise the regulatory floodway along a section of the Agua Fria River in order to mitigate an encroachment into the east floodway boundary by the owner's floodplain filling. The request is considered to be justifiable because it will allow the development of a relatively large project for the Town of Surprise to proceed. This submittal has been prepared in accordance with FEMA regulations 65.7 "Floodway Revisions".

PHASING

The development of the project has been phased for the FEMA submittals because the encroachment only applies to a small area at the north end of the project. During initial discussion with FEMA and the Technical Evaluation Contractor it was agreed that the owners could split the project into two phases thus speeding the release of part of the project from the floodplain.

Consequently, the project has been divided into two phases, each with its own legal description (see Exhibit C). Phase I involves placement of fill within the floodplain only. Phase II involves mitigation of the floodway encroachment through a floodway boundary revision to be followed by a request for floodplain filling of Phase II. A request for a Conditional Letter of Map Revision for the Phase I floodplain filling has been submitted by the property owner. This request has been forwarded by the Town to MCFCD/ADWR/FEMA for review and approval to be followed by the Phase II request for Letter of Map Revision for the floodway boundaries. Following approval of the Phase II LOMR for floodway boundary revisions a final submittal will be forwarded for a Conditional Letter of Map Revision for Phase II, floodplain filling.

METHODOLOGY

The methodology generally conforms with that outlined in the FEMA regulations 65.7 and consists of obtaining necessary studies, maps, engineering drawings, site visits and discussions with various officials with knowledge of the project and/or the process. The information and data was analyzed, assessed and supplemented where required. The final results are presented in this request for LOMR.

The original HEC-II input/output files for the Preliminary FIS September 30, 1986 were obtained from Baker Engineers. Because the files included extensive reaches of the Agua Fria River both upstream and downstream of the affected area, we isolated a reasonable section from the files for this analysis such that the affects of the encroachment were not carried beyond our study reach. The original topographic maps, and hydrology were used as they appear in the original input files.

The HEC-II program was run for our study reach for the conditions listed below:

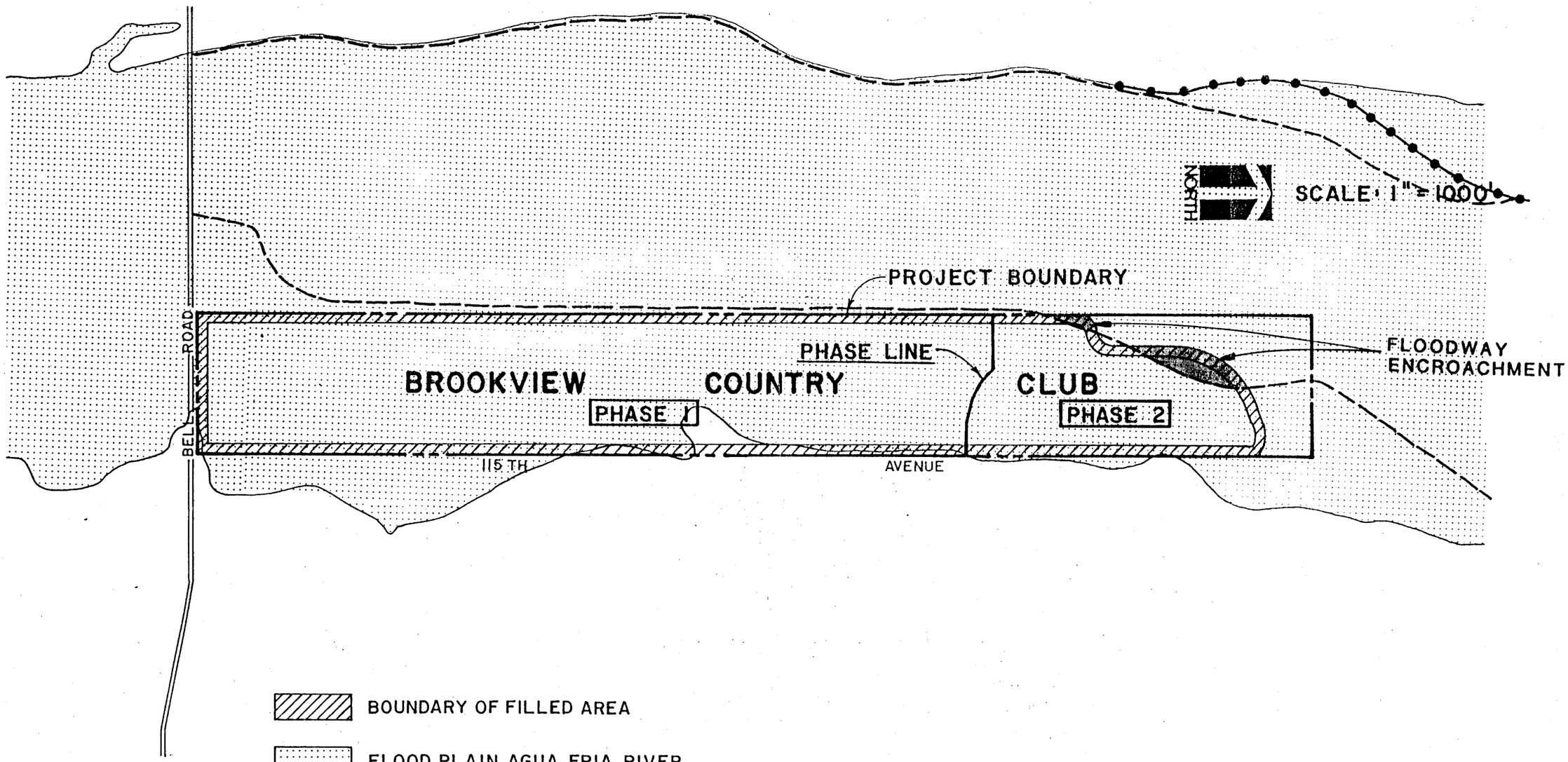
- Original predevelopment topography to confirm the original BFE's and the matching of our analysis with the original study.

- Original floodway model to confirm the original results and boundaries.

- The revised floodway model based on the proposed adjusted floodway boundaries due to the encroachment in order to demonstrate that the floodway boundaries could be adjusted to fit the actual topographic and hydraulic conditions, thereby mitigating the encroachment without any adverse affects to surrounding property. (Exhibit B)

- With the HEC-II results confirming that the floodway boundary adjustments can be made to mitigate the encroachment, the balance of the submittal documentation was prepared.

04-30A-2



BOUNDARY OF FILLED AREA

FLOOD PLAIN AGUA FRIA RIVER

EXISTING FLOODWAY BOUNDARY

REVISED FLOODWAY BOUNDARY

WILLDAN ASSOCIATES
ENGINEERS • PLANNERS
1717 W. NORTHERN AVE., SUITE 112, PHOENIX, AZ 85021
(602) 870-7600

EXHIBIT A
12/87

PRELIMINARY (1986)
FLOOD INSURANCE STUDY
HEC-II DATA FOR B.F.E.'S

NATURAL RUN

```
                                                                                  THIS RUN EXECUTED 24 FEB 84      8:30:20
HEC-2  RELEASE DATED NOV 76  UPDATED MARC 1982

C
T1     AGUA FRIA RIVER  GILA RIVER TO JOMAX ROAD
T2     MARICOPA COUNTY F I S 1983

J1       1.       4.       0.       0.  0.001000     0.00      0.0       0.   917.000    0.000
J2   NPROF    IPLOT    PRFVS    XSECV    XSECH       FN    ALLDC      IBW    CHNIM   ITRACE

        38.000   43.000   53.000   21.000   55.000   26.000   56.000   22.000   54.000    4.000

         1.000   50.000  201.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000

EI       0.000    0.000    9.100    0.000    0.000    0.000    0.000    0.000 9200.000 12800.000
         FROM CONFLUENCE TO RM 9.718, HYDRAULIC MODEL IS BASED ON 1981
         CORPS OF ENGINEERS TCPO, 2 FT C.I., 1 INCH = 200 FEET.
         THE INTERSECTION POINT OF STREAMLINE AND X SECTION LINE IS SET
         [illegible] DOWNSTREAM GILA RIVER
         [illegible] NORMAL DEPTH STARTING ESEL
         [illegible] ARTIFICIALLY RAISED BY
         EFFECTIVE CONVEYANCE.
X1       0.135   55.000 9100.000 10800.000    0.000    0.000    0.000    0.000    0.000    0.000
GR     920.000 6600.000  920.000  7900.000  918.000 8190.000  916.000 8200.000  916.000 8350.000
GR     917.600 8400.000  917.600  9100.000  916.000 9160.000  914.000 9165.000  912.000 9195.000
GR     [illegible]
GR     [illegible]
GR     [illegible]
GR     [illegible]
GR     912.000 11540.000 911.600 11620.000  912.000 11730.000  914.000 11820.000  916.000 11920.000
GR     920.000 12070.000 914.000 12150.000  916.000 12280.000  919.500 12420.000  917.500 12550.000
GR     914.000 13230.000 920.000 13270.000  920.700 13300.000  920.500 13420.000  921.000 13540.000
GR     920.000 13650.000 919.000 13840.000  919.000 13950.000  918.000 14050.000  917.700 15000.000
GR     [illegible]
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         GLOB      GCF       GROB      ALCH      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=     18.81          CWSEL=   1158.75

STA=     9059.     9060.    10420.
  PER Q=      0.0     100.0
  AREA=       2.7    5234.5
   VEL=       1.5      11.0

*SECNO 18.893

3301 HV CHANGED MORE THAN HVINS

3455 OVERBANK AREA ASSUMED NON-EFFECTIVE.ELLEA=     1166.00 ELREA=     1170.00

          LOWASTREAM SIDE BELL ROAD
    18.89     11.76  1160.26      0.00  1155.25  1161.59      1.33      0.90      0.05  1172.00
   115000.       0.  115000.        0.       0.   12424.        0.    43325.     9716.  1168.40
     4.94      0.00      9.26      0.00    0.045    0.030     0.040     0.000   1148.50  9264.99
 0.001345      450.      450.      450.        2        0         0      0.00   1072.75 10337.73

FLOW DISTRIBUTION FOR SECNO=     18.89          CWSEL=   1160.26

STA=     9265.    10350.
  PER Q=     100.0
  AREA=   12424.4
   VEL=       9.3

SPECIAL BRIDGE

SB  XK      XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
    1.10      1.56      3.00      0.00   1040.00     56.00  17035.00     1.80   1148.50   1148.50

*SECNO 18.906
CLASS A LOW FLOW

3420 BRIDGE W.S.=    1163.06 BRIDGE VELOCITY=,      9.90      CALCULATED CHANNEL AREA=,     11611.

EGPRS     EELWC     F3        QWEIR     QLOW      BAREA     TRAPEZOID AREA     ELLC      ELTRD
    0.00   1161.80      0.25        0.   115000.    17035.     19135.     1167.30   1165.70
```



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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         GLOB      GCF       GROB      ALCH      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=     1165.80 ELREA=     1172.00

          HELL ROAD BRIDGE UPSTREAM SIDE
    18.91     12.01   1160.51      0.00   1155.26   1161.80      1.29      0.21      0.00   1148.50
   115000.       0.   115000.        0.        0.   12626.        0.    43345.      9718.   1168.40
     4.96      0.00      9.11      0.00     0.045     0.030     0.040     0.000   1148.50   9250.00
 0.001265       70.       70.       70.         0         0         0      0.00   1072.25  10322.25

FLOW DISTRIBUTION FOR SECNO=     18.91          CWSEL=   1160.51

STA=     9250.    10350.
  PER Q=     100.0
   AREA=   12629.5
    VEL=       9.1

CCHV=    0.100 CEHV=    0.300
1490 AH CARD USED
*SECNO 19.025

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     8650.0    10360.0  TYPE=      1  TARGET=    -8650.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1160.00 ELREA=    100000.00

    19.03      9.60   1161.60   1161.60   1157.48   1164.35      2.74      1.75      0.44   1160.00
   115000.   255934.    85407.        0.      3153.      5932.        0.    43507.      9738.  100000.00
     4.96      9.38     14.40      0.00     0.040     0.035     0.040     0.000   1152.00   8650.00
 0.005229      650.      650.      650.        20        15         0      0.00   1642.43  10292.43

FLOW DISTRIBUTION FOR SECNO=     19.03          CWSEL=   1161.60

STA=     8650.     9200.     9400.    10360.
  PER Q=      21.6       4.1      74.3
   AREA=    2532.5     620.9    5931.5
    VEL=       9.8       7.6      14.4
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     BANK ELEV
   Q         GLOB      CCH       QROB      ALOB      ACH       AROB      VOL       TWA       LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XAL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 AH CARD USED
*SECNO 19.245

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     7400.0    10160.0  TYPE=      1  TARGET=    -7400.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1165.70 ELREA=     1176.00

    19.24     10.89   1168.89      0.00   1165.67   1169.58      0.68      5.02      0.21   1165.70
   115000.    84363.    30637.        0.     13322.      4143.        0.    43913.      9805.   1176.00
     5.02      4.33      7.39      0.00     0.038     0.035     0.040     0.000   1158.00   7400.00
 0.002126     1450.     1140.     1140.         4         0         0      0.00   2711.12  10111.12

FLOW DISTRIBUTION FOR SECNO=     19.24          CWSEL=   1168.89
```

```
FLOW DISTRIBUTION FOR SECNO=

STA=     7400.     7630.     7840.     8060.     8750.     8880.     9020.     9550.    10120.
  PER Q=     3.9       6.8       5.3      25.7      10.1      10.9      10.5      26.6
   AREA=  1075.5    1237.5    1296.5    4756.2    1286.1    1385.0    2285.3    4143.1
    VEL=     4.2       5.2       5.6       6.2       9.0       9.0       5.3       7.4

1490 NH CARD USED
*SECNO 19.491

3470 ENCROACHMENT STATIONS=    6000.0   10160.0  TYPE=     1  TARGET=   -6000.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE.ELLEA=      1167.10 ELREA=    100000.00

     19.49     10.67   1171.67      0.00   1168.95   1172.37      0.70      2.79      0.01   1167.10
    110000.   73433.   41567.        0.   13989.     4766.        0.    44454.      9908.  100000.00
      5.07      5.26      8.72      0.00     0.037     0.035     0.040     0.000   1161.00   6000.00
  0.002167     1300.     1300.     1300.         4         0         0      0.00   4141.51  10141.51

FLOW DISTRIBUTION FOR SECNO=      19.49          CWSEL=   1171.67

STA=     6000.     6520.     7780.     8350.     8730.     9000.     9630.    10160.
  PER Q=     6.2       5.8      17.7      19.5       4.7      10.0      36.1
   AREA=  2881.2    1214.3    3232.2    2914.8    1151.0    2595.9    4766.4
    VEL=     2.5       5.5       6.3       7.7       4.7       4.4       8.7
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     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     BANK ELEV
       Q       ELOB      GCH       GROB      ALCH      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

1490 NH CARD USED
*SECNO 19.700
     19.70     11.32   1174.32      0.00   1170.07   1175.14      0.81      2.73      0.03   1170.00
    116000.   68916.   37138.    10846.    11110.     4123.     1561.    44887.     10007.      1171.00
      5.11      6.12      9.01      6.95     0.036     0.035     0.035     0.000   1163.00   6508.40
  0.003069     1050.     1100.     1060.         2         0         0      0.00   4057.41  10565.81

FLOW DISTRIBUTION FOR SECNO=      19.70          CWSEL=   1174.32

STA=     6508.     7800.     8080.     8520.     8810.     9040.     9190.     9700.    10250.    10530.    10566.
  PER Q=     3.9       6.5      16.8      11.1      10.1       3.5       6.7      32.0       8.6       0.7
   AREA=  1449.5    1210.7    2562.6    1625.0    1454.5     648.6    1695.3    4123.2    1424.7     136.5
    VEL=     2.5       6.2       7.6       7.6       8.0       6.2       4.6       9.0       7.0       6.0

1490 NH CARD USED
*SECNO 19.525
     19.93     11.90   1177.90      0.00   1174.62   1178.61      0.71      3.46      0.01   1172.40
    116000.   68055.   25855.    22050.    11798.     2986.     3187.    45351.     10113.      1173.00
      5.16      5.77      8.67      6.92     0.040     0.035     0.035     0.000   1166.00   6944.48
  0.002869     1150.     1210.     1150.         2         0         0      0.00   3892.39  10836.88

FLOW DISTRIBUTION FOR SECNO=      19.93          CWSEL=   1177.90

STA=     6944.     8110.     8310.     8610.     8920.     9070.     9210.     9830.    10230.    10800.    10837.
  PER Q=     4.9       7.2       7.3       7.5       6.4       6.0      19.3      22.3      18.6       0.4
   AREA=  2123.6    1140.1    1470.1    1519.1    1035.1     966.0    3534.2    2986.1    3078.2     108.8
    VEL=     2.7       7.3       5.7       5.7       7.2       7.2       6.3       8.7       7.0       4.6

1490 NH CARD USED
*SECNO 20.122

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE.ELLEA=      1175.50 ELREA=     1200.00

     20.12      8.73   1180.73      0.00   1176.77   1181.54      0.81      2.90      0.03   1175.50
    116000.   70571.   45625.        0.    11994.     5166.        0.    45756.     10199.      1200.00
```

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   5.28      5.92      9.83      0.00     0.040     0.035     0.035     0.000   [illegible]   6724.34
0.012885    1000.     1020.     1020.         2         0         0      0.00   3571.09  10295.59

FLOW DISTRIBUTION FOR SECNO=      20.12          CWSEL=    1180.73

STA=     6725.     7740.     8950.     9160.     9620.    10330.
  PER Q=     3.2      25.5      11.4      20.2      19.3
    AREA=  1546.8    5441.2    1693.8    3211.9    5166.5
     VEL=     2.4       5.4       8.1       7.3       8.8
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24 FEB 84      8:30:19                                                                                PAGE  339

   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
   Q          GLCH       GCH        GROH       ALCH       ACH        AROP       VOL        TWA      LEFT/RIGHT
   TIPE       VLCH       VCH        VRCH       ANL        XNCH       XNR        WTN        ELMIN       SSTA
   SLOPE      XLCHL      XLCH       XLCHR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST

1490 AH CARD USED
*SECNO 20.382
     20.38      8.96    1184.56       0.00    1180.82    1186.19       1.24       4.53       0.13    1180.00
  117000.    55720.    61280.         0.      9460.      5586.         0.      46258.     10312.     1192.00
      5.25       5.89      10.97       0.00       0.038      0.035      0.035      0.000    1176.00    6688.03
0.012948      1360.     1370.     1370.         2         0         0      0.00    3667.96  10355.99

FLOW DISTRIBUTION FOR SECNO=      20.38          CWSEL=    1184.96

STA=     6688.     7620.     7950.     8180.     8940.     9700.    10400.
  PER Q=     5.6      10.7       3.2       8.6      21.6      52.4
    AREA=  1227.1    1036.1     697.3    2148.1    3768.1    5585.6
     VEL=     3.4       7.7       5.4       4.7       6.7      11.0

1490 AH CARD USED
*SECNO 20.575

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=    1183.50 ELREA=    1232.00

     20.58     10.86    1188.96       0.00    1184.83    1190.18       1.32       3.97       0.02    1183.50
  117000.    56176.    60824.         0.      8593.      5331.         0.      46599.     10395.     1232.00
      5.38       6.25      11.28       0.00       0.038      0.035      0.035      0.000    1178.00    6686.19
0.004002      1000.     1020.     1020.         2         0         0      0.00    3537.45  10223.64

FLOW DISTRIBUTION FOR SECNO=      20.58          CWSEL=    1188.86

STA=     6686.     7480.     7600.     7800.     7950.     8100.     8200.     8980.     9220.     9600.    10290.
  PER Q=     5.7       6.0       5.8       3.3       3.3       3.1       4.5       6.7      11.6      52.0
    AREA=  1257.1     763.5     840.2     579.9     579.9     466.6    1335.4    1167.8    1944.0    5351.2
     VEL=     3.4       9.2       7.5       6.6       6.6       7.7       4.0       6.7       7.0      11.3

1490 AH CARD USED
*SECNO 20.738

3301 FV CHANGED MORE THAN HVINS

     20.74     11.71    1191.71       0.00    1187.12    1192.45       0.74       2.21       0.06    1184.00
  115000.    60312.    53464.     5225.     12394.      6130.       937.      46918.     10462.     1184.00
      5.31       4.87       8.72       5.57       0.039      0.035      0.045      0.000    1180.00    6726.23
0.001904       800.      860.      840.         2         0         0      0.00    3696.98  10423.21
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         GLOB      GCH       GROB      ALOB      ACH       AROB      VOL       TWA       LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

FLOW DISTRIBUTION FOR SECNO=      20.74          CWSEL=   1191.71
STA=     6726.     7170.     7580.     7930.     8210.     8550.     9000.     9180.     9430.     9700.    10300.    10420.    10423.
PER Q=     3.3       3.3       3.4       3.0       4.1       5.4       4.5      10.4      11.2      44.5       4.4       0.0
AREA=   1081.8    1159.0    1263.0     898.4    1260.9    1668.8    1027.5    1939.6    2094.8    6130.1     925.0      12.4
VEL=       3.7       3.7       4.7       4.0       3.9       3.9       5.2       6.4       6.4       8.7       5.6       1.9

1450 NH CARD USED
*SECNO 20.993
  20.99    -10.47   1193.87      0.00   1189.24   1194.58      0.71      2.13      0.00   1192.00
 115000.    26154.    74557.    18290.     7406.     9369.     4067.    47421.    10550.    1188.00
   5.36      3.53      7.56      4.50     0.044     0.035     0.045     0.000   1183.40   7036.69
0.001779     819.      1350.     1370.       2         0         0      0.00   4047.97  11084.67

FLOW DISTRIBUTION FOR SECNO=      20.99          CWSEL=   1193.87
STA=     7037.     7480.     8330.     8670.     8850.     9200.     9380.    10380.    10530.    10900.    11060.    11085.
PER Q=     4.7       3.4       5.8       3.6       3.9       0.6      62.7       3.6       7.8       3.6       0.4
AREA=   1460.2    1576.3    1689.5     990.9    1353.2     335.9    9369.2     917.4    2096.5     946.6     106.7
VEL=       3.8       2.6       4.1       4.3       3.4       2.1       8.0       4.7       4.4       4.6       3.9

1450 NH CARD USED
*SECNO 21.241

3265 DIVIDED FLOW

  21.24      8.84   1196.94      0.00   1194.09   1198.04      1.10      3.35      0.12   1192.00
 115000.    44341.    38593.    36966.     6799.     3332.     5876.    47885.    10644.    1194.00
   5.40      6.52     11.58      6.14     0.044     0.035     0.045     0.000   1188.00   7808.26
0.005697     819.      1310.     1240.       3         0         0      0.00   3942.03  11940.88

FLOW DISTRIBUTION FOR SECNO=      21.24          CWSEL=   1196.94
STA=     7808.     8000.     8390.     9350.     9550.     9870.    10350.    10700.    10820.    11170.    11600.    11910.    11941.
PER Q=     3.5       4.6      17.3       4.6       7.3      32.4       3.8       3.7       7.2       6.9       8.5       0.3
AREA=    596.1    1016.9    2933.4     845.7    1341.1    3331.6     941.8     592.9    1379.3    1434.5    1451.6      76.3
VEL=       6.9       5.4       6.9       6.5       6.5      11.6       4.8       7.4       6.2       5.7       7.0       4.5

*SECNO 21.465
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         GLOB      GCH       GROB      ALOB      ACH       AROB      VOL       TWA       LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

3301 HV CHANGED MORE THAN HVIAS

          LOB WEST SUN CITY WWTP
          THIS SECTION ALONE IS TAKEN LOOKING UPSTREAM
  21.47     14.43   1199.43      0.00   1195.38   1199.75      0.32      1.63      0.08   1194.00
 115100.    45951.    65968.     7083.    13601.    12272.     2678.    48428.    10737.    1194.00
   5.47      3.38      5.38      2.64     0.040     0.035     0.045     0.000   1185.00   7519.24
0.000688     990.      1200.     1800.       3         0         0      0.00   3943.71  11462.96
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FLOW DISTRIBUTION FOR SECNO=      21.47          CWSEL=   1199.43

STA=     7519.    7811.    7994.    8179.    8361.    9623.    8910.    9052.    9175.    9368.    9573.    9718.   10872.
  PER Q=      5.1      3.2      3.0      3.1      3.0      4.4      3.7      4.1      3.1      3.4      2.4     55.4
   AREA=   1790.6   1141.5   1108.9   1126.5   1275.9   1613.1   1119.5   1142.3   1142.3   1249.9    890.2  12272.0
    VEL=      3.4      3.3      3.2      3.3      2.8      3.2      4.0      4.3      3.2      3.3      3.3      5.4
STA=    10872.   11143.   11463.
  PER Q=      3.6      2.3
   AREA=   1548.2   1129.9
    VEL=      2.9      2.5

*SECNO 21.681
          ROSE GARDEN LANE CROSSING.
   21.68    11.44  1200.44     0.00  1195.92  1200.92     0.47     1.12     0.04  1204.00
  115000.       0.    59760.   59240.       0.     9184.   13795.   49070.   10834.   1198.00
    5.52     0.00     6.51     4.29    0.040    0.035    0.045    0.000  1189.00  9133.60
 0.001880     950.     1120.    1150.        3        0        0     0.00  3811.12 12944.72

FLOW DISTRIBUTION FOR SECNO=      21.68          CWSEL=   1200.44

STA=     9134.   10399.   10710.   10947.   11138.   11258.   11427.   11659.   11858.   11982.   12107.   12229.   12363.
  PER Q=     50.2      3.2      3.2      3.3      3.3      3.4      3.4      4.2      3.1      3.1      3.3      3.2
   AREA=   9183.8   1150.6   1046.2    955.8    798.3    941.5   1061.5   1133.4    799.1    750.0    811.7    838.0
    VEL=      6.5      3.5      3.7      4.1      4.9      4.3      3.8      4.4      4.7      4.6      4.8      4.6
STA=    12363.   12495.   12619.   12786.   12938.   12945.
  PER Q=      3.1      3.1      3.4      3.1      0.0
   AREA=    800.1    792.6   1008.6    853.0      8.2
    VEL=      4.5      4.7      4.5      4.3      1.5

*SECNO 21.880
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24 FEB 84      8:30:19                                                                                          PAGE  342

   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     XAL       XACH      XNR       WTN       ELMIN    SSTA
   SLOPE     XLOBL     XLCH      XLOBR    ATPIAL    IDC       ICONT     CORAR     TOPWID   ENDST

3470 ENCROACHMENT STATIONS=     8750.0   13876.0  TYPE=     1  TARGET=   -8750.000
          FROM RM 21.880 TO RM 25.592, MODEL IS BASED ON MARICOPA CO. FCD
          TOPO OF JULY 1983, 4 FOOT C.I., 1 INCH = 200 FEET MAP
          AND DIGITIZED CROSS-SECTIONS.
   21.88    12.48  1202.48     0.00  1198.61  1203.27     0.79     2.26     0.09  1198.00
  115000.   29270.   53997.   35733.    4395.    6200.    8442.   49576.   10930.   1198.00
    5.57     6.66     8.71     4.23    0.040    0.035    0.045    0.000  1190.00  8759.84
 0.002846    1050.    1050.    1050.        2        0        0     0.00  4153.12 12912.96

FLOW DISTRIBUTION FOR SECNO=      21.88          CWSEL=   1202.48

STA=     8750.    8967.    8949.    9056.    9166.    9253.    9444.    9498.   10318.   10498.   10626.   10759.   11028.
  PER Q=      4.4      3.7      3.8      4.1      3.6      3.9      1.1     45.4      3.3      3.6      3.6      3.0
   AREA=    730.9    595.1    672.3    702.3    594.5    857.4    242.4   6199.8    817.0    750.6    731.5    906.5
    VEL=      7.1      7.4      6.8      6.9      7.2      5.4      5.4      8.7      4.8      5.7      5.8      4.0
STA=    11028.   11225.   11494.   11816.   12239.   12677.   12913.
  PER Q=      3.4      3.1      3.2      3.3      3.0      0.4
   AREA=    860.8    923.5   1001.9   1098.3   1095.6    255.1
    VEL=      4.7      4.1      3.8      3.5      3.3      1.9

*SECNO 22.065

*3265 DIVIDED FLOW

   22.07     9.86  1205.86     0.00  1202.53  1207.03     1.17     3.65     0.12  1203.00
  115000.   31785.   54436.   32579.    4259.    5119.    5872.   49970.   11021.   1201.00
    5.60     7.40    10.07     5.55    0.040    0.035    0.045    0.000  1196.00  8267.16
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PRELIMINARY (1986)
FLOOD INSURANCE STUDY
HEC-II DATA FOR FLOODWAY

FLOODWAY MODEL

THIS RUN EXECUTED 19 MAR 84 8:39:05

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

C
T1      AGUA FRIA RIVER, NEW RIVER AND SKUNK CREEK.. GILA R TO ACDC PROJECT
T2      LOWER AGUA FRIA REACH FROM GILA TO NEW RIVER CONFLUENCE.NO CHANELIZATION
T3      100 OVERFLOW W/O ENCROACHMENT.WEST AND DOUBLE LEVEE BREACHED BELOW V84.
J1  ICHECK     INQ      NINV     IDIR     SIRT    METRIC    HVINS      Q      WSEL      FQ
       1.       2.       0.       0.  0.001000     0.00      0.0       0.   919.000    0.000
J2  NPROF    IPLOT    PRFVS    XSECV    XSECH      FN    ALLDC     IBW    CHNIM    ITRACE
    1.000    0.000   -1.000    0.000    0.000    0.000    0.000    0.000    0.000    15.000
J3  VARIABLE CODES FOR SUMMARY PRINTOUT
   38.000   43.000   53.000   21.000   55.000   26.000   56.000   22.000   54.000    4.000

    1.000   50.000  200.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000

 Q1     5.000 89000.000 89000.000 22000.000 67000.000 179000.000    0.000    0.000    0.000    0.000
 NC     0.045    0.040    0.035    0.200    0.400    0.000    0.000    0.000    0.000    0.000
 ET     0.000    0.000    9.100    0.000    0.000    0.000    0.000    0.000 9200.000 12800.000
        FROM CONFLUENCE TO RM 9.718, HYDRAULIC MODEL IS BASED ON 1981
        CORPS OF ENGINEERS TOPO, 2 FT C.I., 1 INCH = 200 FEET.
        THE INTERSECTION POINT OF STREAMLINE AND X SECTION LINE IS SET
        AT STATION 10000 FEET.
        AT STA. 1000 FEET. LOOKING DOWNSTREAM . GILA RIVER
        CONTAINED WITHIN BANKS =NORMAL DEPTH STARTING WSEL.
        ALL GRAVEL MINEN HAVE BEEN ARTIFICIALLY FILLED FOR
        EFFECTIVE CONVEYANCE.
 X1     0.135   55.000 9100.000 10800.000    0.000    0.000    0.000    0.000    0.000    0.000
 GR   920.000 6600.000  920.000  7900.000  918.000 8190.000  916.000 8200.000  916.000 8350.000
 GR   917.600 8400.000  917.600  9100.000  916.000 9160.000  914.000 9165.000  912.000 9195.000
 GR   910.000 9200.000  910.000  9235.000  914.000 9240.000  914.000 9290.000  910.000 9310.000
 GR   908.400 9330.000  910.000  9380.000  910.000 10415.000 912.000 10570.000 910.000 10630.000
 GR   908.000 10660.000 910.000  10715.000 912.000 10750.000 914.000 10775.000 916.000 10790.000
 GR   918.000 10800.000 914.000  10810.000 912.000 10840.000 913.000 11000.000 912.000 11150.000
 GR   912.000 11540.000 911.600  11620.000 912.000 11730.000 914.000 11820.000 916.000 11920.000
 GR   920.000 12070.000 914.000  12150.000 916.000 12280.000 919.500 12420.000 917.500 12550.000
 GR   914.000 13230.000 920.000  13270.000 920.700 13300.000 920.500 13420.000 921.000 13540.000
 GR   920.000 13650.000 919.000  13840.000 919.000 14350.000 918.000 14650.000 917.700 15000.000
 GR   917.000 15270.000 917.000  15400.000 916.500 15700.000 918.000 16250.000 918.500 16530.000
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         GLCH      GCH       GROB      ALOB      ACH       AROB      VOL       TWA       LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1165.80 ELREA=     1172.00

          BELL ROAD BRIDGE UPSTEAM SIDE
    18.91     12.01   1160.51      0.00      0.00   1161.80      1.29      0.21      0.00   1148.50
 115000.        0.   115000.        0.        0.     12626.        0.    43282.     9666.   1168.40
    4.94      0.00      9.11      0.00     0.045     0.030     0.040     0.000   1148.50   9250.00
0.001265       70.       70.       70.         0         0         0      0.00   1072.25  10322.25

FLOW DISTRIBUTION FOR SECNO=     18.91          CWSEL=    1160.51

STA=     9250.    10350.
  PER Q=     100.0
   AREA=   12625.5
    VEL=      9.1

CCHV=    0.100 CEHV=    0.300
1490 NH CARD USED
*SECNO 19.029

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     8650.0    10360.0   TYPE=      1   TARGET=    -8650.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      1160.00 ELREA=    100000.00

    15.03      9.60   1161.60   1161.60      0.00   1164.35      2.74      1.75      0.44   1160.00
 115000.    25593.    85407.        0.      3153.     5932.        0.    43444.     9686.  100000.00
    4.96      9.38     14.40      0.00     0.040     0.035     0.040     0.000   1152.00   8650.00
0.005229       650.      650.      650.        20        15         0      0.00   1642.43  10292.43

FLOW DISTRIBUTION FOR SECNO=     19.03          CWSEL=    1161.60

STA=     8650.     9200.     9400.    10360.
  PER Q=      21.6       4.1      74.3
   AREA=    2532.5     620.9    5931.5
    VEL=       9.8       7.6      14.4
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SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       QLOSS    BANK ELEV
G        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

1490 NH CARD USED
*SECNO 19.245

3301 FV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    7400.0    10160.0  TYPE=     1  TARGET=   -7400.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1165.70 ELREA=     1176.00

   19.24    10.89  1168.89     0.00     0.00  1169.58     0.68     5.02     0.21  1165.70
  115000.  84363.  30637.       0.    13322.     4143.       0.   43850.     9754.   1176.00
    5.01     6.33     7.39     0.00    0.038     0.035    0.040    0.000  1158.00   7400.00
0.002126   1450.    1140.    1140.        4         0        0     0.00  2711.12  10111.12

FLOW DISTRIBUTION FOR SECNO=     19.24          CWSEL=  1168.89

STA=     7400.    7630.    7840.    8060.    8750.    8880.    9020.    9550.   10120.
  PER Q=     3.9      6.0      6.3     25.7     10.1     10.9     10.5     26.6
    AREA=  1075.5   1237.5   1296.5   4756.2   1286.1   1385.0   2285.3   4143.1
     VEL=     4.2      5.6      5.6      6.2      9.0      9.0      5.3      7.4

1490 NH CARD USED
*SECNO 19.491

3470 ENCROACHMENT STATIONS=    6000.0    10160.0  TYPE=     1  TARGET=   -6000.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1167.10 ELREA=   100000.00

   19.49    10.67  1171.67     0.00     0.00  1172.37     0.70     2.79     0.01  1167.10
  115000.  73433.  41567.       0.    13989.     4766.       0.   44391.     9856.  100000.00
    5.07     5.25     8.72     0.00    0.037     0.035    0.040    0.000  1161.00   6000.00
0.002167   1300.    1300.    1300.        4         0        0     0.00  4141.51  10141.51

FLOW DISTRIBUTION FOR SECNO=     19.49          CWSEL=  1171.67

STA=     6000.    7520.    7780.    8350.    8730.    9000.    9630.   10160.
  PER Q=     6.2      5.8     17.7     19.5      4.7     10.0     36.1
    AREA=  2881.2   1214.3   3232.2   2914.8   1151.0   2595.9   4766.4
     VEL=     2.5      5.5      6.3      7.7      4.7      4.4      8.7
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         GLOB      GCH       GROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XAL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 19.700
     19.70     11.32   1174.32      0.00      0.00   1175.14      0.81      2.73      0.03   1170.00
    116000.    68016.    37138.    10846.    11110.     4123.     1561.    44824.     9955.    1171.00
      5.11      6.12      9.01      5.95     0.036     0.035     0.035     0.000   1163.00    6508.40
  0.002069     1050.     1100.     1060.         2         0         0      0.00   4057.41   10565.81

FLOW DISTRIBUTION FOR SECNO=     19.70          CWSEL=   1174.32

STA=     6508.     7800.     8080.     8520.     8810.     9040.     9190.     9700.    10250.    10530.    10566.
  PER Q=      3.9       6.5      16.8      11.1      10.1       3.5       6.7      32.0       8.6       0.7
   AREA=   1149.5    1210.7    2562.6    1689.0    1454.5     648.6    1695.3    4123.2    1424.7     136.5
    VEL=      2.5       6.2       7.6       7.6       8.0       6.2       4.6       9.0       7.0       6.0

1490 NH CARD USED
*SECNO 19.929
     19.93     11.90   1177.90      0.00      0.00   1178.61      0.71      3.46      0.01   1172.40
    116000.    68055.    25895.    22050.    11798.     2986.     3187.    45288.    10061.    1173.00
      5.16      5.77      8.67      6.92     0.040     0.035     0.035     0.000   1166.00    6944.48
  0.002569     1150.     1210.     1150.         2         0         0      0.00   3892.39   10836.88

FLOW DISTRIBUTION FOR SECNO=     19.93          CWSEL=   1177.90

STA=     6944.     8110.     8310.     8610.     8920.     9070.     9210.     9830.    10230.    10800.    10837.
  PER Q=      4.9       7.2       7.3       7.5       6.4       6.0      19.3      22.3      18.6       0.4
   AREA=   2133.6    1149.1    1470.1    1519.1    1035.1     966.0    3534.2    2986.1    3078.2     108.8
    VEL=      2.7       7.3       5.7       5.7       7.2       7.2       6.3       8.7       7.0       4.6

1490 NH CARD USED
*SECNO 20.122

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1175.50 ELREA=     1200.00

     20.12      8.73   1180.73      0.00      0.00   1181.54      0.81      2.90      0.03   1175.50
    116000.    70371.    45629.        0.    11894.     5166.        0.    45693.    10147.    1200.00
      5.20      5.92      8.83      0.00     0.040     0.035     0.035     0.000   1172.00    6724.51
  0.002885     1000.     1020.     1020.         2         0         0      0.00   3571.09   10295.59

FLOW DISTRIBUTION FOR SECNO=     20.12          CWSEL=   1180.73

STA=     6725.     7740.     8950.     9160.     9620.    10330.
  PER Q=      3.2      25.5      11.8      20.2      39.3
   AREA=   1546.8    5441.2    1693.8    3211.9    5166.5
    VEL=      2.4       5.4       8.1       7.3       8.8
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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      XAL       XNCH      XNR       WTN       ELMIN       SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IOC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 20.382
   20.38      8.96   1184.96      0.00      0.00   1186.19      1.24      4.53      0.13   1180.00
  117000.    55720.    61280.        0.      9460.     5586.        0.    46195.    10260.    1192.00
    5.24      5.89     10.57      0.00     0.038     0.035     0.035     0.000   1176.00    6688.03
0.003848     1360.     1370.     1370.         2         0         0      0.00   3667.96   10355.99

FLOW DISTRIBUTION FOR SECNO=      20.38          CWSEL=    1184.96

STA=      6688.     7620.     7950.     8180.     8940.     9700.    10400.
  PER Q=      3.6      10.7       5.2       8.6      21.6      52.4
   AREA=   1227.1    1636.1     680.3    2148.1    3768.1    5585.6
    VEL=      3.4       7.7       5.4       4.7       6.7      11.0

1490 NH CARD USED
*SECNO 20.575

3455 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      1183.50 ELREA=      1232.00

   20.58     10.86   1188.86      0.00      0.00   1190.18      1.32      3.97      0.02   1183.50
  117000.    56176.    60824.        0.      8993.     5391.        0.    46536.    10343.    1232.00
    5.27      6.25     11.28      0.00     0.038     0.035     0.035     0.000   1178.00    6686.19
0.004002     1000.     1020.     1020.         2         0         0      0.00   3537.45   10223.64

FLOW DISTRIBUTION FOR SECNO=      20.58          CWSEL=    1188.86

STA=      6686.     7480.     7600.     7800.     7950.     8100.     8200.     8980.     9220.     9600.    10290.
  PER Q=      5.7       6.0       5.9       3.3       3.3       3.1       4.5       6.7      11.6      52.0
   AREA=   1257.1     763.9     898.2     579.9     579.9     466.6    1335.4    1167.8    1944.0    5391.2
    VEL=      3.4       9.2       7.5       6.6       6.6       7.7       4.0       6.7       7.0      11.3

1490 NH CARD USED
*SECNO 20.738

3301 HV CHANGED MORE THAN HVTOL

   20.74     11.71   1191.71      0.00      0.00   1192.45      0.74      2.21      0.06   1184.00
  115000.    60312.    53464.     5225.     12394.     6130.      937.    46855.    10410.    1184.00
    5.31      4.87      8.72      5.57     0.039     0.035     0.045     0.000   1180.00    6726.23
0.001904      800.      860.      840.         2         0         0      0.00   3696.98   10423.21
```

```
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

FLOW DISTRIBUTION FOR SECNO=      20.74          CWSEL=    1191.71

STA=      6726.     7170.     7580.     7930.     8210.     8550.     9000.     9180.     9430.     9700.    10300.    10420.    10423.
  PER Q=     3.3       3.3       5.4       3.0       4.1       5.4       4.5      10.4      11.2      44.9       4.4       0.0
    AREA=  1081.8    1059.6    1363.0     878.4    1260.9    1668.8    1027.5    1939.6    2094.8    6130.1     925.0      12.4
     VEL=      3.7       3.7       4.7       4.0       3.9       3.9       5.2       6.4       6.4       8.7       5.6       1.9

1490 NH CARD USED
*SECNO 20.993
    20.99     10.47   1193.87      0.00      0.00   1194.58      0.71      2.13      0.00   1192.00
   115000.    26154.    74557.    18290.     7406.     9369.     4067.    47358.    10498.    1188.00
     5.36      3.53      7.96      4.50     0.044     0.035     0.045     0.000   1183.40   7036.69
 0.001779      810.      1350.     1370.         2         0         0      0.00   4047.97  11084.67

FLOW DISTRIBUTION FOR SECNO=      20.99          CWSEL=    1193.87

STA=      7037.     7480.     8330.     8670.     8850.     9200.     9380.    10380.    10530.    10900.    11060.    11085.
  PER Q=     4.7       3.4       5.8       3.6       3.9       0.6      62.7       3.6       7.8       3.6       0.4
    AREA=  1460.2    1576.3    1689.5     990.9    1353.2     335.9    9369.2     917.4    2096.5     946.6     106.7
     VEL=      3.8       2.6       4.1       4.3       3.4       2.1       8.0       4.7       4.4       4.6       3.9

1451 NH CARD USED
*SECNO 21.241

3265 DIVIDED FLOW

    21.24      8.94   1196.94      0.00      0.00   1198.04      1.10      3.35      0.12   1192.00
   115000.    44341.    38593.    36066.     6799.     3332.     5876.    47822.    10592.    1194.00
     5.40      6.52     11.53      6.14     0.044     0.035     0.045     0.000   1188.00   7808.26
 0.005647      810.      1310.     1290.         3         0         0      0.00   3942.03  11940.88

FLOW DISTRIBUTION FOR SECNO=      21.24          CWSEL=    1196.94

STA=      7988.     8009.     8390.     9350.     9550.     9970.    10350.    10700.    10820.    11170.    11600.    11910.    11941.
  PER Q=     3.5       4.6      17.3       4.6       7.3      32.4       3.8       3.7       7.2       6.9       8.5       0.3
    AREA=   596.1    1016.9    2999.4     845.7    1341.1    3331.6     941.8     592.9    1379.3    1434.5    1451.6      76.3
     VEL=      6.9       5.4       6.9       6.5       6.5      11.6       4.8       7.4       6.2       5.7       7.0       4.5

*SECNO 21.469
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         GLOB      GCH       GROB      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    ENDST

3301 HV CHANGED MORE THAN HVINS

          LOB WEST SUR CITY WWTP
            THIS SECTION ALONE IS TAKEN LOOKING UPSTREAM
     21.47     14.43   1199.43      0.00      0.00   1199.75      0.32      1.63      0.08   1194.00
    115000.   45951.   65766.    7083.   13601.   12272.    2678.   48365.   10685.   1194.00
      5.47      3.38      5.38      2.64     0.040     0.035     0.045     0.000   1185.00   7519.24
  0.000688      990.     1200.     1000.         3         0         0      0.00   3943.71  11462.96

 FLOW DISTRIBUTION FOR SECNO=      21.47          CWSEL=    1199.43

 STA=      7519.     7811.     7994.     8179.     8361.     8623.     8910.     9052.     9175.     9368.     9573.     9718.    10872.
   PER Q=      5.1       3.2       3.0       3.1       3.0       4.4       3.7       4.1       3.1       3.4       2.4      55.4
     AREA=   1790.6    1141.5    1108.9    1126.5    1275.9    1613.1    1119.9    1142.3    1142.3    1249.9     890.2   12272.0
      VEL=      3.4       3.3       3.2       3.3       2.8       3.2       4.0       4.3       3.2       3.3       3.3       5.4
 STA=     10872.    11143.    11463.
   PER Q=      3.6       2.3
     AREA=   1548.2    1129.5
      VEL=      2.8       2.5

 *SECNO 21.681
          ROSE GARDEN LANE CROSSING.
     21.68     11.44   1200.44      0.00      0.00   1200.92      0.47      1.12      0.04   1204.00
    115000.       0.   59760.   59240.         0.    9184.   13795.   49007.   10782.   1198.00
      5.52      0.00      6.51      4.29     0.040     0.035     0.045     0.000   1189.00   9133.60
  0.001680      950.     1120.     1150.         3         0         0      0.00   3811.12  12944.72

 FLOW DISTRIBUTION FOR SECNO=      21.68          CWSEL=    1200.44

 STA=      9134.    10399.    10710.    10947.    11138.    11258.    11427.    11659.    11858.    11982.    12107.    12229.    12363.
   PER Q=     50.2       3.2       3.2       3.3       3.3       3.4       3.4       4.2       3.1       3.1       3.3       3.2
     AREA=   9183.8    1150.6    1046.2     955.8     798.3     941.5    1061.5    1133.4     799.1     790.0     811.7     838.0
      VEL=      6.5       3.4       3.7       4.1       4.9       4.3       3.8       4.4       4.7       4.6       4.8       4.6
 STA=     12363.    12495.    12618.    12786.    12938.    12945.
   PER Q=      3.1       3.1       3.8       3.1       0.0
     AREA=    806.1     792.6    1008.6     853.0       8.2
      VEL=      4.5       4.7       4.5       4.3       1.5

 *SECNO 21.880
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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=    8750.0    13876.0  TYPE=     1  TARGET=  -8750.000
          FROM RM 21.880 TO RM 25.592. MODEL IS BASED ON MARICOPA CO. FCD
          TOPO OF JULY 1983, 4 FOOT C.I., 1 INCH = 200 FEET MAP
          AND DIGITIZED CROSS-SECTIONS.
     21.88     12.48   1202.48      0.00   1203.27      0.79      2.26      0.09   1198.00
    115000.   29270.   53997.    35733.    4395.     6200.     8442.    49513.    10878.   1198.00
      5.56      6.66      8.71      4.23     0.040     0.035     0.045     0.000   1190.00   8759.84
  0.002846    1050.     1050.     1050.         2         0         0      0.00   4153.12  12912.96

FLOW DISTRIBUTION FOR SECNO=      21.88          CWSEL=    1202.48

STA=     8760.     8867.     8949.     9056.     9166.     9253.     9444.     9498.    10318.    10498.    10626.    10759.    11028.
  PER Q=    4.4       3.7       3.8       4.1       3.6       3.9       1.1      45.4       3.3       3.6       3.6       3.0
   AREA=  730.9     595.1     672.3     702.3     594.5     857.4     242.4    6199.8     817.0     750.6     731.5     906.5
    VEL=    7.1       7.4       6.8       6.9       7.2       5.4       5.4       8.7       4.8       5.7       5.8       4.0
STA=    11028.    11229.    11494.    11816.    12239.    12677.    12913.
  PER Q=    3.4       3.1       3.2       3.3       3.0       0.4
   AREA=  860.8     924.5    1001.9    1098.3    1095.6     255.1
    VEL=    4.7       4.1       3.8       3.5       3.3       1.9

*SECNO 22.069

3265 DIVIDED FLOW

     22.07      9.86   1205.86      0.00      0.00   1207.03      1.17      3.65      0.12   1203.00
    115000.   31785.   54636.    32579.    4259.     5119.     5872.    49907.    10969.   1201.00
      5.60      7.46     10.67      5.55     0.040     0.035     0.045     0.000   1196.00   8267.16
  0.004834    1000.     1000.     1000.         3         0         0      0.00   3843.90  12472.14

FLOW DISTRIBUTION FOR SECNO=      22.07          CWSEL=    1205.86

STA=     8267.     8358.     8410.     8478.     8770.     8901.     9013.     9154.     9257.    10000.    10106.    10202.    10288.
  PER Q=    5.0       3.1       3.7       3.2       3.0       3.1       3.3       2.2      45.9       3.0       3.5       3.2
   AREA=  606.7     382.5     470.1     747.7     540.5     515.8     590.1     405.6    5118.8     534.1     562.1     503.5
    VEL=    9.7       9.8       9.4       5.1       6.7       7.2       6.7       6.5      10.7       6.8       7.5       7.5
STA=    10288.    10371.    10468.    10667.    11786.    12119.    12472.
  PER Q=    3.5       3.0       3.4       3.1       3.2       1.5
   AREA=  527.5     515.9     714.6    1111.0     848.2     555.5
    VEL=    7.9       7.0       5.6       3.3       4.4       3.2
```

PRELIMINARY (1986)
FLOOD INSURANCE STUDY
TABLES AND PROFILE

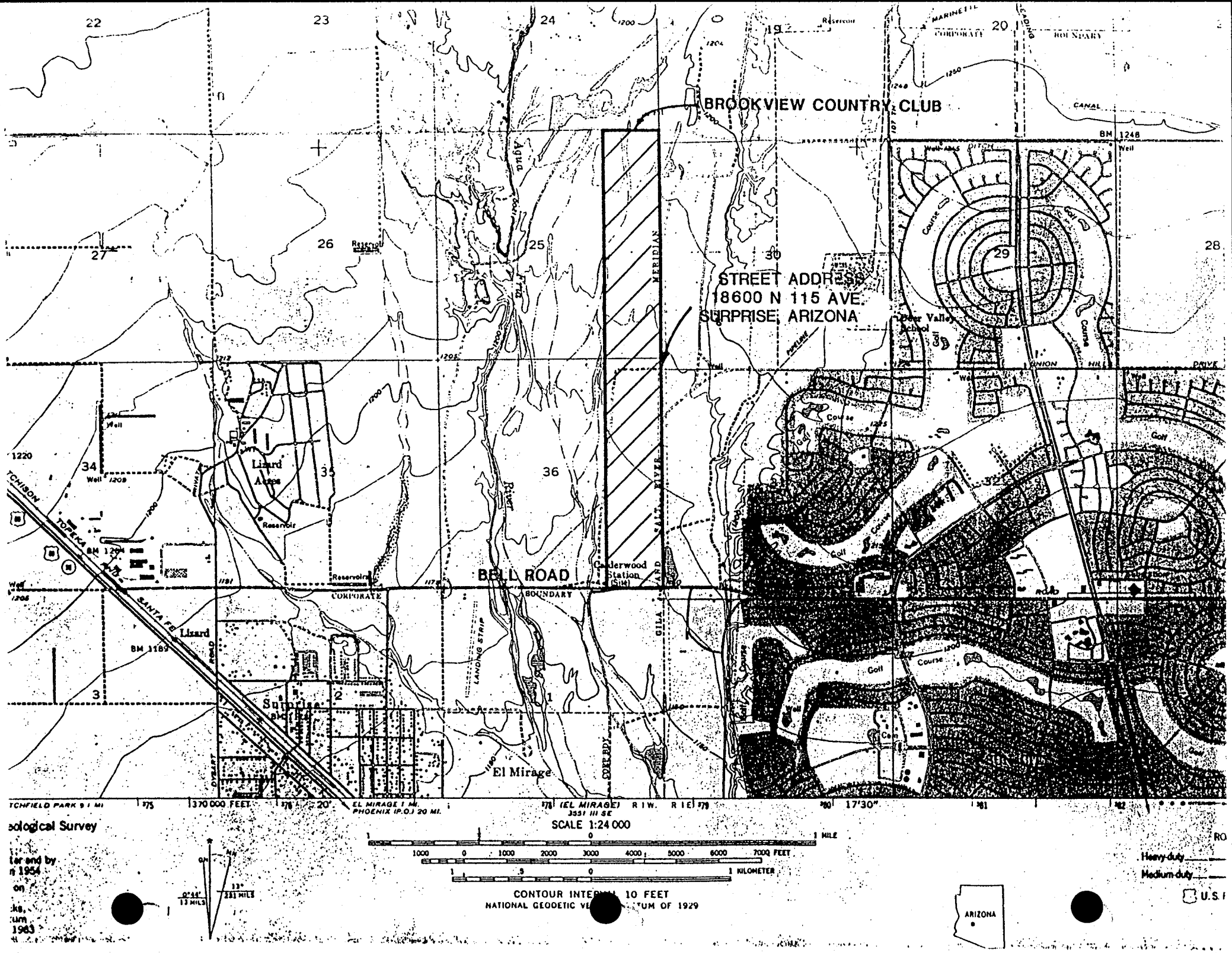

BROOKVIEW COUNTRY CLUB
STREET ADDRESS
18600 N 115 AVE.
SURPRISE, ARIZONA
BELL ROAD
Lizard Acres
Lizard
Surprise
El Mirage
Deer Valley School
UNION HILL DRIVE
Golf Course
SALT RIVER MERIDIAN
GILA RIVER
CORPORATE BOUNDARY
TOPEKA & SANTA FE
LANDING STRIP
SCALE 1:24 000
1 MILE
7000 FEET
1 KILOMETER
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
ARIZONA

Table 3. Summary of Discharges

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Year
Gila River					
Below Confluence With Agua Fria River (At Bullard Avenue)	41,902	95,000	200,000	250,000	360,000
* Agua Fria River					
At Bell Road	1,870	23,000	87,000	115,000	182,000
Above Confluence With New River (At Glendale Avenue)	1,929	18,000	66,000	90,000	177,000
Below Confluence With New River	2,088	28,000	69,000	95,000	184,000
At Avondale	2,241	22,000	67,000	90,000	179,000
Above Confluence With Gila River	2,250	22,000	67,000	89,000	179,000
New River					
At Outflow of New River Dam	0	1,700	2,200	2,350	--[1]
Above Beardsley Road	10.3	2,400	6,500	9,800	--[1]
Above Confluence With Skunk Creek	17.3	2,700	8,000	12,000	--[1]
Below Confluence With Skunk Creek	123.6	4,600	13,000	21,000	--[1]
Skunk Creek					
At Inflow of Adobe Dam	89.6	15,000	29,000	39,000	85,000
At Outflow of Adobe Dam	0.0	1,370	1,650	1,730	2,000
Above Confluence With Scatter Wash	0.9	1,600	2,200	2,600	4,600
Below Confluence With Scatter Wash (At 59th Avenue)	0.4	2,000	5,500	8,400	22,000
At Confluence With Arizona Canal	19.9	2,200	6,700	11,000	33,000
Above Confluence With New River	20.9	2,200	6,700	11,000	33,000
Scatter Wash					
At Mouth	8.5	580	3,500	6,100	17,000
Above Black Canyon Highway (State Highway 17)	6.3	540	3,200	5,700	16,000

[1] Not Computed

* This Project

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Agua Fria River (Continued)								
AA	42,915	1,587	13,300	7.1	1,012.3	1,012.3	1,012.9	0.6
AB	45,441	3,190	15,994	5.9	1,017.5	1,017.5	1,107.7	0.2
AC	48,497	1,694	11,734	8.1	1,024.3	1,024.3	1,024.5	0.2
AD	50,257	2,700	14,356	6.6	1,029.1	1,029.1	1,029.4	0.3
AE	51,717	4,720	21,241	4.2	1,033.8	1,033.8	1,034.7	0.9
AF	53,647	3,400	12,757	7.1	1,037.7	1,037.7	1,037.8	0.1
AG	56,072	2,950	14,565	6.3	1,043.1	1,043.1	1,044.0	0.9
AH	59,897	4,013	13,839	6.7	1,050.8	1,050.8	1,051.3	0.5
AI	62,971	3,405	38,528	2.5	1,064.7	1,064.7	1,064.8	0.1
AJ	65,371	2,753	9,433	10.2	1,064.7	1,064.7	1,065.0	0.3
AK	66,571	2,425	11,074	8.7	1,068.9	1,068.9	1,069.2	0.3
AL	69,091	2,300	15,303	6.4	1,076.1	1,076.1	1,077.0	0.9
AM	71,091	2,441	19,658	5.0	1,080.1	1,080.1	1,080.7	0.6
AN	74,091	3,136	13,249	7.6	1,089.2	1,089.2	1,089.5	0.3
AO	76,091	2,605	13,945	7.4	1,095.4	1,095.4	1,095.9	0.5
AP	78,091	2,754	17,948	5.7	1,101.5	1,101.5	1,101.8	0.3
AQ	80,091	2,092	12,205	8.5	1,104.6	1,104.6	1,105.1	0.5
AR	82,146	2,259	14,813	7.1	1,111.4	1,111.4	1,111.9	0.5
AS	86,715	2,072	21,346	5.1	1,130.7	1,130.7	1,131.5	0.8
AT	89,081	2,520	15,707	6.9	1,133.6	1,133.6	1,134.4	0.8
AU	91,162	2,855	25,570	4.2	1,137.0	1,137.0	1,137.6	0.6
AV	92,921	2,080	11,667	9.3	1,138.4	1,138.4	1,139.0	0.6
AW	96,615	2,616	12,273	8.5	1,149.1	1,149.1	1,149.1	0.0
AX	98,198	2,143	14,516	7.5	1,154.7	1,154.7	1,154.8	0.1
* AY	99,713	1,074	12,826	9.0	1,160.3	1,160.3	1,160.7	0.4
AZ	99,783	1,073	12,995	8.8	1,160.5	1,160.5	1,160.8	0.3

[1] Feet Above Confluence With Gila River

* This Project

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

FLOODWAY DATA

AGUA FRIA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Agua Fria River (Continued)								
* BA	101,573	2,451	16,536	7.0	1,168.9	1,168.9	1,168.9	0.0
BB	103,973	2,796	15,544	7.5	1,174.3	1,174.3	1,174.5	0.2
BC	105,183	2,608	15,653	7.4	1,177.9	1,177.9	1,178.1	0.2
BD	106,203	2,211	14,947	7.8	1,180.7	1,180.7	1,181.1	0.4
BE	109,453	2,521	18,048	6.6	1,191.7	1,191.7	1,192.7	1.0
BF	112,113	2,550	14,014	8.5	1,196.9	1,196.9	1,197.7	0.8
BG	113,313	3,020	26,743	4.4	1,199.4	1,199.4	1,200.4	1.0
BH	114,433	2,868	19,665	6.1	1,200.4	1,200.4	1,201.3	0.9
BI	116,483	2,720	14,168	8.4	1,205.9	1,205.9	1,206.2	0.3
BJ	118,483	2,990	17,358	7.0	1,212.9	1,212.9	1,213.0	0.1
BK	119,483	3,394	20,320	6.0	1,215.9	1,215.9	1,215.9	0.0
BL	121,483	3,383	15,421	7.8	1,222.4	1,222.4	1,222.4	0.0
BM	123,483	3,314	21,455	5.7	1,228.6	1,228.6	1,228.7	0.1
BN	125,483	2,750	14,976	8.2	1,236.6	1,236.6	1,237.1	0.5
BO	127,483	3,015	18,164	6.8	1,244.1	1,244.1	1,244.8	0.7
BP	129,483	3,970	22,373	5.6	1,249.1	1,249.1	1,249.6	0.5
BQ	131,483	3,840	20,042	6.3	1,256.7	1,256.7	1,257.4	0.7
BR	132,483	2,800	16,573	7.7	1,259.3	1,259.3	1,260.0	0.7
BS	134,383	1,272	9,169	13.9	1,266.1	1,266.1	1,266.1	0.0
BT	135,083	1,411	10,556	12.1	1,270.9	1,270.9	1,271.0	0.1

[1] Feet Above Confluence With Gila River

* This Project

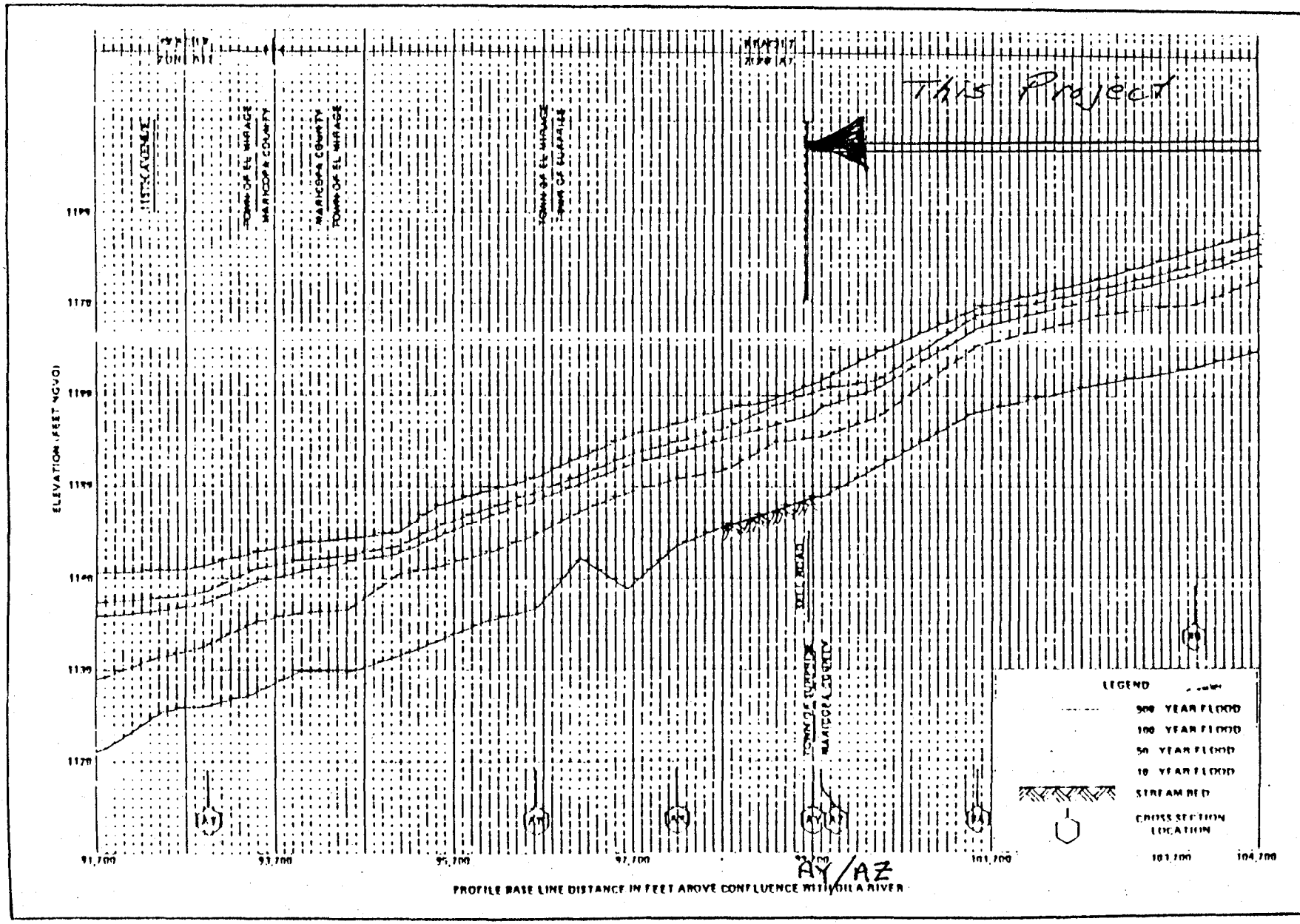
TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

FLOODWAY DATA

AGUA FRIA RIVER



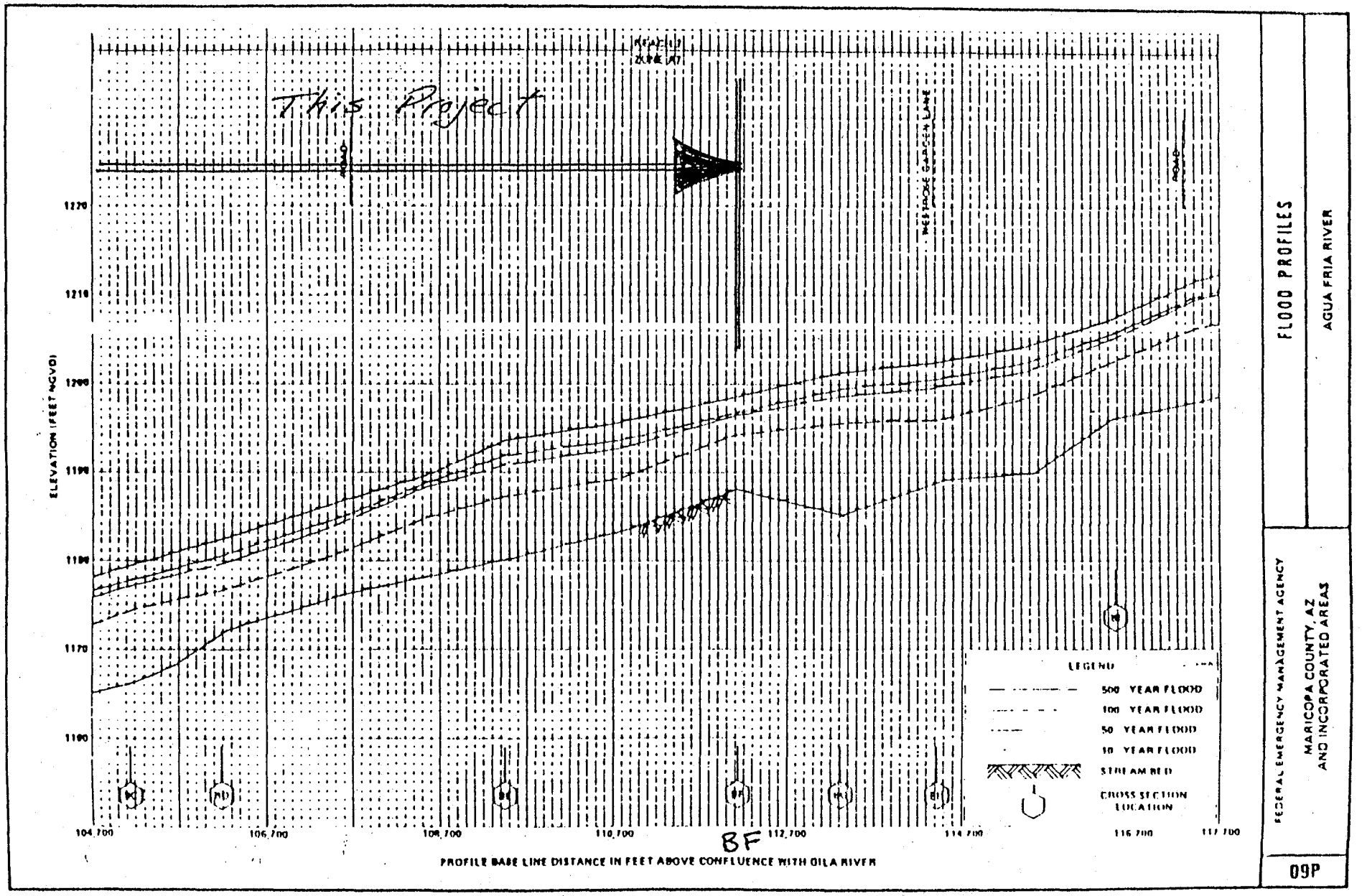
FLOOD PROFILES

AGUA FRIA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

08P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ZONE AT
WEST POLE GARDEN LANE
ELEVATION (FEET NGVD)
1220
1210
1200
1190
1180
1170
1160
104,700
106,700
108,700
110,700
112,700
114,700
116,700
117,700
BF
PROFILE BASE LINE DISTANCE IN FEET ABOVE CONFLUENCE WITH GILA RIVER
LEGEND
500 YEAR FLOOD
100 YEAR FLOOD
50 YEAR FLOOD
10 YEAR FLOOD
STREAMBED
CROSS SECTION LOCATION
FLOOD PROFILES
AGUA FRIA RIVER
FEDERAL EMERGENCY MANAGEMENT AGENCY
MARICOPA COUNTY, AZ
AND INCORPORATED AREAS
09P

HEC-II PRINTOUT FOR
NATURAL CONDITIONS
CONFIRMING B.F.E.'S

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**********************************************************         **************************************
* WATER SURFACE PROFILES                                 *         * U.S. ARMY CORPS OF ENGINEERS
* VERSION OF NOVEMBER 1976                               *         * THE HYDROLOGIC ENGINEERING CENTER
* UPDATED MAY 1984                                       *         * 609 SECOND STREET, SUITE D
* IBM-PC-XT VERSION                                      *         * DAVIS, CALIFORNIA 95616
* RUN DATE  01/04/88  TIME  11:16:47                     *         * (916) 440-2105 (FTS) 448-2105
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                                  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
 01/04/88    11:16:48                                                                        PAGE    1



                                                                THIS RUN EXECUTED 01/04/88   11:16:49

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   ERROR CORR -  01,02,03,04,05,06
   MODIFICATION -  50,51,52,53,54,55,56
   IBM-PC-XT VERSION
 ****************************************************


 T1      WATER SURFACE PROFILE
 T2      LOMR BROOKVIEW
 T3      AGUA FRIA RIVER NORTH OF BELL ROAD BRIDGE

 J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC     HVINS      Q        WSEL       FQ

        1.        2.        0.        0.   .002300       .00        .0       0.  1149.340      .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    53.000    21.000    55.000    26.000    56.000    32.000    54.000     4.000


       1.000    50.000   201.000      .000      .000      .000      .000      .000      .000      .000


 NC       .045       .040       .035       .100       .300       .000       .000       .000       .000       .000
 QT      5.000 112960.000 112960.000  22700.000  85500.000 181700.000       .000       .000       .000       .000
 ET       .000      7.100      9.100       .000       .000       .000       .000  11964.000   9531.000  11520.000
 X1     18.507     95.000   9531.200  10717.800    570.000    515.000    529.000       .000       .000       .000
 X3     10.000       .000       .000       .000       .000       .000       .000       .000       .000       .000
 GR   1164.500   8844.500   1165.900   8934.800   1166.200   9038.100   1166.200   9132.900   1166.400   9226.500
 GR   1163.900   9373.500   1161.300   9422.900   1160.900   9469.400   1160.700   9531.200   1159.100   9560.200
 GR   1192.500   9586.300   1142.800   9686.200   1143.200   9736.100   1147.000   9752.000   1143.400   9773.500
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GR	1144.800	10000.000	1143.900	10083.200	1147.800	10203.700	1148.200	10362.800	1146.900	10437.500
GR	1147.100	10463.600	1148.500	10532.800	1146.000	10613.400	1146.000	10639.500	1149.000	10646.800
GR	1146.900	10664.400	1146.900	10683.700	1150.300	10717.800	1150.300	10842.600	1148.500	10943.100
GR	1147.400	10989.000	1148.900	11029.900	1149.200	11065.100	1149.800	11159.300	1149.400	11230.200
GR	1147.300	11332.900	1147.300	11374.300	1145.300	11439.600	1144.600	11488.900	1146.700	11511.100
GR	1147.300	11579.700	1146.900	11626.800	1146.400	11682.400	1142.700	11724.400	1141.800	11741.500
GR	1142.500	11771.500	1147.100	11798.800	1150.300	11874.800	1152.100	11963.300	1152.100	12067.200
GR	1153.500	12231.200	1152.800	12313.400	1151.900	12418.400	1152.200	12509.800	1152.600	12541.000
GR	1151.500	12593.800	1151.500	12634.100	1151.200	12690.800	1152.100	12710.700	1151.700	12762.900
GR	1151.200	12866.700	1151.300	12928.000	1152.100	12976.200	1152.200	13004.000	1152.900	13075.000
GR	1153.500	13109.000	1148.700	13118.100	1148.000	13149.300	1153.700	13156.700	1153.100	13250.900
GR	1153.500	13406.400	1153.300	13445.500	1159.300	13460.800	1159.300	13488.100	1159.000	13560.100
GR	1158.600	13686.700	1158.400	13785.400	1159.300	13880.700	1159.000	13962.500	1159.100	13989.700
GR	1159.900	14041.900	1159.900	14078.200	1161.800	14098.100	1160.200	14115.700	1159.900	14199.600
GR	1160.700	14465.100	1161.800	14491.900	1162.000	14497.000	1163.900	14523.100	1165.200	14542.400

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ET	.000	7.100	9.100	.000	.000	.000	.000	11892.000	9737.000	11550.000
X1	18.608	75.000	9737.000	10609.400	540.000	685.000	525.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1170.100	8697.100	1169.600	8743.000	1169.100	8774.800	1169.400	8816.800	1169.600	8885.500
GR	1168.400	8986.500	1168.400	9048.900	1168.700	9127.800	1169.200	9210.100	1169.400	9313.300
GR	1169.400	9421.700	1168.900	9466.000	1169.100	9509.100	1168.900	9542.000	1168.700	9577.200
GR	1167.300	9643.000	1165.900	9689.000	1163.400	9715.100	1163.400	9737.000	1154.400	9747.400
GR	1143.400	9761.600	1143.600	9809.900	1144.300	9884.800	1144.300	9916.500	1147.800	9930.200
GR	1143.400	9941.500	1143.600	9969.300	1145.300	9989.200	1145.300	10000.000	1145.700	10031.700
GR	1140.000	10146.900	1147.600	10255.300	1147.600	10349.500	1140.000	10440.900	1149.600	10476.000
GR	1148.700	10526.500	1150.500	10609.400	1149.800	10667.300	1149.900	10733.700	1150.100	10805.700
GR	1149.800	10935.100	1150.500	11011.100	1150.300	11103.100	1150.300	11205.800	1149.600	11273.900
GR	1149.600	11336.300	1148.500	11393.600	1148.500	11437.900	1148.000	11469.100	1147.400	11510.500
GR	1145.300	11533.200	1146.000	11567.200	1147.100	11630.800	1147.100	11721.600	1145.300	11776.100
GR	1142.700	11826.000	1142.300	11842.500	1142.300	11846.400	1148.000	11854.400	1152.800	11891.800
GR	1151.700	11948.000	1151.900	11958.200	1149.600	11991.100	1150.500	12034.800	1149.900	12086.500
GR	1150.300	12152.500	1152.600	12207.300	1152.600	12263.500	1152.200	12358.300	1152.600	12479.700
GR	1152.200	12652.200	1152.400	12719.200	1152.100	12772.500	1151.700	12911.000	1151.900	13016.500
NC	.045	.040	.035	.100	.300	.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	.000	11475.000	9727.000	11300.000
X1	18.707	95.000	9727.600	10598.600	520.000	735.000	535.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1171.200	9121.000	1172.400	9238.400	1171.900	9313.900	1171.900	9380.900	1171.700	9471.100
GR	1170.800	9579.500	1170.100	9589.300	1166.600	9666.300	1165.200	9727.600	1163.900	9740.600
GR	1161.100	9764.500	11157.900	9793.400	1146.000	9824.600	1145.500	9842.800	1145.700	9904.100
GR	1145.700	9933.000	1146.900	9964.800	1146.600	9982.400	1146.600	10000.000	1146.400	10038.000
GR	1146.400	10057.300	1147.400	10074.900	1146.400	10081.100	1146.400	10106.600	1148.500	10113.400
GR	1151.500	10532.400	1152.800	10598.600	1152.400	10650.800	1151.000	10681.500	1152.100	10728.600
GR	1151.900	10759.800	1152.600	10786.400	1151.500	10806.900	1151.900	10838.600	1152.600	10860.800
GR	1152.800	10993.600	1152.400	11105.300	1149.900	11202.900	1150.600	11295.400	1150.100	11378.900
GR	1150.300	11415.700	1149.900	11436.200	1149.800	11473.600	1147.800	11504.300	1146.700	11541.700
GR	1147.400	11609.800	1148.500	11659.700	1148.500	11718.200	1148.200	11775.500	1148.300	11816.400
GR	1148.500	11825.400	1152.600	11831.700	1151.900	11840.200	1149.900	11860.100	1152.900	11885.600
GR	1158.300	11938.900	1151.700	11959.400	1150.600	11970.100	1152.900	11977.500	1153.700	12010.400
GR	1154.000	12074.000	1153.800	12126.800	1153.700	12265.800	1153.700	12394.000	1154.000	12505.200
GR	1154.700	12718.600	1154.000	12808.300	1154.400	12848.000	1154.200	12933.700	1154.000	13056.800
GR	1154.500	13410.900	1149.900	13420.000	1149.900	13441.000	1154.700	13450.600	1157.500	13481.800
GR	1157.700	13565.200	1155.400	13620.300	1155.600	13690.100	1157.000	13742.300	1157.700	13841.600
GR	1159.700	13944.900	1160.000	13979.500	1159.700	14020.300	1160.600	14035.100	1160.600	14164.500
GR	1161.400	14363.600	1162.000	14503.200	1162.300	14657.000	1162.900	14756.900	1163.900	14774.500
GR	1162.900	14779.000	1167.600	14789.800	1170.300	14839.200	1174.400	14852.200	1176.900	14865.800
NC	.045	.040	.030	.100	.300	.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	9059.000	.000	9200.000	10421.000

X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	5200.000	1166.000	5300.000	1162.000	5480.000	1162.000	6300.000	1157.000	7150.000
GR	1157.000	7900.000	1152.000	8380.000	1152.000	8440.000	1156.000	8940.000	1156.000	9060.000
GR	1152.000	9140.000	1152.000	9240.000	1154.000	9490.000	1152.000	9860.000	1148.000	10100.000
GR	1147.000	10360.000	1168.000	10420.000	1171.000	10550.000	1172.000	10880.000	.000	.000

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GT	5.000	115000.000	115000.000	23000.000	87000.000	182000.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	9249.000	10351.000
X1	18.893	13.000	9250.000	10350.000	450.000	450.000	450.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	5170.000	1172.000	5410.000	1168.000	5640.000	1166.000	6040.000	1166.000	6580.000
GR	1166.400	7180.000	1166.800	7750.000	1167.000	8270.000	1172.000	9250.000	1148.500	9280.000
GR	1148.500	10320.000	1168.400	10350.000	1172.000	10600.000	.000	.000	.000	.000
SB	1.100	1.560	3.000	.000	1040.000	56.000	17035.000	1.800	1148.500	1148.500
ET	.000	.000	9.100	.000	.000	.000	9249.000	.000	9249.000	10351.000
X1	18.906	13.000	9250.000	10350.000	70.000	70.000	70.000	.000	.000	.000
X2	.000	.000	1.000	1167.300	1165.700	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1165.800	1172.000	.000
BT	15.000	5150.000	1180.000	.000	5390.000	1172.000	.000	5620.000	1168.000	.000
BT	6020.000	1165.700	.000	6560.000	1165.700	.000	7160.000	1166.400	.000	7730.000
BT	1166.800	.000	8250.000	1167.000	.000	8800.000	1165.800	.000	9249.000	1172.000
BT	.000	9250.000	1175.000	1165.000	9800.000	1177.000	1167.300	10350.000	1172.300	1161.600
BT	10351.000	1168.600	.000	10580.000	1172.000	.000	.000	.000	.000	.000
GR	1180.000	5150.000	1172.000	5390.000	1168.000	5620.000	1166.000	6020.000	1166.000	6560.000
GR	1166.400	7160.000	1166.800	7730.000	1167.000	8250.000	1172.000	9230.000	1148.500	9250.000
GR	1148.500	10280.000	1168.400	10350.000	1172.000	10580.000	.000	.000	.000	.000
NC	.000	.000	.000	.100	.300	.000	.000	.000	.000	.000
NH	3.000	.045	8000.000	.040	9400.000	.035	10360.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	8650.000	.000	8900.000	10361.000
X1	19.029	22.000	9400.000	10360.000	650.000	650.000	650.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	4760.000	1176.000	5010.000	1167.000	5060.000	1168.000	5100.000	1168.000	5940.000
GR	1164.000	6040.000	1164.000	6340.000	1162.000	7390.000	1160.000	8000.000	1160.000	8550.000
GR	1157.000	8600.000	1157.000	9200.000	1160.000	9400.000	1156.000	9460.000	1152.000	9780.000
GR	1152.000	9840.000	1158.000	9870.000	1157.000	10030.000	1156.000	10150.000	1152.000	10160.000
GR	1152.000	10230.000	1172.000	10360.000	.000	.000	.000	.000	.000	.000
NH	4.000	.045	7630.000	.040	8750.000	.035	10120.000	.045	10160.000	.000
ET	.000	7.100	9.100	.000	.000	.000	7400.000	.000	8200.000	10121.000
X1	19.245	19.000	9550.000	10120.000	1450.000	1140.000	1140.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	4920.000	1176.000	4960.000	1172.000	5150.000	1168.000	5570.000	168.000	5910.000
GR	1165.000	7100.000	1164.000	7630.000	1162.000	7840.000	1164.000	8060.000	1160.000	8750.000
GR	1158.000	8880.000	1160.000	9020.000	1164.000	9070.000	1160.000	9550.000	1160.000	9900.000
GR	1158.000	10000.000	1160.000	10100.000	1176.000	10120.000	1180.000	10160.000	.000	.000
NH	4.000	.045	7520.000	.035	8730.000	.040	9630.000	.035	10160.000	.000
ET	.000	7.100	9.100	.000	.000	.000	6000.000	.000	7780.000	10161.000
X1	19.491	17.000	9630.000	10160.000	1300.000	1300.000	1300.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	4880.000	1176.000	5030.000	1172.000	5680.000	1170.000	6290.000	1170.000	7040.000
GR	1168.000	7520.000	1166.000	7600.000	1168.000	7780.000	1164.000	8350.000	1164.000	8730.000
GR	1168.000	8810.000	1168.000	9000.000	1167.000	9630.000	1162.000	9650.000	1161.000	9960.000
GR	1164.000	10130.000	1184.000	10160.000	.000	.000	.000	.000	.000	.000

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NH	4.000	.045	7800.000	.035	9190.000	.040	9700.000	.035	10600.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8130.000	10567.000
X1	19.700	18.000	9700.000	10250.000	1050.000	1060.000	1100.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	3.000	1170.000	9700.000	1171.000	10250.000	1169.400	10350.000	.000	.000	.000
GR	1180.000	5400.000	1176.000	5500.000	1175.000	6220.000	1172.000	7500.000	1172.000	7800.000
GR	1168.000	8080.000	1165.000	8520.000	1168.000	8810.000	1168.000	9040.000	1172.000	9190.000
GR	1168.000	9820.000	1164.000	9900.000	1163.000	9930.000	1164.000	9960.000	1168.000	10180.000
GR	1168.000	10530.000	1172.000	10560.000	1188.000	10600.000	.000	.000	.000	.000
NH	4.000	.045	8110.000	.035	8310.000	.040	9830.000	.035	11000.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8600.000	10838.000
X1	19.929	21.000	9830.000	10230.000	1150.000	1150.000	1210.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	2.000	1172.400	9830.000	1173.000	10230.000	.000	.000	.000	.000	.000
GR	1196.000	5590.000	1184.000	5690.000	1182.000	6060.000	1184.000	6340.000	1180.000	6600.000
GR	1180.000	6850.000	1176.000	7030.000	1176.000	8110.000	1172.000	8130.000	1172.000	8310.000
GR	1174.000	8610.000	1172.000	8920.000	1170.000	9070.000	1172.000	9210.000	1172.000	9900.000
GR	1168.000	9910.000	1166.000	9930.000	1168.000	9970.000	1172.000	10150.000	1172.000	10800.000
GR	1204.000	11000.000	.000	.000	.000	.000	.000	.000	.000	.000
NH	3.000	.045	7930.000	.040	9620.000	.035	10330.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8320.000	10331.000
X1	20.122	19.000	9620.000	10330.000	1000.000	1020.000	1020.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1200.000	5540.000	1188.000	5640.000	1185.000	5680.000	1184.000	6170.000	1184.000	6700.000
GR	1180.000	6730.000	1178.000	6930.000	1180.000	7420.000	1180.000	7510.000	1179.000	7740.000
GR	1176.000	7930.000	1178.000	8950.000	1172.000	9028.000	1172.000	9160.000	1175.000	9620.000
GR	1172.000	10000.000	1172.000	10220.000	1172.000	10280.000	1200.000	10330.000	.000	.000
QT	2.000	117000.000	117000.000	.000	.000	.000	.000	.000	.000	.000
NH	4.000	.045	7450.000	.035	8180.000	.040	9700.000	.035	10400.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8200.000	10401.000
X1	20.382	18.000	9700.000	10400.000	1360.000	1370.000	1370.000	.000	.000	.000
GR	1208.000	5070.000	1196.000	5150.000	1192.000	5320.000	1188.000	6650.000	1184.000	6700.000
GR	1184.000	7450.000	1180.000	7620.000	1180.000	7950.000	1184.000	8180.000	1184.000	8230.000
GR	1180.000	8940.000	1180.000	9700.000	1176.000	9740.000	1176.000	9960.000	1176.000	10050.000
GR	1176.000	10310.000	1184.000	10350.000	1192.000	10400.000	.000	.000	.000	.000
NH	4.000	.045	7480.000	.035	8160.000	.040	9600.000	.035	10290.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8000.000	10291.000
X1	20.575	15.000	9600.000	10290.000	1000.000	1020.000	1020.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	10.000	1183.500	9600.000	1188.000	8200.000	1187.000	7300.000	1181.000	7600.000	1184.000
X4	7650.000	1186.000	7800.000	1184.000	7950.000	1186.000	8050.000	1184.000	8100.000	1182.000
X4	8140.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1212.000	5200.000	1196.000	5310.000	1192.000	5870.000	1192.000	6600.000	1188.000	6710.000
GR	1188.000	7040.000	1184.000	7480.000	1184.000	8160.000	1188.000	8650.000	1184.000	8980.000
GR	1184.000	9220.000	1180.000	9850.000	1178.000	10000.000	1180.000	10210.000	1232.000	10290.000

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QT	5.000	119000.000	119000.000	25800.000	92000.000	182000.000	.000	.000	.000	.000
NH	5.000	.045	6700.000	.035	8210.000	.040	9700.000	.035	10300.000	.045
NH	10440.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	7780.000	10301.000
X1	20.738	16.000	9700.000	10300.000	800.000	840.000	860.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	9.000	1184.000	9700.000	1184.000	10300.000	1187.000	7170.000	1188.000	7270.000	1191.300
X4	7430.000	1188.000	7580.000	1185.000	7650.000	1183.800	9430.000	1181.000	10000.000	.000
GR	1216.000	4990.000	1200.000	5080.000	1196.000	5790.000	1192.000	6400.000	1192.000	6700.000
GR	1188.000	7060.000	1188.000	7700.000	1189.000	7930.000	1188.000	8210.000	1188.000	8550.000
GR	1188.000	9000.000	1184.000	9180.000	1180.000	10090.000	1180.000	10250.000	1184.000	10420.000

NH	5.000	.045	7130.000	.040	7525.000	.045	9380.000	.035	10380.000	.045
NH	11130.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8420.000	10720.000
X1	20.993	29.000	9380.000	10380.000	810.000	1370.000	1350.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	5.000	1195.000	6660.000	1183.000	10300.000	1187.500	10530.000	1188.900	10900.000	1187.000
X4	11060.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1220.000	5280.000	1216.000	5450.000	1212.000	5580.000	1204.000	5630.000	1200.000	5700.000
GR	1196.000	6180.000	1196.000	6550.000	1194.000	7030.000	1192.000	7130.000	1189.000	7350.000
GR	1189.000	7480.000	1192.000	7525.000	1193.000	7800.000	1192.000	8240.000	1188.000	8280.000
GR	1188.000	8330.000	1185.000	8400.000	1189.000	8670.000	1188.000	8800.000	1188.000	8850.000
GR	1192.000	9200.000	1192.000	9380.000	1188.000	9470.000	1184.000	9520.000	1184.000	10330.000
GR	1188.000	10380.000	1188.000	11070.000	1200.000	11100.000	1220.000	11130.000	.000	.000

NH	5.000	.045	7920.000	.040	8130.000	.045	9870.000	.035	10350.000	.045
NH	12000.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8800.000	11350.000
X1	21.241	36.000	9870.000	10350.000	810.000	1240.000	1310.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	3.000	1188.000	10325.000	1194.000	10600.000	1193.000	9550.000	.000	.000	.000
GR	1220.000	6190.000	1204.000	6520.000	1200.000	6860.000	1200.000	7640.000	1196.000	7860.000
GR	1192.000	7920.000	1192.000	8000.000	1194.000	8130.000	1196.000	8390.000	1200.000	8410.000
GR	1200.000	8570.000	1196.000	8590.000	1196.000	8760.000	1192.000	8800.000	1192.000	9350.000
GR	1192.000	9360.000	1192.000	9870.000	1190.000	9900.000	1190.000	10250.000	1188.000	10310.000
GR	1192.000	10330.000	1194.000	10350.000	1194.000	10700.000	1192.000	10760.000	1190.000	10790.000
GR	1192.000	10820.000	1194.000	10950.000	1192.000	11170.000	1191.000	11190.000	1192.000	11210.000
GR	1194.000	11280.000	1194.000	11600.000	1192.000	11680.000	1192.000	11910.000	1200.000	11960.000
GR	1200.000	12000.000	.000	.000	.000	.000	.000	.000	.000	.000

BT	5.000	120700.000	120700.000	28200.000	93700.000	182000.000	.000	.000	.000	.000
NC	.040	.450	.035	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	7950.000	10970.000
X1	21.469	95.000	9718.000	10872.000	980.000	1000.000	1200.000	.000	.000	.000
GR	1257.000	7371.000	1257.000	7412.000	1232.000	7455.000	1204.000	7499.000	1197.000	7530.000
GR	1197.000	7548.000	1193.000	7566.000	1193.000	7611.000	1193.000	7643.000	1193.000	7653.000
GR	1192.000	7811.000	1193.000	7813.000	1193.000	7828.000	1192.000	7839.000	1192.000	7857.000
GR	1193.000	7866.000	1194.000	7893.000	1193.000	7922.000	1194.000	7994.000	1193.000	8032.000
GR	1193.000	8082.000	1194.000	8138.000	1194.000	8152.000	1193.000	8178.000	1192.000	8213.000
GR	1194.000	8242.000	1195.000	8293.000	1192.000	8318.000	1193.000	8361.000	1194.000	8424.000
GR	1195.000	8466.000	1195.000	8486.000	1195.000	8516.000	1195.000	8567.000	1195.000	8623.000

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GR	1195.000	8668.000	1195.000	8699.000	1195.000	8725.000	1194.000	8747.000	1194.000	8796.000
GR	1195.000	8860.000	1185.000	8910.000	1192.000	8951.000	1193.000	8996.000	1193.000	9052.000
GR	1189.000	9071.000	1185.000	9089.000	1190.000	9102.000	1190.000	9129.000	1191.000	9175.000
GR	1193.000	9186.000	1195.000	9195.000	1194.000	9204.000	1193.000	9221.000	1194.000	9249.000
GR	1194.000	9289.000	1193.000	9353.000	1192.000	9368.000	1191.000	9377.000	1194.000	9393.000
GR	1194.000	9412.000	1194.000	9461.000	1193.000	9504.000	1193.000	9573.000	1193.000	9634.000
GR	1194.000	9718.000	1191.000	9733.000	1191.000	9812.000	1191.000	9896.000	1191.000	9949.000
GR	1192.000	9978.000	1192.000	10000.000	1192.000	10006.000	1192.000	10040.000	1189.000	10070.000
GR	1188.000	10804.000	1187.000	10850.000	1193.000	10859.000	1194.000	10872.000	1194.000	10915.000
GR	1194.000	11050.000	1192.000	11073.000	1194.000	11103.000	1192.000	11143.000	1192.000	11166.000
GR	1194.000	11195.000	1193.000	11212.000	1196.000	11236.000	1195.000	11267.000	1195.000	11316.000
GR	1206.000	11575.000	1202.000	11593.000	1202.000	11901.000	1203.000	11919.000	1208.000	11966.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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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

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#PROF 1

CCHV=    .100 CEHV=    .300
#SECNO 18.507

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1160.70 ELREA=     1150.30

    18.51    15.13  1153.93      .00      .00  1154.77      .85      .00      .00  1160.70
   112960.       0.   67483.   45477.       0.    8358.    7322.       0.       0.   1150.30
      .00      .00     8.07     6.21     .045     .035     .040     .000  1138.80  9663.83
   .002301     570.     529.     515.        0        0        5      .00  2299.47 11963.30
0
 FLOW DISTRIBUTION FOR SECNO=     18.51          CWSEL=   1153.93

 STA=    9664.   10718.   10943.   11065.   11230.   11374.   11440.   11489.   11580.   11682.   11742.   11799.   11963.
   PER Q=     59.7      3.7      3.4      3.1      4.4      3.0      3.0      3.9      4.2      4.4      4.6      2.6
    AREA=   8358.1    907.7    682.4    723.9    847.2    498.1    442.6    659.0    726.2    593.5    602.5    638.7
     VEL=      8.1      4.5      5.6      4.8      5.8      6.9      7.7      6.7      6.6      8.3      8.6      4.6

 #SECNO 18.608

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1163.40 ELREA=     1150.50

    18.61    15.15  1155.15      .00      .00  1155.93      .77     1.15      .01  1163.40
   112960.       0.   67835.   45125.       0.    8540.    8232.     224.      31.   1150.50
      .02      .00     7.94     5.48     .045     .035     .040     .000  1140.00  9746.53
   .001666     540.     525.     685.        2        0        0      .00  2145.27 11891.80
0
 FLOW DISTRIBUTION FOR SECNO=     18.61          CWSEL=   1155.15

 STA=    9747.   10609.   10806.   11011.   11206.   11394.   11511.   11567.   11631.   11722.   11826.   11892.
   PER Q=     60.1      4.1      4.2      3.6      4.5      4.0      3.1      3.1      3.9      6.5      3.0
    AREA=   8540.3   1012.6   1053.3    935.5   1050.3    818.5    522.9    547.1    731.1   1044.4    516.6
     VEL=      7.9      4.5      4.5      4.3      4.8      5.6      6.7      6.4      6.1      7.1      6.5

 CCHV=    .100 CEHV=    .300
 #SECNO 18.707

 3301 HV CHANGED MORE THAN HVINS

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    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



 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1165.20 ELREA=     1152.80

    18.71    10.30  1155.80  1155.79      .00  1158.44     2.64     1.95      .56  1165.20
   112960.       0.   78219.   34741.       0.    5439.    3729.     411.      60.   1152.80
      .04      .00    14.38     9.32     .045     .035     .040     .000  1145.50  9824.57
   .008676     520.     535.     735.        6       20        0      .00  1649.03 11473.60
0
 FLOW DISTRIBUTION FOR SECNO=     18.71          CWSEL=   1155.80

 STA=    9825.   10599.   10729.   10839.   10994.   11203.   11295.   11379.   11436.   11474.
   PER Q=     69.2      3.7      3.1      3.2      6.3      4.9      4.3      3.1      2.0
    AREA=   5438.6    493.1    419.9    490.5    811.3    513.4    455.1    322.9    222.5
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CCHV=  .100 CEHV=    .300
*SECNO 18.808

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9059.0   10880.0  TYPE=     1  TARGET=   -9059.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1156.00 ELREA=     1168.00

    18.81    12.27  1159.27      .00      .00  1161.05     1.79     2.53      .09  1156.00
   112960.      5.  112955.       0.       3.   10532.       0.     532.      78.   1168.00
      .05     1.51    10.72      .00     .045     .030     .040     .000  1147.00  9059.00
   .002991     500.     530.     550.        2        0        0      .00  1336.05 10395.05
0
 FLOW DISTRIBUTION FOR SECNO=     18.81          CWSEL=   1159.27

 STA=    9059.    9060.   10420.
   PER Q=       .0    100.0
    AREA=      3.3  10532.4
     VEL=      1.5     10.7

 *SECNO 18.893

 3301 HV CHANGED MORE THAN HVINS

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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=     1172.00 ELREA=     1168.40

    18.89    12.18  1160.68      .00      .00  1161.91     1.24      .80      .05  1172.00
   115000.      0.  115000.       0.       0.   12878.       0.     653.      90.   1168.40
      .06      .00     8.93      .00     .045     .030     .040     .000  1148.50  9264.45
   .001196     450.     450.     450.        2        0        0      .00  1073.92 10338.37
0
 FLOW DISTRIBUTION FOR SECNO=     18.89          CWSEL=   1160.68

 STA=    9264.   10350.
   PER Q=    100.0
    AREA=  12878.1
     VEL=      8.9


 SPECIAL BRIDGE

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      1.10      1.56      3.00       .00   1040.00     56.00  17035.00      1.80   1148.50   1148.50

 *SECNO 18.906
 CLASS A LOW FLOW

 3420 BRIDGE W.S.=   1160.49 BRIDGE VELOCITY=,      9.54      CALCULATED CHANNEL AREA=,    12059.

  EGPRS      EGLWC      H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                              AREA
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1165.80 ELREA=     1172.00

   18.91    12.39  1160.89      .00      .00  1162.10     1.21      .19      .00  1148.50
  115000.      0.  115000.       0.       0.   13036.       0.     673.      92.  1168.40
     .07      .00     8.82      .00     .000     .030     .000     .000  1148.50  9250.00
  .001139     70.      70.      70.        0        0        0      .00  1073.60 10323.60
0
FLOW DISTRIBUTION FOR SECNO=     18.91          CWSEL=   1160.89

STA=    9250.   10350.
  PER Q=    100.0
   AREA=  13035.5
    VEL=      8.8

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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
1490 NH CARD USED
*SECNO 19.029

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    8650.0   10360.0  TYPE=     1  TARGET=   -8650.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1160.00 ELREA=   100000.00

    19.03     9.70  1161.70  1161.70      .00  1164.44     2.74     1.63      .46  1160.00
  115000.   31105.   83895.       0.    3228.    5830.       0.     838.     112. 100000.00
     .08     9.64    14.39      .00     .040     .035     .000     .000  1152.00  8650.00
  .009445     650.     650.     650.        4       19        0      .00  1643.08 10293.08
0
FLOW DISTRIBUTION FOR SECNO=     19.03          CWSEL=   1161.70

STA=    8650.    9200.    9400.   10360.
  PER Q=     22.7      4.4     73.0
   AREA=   2587.2    640.8   5830.3
    VEL=     10.1      7.8     14.4

1490 NH CARD USED
*SECNO 19.245

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    7400.0   10160.0  TYPE=     1  TARGET=   -7400.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1160.00 ELREA=     1176.00

    19.25    10.40  1168.40      .00      .00  1169.03      .63     4.38      .21  1160.00
  115000.   78772.   36228.       0.   13645.    4868.       0.    1259.     180.  1176.00
     .14     5.77     7.44      .00     .038     .035     .000     .000  1158.00  7400.00
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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


FLOW DISTRIBUTION FOR SECNO=     19.25          CWSEL=   1168.40

STA=    7400.    7840.    8060.    8750.    8880.    9020.    9550.   10120.
  PER Q=      7.7      4.9     20.5      8.4      9.0     18.0     31.5
   AREA=   2099.1   1189.5   4420.6   1222.9   1316.9   3395.6   4867.9
    VEL=      4.2      4.8      5.3      7.9      7.9      6.1      7.4

1490 NH CARD USED
#SECNO 19.491

3470 ENCROACHMENT STATIONS=    6000.0   10160.0  TYPE=     1  TARGET=   -6000.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1167.00 ELREA=   100000.00

    19.49    10.08  1171.08      .00      .00  1172.01      .93     2.89      .09  1167.00
  115000.   69235.   45765.       0.   11896.    4600.       0.    1781.     282. 100000.00
      .19     5.82     9.95      .00     .037     .035     .000     .000  1161.00  6000.00
  .002950    1300.    1300.    1300.        3        0        0      .00  4140.63 10140.63
0
FLOW DISTRIBUTION FOR SECNO=     19.49          CWSEL=   1171.08

STA=    6000.    7520.    7780.    8350.    8730.    9000.    9630.   10160.
  PER Q=      4.1      5.4     17.2     19.9      4.3      9.3     39.8
   AREA=   1991.5   1062.1   2898.5   2692.3    993.0   2258.6   4600.2
    VEL=      2.4      5.9      6.8      8.5      5.0      4.7      9.9

1490 NH CARD USED
#SECNO 19.700
    19.70    11.17  1174.17      .00      .00  1174.87      .70     2.84      .02  1170.00
  116000.   75010.   31843.    9147.   12091.    4040.    1513.    2198.     381.  1171.00
      .23     6.20     7.88     6.04     .036     .035     .035     .000  1163.00  6573.07
  .002415    1050.    1100.    1060.        2        0        0      .00  3992.36 10565.43
0
FLOW DISTRIBUTION FOR SECNO=     19.70          CWSEL=   1174.17

STA=    6573.    7800.    8080.    8520.    8810.    9040.    9700.   10250.   10530.   10565.
  PER Q=      3.0      5.4     23.6     15.6      8.6      8.4     27.5      7.3       .6
   AREA=   1658.6   1168.3   3375.9   2225.0   1419.7   2243.8   4039.9   1382.3    131.1
    VEL=      2.1      5.4      8.1      8.1      7.0      4.4      7.9      6.1      5.2
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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


1490 NH CARD USED
#SECNO 19.929
    19.93    11.51  1177.51      .00      .00  1178.35      .84     3.44      .04  1172.40
  116000.   67139.   26837.   22023.   10672.    2830.    2950.    2653.     485.  1173.00
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  .003687    1150.    1210.    1150.       2        0        0      .00  3872.33 10834.43
0
 FLOW DISTRIBUTION FOR SECNO=     19.93          CWSEL=   1177.51

 STA=    6962.    8110.    8310.    8610.    8920.    9070.    9210.    9830.   10230.   10800.   10834.
   PER Q=      3.8      7.2      7.2      7.4      6.6      6.2     19.5     23.1     18.6       .4
    AREA=   1680.7   1061.8   1352.6   1397.7    976.3    911.2   3291.4   2829.5   2855.0     94.8
     VEL=      2.6      7.9      6.2      6.2      7.9      7.9      6.9      9.5      7.5      5.0

 1490 NH CARD USED
 #SECNO 20.122

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1175.00 ELREA=     1200.00

     20.12     8.86  1180.86      .00      .00  1181.74      .88     3.37      .01  1175.00
   116000.   66362.   49638.       0.   11251.    5345.       0.    3035.     571.   1200.00
      .31     5.90     9.29      .00     .041     .035     .035     .000  1172.00  6723.58
   .003050    1000.    1020.    1020.       2        0        0      .00  3572.23 10295.81
0
 FLOW DISTRIBUTION FOR SECNO=     20.12          CWSEL=   1180.86

 STA=    6724.    7420.    8950.    9160.    9620.   10330.
   PER Q=      3.0     20.1     11.5     22.6     42.8
    AREA=   1283.0   4958.9   1625.6   3383.5   5344.6
     VEL=      2.8      4.7      8.2      7.8      9.3

 1490 NH CARD USED
 #SECNO 20.382
     20.38     9.12  1185.12      .00      .00  1186.26     1.14     4.44      .08  1180.00
   117000.   56900.   60100.       0.    9953.    5693.       0.    3539.     684.   1192.00
      .36     5.72    10.56      .00     .038     .035     .035     .000  1176.00  6685.98
   .003481    1360.    1370.    1370.       2        0        0      .00  3671.03 10357.01
0
 FLOW DISTRIBUTION FOR SECNO=     20.38          CWSEL=   1185.12

 STA=    6686.    7620.    7950.    8180.    8940.    9700.   10400.
   PER Q=      3.9     10.8      3.3      9.0     21.7     51.4
    AREA=   1379.8   1690.2    718.0   2272.5   3892.5   5693.0
     VEL=      3.3      7.4      5.4      4.6      6.5     10.6

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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


 1490 NH CARD USED
 #SECNO 20.575

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1183.50 ELREA=     1232.00

     20.58    10.80  1188.80      .00      .00  1190.16     1.36     3.84      .07  1183.50
   117000.   55742.   61258.       0.    8807.    5351.       0.    3884.     767.   1232.00
      .39     6.33    11.45      .00     .038     .035     .035     .000  1178.00  6687.94
   .004160    1000.    1020.    1020.       2        0        0      .00  3535.60 10223.54
0
 FLOW DISTRIBUTION FOR SECNO=     20.58          CWSEL=   1188.80

 STA=    6688.    7480.    7600.    7800.    7950.    8100.    8200.    8980.    9220.    9600.   10290.
   PER Q=      3.6      6.0      5.8      3.3      3.3      3.1      4.4      6.7     11.6     52.4
    AREA=   1206.5    756.3    885.4    570.3    570.3    460.2   1285.7   1152.5   1919.8   5351.4
```

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1490 NH CARD USED
#SECNO 20.738

3301 HV CHANGED MORE THAN HVINS

    20.74    11.72  1191.72      .00      .00  1192.45      .73     2.23      .06  1184.00
   119000.   60513.   53278.    5210.   12456.    6137.     939.    4202.     835.   1184.00
      .43     4.86     8.68     5.55     .039     .035     .045     .000  1180.00  6725.15
  .001883     800.     860.     840.        2        0        0      .00  3698.07 10423.22
0
 FLOW DISTRIBUTION FOR SECNO=     20.74          CWSEL=   1191.72

 STA=    6725.    7170.    7580.    7930.    8210.    8550.    9000.    9180.    9430.    9700.   10300.   10420.   10423.
   PER Q=      3.3      3.3      5.4      3.0      4.1      5.4      4.5     10.4     11.3     44.8      4.4       .0
    AREA=   1087.2   1063.9   1367.2    901.8   1265.0   1674.3   1029.7   1955.1   2111.6   6137.3    926.5     12.4
     VEL=      3.7      3.7      4.7      4.0      3.9      3.9      5.2      6.4      6.4      8.7      5.6      1.9

 1490 NH CARD USED
 #SECNO 20.993
    20.99    10.82  1193.82      .00      .00  1194.47      .65     2.01      .01  1192.00
   119000.   29271.   72547.   17183.    7950.    9473.    4026.    4711.     922.   1188.00
      .48     3.68     7.66     4.27     .044     .035     .045     .000  1183.00  7039.59
  .001624     810.    1350.    1370.        2        0        0      .00  4044.93 11084.52
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


 FLOW DISTRIBUTION FOR SECNO=     20.99          CWSEL=   1193.82

 STA=    7040.    7480.    8330.    8670.    8850.    9200.    9380.   10380.   10530.   10900.   11060.   11085.
   PER Q=      4.4      3.1      9.5      3.4      3.6       .5     61.0      3.4      7.3      3.4       .3
    AREA=   1434.6   1527.0   2349.8    990.5   1332.9    325.5   9473.2    908.7   2075.0    937.3    105.3
     VEL=      3.6      2.4      4.8      4.1      3.2      2.0      7.7      4.4      4.2      4.3      3.7

 1490 NH CARD USED
 #SECNO 21.241

 3265 DIVIDED FLOW


 3301 HV CHANGED MORE THAN HVINS

    21.24     8.71  1196.71      .00      .00  1197.92     1.21     3.28      .17  1192.00
   119000.   44473.   39008.   35519.    6492.    3220.    5593.    5173.    1016.   1194.00
      .51     6.85    12.12     6.35     .044     .035     .045     .000  1188.00  7821.09
  .006466     810.    1310.    1240.        3        0        0      .00  3925.40 11939.42
0
 FLOW DISTRIBUTION FOR SECNO=     21.24          CWSEL=   1196.71

 STA=    7821.    8000.    8390.    9350.    9550.    9870.   10350.   10700.   10820.   11170.   11600.   11910.   11939.
   PER Q=      3.4      4.3     16.9      4.9      7.8     32.8      4.1      3.6      6.9      6.5      8.4       .3
    AREA=    552.8    925.9   2820.1    846.5   1346.4   3219.6    947.6    564.9   1297.6   1334.2   1379.3     69.2
     VEL=      7.3      5.5      7.1      7.0      6.9     12.1      5.2      7.6      6.4      5.8      7.2      4.7

 #SECNO 21.469

 3301 HV CHANGED MORE THAN HVINS
```

```
   21.47    14.55  1199.55      .00      .00  1199.55      .58     1.95      .08  1194.00
  120700.   52501.   67381.     817.   13926.   11754.    2776.    5705.    1108.   1194.00
     .58     3.77     5.73     .29     .040     .035     .450     .000  1185.00  7518.71
  .000828    980.    1200.    1000.        3        0        0      .00  3904.39 11423.10
0
 FLOW DISTRIBUTION FOR SECNO=     21.47          CWSEL=   1199.55

1
 01/04/88    11:16:48                                                                    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


 STA=    7519.    7811.    7994.    8178.    8361.    8623.    8860.    8951.    9089.    9175.    9353.    9573.    9718.
   PER Q=     5.7      3.5      3.4      3.5      3.4      3.0      3.8      3.8      3.3      3.1      4.2      2.7
    AREA=  1825.6   1163.4   1131.0   1148.4   1307.3   1170.0    930.4   1072.2    830.7   1059.7   1380.2    907.6
     VEL=     3.8      3.7      3.6      3.7      3.1      3.1      5.0      4.3      4.8      3.5      3.7      3.6
 STA=    9718.   10872.   11423.
   PER Q=    55.8       .7
    AREA= 11753.7   2776.2
     VEL=     5.7       .3

1
 01/04/88    11:16:48                                                                    PAGE   16


                                                                THIS RUN EXECUTED 01/04/88   11:18:08
 ************************************************
   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
 ************************************************
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HEC-II PRINTOUT FOR
ORIGINAL FLOODWAY
BOUNDARY CONDITIONS

```
****************************************************
* WATER SURFACE PROFILES                           *
* VERSION OF NOVEMBER 1976                         *
* UPDATED MAY 1984                                 *
* IBM-PC-XT VERSION                                *
* RUN DATE  12/28/87  TIME  15:00:20               *
****************************************************
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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
```


THIS RUN EXECUTED 12/28/87   15:00:22

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

T1 WATER SURFACE PROFILE
T2 LOMR BROOKVIEW -FLOODWAY
T3 AGUA FRIA RIVER NORTH OF BELL ROAD BRIDGE

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	1.	3.	0.	0.	.002300	.00	.0	0.	1149.340	.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	53.000	21.000	55.000	26.000	56.000	32.000	54.000	4.000
1.000	50.000	201.000	.000	.000	.000	.000	.000	.000	.000

NC	.045	.040	.035	.100	.300	.000	.000	.000	.000	.000
QT	5.000	112960.000	112960.000	22700.000	85500.000	181700.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	.000	11964.000	9531.000	11520.000
X1	18.507	95.000	9531.200	10717.800	570.000	515.000	529.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1164.500	8844.500	1165.900	8934.800	1166.200	9038.100	1166.200	9132.900	1166.400	9226.500
GR	1163.900	9373.500	1161.300	9422.900	1160.900	9469.400	1160.700	9531.200	1159.100	9560.200

GR	1144.800	10000.000	1145.900	10065.200	1147.800	10203.700	1148.200	10362.600	1146.900	10437.500
GR	1147.100	10463.600	1148.500	10532.800	1146.000	10613.400	1146.000	10639.500	1149.000	10646.800
GR	1146.900	10664.400	1146.900	10683.700	1150.300	10717.800	1150.300	10842.600	1148.500	10943.100
GR	1147.400	10989.000	1148.900	11029.900	1149.200	11065.100	1149.800	11159.300	1149.400	11230.200
GR	1147.300	11332.900	1147.300	11374.300	1145.300	11439.600	1144.600	11488.900	1146.700	11511.100
GR	1147.300	11579.700	1146.900	11626.800	1146.400	11682.400	1142.700	11724.400	1141.800	11741.500
GR	1142.500	11771.500	1147.100	11798.800	1150.300	11874.800	1152.100	11963.300	1152.100	12067.200
GR	1153.500	12231.200	1152.800	12313.400	1151.900	12418.400	1152.200	12509.800	1152.600	12541.000
GR	1151.500	12593.800	1151.500	12634.100	1151.200	12690.800	1152.100	12710.700	1151.700	12762.900
GR	1151.200	12866.700	1151.300	12928.000	1152.100	12976.200	1152.200	13004.000	1152.900	13075.000
GR	1153.500	13109.000	1148.700	13118.100	1148.000	13149.300	1153.700	13156.700	1153.100	13250.900
GR	1153.500	13406.400	1153.300	13445.500	1159.300	13460.800	1159.300	13488.100	1159.000	13560.100
GR	1158.600	13686.700	1158.400	13785.400	1159.300	13880.700	1159.000	13962.500	1159.100	13989.700
GR	1159.900	14041.900	1159.900	14078.200	1161.800	14098.100	1160.200	14115.700	1159.900	14199.600
GR	1160.700	14465.100	1161.800	14491.900	1162.000	14497.000	1163.900	14523.100	1165.200	14542.400

1

ET	.000	7.100	9.100	.000	.000	.000	.000	11892.000	9737.000	11550.000
X1	18.608	75.000	9737.000	10609.400	540.000	685.000	525.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1170.100	8697.100	1169.600	8743.000	1169.100	8774.800	1169.400	8816.800	1169.600	8885.500
GR	1168.400	8986.500	1168.400	9048.900	1168.700	9127.800	1169.200	9210.100	1169.400	9313.300
GR	1169.400	9421.700	1168.900	9466.000	1169.100	9509.100	1168.900	9542.000	1168.700	9577.200
GR	1167.300	9643.000	1165.900	9689.000	1163.400	9715.100	1163.400	9737.000	1154.400	9747.400
GR	1143.400	9761.600	1143.600	9809.900	1144.300	9884.800	1144.300	9916.500	1147.800	9930.200
GR	1143.400	9941.500	1143.600	9969.300	1145.300	9989.200	1145.300	10000.000	1145.700	10031.700
GR	1140.000	10146.900	1147.600	10255.300	1147.600	10349.500	1140.000	10440.900	1149.600	10476.000
GR	1148.700	10526.500	1150.500	10609.400	1149.800	10667.300	1149.900	10733.700	1150.100	10805.700
GR	1149.800	10935.100	1150.500	11011.100	1150.300	11103.100	1150.300	11205.800	1149.600	11273.900
GR	1149.600	11336.300	1148.500	11393.600	1148.500	11437.900	1148.000	11469.100	1147.400	11510.500
GR	1145.300	11533.200	1146.000	11567.200	1147.100	11630.800	1147.100	11721.600	1145.300	11776.100
GR	1142.700	11826.000	1142.300	11842.500	1142.300	11846.400	1148.000	11854.400	1152.800	11891.800
GR	1151.700	11948.000	1151.900	11958.200	1149.600	11991.100	1150.500	12034.800	1149.900	12086.500
GR	1150.300	12152.500	1152.600	12207.300	1152.600	12263.500	1152.200	12358.300	1152.600	12479.700
GR	1152.200	12652.200	1152.400	12719.200	1152.100	12772.500	1151.700	12911.000	1151.900	13016.500
NC	.045	.040	.035	.100	.300	.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	.000	11475.000	9727.000	11300.000
X1	18.707	95.000	9727.600	10598.600	520.000	735.000	535.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1171.200	9121.000	1172.400	9238.400	1171.900	9313.900	1171.900	9380.900	1171.700	9471.100
GR	1170.800	9579.500	1170.100	9589.300	1166.600	9666.300	1165.200	9727.600	1163.900	9740.600
GR	1161.100	9764.500	11157.900	9793.400	1146.000	9824.600	1145.500	9842.800	1145.700	9904.100
GR	1145.700	9933.000	1146.900	9964.800	1146.600	9982.400	1146.600	10000.000	1146.400	10038.000
GR	1146.400	10057.300	1147.400	10074.900	1146.400	10081.100	1146.400	10106.600	1148.500	10113.400
GR	1151.500	10532.400	1152.800	10598.600	1152.400	10650.800	1151.000	10681.500	1152.100	10728.600
GR	1151.900	10759.800	1152.600	10786.400	1151.500	10806.900	1151.900	10838.600	1152.600	10860.800
GR	1152.800	10993.600	1152.400	11105.300	1149.900	11202.900	1150.600	11295.400	1150.100	11378.900
GR	1150.300	11415.700	1149.900	11436.200	1149.800	11473.600	1147.800	11504.300	1146.700	11541.700
GR	1147.400	11609.800	1148.500	11659.700	1148.500	11718.200	1148.200	11775.500	1148.300	11816.400
GR	1148.500	11825.400	1152.600	11831.700	1151.900	11840.200	1149.900	11860.100	1152.900	11885.600
GR	1158.300	11938.900	1151.700	11959.400	1150.600	11970.100	1152.900	11977.500	1153.700	12010.400
GR	1154.000	12074.000	1153.800	12126.800	1153.700	12265.800	1153.700	12394.000	1154.000	12505.200
GR	1154.700	12718.600	1154.000	12808.300	1154.400	12848.000	1154.200	12933.700	1154.000	13056.800
GR	1154.500	13410.900	1149.900	13420.000	1149.900	13441.000	1154.700	13450.600	1157.500	13481.800
GR	1157.700	13565.200	1155.400	13620.300	1155.600	13690.100	1157.000	13742.300	1157.700	13841.600
GR	1159.700	13944.900	1160.000	13979.500	1159.700	14020.300	1160.600	14035.100	1160.600	14164.500
GR	1161.400	14363.600	1162.000	14503.200	1162.300	14657.000	1162.900	14756.900	1163.900	14774.500
GR	1162.900	14779.000	1167.600	14789.800	1170.300	14839.200	1174.400	14852.200	1176.900	14865.800
NC	.045	.040	.030	.100	.300	.000	.000	.000	.000	.000

X1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	5200.000	1166.000	5300.000	1162.000	5480.000	1162.000	6300.000	1157.000	7150.000
GR	1157.000	7900.000	1152.000	8380.000	1152.000	8440.000	1156.000	8940.000	1156.000	9060.000
GR	1152.000	9140.000	1152.000	9240.000	1154.000	9490.000	1152.000	9860.000	1148.000	10100.000
GR	1147.000	10360.000	1168.000	10420.000	1171.000	10550.000	1172.000	10880.000	.000	.000

1

QT	5.000	115000.000	115000.000	23000.000	87000.000	182000.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	9249.000	10351.000
X1	18.893	13.000	9250.000	10350.000	450.000	450.000	450.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	5170.000	1172.000	5410.000	1168.000	5640.000	1166.000	6040.000	1166.000	6580.000
GR	1166.400	7180.000	1166.800	7750.000	1167.000	8270.000	1172.000	9250.000	1148.500	9280.000
GR	1148.500	10320.000	1168.400	10350.000	1172.000	10600.000	.000	.000	.000	.000
SB	1.100	1.560	3.000	.000	1040.000	56.000	17035.000	1.800	1148.500	1148.500
ET	.000	.000	9.100	.000	.000	.000	9249.000	.000	9249.000	10351.000
X1	18.906	13.000	9250.000	10350.000	70.000	70.000	70.000	.000	.000	.000
X2	.000	.000	1.000	1167.300	1165.700	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1165.800	1172.000	.000
BT	15.000	5150.000	1180.000	.000	5390.000	1172.000	.000	5620.000	1168.000	.000
BT	6020.000	1165.700	.000	6560.000	1165.700	.000	7160.000	1166.400	.000	7730.000
BT	1166.800	.000	8250.000	1167.000	.000	8800.000	1165.800	.000	9249.000	1172.000
BT	.000	9250.000	1175.000	1165.000	9800.000	1177.000	1167.300	10350.000	1172.300	1161.600
BT	10351.000	1168.600	.000	10580.000	1172.000	.000	.000	.000	.000	.000
GR	1180.000	5150.000	1172.000	5390.000	1168.000	5620.000	1166.000	6020.000	1166.000	6560.000
GR	1166.400	7160.000	1166.800	7730.000	1167.000	8250.000	1172.000	9230.000	1148.500	9250.000
GR	1148.500	10280.000	1168.400	10350.000	1172.000	10580.000	.000	.000	.000	.000
NC	.000	.000	.000	.100	.300	.000	.000	.000	.000	.000
NH	3.000	.045	8000.000	.040	9400.000	.035	10360.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	8650.000	.000	8900.000	10361.000
X1	19.029	22.000	9400.000	10360.000	650.000	650.000	650.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	4760.000	1176.000	5010.000	1167.000	5060.000	1168.000	5100.000	1168.000	5940.000
GR	1164.000	6040.000	1164.000	6340.000	1162.000	7390.000	1160.000	8000.000	1160.000	8550.000
GR	1157.000	8600.000	1157.000	9200.000	1160.000	9400.000	1156.000	9460.000	1152.000	9780.000
GR	1152.000	9840.000	1158.000	9870.000	1157.000	10030.000	1156.000	10150.000	1152.000	10160.000
GR	1152.000	10230.000	1172.000	10360.000	.000	.000	.000	.000	.000	.000
NH	4.000	.045	7630.000	.040	8750.000	.035	10120.000	.045	10160.000	.000
ET	.000	7.100	9.100	.000	.000	.000	7400.000	.000	8200.000	10121.000
X1	19.245	19.000	9550.000	10120.000	1450.000	1140.000	1140.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	4920.000	1176.000	4960.000	1172.000	5150.000	1168.000	5570.000	168.000	5910.000
GR	1165.000	7100.000	1164.000	7630.000	1162.000	7840.000	1164.000	8060.000	1160.000	8750.000
GR	1158.000	8880.000	1160.000	9020.000	1164.000	9070.000	1160.000	9550.000	1160.000	9900.000
GR	1158.000	10000.000	1160.000	10100.000	1176.000	10120.000	1180.000	10160.000	.000	.000
NH	4.000	.045	7520.000	.035	8730.000	.040	9630.000	.035	10160.000	.000
ET	.000	7.100	9.100	.000	.000	.000	6000.000	.000	7780.000	10161.000
X1	19.491	17.000	9630.000	10160.000	1300.000	1300.000	1300.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	4880.000	1176.000	5030.000	1172.000	5680.000	1170.000	6290.000	1170.000	7040.000
GR	1168.000	7520.000	1166.000	7600.000	1168.000	7780.000	1164.000	8350.000	1164.000	8730.000
GR	1168.000	8810.000	1168.000	9000.000	1167.000	9630.000	1162.000	9650.000	1161.000	9960.000
GR	1164.000	10130.000	1184.000	10160.000	.000	.000	.000	.000	.000	.000

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NH	4.000	.045	7800.000	.035	9190.000	.040	9700.000	.035	10600.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8130.000	10567.000
X1	19.700	18.000	9700.000	10250.000	1050.000	1060.000	1100.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	3.000	1170.000	9700.000	1171.000	10250.000	1169.400	10350.000	.000	.000	.000
GR	1180.000	5400.000	1176.000	5500.000	1175.000	6220.000	1172.000	7500.000	1172.000	7800.000
GR	1168.000	8080.000	1165.000	8520.000	1168.000	8810.000	1168.000	9040.000	1172.000	9190.000
GR	1168.000	9820.000	1164.000	9900.000	1163.000	9930.000	1164.000	9960.000	1168.000	10180.000
GR	1168.000	10530.000	1172.000	10560.000	1188.000	10600.000	.000	.000	.000	.000
NH	4.000	.045	8110.000	.035	8310.000	.040	9830.000	.035	11000.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8600.000	10838.000
X1	19.929	21.000	9830.000	10230.000	1150.000	1150.000	1210.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	2.000	1172.400	9830.000	1173.000	10230.000	.000	.000	.000	.000	.000
GR	1196.000	5590.000	1184.000	5690.000	1182.000	6060.000	1184.000	6340.000	1180.000	6600.000
GR	1180.000	6850.000	1176.000	7030.000	1176.000	8110.000	1172.000	8130.000	1172.000	8310.000
GR	1174.000	8610.000	1172.000	8920.000	1170.000	9070.000	1172.000	9210.000	1172.000	9900.000
GR	1168.000	9910.000	1166.000	9930.000	1168.000	9970.000	1172.000	10150.000	1172.000	10800.000
GR	1204.000	11000.000	.000	.000	.000	.000	.000	.000	.000	.000
NH	3.000	.045	7930.000	.040	9620.000	.035	10330.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8320.000	10331.000
X1	20.122	19.000	9620.000	10330.000	1000.000	1020.000	1020.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1200.000	5540.000	1188.000	5640.000	1185.000	5680.000	1184.000	6170.000	1184.000	6700.000
GR	1180.000	6730.000	1178.000	6930.000	1180.000	7420.000	1180.000	7510.000	1179.000	7740.000
GR	1176.000	7930.000	1178.000	8950.000	1172.000	9028.000	1172.000	9160.000	1175.000	9620.000
GR	1172.000	10000.000	1172.000	10220.000	1172.000	10280.000	1200.000	10330.000	.000	.000
QT	2.000	117000.000	117000.000	.000	.000	.000	.000	.000	.000	.000
NH	4.000	.045	7450.000	.035	8180.000	.040	9700.000	.035	10400.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8200.000	10401.000
X1	20.382	18.000	9700.000	10400.000	1360.000	1370.000	1370.000	.000	.000	.000
GR	1208.000	5070.000	1196.000	5150.000	1192.000	5320.000	1188.000	6650.000	1184.000	6700.000
GR	1184.000	7450.000	1180.000	7620.000	1180.000	7950.000	1184.000	8180.000	1184.000	8230.000
GR	1180.000	8940.000	1180.000	9700.000	1176.000	9740.000	1176.000	9960.000	1176.000	10050.000
GR	1176.000	10310.000	1184.000	10350.000	1192.000	10400.000	.000	.000	.000	.000
NH	4.000	.045	7480.000	.035	8160.000	.040	9600.000	.035	10290.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8000.000	10291.000
X1	20.575	15.000	9600.000	10290.000	1000.000	1020.000	1020.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	10.000	1183.500	9600.000	1188.000	8200.000	1187.000	7300.000	1181.000	7600.000	1184.000
X4	7650.000	1186.000	7800.000	1184.000	7950.000	1186.000	8050.000	1184.000	8100.000	1182.000
X4	8140.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1212.000	5200.000	1196.000	5310.000	1192.000	5870.000	1192.000	6600.000	1188.000	6710.000
GR	1188.000	7040.000	1184.000	7480.000	1184.000	8160.000	1188.000	8650.000	1184.000	8980.000
GR	1184.000	9220.000	1180.000	9850.000	1178.000	10000.000	1180.000	10210.000	1232.000	10290.000

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QT	5.000	119000.000	119000.000	25800.000	92000.000	182000.000	.000	.000	.000	.000
NH	5.000	.045	6700.000	.035	8210.000	.040	9700.000	.035	10300.000	.045
NH	10440.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	7780.000	10301.000
X1	20.738	16.000	9700.000	10300.000	800.000	840.000	860.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	9.000	1184.000	9700.000	1184.000	10300.000	1187.000	7170.000	1188.000	7270.000	1191.300
X4	7430.000	1188.000	7580.000	1185.000	7650.000	1183.800	9430.000	1181.000	10000.000	.000
GR	1216.000	4990.000	1200.000	5080.000	1196.000	5790.000	1192.000	6400.000	1192.000	6700.000
GR	1188.000	7060.000	1188.000	7700.000	[illegible]	[illegible]	1188.000	8210.000	1188.000	8550.000

GR	[illegible]	[illegible]	.000	.000	.000	.000	.000	.000	.000	.000
NH	5.000	.045	7130.000	.040	7525.000	.045	9380.000	.035	10380.000	.045
NH	11130.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8420.000	10720.000
X1	20.993	29.000	9380.000	10380.000	810.000	1370.000	1350.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	5.000	1195.000	6660.000	1183.000	10300.000	1187.500	10530.000	1188.900	10900.000	1187.000
X4	11060.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1220.000	5280.000	1216.000	5450.000	1212.000	5580.000	1204.000	5630.000	1200.000	5700.000
GR	1196.000	6180.000	1196.000	6550.000	1194.000	7030.000	1192.000	7130.000	1189.000	7350.000
GR	1189.000	7480.000	1192.000	7525.000	1193.000	7800.000	1192.000	8240.000	1188.000	8280.000
GR	1188.000	8330.000	1185.000	8400.000	1189.000	8670.000	1188.000	8800.000	1188.000	8850.000
GR	1192.000	9200.000	1192.000	9380.000	1188.000	9470.000	1184.000	9520.000	1184.000	10330.000
GR	1188.000	10380.000	1188.000	11070.000	1200.000	11100.000	1220.000	11130.000	.000	.000
NH	5.000	.045	7920.000	.040	8130.000	.045	9870.000	.035	10350.000	.045
NH	12000.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8800.000	11350.000
X1	21.241	36.000	9870.000	10350.000	810.000	1240.000	1310.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	3.000	1188.000	10325.000	1194.000	10600.000	1193.000	9550.000	.000	.000	.000
GR	1220.000	6190.000	1204.000	6520.000	1200.000	6860.000	1200.000	7640.000	1196.000	7860.000
GR	1192.000	7920.000	1192.000	8000.000	1194.000	8130.000	1196.000	8390.000	1200.000	8410.000
GR	1200.000	8570.000	1196.000	8590.000	1196.000	8760.000	1192.000	8800.000	1192.000	9350.000
GR	1192.000	9360.000	1192.000	9870.000	1190.000	9900.000	1190.000	10250.000	1188.000	10310.000
GR	1192.000	10330.000	1194.000	10350.000	1194.000	10700.000	1192.000	10760.000	1190.000	10790.000
GR	1192.000	10820.000	1194.000	10950.000	1192.000	11170.000	1191.000	11190.000	1192.000	11210.000
GR	1194.000	11280.000	1194.000	11600.000	1192.000	11680.000	1192.000	11910.000	1200.000	11960.000
GR	1200.000	12000.000	.000	.000	.000	.000	.000	.000	.000	.000
QT	5.000	120700.000	120700.000	28200.000	93700.000	182000.000	.000	.000	.000	.000
NC	.040	.450	.035	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	7950.000	10970.000
X1	21.469	95.000	9718.000	10872.000	980.000	1000.000	1200.000	.000	.000	.000
GR	1257.000	7371.000	1257.000	7412.000	1232.000	7455.000	1204.000	7499.000	1197.000	7530.000
GR	1197.000	7548.000	1193.000	7566.000	1193.000	7611.000	1193.000	7643.000	1193.000	7653.000
GR	1192.000	7811.000	1193.000	7813.000	1193.000	7828.000	1192.000	7839.000	1192.000	7857.000
GR	1193.000	7866.000	1194.000	7893.000	1193.000	7922.000	1194.000	7994.000	1193.000	8032.000
GR	1193.000	8082.000	1194.000	8138.000	1194.000	8152.000	1193.000	8178.000	1192.000	8213.000
GR	1194.000	8242.000	1195.000	8293.000	1192.000	8318.000	1193.000	8361.000	1194.000	8424.000
GR	1195.000	8466.000	1195.000	8486.000	1195.000	8516.000	1195.000	8567.000	1195.000	8623.000

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GR	1195.000	8668.000	1195.000	8699.000	1195.000	8725.000	1194.000	8747.000	1194.000	8796.000
GR	1195.000	8860.000	1185.000	8910.000	1192.000	8951.000	1193.000	8996.000	1193.000	9052.000
GR	1189.000	9071.000	1185.000	9089.000	1190.000	9102.000	1190.000	9129.000	1191.000	9175.000
GR	1193.000	9186.000	1195.000	9195.000	1194.000	9204.000	1193.000	9221.000	1194.000	9249.000
GR	1194.000	9289.000	1193.000	9353.000	1192.000	9368.000	1191.000	9377.000	1194.000	9393.000
GR	1194.000	9412.000	1194.000	9461.000	1193.000	9504.000	1193.000	9573.000	1193.000	9634.000
GR	1194.000	9718.000	1191.000	9733.000	1191.000	9812.000	1191.000	9896.000	1191.000	9949.000
GR	1192.000	9978.000	1192.000	10000.000	1192.000	10006.000	1192.000	10040.000	1189.000	10070.000
GR	1188.000	10804.000	1187.000	10850.000	1193.000	10859.000	1194.000	10872.000	1194.000	10915.000
GR	1194.000	11050.000	1192.000	11073.000	1194.000	11103.000	1192.000	11143.000	1192.000	11166.000
GR	1194.000	11195.000	1193.000	11212.000	1196.000	11236.000	1195.000	11267.000	1195.000	11316.000
GR	1206.000	11575.000	1202.000	11593.000	1202.000	11901.000	1203.000	11919.000	1208.000	11966.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

#PROF 1

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	DLOSS	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


 CCHV=   .100 CEHV=    .300
 ‡SECNO 18.507

 3470 ENCROACHMENT STATIONS=    9531.0   11520.0  TYPE=     1  TARGET=    1989.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1160.70 ELREA=     1150.30

     18.51    16.04  1154.84      .00      .00  1155.86     1.01      .00      .00  1160.70
   112960.       0.   81050.   31910.       0.    9323.    5083.       0.       0.   1150.30
      .00      .00     8.69     6.28     .045     .035     .040     .000  1138.80  9662.00
   .002312     570.     529.     515.        0        0        5      .00  1858.00 11520.00
0
 FLOW DISTRIBUTION FOR SECNO=     18.51          CWSEL=   1154.84

 STA=    9662.   10718.   10943.   11030.   11159.   11333.   11440.   11489.   11520.
   PER Q=     71.8      5.1      3.3      3.5      5.4      5.6      3.6      1.7
    AREA=   9323.0   1113.8    590.1    707.1   1038.4    870.0    487.7    276.2
     VEL=      8.7      5.2      6.4      5.5      5.9      7.3      8.2      7.0

 ‡SECNO 18.608
 3280 CROSS SECTION     18.61 EXTENDED      4.16 FEET


 3470 ENCROACHMENT STATIONS=    9737.0   11550.0  TYPE=     1  TARGET=    1813.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1163.40 ELREA=     1150.50

     18.61    16.06  1156.06      .00      .00  1157.00      .95     1.14      .01  1163.40
   112960.       0.   80149.   32811.       0.    9322.    6085.     200.      25.   1150.50
      .02      .00     8.60     5.39     .045     .035     .040     .000  1140.00  9745.48
   .001740     540.     525.     685.        2        0        0      .00  1804.51 11550.00
0
 FLOW DISTRIBUTION FOR SECNO=     18.61          CWSEL=   1156.06

 STA=    9745.   10609.   10734.   10935.   11103.   11274.   11394.   11469.   11533.   11550.
   PER Q=     71.0      3.4      5.6      4.3      4.5      3.9      3.1      3.3       .9
    AREA=   9322.5    754.3   1226.5    969.5   1007.3    804.5    578.4    566.4    177.8
     VEL=      8.6      5.2      5.2      5.0      5.1      5.5      6.0      6.6      5.4

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  12/28/87    15:00:21                                                                          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


 CCHV=    .100 CEHV=    .300
 ‡SECNO 18.707

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9727.0   11300.0  TYPE=     1  TARGET=    1573.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1165.20 ELREA=     1152.80

     18.71    11.35  1156.85      .00      .00  1159.16     2.31     1.75      .41  1165.20
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   .006118     520.     535.     735.       2       0       0     .00  1475.43 11300.00
0
 FLOW DISTRIBUTION FOR SECNO=     18.71          CWSEL=   1156.85

 STA=    9825.   10599.   10729.   10839.   10994.   11105.   11203.   11295.   11300.
   PER Q=     73.5      4.7      4.0      4.4      3.2      4.6      5.5       .1
    AREA=   6260.3    631.1    536.6    655.1    476.0    557.5    611.6     28.9
     VEL=     13.3      8.4      8.4      7.6      7.6      9.3     10.2      5.6

 CCHV=    .100 CEHV=    .300
 #SECNO 18.808

 3470 ENCROACHMENT STATIONS=    9200.0   10421.0  TYPE=     1  TARGET=    1221.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1168.00

     18.81    12.46  1159.46      .00      .00  1161.48     2.02     2.29      .03100000.00
   112960.       0.  112960.       0.       0.    9915.       0.     497.      66.   1168.00
       .05      .00    11.39      .00     .045     .030     .040     .000  1147.00  9200.00
   .003186     500.     530.     550.       2       0       0      .00  1195.62 10395.62
0
 FLOW DISTRIBUTION FOR SECNO=     18.81          CWSEL=   1159.46

 STA=    9200.   10420.
   PER Q=    100.0
    AREA=   9914.5
     VEL=     11.4

1
  12/28/87    15:00:21                                                                    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 18.893

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9249.0   10351.0  TYPE=     1  TARGET=    1102.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1172.00 ELREA=     1168.40

     18.89    12.68  1161.18      .00      .00  1162.32     1.14      .76      .09  1172.00
   115000.       0.  115000.       0.       0.   13415.       0.     618.      77.   1168.40
       .06      .00     8.57      .00     .045     .030     .040     .000  1148.50  9263.81
   .001046     450.     450.     450.       2       0       0      .00  1075.31 10339.12
0
 FLOW DISTRIBUTION FOR SECNO=     18.89          CWSEL=   1161.18

 STA=    9264.   10350.
   PER Q=    100.0
    AREA=  13414.6
     VEL=      8.6


 SPECIAL BRIDGE

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      1.10      1.56      3.00       .00   1040.00     56.00  17035.00      1.80   1148.50   1148.50
```

```
*SECNO 18.708
CLASS A LOW FLOW

3420 BRIDGE W.S.=   1161.02 BRIDGE VELOCITY=,      9.13     CALCULATED CHANNEL AREA=,    12602.

 EGPRS      EGLWC       H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC     ELTRD
                                                                 AREA
      .00   1162.49      .19        0.   115000.    17035.    19135.     1167.30   1165.70


3470 ENCROACHMENT STATIONS=    9249.0   10351.0  TYPE=     1  TARGET=    1102.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1165.80 ELREA=     1172.00

    18.91    12.87  1161.37      .00      .00  1162.49     1.12      .16      .00  1148.50
  115000.       0.  115000.       0.       0.   13545.       0.     639.      79.   1168.40
      .06      .00     8.49      .00     .000     .030     .000     .000  1148.50  9250.00
  .001004      70.      70.      70.        0        0        0      .00  1075.26 10325.26
0
1
 12/28/87    15:00:21                                                                          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


FLOW DISTRIBUTION FOR SECNO=     18.91         CWSEL=   1161.37

STA=    9250.   10350.
  PER Q=    100.0
   AREA=  13545.2
    VEL=      8.5

CCHV=    .100 CEHV=    .300
1490 NH CARD USED
*SECNO 19.029

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    8900.0   10361.0  TYPE=     1  TARGET=    1461.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1160.00 ELREA=     1172.00

    19.03    10.15  1162.15  1162.15      .00  1165.20     3.05     1.48      .58  1160.00
  115000.   22472.   92528.       0.    2276.    6231.       0.     804.      97.   1172.00
      .08     9.87    14.85      .00     .040     .035     .000     .000  1152.00  8900.00
  .009245     650.     650.     650.       20       15        0      .00  1395.99 10295.99
0
FLOW DISTRIBUTION FOR SECNO=     19.03         CWSEL=   1162.15

STA=    8900.    9200.    9400.   10360.
  PER Q=     14.2      5.4     80.5
   AREA=   1545.7    730.4   6231.3
    VEL=     10.5      8.5     14.8

1490 NH CARD USED
*SECNO 19.245
```

```
 3470 ENCROACHMENT STATIONS=    8200.0   10121.0  TYPE=     1  TARGET=    1921.000
1
  12/28/87    15:00:21                                                                                                    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



 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1160.00 ELREA=     1176.00

     19.25    11.05  1169.05      .00      .00  1169.89      .84     4.47      .22  1160.00
   115000.   72930.   42070.       0.   10559.    5232.       0.    1168.     147.   1176.00
       .13     6.91     8.04      .00     .037     .035     .000     .000  1158.00  8200.00
   .001842    1450.    1140.    1140.        4        0        0      .00  1911.32 10111.32
0
 FLOW DISTRIBUTION FOR SECNO=     19.25          CWSEL=   1169.05

 STA=    8200.    8750.    8880.    9020.    9070.    9550.   10120.
   PER Q=     21.6      9.7     10.4      2.1     19.7     36.6
    AREA=   4104.2   1307.3   1407.9    352.8   3387.0   5232.2
     VEL=      6.0      8.5      8.5      6.7      6.7      8.0

 1490 NH CARD USED
 #SECNO 19.491

 3470 ENCROACHMENT STATIONS=    7780.0   10161.0  TYPE=     1  TARGET=    2381.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1167.00 ELREA=     1184.00

     19.49    10.75  1171.75      .00      .00  1172.76     1.02     2.82      .05  1167.00
   115000.   66814.   48186.       0.   10068.    4939.       0.    1627.     211.   1184.00
       .17     6.64     9.76      .00     .036     .035     .000     .000  1161.00  7780.00
   .002589    1300.    1300.    1300.        4        0        0      .00  2361.62 10141.62
0
 FLOW DISTRIBUTION FOR SECNO=     19.49          CWSEL=   1171.75

 STA=    7780.    8350.    8730.    8810.    9000.    9630.   10160.
   PER Q=     19.7     21.7      2.4      2.8     11.5     41.9
    AREA=   3276.1   2944.1    459.8    712.0   2676.0   4938.8
     VEL=      6.9      8.5      6.1      4.6      5.0      9.8

 1490 NH CARD USED
 #SECNO 19.700

 3470 ENCROACHMENT STATIONS=    8130.0   10567.0  TYPE=     1  TARGET=    2437.000
     19.70    11.59  1174.59      .00      .00  1175.47      .88     2.69      .01  1170.00
   116000.   70284.   35167.   10549.    9594.    4267.    1644.    2000.     270.   1171.00
       .21     7.33     8.24     6.42     .036     .035     .035     .000  1163.00  8130.00
   .002455    1050.    1100.    1060.        2        0        0      .00  2436.46 10566.46
0
1
  12/28/87    15:00:21                                                                                                    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
```

```
 FLOW DISTRIBUTION FOR SECNO=     19.70          CWSEL=   1174.59

 STA=    8130.    8520.    8810.    9040.    9190.    9700.   10250.   10530.   10566.
   PER Q=     23.6     17.1      9.7      3.4      6.8     30.3      8.4       .7
    AREA=   3219.5   2344.6   1514.5    687.7   1828.2   4266.6   1497.7    145.9
     VEL=      8.5      8.5      7.4      5.8      4.3      8.2      6.5      5.6

 1490 NH CARD USED
 *SECNO 19.929

 3470 ENCROACHMENT STATIONS=    8600.0   10838.0  TYPE=     1  TARGET=    2238.000
     19.93    12.02  1178.02      .00      .00  1179.22     1.20     3.65      .09  1172.40
   116000.   56712.   31869.   27419.    7240.    3034.    3259.    2389.     332.   1173.00
      .25     7.83    10.51     8.41     .040     .035     .035     .000  1166.00  8600.00
   .004121    1150.    1210.    1150.        2        0        0      .00  2237.62 10837.62
0
 FLOW DISTRIBUTION FOR SECNO=     19.93          CWSEL=   1178.02

 STA=    8600.    8920.    9070.    9210.    9830.   10230.   10800.   10838.
   PER Q=      9.5      7.9      7.4     24.0     27.5     23.1       .5
    AREA=   1596.5   1052.9    982.7   3607.9   3033.7   3145.9    113.2
     VEL=      6.9      8.7      8.7      7.7     10.5      8.5      5.6

 1490 NH CARD USED
 *SECNO 20.122

 3470 ENCROACHMENT STATIONS=    8320.0   10331.0  TYPE=     1  TARGET=    2011.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1175.00 ELREA=     1200.00

     20.12     9.59  1181.59      .00      .00  1182.73     1.13     3.50      .01  1175.00
   116000.   59389.   56611.       0.    8152.    5841.       0.    2707.     381.   1200.00
      .28     7.29     9.69      .00     .040     .035     .035     .000  1172.00  8320.00
   .002959    1000.    1020.    1020.        2        0        0      .00  1977.12 10297.12
0
 FLOW DISTRIBUTION FOR SECNO=     20.12          CWSEL=   1181.59

 STA=    8320.    8950.    9028.    9160.    9620.   10330.
   PER Q=     12.0      3.1     10.0     26.1     48.8
    AREA=   2650.6    514.0   1265.8   3721.2   5841.2
     VEL=      5.2      7.1      9.1      8.1      9.7

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  12/28/87    15:00:21                                                                    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


 1490 NH CARD USED
 *SECNO 20.382

 3470 ENCROACHMENT STATIONS=    8200.0   10401.0  TYPE=     1  TARGET=    2201.000
     20.38     9.83  1185.83      .00      .00  1187.29     1.46     4.47      .10  1180.00
   117000.   47265.   69735.       0.    7209.    6162.       0.    3136.     445.   1192.00
      .32     6.56    11.32      .00     .040     .035     .035     .000  1176.00  8200.00
   .003633    1360.    1370.    1370.        2        0        0      .00  2161.45 10361.45
0
 FLOW DISTRIBUTION FOR SECNO=     20.38          CWSEL=   1185.83

 STA=    8200.    8230.    8940.    9700.   10400.
```

```
   AREA=      [illegible]   [illegible]   [illegible]   [illegible]
    VEL=      3.2      5.5      7.3     11.3

 1490 NH CARD USED
 ‡SECNO 20.575

 3470 ENCROACHMENT STATIONS=    8000.0   10291.0  TYPE=     1  TARGET=    2291.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1183.50 ELREA=     1232.00

     20.58    11.62  1189.62      .00      .00  1191.35     1.73     3.97      .08  1183.50
   117000.   45012.   71988.       0.    6478.    5861.       0.    3434.     496.   1232.00
       .35     6.95    12.28      .00     .039     .035     .035     .000  1178.00  8000.00
   .004257    1000.    1020.    1020.        2        0        0      .00  2224.80 10224.80
0
 FLOW DISTRIBUTION FOR SECNO=     20.58          CWSEL=   1189.62

 STA=    8000.    8140.    8650.    8980.    9220.    9600.   10290.
   PER Q=      4.9      3.9      5.8      8.8     15.0     61.5
    AREA=    701.5   1005.1   1193.9   1348.3   2229.8   5860.5
     VEL=      8.2      4.5      5.7      7.7      7.9     12.3

 1490 NH CARD USED
 ‡SECNO 20.738

 3301 HV CHANGED MORE THAN HVINS

1
  12/28/87    15:00:21                                                                                    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=    7780.0   10301.0  TYPE=     1  TARGET=    2521.000
     20.74    12.73  1192.73      .00      .00  1193.53      .80     2.09      .09  1184.00
   119000.   60319.   58670.      11.   11335.    6744.       9.    3722.     541.   1184.00
       .38     5.32     8.70     1.25     .039     .035     .045     .000  1180.00  7780.00
   .001668     800.     860.     840.        2        0        0      .00  2521.00 10301.00
0
 FLOW DISTRIBUTION FOR SECNO=     20.74          CWSEL=   1192.73

 STA=    7780.    8210.    8550.    9000.    9180.    9430.    9700.   10300.   10301.
   PER Q=      6.7      5.8      7.7      5.5     12.0     13.0     49.3       .0
    AREA=   1793.4   1608.6   2129.1   1211.6   2207.8   2384.5   6743.8      8.7
     VEL=      4.5      4.3      4.3      5.4      6.5      6.5      8.7      1.3

 1490 NH CARD USED
 ‡SECNO 20.993

 3470 ENCROACHMENT STATIONS=    8420.0   10720.0  TYPE=     1  TARGET=    2300.000
     20.99    11.65  1194.65      .00      .00  1195.51      .86     1.96      .02  1192.00
   119000.   22221.   85512.   11267.    5115.   10318.    2326.    4176.     597.   1188.00
       .43     4.34     8.29     4.84     .045     .035     .045     .000  1183.00  8420.00
   .001697     810.    1350.    1370.        3        0        0      .00  2300.00 10720.00
0
 FLOW DISTRIBUTION FOR SECNO=     20.99          CWSEL=   1194.65

 STA=    8420.    8670.    8800.    9200.    9380.   10380.   10530.   10720.
   PER Q=      8.0      3.1      6.5      1.0     71.9      4.3      5.2
    AREA=   1876.2    799.9   1961.2    477.6  10318.1   1035.5   1290.8
```

```
1490 NH CARD USED
#SECNO 21.241

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8800.0   11350.0  TYPE=     1  TARGET=    2550.000
    21.24     9.56  1197.56      .00      .00  1199.02     1.45     3.33      .18  1192.00
  119000.   43920.   45476.   29604.    5698.    3630.    4323.    4581.     658.   1194.00
      .46     7.71    12.53     6.85     .045     .035     .045     .000  1188.00  8800.00
  .005889     810.    1310.    1240.        3        0        0      .00  2550.00 11350.00
0
1
 12/28/87    15:00:21                                                                          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


FLOW DISTRIBUTION FOR SECNO=     21.24          CWSEL=   1197.56

STA=    8800.    9350.    9550.    9870.   10350.   10600.   10760.   10950.   11170.   11280.   11350.
  PER Q=     20.3      6.4     10.2     38.2      4.4      3.4      6.4      5.9      3.6      1.2
   AREA=   3059.7   1017.6   1620.2   3630.3    890.8    630.1    987.0   1003.9    561.9    249.4
    VEL=      7.9      7.5      7.5     12.5      5.9      6.4      7.7      7.0      7.6      5.7

#SECNO 21.469

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    7950.0   10970.0  TYPE=     1  TARGET=    3020.000
    21.47    15.44  1200.44      .00      .00  1200.83      .38     1.70      .11  1194.00
  120700.   48476.   72039.     185.   12777.   12787.     631.    5072.     725.   1194.00
      .52     3.79     5.63      .29     .040     .035     .450     .000  1185.00  7950.00
  .000715     980.    1200.    1000.        3        0        0      .00  3020.00 10970.00
0
FLOW DISTRIBUTION FOR SECNO=     21.47          CWSEL=   1200.44

STA=    7950.    8138.    8293.    8466.    8699.    8910.    8996.    9089.    9175.    9353.    9504.    9634.    9718.
  PER Q=      3.9      3.2      3.6      3.2      4.7      3.3      3.1      3.6      3.6      3.2      3.0      1.7
   AREA=   1321.9   1067.8   1202.3   1268.4   1490.6    847.2    838.3    907.7   1219.0   1063.5    967.7    583.3
    VEL=      3.6      3.6      3.6      3.1      3.8      4.6      4.4      4.8      3.6      3.7      3.8      3.6
STA=    9718.   10872.   10970.
  PER Q=     59.7       .2
   AREA=  12786.6    631.5
    VEL=      5.6       .3

1
 12/28/87    15:00:21                                                                          PAGE   16


                                                                THIS RUN EXECUTED 12/28/87    15:01:35
**************************************************
  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
**************************************************
```

HEC-II PRINTOUT FOR
PROPOSED FLOODWAY
BOUNDARY REVISION AND
ENCROACHMENT CONDITION

```
1*************************************************
 * WATER SURFACE PROFILES                        *
 * VERSION OF NOVEMBER 1976                      *
 * UPDATED MAY 1984                              *
 * IBM-PC-XT VERSION                             *
 * RUN DATE  12/28/87  TIME  14:01:28            *
 *************************************************
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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
*********************************
```

```
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

12/28/87 14:01:29

THIS RUN EXECUTED 12/28/87 14:01:30

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

T1 WATER SURFACE PROFILE
T2 LOMR BROOKVIEW
T3 AGUA FRIA RIVER NORTH OF BELL ROAD BRIDGE

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	1.	3.	0.	0.	.002300	.00	.0	0.	1149.340	.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	53.000	21.000	55.000	26.000	56.000	32.000	54.000	4.000
1.000	50.000	201.000	.000	.000	.000	.000	.000	.000	.000

NC	.045	.040	.035	.100	.300	.000	.000	.000	.000	.000
QT	5.000	112960.000	112960.000	22700.000	85500.000	181700.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	.000	11964.000	9531.000	11520.000
X1	18.507	95.000	9531.200	10717.800	570.000	515.000	529.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1164.500	8844.500	1165.900	8934.800	1166.200	9038.100	1166.200	9132.900	1166.400	9226.500
GR	1163.900	9373.500	1161.300	9422.900	1160.900	9449.400	1160.700	9531.200	1159.100	9540.700

GR	1142.100	9791.700	1140.000	9811.600	1138.800	9831.400	1139.100	9855.300	1143.200	9869.400
GR	1144.800	10000.000	1145.900	10065.200	1147.800	10203.700	1148.200	10362.600	1146.900	10437.500
GR	1147.100	10463.600	1148.500	10532.800	1146.000	10613.400	1146.000	10639.500	1149.000	10646.800
GR	1146.900	10664.400	1146.900	10683.700	1150.300	10717.800	1150.300	10842.600	1148.500	10943.100
GR	1147.400	10989.000	1148.900	11029.900	1149.200	11065.100	1149.800	11159.300	1149.400	11230.200
GR	1147.300	11332.900	1147.300	11374.300	1145.300	11439.600	1144.600	11488.900	1146.700	11511.100
GR	1147.300	11579.700	1146.900	11626.800	1146.400	11682.400	1142.700	11724.400	1141.800	11741.500
GR	1142.500	11771.500	1147.100	11798.800	1150.300	11874.800	1152.100	11963.300	1152.100	12067.200
GR	1153.500	12231.200	1152.800	12313.400	1151.900	12418.400	1152.200	12509.800	1152.600	12541.000
GR	1151.500	12593.800	1151.500	12634.100	1151.200	12690.800	1152.100	12710.700	1151.700	12762.900
GR	1151.200	12866.700	1151.300	12928.000	1152.100	12976.200	1152.200	13004.000	1152.900	13075.000
GR	1153.500	13109.000	1148.700	13118.100	1148.000	13149.300	1153.700	13156.700	1153.100	13250.900
GR	1153.500	13406.400	1153.300	13445.500	1159.300	13460.800	1159.300	13488.100	1159.000	13560.100
GR	1158.600	13686.700	1158.400	13785.400	1159.300	13880.700	1159.000	13962.500	1159.100	13989.700
GR	1159.900	14041.900	1159.900	14078.200	1161.800	14098.100	1160.200	14115.700	1159.900	14199.600
GR	1160.700	14465.100	1161.800	14491.900	1162.000	14497.000	1163.900	14523.100	1165.200	14542.400

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ET	.000	7.100	9.100	.000	.000	.000	.000	11892.000	9737.000	11550.000
X1	18.608	75.000	9737.000	10609.400	540.000	685.000	525.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1170.100	8697.100	1169.600	8743.000	1169.100	8774.800	1169.400	8816.800	1169.600	8885.500
GR	1168.400	8986.500	1168.400	9048.900	1168.700	9127.800	1169.200	9210.100	1169.400	9313.300
GR	1169.400	9421.700	1168.900	9466.000	1169.100	9509.100	1168.900	9542.000	1168.700	9577.200
GR	1167.300	9643.000	1165.900	9689.000	1163.400	9715.100	1163.400	9737.000	1154.400	9747.400
GR	1143.400	9761.600	1143.600	9809.900	1144.300	9884.800	1144.300	9916.500	1147.800	9930.200
GR	1143.400	9941.500	1143.600	9969.300	1145.300	9989.200	1145.300	10000.000	1145.700	10031.700
GR	1140.000	10146.900	1147.600	10255.300	1147.600	10349.500	1140.000	10440.900	1149.600	10476.000
GR	1148.700	10526.500	1150.500	10609.400	1149.800	10667.300	1149.900	10733.700	1150.100	10805.700
GR	1149.800	10935.100	1150.500	11011.100	1150.300	11103.100	1150.300	11205.800	1149.600	11273.900
GR	1149.600	11336.300	1148.500	11393.600	1148.500	11437.900	1148.000	11469.100	1147.400	11510.500
GR	1145.300	11533.200	1146.000	11567.200	1147.100	11630.800	1147.100	11721.600	1145.300	11776.100
GR	1142.700	11826.000	1142.300	11842.500	1142.300	11846.400	1148.000	11854.400	1152.800	11891.800
GR	1151.700	11948.000	1151.900	11958.200	1149.600	11991.100	1150.500	12034.800	1149.900	12086.500
GR	1150.300	12152.500	1152.600	12207.300	1152.600	12263.500	1152.200	12358.300	1152.600	12479.700
GR	1152.200	12652.200	1152.400	12719.200	1152.100	12772.500	1151.700	12911.000	1151.900	13016.500
NC	.045	.040	.035	.100	.300	.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	.000	11475.000	9727.000	11300.000
X1	18.707	95.000	9727.600	10598.600	520.000	735.000	535.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1171.200	9121.000	1172.400	9238.400	1171.900	9313.900	1171.900	9380.900	1171.700	9471.100
GR	1170.800	9579.500	1170.100	9589.300	1166.600	9666.300	1165.200	9727.600	1163.900	9740.600
GR	1161.100	9764.500	11157.900	9793.400	1146.000	9824.600	1145.500	9842.800	1145.700	9904.100
GR	1145.700	9933.000	1146.900	9964.800	1146.600	9982.400	1146.600	10000.000	1146.400	10038.000
GR	1146.400	10057.300	1147.400	10074.900	1146.400	10081.100	1146.400	10106.600	1148.500	10113.400
GR	1151.500	10532.400	1152.800	10598.600	1152.400	10650.800	1151.000	10681.500	1152.100	10728.600
GR	1151.900	10759.800	1152.600	10786.400	1151.500	10806.900	1151.900	10838.600	1152.600	10860.800
GR	1152.800	10993.600	1152.400	11105.300	1149.900	11202.900	1150.600	11295.400	1150.100	11378.900
GR	1150.300	11415.700	1149.900	11436.200	1149.800	11473.600	1147.800	11504.300	1146.700	11541.700
GR	1147.400	11609.800	1148.500	11659.700	1148.500	11718.200	1148.200	11775.500	1148.300	11816.400
GR	1148.500	11825.400	1152.600	11831.700	1151.900	11840.200	1149.900	11860.100	1152.900	11885.600
GR	1158.300	11938.900	1151.700	11959.400	1150.600	11970.100	1152.900	11977.500	1153.700	12010.400
GR	1154.000	12074.000	1153.800	12126.800	1153.700	12265.800	1153.700	12394.000	1154.000	12505.200
GR	1154.700	12718.600	1154.000	12808.300	1154.400	12848.000	1154.200	12933.700	1154.000	13056.800
GR	1154.500	13410.900	1149.900	13420.000	1149.900	13441.000	1154.700	13450.600	1157.500	13481.800
GR	1157.700	13565.200	1155.400	13620.300	1155.600	13690.100	1157.000	13742.300	1157.700	13841.600
GR	1159.700	13944.900	1160.000	13979.500	1159.700	14020.300	1160.600	14035.100	1160.600	14164.500
GR	1161.400	14363.600	1162.000	14503.200	1162.300	14657.000	1162.900	14756.900	1163.900	14774.500
GR	1162.900	14779.000	1167.600	14789.800	1170.300	14839.200	1174.400	14852.200	1176.900	14865.800
NC	.045	.040	.030	.100	.300	.000	.000	.000	.000	.000

X1	18.808	19.000	9060.000	10420.000	500.000	550.000	530.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	5200.000	1166.000	5300.000	1162.000	5480.000	1162.000	6300.000	1157.000	7150.000
GR	1157.000	7900.000	1152.000	8380.000	1152.000	8440.000	1156.000	8940.000	1156.000	9060.000
GR	1152.000	9140.000	1152.000	9240.000	1154.000	9490.000	1152.000	9860.000	1148.000	10100.000
GR	1147.000	10360.000	1168.000	10420.000	1171.000	10550.000	1172.000	10880.000	.000	.000

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QT	5.000	115000.000	115000.000	23000.000	87000.000	182000.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	9249.000	10351.000
X1	18.893	13.000	9250.000	10350.000	450.000	450.000	450.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	5170.000	1172.000	5410.000	1168.000	5640.000	1166.000	6040.000	1166.000	6580.000
GR	1166.400	7180.000	1166.800	7750.000	1167.000	8270.000	1172.000	9250.000	1148.500	9280.000
GR	1148.500	10320.000	1168.400	10350.000	1172.000	10600.000	.000	.000	.000	.000
SB	1.100	1.560	3.000	.000	1040.000	56.000	17035.000	1.800	1148.500	1148.500
ET	.000	.000	9.100	.000	.000	.000	9249.000	.000	9249.000	10351.000
X1	18.906	13.000	9250.000	10350.000	70.000	70.000	70.000	.000	.000	.000
X2	.000	.000	1.000	1167.300	1165.700	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	1165.800	1172.000	.000
BT	15.000	5150.000	1180.000	.000	5390.000	1172.000	.000	5620.000	1168.000	.000
BT	6020.000	1165.700	.000	6560.000	1165.700	.000	7160.000	1166.400	.000	7730.000
BT	1166.800	.000	8250.000	1167.000	.000	8800.000	1165.800	.000	9249.000	1172.000
BT	.000	9250.000	1175.000	1165.000	9800.000	1177.000	1167.300	10350.000	1172.300	1161.600
BT	10351.000	1168.600	.000	10580.000	1172.000	.000	.000	.000	.000	.000
GR	1180.000	5150.000	1172.000	5390.000	1168.000	5620.000	1166.000	6020.000	1166.000	6560.000
GR	1166.400	7160.000	1166.800	7730.000	1167.000	8250.000	1172.000	9230.000	1148.500	9250.000
GR	1148.500	10280.000	1168.400	10350.000	1172.000	10580.000	.000	.000	.000	.000
NC	.000	.000	.000	.100	.300	.000	.000	.000	.000	.000
NH	3.000	.045	8000.000	.040	9400.000	.035	10360.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	8650.000	.000	8900.000	10361.000
X1	19.029	22.000	9400.000	10360.000	650.000	650.000	650.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	4760.000	1176.000	5010.000	1167.000	5060.000	1168.000	5100.000	1168.000	5940.000
GR	1164.000	6040.000	1164.000	6340.000	1162.000	7390.000	1160.000	8000.000	1160.000	8550.000
GR	1157.000	8600.000	1157.000	9200.000	1160.000	9400.000	1156.000	9460.000	1152.000	9780.000
GR	1152.000	9840.000	1158.000	9870.000	1157.000	10030.000	1156.000	10150.000	1152.000	10160.000
GR	1152.000	10230.000	1172.000	10360.000	.000	.000	.000	.000	.000	.000
NH	4.000	.045	7630.000	.040	8750.000	.035	10120.000	.045	10160.000	.000
ET	.000	7.100	9.100	.000	.000	.000	7400.000	.000	8200.000	10121.000
X1	19.245	19.000	9550.000	10120.000	1450.000	1140.000	1140.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	4920.000	1176.000	4960.000	1172.000	5150.000	1168.000	5570.000	168.000	5910.000
GR	1165.000	7100.000	1164.000	7630.000	1162.000	7840.000	1164.000	8060.000	1160.000	8750.000
GR	1158.000	8880.000	1160.000	9020.000	1164.000	9070.000	1160.000	9550.000	1160.000	9900.000
GR	1158.000	10000.000	1160.000	10100.000	1176.000	10120.000	1180.000	10160.000	.000	.000
NH	4.000	.045	7520.000	.035	8730.000	.040	9630.000	.035	10160.000	.000
ET	.000	7.100	9.100	.000	.000	.000	6000.000	.000	7780.000	10161.000
X1	19.491	17.000	9630.000	10160.000	1300.000	1300.000	1300.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1180.000	4880.000	1176.000	5030.000	1172.000	5680.000	1170.000	6290.000	1170.000	7040.000
GR	1168.000	7520.000	1166.000	7600.000	1168.000	7780.000	1164.000	8350.000	1164.000	8730.000
GR	1168.000	8810.000	1168.000	9000.000	1167.000	9630.000	1162.000	9650.000	1161.000	9960.000
GR	1164.000	10130.000	1184.000	10160.000	.000	.000	.000	.000	.000	.000

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QT	5.000	116000.000	116000.000	24000.000	90000.000	182000.000	.000	.000	.000	.000
NH	4.000	.045	7800.000	.035	9190.000	.040	9700.000	.035	10600.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8130.000	10567.000
X1	19.700	18.000	9700.000	10250.000	1050.000	1060.000	1100.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	3.000	1170.000	9700.000	1171.000	10250.000	1169.400	10350.000	.000	.000	.000
GR	1180.000	5400.000	1176.000	5500.000	1175.000	6220.000	1172.000	7500.000	1172.000	7800.000
GR	1168.000	8080.000	1165.000	8520.000	1168.000	8810.000	1168.000	9040.000	1172.000	9190.000
GR	1168.000	9820.000	1164.000	9900.000	1163.000	9930.000	1164.000	9960.000	1168.000	10180.000
GR	1168.000	10530.000	1172.000	10560.000	1188.000	10600.000	.000	.000	.000	.000
NH	4.000	.045	8110.000	.035	8310.000	.040	9830.000	.035	11000.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8600.000	10838.000
X1	19.929	21.000	9830.000	10230.000	1150.000	1150.000	1210.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	2.000	1172.400	9830.000	1173.000	10230.000	.000	.000	.000	.000	.000
GR	1196.000	5590.000	1184.000	5690.000	1182.000	6060.000	1184.000	6340.000	1180.000	6600.000
GR	1180.000	6850.000	1176.000	7030.000	1176.000	8110.000	1172.000	8130.000	1172.000	8310.000
GR	1174.000	8610.000	1172.000	8920.000	1170.000	9070.000	1172.000	9210.000	1172.000	9900.000
GR	1168.000	9910.000	1166.000	9930.000	1168.000	9970.000	1172.000	10150.000	1172.000	10800.000
GR	1204.000	11000.000	.000	.000	.000	.000	.000	.000	.000	.000
NH	3.000	.045	7930.000	.040	9620.000	.035	10330.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8320.000	10331.000
X1	20.122	19.000	9620.000	10330.000	1000.000	1020.000	1020.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1200.000	5540.000	1188.000	5640.000	1185.000	5680.000	1184.000	6170.000	1184.000	6700.000
GR	1180.000	6730.000	1178.000	6930.000	1180.000	7420.000	1180.000	7510.000	1179.000	7740.000
GR	1176.000	7930.000	1178.000	8950.000	1172.000	9028.000	1172.000	9160.000	1175.000	9620.000
GR	1172.000	10000.000	1172.000	10220.000	1172.000	10280.000	1200.000	10330.000	.000	.000
QT	2.000	117000.000	117000.000	.000	.000	.000	.000	.000	.000	.000
NH	4.000	.045	7450.000	.035	8180.000	.040	9700.000	.035	10400.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8200.000	10401.000
X1	20.382	18.000	9700.000	10400.000	1360.000	1370.000	1370.000	.000	.000	.000
GR	1208.000	5070.000	1196.000	5150.000	1192.000	5320.000	1188.000	6650.000	1184.000	6700.000
GR	1184.000	7450.000	1180.000	7620.000	1180.000	7950.000	1184.000	8180.000	1184.000	8230.000
GR	1180.000	8940.000	1180.000	9700.000	1176.000	9740.000	1176.000	9960.000	1176.000	10050.000
GR	1176.000	10310.000	1184.000	10350.000	1192.000	10400.000	.000	.000	.000	.000
NH	4.000	.045	7480.000	.035	8160.000	.040	9600.000	.035	10290.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8060.000	10291.000
X1	20.575	15.000	9600.000	10290.000	1000.000	1020.000	1020.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	10.000	1183.500	9600.000	1188.000	8200.000	1187.000	7300.000	1181.000	7600.000	1184.000
X4	7650.000	1186.000	7800.000	1184.000	7950.000	1186.000	8050.000	1184.000	8100.000	1182.000
X4	8140.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1212.000	5200.000	1196.000	5310.000	1192.000	5870.000	1192.000	6600.000	1188.000	6710.000
GR	1188.000	7040.000	1184.000	7480.000	1184.000	8160.000	1188.000	8650.000	1184.000	8980.000
GR	1184.000	9220.000	1180.000	9850.000	1178.000	10000.000	1180.000	10210.000	1232.000	10290.000

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QT	5.000	119000.000	119000.000	25800.000	92000.000	182000.000	.000	.000	.000	.000
NH	5.000	.045	6700.000	.035	8210.000	.040	9700.000	.035	10300.000	.045
NH	10440.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	7950.000	10460.000
X1	20.738	16.000	9700.000	10300.000	800.000	840.000	860.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	9.000	1184.000	9700.000	1184.000	10300.000	1187.000	7170.000	1188.000	7270.000	1191.300
X4	7430.000	1188.000	7580.000	1185.000	7650.000	1183.800	9430.000	1181.000	10000.000	.000
GR	1216.000	4990.000	1200.000	5080.000	1196.000	5790.000	1192.000	6400.000	1192.000	6700.000
GR	1188.000	7060.000	1188.000	7700.000	1188.000	7930.000	1188.000	8210.000	1188.000	8550.000

GR	1232.000	10440.000	.000	.000	.000	.000	.000	.000	.000	.000

NH	5.000	.045	7130.000	.040	7525.000	.045	9380.000	.035	10380.000	.045
NH	11130.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8420.000	11120.000
X1	20.993	29.000	9380.000	10380.000	810.000	1370.000	1350.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	5.000	1195.000	6660.000	1183.000	10300.000	1187.500	10530.000	1188.900	10900.000	1187.000
X4	11060.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	1220.000	5280.000	1216.000	5450.000	1212.000	5580.000	1204.000	5630.000	1200.000	5700.000
GR	1196.000	6180.000	1196.000	6550.000	1194.000	7030.000	1192.000	7130.000	1189.000	7350.000
GR	1189.000	7480.000	1192.000	7525.000	1193.000	7800.000	1192.000	8240.000	1188.000	8280.000
GR	1188.000	8330.000	1185.000	8400.000	1189.000	8670.000	1188.000	8800.000	1188.000	8850.000
GR	1192.000	9200.000	1192.000	9380.000	1188.000	9470.000	1184.000	9520.000	1184.000	10330.000
GR	1188.000	10380.000	1188.000	11070.000	1200.000	11100.000	1220.000	11130.000	.000	.000

NH	5.000	.045	7920.000	.040	8130.000	.045	9870.000	.035	10350.000	.045
NH	12000.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	8800.000	11350.000
X1	21.241	36.000	9870.000	10350.000	810.000	1240.000	1310.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X4	3.000	1188.000	10325.000	1194.000	10600.000	1193.000	9550.000	.000	.000	.000
GR	1220.000	6190.000	1204.000	6520.000	1200.000	6860.000	1200.000	7640.000	1196.000	7860.000
GR	1192.000	7920.000	1192.000	8000.000	1194.000	8130.000	1196.000	8390.000	1200.000	8410.000
GR	1200.000	8570.000	1196.000	8590.000	1196.000	8760.000	1192.000	8800.000	1192.000	9350.000
GR	1192.000	9360.000	1192.000	9870.000	1190.000	9900.000	1190.000	10250.000	1188.000	10310.000
GR	1192.000	10330.000	1194.000	10350.000	1194.000	10700.000	1192.000	10760.000	1190.000	10790.000
GR	1192.000	10820.000	1194.000	10950.000	1192.000	11170.000	1191.000	11190.000	1192.000	11210.000
GR	1194.000	11280.000	1194.000	11600.000	1192.000	11680.000	1192.000	11910.000	1200.000	11960.000
GR	1200.000	12000.000	.000	.000	.000	.000	.000	.000	.000	.000

QT	5.000	120700.000	120700.000	28200.000	93700.000	182000.000	.000	.000	.000	.000
NC	.040	.450	.035	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	7950.000	10970.000
X1	21.469	95.000	9718.000	10872.000	980.000	1000.000	1200.000	.000	.000	.000
GR	1257.000	7371.000	1257.000	7412.000	1232.000	7455.000	1204.000	7499.000	1197.000	7530.000
GR	1197.000	7548.000	1193.000	7566.000	1193.000	7611.000	1193.000	7643.000	1193.000	7653.000
GR	1192.000	7811.000	1193.000	7813.000	1193.000	7828.000	1192.000	7839.000	1192.000	7857.000
GR	1193.000	7866.000	1194.000	7893.000	1193.000	7922.000	1194.000	7994.000	1193.000	8032.000
GR	1193.000	8082.000	1194.000	8138.000	1194.000	8152.000	1193.000	8178.000	1192.000	8213.000
GR	1194.000	8242.000	1195.000	8293.000	1192.000	8318.000	1193.000	8361.000	1194.000	8424.000
GR	1195.000	8466.000	1195.000	8486.000	1195.000	8516.000	1195.000	8567.000	1195.000	8623.000

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GR	1195.000	8668.000	1195.000	8699.000	1195.000	8725.000	1194.000	8747.000	1194.000	8796.000
GR	1195.000	8860.000	1185.000	8910.000	1192.000	8951.000	1193.000	8996.000	1193.000	9052.000
GR	1189.000	9071.000	1185.000	9089.000	1190.000	9102.000	1190.000	9129.000	1191.000	9175.000
GR	1193.000	9186.000	1195.000	9195.000	1194.000	9204.000	1193.000	9221.000	1194.000	9249.000
GR	1194.000	9289.000	1193.000	9353.000	1192.000	9368.000	1191.000	9377.000	1194.000	9393.000
GR	1194.000	9412.000	1194.000	9461.000	1193.000	9504.000	1193.000	9573.000	1193.000	9634.000
GR	1194.000	9718.000	1191.000	9733.000	1191.000	9812.000	1191.000	9896.000	1191.000	9949.000
GR	1192.000	9978.000	1192.000	10000.000	1192.000	10006.000	1192.000	10040.000	1189.000	10070.000
GR	1188.000	10804.000	1187.000	10850.000	1193.000	10859.000	1194.000	10872.000	1194.000	10915.000
GR	1194.000	11050.000	1192.000	11073.000	1194.000	11103.000	1192.000	11143.000	1192.000	11166.000
GR	1194.000	11195.000	1193.000	11212.000	1196.000	11236.000	1195.000	11267.000	1195.000	11316.000
GR	1206.000	11575.000	1202.000	11593.000	1202.000	11901.000	1203.000	11919.000	1208.000	11966.000
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
0	DLOR	DCW	DPOR	DLOR	DCW	DPOR	VOL	TWA	LEFT/RIGHT

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


 *PROF 1

 CCHV=    .100 CEHV=    .300
 *SECNO 18.507

 3470 ENCROACHMENT STATIONS=    9531.0   11520.0  TYPE=     1  TARGET=    1989.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1160.70 ELREA=     1150.30

    18.51    16.04  1154.84      .00      .00  1155.86     1.01      .00      .00  1160.70
  112960.       0.   81050.   31910.       0.    9323.    5083.       0.       0.   1150.30
      .00      .00     8.69     6.28     .045     .035     .040     .000  1138.80  9662.00
  .002312     570.     529.     515.        0        0        5      .00  1858.00 11520.00
0
 FLOW DISTRIBUTION FOR SECNO=     18.51          CWSEL=   1154.84

 STA=    9662.   10718.   10943.   11030.   11159.   11333.   11440.   11489.   11520.
   PER Q=     71.8      5.1      3.3      3.5      5.4      5.6      3.6      1.7
    AREA=   9323.0   1113.8    590.1    707.1   1038.4    870.0    487.7    276.2
     VEL=      8.7      5.2      6.4      5.5      5.9      7.3      8.2      7.0

 *SECNO 18.608
 3280 CROSS SECTION     18.61 EXTENDED      4.16 FEET


 3470 ENCROACHMENT STATIONS=    9737.0   11550.0  TYPE=     1  TARGET=    1813.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1163.40 ELREA=     1150.50

    18.61    16.06  1156.06      .00      .00  1157.00      .95     1.14      .01  1163.40
  112960.       0.   80149.   32811.       0.    9322.    6085.     200.      25.   1150.50
      .02      .00     8.60     5.39     .045     .035     .040     .000  1140.00  9745.48
  .001740     540.     525.     685.        2        0        0      .00  1804.51 11550.00
0
 FLOW DISTRIBUTION FOR SECNO=     18.61          CWSEL=   1156.06

 STA=    9745.   10609.   10734.   10935.   11103.   11274.   11394.   11469.   11533.   11550.
   PER Q=     71.0      3.4      5.6      4.3      4.5      3.9      3.1      3.3       .9
    AREA=   9322.5    754.3   1226.5    969.5   1007.3    804.5    578.4    566.4    177.8
     VEL=      8.6      5.2      5.2      5.0      5.1      5.5      6.0      6.6      5.4

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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 18.707

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    9727.0   11300.0  TYPE=     1  TARGET=    1573.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1165.20 ELREA=     1152.80

    18.71    11.35  1156.85      .00      .00  1159.16     2.31     1.75       41  1165.20
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      .03      .00    13.25     8.58     .045     .035     .040     .000  1145.50  9824.57
   .006118     520.     535.     735.        2        0        0      .00  1475.43 11300.00
0
 FLOW DISTRIBUTION FOR SECNO=     18.71          CWSEL=   1156.85

 STA=    9825.   10599.   10729.   10839.   10994.   11105.   11203.   11295.   11300.
   PER Q=     73.5      4.7      4.0      4.4      3.2      4.6      5.5       .1
    AREA=   6260.3    631.1    536.6    655.1    476.0    557.5    611.6     28.9
     VEL=     13.3      8.4      8.4      7.6      7.6      9.3     10.2      5.6

 CCHV=    .100 CEHV=    .300
 #SECNO 18.808

 3470 ENCROACHMENT STATIONS=    9200.0   10421.0  TYPE=     1  TARGET=    1221.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=   100000.00 ELREA=     1168.00

     18.81    12.46  1159.46      .00      .00  1161.48     2.02     2.29      .03100000.00
   112960.       0.  112960.       0.       0.    9915.       0.     497.      66.   1168.00
      .05      .00    11.39      .00     .045     .030     .040     .000  1147.00  9200.00
   .003186     500.     530.     550.        2        0        0      .00  1195.62 10395.62
0
 FLOW DISTRIBUTION FOR SECNO=     18.81          CWSEL=   1159.46

 STA=    9200.   10420.
   PER Q=    100.0
    AREA=   9914.5
     VEL=     11.4
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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 18.893

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS=    9249.0   10351.0  TYPE=     1  TARGET=    1102.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1172.00 ELREA=     1168.40

     18.89    12.68  1161.18      .00      .00  1162.32     1.14      .76      .09  1172.00
   115000.       0.  115000.       0.       0.   13415.       0.     618.      77.   1168.40
      .06      .00     8.57      .00     .045     .030     .040     .000  1148.50  9263.81
   .001046     450.     450.     450.        2        0        0      .00  1075.31 10339.12
0
 FLOW DISTRIBUTION FOR SECNO=     18.89          CWSEL=   1161.18

 STA=    9264.   10350.
   PER Q=    100.0
    AREA=  13414.6
     VEL=      8.6

 SPECIAL BRIDGE

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.10      1.54      3.00        .00   1040.00     54.00  17035.00     1.00   1148.50   1148.50
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#SECNO 18.906
CLASS A LOW FLOW

3420 BRIDGE W.S.=   1161.02 BRIDGE VELOCITY=,      9.13      CALCULATED CHANNEL AREA=,    12602.

 EGPRS      EGLWC       H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC     ELTRD
                                                                 AREA
      .00   1162.49      .19        0.   115000.    17035.    19135.     1167.30   1165.70


3470 ENCROACHMENT STATIONS=    9249.0   10351.0  TYPE=     1  TARGET=    1102.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1165.80 ELREA=     1172.00

    18.91    12.87  1161.37      .00      .00  1162.49     1.12      .16      .00  1148.50
  115000.       0.  115000.       0.       0.   13545.       0.     639.      79.   1168.40
      .06      .00     8.49      .00     .000     .030     .000     .000  1148.50  9250.00
  .001004      70.      70.      70.        0        0        0      .00  1075.26 10325.26
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


FLOW DISTRIBUTION FOR SECNO=     18.91          CWSEL=   1161.37

STA=    9250.   10350.
  PER Q=    100.0
   AREA=  13545.2
    VEL=      8.5

CCHV=    .100 CEHV=    .300
1490 NH CARD USED
#SECNO 19.029

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    8900.0   10361.0  TYPE=     1  TARGET=    1461.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1160.00 ELREA=     1172.00

    19.03    10.15  1162.15  1162.15      .00  1165.20     3.05     1.48      .58  1160.00
  115000.   22472.   92528.       0.    2276.    6231.       0.     804.      97.   1172.00
      .08     9.87    14.85      .00     .040     .035     .000     .000  1152.00  8900.00
  .009245     650.     650.     650.       20       15        0      .00  1395.99 10295.99
0
FLOW DISTRIBUTION FOR SECNO=     19.03          CWSEL=   1162.15

STA=    8900.    9200.    9400.   10360.
  PER Q=     14.2      5.4     80.5
   AREA=   1545.7    730.4   6231.3
    VEL=     10.5      8.5     14.8

1490 NH CARD USED
#SECNO 19.245
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3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    8200.0   10121.0  TYPE=     1  TARGET=    1921.000
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=     1160.00 ELREA=     1176.00

    19.25    11.05  1169.05      .00      .00  1169.89      .84     4.47      .22  1160.00
  115000.   72930.   42070.       0.   10559.    5232.       0.    1168.     147.   1176.00
      .13     6.91     8.04      .00     .037     .035     .000     .000  1158.00  8200.00
  .001842    1450.    1140.    1140.        4        0        0      .00  1911.32 10111.32
0
FLOW DISTRIBUTION FOR SECNO=     19.25          CWSEL=   1169.05

STA=    8200.    8750.    8880.    9020.    9070.    9550.   10120.
  PER Q=     21.6      9.7     10.4      2.1     19.7     36.6
   AREA=   4104.2   1307.3   1407.9    352.8   3387.0   5232.2
    VEL=      6.0      8.5      8.5      6.7      6.7      8.0

1490 NH CARD USED
*SECNO 19.491

3470 ENCROACHMENT STATIONS=    7780.0   10161.0  TYPE=     1  TARGET=    2381.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1167.00 ELREA=     1184.00

    19.49    10.75  1171.75      .00      .00  1172.76     1.02     2.82      .05  1167.00
  115000.   66814.   48186.       0.   10068.    4939.       0.    1627.     211.   1184.00
      .17     6.64     9.76      .00     .036     .035     .000     .000  1161.00  7780.00
  .002589    1300.    1300.    1300.        4        0        0      .00  2361.62 10141.62
0
FLOW DISTRIBUTION FOR SECNO=     19.49          CWSEL=   1171.75

STA=    7780.    8350.    8730.    8810.    9000.    9630.   10160.
  PER Q=     19.7     21.7      2.4      2.8     11.5     41.9
   AREA=   3276.1   2944.1    459.8    712.0   2676.0   4938.8
    VEL=      6.9      8.5      6.1      4.6      5.0      9.8

1490 NH CARD USED
*SECNO 19.700

3470 ENCROACHMENT STATIONS=    8130.0   10567.0  TYPE=     1  TARGET=    2437.000
    19.70    11.59  1174.59      .00      .00  1175.47      .88     2.69      .01  1170.00
  116000.   70284.   35167.   10549.    9594.    4267.    1644.    2000.     270.   1171.00
      .21     7.33     8.24     6.42     .036     .035     .035     .000  1163.00  8130.00
  .002455    1050.    1100.    1060.        2        0        0      .00  2436.46 10566.46
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
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 FLOW DISTRIBUTION FOR SECNO=     19.70          CWSEL=   1174.59

 STA=    8130.    8520.    8810.    9040.    9190.    9700.   10250.   10530.   10566.
   PER Q=     23.6     17.1      9.7      3.4      6.8     30.3      8.4       .7
    AREA=   3219.5   2344.6   1514.5    687.7   1828.2   4266.6   1497.7    145.9
     VEL=      8.5      8.5      7.4      5.8      4.3      8.2      6.5      5.6

 1490 NH CARD USED
 ‡SECNO 19.929

 3470 ENCROACHMENT STATIONS=    8600.0   10838.0  TYPE=     1  TARGET=    2238.000
     19.93    12.02  1178.02      .00      .00  1179.22     1.20     3.65      .09  1172.40
   116000.   56712.   31869.   27419.    7240.    3034.    3259.    2389.     332.   1173.00
      .25     7.83    10.51     8.41     .040     .035     .035     .000  1166.00  8600.00
   .004121    1150.    1210.    1150.        2        0        0      .00  2237.62 10837.62
0
 FLOW DISTRIBUTION FOR SECNO=     19.93          CWSEL=   1178.02

 STA=    8600.    8920.    9070.    9210.    9830.   10230.   10800.   10838.
   PER Q=      9.5      7.9      7.4     24.0     27.5     23.1       .5
    AREA=   1596.5   1052.9    982.7   3607.9   3033.7   3145.9    113.2
     VEL=      6.9      8.7      8.7      7.7     10.5      8.5      5.6

 1490 NH CARD USED
 ‡SECNO 20.122

 3470 ENCROACHMENT STATIONS=    8320.0   10331.0  TYPE=     1  TARGET=    2011.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1175.00 ELREA=     1200.00

     20.12     9.59  1181.59      .00      .00  1182.73     1.13     3.50      .01  1175.00
   116000.   59389.   56611.       0.    8152.    5841.       0.    2707.     381.   1200.00
      .28     7.29     9.69      .00     .040     .035     .035     .000  1172.00  8320.00
   .002959    1000.    1020.    1020.        2        0        0      .00  1977.12 10297.12
0
 FLOW DISTRIBUTION FOR SECNO=     20.12          CWSEL=   1181.59

 STA=    8320.    8950.    9028.    9160.    9620.   10330.
   PER Q=     12.0      3.1     10.0     26.1     48.8
    AREA=   2650.6    514.0   1265.8   3721.2   5841.2
     VEL=      5.2      7.1      9.1      8.1      9.7

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    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   IDC      ICONT    CORAR    TOPWID     ENDST


 1490 NH CARD USED
 ‡SECNO 20.382

 3470 ENCROACHMENT STATIONS=    8200.0   10401.0  TYPE=     1  TARGET=    2201.000
     20.38     9.83  1185.83      .00      .00  1187.29     1.46     4.47      .10  1180.00
   117000.   47265.   69735.       0.    7209.    6162.       0.    3136.     445.   1192.00
      .32     6.56    11.32      .00     .040     .035     .035     .000  1176.00  8200.00
   .003633    1360.    1370.    1370.        2        0        0      .00  2161.45 10361.45
0
 FLOW DISTRIBUTION FOR SECNO=     20.38          CWSEL=   1185.83

 STA=    8200.    8230.    8840.    9700.   10400.
```

```
    AREA=     55.0   2721.2   4432.8   6161.7
     VEL=      3.2      5.5      7.3     11.3

 1490 NH CARD USED
 #SECNO 20.575

 3470 ENCROACHMENT STATIONS=    8060.0   10291.0  TYPE=     1  TARGET=    2231.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1183.50 ELREA=     1232.00

     20.58    11.62  1189.62      .00      .00  1191.42     1.79     4.02      .10  1183.50
   117000.   43971.   73029.       0.    6246.    5865.       0.    3431.     495.   1232.00
      .35     7.04    12.45      .00     .039     .035     .035     .000  1178.00  8060.00
   .004370    1000.    1020.    1020.        2        0        0      .00  2164.81 10224.81
0
 FLOW DISTRIBUTION FOR SECNO=     20.58          CWSEL=   1189.62

 STA=    8060.    8140.    8650.    8980.    9220.    9600.   10290.
   PER Q=      3.5      4.0      5.9      9.0     15.3     62.4
    AREA=    458.0   1008.8   1196.3   1350.0   2232.5   5865.1
     VEL=      8.9      4.6      5.8      7.8      8.0     12.5

 1490 NH CARD USED
 #SECNO 20.738

 3301 HV CHANGED MORE THAN HVINS

1
  12/28/87    14:01:29                                                                                                    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=    7950.0   10460.0  TYPE=     1  TARGET=    2510.000
     20.74    12.79  1192.79      .00      .00  1193.54      .75     2.02      .10  1184.00
   119000.   56095.   57035.    5870.   10757.    6780.    1071.    3722.     539.   1184.00
      .38     5.21     8.41     5.48     .040     .035     .045     .000  1180.00  7950.00
   .001548     800.     860.     840.        2        0        0      .00  2473.66 10423.66
0
 FLOW DISTRIBUTION FOR SECNO=     20.74          CWSEL=   1192.79

 STA=    7950.    8210.    8550.    9000.    9180.    9430.    9700.   10300.   10420.   10424.
   PER Q=      4.2      5.7      7.5      5.4     11.7     12.7     47.9      4.9       .0
    AREA=   1125.2   1629.2   2156.3   1222.5   2223.0   2400.8   6780.1   1055.0     16.1
     VEL=      4.4      4.2      4.2      5.2      6.3      6.3      8.4      5.5      1.8

 1490 NH CARD USED
 #SECNO 20.993

 3470 ENCROACHMENT STATIONS=    8420.0   11120.0  TYPE=     1  TARGET=    2700.000
     20.99    11.62  1194.62      .00      .00  1195.31      .69     1.76      .01  1192.00
   119000.   20301.   78505.   20194.    5079.   10281.    4596.    4223.     602.   1188.00
      .43     4.00     7.64     4.39     .045     .035     .045     .000  1183.00  8420.00
   .001448     810.    1350.    1370.        2        0        0      .00  2666.54 11086.54
0
 FLOW DISTRIBUTION FOR SECNO=     20.99          CWSEL=   1194.62

 STA=    8420.    8670.    8850.    9200.    9380.   10380.   10530.   10900.   11060.   11087.
   PER Q=      7.3      4.0      4.7       .9     66.0      3.9      8.7      4.0       .4
    AREA=   1866.9   1125.8   1615.5    470.8  10280.4   1079.8   2373.8   1044.5    125.9
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 1490 NH CARD USED
 *SECNO 21.241

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    8800.0   11350.0  TYPE=     1  TARGET=    2550.000
     21.24     9.15  1197.15      .00       .00  1198.89     1.74     3.26      .32  1192.00
   119000.   43528.   46986.   28486.    5244.    3427.    3899.    4646.     667.   1194.00
       .46     8.30    13.71     7.31     .045     .035     .045     .000  1188.00  8800.00
   .007619     810.    1310.    1240.        3        0        0      .00  2550.00 11350.00
0
1
  12/28/87    14:01:29                                                                       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


 FLOW DISTRIBUTION FOR SECNO=     21.24          CWSEL=    1197.15

 STA=    8800.     9350.     9550.     9870.    10350.    10600.    10760.    10950.    11170.    11280.    11350.
   PER Q=     20.3       6.3      10.0      39.5       4.1       3.2       6.3       5.7       3.5       1.1
    AREA=   2826.7     932.9    1484.6    3426.9     784.9     562.3     906.5     910.7     515.3     219.8
     VEL=      8.5       8.0       8.0      13.7       6.2       6.7       8.3       7.4       8.2       6.0

 *SECNO 21.469

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=    7950.0   10970.0  TYPE=     1  TARGET=    3020.000
     21.47    15.45  1200.45      .00       .00  1200.84      .38     1.81      .14  1194.00
   120700.   48495.   72019.     185.   12794.   12797.     632.    5125.     734.   1194.00
       .53     3.79     5.63      .29     .040     .035     .450     .000  1185.00  7950.00
   .000712     980.    1200.    1000.        3        0        0      .00  3020.00 10970.00
0
 FLOW DISTRIBUTION FOR SECNO=     21.47          CWSEL=    1200.45

 STA=    7950.     8138.     8293.     8466.     8699.     8910.     8996.     9089.     9175.     9353.     9504.     9634.     9718.
   PER Q=      3.9       3.2       3.6       3.2       4.7       3.3       3.1       3.6       3.6       3.2       3.0       1.7
    AREA=   1323.6    1069.2    1203.9    1270.6    1492.6     848.0     839.1     908.5    1220.7    1064.9     968.9     584.1
     VEL=      3.6       3.6       3.6       3.1       3.8       4.6       4.4       4.8       3.6       3.7       3.8       3.6
 STA=    9718.    10872.    10970.
   PER Q=     59.7        .2
    AREA=  12797.4     632.4
     VEL=      5.6        .3

1
  12/28/87    14:01:29                                                                       PAGE   16



                                                                   THIS RUN EXECUTED 12/28/87    14:02:44
 ******************************************************
   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
 ******************************************************
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EXHIBIT B (SHT. 1)
FLOODWAY BOUNDARY
ENCROACHMENT AND
PROPOSED REVISION

AGUA FRIA RIVER

LEGEND

100-YEAR FLOODPLAIN

FLOODWAY

BASE FLOOD ELEVATION

NOTE
The 500-Year Floodplain cannot be determined.

Scale 1" = 400'

4' C.I

AREA OF REVISED BOUNDARY

STATE OF ARIZONA TRUST LAND (WEST OF THIS LINE)

AREAS OF ENCROACHMENT INTO FLOODWAY

PLAT BOUNDARY

BOUNDARY OF FILLED AREA

BROOKVIEW COUNTRY CLUB PHASE 1 PHASE 2

PHASE LINE

AGUA FRIA RIVER CHANNEL (79' THALWAG)

N. 1/4 COR. SEC. 25 T. 4 N., R. 1 W.

ZONE A7

ELEV. 1195 ELEV. 1190 ELEV. 1185 ELEV. 1180 ELEV. 1175 ELEV. 1170 ELEV. 1165 ELEV. 1159

BELL ROAD

CANAL

CONCRETE DITCH

NOTES

1. PROPERTY BOUNDARIES AND LIMITS OF FILL PLOTTED BY ANDERSON-NELSON, INC. (DEVELOPERS ENGINEER)
2. ADDITIONAL SPOT ELEVATIONS BETWEEN SECTIONS 20.738 AND 20.993 WERE SURVEYED AND PLOTTED BY ANDERSON-NELSON, INC.

LEGEND

WATER SURFACE ELEVATIONS — CROSS-SECTION

B.F.E. FROM F.I.S. STUDY, MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS, PRELIMINARY, SEPT. 30, 1986

FLOODWAY WATER SURFACE ELEVATIONS BASED ON METHOD I ENCROACHMENT TO FLOODWAY BOUNDARY FROM PRELIMINARY F.I.S., SEPT. 30, 1986

CALCULATED WATER SURFACE ELEVATIONS BASED ON METHOD I ENCROACHMENT FOR REQUESTED FLOODWAY BOUNDARY ADJUSTMENT

NOTE: ALL WATER SURFACE ELEVATIONS ARE BASED ON ORIGINAL F.I.S. WHICH REFERENCES 1929 N.G.V.D.

WILLDAN ASSOCIATES
ENGINEERS • PLANNERS
1717 W. NORTHERN AVE., SUITE 112, PHOENIX, AZ 85021
(602) 870-7600

EXHIBIT NO. B
SHEET 1
Request for LOMR FLOODWAY REVISION

AGUA FRIA RIVER
TOWN OF SURPRISE

SCALE: 1" = 400'	DATE: 12-87
DRAWN BY: S.S.	JOB No.: 39011
CHECKED BY: J.L.	FIELD BK.:

400' 200' 0 400' 800'

Sheet 15/17

Note. The Section 21.469 is taken looking upstream.

KENNEY AERIAL MAPPING INC.
810623K
Phoenix, Arizona

EXHIBIT B (SHT. 2)

WILLDAN ASSOCIATES
ENGINEERS • PLANNERS
1717 W. NORTHERN AVE. SUITE 112, PHOENIX, AZ 85021
(602) 870-7600

EXHIBIT B
SHEET 2

SCALE: 1"=1000'	DATE: 01/04/88
DRAWN BY: WLM	JOB No.: 39010
CHECKED BY:	FIELD BK.:

FIRM
FLOOD INSURANCE RATE MAP
PANELS 1165 & 1170 OF 4350

Anderson-Nelson, Inc.
CIVIL ENGINEERING, LAND PLANNING, CONSULTANTS
PHOENIX, ARIZONA 273-1850

PRELIMINARY

DRAWN BY	R.J.G	NO.	DATE	BY	REVISIONS & REMARKS	SHT. 1
SCALE	1"=1000'	1.				OF 1
DATE	11-87	2.				
APPROVED						

EXHIBIT C
PROJECT LEGAL DESCRIPTION

PHASE II
LEGAL DESCRIPTION

Legal description of a parcel of land being a part of and being located within the East half of the East half of Section 36, Township 4 North, Range 1 West, and the East half of the East half of Section 25, Township 4 North, Range 1 West, Gila and Salt River Meridian, Maricopa County, Arizona, more particularly described as follows:

Commencing at the Southeast corner of said Section 36, thence N.00°24'49"E., 5016.24 feet along the West line of Section 31, Township 4 North, Range 1 East, to the Southwest corner of Section 30, Township 4 North, Range 1 East; thence N.00°24'40"E., 2324.53 feet along the West line of said Section 30, thence N.89°35'20"W., 60.15 feet to the POINT OF BEGINNING thence N.00°44'26"E., 2563.84 feet; thence N.35°02'45"W., 37.61 feet; thence N.01°04'39"W., 65.35 feet; thence N.35°51'02"E., 61.64 feet; thence N.00°11'51"E., 61.20 feet; thence N.89°45'58"W., 263.37 feet; thence N.79°22'49"W., 179.07 feet; thence S.68°03'33"W., 305.10 feet; thence S.55°22'33"W., 153.12 feet; thence S.39°09'48"W., 159.93 feet; thence S.26°21'02"W., 119.41 feet; thence S.16°26'03"W., 144.92 feet; thence S.00°55'22"W., 683.09 feet; thence S.62°47'54"W., 201.26 feet; thence S.18°19'29"W., 98.67 feet; thence S.10°14'03"W., 95.11 feet; thence S.00°40'00"W., 901.19 feet; thence East a distance of 525.51 feet to the beginning of a non-tangent curve concave to the northeast and having a radius of 969.00 feet, a radial line passing through the beginning of said curve bears S.57°55'03"W.; thence southeasterly along said curve a distance of 360.48 feet through a central angle of 21°18'53"; thence S.53°23'51"E.; 173.48 feet; thence S.89°19'58"E., 337.15 feet to the POINT OF BEGINNING.

EXCEPT the following described Parcel "C";

Commencing at the Southeast corner of said Section 36, thence N.00°24'49"E., 5016.24 feet along the West line of Section 31, Township 4 North, Range 1 East, to the Southwest corner of Section 30, Township 4 North, Range 1 East; thence N.00°24'40"E., 2371.59 feet along the West line of said Section 30, thence N.89°35'20"W., 386.52 feet to the POINT OF BEGINNING of Parcel "C"; thence N.63°34'15"W., 206.30 feet; thence N.36°53'58"E., 93.12 feet; thence N.48°54'20"W., 83.71 feet; thence N.05°48'40"W., 179.23 feet; thence N.26°58'49"W., 105.62 feet; thence N.45°04'32"W., 79.28 feet; thence N.02°16'02"W., 312.83 feet; thence N.07°07'28"E., 154.06 feet; thence N.00°00'11"W.,

189.25 feet; thence N.74°25'51"E., 101.54 feet; thence N.08°39'28"E., 146.08 feet; thence N.14°55'54"W., 287.73 feet; thence N.01°28'37"W., 549.65 feet; thence N.49°07'43"W., 70.31 feet; thence N.00°26'53"E., 19.31 feet; thence N.46°17'58"E., 126.63 feet; thence N.12°58'40"W., 131.23 feet; thence N.66°11'54"E., 156.15 feet; thence N.85°14'51"E., 125.90 feet; thence S.46°10'00"E., 65.29 feet; thence S.00°50'50"E., 94.95 feet; thence S.33°18'29"W., 38.10 feet; thence S.00°06'31"E., 449.98 feet; thence S.16°44'42"E., 106.13 feet; thence S.28°06'01"W., 92.73 feet; thence S.01°49'43"W., 180.17 feet; thence S.18°36'00"E., 53.45 feet; thence S.13°06'14"W., 59.81 feet thence S.00°28'52"E., 201.70 feet; thence S.11°21'23"E., 68.35 feet; thence S.15°58'28"W., 83.50 feet; thence S.00°05'04"E., 159.41 feet; thence S.36°41'42"E., 36.80 feet; thence S.00°30'08"W., 60.48 feet; thence S.40°18'00"W., 32.23 feet; thence S.00°58'02"W., 188.80 feet; thence S.26°01'43"E., 64.53 feet; thence S.24°46'43"W., 50.10 feet; thence S.00°24'59"W., 227.15 feet; thence S.32°00'20"E., 54.18 feet; thence S.31°14'43"W., 59.28 feet; thence S.02°03'13"W., 224.50 feet to the POINT OF BEGINNING of Parcel "C".

and EXCEPT the following Parcel "B-1";

Commencing at the Southeast corner of said Section 36, thence N.00°24'49"E., 5016.24 feet along the West line of Section 31, Township 4 North, Range 1 East, to the Southwest corner of Section 30, Township 4 North, Range 1 East; thence N.00°24'40"E., 2324.53 feet along the West line of said Section 30, thence N.89°35'20"W., 60.15 feet; thence N.89°19'58"W., 337.15 feet; thence N.53°23'51"W., 173.48 feet to the beginning of a tangent curve concave to the northeast and having a radius of 969.00 feet; thence northwesterly along said curve a distance of 360.48 feet through a central angle of 21°18'53"; thence West a distance of 195.63 feet to the POINT OF BEGINNING; thence N.31°56'06"W., 118.10 feet; thence N.14°13'27"W., 104.60 feet; thence N.06°23'03"W., 342.14 feet; thence N.40°32'13"W., 131.28 feet; thence N.89°18'52"W., 51.31 feet; thence S.04°13'10"W., 46.40 feet; thence S.49°38'36"W., 53.26 feet; thence S.00°35'45"W., 561.29 feet; thence East 312.68 feet to the POINT OF BEGINNING.

Containing an area of 46.12 acres (Parcels "C" and "B-1" excepted out) more or less.

L.N. 334
LBJ/jas
December 2, 1987

PHASE I
LEGAL DESCRIPTION

Legal description of a parcel of land being a part of and being located within the East half of the East half of Section 36, Township 4 North, Range 1 West, and the East half of the East half of Section 25, Township 4 North, Range 1 West, Gila and Salt River Meridian, Maricopa County, Arizona, more particularly described as follows:

Commencing at the Southeast corner of said Section 36, thence N.89°24'41"W. along the South line of said Section 36, 80.57 feet; thence N.00°35'19"E., 105.68 feet to the POINT OF BEGINNING; thence N.18°43'49"E., 114.38 feet; thence N.00°08'35"E., 5587.02 feet; thence N.42°38'13"W., 26.57 feet; thence N.00°09'11"W., 76.78 feet; thence N.55°44'04"E., 17.59 feet; thence N.00°33'43"E., 975.34 feet; thence N.27°13'14"E., 21.82 feet; thence N.00°44'26"E., 438.30 feet; thence N.89°19'58"W., 337.15 feet; thence N.53°23'51"W., 173.48 feet to the beginning of a tangent curve concave to the northeast and having a radius of 969.00 feet; thence northwesterly along said curve a distance of 360.48 feet through a central angle of 21°18'53"; thence West a distance of 525.51 feet; thence S.00°40'00"W., 2450.69 feet; thence S.00°04'37"W., 3692.80 feet; thence S.04°05'59"W., 96.58 feet; thence S.00°14'21"W., 1299.11 feet; thence S.19°11'07"E., 62.11 feet; thence S.89°35'10"E., 566.58 feet; thence S.00°37'59"W., 44.27 feet; thence S.88°57'20"E., 93.48 feet; thence N.00°06'57"E., 43.07 feet; thence S.89°55'37"E., 538.69 feet to the POINT OF BEGINNING;

EXCEPT the following described Parcel "A";

Commencing at the Southeast corner of said Section 36 thence N.89°24'41"W., along the South line of said Section 36, 634.90 feet; thence N.00°35'19"E., 547.37 feet to the POINT OF BEGINNING of Parcel "A"; thence S.86°04'13"W., 56.54 feet; thence N.49°31'57"W., 163.22 feet; thence N.13°00'35"W., 36.94 feet; thence N.27°21'48"E., 142.73 feet; thence N.29°37'48"W., 101.60 feet; thence N.70°22'13"W., 58.74 feet; thence N.60°51'21"W., 166.83 feet; thence N.46°22'45"W., 82.61 feet; thence N.06°03'27"W., 168.63 feet; thence N.31°02'24"E., 48.81 feet; thence N.66°33'01"E., 103.54 feet; thence N.33°23'55"E., 76.14 feet; thence N.02°41'45"W., 247.55 feet; thence N.04°17'32"E., 146.99 feet; thence N.05°10'16"W., 133.45 feet; thence N.00°04'13"E., 308.58 feet; thence N.18°03'10"W., 137.84 feet; thence N.02°44'12"W., 293.80 feet; thence N.07°55'48"E., 192.73

feet; thence N.21°18'58"E., 102.06 feet; thence N.00°09'26"W., 184.33 feet; thence N.19°43'23"E., 185.93 feet; thence N.03°32'25"E., 239.13 feet; thence N.32°53'46"E., 250.37 feet; thence N.04°08'06"E., 183.57 feet; thence N.56°10'00"E., 52.51 feet; thence N.27°16'21"W., 114.90 feet; thence N.64°59'27"E., 372.76 feet; thence S.27°21'18"E., 203.56 feet; thence S.07°39'47"W., 147.38 feet; thence S.08°29'24"E., 185.34 feet; thence S.16°09'02"W., 100.64 feet; thence S.03°53'59"E., 192.73 feet; thence S.59°27'51"W., 43.18 feet; thence S.00°03'38"W., 165.26 feet; thence S.26°00'02"W., 262.41 feet; thence S.66°31'06"W., 151.43 feet; thence S.04°07'46"W., 99.30 feet; thence S.35°09'39"E., 101.12 feet; thence S.02°15'03"W., 45.02 feet; thence S.46°36'44"W., 60.25 feet; thence S.00°18'34"W., 189.11 feet; thence S.44°05'53"E., 58.31 feet; thence S.65°37'05"E., 209.79 feet; thence S.26°38'22"E., 39.93 feet; thence S.24°29'50"W., 82.05 feet; thence S.04°07'24"W., 118.89 feet; thence S.33°40'36"E., 85.90 feet; thence S.00°02'15"W., 58.15 feet; thence S.30°16'20"W., 86.99 feet; thence S.00°31'49"W., 243.03 feet; thence S.23°25'51"W., 160.07 feet; thence S.03°35'25"E., 352.23 feet; thence S.42°34'30"E., 127.72 feet; thence S.33°45'37"W., 172.45 feet; thence S.83°24'20"W., 74.41 feet; thence S.59°36'52"W., 115.34 feet; thence S.36°34'56"W., 61.29 feet; thence S.11°21'23"E., 173.92 feet; thence S.25°55'51"W., 93.56 feet to the POINT OF BEGINNING of Parcel "A";

and EXCEPT the following described Parcel "B";

Commencing at the Southeast corner of said Section 36, thence N.00°24'49"E., along the West line of Section 31, Township 4 North, Range 1 East, 4252.50 feet; thence N.89°35'11"W., 423.97 feet to the POINT OF BEGINNING of Parcel "B"; thence S.63°20'06"W., 274.38 feet; thence N.29°33'29"W., 109.15 feet; thence N.08°53'59"E., 23.67 feet; thence N.31°56'42"W., 172.06 feet; thence N.57°50'43"W., 64.12 feet; thence N.04°31'29"E., 129.70 feet; thence N.00°23'41"E., 800.44 feet; thence N.24°51'13"E., 100.65 feet; thence N.00°19'22"E., 230.82 feet; thence N.85°47'36"W., 249.31 feet; thence N.68°59'12"W., 62.00 feet; thence N.87°29'48"W., 162.24 feet; thence N.00°17'04"W., 329.62 feet; thence N.18°44'57"W., 22.67 feet; thence N.00°35'45"E., 1630.38 feet; thence East a distance of 312.68 feet; thence S.31°56'06"E., 111.13 feet; thence S.31°21'21"W., 240.18 feet; thence S.18°51'40"W., 303.91 feet; thence S.04°03'11"E., 946.80 feet; thence N.89°03'14"E., 421.23 feet; thence N.01°03'17"W., 255.83 feet; thence N.32°31'36"W., 46.27 feet; thence N.14°53'49"E., 89.95 feet; thence N.13°55'50"W., 244.92 feet; thence N.51°03'57"E., 71.68 feet; thence N.02°22'49"E., 204.22 feet; thence N.25°08'04"W., 125.82 feet; thence N.38°39'30"E., 227.21 feet; thence S.77°24'42"E., 134.07

feet; thence S.44°58'14"E., 122.30 feet; thence S.12°37'47"W., 102.13 feet; thence S.34°15'46"E., 197.95 feet; thence S.43°11'51"W., 119.95 feet; thence S.03°11'03"E., 191.99 feet; thence S.44°58'36"W., 113.91 feet; thence S.00°43'16"E., 206.72 feet; thence S.39°20'06"W., 62.87 feet; thence S.01°07'37"E., 125.72 feet; thence S.35'57'02"W., 58.49 feet; thence S.09°01'02"W., 88.90 feet; thence S.56°13'13"W., 96.69 feet; thence S.08°16'11"W., 258.42 feet; thence S.42°06'17"E., 139.55 feet; thence S.10°24'53"E., 432.47 feet; thence S.28°44'28"E., 161.06 feet; thence S.13°56'58"W., 188.51 feet; thence S.01°49'59"E., 132.39 feet; thence S.18°23'00"E., 79.46 feet; thence S.34°21'42"E., 90.84 feet; thence S.07°37'35"E., 48.39 feet; thence S.37°24'22"W., 140.93 feet; thence S.09°58'21"W., 235.03 feet to the POINT OF BEGINNING of Parcel "B";

Containing an area of 134.84 acres (Parcels "A" and "B" excepted out) more or less.