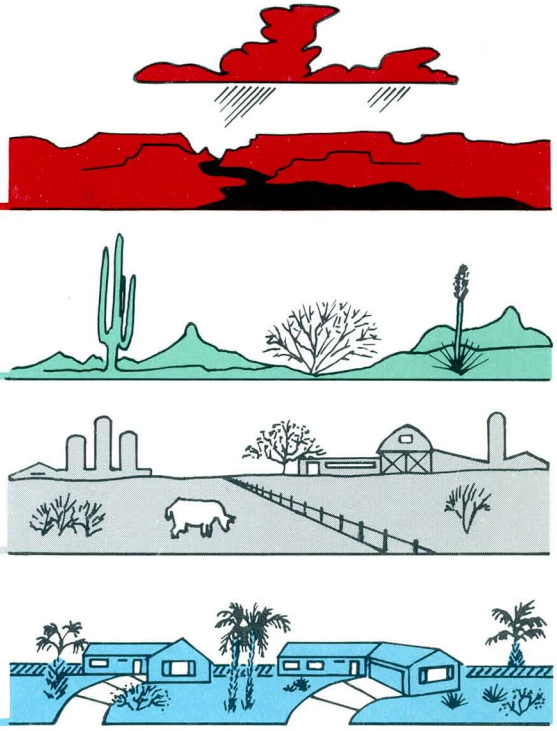

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

HYDROLOGIC AND HYDRAULIC ANALYSIS OF WHITE TANKS #4 F.R.S. SPILLWAY FOR THE 1/2 PROBABLE MAXIMUM FLOOD

ANNEXES

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

HYDROLOGIC AND HYDRAULIC ANALYSIS OF WHITE TANKS #4 F.R.S. SPILLWAY FOR THE 1/2 PROBABLE MAXIMUM FLOOD

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PREPARED BY:

MARICOPA COUNTY FLOOD CONTROL DISTRICT
HYDROLOGY DIVISION
WATERSHED MANAGEMENT BRANCH

DAVID B. BOGGS, P.E.

HYDROLOGIST

JULY 8, 1993

HYDROLOGIC AND HYDRAULIC ANALYSIS
OF WHITE TANKS #4 F.R.S. SPILLWAY
FOR THE 1/2 PROBABLE MAXIMUM FLOOD

ANNEXES

ADWR *Guidelines for the Determination of Spillway Capacity Requirements*, May, 1991 (draft).

STATE OF ARIZONA

DEPARTMENT OF WATER RESOURCES

ENGINEERING DIVISION/SAFETY OF DAMS SECTION

DRAFT

GUIDELINES FOR THE DETERMINATION OF SPILLWAY CAPACITY REQUIREMENTS

DRAFT

PREPARED BY

DAN ROGER LAWRENCE, CHIEF

ENGINEERING DIVISION/SAFETY OF DAMS SECTION

MAY 1991

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DRAFT GUIDELINES FOR THE DETERMINATION OF SPILLWAY CAPACITY REQUIREMENTS

INTRODUCTION

The Arizona Revised Statutes assign the responsibility for the supervision of the safety of dams to the Director of the Department of Water Resources. The statutes require that, in order to maximize protection of the public against loss of life and property by virtue of the failure of the dam, the construction, repair, enlargement, maintenance and operation of such dam must be under the approval and supervision of the Director, acting under authority vested in the Department of Water Resources.

One of the most important among the many factors affecting the safety of a dam is that of the adequacy of the emergency spillway. The Department of Water Resources is frequently asked to provide guidelines and hydrologic criteria for spillway and freeboard requirements for dams within jurisdiction. These guidelines have been prepared to assist the owner, the owner's engineer, and other interested individuals involved in the design or modification of spillways on jurisdictional dams. The Guidelines are reviewed periodically and will be revised as needed.

The following procedures and requirements will apply to all existing dams which are being enlarged or improved, dams which are being reevaluated for safety, and proposed new dams which will be under statutory jurisdiction of the Director.

GENERAL REQUIREMENTS

The basis for assigning the hydrologic requirements for spillway capacity determination lies primarily in the potential hazard posed by the dam. The hazard classification assigned to a dam is dependent on many factors all of which must be carefully evaluated in terms of their effects on the safety of the dam and on the magnitude of economic, environmental and human losses in the event of failure of the dam. These factors include, but are not necessarily limited to: height of dam; storage capacity; existing and probable future downstream development; uses of reservoir; operational procedures; type of dam; type of spillway; site and foundation geology; size, slope, material composition and configuration of downstream channel; distance from dam to nearest significant downstream development; and the relative location of the spillway to the dam.

Spillways acceptable to the Department of Water Resources must be sized in accordance with the classification of hazard potential for the dam and may range in capacity from a size capable of safely passing the outflow from a storm with a recurrence interval of 100-years for dams of low hazard potential to that of the Probable Maximum Flood for high hazard potential dams.

The minimum acceptable size of the spillway must have a capacity large enough to safely handle the 100-year flood inflow.

DOWNSTREAM HAZARD POTENTIAL CLASSIFICATION

Classification of downstream hazard potential has no relationship to the condition of the dam but rather is dependent on an evaluation of probable loss of life and damage downstream in the event of a dam failure. The hazard potential classification for each dam is determined by the Department in accordance with Table 1. This assessment will be reevaluated periodically and revised as needed.

TABLE 1. DOWNSTREAM HAZARD POTENTIAL CLASSIFICATION

CATEGORY	URBAN DEVELOPMENT	ECONOMIC LOSS
Low	No permanent structure for human habitation.	Minimal (undeveloped to occasional structures or agriculture).
Significant	No urban development and no more than a small number of habitable structures.*	Appreciable (notable agriculture, industry or other structures).
High	Urban development with more than a small number of habitable structures.*	Excessive (extensive community, industry, agriculture).

* Because this definition does not cite a specific number of lives that could be lost, some difficulty has been experienced in determining whether dams should be categorized as having 'significant' or 'high' downstream hazard potential. The issue is clarified by emphasizing that the downstream hazard potential classification should be based on the density of downstream development containing habitable structures. For example, dams located upstream of isolated farmhouses would be classified as having significant downstream hazard potential, and those located upstream of several houses or a residential development would be classified as having a high downstream hazard potential.

SIZE CLASSIFICATION

Dams are classified into small, medium and large sizes. A numerical rating procedure, based on the descriptive characteristics of height and reservoir capacity has been developed to determine the dam size classification.

Height is measured from the lowest elevation of the outside limit of the dam (usually the downstream toe) to the spillway crest, or top of spillway gates if so equipped. For dams with no spillway, the height is measured to the crest of the dam.

Reservoir capacity, in acre-feet, is measured to the spillway crest, or top of the spillway gates if so equipped. For dams with no spillway, capacity is measured to the dam crest.

The categories and corresponding rating factors are shown in Table 2.

TABLE 2. SIZE CLASSIFICATION RATING CATEGORIES

Height (feet)	Rating Factor	Capacity (acre-feet)	Rating Factor
6-24	0	15-499	0
25-39	1	500-999	1
40-59	2	1,000-2,999	2
60-79	3	3,000-9,999	3
80-99	4	10,000-24,999	4
100+	5	25,000+	5

A numerical rating is computed for each dam by adding the corresponding rating factors for each of the two categories. For example, a dam that is 65 feet in height and has a reservoir capacity of 22,000 acre-feet would have a rating of (3+4=7). Small dams have a rating in the range 0-2, medium dams in the range of 3-7 and large dams, 8 or greater.

REQUIRED HYDROLOGIC CRITERIA

An evaluation of the performance and capacity of an existing spillway or a hydrologic design study for a spillway at a proposed dam is required to determine the ability of the structure to safely pass a flood whose magnitude is established on the basis of the size and downstream hazard potential classifications assigned to the dam.

The Inflow Design Flood (IDF) for a specific spillway is determined by the runoff hydrograph selected primarily on the basis of the size and hazard classifications assigned to the dam. As there are many factors to consider in the selection of the magnitude of this flood, it is not the purpose of these guidelines to require a specific flood frequency, volume or rainfall depth for each classification. However, Table 3 does provide ranges of flood magnitudes from which the Inflow Design Flood may be selected on the basis of the designated hazard potential and size classifications. These ranges of flood magnitudes generally define the limits acceptable to the Department of Water Resources for use as the basis for sizing the spillway.

TABLE 3. RECOMMENDED SPILLWAY DESIGN FLOODS

HAZARD CLASS	SIZE CLASSIFICATION	INFLOW DESIGN FLOOD MAGNITUDE
Low	Small	100-year
	Medium	100-year to 0.5 PMF
	Large	0.5 PMF
Significant	Small	100-year to 0.5 PMF
	Medium	0.5 PMF
	Large	0.5 PMF to PMF
High	Small	0.5 PMF
	Medium	0.5 PMF to PMF
	Large	PMF

The flood magnitudes shown in Table 3 are derived from rainfall depths for various durations and severities of storms. Both general frontal and thunderstorm type storms should be studied with due consideration given tropical storm potential and orographic influences that may greatly increase rainfall amounts.

Recorded rainfall and flood flows in Arizona are rather sparse, and the period of record is usually short. Consequently, rainfall data are usually obtained from data published by the National Weather Service as listed in the References. Synthetic flood hydrographs are then developed by modeling the watershed's rainfall/runoff response and employing the unit hydrograph approach.

The peak inflow rate usually has a greater influence than the runoff volume on the spillway capacity requirement for a dam with a small reservoir storage that is subject to storm inflow from a large watershed. In this case, the Inflow Design Flood (IDF) peak flow is essentially equal to the peak outflow rate. Conversely, a reservoir that is relatively large compared to contributing watershed will usually attenuate the IDF peak; in this case, the spillway peak discharge may be considerably less than the IDF peak.

A spillway capacity less than outlined above will be acceptable for: (1) all new dams, (2) existing dams which are being enlarged or improved, and (3) dams being reevaluated for safety, where the owner (or the owner's engineer) can demonstrate to the Department that the incremental damages due to failure of the dam are insignificant and will not cause loss of life. The analysis shall be based upon the dam failure caused by a flood which just exceeds the routing capacity of the reservoir. The result shall be compared to the pre-failure conditions such as the spillway discharge and any reasonable rainfall runoff occurring between the dam site and the point(s) of interest below the dam. The burden of proof rests with the owner.

RESERVOIR ROUTING REQUIREMENTS

The adequacy of the spillway for an existing dam is normally determined by routing the Inflow Design Flood through the reservoir and spillway. Flood routings for spillway capacity determinations will normally be required to commence with the reservoir storage level at the spillway crest elevation. Infrequent exception would be: (1) normal conservation storage level is below the spillway crest of a reservoir without a flood storage pool, (2) the normal upper surface of the conservation pool is limited to a level that is coincident with the bottom level of the flood control pool allocation or (3) the reservoir is used exclusively for flood control and would normally be empty. Deviations from the normal starting level of routing at the spillway crest elevation must be considered on the basis of risk and reservoir operating procedure.

FREEBOARD REQUIREMENTS

Total freeboard (the distance between the top of the dam and the spillway crest) is determined by the type of dam, the maximum water surface during discharge of the Inflow Design Flood, maximum anticipated wave height and runup, and by economic factors. The minimum permissible total freeboard shall be four feet.

Residual freeboard (the distance between the maximum water surface and the top of the dam) depends on dam type, wave height and runup, the slope and finish of the upper part of the upstream face, and the Inflow Design Flood. Generally, the minimum permissible residual freeboard for an earthfill or rockfill dam shall be the greater of either the sum of wave height and runup or three feet. This requirement may be reduced in those cases where the Inflow Design Flood is the 0.5 PMF or greater.

The minimum residual freeboard for a concrete dam of any type without either a parapet wall or protection against overpour shall be the same as that of an earthfill or rockfill dam. Concrete dams provided with parapet walls exceeding the minimum residual freeboard height, or concrete dams provided with adequate splash impact protection at the toe need no other residual freeboard requirements except those which the owner may wish to provide.

DEFINITIONS

The following definitions may be helpful to those concerned with the design of an emergency spillway. The terminology is largely based on data published by Federal agencies.

100-Year Flood - The flood runoff whose magnitude is expected to be equaled or exceeded, on the average, once in 100 years. Stated another way, it is a flood that has a one percent chance of being equaled or exceeded in any one year.

Concrete Dam - Any dam constructed of concrete. Some examples are: arch, gravity, arch-gravity, slab and buttress, multiple arch. A dam having only a concrete facing should not be referred to as a concrete dam.

Drainage Area - The area that drains naturally to a particular point on a river or stream.

Earth Dam (Earthfill Dam) - An embankment dam in which more than 50% of the total volume is formed of compacted fine-grained material obtained from a borrow area.

Embankment Dam (Fill Dam) - Any dam constructed of excavated materials.

Fetch - The straight line distance between a dam and the farthest reservoir shore. The fetch is one of the factors used in calculating wave heights in a reservoir.

Flood - The runoff from rainfall or snowmelt of significant magnitude and often related to a theoretical frequency of occurrence. Flood is inflow to the water control structure.

Flood Routing - The determination of the attenuating effects of storage on a flood passing through a valley, channel, or reservoir.

Hydrograph - A graphical representation of discharge, stage, or other hydraulic property with respect to time for a particular point on a stream. (At times the term is applied to the phenomenon the graphical representation describes: hence a flood hydrograph is the passage of flood discharge past the observation point).

Inflow Design Flood (IDF) - The reservoir flood inflow whose magnitude has been selected for design requirements based on the size and assigned hazard classification of the dam. The magnitude of the IDF may range from the 100-year flood to the PMF.

Masonry Dam - Any dam constructed mainly of stone, brick, or concrete blocks that may or may not be joined with mortar. A dam having only a masonry facing should not be referred to as a masonry dam.

Maximum Water Surface (MWS) - The maximum elevation of the reservoir water surface attained during routing of the Inflow Design Flood (IDF).

Normal Water Surface (NWS) - The storage level at which the reservoir is usually operated. This level is usually at or below the spillway crest, except in the few instances where the storage level is normally maintained above the spillway crest by means of gates or flashboards.

Outlet Works - A closed channel under the dam or through an abutment for discharge of water. An outlet works may be controlled or uncontrolled. An outlet works is subject to plugging by debris and is generally not eligible for classification as a spillway.

Parapet Wall - A solid wall built along the top of a dam for ornament, for the safety of vehicles and pedestrians, or to prevent overtopping.

Peak Flow - The maximum instantaneous discharge that occurs during a flood. It is coincident with the peak of a flood hydrograph.

Probable Maximum Flood (PMF) - The flood runoff that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in the region.

0.5 PMF - That flood hydrograph with ordinates equal to one-half the corresponding ordinates of the Probable Maximum Flood hydrograph.

Probable Maximum Precipitation (PMP) - The precipitation depth which generates the PMF.

Reservoir Capacity - The storage capacity of the reservoir when the storage level is at the crest of the spillway, or at the top of permanently mounted spillway gates in closed position. For dams with no spillway the capacity is measured to the dam crest.

Reservoir Routing - The computation by which the interrelated effects of the inflow hydrograph, reservoir storage, and discharge from the reservoir are evaluated.

Residual Freeboard - The vertical distance between the maximum water surface elevation and the minimum dam crest elevation.

Rockfill Dam - An embankment dam in which more than 50% of the total volume comprises compacted or dumped pervious natural or crushed rock.

Spillway - A structure over or through which flood flows are discharged. If the flow is controlled by gates, it is considered a controlled spillway; if the elevation of the spillway crest is the only control, it is considered an uncontrolled spillway.

Spillway Design Hydrograph (SDH) - The routed outflow flood derived from the Inflow Design Flood (IDF). In some cases the IDF and the SDF hydrographs are essentially identical; however the SDF hydrograph will usually have a lower peak discharge value because of attenuation of the IDF peak due to reservoir routing. The SDH peak discharge is the maximum discharge capacity of the spillway.

Surcharge Storage - The storage volume above the spillway crest.

Total Freeboard - The vertical distance between the spillway crest and the crest of the dam.

REFERENCES

1. Arizona Compilation of Rules and Regulations, R12-15-151, R12-15-152, and R12-15-1201 to R12-15-1206.
2. Arizona Revised Statutes, Title 45, Chapter 6, Article 1.
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6. EM 1110-2-1411, Standard Project Flood Determinations, U.S. Army Corps of Engineers, 1952.
7. Guidelines for Determining Flood Flow Frequency, Bulletin 17B, U.S. Water Resources Council, Washington, D.C., March 1982.

8. HEC-1, Flood Hydrograph Package, U.S. Army, Corps of Engineers.

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Field Survey Notes from White Tanks #4, June-July, 1993.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Interoffice Memorandum

To: D. Boggs From: M. Bresso Date: June 18, 1993

Copy: File: SO.1

Subject: White Tanks #4 FRS, Emergency Spillway Data

I have attached a copy of two sketches which represent the physical geometry of each spillway for the White Tanks #4 structure. The survey was performed by John Hughes, RLS and myself, Thursday, June 17. Would you please ensure these conditions are considered in the HEC-1 model, and please inform Dave Creighton of ADWR of the results.

Western Spillway

Dam Crest-Spillway Differential Elevation	5.5'
Southern Side Slope	12% ≈ 8 horiz.: 1 vert.
Northern Side Slope	14% ≈ 7 horiz.: 1 vert.
Approx. Approach Spillway Length	360'
Approach Spillway Slope (Average)	-0.4%
Approx. Downstream Spillway Length	580'
Downstream Spillway Slope (Average)	0.6%
Width of Spillway (at spillway elevation)	151.6'
Width of Spillway (at crest elevation)	227.2'

Eastern Spillway

Dam Crest-Spillway Differential Elevation	5.3'
Southern Side Slope	7.4% ≈ 13 horiz.: 1 vert.
Northern Side Slope	30% ≈ 3 horiz.: 1 vert.
Approx. Approach Spillway Length	181'
Approach Spillway Slope (Average)	-0.1%
Approx. Downstream Spillway Length	442'
Downstream Spillway Slope (Average)	-0.4%
Width of Spillway (at spillway elevation)	130.0'
Width of Spillway (at crest elevation)	210.0'

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT WHITE TANKS #4 PAGE ____ OF ____

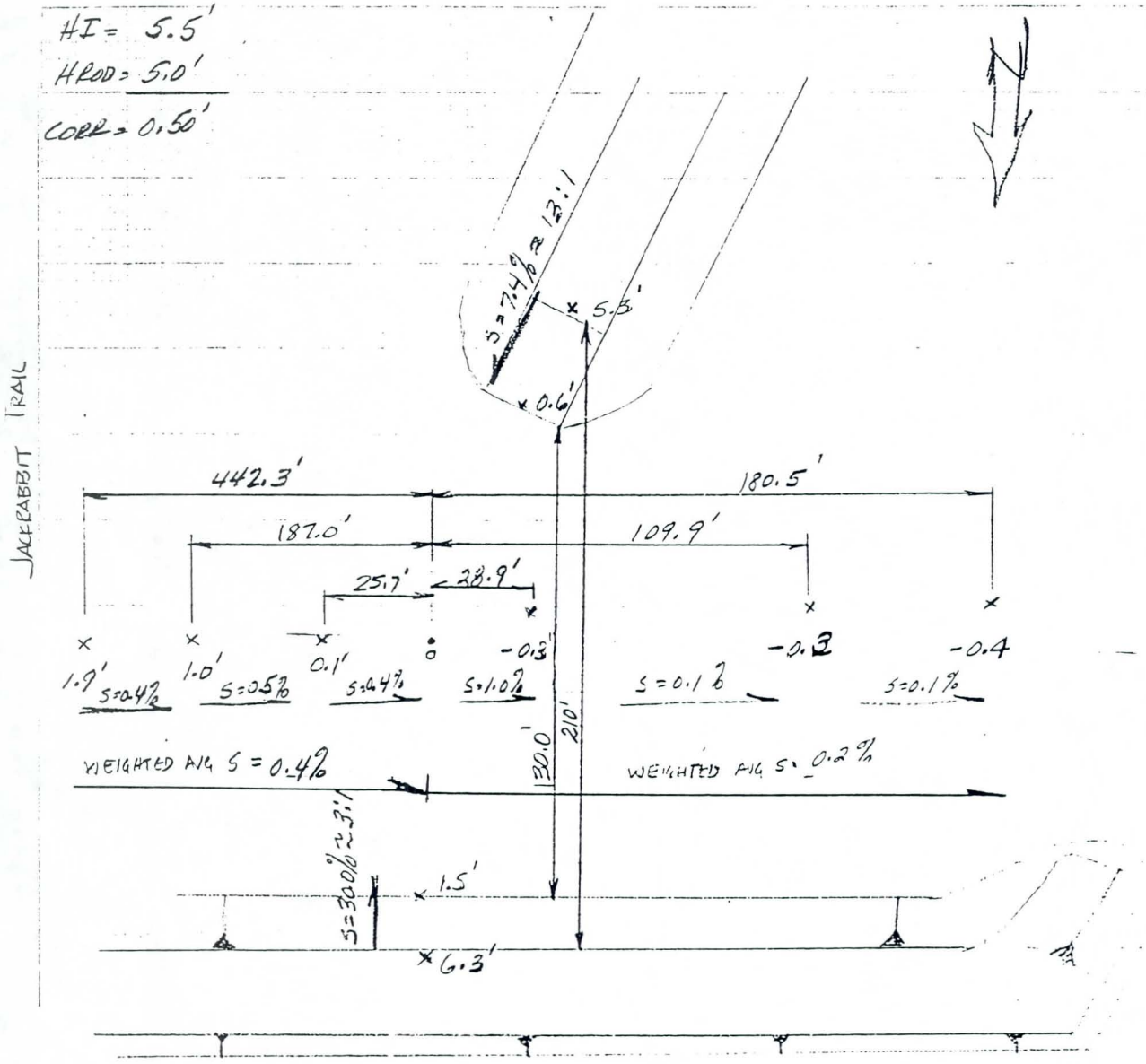
DETAIL EASTERN EMERGENCY SPILLWAY COMPUTED MPB DATE ____

CHECKED BY ____ DATE ____

HI = 5.5'

HROD = 5.0'

CORR = 0.50'

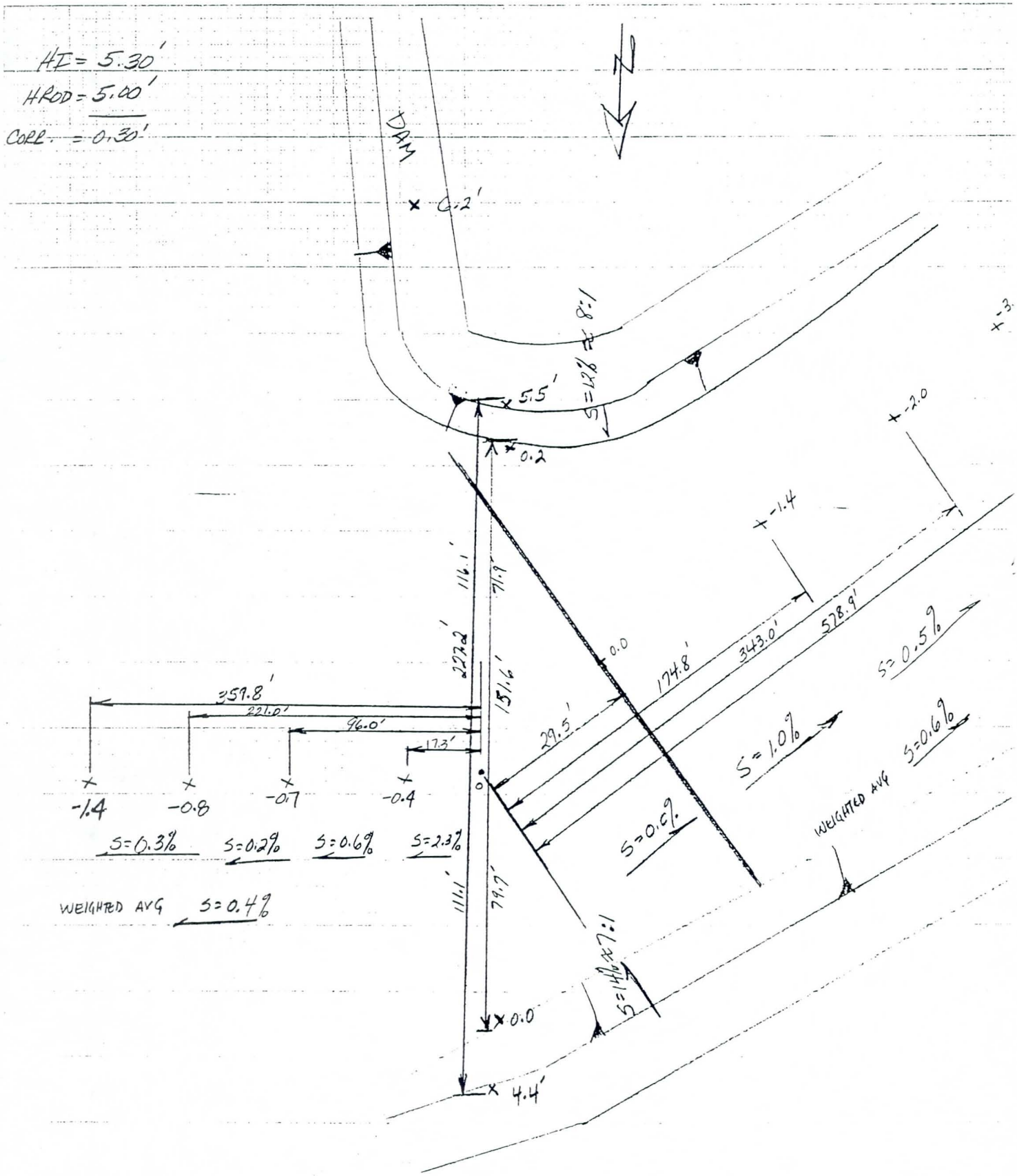


FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT *WHITE TANKS #4* PAGE ____ OF ____

DETAIL *WESTERN EMERGENCY SPILLWAY* COMPUTED *MPB* DATE ____

CHECKED BY ____ DATE ____



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Interoffice Memorandum

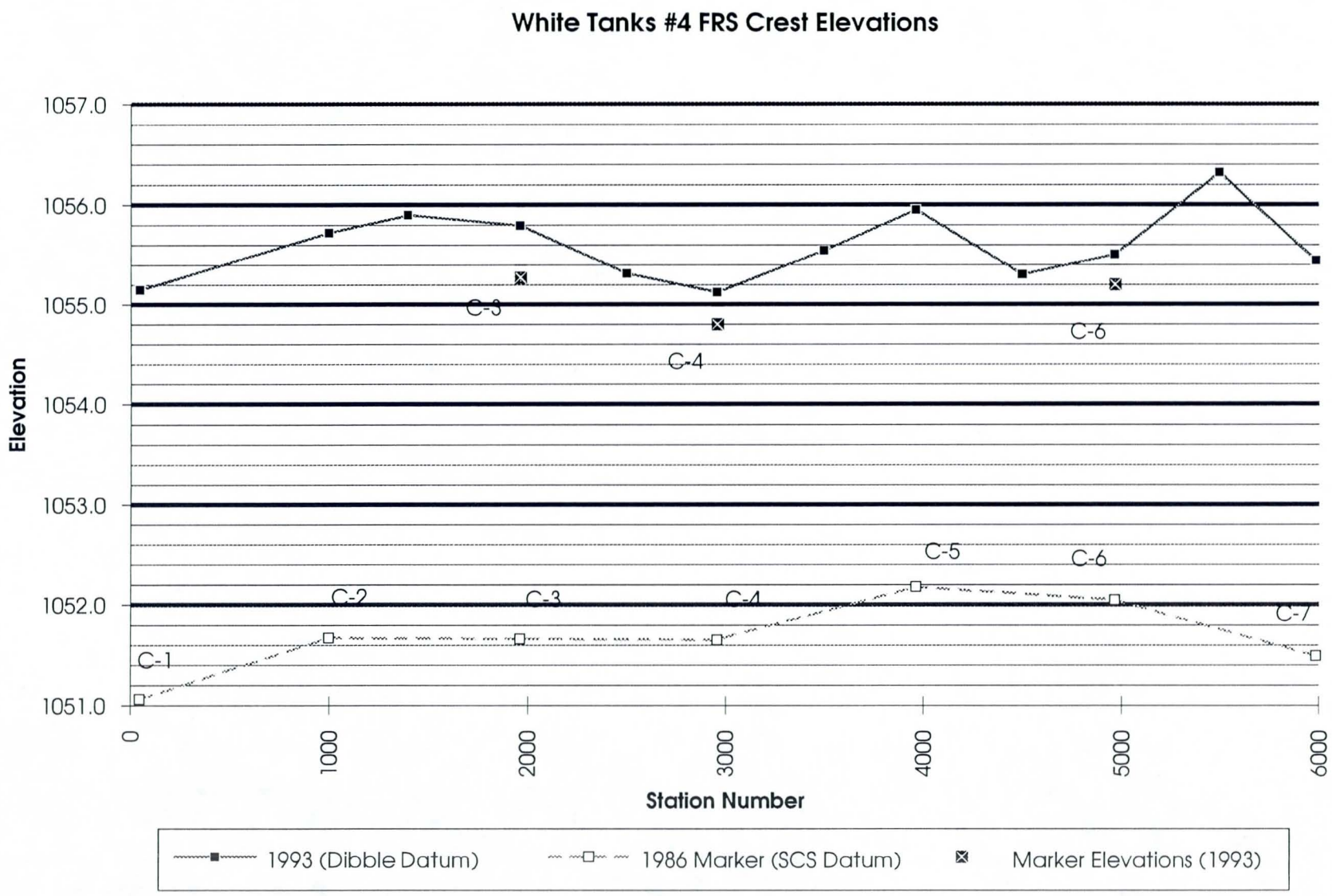
To: D. Boggs From: M. Bresso Date: July 2, 1993

Subject: White Tanks #4 FRS, Crest Elevations

The crest elevations for the White Tanks #4 FRS were field verified on July 2. The attached chart indicates the crest elevation at various stations, the elevations of subsidence markers that were found and the elevations of the subsidence markers as they were measured in 1986 by SCS. The 1/2" pipe in handhole, located at the intersection of Jackrabbit Trail and Van Buren, was used as the benchmark with a given elevation of 1030.91. The datum is NGS, and the benchmark elevation was obtained from the White Tanks ADMS performed by the WLB Group.

The crest of the dam is no less than 1055.0 across the length of the dam. The subsidence markers that were found are typically about 0.3' below the elevation of the crest. In addition to the crest elevation, a spot elevation was obtained for each emergency spillway. The elevation of the eastern spillway was 1049.4, the elevation of the western spillway was 1047.9.

The WLB Group study determined the SCS benchmark, 1/2" pipe in handhole at the intersection of Jackrabbit Trail and McDowell Road, to be 1079.43 compared to the SCS 1986 datum elevation of 1972.02. The corresponding correctional value is 7.41'. Comparison between SCS elevations (1984, 1986) and FCD 1993 elevations indicate the dam has generally subsided about 4.0' since 1986 and 3.7' since 1984. It is not certain if there is a discrepancy with the SCS benchmark elevation between 1984 and 1986 since the data indicates the dam "rose" during that time.


White Tanks #4 FRS Crest Elevations
Elevation
1057.0
1056.0
1055.0
1054.0
1053.0
1052.0
1051.0
0
1000
2000
3000
4000
5000
6000
Station Number
C-1
C-2
C-3
C-4
C-5
C-6
C-7
C-3
C-4
C-6
1993 (Dibble Datum)
1986 Marker (SCS Datum)
Marker Elevations (1993)

Comments Received from ADWR's David Creighton

Summary (Interim)
6/25/93

Impressions gained to date (6/25/93) of reviewing various source materials with respect to evaluating the hydrologic study for the 1/2 PMF storm and runoff reservoir routing.

1. The documentation developed to date and reviewed is not adequate to support specific qualitative opinions or draw conclusions.

2. The hydrologic model configuration is not in keeping with present watershed conditions; therefore, the drainage area and hydrographs are not proper.

3. The hydraulic structure data for the 2 spillway cross-sections and crest evaluations and the dam embankment elevations are not adequately documented to current date specific and a definite bench mark. The structure data included in the models is not consistent.

4. The HEC-1 model submitted has several routing reaches for which the routed hydrographs overtop the low bank and some water would be shed from the White Tanks #4 combined hydrograph.

5. For analysis of present conditions, concepts of assumed or hypothetical drainage facilities to be constructed are not proper for routing model development.

6. If an assumed future conditions model is optionally desired, the rationale, parameter assumptions, and sequential phasing can be displayed for the scenario hypothecated.

7. The expansion of the original watershed area from 14.23 sm Ertec value to 20.96 sm needs supporting documentation.

8. A HEC-2 model could be used to more definitively route the IDF.

9. Modeling present ground elevations for the spillway, particularly the west spill can add top width to bring the TW to about 500 feet. This should add a significant amount of capacity which to date appears to have been ignored.

10. Along Jackrabbit Trail the use of Divert and Retrieve to reduce the PMF to 1/2 for reach analysis would give guidance to the lower capacity limit of the Jackrabbit Trail drainage ditch and the magnitude of flows shed and lost.

11. Under PMF flows, the Jackrabbit Trail is indicated to be overtopped from 1.67 to 9.13 feet.

12. Interior sub area overtopping is also indicated. Route 23 to CP 22A has 9.84' of overtopping indicated.

13. Inspection reports raise the question that O&M forces have progressively lowered the dam crest elevation due to maintenance methods and actions.

14. There remains an impression that even though there is inadequate documentation for present condition modelling, the net effect of the current deficiencies when corrected, may yield an adequate hydrologic model and resulting output for a residual free board in the range of one (1) foot.

15. At some future date when speculative land development pressures become dominant, a new hydrologic-hydraulic study will be required.

16. The starting storage content of White Tanks #4 and available reservoir capacity has three (3) possible primary assumptions which are:

    a. Start with the reservoir full to spillway level.
    b. Start with the basic design level of empty prior to the borrow pit excavation.
    c. Start with the basic design level storage as augmented by the borrow pit excavation.

Under ADWR Spillway design guidelines for a flood control structure normally empty, assumption #2 is believed to be the more reasonably conservative by treating the borrow pit as a transient condition subject to adverse storage changes due to an antecedent less than design storm and sediment deposition.

Freeboard Concepts and Criteria

Freeboard is a public safety-hazard reduction concept. Freeboard is to provide an adequate amount of reservoir storage below the dam crest elevation to allow for several contingency conditions which might occur. Among these contingencies are:

1. Wind and ~~more~~ wave action.

2. Possible errors in hydrologic-hydraulic modeling parameter estimation and the effect upon quality of resulting computations.

3. Reliability of structure elevation data being adequate in displaying the minimum dam embankment elevation and the spillway dimension-elevation in relation to the completed reservoir maximum water surface elevation.

Freeboard quantatively should be some reasonable magnitude greater than the possible range margin of error estimates for the inflow design flood (IDF) and the reservoir spillway-dam routing computation results or wave action. The state guidelines of three (3) feet may be reduced when the IDF is the 0.5 PMF or greater.

A one (1) foot minimum residual for IDFs between 100-year and 0.5 PMF is considered to be reasonable guidance considering the difference between "minimum permissible total" of four (4) feet and the "residual freeboard" of three (3) feet, and the length of fetch.

Freeboard values between 0 and 1/2 foot are considered to be outside of any reasonable limits for dam safety acceptability.

Spillway Discharge Rating

1. Dimensional Parameters

1.1 The spillway SCS design parameters were an east and west curved (centerline radius = 282.5' and 350' respectively) alignment with a 165' bottom width and side slopes of 1:1 to the top of the dam embankment at elevation 1056.0 or to original ground elevation. Each spillway had a level crest at elevation 1050.0. The inlet channels to the crest had a slope of +0.002 with the discharge channel slope of -0.003.

1.2 Current (1993) conditions of the spillway reflect operational and maintenance modifications to the side slopes encroachment into the east spillway by the creation of Jackrabbit Trail drainage inlet channel dike. Downstream from the end of the R-O-W across the flow path, a chainlink fenced equipment yard and a farm equipment building have been constructed. The back water effect of these structures has not been estimated or evaluated.

The present conditions based on field survey data of different dates and a difference in bench marks show:

East Spillway- Bottom width 130', top width 210', at depth = 5.3'. The topographic map shows a spot elevation of 1049.0.

West Spillway - Bottom width 151.6', top width 227.2', at depth = 5.5' and spot elevation of 1048.5.

Computation of total channel cross-section area shows a loss of cross-section area in the lower 4 feet and a minor gain above about 4.4' depth. The loss ranges from 11.2% with 1 foot depth to 0 at 4.4' and a 5.5% gross gain at d = 6. A graph illustrates these changes. The net effect on computed water surface elevation has not received final review.

Spillway Discharge Rating Estimation

Three approaches to spillway discharge rating have been used between 1952 and 1993:

1. The SCS (1952) and Ertec (1981) have used the normal depth method to complete a normal depth and velocity head for a specific discharge throughout the probable range expected for design. FCDMC (1993) has used this as a check method.

2. The concept of a broad-crested weir has been used ($Q = CLH^{3/2}$). Examination of the upstream weir face height and slope and the downstream weir face height and slope appears not to have been involved in selecting the value of the crest coefficient and whether it is fixed or variable. The use of HEC-1 SQ, SE tables has been used to back calculate the apparent "c" used for different modelling attempts.

3. The HEC-2 program using the QT card with a range of discharges from minimum to probable QT has been used to get a series of H values using EGL-ELMIN to compute back for "C." This method has been applied to the Green Valley Dam and Spillway section using multi-station GR Data. David Boggs has also used this method and in has indicated a range of values for "c" from 2.0 at H = <1.0' to 2.47 at H = 5.94'

4. The HEC-2 program could also be used to run the 2 spillway ratings by joining the low banks to a common 2-stations and the present ground elevation slope (high banks) to be the end stations. A version using the dam embankment as a channel is land could also be tired. The two different spillway channel elevations

At the west spillway a dike extension corner to define the left bank for the circular curve channel will provide a depth approximating the 6 feet as designed. The left bank on this radius alignment enlarges the cross-section appreciably beyond the theoretical original 1:1 side slope and from the topography sheet 1" = 200', the present (1989 +/-) distance-elevation relations are sketched below.

Comments by Ken Hussein (ADWR) after recent (June 1993) inspection of White Tanks #3 & #4 and questions about dam crest elevation and the Lateral 12 dike indicate that operations-maintenance forces of FCDMC periodically blade the dam crest to improve esthetics. The elevations along White Tanks #4 may have again been altered by blading prior to the June 1993 inspection.

6/28/93 - Per telecom with Harry Millsaps. SCS (280-8783), per John Arrington. White Tanks #3 - one end of dam is 2' to 3' lower than the other. (Which end not defined, extent of survey not known.)

Introduction

White Tanks #4 was constructed about 1954 as the lowest (Southern) component of a series of facilities to limit runoff damage from the east flank of the White Tank Mountains.

The SCS and Ertec 1981 drainage areas as defined was significantly more limited than that used by FCDMC 1993, 1969, and WLB 1991/92. The changed drainage area has been attributed to activities on the Caterpillar Tractor Co. proving grounds. Caterpillar is understood to have discontinued active operation and use of the proving grounds. No report of ownership change has been brought to the attention of ADWR.

Present Conditions

The watershed conditions for sub area modelling and channel routing for dam and spillway capacity and freeboard analysis is for present conditions. This may include work in active progress with a specific near present condition .

Future Conditions

Possible plans or conceptual future drainage systems of drainage channels and transportation embankments which may be displayed for speculative land promotion and development do not provide a basis for PMP-PMF-SDH (Spillway Design Hydrograph) modelling for present conditions.

Quality of model output, review,and discharges shed when channel banks are overtopped.

When a sub area boundary channel is overtopped, the overtopping flow will redirect into the adjacent sub area. This may or may not be without the reservoir contributing watershed.

The following east watershed boundary sub areas as identified and modelled show the following information.

WLB's Hydrology Methodology Write-Up from the White Tanks ADMS

SECTION 3: HYDROLOGIC ANALYSIS

3.1 METHOD DESCRIPTION

The hydrologic methodology incorporated in the White Tanks/Agua Fria Area Drainage Master Study (ADMS) utilizes the new "Hydrologic Design Manual for Maricopa County, Arizona" dated April, 1990. This manual is a comprehensive compilation of technical procedures for the estimation of rainfall-runoff which is used for the purpose of designing and analyzing drainage facilities in Maricopa County.

Hydrologic parameters were calculated for each subbasin within the study area. The WLB Group, Inc. created a worksheet utilizing the Lotus 1-2-3 program in which subbasin parameters; such as flow length, slope, land use, soil type, vegetative cover, and soil moisture condition, were used to calculate average Green-Ampt loss rate parameters and lag time for each subbasin. These values were then input into a computer program supplied by the Flood Control District of Maricopa County (FCDMC) called MCUHP2 (Maricopa County Unit Hydrograph Procedure 2) dated October 2, 1990. This program calculates unit hydrographs based on the U.S. Army Corps of Engineers S-graphs that were developed for the Phoenix Area. The program also creates HEC-1 input files that can be utilized within the HEC-1 Flood Hydrograph Package computer program created by the U.S. Army Corps of Engineer's Hydrologic Engineering Center. The HEC-1 program used for this study was the June 1, 1988 version and was acquired directly from the U.S. Army Corps of Engineers Hydrologic Engineering Center.

3.2 PARAMETER ESTIMATION

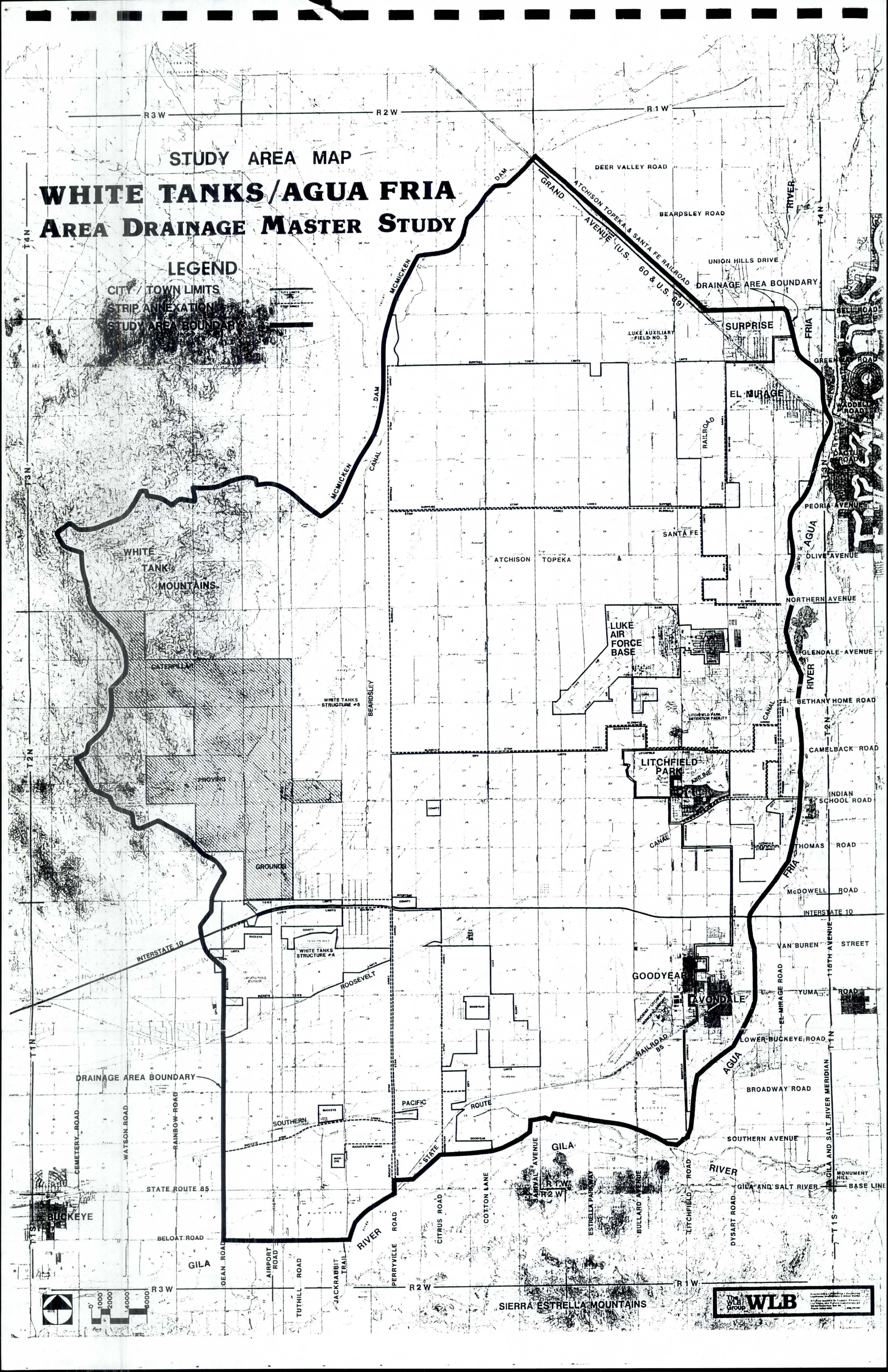
Due to the large amount of base data generated by this Area Drainage Master Study, separate notebooks for each physical parameter calculated are supplied as appendices to this report and will be referred to when discussing each parameter calculated.

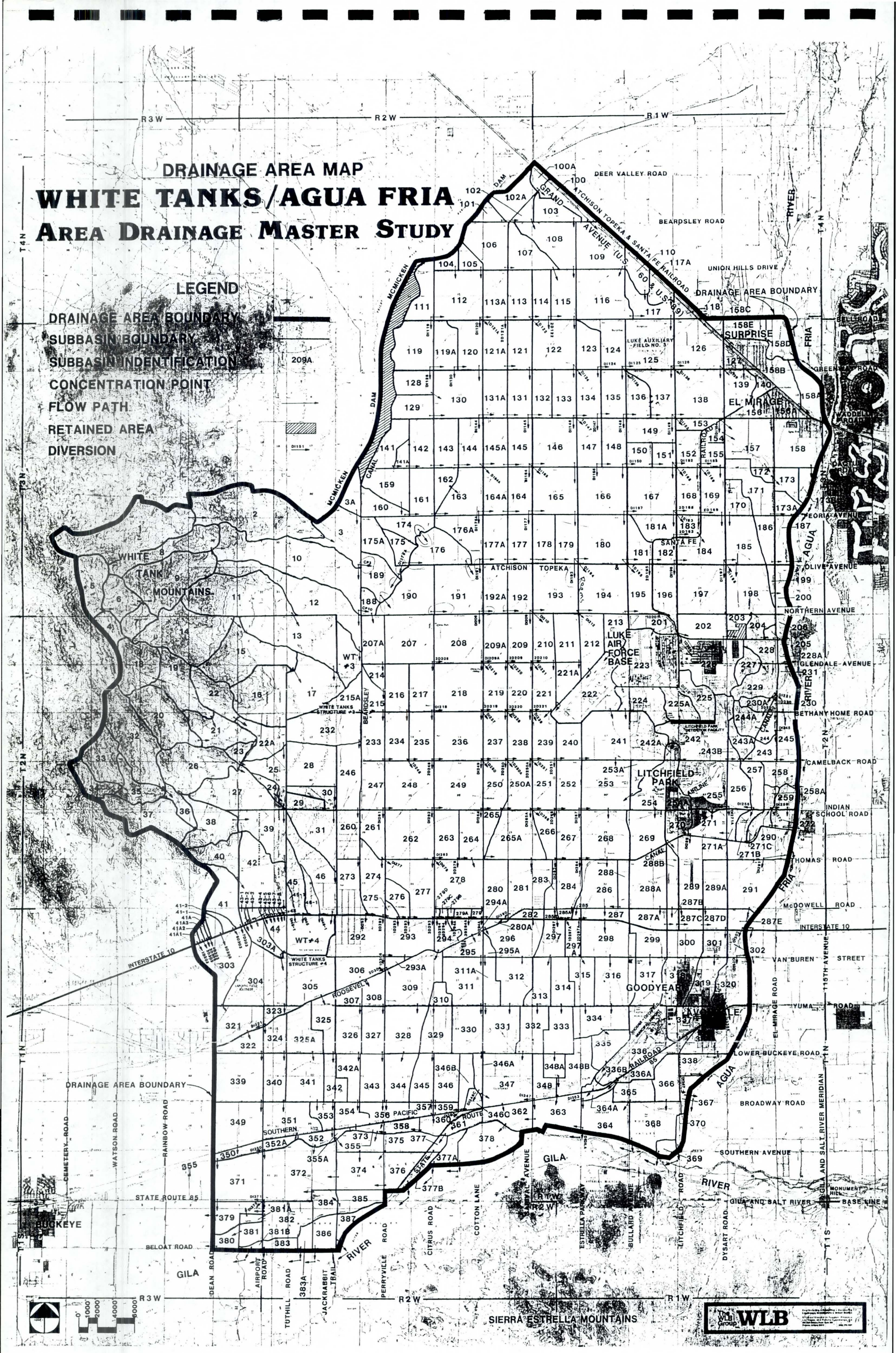
3.2.1 Drainage Area Boundaries

The drainage area for the White Tanks/Agua Fria ADMS is approximately 220 square miles with approximately 2/3 of the watershed draining to the Gila River and 1/3 of the watershed draining to the Agua Fria River. The drainage area is bounded on the north by McMicken Dam and Grand Avenue; on the east by the Agua Fria River; on the south by the Gila River; and on the west by Dean Road and the White Tank Mountains. Several incorporated communities are located within the study area including the Cities of Avondale, El Mirage, Goodyear, Litchfield Park, and Surprise; the Town of Buckeye; Luke Air Force Base; and strip annexed areas of the Cities of Glendale and Phoenix.

Prominent features located within the drainage area are the White Tank Mountains, White Tanks Flood Retarding Structures #3 and #4, Interstate 10, interim Estrella Freeway, Atchison Topeka and Santa Fe Railroad, Southern Pacific Railroad, Airline Canal, Buckeye Canal, Beardsley Canal, Roosevelt Irrigation District Canal, Litchfield Park Detention Facility, Dysart Drain, Tuthill Dike, Bullard Wash, Caterpillar Proving Grounds, Case Proving Grounds, White Tank Mountain Regional Park, Agua Fria River, and Gila River. (Refer to the attached 11" x 17" Study Area Map.)

Subbasins were delineated using 1" = 400', 2-foot contour interval topographic mapping developed for this study by Cooper Aerial and Western Air Maps. Also, aerial photographs were used and field reconnaissance trips were taken to determine subbasin boundaries that were not readily apparent on the maps. Points of concentration that were of particular interest were also used to define subbasin boundaries. Refer to the following 11" x 17" Drainage Area Map. A 1" = 4000' Drainage Area Map is also provided with the hardcopy of the HEC-1 model located in Appendix C under separate cover.


STUDY AREA MAP
WHITE TANKS/AGUA FRIA
AREA DRAINAGE MASTER STUDY
LEGEND
CITY / TOWN LIMITS
STRIP ANNEXATION
STUDY AREA BOUNDARY
R3W
R2W
R1W
T4N
T3N
T2N
T1N
T1S
DEER VALLEY ROAD
BEARDSLEY ROAD
UNION HILLS DRIVE
DRAINAGE AREA BOUNDARY
ATCHISON TOPEKA & SANTA FE RAILROAD
GRAND AVENUE (U.S. 60 & U.S. 89)
SURPRISE
LUKE AUXILIARY FIELD NO. 3
EL MIRAGE
BELL ROAD
GREENWAY ROAD
WADDELL ROAD
PEORIA AVENUE
OLIVE AVENUE
NORTHERN AVENUE
GLENDALE AVENUE
BETHANY HOME ROAD
CAMELBACK ROAD
INDIAN SCHOOL ROAD
THOMAS ROAD
McDOWELL ROAD
INTERSTATE 10
VAN BUREN STREET
YUMA ROAD
LOWER BUCKEYE ROAD
BROADWAY ROAD
SOUTHERN AVENUE
GILA AND SALT RIVER
BASE LINE
MONUMENT HILL
GILA AND SALT RIVER MERIDIAN
115TH AVENUE
EL MIRAGE ROAD
AGUA FRIA RIVER
MCMICKEN DAM
MCMICKEN CANAL
WHITE TANK MOUNTAINS
CATERPILLAR PROVING GROUNDS
WHITE TANKS STRUCTURE #3
WHITE TANKS STRUCTURE #4
LUKE AIR FORCE BASE
LITCHFIELD PARK DETENTION FACILITY
LITCHFIELD PARK
AIRLINE
CANAL
SANTA FE
ATCHISON TOPEKA & SANTA FE RAILROAD
GOODYEAR
AVONDALE
ROOSEVELT
RAILROAD 85
PACIFIC
SOUTHERN
STATE ROUTE 85
BUCKEYE
BELOAT ROAD
GILA RIVER
SIERRA ESTRELLA MOUNTAINS
DEAN ROAD
CEMETERY ROAD
WATSON ROAD
RAINBOW ROAD
AIRPORT ROAD
TUTHILL ROAD
JACKRABBIT TRAIL
PERRYVILLE ROAD
CITRUS ROAD
COTTON LANE
ARTIMAL AVENUE
ESTRELLA PARKWAY
BULLARD AVENUE
LITCHFIELD ROAD
DYSART ROAD
0 1000 2000 4000 6000
WLB Group WLB


DRAINAGE AREA MAP
WHITE TANKS/AGUA FRIA
AREA DRAINAGE MASTER STUDY
LEGEND
DRAINAGE AREA BOUNDARY
SUBBASIN BOUNDARY
SUBBASIN INDENTIFICATION
CONCENTRATION POINT
FLOW PATH
RETAINED AREA
DIVERSION
R3W
R2W
R1W
T4N
T3N
T2N
T1N
T1S
DEER VALLEY ROAD
BEARDSLEY ROAD
UNION HILLS DRIVE
DRAINAGE AREA BOUNDARY
GRAND AVENUE (U.S. 60 & U.S. 89)
ATCHISON TOPEKA & SANTA FE RAILROAD
MCMICKEN DAM
MCMICKEN CANAL
WHITE TANK MOUNTAINS
SURPRISE
EL MIRAGE
LUKE AUXILIARY FIELD NO. 3
LUKE AIR FORCE BASE
LITCHFIELD PARK
GOODYEAR
AVONDALE
BELL ROAD
GREENWAY ROAD
WADDELL ROAD
PEORIA AVENUE
OLIVE AVENUE
NORTHERN AVENUE
GLENDALE AVENUE
BETHANY HOME ROAD
CAMELBACK ROAD
INDIAN SCHOOL ROAD
THOMAS ROAD
McDOWELL ROAD
INTERSTATE 10
VAN BUREN STREET
YUMA ROAD
LOWER BUCKEYE ROAD
BROADWAY ROAD
SOUTHERN AVENUE
GILA AND SALT RIVER
BASE LINE
MONUMENT HILL
STATE ROUTE 85
BUCKEYE
BELOAT ROAD
ROOSEVELT
PACIFIC SOUTHERN ROUTE
SANTA FE
ATCHISON TOPEKA & SANTA FE RAILROAD
WHITE TANKS STRUCTURE #3
WHITE TANKS STRUCTURE #4
WT #3
WT #4
LITCHFIELD PARK DETENTION FACILITY
AGUA FRIA RIVER
GILA RIVER
SIERRA ESTRELLA MOUNTAINS
CEMETERY ROAD
WATSON ROAD
RAINBOW ROAD
DEAN ROAD
AIRPORT ROAD
TUTHILL ROAD
JACKRABBIT TRAIL
PERRYVILLE ROAD
CITRUS ROAD
COTTON LANE
ESTRELLA PARKWAY
BULLARD AVENUE
LITCHFIELD ROAD
DYSART ROAD
EL MIRAGE ROAD
115TH AVENUE
GILA AND SALT RIVER MERIDIAN
0 1000 2000 4000 6000
The WLB Group
WLB

3.2.2 Physical Parameters

3.2.2.1 *Unit Hydrograph Calculation*: The Phoenix Valley S-graph was incorporated per instructions from the FCDMC to calculate unit hydrographs for use within the HEC-1 model. This, along with the use of Green-Ampt loss rate parameters, forms the basis for calculating runoff hydrographs for each subbasin throughout the watershed. The Phoenix Valley S-graph was selected based on the criteria of being applied to a large, mostly undeveloped watershed. The majority of the watershed is in agricultural uses with a lesser degree of desert and mountainous terrain and even fewer areas of urban development.

The Phoenix Valley S-graph was developed by the U.S. Army Corps of Engineers and can be found in "New River and Phoenix City Streams, Arizona, Design Memorandum No. 2, Hydrology, Part 1", U.S. Army Corps of Engineers, Los Angeles District, October, 1974.

The MCUHP2 program uses the Phoenix Valley S-graph to calculate unit hydrographs. Input requirements for MCUHP2 include basin area, basin lag, and Green-Ampt loss rates.

A number of variables are involved in calculating loss-rate parameters for the Green-Ampt method. The "Hydrologic Design Manual for Maricopa County" describes the steps involved in calculating these parameters and this manual is available from the Flood Control District of Maricopa County upon request. It would be repetitive and cumbersome to relate all of the details involved in this procedure and it is left up to the individual to acquaint themselves with this methodology and to refer to the manual during the following description of procedures if the reader is not familiar with them.

The WLB Group, Inc. created a Lotus 1-2-3 worksheet to help reduce the amount of hand calculations involved in developing the input parameters for MCUHP2. The FCDMC has recently updated this worksheet and now includes it with the new Hydrologic Design Manual for use by its consultants. The following steps were utilized within the worksheet to calculate basin lag time and average Green-Ampt loss rate parameters within each subbasin.

1. Measure flow path length and calculate elevation difference. This may be broken down into incremental elements representing areas of the same hydrologic properties and basin slopes.

2. The representative slope is then calculated according to the following formulas:

$$I = (Li^3 + Hi)^{.5}, \text{ where } i = 1, 2, 3, \ldots n$$

and

L_1, L_2, L_3, etc. Incremental Lengths Along the Longest Flow Path, Miles

H_1, H_2, H_3, etc. Incremental Elevation Differences for Each Length, Feet

and representative slope is then calculated from:

$$\text{Avg. } S = (L + I)^2 \text{ ft/mi}$$

where

L = Total Length of the Longest Flow Path
I = Value From Previous Formula

This average slope formula will take into account differences within a watershed due to varying topographic situations and varying slopes. This formula was taken from the "Hydrology Manual for Engineering Design and Floodplain Management Within Pima County, Arizona". It should be noted that "I" and "S" are usually calculated in feet and feet/feet respectively. But for this study Li was computed in miles and, therefore, S is in feet/mile for use in the lag equation that follows.

3. The lag for each subbasin is then calculated based on a formula created by the U.S. Army Corps of Engineers (1974):

$$\text{Lag} = 1.2\ (L * Lca + S^{1/2})^{0.38}$$

where

L = Length of Longest Watercourse, miles
Lca = Length Along Longest Watercourse, Measured Upstream to a Point Opposite the Center of the Area, miles
S = Overall Average Slope of Longest Watercourse Between Headwater and Collection Point, ft/mile

Note: To obtain the Lag (in hours) for any area, multiply the lag obtained from the formula by $\bar{n}/.050$ or $20\bar{n}$.

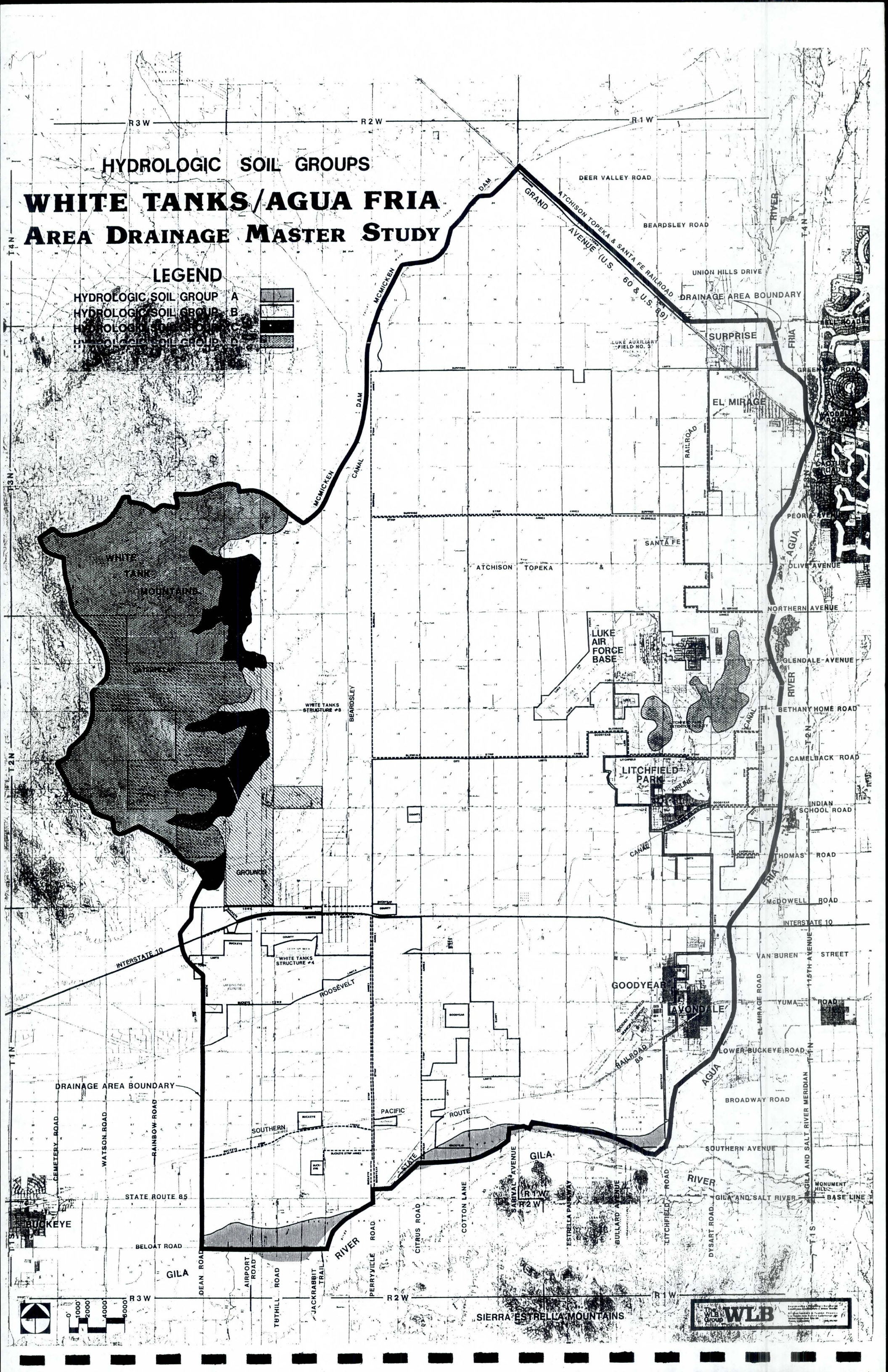
$\bar{n}$ = Visually Estimated Mean of the N (Manning's Formula) Values of all the Channels Within an Area

4. The land use classification is then chosen along with an estimated percentage of vegetative cover and percentage of impervious areas. If the impervious areas are noncontiguous and undeveloped, only 50% of that impervious area is used for calculation purposes as directed by the Flood Control District of Maricopa County.

Aerial photographs were used along with zoning maps to help classify areas of differing land uses. (See the attached 11" x 17" Current Land Use and Zoning Map.) The aerial photographs also helped to define the percentage of vegetative cover in an area. Field investigation, along with numerous photographs, also help document this procedure. (See Appendix D for typical photographs of the area.)

The soil moisture condition for the calculation of DTHETA, and the surface retention loss, IA, are based upon the land use type. For instance, irrigated agricultural land is assumed to be in a saturated condition with a corresponding surface retention loss of 0.50 inches, residential land is assumed to be in a normal moisture condition with a corresponding surface retention loss of 0.12 inches, and desert land is assumed to be in a dry condition with a corresponding surface retention loss of 0.35 inches. These parameters were directed by the Flood Control District of Maricopa County. Refer to the "Hydrologic Design Manual for Maricopa County" for a more indepth discussion of DTHETA.

The rate of hydraulic conductivity to bare ground hydraulic conductivity, CK, is also a function of the percent of vegetative cover. This value was calculated as an average value for each subbasin. Refer to Fig. 4.10 in the "Hydrologic Design Manual for Maricopa County" and to Appendix E, Volume 6 of 15 for examples of the parameter averaging.


HYDROLOGIC SOIL GROUPS
WHITE TANKS/AGUA FRIA
AREA DRAINAGE MASTER STUDY
LEGEND
HYDROLOGIC SOIL GROUP A
HYDROLOGIC SOIL GROUP B
HYDROLOGIC SOIL GROUP C
HYDROLOGIC SOIL GROUP D
R3W
R2W
R1W
T4N
T3N
T2N
T1N
T1S
DEER VALLEY ROAD
BEARDSLEY ROAD
UNION HILLS DRIVE
DRAINAGE AREA BOUNDARY
ATCHISON TOPEKA & SANTA FE RAILROAD
GRAND AVENUE (U.S. 60 & U.S. 89)
SURPRISE
EL MIRAGE
LUKE AUXILIARY FIELD NO. 3
MCMICKEN DAM
MCMICKEN CANAL
WHITE TANK MOUNTAINS
WHITE TANKS STRUCTURE #3
WHITE TANKS STRUCTURE #4
BEARDSLEY
GROUNDS
LUKE AIR FORCE BASE
LITCHFIELD PARK
GOODYEAR
AVONDALE
INTERSTATE 10
ROOSEVELT
SANTA FE
PEORIA AVENUE
OLIVE AVENUE
NORTHERN AVENUE
GLENDALE AVENUE
BETHANY HOME ROAD
CAMELBACK ROAD
INDIAN SCHOOL ROAD
THOMAS ROAD
McDOWELL ROAD
VAN BUREN STREET
YUMA ROAD
LOWER BUCKEYE ROAD
BROADWAY ROAD
SOUTHERN AVENUE
GILA AND SALT RIVER BASE LINE
MONUMENT HILL
AGUA FRIA RIVER
GILA RIVER
CANAL
RAILROAD
SOUTHERN PACIFIC ROUTE
STATE ROUTE 85
BUCKEYE
BELOAT ROAD
DRAINAGE AREA BOUNDARY
CEMETERY ROAD
WATSON ROAD
RAINBOW ROAD
DEAN ROAD
AIRPORT ROAD
TOTHILL ROAD
JACKRABBIT TRAIL
PERRYVILLE ROAD
CITRUS ROAD
COTTON LANE
SARIVAL AVENUE
ESTRELLA PARKWAY
BULLARD AVENUE
LITCHFIELD ROAD
DYSART ROAD
EL MIRAGE ROAD
115TH AVENUE
GILA AND SALT RIVER MERIDIAN
SIERRA ESTRELLA MOUNTAINS
0 1000 2000 4000 6000
The WLB Group WLB

5. The next step was to planimeter areas of distinct soil classification within each subbasin and input the percentage of area for each soil group into the worksheet. This was accomplished by using Soil Conservation Service soil survey maps created for Maricopa County. Subbasins were transposed on these maps and distinct soil classification areas were then planimetered. Each soil group has distinct values associated with it for calculation of the Green-Ampt loss rate parameters. These parameters are then averaged based upon the percentage of different soil classifications within each subbasin. Refer to Appendix E, Volume 6 of 15, to see how parameter averaging is performed. The following 11" x 17" Hydrologic Soil Group Map shows locations of various types of hydrologic soil groups within the study area.

6. The average loss rate values, along with basin area and lag time, are then used as input into the FCDMC's computer program MCUHP2 to calculate a unit hydrograph for the HEC-1 model. This was done for each subbasin within the watershed; the corresponding S-graph Parameter sheets for each subbasin are included under separate cover in Appendix E. This appendix also includes a copy of the Soil Loss Rate Tables used in this study. A copy of the MCUHP2 input data as backup documentation to verify that the data was input correctly is located in Appendix F under separate cover.

3.2.2.2 *Channel Routing*: Channel routing throughout the watershed was accomplished by using the normal depth (modified Puls) routing procedure as outlined in HEC-1. This method utilizes an eight point typical cross section along with an average channel slope, channel length and typical Manning's n-values. The 1" = 400', 2-foot contour interval topographic mapping was incorporated to determine typical cross sections and channel geometry.

Two iterations of the HEC-1 model were run to calculate velocities in each routing reach. Initially, velocities were assumed for each routing reach within the watershed. After this initial model had been run, normal depth computations were performed to estimate velocity for each routing reach utilizing the computed discharges. The velocity estimates were based on a trapezoidal channel shape with an average Manning's n-value for the cross section. The resulting velocity estimates were then used to compute the number of steps for each channel routing reach. The number of steps was set equal to (reach length ÷ (average velocity x time interval)). The second iteration of the HEC-1 model was then run to produce the final discharges used in this study. Channel routing parameters are located in Appendix G and Velocity Calculations are located in Appendix H. Both of these appendices are under separate cover.

CURRENT LAND USE AND ZONING MAP

WHITE TANKS/AGUA FRIA AREA DRAINAGE MASTER STUDY

LEGEND

- COUNTY PARK AND OUTDOOR RECREATION AREA
- BLM LAND
- STATE LAND
- MILITARY RESERVATIONS AND WITHDRAWALS
- RURAL-43 ZONING
- COMMERCIAL ZONING
- INDUSTRIAL ZONING
- RESIDENTIAL ZONING

R3W R2W R1W

T4N T3N T2N T1N T1S

DEER VALLEY ROAD
BEARDSLEY ROAD
UNION HILLS DRIVE
DRAINAGE AREA BOUNDARY
GRAND AVENUE (U.S. 60 & U.S. 89)
ATCHISON TOPEKA & SANTA FE RAILROAD
SURPRISE
LUKE AUXILIARY FIELD NO. 3
MCMICKEN DAM
MCMICKEN CANAL
RAILROAD
WHITE TANK MOUNTAINS
CATERPILLAR
WHITE TANKS STRUCTURE #3
BEARDSLEY
PROVING GROUNDS
WHITE TANKS STRUCTURE #4
INTERSTATE 10
ROOSEVELT
M.H.R.
ATCHISON TOPEKA & SANTA FE
LUKE AIR FORCE BASE
PUBLIC FACILITY
CANAL
P.A.D.
GOODYEAR
AVONDALE
RAILROAD
PACIFIC
SOUTHERN
STATE ROUTE 85
BUCKEYE
BELOAT ROAD
GILA RIVER
AGUA FRIA RIVER
PEORIA AVENUE
OLIVE AVENUE
NORTHERN AVENUE
GLENDALE AVENUE
BETHANY HOME ROAD
CAMELBACK ROAD
INDIAN SCHOOL ROAD
THOMAS ROAD
MCDOWELL ROAD
VAN BUREN STREET
YUMA ROAD
LOWER BUCKEYE ROAD
BROADWAY ROAD
SOUTHERN AVENUE
GILA AND SALT RIVER
BASE LINE
MONUMENT HILL
GILA AND SALT RIVER MERIDIAN
115TH AVENUE
EL MIRAGE ROAD
DRAINAGE AREA BOUNDARY
CEMETERY ROAD
WATSON ROAD
RAINBOW ROAD
DEAN ROAD
AIRPORT ROAD
TUTHILL ROAD
JACKRABBIT TRAIL
PERRYVILLE ROAD
CITRUS ROAD
COTTON LANE
ESTRELLA PARKWAY
BULLARD AVENUE
LITCHFIELD ROAD
DYSART ROAD
SIERRA ESTRELLA MOUNTAINS

0 1000 2000 4000 6000

WLB Group WLB

3.2.2.3 *Stage-Storage Discharge Parameters*: Stage-storage-discharge tables were created to model the numerous ponding areas located throughout the watershed. These areas are typically comprised of ponding behind structures such as dams, roadway embankments, railroad embankments or canal banks. Outfalls from these ponding areas include culverts, bridges, and weir flow over the top of the embankment. A list of existing drainage structures is located in Appendix I under separate cover and can also be found in the HEC-1 input documentation.

Ponding areas were identified using the 1" = 400' topographic mapping. The stage-storage data was computed by planimetering areas between adjacent contours and computing average volumes associated with that area and depth.

Bureau of Public Roads culvert charts were incorporated to calculate outflow from ponding areas where appropriate. The weir flow equation was used when flow overtopped an embankment or overtopped a particular impoundment. Stage-Storage Discharge tables can be found in Appendix I under separate cover.

3.2.2.4 *Diversions*: Numerous diversion tables were also incorporated throughout the watershed. This was due to the fact that a majority of the watershed is fairly flat with no well defined channels to contain the runoff. Consequently, flooding in the study area is characterized by wide, shallow flow paths which are easily diverted along man-made obstructions, such as railroads and irrigation canals.

Agriculture is the predominant practice throughout this area and fields are separated by major mile, half-mile, and farm access roadways. These roadways, along with irrigation canals, tend to pond water at the southeastern corner of the fields. From this point, flows break over the intersection of the two roads and will either continue east at the capacity of that particular road, flow overland to the southeast spreading out into another agricultural field, or flow south at the capacity of that road. It is not uncommon to have a three-way split at these locations.

These types of diversions were calculated by taking a cross section upstream along the centerline of each major road and computing weir flow as it applies to each diversion.

A second type of diversion, using the same cross section method along the centerline of the road, was to model the flow with a normal depth calculation. This was used when weir flow was not applicable at an intersection.

The third type of diversion usually involved a culvert analysis. If an embankment was present and the culvert capacity was exceeded, a diversion would take place above a certain limiting elevation. This diversion was calculated using either weir flow or normal depth methodology depending on the situation.

Finally, the fourth type of diversion would take place at a canal bank. Diversions were calculated by weir flow if the flow was to cross over the top of the canal bank and continue downstream or by normal depth methods if the flow was diverted along the upstream bank of the canal. Diversion tables can be found in Appendix I, under separate cover, and the Drainage Area Map identifies where diversions take place in the watershed. Each diversion is distinctly labeled except for the diverts associated with subbasins 43 and 43-1 through 43-8 - where space limitations on the Drainage Area Map required their exclusion. Refer to the exhibit on the following page for an enlargement of this area.

3.2.2.5 *Hydrograph Combinations*: The HEC-1 model for the White Tanks/Agua Fria ADMS was set up so that the area associated with each hydrograph combination was directly input into the model. The criteria to be followed, as directed by the FCDMC, was to hand calculate the total area that would be contributing to any given concentration point. Diversions were assumed to be contributing the whole area to the next concentration point, therefore, the corresponding area assigned to each concentration point would correspond to the total area of all subbasins that drain, either partially or fully to that point. The calculated areas were checked thoroughly by the FCDMC and concurrence was reached for the areas submitted on the HEC-1 model. This procedure was undertaken because the HEC-1 model assigns an area of zero to the diverts and carries that area to the next concentration point. Because rainfall depth decreases with increases in drainage area, the zero area associated with the diverts would, in some instances, result in overestimating peak discharges.

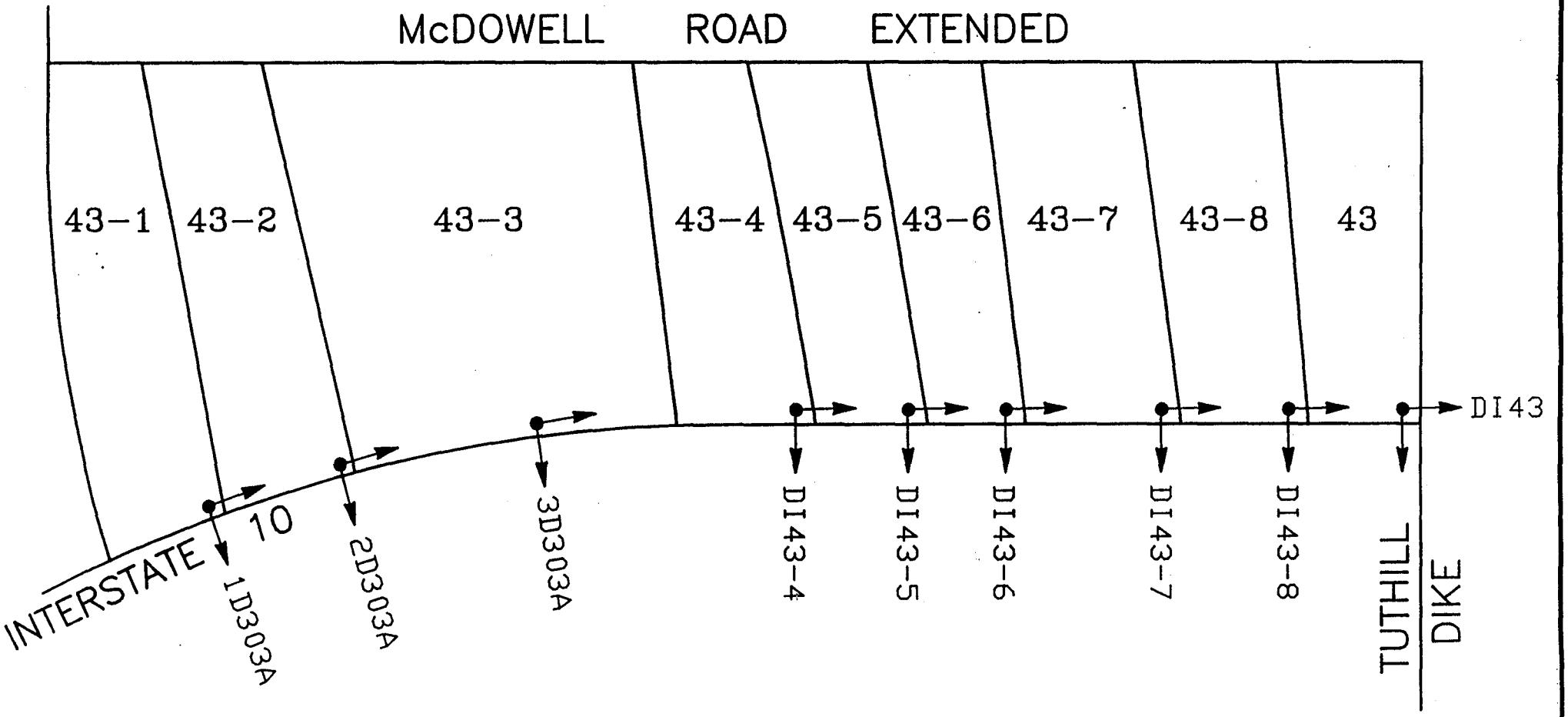
3.2.2.6 *Manning's N-Value Documentation*: Manning's n-value determinations for subbasins and routing reaches within the watershed were made based on field reconnaissance, aerial photographs, picture documentation, and sound engineering judgement. Typical "n" values were designated for agricultural areas, n = .12, and urban areas, n = .03, and these values were mutually agreed upon by The WLB Group and the FCDMC. Desert and mountainous areas have varying "n" values ranging from .03 to .20 and were incorporated based on the hydrologic conditions of that subbasin. Picture documentation of typical basin "n" values and channel and overbank "n" values are presented in Appendix D, under separate cover.

3.2.3 Statistical Parameters

No statistical analysis was performed with the White Tanks/Agua Fria ADMS as stream gage data is not available in this area.

It should be pointed out, however, that the Phoenix Valley S-graph used to compute the unit hydrographs is based on a statistical analysis of streamflow in and around Maricopa County (U.S. Army Corps of Engineer, 1974).

DIVERSIONS FOR SUBBASINS 43 - 43-8



WHITE TANKS / AGUA FRIA AREA DRAINAGE MASTER STUDY

N.T.S.

The WLB Group, Inc. WLB

3.2.4 Precipitation

Precipitation data for the White Tanks/Agua Fria ADMS was developed from criteria as presented in the "Hydrologic Design Manual for Maricopa County". Initially, The WLB Group was instructed to use the 100-year, 6-hour storm to compute peak discharges. This, along with a new depth-area reduction curve designed for Maricopa County and 6-hour rainfall distribution patterns based upon drainage area, was incorporated into the 100-year model.

Sensitivity analyses were then run and tested against the 100-year, 24-hour storm. The 24-hour storm gave larger peak discharges as the area contributing to a watercourse increased. These discharges also increased uniformly downstream, whereas, the 6-hour storm did not.

The 6-hour storm produced larger peak flows for smaller watersheds (approximately .5 square miles or less), but, as the size of the area increased, the peak flows would, in some cases, decrease in a downstream direction. This was due to the sharp increase in rainfall intensity associated with the rainfall distribution patterns for small drainage areas. This discrepancy was the reason that the 100-year, 24-hour storm was chosen to model the watershed and to ultimately delineate the 100-year floodplains.

Precipitation amounts were developed for different return periods and frequency storms using the procedure stated in the "Precipitation-Frequency Atlas of the Western United States, Volume VIII - Arizona, NOAA Atlas 2," published by the National Weather Service's National Oceanic and Atmospheric Administration. This data is presented in Appendix A in the back of this report. Depth-area reduction of point rainfall was also taken from a graph in NOAA Atlas 2 since the 24-hour storm was used, and the Soil Conservation Service Type II rainfall distribution pattern was used to distribute the rainfall data accordingly.

3.2.5 Gage Data

No stream gages are located in the study area.

3.3 CALIBRATION

Due to the lack of stream gages or precipitation data in the study area, it is difficult to calibrate peak discharges computed in the HEC-1 model. However, a few previous studies have been performed on an isolated basis in different areas of the watershed. The new discharges were compared to the previous values to ascertain whether the results seemed reasonable. The reports and hydraulic analyses that WLB compared its results to are listed as follows:

1. "A Hydrologic Analysis of the White Tanks Flood Retarding Structures #3 and #4", by the Flood Control District of Maricopa County (FCD), October, 1989

INPUT PARAMETER COMPARISONS

Hydrologic Parameters	WLB	FCD
Storm Frequency and Duration	100-Year, 24-Hour	100-Year, 24-Hour
Rainfall Amount	4.03 In.	4.20 In.
Tabulation Interval	5-Minute	15-Minute
Loss Rate	Green-Ampt	SCS Curve Number
Distribution Pattern	SCS Type II	SCS Type II
Areal Distribution	NOAA Atlas II	None
Hydrograph Development	COE Phoenix Valley S-Graph	COE Phoenix Mountain S-Graph SCS Unit Hydrograph
Routing Method	Normal Depth	Normal Depth Kinematic Wave

COMPARISON OF DISCHARGES

Location	Discharges, CFS WLB	FCD
Inflow to White Tanks F.R.S. #3	6649	7640
Inflow to White Tanks F.R.S. #4	6026	5830

These discharges are reasonably close and the differences may be attributed to FCD's rainfall amount of 4.20 inches versus WLB's amount of 4.0 inches. Also, FCD used the SCS Curve Number Loss Rate while WLB incorporated the FCD's new methodology which incorporates Green-Ampt loss rate parameters. Also, a 15 minute time interval was used in the FCD study while a 5 minute time interval was utilized in this study.

2. "Conceptual Drainage Report for Litchfield Park Detention Facility", by Coe and Van Loo, June, 1989.

3. "Flow Estimation to Camelback and Dysart Roads", by Boyle Engineering Corporation, April, 1988.

4. "Hydrologic Evaluation, Litchfield Park Dam, Maricopa County, Arizona", by Dames & Moore, January 1986.

INPUT PARAMETER COMPARISONS

Hydrologic Parameters	WLB	CVL	Boyle	D & M
Storm Frequency & Duration	100/24	100/24	100/24	100/24
Rainfall Amount	4.03 In.	3.75 In.	3.77 In.	3.90 In.
Tabulation Interval	5-Min.	10-Min.	15-Min.	N/A
Loss Rate	Green-Ampt	SCS Curve	SCS Curve	SCS Curve
Distribution Pattern	SCS Type II	SCS Type II	SCS Type II	SCS Type II
Aerial Distribution	NOAA At. II	None	None	N/A
Hydrograph Development	COE Phx. Valley S-Gr	SCS Unit Hydrograph	SCS Unit Hydrograph	N/A
Routing Method	Norm. Depth	Kinematic	Kinematic	N/A

COMPARISON OF PEAK DISCHARGES

Location	WLB	CVL	Boyle	D & M
At Litchfield Park Detention Facility	959	769	525	1031
At Camelback and Dysart Road	1049	953	717	960

Again, these differences can be attributed to modeling techniques and WLB performed a HEC-2 analysis on Dysart Drain to better approximate the actual capacity of this facility and the corresponding breakout flows. Also, WLB had 1" = 400', 2-foot contour interval mapping to better estimate diversions and to delineate the watershed with greater precision.

5. "Conceptual Master Drainage Report for Litchfield Park Development Master Plan", by Coe & Van Loo, September 1989.

6. "Arizona Department of Transportation Interstate 10 Plans, Ehrenberg - Phoenix, Maricopa County I-10-2(34)," September 19, 1985.

INPUT PARAMETER COMPARISONS

Hydrologic Parameters	WLB	CVL	ADOT
Storm Frequency and Duration	100/24	100/6	100/3
Rainfall Amount	4.03 In.	3.15 In.	2.92 In.
Tabulation Interval	5-Minute	10-Minute	N/A
Loss Rate	Green-Ampt	SCS Curve #	SCS Curve #
Distribution Pattern	SCS Type II	SCS Type II	N/A
Areal Distribution	NOAA Atlas II	None	None
Hydrograph Development	COE Phx. Valley S-Graph	SCS Unit Hydrograph	SCS: Part II
Routing Method	Normal Depth	Kinematic Wave	N/A

COMPARISON OF DISCHARGES

Location	CVL	WLB	ADOT
At Reems Road & Northern Ave.	1001	2347	---
Divert E. at Reems Rd. & Northern Ave.	300	812	---
Remainder Flow to the S. at Reems Road and Northern Ave.	701	1536	---
At Camelback Road and Bullard Wash	2941	4243	---
At RID Canal and Bullard Wash	3585	4703	---
At Bullard Wash and I-10	*	5319 Upstream 4450 Downstream	5000 Upstream
At RID Canal and I-10	1347	826	

* Not Computed

The differences here are attributed to different storm durations and associated rainfall amounts, different subbasin divisions, a more intense scrutiny of diversions throughout the watershed, a HEC-2 analysis of Dysart Drain, and use of 1" = 400', 2-foot contour interval mapping over the entire watershed.

A number of sensitivity analyses were also performed to test the assumptions of hydrologic moisture condition and vegetation cover in the agricultural areas. Models were developed assuming fallow field (not planted) with the three different soil moisture conditions - saturated, normal and dry. These three moisture conditions were also used with a fully vegetated condition model. After reviewing these analyses, the FCDMC directed us to use the fully vegetated field in a saturated condition for agricultural areas in the watershed. It was understood that some areas would be fallow in a dry condition, vegetated in a normal or dry condition, etc., but the directed assumption gives an average condition without being too conservative or too under-conservative.

Also, an analysis was performed to determine if the numerous small agricultural reservoirs in the study area should be incorporated in the model. A typical agricultural reservoir was modeled and the results convinced the FCDMC that the storage would be filled during the early part of the storm before the peak arrived, therefore, these reservoirs would not be modeled. Another factor in the decision to not include the reservoirs is that there is no guarantee that they would not be filled in by the farmer or filled with sediment during the storm.

3.4 SPECIAL PROBLEMS/SOLUTIONS

The very nature of the watershed in the White Tanks/Agua Fria ADMS, with vastly differing hydrologic elements, tends to lead to modeling problems.

Initially, the watershed was separated into the following four distinct regions.

1. Watershed draining to White Tanks Flood Retarding Structure #3.
2. Watershed draining to White Tanks Flood Retarding Structure #4.
3. Watershed north of Dysart Drain and Northern Avenue.
4. Watershed south of Dysart Drain and Northern Avenue.

This was done to facilitate the FCDMC's review process and to allow the WLB Group to work on different regions while one was in for review.

This worked reasonably well as volumes of base data were generated in this study. The model was then joined together to create one complete hydrologic model of the entire watershed.

Two future conditions were assumed to be in place for the existing condition model. These assumptions were that the interim Estrella Freeway and Camelback Channel would be in place by the time the study was finished. The interim Estrella Freeway was assumed to collect flows along the west side of the roadway and pass these flows through at either at grade crossings or under the road in culvert crossings. For ease of modeling these were assumed to take place at major mile intersections although some flows may cross over or under at various locations between the intersections. The reason this assumption was made was based on the fact that these flows would eventually collect at the next major mile intersection to the southeast as overland flows naturally collect there now. This assumption was also used along the railroad at Cotton Lane.

The Colter Street Channel will be built by the Maricopa County Department of Transportation along an alignment of Coter Street which is approximately 1/4 mile north of Camelback Road. A Camelback Road alignment was assumed for this HEC-1 analysis which results in slightly larger flows, but does not compromise the integrity of the model. Flows will be collected in the channel from Litchfield Road and along inflow points to the east and are then conveyed to the Agua Fria River.

The Dysart Drain (also known as the Luke Air Force Base Drainage Channel) is located north and east of Luke Air Force Base and was modeled by a HEC-2 split flow analysis. Subsequent breakout flows were then incorporated into the HEC-1 model. Many iterations were required for this analysis to compute final diversion tables for the HEC-1 model.

To make the HEC-1 model a complete unit, it was necessary to route flows around the edge of the watershed in the Agua Fria River and Gila River. Since these are both very wide rivers, the assumption was made to route flows in a 1000 foot wide trapezoidal channel with representative Manning's n-values. The calculated flows are insignificant in comparison to the 100-year flow on the Agua Fria River and the Gila River.

As mentioned previously in this report, numerous diversions and ponding areas were modeled in the White Tank/Agua Fria ADMS. The procedures for modeling these areas are described in section 3.2.2. Of special note are the diversions located at the intersections of Olive Avenue and Beardsley Canal and Northern Avenue and Beardsley Canal. These diversions were modeled previously by the FCDMC in a report entitled "A Hydrologic Analysis of The White Tanks F.R.s #3 & #4". This data was incorporated in the HEC-1 model and into the subsequent HEC-2 analysis.

3.5 FINAL RESULTS/COMPUTER MODEL

The final results of the HEC-1 model are presented in numerical order in the Runoff Summary on the following pages. This is the same Runoff Summary generated by the HEC-1 model but it has been rearranged into numerical order for ease of locating discharges. Final output for the HEC-1 model is located in Appendix C, under separate cover, and another copy of the numerical Runoff Summary is included as well.

Four operations are shown in the Runoff Summary. These are respectively:

A) Runoff hydrographs for each subbasin.
B) Intermediate and final concentration points for combined hydrographs.
C) Diversion hydrographs.
D) Storage routing routines through reservoirs or ponding areas.

Routed flow discharges and returned diversion flows are not shown in this table. The HEC-1 output should be referred to if these discharges are required.

A note about the naming sequence of different operations in the HEC-1 model. Runoff hydrographs are designated as a number, combinations of numbers, or combinations of numbers and letters, ie, 41, 41-1, 41A1.

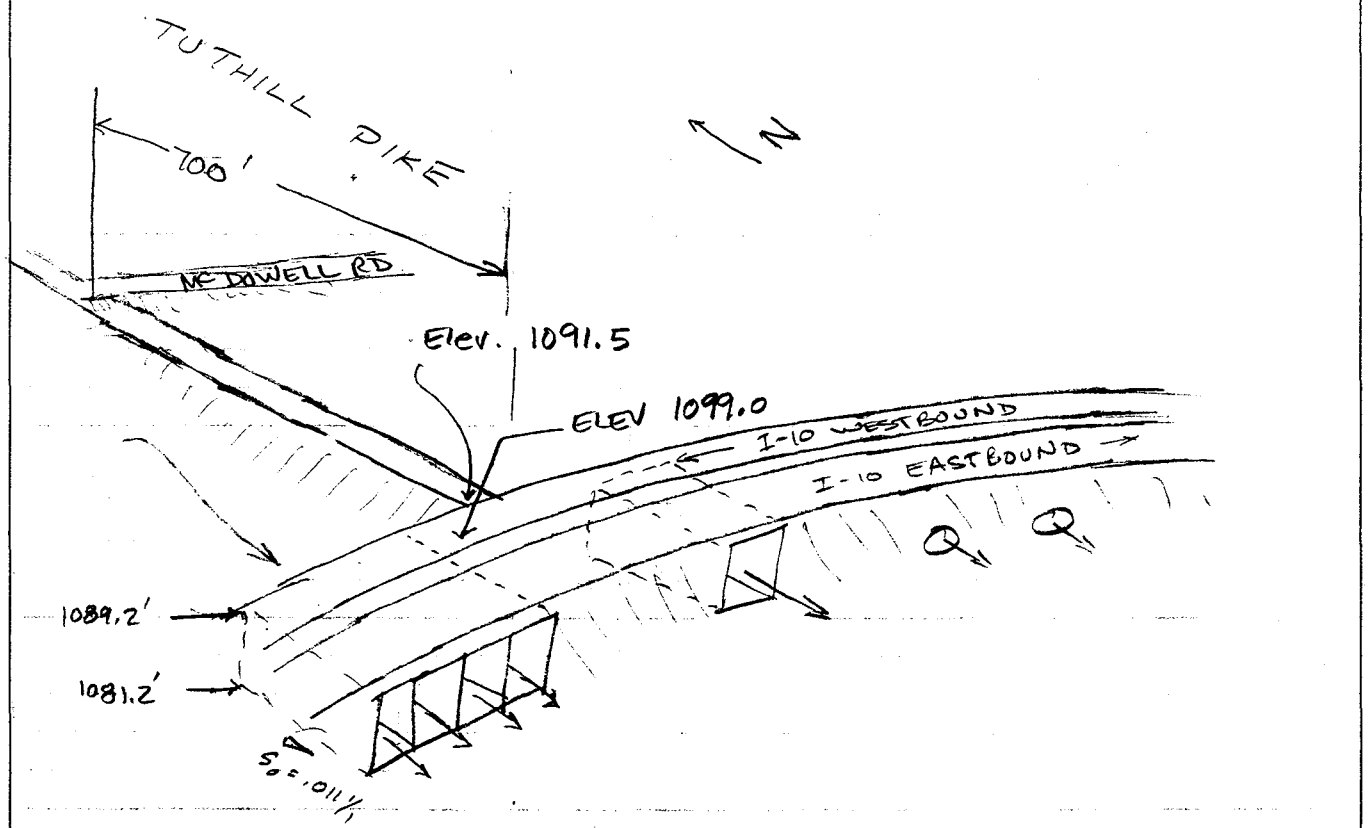
Final concentration points have the designation CP followed by the watershed number where that particular concentration point is located. Intermediate concentration points are designated as I1CP or 1I, 2I, etc; again, followed by the subbasin number. Concentration points combined in the Agua Fria or Gila River are designated as RCP followed by the subbasin number. It should also be mentioned here that routings in the river reaches are designated as RR standing for river route.

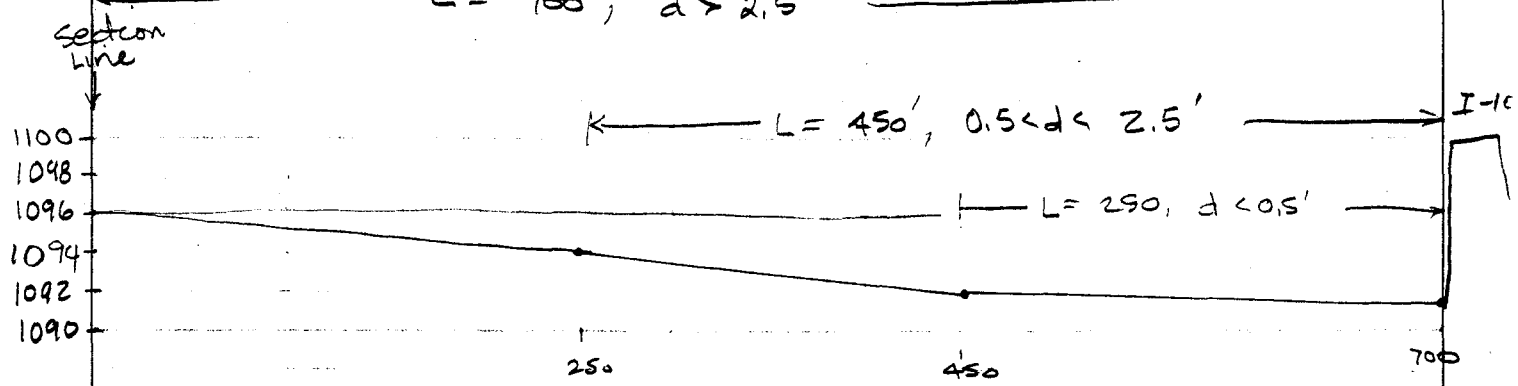
Diversions are designated by D, DI, 1D, 2D, etc. Storage routing through ponding areas or reservoirs is designated by SR with the one exception being the storage routine behind WT#4 which was inadvertently called RS47. Otherwise, these naming schemes stay consistent throughout the model.

Due to the nature and differing hydrologic regions of the watershed, it is difficult to put the model together in a systematic order. The model, therefore, is very complex and difficult to follow. A HEC-1 Key Map was created that breaks out the order in which the model was created. Distinct groups of subbasins make up a hydrologic area that drains to a common concentration point. These areas are numbered and have a corresponding tab in the HEC-1 output hardcopy so that it is easier to identify certain areas within the model that are of particular interest. The key map is located in the front of Appendix C where the HEC-1 hardcopy is located.

Sketches and Hydraulic Calculations of Split-Flows

SR 43





Weir Flow across Tuthill Dike

$C = 2.5$ $\qquad Q = C \cdot L \cdot H^{3/2}$

Elev =	1092.0	H = 0.5	L = 250 ,	Q = 221 cfs
Elev =	1094.0	H = A/T = 1.833'		Q = 2793 cfs
Elev. =	1096.0	H = A/T = 1925/700 = 2.82'		Q = 8293 cfs
Elev. =	1097	H = A/T = 3325/700 = 4.75'		Q = 18,117 cfs
Elev.	1098	H = A/T = 4025/700 = 5.75'		Q = 24,129 cfs.
Elev.	1099	H = A/T = 4725/700 = 6.75		Q = 30,690 cfs.

From SR43 Block.

Flow thru 4 - 10'x8' Box Culverts.

ELEV.	H	Q thru culvert	Q east over Tuthill Dike	Q south + Q east
1081.2	0	0	0	0
1085.18	3.98	1020	0	1020
1087.60	6.40	1965	0	1965
1089.2 (FULL)	8.00	—	—	
1090.19	8.99	3065	0	3065
1091.50	10.3	3600	0	3600
1092.00	10.8	3794	221	4015
1092.5	11.3	3984	625	4609
1093.0	11.8	4173	1243	5416
1094.0	12.8	4521	2793	7314
1094.81	13.61	4800	5691	10,491
1096.00	14.8	5172	8293	13,465
1097	15.8	5485	18,117	23,602
1098	16.8	5796	24,129	29,925
1099	17.8	6106	30,690	36,796

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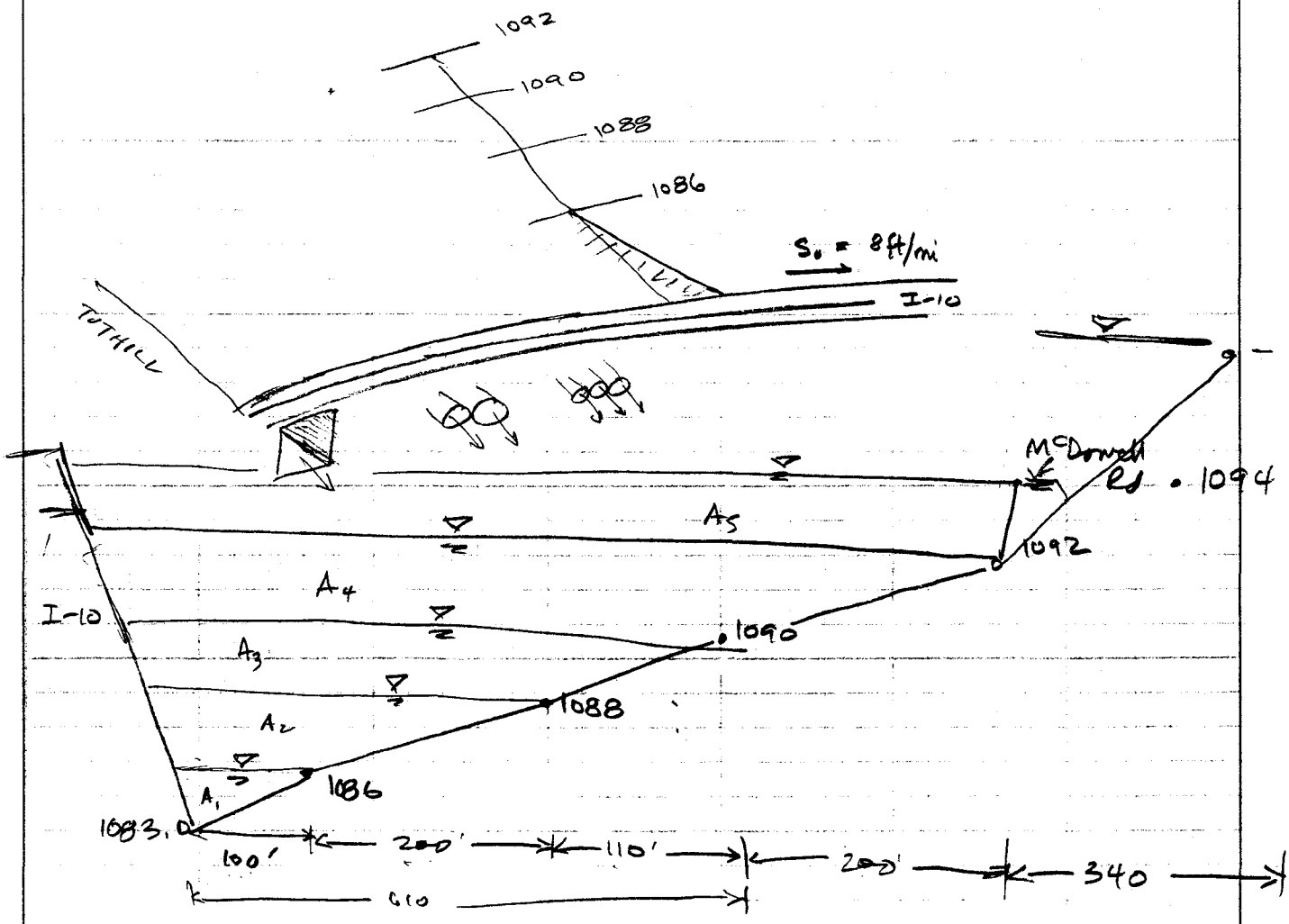
SR 45-1



ELEV 1088 $A_1 = \frac{(3)(100)}{2} = 150\ ft^2$

$1088 - \sum_1^2 A_i = A_1 + \left(\frac{100+300}{2}\right)2 = 150 + 400 = 550\ ft^2$

$1090 - \sum_1^3 A_i = A_1 + A_2 + \left(\frac{300+410}{2}\right)2 = 550 + 710 = 1260\ ft^2$

$1092 - \sum_1^4 A_i = A_1 + A_2 + A_3 + \left(\frac{410+610}{2}\right)(2) = 1260 + 1020 = 2280\ ft^2$

$1094 - \sum_1^5 A_i = A_1 + A_2 + A_3 + A_4 + (610)(1) = 2890\ ft^2$

$1096 \quad A_6 = 650 * 2 + \frac{(340)(2)}{2} = 1300 + 340 = 1640 \quad \sum_1^6 A = 4530\ ft^2$

$R = \frac{4530}{950} = 4.768\ ft \qquad V = \frac{1.486}{.03}(4.768)^{2/3}\left(\frac{8}{5280}\right)^{1/2} = 5.46\ ft/sec$

$Q = A \cdot V = (4530)(5.46) = 24{,}744\ cfs$ OK

SR. 45-1

1. ELEV. 1090 WP = 610'
A = 1260 ft²
R = 2.065'

$$V = \frac{1.486}{.03}(2.065)^{2/3}\left(\frac{8}{5280}\right)^{1/2} = 3.13 \text{ ft/sec.}$$

$$Q = A \cdot V = (1260)(3.13) = \underline{3,940 \text{ cfs.}}$$

2. ELEV. 1092.

WP = 810'

$$R = \frac{2280}{810} = 2.815'$$

$$V = \frac{1.486}{.03}(2.815)^{2/3}\left(\frac{8}{5280}\right)^{1/2} = 3.844 \text{ fps}$$

$$Q = AV = (2280)(3.844) = \underline{8,764 \text{ cfs.}}$$

3. Elev. 1094

WP = 850'

$$R = \frac{2890}{850} = 3.4'$$

$$V = \frac{1.486}{.03}(3.4)^{2/3}\left(\frac{8}{5280}\right)^{1/2} = 4.36 \text{ fps.}$$

$$Q = A \cdot V = (2890)(4.36) = \underline{12,600 \text{ cfs.}}$$

4. Elev. 1096.

WP = 950

$$R = \frac{4530}{950} = 4.77'$$

$$V = \frac{1.486}{.03}(4.77)^{2/3}\left(\frac{8}{5280}\right)^{1/2} = 5.46 \text{ fps}$$

$$Q = A \cdot V = (4530 \text{ ft}^2)(5.46 \text{ fps}) = \underline{24,744 \text{ cfs.}}$$

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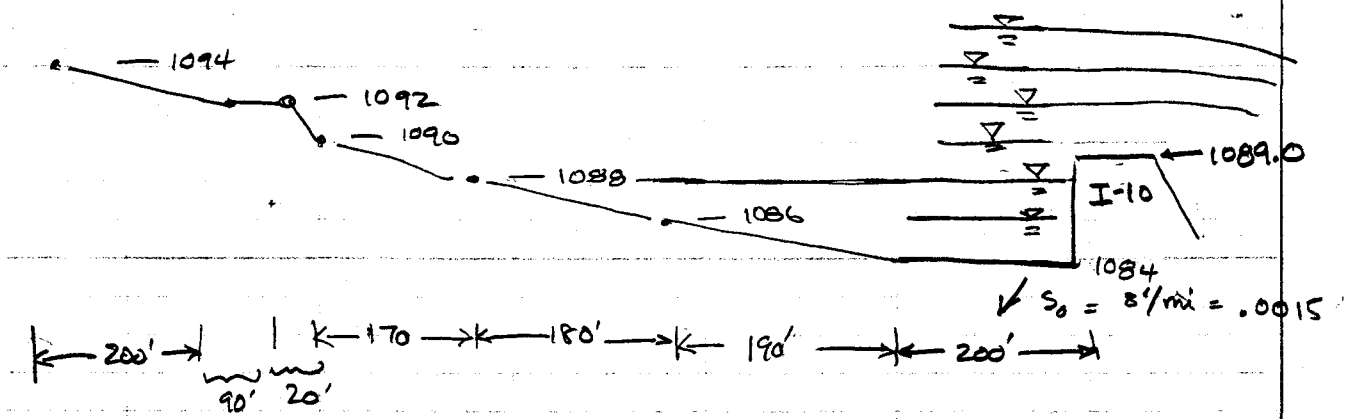
SR 45



Elev 1088

$A = (200)(2) + \frac{(190)(2)}{2} + (2)(390) + \frac{(180)(2)}{2} = 400 + 190 + 780 + 180 = 1550\ ft^2$

$WP = 180 + 190 + 200 = 570'$

$R = \frac{1550}{570} = 2.719$

$V = \frac{1.486}{.03}(2.719)^{2/3}(.0015)^{1/2} = 3.756$ fps.

$Q = AV = (1550)(3.756) = \underline{5822}$ cfs

Elev. 1090

$A_{new} = 570 * 2 + \frac{(170)(2)}{2} = 740\ ft^2$

$A_{Total} = 1550 + 740 = 2290\ ft^2$

$R = \frac{2290}{740} = 3.0946'$

$V = \frac{1.486}{.03}(3.0946)^{2/3}(.0015)^{1/2} = 4.0739$ fps

$Q = A \cdot V = (2290)(4.0739) = \underline{9329}$ cfs

Elev. 1092

$A_{new} = 760 * 2 = 1520\ ft^2$ $A_T = 2290 + 1520 = 3810\ ft^2$

$R = \frac{3810\ ft^2}{760} = 5.013'$

$V = \frac{1.486}{.03}(5.013)^{2/3}(.0015)^{1/2} = 5.6193$ fps

$Q = AV = (3810)(5.6193) = \underline{21,410}$ cfs.

SR 45 (cont)

Elev.

1094

$A_{new} = 850 * 2 + \frac{(200)(2)}{2} = 1700 + 200 = 1900 \text{ ft}^2$

$A_T = 3810 + 1900 = 5710 \text{ ft}^2$

$WP = 760' + 290' = 1050'$

$R = \frac{5710}{1050} = 5.438'$

$V = \frac{1.486}{.03}(5.438)^{2/3}(.0015)^{1/2} = 5.93 \text{ fps}$

$Q = A \cdot V = (5710)(5.93) = \underline{33,874} \text{ cfs}$

Culvert Flow

$\left(\frac{5.84}{4.84}\right)^x = \frac{392}{317} = 1.2366$

12.84 – 1094
10.84 – 1092
8.84 – 1090
6.84 – 1088
5.84 – 1087

$x \log(1.2066) = \log 1.2366$

$x = \frac{\log(1.2066)}{\log(1.2366)} = 0.88$

$Q_{1088} = \left(\frac{6.84}{5.84}\right)^{0.88} * 392 = \underline{450} \text{ cfs}$

$Q_{1090} = \left(\frac{8.84}{5.84}\right)^{0.88} * 392 = \underline{567} \text{ cfs}$

$Q_{1090} = \left(\frac{10.84}{5.84}\right)^{0.88} * 392 = \underline{676} \text{ cfs}$

$Q_{1092} = \left(\frac{12.84}{5.84}\right)^{0.88} * 392 = \underline{784} \text{ cfs}$

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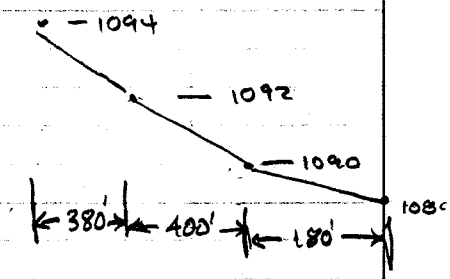
SR 45

Weir flow across I-10 to the South enters WTA.

It begins when WSE reaches 1089.0 ft AMSL.
"Weir" lengths approximated as follows.

Elev. 1089 to 1090 = 180 ft.
1090 to 1092 = 400 ft
1092 to 1094 = 380 ft.



Elev. 1090

$A_{FLOW} = \frac{(180)(1)}{2} = 90 ft^2$

$T = 180$

$d \approx \frac{90}{180} = 0.5'$ $\quad Q_{1090} \approx (2.5)(180)(0.5)^{3/2} = \underline{159 cfs}$

Elev. 1092

$A_{FLOW} = 90 ft^2 + 2 * 180 + \frac{2 * 400}{2} = 90 + 360 + 400 = 850 ft^2$

$T = 580'$

$d \approx \frac{850}{580} = 1.4655'$

$Q \approx (2.5)(580)(1.4655)^{3/2} = \underline{2572 cfs}$

Elev. 1094

$A_{FLOW} = 850 ft^2 + 580 * 2 + \frac{380 * 2}{2} = 850 + 1160 + 380 = 2390 ft^2$

$T = 960'$ $\quad d \approx \frac{2390}{960} = 2.49'$

$Q_{1092} = (2.5)(960)(2.49)^{3/2} = \underline{9428 cfs}$

SR 45

ELEV.	$Q_{Culvert}$	Q_{East}	$Q_{overtop}$ I-10	Q_T
1081.16	0	0	0	0
1082.74	41	0	0	41
1084.00	132	0	0	132
1086.00	317	0	0	317
1086.50	362	0	0	362
1087.0	392	3125	0	3517
1088.0	450	5,822	0	6272
1090.0	567	9329	152	10,048
1092.0	676	21,410	2572	24,658
1094.0	784	33,874	9428	44,086

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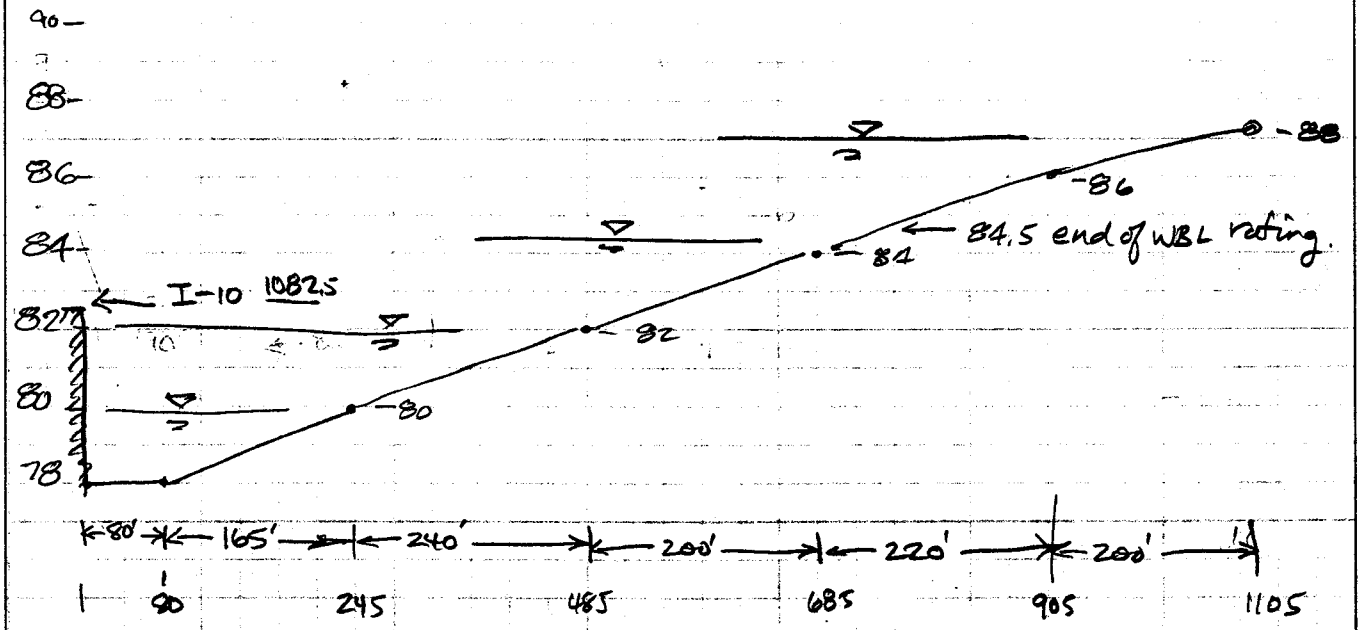
SR 46-1

Ground slope eastward along N side of I-10
measured at 0.00448 ft/ft



Elev = 1086

$WP = 905' + 4 = 909'$

$A = \frac{8*(905-80)}{2} + 80*8 = 3300 + 640 = 3940 \text{ ft}^2$

$R = \frac{3940}{909} = 4.33'$

$V = \frac{1.486}{.03}(4.33)^{2/3}(.00448)^{1/2} = 8.814 \text{ fps.}$

$Q = A \cdot V = (3940)(8.814) = \underline{34,726} \text{ cfs}$

Elev = 1085

$WP = 685 + 110 + 4 = 799'$

$A = 7*80 + \left(\frac{795-80}{2}\right)(7) = 3062.5 \text{ ft}^2$

$R = \frac{3062.5}{799} = 3.833'$

$V = \frac{1.486}{.03}(3.833)^{2/3}(.00448)^{1/2} = 8.12 \text{ fps}$

$Q = A \cdot V = (3062.5)(8.12) = \underline{24,867.5} \text{ cfs.}$

SR 46-1 (Con't)

Elev. 1084

$WP = 685 + 4 = 689$

$A = 80 * 6 + \frac{(685-80)(6)}{2} = 2511\ ft^2$

$R = \frac{2511}{689} = 3.64'$

$V = \frac{1.486}{.03}(3.64)^{2/3}(.00448)^{1/2} = 7.85$ fps.

$Q = A \cdot V = (2511)(7.85) = \underline{19,713}$ cfs

Elev. 1082

$WP = 485 + 4 = 489$

$A = 4 * 80 + \frac{(485-80) * 4}{2} = 360 + 810 = 1170\ ft^2$

$R = \frac{1170\ ft^2}{489} = 2.39'$

$V = \frac{1.486}{.03}(2.39)^{2/3}(.00448)^{1/2} = 5.93$ fps

$Q = A \cdot V = (1170)(5.93) = \underline{6,939}$ cfs.

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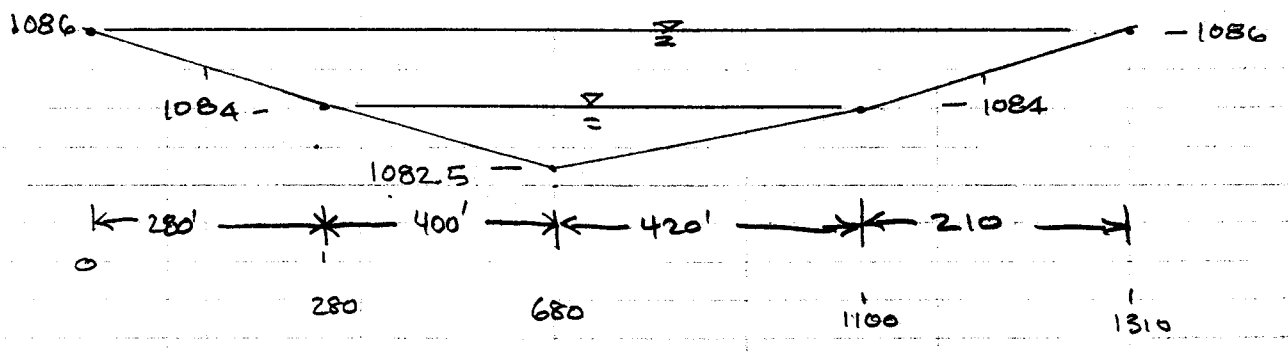
SR 46-1 (cont)

Weir spill to South across I-10 enters WT4.



Elev 1084

$WP = 1100 - 280 = 820' \approx T$

$A = \frac{(1.5)(400)}{2} + \frac{(1.5)(420)}{2} = 300 + 315 = 615\ ft^2$

$d \approx \frac{A}{T} = \frac{615\ ft^2}{820'} = 0.75 \approx H$

$L_{ave} = \frac{T}{2} = 410'$

$Q = C L H^{3/2} = (2.5)(410)(0.75)^{3/2} = 665$ cfs.

$V = \frac{Q}{A} = 1.08$ fps.

Elev. 1086

$WP = 1310 \approx T$

$A = 615\ ft^2 + 2*(1100 - 280) + \frac{(280)(2)}{2} + \frac{(210)(2)}{2} = 615 + 1640 + 280 + 210 = 2$

$d \approx \frac{A}{T} = \frac{2745}{1310} = 2.095'$

$Q = (2.5)\left(\frac{1310+615}{2}\right)(2.095)^{3/2} = 7299$ cfs.

$V = \frac{Q}{A} = 2.66$ fps.

Elev. 1085

$WP = 1310 - 240 = 1070'$

$A = 2745 - 1070 - \frac{170}{2} - \frac{100}{2} = 1555\ ft^2$

$T = \frac{1555}{1070} = 1.45$

$Q = (2.5)(1070)(1.45)^{3/2} = 4686$ cfs

SR - 46-1 (cont)

ELEV.	Q South Culvert	Q EAST	Q OVERTOP I-10	Q Total
1078.4	0	0	0	0
1080.0	39	0	0	39
1082.0	156	6,939	0	7,095
1084.0	225	19,713	665	20,603
1085.0	264	24,868	4686	29,818
1086.0	283	34,726	7299	42,308

SR 46-1			CP 46-1 divert thru culverts.		D46-1 (new) divert over I-10		
SV	SE	SQ	DI	DQ	DI*	DI**	DQ
0	1078.4	0	0	0	0	0	0
1.07	1080.0	39	39	39	39	0	0
6.90	1082.0	7095	7095	156	7095	6,939	0
18.65	1084.0	20,603	20,603	225	20,603	20,378	665
28.26	1085.0	29,818	29,818	264	29,818	29,554	4686
33.51	1086.0	42,308	42,308	283.	42,308	42,025	7299

* before Culverts
** after culverts

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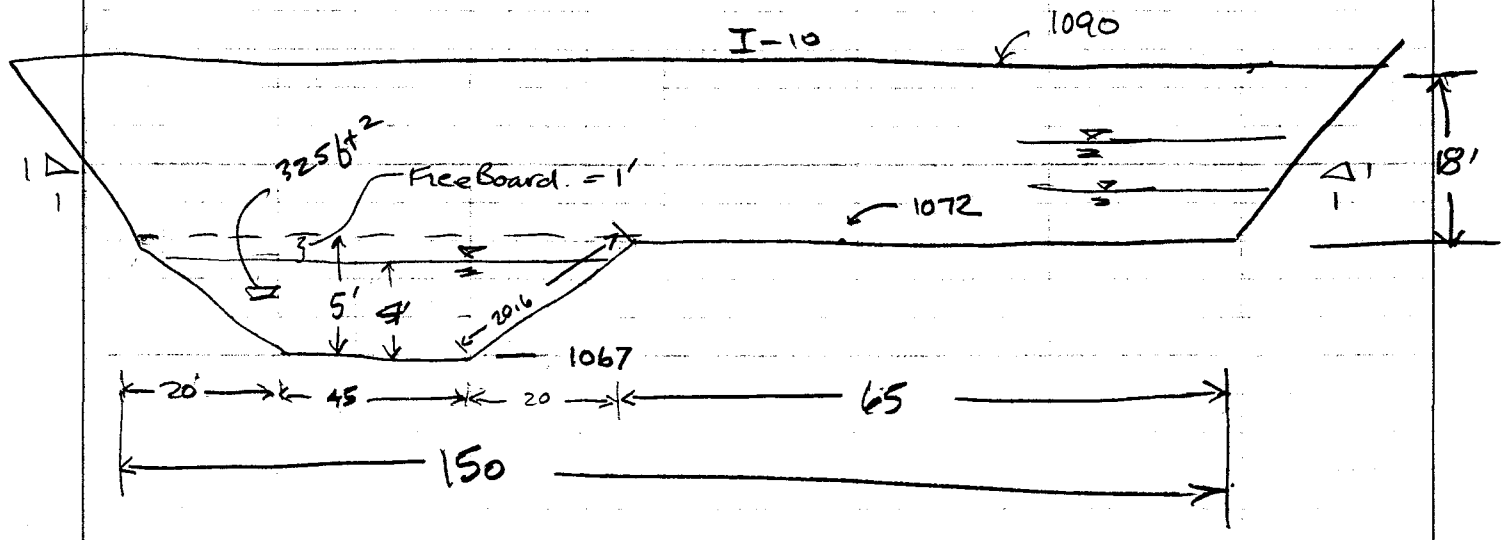
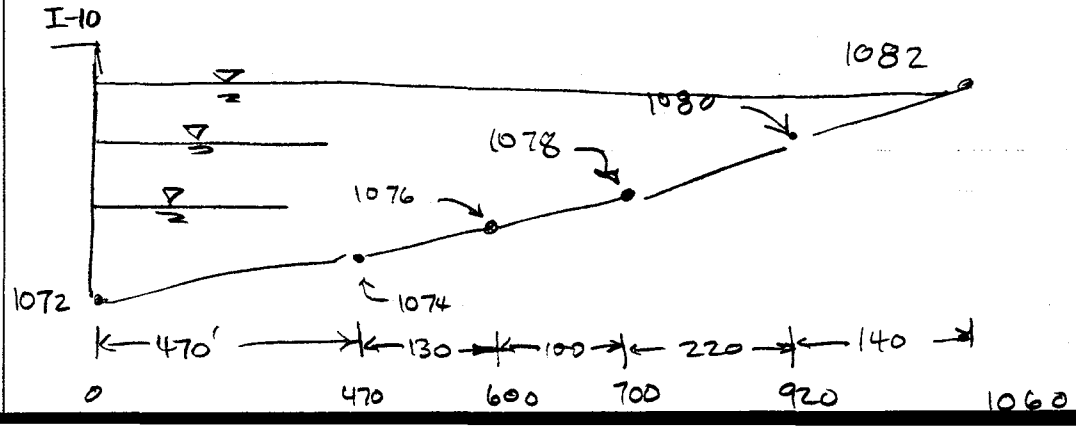
Source:
Rebile + Assoc. X-S
ADMS Mapping

I-10 Underpass dimensions.

New Storage Routing Reach at I-10, Jackrabbit Trail Intersection on the North side of the Underpass



Profile of Jackrabbit Rd. North of I-10



Jackrabbit Trail (Flow Going Eastward along N Side of I-10)

Elev = 1074

WP = T = 470'

$A = \frac{(470)(2)}{2} = 470 ft^2$

$H \approx 1.0$ $\quad Q = (2.5)(470)(1)^{3/2} = 1175$ cfs.

$V = \frac{Q}{A} = 2.5$ fps. OK

Elev. 1076

WP = T = 600'

$A = 470 ft^2 + 2 * 470 + \frac{(2)(130)}{2} = 470 + 940 + 130 = 1540 ft^2$

$H \approx \frac{1540}{600} = 2.56'$ $\quad Q = (2.5)(600)(2.56)^{3/2} = 6168.0$ cfs

$V = \frac{6168}{1540} = 4.0$ fps.

Elev. 1078

WP = 700' ≃ T

$A = 1540 ft^2 + 600 * 2 + \frac{(100)(2)}{2} = 2840 ft^2$

$H \approx \frac{2840}{700} = 4.057$

$Q = (2.5)(700)(4.057)^{3/2} = 14,301$ cfs $\quad V = \frac{14301}{2840} = 5.03$ fps.

Elev. 1080

WP = 920' = T

$A = 2840 ft^2 + 700 * 2 + \frac{(220)(2)}{2} = 4460 ft^2$

$H \approx \frac{4460}{920} = 4.85'$ $\quad Q = (2.5)(920)(4.85)^{3/2} = 24,550$ cfs

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Flow Going South down Jackrabbit Trail thru the inlet channel and in Jackrabbit trail. X-S as in page 13/

Elev. 1067, Flow is 0

Elev. 1071, Flow is 2206 cfs (design capacity of 100-yr. channel)

Elev. 1072. Flow is 3700 cfs (this is bank-full stage or flow)

Elev. 1073

$A = 325 ft^2 + 150 ft^2 = 475 ft^2$

$WP = 2 * 20.6 + 45 + 65 = 151.2$

$R = \frac{475}{151.2} = 3.14'$

$V = \frac{1.486}{.03}(3.14)^{2/3}(.009)^{1/2} = 10.1$ fps

$Q = A \cdot V = (475)(10.1) = 4786$ cfs

Elev. 1074

$A = 475 ft^2 + 151 = 626 ft^2$

$WP = 151.2 + 4\sqrt{2} = 156.86$ ft

$R = \frac{626}{156.86} = 3.99'$

$V = \frac{1.486}{.03}(3.99)^{2/3}(.009)^{1/2} = 11.82$ fps.

$Q = A \cdot V = (626)(11.82) = 7,400$ cfs

Elev. 1076

$A = 626 + 2 * 154 = 934 ft^2$

$WP = 156.86 + 2\sqrt{2} = 159.69'$

$R = \frac{934}{159.69} = 5.85'$

$V = \frac{1.486}{.03}(5.85)^{2/3}(.009)^{1/2} = 15.25$ fps

$Q_{1074} = A V = (934)(15.25) = 14,248$ cfs

Elev. 1078

$A = 934 + 2 * 154 = 1242 ft^2$

$WP = 159.69 + 2\sqrt{2} = 162.52'$

$R = \frac{1242}{162.52} = 7.64'$

$V = \frac{1.486}{.03}(7.64)^{2/3}(.009)^{1/2} = 18.23$ fps

$Q = A \cdot V = (1242)(18.23) = 22,644$ cfs

1.2933 Ac = 1 rev.

The Cross Section is drawn at the ℄ of the N I-10 On Ramp. Box Culverts. @ ℄ of Road, elevation = 1072.3

@ ~~CP~~-SR 46

SV	0	0.5	2.31	5.75	7.99	13.49
SE	1067	1071	1072	1074	1076	1078
SQ	0	2206	3700	8575	20416	36945

DI-EAST

DI	0	3700	8575	20416	36945
DQ	0	0	1175	6168	14301

ELEV.	Q_{SOUTH}	Q_{EAST}	Q_{Total}
1067	0	0	0
1071	2206	0	2206
1072	3700	0	3700
1074	7400	1175	8575
1076	14,248	6168	20,416
1078	22,644	14,301	36,945

Area below Jackrabbit Trail

	rev.	Ac.	Volume (AF)
1072	1.19	1.54	2.31
1074	3.85	4.98	5.75
1076	7.65	9.89	7.99
1078	11.90	15.39	13.49

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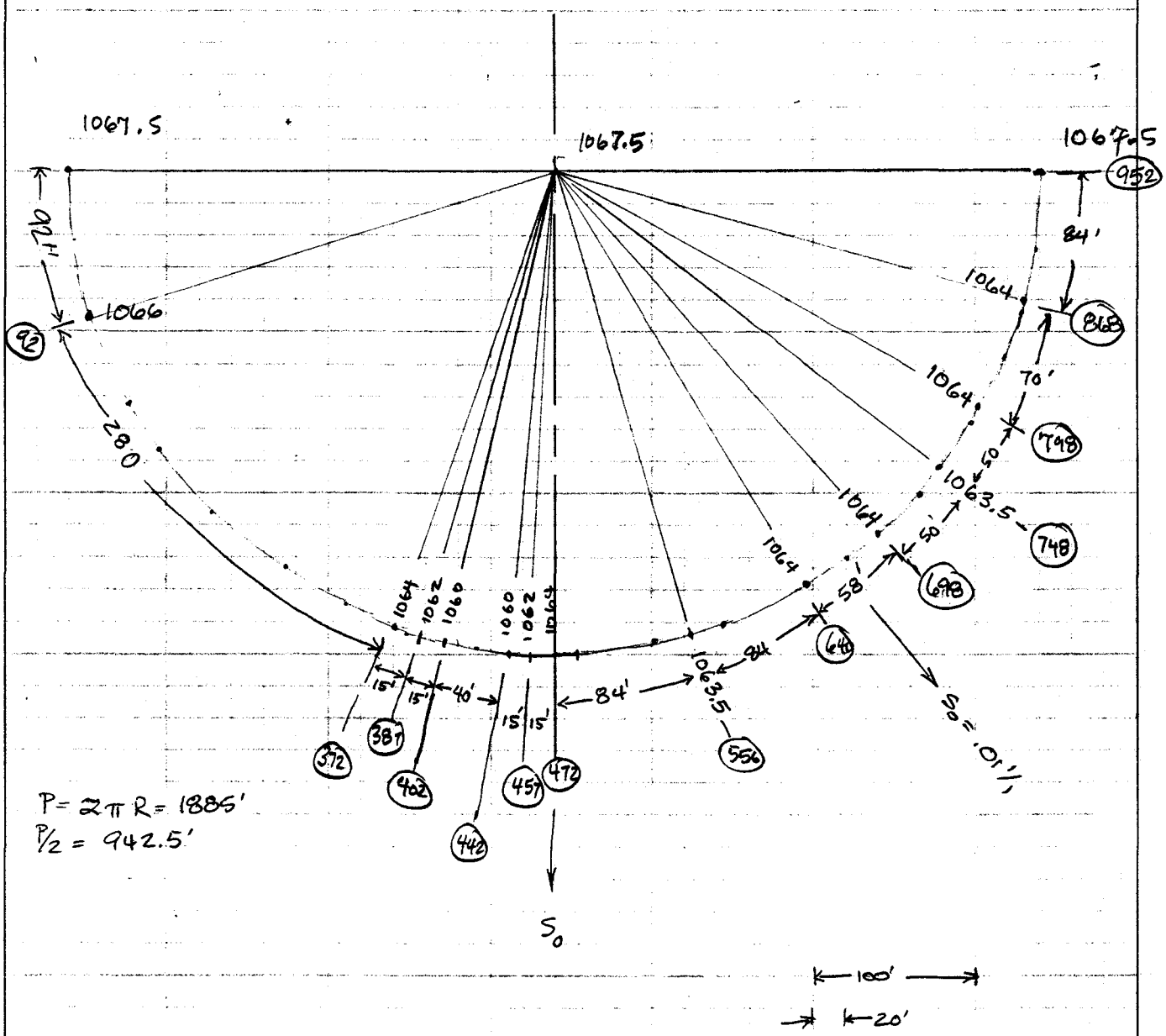
Outlet From I-10/Jackrabbit Trail Underpass.



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Obtain stage discharge relationship at outlet of Jackrabbit Trail - I-10 underpass, assuming normal depth thru the underpass, and subtracting (1072.3 - 1068.5) = 3.8 ft from the water surface elevations obtained at Routing Reach SR46 (at upstream end of underpass)

WSE		Q (cfs)	
1067 - 3.8 =	1063.2	0	← Channel Bottom
1071 - 3.8 =	1067.2	2206	
1072 - 3.8 =	1068.2	3700	← Road ℄
1074 - 3.8 =	1070.2	7400	
1076 - 3.8 =	1072.2	14,248	
1078 - 3.8 =	1074.2	22,644	

Rating at Outlet of I-10 Underpass.

To account for slope over 300' between I-10 and the Rating Section, drop elevation of 1063.2 by 3.2' to coincide with new channel bottom elev = 1060.0, Road ℄ elevation then becomes 1067.5 − 3.2 = 1064.3 OK

WSE		Q
1063.2 - 3.2	= 1060.0	0
1067.2 - 3.2	= 1064.0	2206
1068.2 - 3.2	= 1065.0	3700
1070.2 - 3.2	= 1067.0	7400
1072.2 - 3.2	= 1069.0	14,248
1074.2 - 3.2	= 1071.0	22,644

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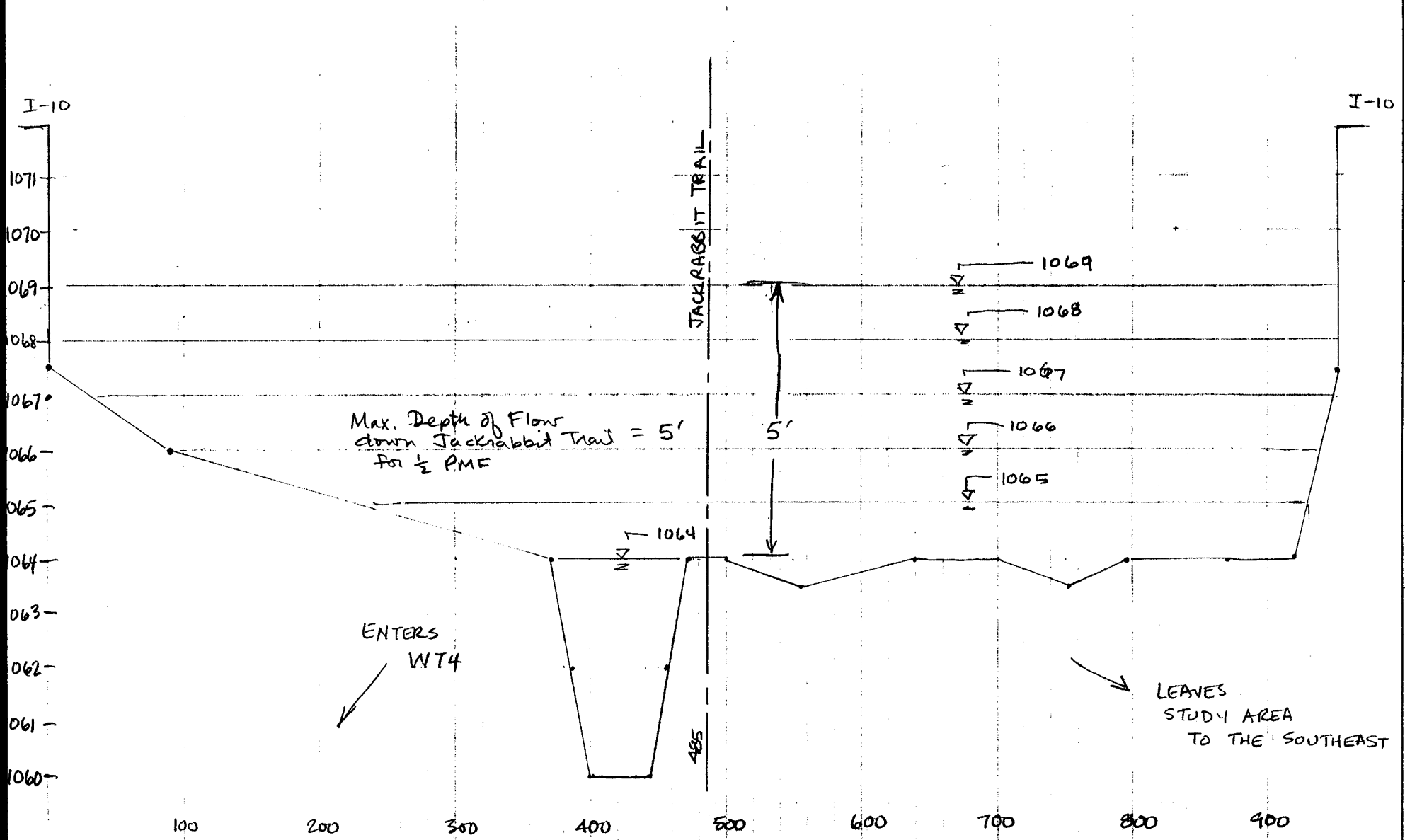

For Flows @ < Elev. 1064, use Manning's Eqn of the Channel w/ $S_o = .01$

$b = 45$ Side Slopes = 4:1 $n = .03$ $S_o = .01$ 1/1

Q_{full} @ $d_n = 4'$ (ELEV = 1064) = 2600 cfs $A_{flow} = 244\ ft^2$

Elev. 1065

Use weir flow for length of $930 - 240 = 690'$

$$Q_T = (2.5)(690)(1)^{3/2} = 1725 \text{ cfs}$$

Apportion flow to west ∝ weir length $\left(\frac{485-240}{690}\right) * 1725 = 613$ cfs.

$$Q_{WT4\ 1065} = 613 \text{ cfs} + 2600 \text{ cfs} = 3213 \text{ cfs}$$

$$Q_{SE\ 1065} = 1725 - 613 = 1112 \text{ cfs}$$

Elev. 1066

Use Weir Flow For $L = 930 - 160 = 770'$

$$Q_T = (2.5)(770)(2)^{3/2} = 5445 \text{ cfs}$$

$$Q_{WT4\ 1066} = \frac{(485-95)}{(930-95)} * 5445 + 2600 = 2543 + 2600 = 5143 \text{ cfs}$$

$$Q_{SE\ 1066} = 5445 - 2543 = 2902 \text{ cfs.}$$

Elev. 1067

Use weir flow for $L = 930'$

$$Q_T = (2.5)(930)(3)^{3/2} = 12{,}081 \text{ cfs.}$$

$$Q_{WT4\ 1067} = \frac{485}{930} * 12{,}081 + 2600 = 6300 + 2600 = 8900 \text{ cfs}$$

$$Q_{SE\ 1067} = \frac{930-485}{930} * 12{,}081 = 5{,}781 \text{ cfs}$$

Elev. 1068

Use Weir Flow Eqn for $L = 930$ $Q_T = (2.5)(930)(4)^{3/2} = 18{,}600$ cfs.

$$Q_{WT4\ 1068} = \frac{485}{930} * 18{,}600 + 2600 = 9700 + 2600 = 12{,}300 \text{ cfs}$$

$$Q_{SE} = \frac{930-485}{930} * 18{,}600 = 8{,}900 \text{ cfs.}$$

Elev. 1069.

Use Weir Flow Eqn for L = 930'

$$Q_T = (2.5)(930)(5)^{3/2} = 25,994 \text{ cfs}.$$

$$Q_{WT4\,1069} = \frac{485}{930} * 25,994 + 2600 = 16,156 \text{ cfs}.$$

$$Q_{SE\,1069} = \frac{930-435}{930} * 25,994 = 13,836 \text{ cfs}.$$

ELEV.	Q_{WT4}	(DQ) Q_{SE}	(DI) Q_T
1060	0	0	0
1064	2600	0	2600
1065	3213	1112	4325
1066	5143	2902	8045
1067	8900	5781	14,681
1068	12,300	8900	21,200
1069	16,156	13,836	29,992

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6366+85 4-10'x8' BC'S AT CP43

ELEVATION	AREA	VOLUME	DISCHARGE	DIVERT
1081.16	0	0	0	0
1085.18	.26	0.52	920	0
1087.60	3.41	4.33	1824	0
1090.19	5.77	16.22	2976	0
1091.5	Top of Dike 7.47	24.89	3396	0
1092.0	8.13	28.79	3536	177
1092.5	9.09	33.09	3676	500
1093.0	10.05	37.88	3816	918
1094.81	11.02	56.95	4368	2096 to E.

C = 2.5 Length = 200'

(depth) H_o at .5 Q = 177 cfs

at 1.0 Q = 500 cfs

at 1.5 Q = 918 cfs

C = Coefficient of weir flow

Form 209

STA 6366+85

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 13, 1990

PROGRAM INPUT DATA:

DESCRIPTION 4-10'x8' B.C.'s	VALUE
Culvert Span (Width of Opening) (feet).....	10.00
Culvert Rise (Height of Opening) (feet).....	8.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	227.0
Culvert Slope (feet per foot).....	0.0111

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
229.7	1.00	4.02	2.98	1.57	2.54	1.57	14.67
456.0	1.50	6.44	4.41	2.49	4.01	2.49	18.31
744.5	2.00	9.03	6.72	3.52	5.56	3.52	21.16
1092.1	2.50	13.65	10.36	4.66	7.18	4.66	23.46
1497.2	3.00	19.96	15.42	5.91	8.00	5.91	25.34
1959.0	3.50	29.57	22.49	7.28	8.00	7.28	26.92

BOX CULVERT ANALYSIS COMPUTER PROGRAM Version 1.4 Copyright (c) 1986
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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUAFRIA AOMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

Combined Storage Table

STA 6368+00, 6370+30, 6373+00, 6375+20 CP45-1

1-12'x12' BC, 2-42" CMP, 2-36" CMP, 1-36" CMP

ELEV.		VOLUME	DISCHARGE	DIVERT	QT
1083.1		0	0	0	0
1084.78		85	51	0	51
1086	2.9	223	156	0	156
1087.4	4.3	573	305	815	120
1089.0	5.9	11.22	480	2650	3130
1089.5	6.4	14.61	543	3618	4161
1090.0	6.9	19.71	610	4899	5500
1092.	8.9	31.09	894	8764	9658
1094	10.9	46.07	1212	12,600	13,812
1096	12.9	64.75	1560	24,744	26,30

Form 209

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COMPUTATION DATA SHEET

Changed

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6368+00 1-12'x12' BC AT CD45-1

ELEVATION	VOLUME	DISCHARGE	DIVERT
1083.98	0	0	0
1086.00 Top of Bank	.50	63	0
1086.93	.75	95	448
1088.39	1.5	192	1847
1089.79	5.0	321	3689
1091.30	7.5	480	6100

C = 2.5 L = 200

at .93 Q = 448 cfs

at 2.39 Q = 1847 cfs

at 3.79 Q = 3689 cfs

at 5.3 Q = 6100

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Changed

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6370+30 2-42" CMP | 6373+00 2-36" CMP | 6375+20 1-36" CMP | AT CP45-2

ELEVATION		VOLUME	DISCHARGE	DIVERT
1083.11	0	0	0	0
1084.78	0.78	0.65	26	0
1085.70	1.57	1.73	75	0
1087.4	1.97	4.74	179	0
1089.0	Top of Dike 2.36	8.20	232	0
1089.5	6.16	10.33	249	310
1090.0	9.96	14.36	267	875
1090.5	10.50	21.59	285	1607

C = 2.5 L = 350

at .5 Q = 310

at 1.0 Q = 875

at 1.5 Q = 1607

Form 209

STA 6368+00

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 12, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0083
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	20.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
1.0	95.0	4.13	0.774	0.265	1.265	23.0	26.0
1.5	192.4	5.24	0.820	0.426	1.926	36.7	29.0
2.0	320.6	6.17	0.852	0.590	2.590	52.0	32.0
2.5	480.1	6.98	0.878	0.757	3.257	68.8	35.0
3.0	671.8	7.72	0.899	0.926	3.926	87.0	38.0
3.5	896.9	8.40	0.918	1.096	4.596	106.7	41.0
4.0	1156.6	9.04	0.934	1.268	5.268	128.0	44.0
4.5	1452.3	9.63	0.948	1.441	5.941	150.7	47.0
5.0	1785.3	10.20	0.961	1.616	6.616	175.0	50.0
5.5	2157.1	10.75	0.973	1.793	7.293	200.7	53.0
6.0	2569.0	11.27	0.984	1.971	7.971	228.0	56.0
6.5	3022.3	11.77	0.994	2.152	8.652	256.7	59.0
7.0	3518.4	12.26	1.004	2.334	9.334	287.0	62.0

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
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(713) 895-8322. A manual with equations & flow chart is available.

TA 6370+30, 6373+00, 6375+20, 6379+84, 6381+45, 6384+25, 6388+55, 6390+50, 6395+75, 6400+60

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

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PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0111
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.2	2.82	0.781	0.124	0.624	3.3	8.0
0.6	12.8	3.13	0.800	0.152	0.752	4.1	8.6
0.7	16.9	3.41	0.817	0.180	0.880	5.0	9.2
0.8	21.7	3.66	0.831	0.209	1.009	5.9	9.8
0.9	27.1	3.91	0.844	0.237	1.137	6.9	10.4
1.0	33.1	4.14	0.855	0.266	1.266	8.0	11.0
1.1	39.8	4.36	0.866	0.295	1.395	9.1	11.6
1.2	47.2	4.57	0.876	0.324	1.524	10.3	12.2
1.3	55.2	4.77	0.885	0.354	1.654	11.6	12.8
1.4	64.0	4.97	0.894	0.384	1.784	12.9	13.4
1.5	73.6	5.16	0.902	0.414	1.914	14.2	14.0
1.6	83.8	5.35	0.909	0.444	2.044	15.7	14.6
1.7	94.9	5.53	0.916	0.474	2.174	17.2	15.2

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TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
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(713) 895-8322. A manual with equations & flow chart is available.

STA 6368+00

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 13, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1- 12'x12' BC	VALUE
Culvert Span (Width of Opening) (feet).....	12.00
Culvert Rise (Height of Opening) (feet).....	12.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	194.0
Culvert Slope (feet per foot).....	0.0190

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
95.0	1.00	1.93	2.95	0.66	1.25	1.25	6.34
192.4	1.50	3.12	3.36	1.03	2.00	2.00	8.02
320.6	2.00	4.41	3.85	1.42	2.81	1.42	18.75
480.0	2.50	5.81	4.44	1.86	3.68	1.86	21.55
671.8	3.00	7.32	5.18	2.32	4.60	2.32	24.08
896.9	3.50	8.92	6.12	2.83	5.58	2.83	26.40
1156.6	4.00	10.63	7.31	3.38	6.61	3.38	28.54
1452.3	4.50	12.44	8.82	3.97	7.69	3.97	30.50
1785.3	5.00	14.77	10.75	4.60	8.83	4.60	32.32
2157.1	5.50	18.36	13.20	5.29	10.01	5.29	34.00
2569.0	6.00	21.97	16.28	6.02	11.25	6.02	35.55

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STA 6370+30

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 2-42" CMP	VALUE
Culvert Diameter (feet).....	3.50
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	260.0
Culvert Slope (feet per foot).....	0.0088

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.25	0.02	1.01	0.92	1.01	4.01
12.8	0.60	1.49	0.19	1.19	1.09	1.19	4.42
16.9	0.70	1.74	0.41	1.39	1.25	1.39	4.77
21.7	0.80	2.00	0.70	1.59	1.43	1.59	5.11
27.1	0.90	2.28	1.09	1.81	1.60	1.81	5.38
33.1	1.00	2.58	1.58	2.04	1.78	2.04	5.70
39.8	1.10	2.89	2.22	2.32	1.96	2.32	5.87
47.2	1.20	3.24	3.03	2.67	2.14	2.67	6.00
55.2	1.30	3.61	4.04	3.50	2.33	2.33	8.13
64.0	1.40	4.07	5.31	3.50	2.51	2.51	8.68
73.6	1.50	4.63	6.88	3.50	2.69	2.69	9.29
83.8	1.60	5.29	8.77	3.50	2.85	2.85	9.98
94.9	1.70	6.10	11.07	3.50	3.01	3.01	10.79

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STA 6373+00

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

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PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	256.0
Culvert Slope (feet per foot).....	0.0031

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	1.39	1.43	0.96	0.96	4.73
12.8	0.60	1.58	1.67	1.74	1.14	1.14	5.21
16.9	0.70	1.86	2.05	2.10	1.31	1.31	5.68
21.7	0.80	2.16	2.59	3.00	1.50	1.50	6.15
27.1	0.90	2.48	3.32	3.00	1.68	1.68	6.64
33.1	1.00	2.83	4.29	3.00	1.87	1.87	7.16
39.8	1.10	3.23	5.56	3.00	2.05	2.05	7.72
47.2	1.20	3.81	7.21	3.00	2.24	2.24	8.35
55.2	1.30	4.38	9.27	3.00	2.41	2.41	9.07
64.0	1.40	5.18	11.89	3.00	2.57	2.57	9.93
73.6	1.50	6.18	15.15	3.00	2.70	2.70	10.98
83.8	1.60	7.40	19.08	3.00	2.80	2.80	12.20
94.9	1.70	8.90	23.91	3.00	2.87	2.87	13.62

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STA 6375+20

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
1-36" CMP	
Culvert Diameter (feet)	3.00
FHWA Chart Number (1,2 or 3)	2
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.0240
Entrance Loss Coefficient of Culvert Opening	0.50
Culvert Length (feet)	256.0
Culvert Slope (feet per foot)	0.0083

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.06	1.09	0.96	1.09	3.99
12.8	0.60	1.58	0.34	1.30	1.14	1.30	4.37
16.9	0.70	1.86	0.72	1.54	1.31	1.54	4.64
21.7	0.80	2.16	1.26	1.78	1.50	1.78	4.98
27.1	0.90	2.48	1.99	2.07	1.68	2.07	5.21
33.1	1.00	2.83	2.96	2.48	1.87	1.87	7.16
39.8	1.10	3.23	4.23	3.00	2.05	2.05	7.72
47.2	1.20	3.81	5.88	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.94	3.00	2.41	2.41	9.07
64.0	1.40	5.18	10.56	3.00	2.57	2.57	9.93

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-19-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

COMBINED STORAGE-DISCHARGE FOR STA 6379+84, 6381+45, 6384+25, 6388+55, 6390+50

ELEVATION		VOLUME	DISCHARGE (2-36", 1-36", 2-36")	DIVERT (2-36")	Total
1081.16	0	0	0	0	0
1082.74	2.33	1.84	41	0	41
1084.0	4.20	5.95	132	0	132
1086.0	Top of Dike 8.40	18.55	317	0	317
1086.5	10.49	23.27	362	1100	1462
1087.0	12.59	29.04	392	3125	3517
1088.0		41.95	450		
1090.0		61.66	567		
1092.0		83.65	676		
1094.0		110.95	784		

AT CP45

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (T-10)

STA 6379+84 2-36" CMP AT CP45

ELEVATION		VOLUME	DISCHARGE	DIVERT
1083.43		0	0	0
1084.2	✓		9	0
1084.75			18	0
1085.01			36	0
1085.29			42	0
1085.91	Top of Dike		54	0
1086.31			66	158
1087.18			80	895

C = 2.5 L = 250

at .4 Q = 158 cfs

at 1.27 Q = 895 cfs

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6381+45 1-36" CMP AT CP45

ELEVATION	VOLUME	DISCHARGE	DIVERT
1083.45	0	0	0
1084.2 ✓		7	0
1084.77		9	0
1085.03		13	0
1085.31		17	0
1085.61		22	0
1085.93 Top of Dike		27	0
1086.28		33	129
1086.81		40	516
1088.44		47	2485

C = 2.5 L = 250

at .35 Q = 129 cfs

at .88 Q = 516 cfs

at 2.71 Q = 2485 cfs

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6384+25 2-36" CMP AT CP45

ELEVATION	VOLUME	DISCHARGE	DIVERT
1081.82	0	0	0
1083.40		26	0
1083.98		44	0
1084.5		51	0
1085.0		58	0
1085.18		66	0
1086.0' Top of Dike		80	0
1086.81		94	455
1088.85		110	3007

C=25 L=250

at .81 Q=455

at 2.85 Q=3007

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6388+55 2-36" CMP AT CP45

ELEVATION	VOLUME	DISCHARGE	DIVERT
1081.16	0	0	0
1082.74		26	0
1083.32		44	0
1084.0		55	0
1084.4		66	0
1085.62		80	0
1086.0 Top of Dike		85	0
1086.5		90	220
1087.19		94	811

C = 2.5 L = 250

at .5 Q = 220 cfs

at 1.19 Q = 811 cfs

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6390+50 2-36" CMP AT CP45

ELEVATION	VOLUME	DISCHARGE	DIVERT
1082.94	0	0	0
1084.52		26	0
1085.10		44	0
1085.77		66	0
1086.0 Top of Dike		71	0
1086.91		80	542
1088.41		94	2338

C = 2.5 L = 250

at .91 Q = 542 cfs

at 2.41 Q = 2338 cfs

Form 209

STA 637+84

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

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PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	260.0
Culvert Slope (feet per foot).....	0.0104

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	-0.52	1.02	0.96	1.02	4.33
12.8	0.60	1.58	-0.23	1.22	1.14	1.22	4.74
16.9	0.70	1.86	0.15	1.43	1.31	1.43	5.11
21.7	0.80	2.16	0.70	1.66	1.50	1.66	5.42
27.1	0.80	2.48	1.43	1.91	1.68	1.91	5.70
27.1	0.90	2.48	1.43	1.91	1.68	1.91	5.70
33.1	1.00	2.83	2.41	2.22	1.87	2.22	5.89
39.8	1.10	3.23	3.70	3.00	2.05	2.05	7.72
47.2	1.20	3.81	5.37	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.46	3.00	2.41	2.41	9.07
64.0	1.40	5.18	10.10	3.00	2.57	2.57	9.93
73.6	1.50	6.18	13.40	3.00	2.70	2.70	10.98

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STA 6381+45

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	252.0
Culvert Slope (feet per foot).....	0.0117

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	-0.77	0.99	0.96	0.99	4.50
12.8	0.60	1.58	-0.49	1.18	1.14	1.18	4.95
16.9	0.70	1.86	-0.11	1.38	1.31	1.38	5.33
21.7	0.80	2.16	0.42	1.60	1.50	1.60	5.67
27.1	0.90	2.48	1.15	1.84	1.68	1.84	5.97
33.1	1.00	2.83	2.10	2.12	1.87	2.12	6.20
39.8	1.10	3.23	3.36	2.51	2.05	2.05	7.72
47.2	1.20	3.81	4.99	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.03	3.00	2.41	2.41	9.07
64.0	1.40	5.18	9.61	3.00	2.57	2.57	9.93
73.6	1.50	6.18	12.83	3.00	2.70	2.70	10.98

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STA 6384+25

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	252.0
Culvert Slope (feet per foot).....	0.0067

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.49	1.16	0.96	1.16	3.65
12.8	0.60	1.58	0.77	1.38	1.14	1.38	4.04
16.9	0.70	1.86	1.15	1.62	1.31	1.62	4.33
21.7	0.80	2.16	1.68	1.90	1.50	1.90	4.59
27.1	0.90	2.48	2.41	2.26	1.68	2.26	4.74
33.1	1.00	2.83	3.36	3.00	1.87	1.87	7.16
39.8	1.10	3.23	4.62	3.00	2.05	2.05	7.72
47.2	1.20	3.81	6.25	3.00	2.24	2.24	8.35
55.2	1.30	4.38	8.29	3.00	2.41	2.41	9.07
64.0	1.40	5.18	10.87	3.00	2.57	2.57	9.93
73.6	1.50	6.18	14.09	3.00	2.70	2.70	10.98

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STA 6388+55

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

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PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	240.0
Culvert Slope (feet per foot).....	0.0071

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.47	1.13	0.96	1.13	3.76
2.8	0.60	0.70	0.07	0.61	0.52	0.61	2.69
12.8	0.60	1.58	0.74	1.36	1.14	1.36	4.12
16.9	0.70	1.86	1.11	1.60	1.31	1.60	4.41
21.7	0.80	2.16	1.63	1.87	1.50	1.87	4.67
27.1	0.90	2.48	2.32	2.23	1.68	2.23	4.82
33.1	1.00	2.83	3.24	3.00	1.87	1.87	7.16
39.8	1.10	3.23	4.46	3.00	2.05	2.05	7.72
47.2	1.20	3.81	6.03	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.99	3.00	2.41	2.41	9.07
64.0	1.40	5.18	10.48	3.00	2.57	2.57	9.93
73.6	1.50	6.18	13.58	3.00	2.70	2.70	10.98

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STA 6390+50

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	224.0
Culvert Slope (feet per foot).....	0.0089

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.17	1.06	0.96	1.06	4.10
12.8	0.60	1.58	0.43	1.27	1.14	1.27	4.48
16.9	0.70	1.86	0.78	1.49	1.31	1.49	4.81
21.7	0.80	2.16	1.28	1.74	1.50	1.74	5.11
27.1	0.90	2.48	1.94	2.02	1.68	2.02	5.36
33.1	1.00	2.83	2.82	2.38	1.87	2.38	5.50
39.8	1.10	3.23	3.97	3.00	2.05	2.05	7.72
47.2	1.20	3.81	5.47	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.33	3.00	2.41	2.41	9.07
64.0	1.40	5.18	9.69	3.00	2.57	2.57	9.93
73.6	1.50	6.18	12.63	3.00	2.70	2.70	10.98

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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0111
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.2	2.82	0.781	0.124	0.624	3.3	8.0
0.6	12.8	3.13	0.800	0.152	0.752	4.1	8.6
0.7	16.9	3.41	0.817	0.180	0.880	5.0	9.2
0.8	21.7	3.66	0.831	0.209	1.009	5.9	9.8
0.9	27.1	3.91	0.844	0.237	1.137	6.9	10.4
1.0	33.1	4.14	0.855	0.266	1.266	8.0	11.0
1.1	39.8	4.36	0.866	0.295	1.395	9.1	11.6
1.2	47.2	4.57	0.876	0.324	1.524	10.3	12.2
1.3	55.2	4.77	0.885	0.354	1.654	11.6	12.8
1.4	64.0	4.97	0.894	0.384	1.784	12.9	13.4
1.5	73.6	5.16	0.902	0.414	1.914	14.2	14.0
1.6	83.8	5.35	0.909	0.444	2.044	15.7	14.6
1.7	94.9	5.53	0.916	0.474	2.174	17.2	15.2

==========

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6395+75 2-36" CMP AT CP46-1

ELEVATION	VOLUME	DISCHARGE	DIVERT
1080.0	0	0	0
1081.58		26	0
1082.16		44	0
1082.84		66	0
1083.0 Top of Dike		71	0
1083.5		75	200
1084.0		80	563
1084.5		94	1033

C = 2.5 L = 275

at .5 Q = 200 cfs

at 1.0 Q = 563

at 1.5 Q = 1033

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6400+60 3-36" CMP AT CP46-1

ELEVATION	VOLUME	DISCHARGE	DIVERT
1078.36	0	0	0
1079.94		39	0
1080.52		66	0
1081.31		99	0
1082.44		120	0
1083.0 Top of Dike		128	0
1083.5		135	200
1083.9		141	480
1085.72		165	2523

C = 2.5 L = 225

at .5 Q = 200 cfs

at .9 Q = 480 cfs

at 2.72 Q = 2523 cfs

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-20-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

AT CP4

COMBINED STORAGE - DISCHARGE FOR STA 6395+75, 6400+60
2-36" CMP 3-36" CMP

ELEVATION		VOLUME		DISCHARGE	DIVERT
1078.36	0	0		0	0
1080.0	1.31	1.07		39	0
1081.5	3.54	4.71		128	0
1082.0		6.9		156	
1082.5	5.93	9.0		183	0
					0
1083.0	Top of Dike 5.77	11.7		199	0
1083.5	6.95	14.88		210	400
1084.0	8.13	18.65	5.64	225	1126
1084.5	9.31	23.01	6.14	244	2066
1085.0		28.26		264	
1086.0		33.51		283	

Form 209

STA 6395+75

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	226.0
Culvert Slope (feet per foot).....	0.0088

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.18	1.07	0.96	1.07	4.07
12.8	0.60	1.58	0.44	1.28	1.14	1.28	4.43
16.9	0.70	1.86	0.79	1.50	1.31	1.50	4.79
21.7	0.80	2.16	1.29	1.75	1.50	1.75	5.09
27.1	0.90	2.48	1.96	2.03	1.68	2.03	5.33
33.1	1.00	2.83	2.84	2.40	1.87	1.87	7.16
39.8	1.10	3.23	4.00	3.00	2.05	2.05	7.72
47.2	1.20	3.81	5.50	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.38	3.00	2.41	2.41	9.07
64.0	1.40	5.18	9.76	3.00	2.57	2.57	9.93
73.6	1.50	6.18	12.71	3.00	2.70	2.70	10.98

==========

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STA 6400 + 60

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 3-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	217.0
Culvert Slope (feet per foot).....	0.0083

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.36	1.09	0.96	1.09	3.99
12.8	0.60	1.58	0.61	1.30	1.14	1.30	4.37
16.9	0.70	1.86	0.96	1.54	1.31	1.54	4.64
21.7	0.80	2.16	1.45	1.78	1.50	1.78	4.98
27.1	0.90	2.48	2.10	2.07	1.68	2.07	5.21
33.1	1.00	2.83	2.95	2.48	1.87	1.87	7.16
39.8	1.10	3.23	4.08	3.00	2.05	2.05	7.72
47.2	1.20	3.81	5.54	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.36	3.00	2.41	2.41	9.07
64.0	1.40	5.18	9.66	3.00	2.57	2.57	9.93
73.6	1.50	6.18	12.53	3.00	2.70	2.70	10.98

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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0111
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.2	2.82	0.781	0.124	0.624	3.3	8.0
0.6	12.8	3.13	0.800	0.152	0.752	4.1	8.6
0.7	16.9	3.41	0.817	0.180	0.880	5.0	9.2
0.8	21.7	3.66	0.831	0.209	1.009	5.9	9.8
0.9	27.1	3.91	0.844	0.237	1.137	6.9	10.4
1.0	33.1	4.14	0.855	0.266	1.266	8.0	11.0
1.1	39.8	4.36	0.866	0.295	1.395	9.1	11.6
1.2	47.2	4.57	0.876	0.324	1.524	10.3	12.2
1.3	55.2	4.77	0.885	0.354	1.654	11.6	12.8
1.4	64.0	4.97	0.894	0.384	1.784	12.9	13.4
1.5	73.6	5.16	0.902	0.414	1.914	14.2	14.0
1.6	83.8	5.35	0.909	0.444	2.044	15.7	14.6
1.7	94.9	5.53	0.916	0.474	2.174	17.2	15.2

==========

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6419+30 5-10'x4' BC's AT CP46

ELEVATION		VOLUME	DISCHARGE	DIVERT
1065.41	0	0	0	0
1068.42	0.72	1.08	730	0
1070.53	1.22	3.13	1460	0
1071.4	Top of Bank 1.43	4.28	1680	0
1072.0	1.57	5.18	1834	58
1073	3.14	7.54	2090	250
1074.3	5.2	12.96	2470	617

C = 25 L = 50

at .6 Q = 58 cfs

at 1.6 Q = 250 cfs

at 2.9 Q = 617

Form 209

STA 6419+30

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 13, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 5-10'x4' BC'S	VALUE
Culvert Span (Width of Opening) (feet).....	10.00
Culvert Rise (Height of Opening) (feet).....	4.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	52.0
Culvert Slope (feet per foot).....	0.0055

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
146.3	1.00	3.01	2.99	1.47	1.88	1.47	9.98
292.8	1.50	5.12	4.57	2.34	2.99	2.34	12.52
484.4	2.00	8.89	7.44	3.33	4.00	3.33	14.56
714.0	2.50	15.51	11.80	4.00	4.00	4.00	17.85
988.0	3.00	26.73	19.20	4.00	4.00	4.00	24.70

==========

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STA 6419+ 30

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 13, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0091
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	30.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
1.0	146.3	4.43	0.816	0.305	1.305	33.0	36.0
1.5	292.8	5.66	0.866	0.497	1.997	51.7	39.0
2.0	482.4	6.70	0.902	0.697	2.697	72.0	42.0
2.5	714.0	7.62	0.930	0.901	3.401	93.8	45.0
3.0	988.0	8.44	0.953	1.107	4.107	117.0	48.0
3.5	1304.8	9.20	0.973	1.316	4.816	141.7	51.0
4.0	1665.2	9.91	0.990	1.526	5.526	168.0	54.0
4.5	2070.2	10.58	1.006	1.737	6.237	195.7	57.0

==========

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Calculation of Probable Maximum Precipitation (PMP)

PMP Calculations

Table 6.1.--General-storm PMP computations for the Colorado River and Great basin

Drainage White Tanks #4 Area 19.3 mi^2 (km^2)

Latitude 33.5°N, Longitude 132.5°W of basin center

Month August

Step	Duration (hrs) 6	12	18	24	48	72
A. Convergence PMP						
1. Drainage average value from one of figures 2.5 to 2.16	13.8 in. (mm)					
2. Reduction for barrier-elevation [fig. 2.18]	88 %					
3. Barrier-elevation reduced PMP [step 1 X step 2]	12.14 in. (mm)					
4. Durational variation [figs. 2.25 to 2.27 and table 2.7].	75	89	96	100	112	116 %
5. Convergence PMP for indicated durations [steps 3 X 4]	9.1	10.8	11.7	12.1	13.6	14.1 in. (mm)
6. Incremental 10 mi^2 (26 km^2) PMP [successive subtraction in step 5]	9.1	1.7	0.9	0.4	1.5	0.5 in. (mm)
7. Areal reduction [select from figs. 2.28 and 2.29]	99	100	100	100	100	100 %
8. Areally reduced PMP [step 6 X step 7]	9.01"	1.7"	0.9"	0.4"	1.5"	0.5" in. (mm)
9. Drainage average PMP [accumulated values of step 8]	9.01"	10.7"	11.6"	12.0"	13.5"	14.0" in. (mm)
B. Orographic PMP						
1. Drainage average orographic index from figure 3.11a to d. (REVISED)	2 in. (mm)					
2. Areal reduction [figure 3.20]	98.75%					
3. Adjustment for month [one of figs. 3.12 to 3.17]	100 %					
4. Areally and seasonally adjusted PMP [steps 1 X 2 X 3]	1.98 in. (mm)					
5. Durational variation [table ~~3.6~~ 3.9]	35.5	63	84	100	141	160%
6. Orographic PMP for given durations [steps 4 X 5]	.7"	1.2"	1.7"	1.98"	2.8"	3.2" in. (mm)
C. Total PMP						
1. Add steps A9 and B6	9.7"	11.9"	13.3"	14.0"	16.3"	17.2" in. (mm)

2. PMP for other durations from smooth curve fitted to plot of computed data.

3. Comparison with local-storm PMP (see sec. 6.3).

Table 6.3A.--Local-storm PMP computation, Colorado River, Great Basin and California drainages. For drainage average depth PMP. Go to table 6.3B if areal variation is required.

Drainage White Tanks #4 Structure Area 19.3 mi^2 (km^2)
Latitude 33.5 N Longitude 132.5 W Minimum Elevation 1000 ft (m)

Steps correspond to those in sec. 6.3A.

1. Average 1-hr 1-mi^2 (2.6-km^2) PMP for drainage [fig. 4.5]. 11.5 in. (~~mm~~)

2. a. Reduction for elevation. [No adjustment for elevations up to 5,000 feet (1,524 m): 5% decrease per 1,000 feet (305 m) above 5,000 feet (1,524 m)]. 100 %

   b. Multiply step 1 by step 2a. 11.5 in. (~~mm~~)

3. Average 6/1-hr ratio for drainage [fig. 4.7]. 1.3

	Duration (hr)								
	1/4	1/2	3/4	1	2	3	4	5	6
4. Durational variation for 6/1-hr ratio of step 3 [table 4.4].	74	89	95	100	114	121	125	128	130 %
5. 1-mi^2 (2.6-km^2) PMP for indicated durations [step 2b X step 4].	8.5	10.2	10.9	11.5	13.1	13.9	14.4	14.7	15.0 in. (~~mm~~)
6. Areal reduction [fig. 4.9].	.63	.69	.72	.74	.77	.78	.80	.81	.82 %
7. Areal reduced PMP [steps 5 X 6].	5.4"	7.0"	7.8"	8.5"	10.1"	10.8"	11.5"	11.9"	12.3" in. (~~mm~~)
8. Incremental PMP [successive subtraction in step 7].				8.5"	1.6"	0.7"	0.7"	0.4"	0.4" in. (~~mm~~)
	5.4"	1.6"	0.8"	0.7" } 15-min. increments					

9. Time sequence of incremental PMP according to:

HMR-No. 51

Hourly increments [table 4.7].	0.4"	0.7"	8.5"	1.6"	0.7"	0.4"	in. (~~mm~~)
Four largest 15-min. increments [table 4.8].	5.4"	1.6"	0.8"	0.7"			in. (~~mm~~)

Table 6.3B.--Local-storm PMP computation, Colorado River and Great Basin, and California drainages. (Giving areal distribution of PMP).

Steps correspond to those in sec. 6.3B.

1. Place idealized isohyetal pattern [fig. 4.10] over drainage adjusted to 1:500,000 scale to obtain most critical placement.

2. Note the isohyets within drainage.

3. Average 1-hr 1-mi^2 (2.6-km^2) PMP for drainage [fig. 4.5]. _____ in. (mm)

4. a. Reduction for elevation. [No adjustment for elevations up to 5,000 feet (1,524 m), 5% decrease per 1,000 feet (305 m) above 5,000 feet (1,524 m)]. _____ %

   b. Multiply step 3 by step 4a. _____ in. (mm)

5. Average 6/1-hr ratio for drainage [fig. 4.7]. _____

6. Obtain isohetal labels for 15-min incremental and the highest PMP from table 4.5 corresponding 6/1-hr ratio of step 5.

PMP Increment	Isohyet A	B	C	D	E	F	G	H	I	J	
Highest 1-hr											
Highest 15-min.											
2nd "											
3rd "											in %
4th "											

7. Obtain isohyetal labels in % of 1-hr PMP for 2nd to 6th highest hourly incremental PMP values from table 4.6 using 6/1-hr ratio of step 5.

2nd Highest 1-hr PMP											
3rd "											
4th "											in %
5th "											
6th "											

8. Multiply steps 6 and 7 by step 4b to get incremental isohyetal labels of PMP.

Highest 15-min.											
2nd "											
3rd "											
4th "											
Highest 1-hr											in in. (mm)
2nd "											
3rd "											
4th "											
5th "											
6th "											

9. Arrange values of step 8 in time sequence [tables 4.7 and 4.8].

(1) Determine 1000 mb 24 convergence PMP for 10 mi² watershed.

					Step (3) Value
a.	Fig 2.5.	— January	—	8.9	7.83
b.	Fig 2.6	Feb.	—	8.8	7.74
c.	2.7	Mar.	—	8.7	7.66
d	2.8	April	—	8.5	7.48
e.	2.9	May	—	8.5	7.48
f.	2.10	June	—	8.6	7.56
g.	2.11	July	—	12.5	11.00
h.	2.12	Aug	—	13.8	12.14
i.	2.13	Sept	—	13.8	12.14
j.	2.14	Oct.	—	12.6	11.09
k.	2.15	Nov.	—	10.2	8.98
l.	2.16	Dec.	—	9.3	8.18

(2) Obtain reduction factor for effective barrier + elevation in percent from Fig. 2.18.

Value = 88%

(3) Barrier elevation reduced 24-hr. 10-mi² convergence PMP average = (1) * (2).

For Aug/Sept = (13.8)(0.88) = 12.144

For Apr/May = (8.5)(0.88) = 7.48

(4) Determine drainage 6/24-hr. ratio for month of interest from Fig. 2.25 + 2.27

Table 27 Values.

		6 hr.	12 hr.	18 hr.	24 hr.	48 hr.	72 hr.
(a) Jan	— 64%						
(b) Feb	— 64%	— 64	83	93	100	117	126
(c) Mar.	— 66%	— 66	84	93	100	116	124
(d) Apr.	— 67%	— 67	85	94	100	116	123
(e) May	— 69%	— 69	86	94	100	115	121
(f) June	— 72%	— 72	88	95	100	113	118
(g) July	— 75%						
(h) Aug	— 75%	— 75	89	96	100	112	116
(i) Sept	— 75%						
(j) Oct	— 72%	72	88	95	100	113	118
(k) Nov.	— 65%	65	84	93	100	117	125
(l) Dec.	— 63%	63	82	93	100	118	128

(5) Step (3) value * Step (4) value → convergence PMP for durations of step (4) for 10 mi²

	6 hr.	Areally Reduced, Step (7) 12 hr.	18 hr.	24 hr.	48 hr.	72 hr.
Jan	5.0112 (4.96)	6.4989	7.2819	7.830	9.1611	9.8658
Feb.	5.108 (5.06)	6.5016	7.1982	7.740	8.9784	9.5976
Mar.	5.132 (5.08)	6.5110	7.2004	7.660	8.8856	9.4218
Apr.	5.0116 (4.10)	6.358	7.0312	7.480	8.6768	9.2004
May	5.161 (5.11)	6.4328	7.0312	7.48	8.602	9.0508
Jun	5.443 (5.39)	6.6528	7.182	7.56	8.5428	8.9208
Jul	8.25 (8.17)	9.790	10.56	11.00	12.320	12.760
Aug	9.105 (9.01)	10.8046	11.6544	12.14	13.5968	14.0824
Sept	9.105 (9.01)	10.8046	11.6544	12.14	13.5968	14.0824
Oct	7.984 (7.90)	9.7592	10.5355	11.09	12.5317	14.7874
Nov.	5.837 (5.78)	7.5432	8.3514	8.98	10.5066	11.225
Dec.	5.153 (5.10)	6.7076	7.6074	8.18	9.6524	10.4704

(6) Incremental convergence PMP obtained by successive subtraction (not req'd)

(7) Areal Reduction for Drainage = 19.3 mi², From Fig. 2.28-2.29

	6 hr.	12 hr.	18 hr.	24 hr.
Jan-Mar.	.99	1.0	1.0	1.0
April	.99	1.0	1.0	1.0
May	.99	1.0	1.0	1.0
Jun-July	.99	1.0	1.0	1.0
Aug-Sept.	.99	1.0	1.0	1.0
Oct.	.99	1.0	1.0	1.0
Nov-Dec.	.99	1.0	1.0	1.0

These areal reduction factors for the 6-hr duration are included as a separate column in Step (5); all other durations, the factor is near enough to 1.0 to ignore areal reduction for a 19.3 mi² drainage area.

(8) Drainage average PMP (d.a. = 19.3 mi²)

	6 hr.	12 hr.	18 hr.	24 hr.	48 hr.	72 hr.
Aug/Sept.	9.01"	10.80"	11.65"	12.14"	13.60"	14.08"

(B) (1) The orographic index for the 10-mi², 24-hr. PMP. given on Fig. 3.11d in "2"

(2) Areal Reduction from Figure 3.20 = $\boxed{0.9875}$

(3) Seasonal adjustment for Orographic PMP.

Jan	88%	Jul	82.5%
Feb.	87%	Aug	100%
Mar.	82%	Sept	100%
Apr	72%	Oct	99%
May	63%	Nov	94%
Jun.	63%	Dec.	89%

(4) Areally + Seasonally adjusted PMP (inches) = (1) * (2) * (3).

Jan	1.738"	July	1.629"
Feb.	1.718"	Aug	1.975"
Mar.	1.620"	Sept	1.975"
Apr.	1.422"	Oct	1.955"
May	1.244"	Nov.	1.857"
Jun	1.244"	Dec.	1.758"

(5) Durational Variation for Lat. 33.5° N Long. 112.5° W

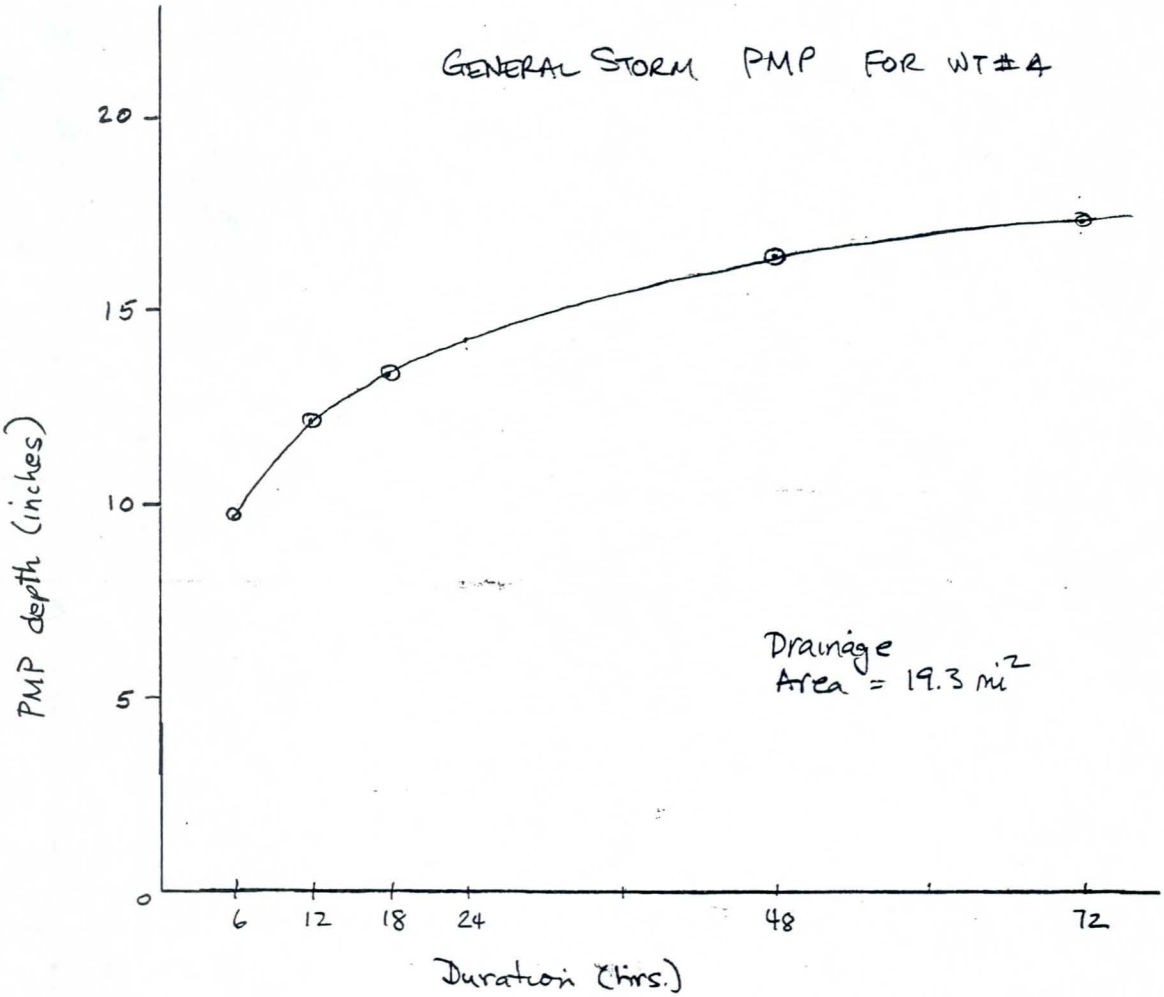
6 hr.	12 hr.	18 hr.	24 hr.	48 hr.	72-hr.
35.5	62.5	83.5	100	141	159.5

(6) Orographic PMP (inches)

	6 hr.	12 hr.	18 hr.	24-hr.	48 hr.	72 hr.
Jan.				1.738		
Feb.				1.718"		
Mar.				1.620"		
Apr.				1.422		
May				1.244"		
Jun.				1.244"		
July				1.629"		
Aug/Sept	0.70"	1.23"	1.65"	1.975"	2.78"	3.15"
Oct				1.955"		
Nov				1.857"		
Dec.				1.758"		

① Total PMP (Aug/Sept)

	6 hr	12 hr.	18 hr	24 hr.	48 hr.	72 hr.
A-9 =	9.01"	10.80"	11.65"	12.14"	13.60"	14.08"
B-6 =	0.70"	1.23	1.65	1.98	2.78	3.15"
	9.71"	12.03"	13.30"	14.12"	16.38"	17.23"



42-381 50 SHEETS EYE-EASE® 5 SQUARE
42-382 100 SHEETS EYE-EASE® 5 SQUARE
42-389 200 SHEETS EYE-EASE® 5 SQUARE
42-392 100 RECYCLED WHITE 5 SQUARE
42-399 200 RECYCLED WHITE 5 SQUARE
Made in U.S.A.
National® Brand

Use the 72-hr. general storm

hour	PMP (in)	Δ / period	Δ / 6 hrs
6	9.7	9.7	9.7
12	11.9	2.2	2.2
18	13.3	1.4	1.4
24	14.0	0.7	0.7
48	16.3	2.3	0.575
72	17.2	0.9	0.225

Rank	Amt. (in.)
1	9.7
2	2.2
3	1.4
4	0.7
5	0.575
6	0.575
7	0.575
8	0.575
9	0.225
10	0.225
11	0.225
12	0.225

Use temporal distribution on $\boxed{\text{Figure 6-1a}}$ in HMR-49

Period	From	To	Rank	P(in)	P(in/hr)
1	0	6 hrs	9	0.225	0.0375 ✓
2	6	12	7	0.575	$0.0958\overline{3}$ ✓
3	12	18	5	0.575	$0.0958\overline{3}$ ✓
4	18	24	3	1.400	$0.233\overline{3}$ ✓
5	24	30	1	9.700	$1.616\overline{6}$ ✓
6	30	36	2	2.200	$0.366\overline{6}$ ✓
7	36	42	4	0.700	$0.166\overline{6}$ ✓
8	42	48	6	0.575	$0.0958\overline{3}$ ✓
9	48	54	8	0.575	0.09583 ✓
10	54	60	10	0.225	0.0375
11	60	66	11	0.225	0.0375
12	66	72	12	0.225	0.0375

Cummulative Precip

Hr.	P (in) Cum	%	Hr.		Cum %
1	.0375	.0022	37	14.84$\overline{6}$	.8629
2	.0750	.0044	38	15.0083	.8726
3	.1125	.0065	39	15.175	.8823
4	.1500	.0087	40	15.341$\overline{6}$	.8920
5	.1875	.0109	41	15.3583	.8929
$\boxed{6}$	.2250	.0131	$\boxed{42}$	15.375	.8939
7	.3208	.0187	43	15.4708$\overline{3}$	.8995
8	.416$\overline{6}$	.0242	44	15.5$\overline{6}$	.9050
9	.5125	.0298	45	15.6625	.9106
10	.6083	.0354	46	15.7583	.9162
11	.70416	.0409	47	15.8542	.9218
$\boxed{12}$	0.800	.0465	$\boxed{48}$	15.950	.9273
13	.8958$\overline{3}$	.0521	49	16.0458	.9329
14	.9916$\overline{6}$	.0577	50	16.141$\overline{6}$	.9385
15	1.0875	.0632	51	16.2375	.9440
16	1.183$\overline{3}$	.0688	52	16.3$\overline{3}$	.9496
17	1.27916	.0744	53	16.4291$\overline{6}$	.9552
$\boxed{18}$	1.375	.0799	$\boxed{54}$	16.525	.9608
19	1.6083	.0935	55	16.5625	.9629
20	1.841$\overline{6}$	.1071	56	16.6000	.9651
21	2.075	.1206	57	16.6375	.9673
22	2.308$\overline{3}$	.1342	58	16.675	.9695
23	2.541$\overline{6}$	.1478	59	16.7125	.9717
$\boxed{24}$	2.775	.1613	$\boxed{60}$	16.750	.9738
25	4.391$\overline{6}$	.2553	61	16.7875	.9760
26	6.0083	.3493	62	16.825	.9782
27	7.625	.4433	63	16.8625	.9804
28	9.241$\overline{6}$	.5373	64	16.9000	.9825
29	10.8583	.6313	65	16.9375	.9847
$\boxed{30}$	12.475	.7253	$\boxed{66}$	16.975	.9869
31	12.841$\overline{6}$	.7466	67	17.0125	.9891
32	13.2083	.7679	68	17.050	.9913
33	13.575	.7892	69	17.0875	.9935
34	13.941$\overline{6}$	.8106	70	17.125	.9956
35	14.3083	.8319	71	17.1625	.9978
$\boxed{36}$	14.675	.8532	$\boxed{72}$	17.200	1.0

National® Brand
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42-392 100 RECYCLED WHITE 5 SQUARE
42-399 200 RECYCLED WHITE 5 SQUARE
Made in U.S.A.

$5000

27 43,560

1 AF = [illegible] pd³ / 43 / 6000

Results of the PMP Analysis

STORAGE VOL (EXISTING) = **2246 AF**

		6-hour Local PMP	72-hour General PMP
Depth of Precip.		12.30"	17.20"
Q_p inflow to WT#4		42,185 cfs	27,405 cfs
T_p		3.58 hrs.	29.75 hrs.
Vol of Inflow (AF)	(6HR)	2255	4746
	(24 HR)	2445	5643
	(72 HR)	2445	5748

LOCATIONS OF WARNING MESSAGES IN PMF OUTPUT (FILE WT4PMP7)

KK Block	DI or SQ Ex Max.	Req. Max
	4212	13,700
	2420	15,700
	2772	12,000
	7028	10,000
	503	4850
	2310	2765
	5172	27,105
	186	2045
	892	2283
	276	2450
	906	2550
	951	2950
	3318	3644
	~~222~~	3815

KK Block	DI or SQ Exist	Req. Max
	~~1054~~	4690
	~~1219~~	4280
	28,617	58,496
	~~13,500~~	58,815
	15,208	50,215
	~~6550~~	26,820
	10,999	22,850
	3324	16,690
	12,363	21,050
	~~4546~~	12,037
	~~2273~~	6090
	4138	6950
	679	5750
	~~2000~~	11,400
	3244	3315
	~~2963~~	3360
	9959	10,650

Stage/Storage
per WLB HEC-1

SE	SV	SQ	
997	0	0	
1000	2.81	0	
1010	51	0	
1020	148	0	
1030	277	0	
1040	543	0	← pit. (Below Grade)
1049	1269	0	
1050	1396	375	
1052	1690	2600	
1054	2045	6150	
1055	2246	14700	

Brief Analysis of Storage

① Downstream Elevation ≈ 1034.0
② Add 6 ft (allowable) 6.0
③ 1040.0 ← elevation at which it is no longer a dam.
④ Storage available below 1040 = 543 AF
⑤ Volume Req'd to contain ½ PMF from:

	6-hour local storm	72-hr. general storm
	2445 AF (Q=11,725)	5748 AF (Q = 13,575 cfs)
⑥	1902 AF	5205 AF
⑦ Cost	$9,205,680	$25,192,2000

HEC-2 Model Output of Idealized Composite Spillway

```
1*****************************************
* HEC-2 WATER SURFACE PROFILES          *
*                                       *
*                                       *
* Version   4.6.2;  May 1991            *
*                                       *
* RUN DATE   21JUN93    TIME   14:00:45 *
*****************************************
```

```
****************************************
* U.S. ARMY CORPS OF ENGINEERS         *
*                                      *
* HYDROLOGIC ENGINEERING CENTER        *
* 609 SECOND STREET, SUITE D           *
* DAVIS, CALIFORNIA 95616-4687         *
*        (916) 756-1104                *
****************************************
```

```
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

21JUN93 14:00:45 PAGE 1

THIS RUN EXECUTED 21JUN93 14:00:45

```
*************************************
HEC-2 WATER SURFACE PROFILES

Version   4.6.2;  May 1991
*************************************
```

```
T1      WHITE TANKS #4 F.R.S.  SPILLWAY HYDRAULIC ANALYSIS
T2      THE SPILLWAY IS MODELED AS NORMAL DEPTH OPEN CHANNEL
T3     THE SPILLWAY DIMENSIONS ARE     COMPOSITEE OF TWO SPILLWAYS
T4          BASED ON FIELD SURVEY OF JUNE 18, 1993

J1  ICHECK   INQ     NINV    IDIR    STRT    METRIC   HVINS    Q       WSEL     FQ

     0       2       0       0               0       0       0  1048.07      0

J2  NPROF    IPLOT   PRFVS   XSECV   XSECH   FN      ALLDC   IBW     CHNIM    ITRACE

     1       0       0       0       0       0       0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    55      56      26      10      57       6      20       5      58      67
    68      69       1       2       9       3      11      12      62

NC    .04     .04     .03     .1      .5
QT     15     500    1000    2000    3000    4000    5000    6000    7000    8000
QT   9000   10000   11000   12000   13000   14000
ET      0
X1   0.00       4    2000    2438       0       0       0       0       0       0
GR  1053.6    2000  1047.3    2078  1047.3    2360  1053.6    2438

X1    100       0                   100     100     100       0      .3

X1    200       0                   100     100     100       0      .3

X1    300       0                   100     100     100       0      .3

X1    400       0                   100     100     100       0      .3

X1    500       0                   100     100     100       0      .3

X1    600       0                   100     100     100       0      .3

X1    700       0                   100     100     100       0      .3
```

```
X1    750     0                    50     50     50     0     .15

X1    770     0                    20     20     20     0     .06

X1    780     0                    10     10     10     0     .03

X1    790     0                    10     10     10     0     .03

X1    800     0                    10     10     10     0     .03

X1    805     6     2000    2438     5      5      5     0
GR    1060    1999.9    1056.0    2000    1049.7    2078    1049.7    2360    1056.0    2438
GR    1060    2438.1

X1    810     0                     5      5      5     0     0

X1    820     0                    10     10     10     0     0

X1    840     0                    20     20     20     0     0

X1    940     0                   100    100    100   3.5    -.2

X1    1040    0                   100    100    100   1.2    -.2

X1    1140    0                   100    100    100   1.2    -.2

X1    1240    0                   100    100    100   1.2    -.2

X1    1340    0                   100    100    100   1.2    -.2

X1    1440    0                   100    100    100   1.2    -.2

X1    1540    0                   100    100    100   1.2    -.2

X1    1640    0                   100    100    100   1.2    -.2

X1    1740    0                   100    100    100   1.2    -.2
```



```
SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*PROF 1
0

CCHV=    .100 CEHV=    .500
*SECNO  .000
    .000     .77   1048.07     .00   1048.07   1048.15     .08     .00     .00   1053.60
   500.0      .0    500.0      .0      .0     224.4      .0      .0      .0   1053.60
     .00     .00     2.23     .00     .000     .030     .000    .000   1047.30   2068.47
  .002993     0.      0.      0.       0        0        0     .00    301.06   2369.53


*SECNO 100.000
  100.000     .77   1048.37     .00     .00   1048.45     .08     .30     .00   1053.90
   500.0      .0    500.0      .0      .0     224.2      .0      .5      .7   1053.90
     .01     .00     2.23     .00     .000     .030     .000    .000   1047.60   2068.48
  .003002    100.     100.    100.       0        0        0     .00    301.05   2369.52


*SECNO 200.000
  200.000     .77   1048.67     .00     .00   1048.75     .08     .30     .00   1054.20
   500.0      .0    500.0      .0      .0     224.2      .0     1.0     1.4   1054.20
     .02     .00     2.23     .00     .000     .030     .000    .000   1047.90   2068.48
  .003002    100.     100.    100.       0        0        0     .00    301.05   2369.52
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```
*SECNO 300.000
  300.000     .77  1048.97     .00     .00  1049.05     .08     .30     .00  1054.50
    500.0      .0    500.0      .0      .0    224.4      .0     1.5     2.1  1054.50
      .04     .00     2.23     .00    .000     .030    .000    .000 1048.20  2068.47
  .002993     100.     100.    100.       0        0       0     .00  301.06  2369.53


*SECNO 400.000
  400.000     .77  1049.27     .00     .00  1049.35     .08     .30     .00  1054.80
    500.0      .0    500.0      .0      .0    224.3      .0     2.1     2.8  1054.80
      .05     .00     2.23     .00    .000     .030    .000    .000 1048.50  2068.48
  .003001     100.     100.    100.       0        0       0     .00  301.05  2369.52


*SECNO 500.000
  500.000     .77  1049.57     .00     .00  1049.65     .08     .30     .00  1055.10
    500.0      .0    500.0      .0      .0    224.2      .0     2.6     3.5  1055.10
      .06     .00     2.23     .00    .000     .030    .000    .000 1048.80  2068.48
  .003006     100.     100.    100.       0        0       0     .00  301.04  2369.52


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  21JUN93      14:00:45                                                    PAGE    4


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 600.000
  600.000     .77  1049.87     .00     .00  1049.95     .08     .30     .00  1055.40
    500.0      .0    500.0      .0      .0    224.4      .0     3.1     4.1  1055.40
      .07     .00     2.23     .00    .000     .030    .000    .000 1049.10  2068.47
  .002994     100.     100.    100.       0        0       0     .00  301.06  2369.53


*SECNO 700.000
  700.000     .77  1050.17     .00     .00  1050.25     .08     .30     .00  1055.70
    500.0      .0    500.0      .0      .0    224.4      .0     3.6     4.8  1055.70
      .09     .00     2.23     .00    .000     .030    .000    .000 1049.40  2068.47
  .002996     100.     100.    100.       0        0       0     .00  301.06  2369.53


*SECNO 750.000
  750.000     .77  1050.32     .00     .00  1050.40     .08     .15     .00  1055.85
    500.0      .0    500.0      .0      .0    224.2      .0     3.9     5.2  1055.85
      .09     .00     2.23     .00    .000     .030    .000    .000 1049.55  2068.48
  .003006      50.      50.     50.       0        0       0     .00  301.04  2369.52


*SECNO 770.000
  770.000     .77  1050.38     .00     .00  1050.46     .08     .06     .00  1055.91
    500.0      .0    500.0      .0      .0    224.2      .0     4.0     5.3  1055.91
      .10     .00     2.23     .00    .000     .030    .000    .000 1049.61  2068.48
  .003002      20.      20.     20.       0        0       0     .00  301.05  2369.52


*SECNO 780.000
  780.000     .77  1050.41     .00     .00  1050.49     .08     .03     .00  1055.94
    500.0      .0    500.0      .0      .0    224.3      .0     4.0     5.4  1055.94
      .10     .00     2.23     .00    .000     .030    .000    .000 1049.64  2068.48
  .003001      10.      10.     10.       0        0       0     .00  301.05  2369.52


*SECNO 790.000
  790.000     .77  1050.44     .00     .00  1050.52     .08     .03     .00  1055.97
    500.0      .0    500.0      .0      .0    224.3      .0     4.1     5.5  1055.97
      .10     .00     2.23     .00    .000     .030    .000    .000 1049.67  2068.48
  .003001      10.      10.     10.       0        0       0     .00  301.05  2369.52


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 SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
 Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
 TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
 SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 800.000
 800.000    .77   1050.47    .00      .00   1050.55    .08      .03      .00   1056.00
   500.0    .0    500.0      .0       .0     224.3     .0       4.1      5.5   1056.00
     .10    .00   2.23       .00      .000   .030      .000     .000     1049.70  2068.48
 .003001    10.   10.        10.      0      0         0        .00      301.05   2369.52


*SECNO 805.000
 805.000    .79   1050.49    .00      .00   1050.56    .07      .01      .00   1056.00
   500.0    .0    500.0      .0       .0     229.0     .0       4.1      5.6   1056.00
     .10    .00   2.18       .00      .000   .030      .000     .000     1049.70  2068.28
 .002805    5.    5.         5.       0      0         0        .00      301.44   2369.72


*SECNO 810.000
 810.000    .80   1050.50    .00      .00   1050.58    .07      .01      .00   1056.00
   500.0    .0    500.0      .0       .0     234.2     .0       4.2      5.6   1056.00
     .10    .00   2.13       .00      .000   .030      .000     .000     1049.70  2068.07
 .002607    5.    5.         5.       0      0         0        .00      301.86   2369.93


*SECNO 820.000
 820.000    .83   1050.53    .00      .00   1050.60    .07      .02      .00   1056.00
   500.0    .0    500.0      .0       .0     243.2     .0       4.2      5.7   1056.00
     .10    .00   2.06       .00      .000   .030      .000     .000     1049.70  2067.70
 .002307    10.   10.        10.      0      0         0        .00      302.60   2370.30


*SECNO 840.000
 840.000    .89   1050.59    .00      .00   1050.64    .06      .04      .00   1056.00
   500.0    .0    500.0      .0       .0     259.0     .0       4.3      5.8   1056.00
     .11    .00   1.93       .00      .000   .030      .000     .000     1049.70  2067.05
 .001881    20.   20.        20.      0      0         0        .00      303.89   2370.95


*SECNO 940.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  5.55

 940.000    1.16  1050.66    .00      .00   1050.67    .00      .02      .01   1055.80
   500.0    .0    500.0      .0       .0     1206.3    .0       6.0      7.4   1055.80
     .17    .00   .41        .00      .000   .030      .000     .000     1049.50  2222.86
 .000061    100.  100.       100.     2      0         0        .00      1087.78  3310.64
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1


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 SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
 Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
 TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
 SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 1040.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.58

1040.000    1.37  1050.67    .00      .00   1050.67    .00      .00      .00   1055.60
   500.0    .0    500.0      .0       .0     1718.1    .0       9.4      10.2  1055.60
     .27    .00   .29        .00      .000   .030      .000     .000     1049.30  2256.76
 .000024    100.  100.       100.     2      0         0        .00      1326.71  3583.48


*SECNO 1140.000
```

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.52

1140.000	1.57	1050.67	.00	.00	1050.67	.00	.00	.00	1055.40	
500.0	.0	500.0	.0	.0	2389.5	.0	14.1	13.6	1055.40	
.40	.00	.21	.00	.000	.030	.000	.000	1049.10	2295.39	
.000011	100.	100.	100.	0	0	0	.00	1617.54	3912.94	

*SECNO 1240.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.47

1240.000	1.77	1050.67	.00	.00	1050.67	.00	.00	.00	1055.20	
500.0	.0	500.0	.0	.0	3257.8	.0	20.6	17.7	1055.20	
.58	.00	.15	.00	.000	.030	.000	.000	1048.90	2339.55	
.000005	100.	100.	100.	0	0	0	.00	1970.94	4310.49	

*SECNO 1340.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.44

1340.000	1.97	1050.67	.00	.00	1050.67	.00	.00	.00	1055.00	
500.0	.0	500.0	.0	.0	4386.1	.0	29.4	22.7	1055.00	
.83	.00	.11	.00	.000	.030	.000	.000	1048.70	2389.50	
.000002	100.	100.	100.	0	0	0	.00	2401.09	4790.58	

*SECNO 1440.000

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.41

1440.000	2.17	1050.67	.00	.00	1050.67	.00	.00	.00	1054.80	
500.0	.0	500.0	.0	.0	5844.1	.0	41.1	28.8	1054.80	
1.15	.00	.09	.00	.000	.030	.000	.000	1048.50	2445.84	
.000001	100.	100.	100.	0	0	0	.00	2924.45	5370.29	

*SECNO 1540.000

1540.000	2.37	1050.67	.00	.00	1050.67	.00	.00	.00	1054.60	
500.0	.0	500.0	.0	.0	7719.8	.0	56.7	36.2	1054.60	
1.58	.00	.06	.00	.000	.030	.000	.000	1048.30	2509.16	
.000001	100.	100.	100.	0	0	0	.00	3561.08	6070.24	

*SECNO 1640.000

1640.000	2.57	1050.67	.00	.00	1050.67	.00	.00	.00	1054.40	
500.0	.0	500.0	.0	.0	10125.0	.0	77.1	45.3	1054.40	
2.14	.00	.05	.00	.000	.030	.000	.000	1048.10	2579.95	
.000000	100.	100.	100.	0	0	0	.00	4335.43	6915.38	

*SECNO 1740.000

1740.000	2.77	1050.67	.00	.00	1050.67	.00	.00	.00	1054.20	
500.0	.0	500.0	.0	.0	13197.6	.0	103.9	56.3	1054.20	
2.87	.00	.04	.00	.000	.030	.000	.000	1047.90	2658.70	
.000000	100.	100.	100.	0	0	0	.00	5277.03	7935.73	

1

PROFILE FOR STREAM THE SPILLWAY DIMENSIONS

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT

BANK,M-LOWER END STA

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ELEVATION 1047.   1049.   1051.   1053.   1055.   1057.   1059.   1061.   1063.   1065.
  SECNO  CUMDIS

   .00    0. I  E  .      .      .L     .      .      .      .      .      .      .
         10. I  E  .      .      .L     .      .      .      .      .      .      .
         20. I  WE .      .      .L     .      .      .      .      .      .      .
         30. I  WE .      .      .L     .      .      .      .      .      .      .
         40. CI WE .      .      .L     .      .      .      .      .      .      .
         50. CI E  .      .      .L     .      .      .      .      .      .      .
         60. CI E  .      .      .L     .      .      .      .      .      .      .
         70. CI E  .      .      .L     .      .      .      .      .      .      .
         80. CI E  .      .      .L     .      .      .      .      .      .      .
         90. CI WE .      .      .L     .      .      .      .      .      .      .
  100.00 100. CI WE .      .      .L     .      .      .      .      .      .      .
        110. CI WE .      .      .L     .      .      .      .      .      .      .
        120. CI E  .      .      .L     .      .      .      .      .      .      .
        130. CI E  .      .      .L     .      .      .      .      .      .      .
        140. CI E  .      .      .L     .      .      .      .      .      .      .
        150. CI E  .      .      .L     .      .      .      .      .      .      .
        160. CI WE .      .      .L     .      .      .      .      .      .      .
        170. C I WE .     .      .L     .      .      .      .      .      .      .
        180. C I E .      .      .L     .      .      .      .      .      .      .
        190. C I E .      .      .L     .      .      .      .      .      .      .
  200.00 200. C I E .     .      .L     .      .      .      .      .      .      .
        210. C I E .      .      .L     .      .      .      .      .      .      .
        220. C I WE.      .      .L     .      .      .      .      .      .      .
        230. C I WE.      .      .L     .      .      .      .      .      .      .
        240. C I WE.      .      .L     .      .      .      .      .      .      .
        250. C I E.       .      .L     .      .      .      .      .      .      .
        260. C I E.       .      .L     .      .      .      .      .      .      .
        270. C I E.       .      .L     .      .      .      .      .      .      .
        280. C I E.       .      .L     .      .      .      .      .      .      .
        290. C I WE.      .      .L     .      .      .      .      .      .      .
  300.00 300. C I WE.     .      .L     .      .      .      .      .      .      .
        310. C I WE.      .      .L     .      .      .      .      .      .      .
        320. C I E.       .      .L     .      .      .      .      .      .      .
        330. C I E.       .      .L     .      .      .      .      .      .      .
        340. C I E.       .      .L     .      .      .      .      .      .      .
        350. C I E.       .      .L     .      .      .      .      .      .      .
        360. C I WE       .      .L     .      .      .      .      .      .      .
        370. C I WE       .      .L     .      .      .      .      .      .      .
        380. C I E        .      .L     .      .      .      .      .      .      .
        390. C I E        .      .L     .      .      .      .      .      .      .
  400.00 400. C I E       .      .L     .      .      .      .      .      .      .
        410. C I E        .      .L     .      .      .      .      .      .      .
        420. C I WE       .      .L     .      .      .      .      .      .      .
        430. C I WE       .      .L     .      .      .      .      .      .      .
        440. C I WE       .      .L     .      .      .      .      .      .      .
        450. C I .E       .      .L     .      .      .      .      .      .      .
        460. C I .E       .      .L     .      .      .      .      .      .      .
        470. C I .E       .      .L     .      .      .      .      .      .      .
        480. C I .E       .      .L     .      .      .      .      .      .      .
        490. C I .WE      .      .L     .      .      .      .      .      .      .
  500.00 500. C I .WE     .      .L     .      .      .      .      .      .      .
        510. C I .WE      .      .L     .      .      .      .      .      .      .
        520. C I . E      .      .L     .      .      .      .      .      .      .
        530. C I . E      .      .L     .      .      .      .      .      .      .
        540. C I . E      .      .L     .      .      .      .      .      .      .
        550. C I . E      .      .L     .      .      .      .      .      .      .
        560. C I . WE     .      .L     .      .      .      .      .      .      .
        570. C I. WE      .      .L     .      .      .      .      .      .      .
        580. C I. E       .      .L     .      .      .      .      .      .      .
        590. C I. E       .      .L     .      .      .      .      .      .      .
  600.00 600. C I. E      .      .L     .      .      .      .      .      .      .
        610. C I. E       .      .L     .      .      .      .      .      .      .
        620. C I. WE      .      .L     .      .      .      .      .      .      .
        630. C I. WE      .      .L     .      .      .      .      .      .      .
        640. C I WE       .      .L     .      .      .      .      .      .      .
        650. C I E        .      .L     .      .      .      .      .      .      .
        660. C I E        .      .L     .      .      .      .      .      .      .
        670. C I E        .      .L     .      .      .      .      .      .      .
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      680. C     I E  .    .    .L   .    .    .    .    .    .
      690. C     I WE .    .    .L   .    .    .    .    .    .
700.00 700. C     I WE .    .    .L   .    .    .    .    .    .
      710. C    .I WE .    .    .L   .    .    .    .    .    .
      720. C    .I E  .    .    .L   .    .    .    .    .    .
      730. C    .I E  .    .    .L   .    .    .    .    .    .
      740. C    .I E  .    .    .L   .    .    .    .    .    .
750.00 750. C    .I E  .    .    .L   .    .    .    .    .    .
      760. C    .I WE .    .    .L   .    .    .    .    .    .
770.00 770. C    .I WE .    .    .L   .    .    .    .    .    .
780.00 780. C    .I E  .    .    .L   .    .    .    .    .    .
790.00 790. C    .I E  .    .    .L   .    .    .    .    .    .
800.00 800. C    .I E  .    .    .L   .    .    .    .    .    .
805.00 810. C    .I E  .    .    .L   .    .M   .    .    .    .
810.00 820. C    .I E  .    .    .L   .    .M   .    .    .    .
820.00 830. C    .I E  .    .    .L   .    .M   .    .    .    .
840.00 840. C    .I WE .    .    .L   .    .M   .    .    .    .
      850. C    .I WE .    .    .L   .    .M   .    .    .    .
      860. C    .I WE .    .    .L   .    .M   .    .    .    .
      870. C    .I E  .    .    .L   .    .M   .    .    .    .
      880. C    .I E  .    .    .L   .    .M   .    .    .    .
      890. C    .I E  .    .    .L   .    .M   .    .    .    .
      900. C    .I E  .    .    .L   .    .M   .    .    .    .
      910. C    .I E  .    .    .L   .    .M   .    .    .    .
      920. C    .I E  .    .    .L   .    .M   .    .    .    .
      930. C    .I E  .    .    .L   .    .M   .    .    .    .
940.00 940. C    .I E  .    .    .L   .    .M   .    .    .    .
      950. C    .I E  .    .    .L   .    .M   .    .    .    .
      960. C    .I E  .    .    .L   .    .M   .    .    .    .
      970. C    .I E  .    .    .L   .    .M   .    .    .    .
      980. C    .I E  .    .    .L   .    .M   .    .    .    .
      990. C     I E  .    .    .L   .    .M   .    .    .    .
     1000. C     I E  .    .    .L   .    .M   .    .    .    .
     1010. C     I E  .    .    .L   .    .M   .    .    .    .
     1020. C     I E  .    .    .L   .    .M   .    .    .    .
     1030. C     I E  .    .    .L   .    .M   .    .    .    .
1040.00 1040. C     I E  .    .    .L   .    .M   .    .    .    .
     1050. C     I E  .    .    .L   .    .M   .    .    .    .
     1060. C     I E  .    .    .L   .    .M   .    .    .    .
     1070. C     I E  .    .    .L   .    .M   .    .    .    .
     1080. C     I E  .    .    .L   .    .M   .    .    .    .
     1090. C    I. E  .    .    .L   .    .M   .    .    .    .
     1100. C    I. E  .    .    .L   .    .M   .    .    .    .
     1110. C    I. E  .    .    .L   .    .M   .    .    .    .
     1120. C    I. E  .    .    .L   .    .M   .    .    .    .
     1130. C    I. E  .    .    .L   .    .M   .    .    .    .
1140.00 1140. C    I. E  .    .    L    .    M    .    .    .    .
     1150. C    I. E  .    .    L    .    M    .    .    .    .
     1160. C    I. E  .    .    L    .    M    .    .    .    .
     1170. C    I. E  .    .    L    .    M    .    .    .    .
     1180. C    I. E  .    .    L    .    M    .    .    .    .
     1190. C    I. E  .    .    L    .    M    .    .    .    .
     1200. C    I. E  .    .    L    .    M    .    .    .    .
     1210. C    I. E  .    .    L    .    M    .    .    .    .
     1220. C    I. E  .    .    L    .    M    .    .    .    .
     1230. C    I. E  .    .    L    .    M    .    .    .    .
1240.00 1240. C    I. E  .    .    L.   .    M.   .    .    .    .
     1250. C    I. E  .    .    L.   .    M.   .    .    .    .
     1260. C    I. E  .    .    L.   .    M.   .    .    .    .
     1270. C    I. E  .    .    L.   .    M.   .    .    .    .
     1280. C    I. E  .    .    L.   .    M.   .    .    .    .
     1290. C    I. E  .    .    L.   .    M.   .    .    .    .
     1300. C    I. E  .    .    L.   .    M.   .    .    .    .
     1310. C    I. E  .    .    L.   .    M.   .    .    .    .
     1320. C    I. E  .    .    L.   .    M.   .    .    .    .
     1330. C    I. E  .    .    L.   .    M.   .    .    .    .
1340.00 1340. C    I. E  .    .    L.   .    M.   .    .    .    .
     1350. C    I. E  .    .    L.   .    M.   .    .    .    .
     1360. C    I. E  .    .    L.   .    M.   .    .    .    .
     1370. C    I. E  .    .    L.   .    M.   .    .    .    .
     1380. C    I. E  .    .    L.   .    M.   .    .    .    .
     1390. C    I. E  .    .    L.   .    M.   .    .    .    .
     1400. C    I. E  .    .    L.   .    M.   .    .    .    .
     1410. C    I. E  .    .    L.   .    M.   .    .    .    .
     1420. C    I. E  .    .    L.   .    M.   .    .    .    .
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      1430. C   I .   E .     .   L.     .   M.     .     .     .     .
  1440.00 1440. C   I .   E .     .   L.     .   M.     .     .     .     .
      1450. C   I .   E .     .   L .     .   M .     .     .     .     .
      1460. C   I .   E .     .   L .     .   M .     .     .     .     .
      1470. C   I .   E .     .   L .     .   M .     .     .     .     .
      1480. C   I .   E .     .   L .     .   M .     .     .     .     .
      1490. C   I .   E .     .   L .     .   M .     .     .     .     .
      1500. C   I .   E .     .   L .     .   M .     .     .     .     .
      1510. C   I .   E .     .   L .     .   M .     .     .     .     .
      1520. C   I .   E .     .   L .     .   M .     .     .     .     .
      1530. C   I .   E .     .   L .     .   M .     .     .     .     .
  1540.00 1540. C   I .   E .     .   L .     .   M .     .     .     .     .
      1550. C   I .   E .     .   L .     .   M .     .     .     .     .
      1560. C   I .   E .     .   L .     .   M .     .     .     .     .
      1570. C   I .   E .     .   L .     .   M .     .     .     .     .
      1580. C   I .   E .     .   L .     .   M .     .     .     .     .
      1590. C   I .   E .     .   L .     .   M .     .     .     .     .
      1600. C   I .   E .     .   L .     .   M .     .     .     .     .
      1610. C   I .   E .     .   L .     .   M .     .     .     .     .
      1620. C   I .   E .     .   L .     .   M .     .     .     .     .
      1630. C   I .   E .     .   L .     .   M .     .     .     .     .
  1640.00 1640. C   I .   E .     .   L .     .   M .     .     .     .     .
      1650. C   I .   E .     .   L .     .   M .     .     .     .     .
      1660. C   I .   E .     .   L .     .   M .     .     .     .     .
      1670. C   I .   E .     .   L .     .   M .     .     .     .     .
      1680. C   I .   E .     .   L .     .   M .     .     .     .     .
      1690. C   I .   E .     .   L .     .   M .     .     .     .     .
      1700. C   I .   E .     .   L .     .   M .     .     .     .     .
      1710. C   I .   E .     .   L .     .   M .     .     .     .     .
      1720. C   I .   E .     .   L .     .   M .     .     .     .     .
      1730. C   I .   E .     .   L .     .   M .     .     .     .     .
  1740.00 1740. C   I .   E .     .   L .     .   M .     .     .     .     .
1
  21JUN93      14:00:45                                                    PAGE   8


T1      Q3 = 1000 CFS, STARTING WSE = 1048.46

J1  ICHECK   INQ     NINV    IDIR    STRT    METRIC   HVINS    Q       WSEL     FQ

     0       3       0       0       0       0        0     1048.46    0

J2  NPROF    IPLOT   PRFVS   XSECV   XSECH   FN       ALLDC    IBW     CHNIM    ITRACE

     2       0       0       0       0       0        0

1
  21JUN93      14:00:45                                                    PAGE   9


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*PROF 2
0

CCHV=     .100 CEHV=     .500
*SECNO  .000
     .000     1.16   1048.46     .00   1048.46   1048.59     .13     .00     .00   1053.60
   1000.0      .0   1000.0      .0      .0     343.8      .0      .0      .0   1053.60
     .00      .00     2.91     .00     .000     .030     .000    .000   1047.30   2063.64
  .003016      0.      0.       0.       0       0        0     .00    310.72   2374.36


*SECNO 100.000
   100.000     1.16   1048.76     .00     .00   1048.89     .13     .30     .00   1053.90
   1000.0      .0   1000.0      .0      .0     344.2      .0      .8      .7   1053.90
     .01      .00     2.91     .00     .000     .030     .000    .000   1047.60   2063.62
  .003003     100.    100.     100.      0       0        0     .00    310.76   2374.38


*SECNO 200.000
```

```
 200.000    1.16  1049.06    .00    .00  1049.19    .13    .30    .00  1054.20
  1000.0     .0   1000.0     .0     .0    344.4     .0    1.6    1.4  1054.20
     .02    .00     2.90    .00   .000     .030   .000   .000  1047.90  2063.61
 .002999    100.     100.    100.      0       0      0    .00   310.77  2374.39


*SECNO 300.000
 300.000    1.16  1049.36    .00    .00  1049.49    .13    .30    .00  1054.50
  1000.0     .0   1000.0     .0     .0    344.1     .0    2.4    2.1  1054.50
     .03    .00     2.91    .00   .000     .030   .000   .000  1048.20  2063.62
 .003005    100.     100.    100.      0       0      0    .00   310.75  2374.38


*SECNO 400.000
 400.000    1.16  1049.66    .00    .00  1049.79    .13    .30    .00  1054.80
  1000.0     .0   1000.0     .0     .0    344.2     .0    3.2    2.9  1054.80
     .04    .00     2.91    .00   .000     .030   .000   .000  1048.50  2063.62
 .003003    100.     100.    100.      0       0      0    .00   310.76  2374.38


*SECNO 500.000
 500.000    1.16  1049.96    .00    .00  1050.09    .13    .30    .00  1055.10
  1000.0     .0   1000.0     .0     .0    344.4     .0    4.0    3.6  1055.10
     .05    .00     2.90    .00   .000     .030   .000   .000  1048.80  2063.61
 .002998    100.     100.    100.      0       0      0    .00   310.77  2374.39


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   SECNO    DEPTH    CWSEL    CRIWS    WSELK     EG       HV       HL      OLOSS    L-BANK ELEV
   Q       QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 600.000
 600.000    1.16  1050.26    .00    .00  1050.39    .13    .30    .00  1055.40
  1000.0     .0   1000.0     .0     .0    344.4     .0    4.7    4.3  1055.40
     .06    .00     2.90    .00   .000     .030   .000   .000  1049.10  2063.61
 .002999    100.     100.    100.      0       0      0    .00   310.77  2374.39


*SECNO 700.000
 700.000    1.16  1050.56    .00    .00  1050.69    .13    .30    .00  1055.70
  1000.0     .0   1000.0     .0     .0    344.2     .0    5.5    5.0  1055.70
     .07    .00     2.91    .00   .000     .030   .000   .000  1049.40  2063.62
 .003004    100.     100.    100.      0       0      0    .00   310.76  2374.38


*SECNO 750.000
 750.000    1.16  1050.71    .00    .00  1050.84    .13    .15    .00  1055.85
  1000.0     .0   1000.0     .0     .0    344.2     .0    5.9    5.4  1055.85
     .07    .00     2.90    .00   .000     .030   .000   .000  1049.55  2063.62
 .003002     50.      50.     50.      0       0      0    .00   310.76  2374.38


*SECNO 770.000
 770.000    1.16  1050.77    .00    .00  1050.90    .13    .06    .00  1055.91
  1000.0     .0   1000.0     .0     .0    344.3     .0    6.1    5.5  1055.91
     .07    .00     2.90    .00   .000     .030   .000   .000  1049.61  2063.62
 .003000     20.      20.     20.      0       0      0    .00   310.77  2374.38


*SECNO 780.000
 780.000    1.16  1050.80    .00    .00  1050.93    .13    .03    .00  1055.94
  1000.0     .0   1000.0     .0     .0    344.3     .0    6.2    5.6  1055.94
     .07    .00     2.90    .00   .000     .030   .000   .000  1049.64  2063.62
 .003000     10.      10.     10.      0       0      0    .00   310.77  2374.38


*SECNO 790.000
 790.000    1.16  1050.83    .00    .00  1050.96    .13    .03    .00  1055.97
  1000.0     .0   1000.0     .0     .0    344.3     .0    6.2    5.6  1055.97
```

```
   .08      .00     2.90      .00     .000     .030     .000     .000  1049.67  2063.62
 .003000     10.      10.      10.       0        0        0      .00   310.77  2374.38
```

1


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 SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
 Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
 TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
 SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 800.000
 800.000    1.16  1050.86      .00      .00  1050.99      .13      .03      .00  1056.00
  1000.0      .0   1000.0       .0       .0    344.3       .0      6.3      5.7  1056.00
     .08     .00     2.90      .00     .000     .030     .000     .000  1049.70  2063.62
 .003000     10.      10.      10.       0        0        0      .00   310.77  2374.38

*SECNO 805.000
 805.000    1.18  1050.88      .00      .00  1051.01      .13      .01      .00  1056.00
  1000.0      .0   1000.0       .0       .0    349.2       .0      6.4      5.7  1056.00
     .08     .00     2.86      .00     .000     .030     .000     .000  1049.70  2063.42
 .002868      5.       5.       5.       0        0        0      .00   311.15  2374.58

*SECNO 810.000
 810.000    1.20  1050.90      .00      .00  1051.02      .12      .01      .00  1056.00
  1000.0      .0   1000.0       .0       .0    354.9       .0      6.4      5.8  1056.00
     .08     .00     2.82      .00     .000     .030     .000     .000  1049.70  2063.20
 .002722      5.       5.       5.       0        0        0      .00   311.61  2374.80

*SECNO 820.000
 820.000    1.23  1050.93      .00      .00  1051.05      .12      .03      .00  1056.00
  1000.0      .0   1000.0       .0       .0    364.8       .0      6.5      5.9  1056.00
     .08     .00     2.74      .00     .000     .030     .000     .000  1049.70  2062.80
 .002492     10.      10.      10.       0        0        0      .00   312.39  2375.20

*SECNO 840.000
 840.000    1.29  1050.99      .00      .00  1051.10      .11      .05      .00  1056.00
  1000.0      .0   1000.0       .0       .0    382.8       .0      6.7      6.0  1056.00
     .08     .00     2.61      .00     .000     .030     .000     .000  1049.70  2062.09
 .002135     20.      20.      20.       0        0        0      .00   313.82  2375.91

*SECNO 940.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  5.20

 940.000    1.62  1051.12      .00      .00  1051.13      .01      .02      .01  1055.80
  1000.0      .0   1000.0       .0       .0   1716.4       .0      9.1      7.6  1055.80
     .13     .00      .58      .00     .000     .030     .000     .000  1049.50  2202.91
 .000079    100.     100.     100.       2        0        0      .00  1127.68  3330.59
```

1


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 SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
 Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
 TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
 SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 1040.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.47

1040.000    1.83  1051.13      .00      .00  1051.13      .00      .01      .00  1055.60
  1000.0      .0   1000.0       .0       .0   2343.5       .0     13.7     10.5  1055.60
```

```
   .19      .00      .43      .00      .000      .030      .000      .000  1049.30  2232.69
 .000036    100.     100.     100.        2         0         0       .00  1374.87  3607.55
```

*SECNO 1140.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.44

```
 1140.000     2.04  1051.14      .00       .00  1051.14      .00      .00      .00  1055.40
   1000.0       .0  1000.0       .0        .0   3154.3       .0     20.0     14.0  1055.40
      .28      .00      .32      .00      .000      .030      .000      .000  1049.10  2266.41
  .000018     100.     100.     100.         0         0         0       .00  1675.51  3941.92
```

*SECNO 1240.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.41

```
 1240.000     2.24  1051.14      .00       .00  1051.14      .00      .00      .00  1055.20
   1000.0       .0  1000.0       .0        .0   4191.6       .0     28.5     18.3  1055.20
      .40      .00      .24      .00      .000      .030      .000      .000  1048.90  2304.68
  .000009     100.     100.     100.         0         0         0       .00  2040.67  4345.35
```

*SECNO 1340.000

```
 1340.000     2.44  1051.14      .00       .00  1051.14      .00      .00      .00  1055.00
   1000.0       .0  1000.0       .0        .0   5525.0       .0     39.6     23.5  1055.00
      .55      .00      .18      .00      .000      .030      .000      .000  1048.70  2347.61
  .000005     100.     100.     100.         0         0         0       .00  2484.86  4832.47
```

*SECNO 1440.000

```
 1440.000     2.64  1051.14      .00       .00  1051.14      .00      .00      .00  1054.80
   1000.0       .0  1000.0       .0        .0   7231.6       .0     54.3     29.8  1054.80
      .75      .00      .14      .00      .000      .030      .000      .000  1048.50  2395.55
  .000002     100.     100.     100.         0         0         0       .00  3025.04  5420.59
```

1


```
SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST
```

*SECNO 1540.000

```
 1540.000     2.84  1051.14      .00       .00  1051.14      .00      .00      .00  1054.60
   1000.0       .0  1000.0       .0        .0   9409.9       .0     73.4     37.5  1054.60
     1.01      .00      .11      .00      .000      .030      .000      .000  1048.30  2448.78
  .000001     100.     100.     100.         0         0         0       .00  3681.85  6130.63
```

*SECNO 1640.000

```
 1640.000     3.04  1051.14      .00       .00  1051.14      .00      .00      .00  1054.40
   1000.0       .0  1000.0       .0        .0  12182.6       .0     98.2     46.9  1054.40
     1.35      .00      .08      .00      .000      .030      .000      .000  1048.10  2507.47
  .000001     100.     100.     100.         0         0         0       .00  4480.39  6987.86
```

*SECNO 1740.000

```
 1740.000     3.24  1051.14      .00       .00  1051.14      .00      .00      .00  1054.20
   1000.0       .0  1000.0       .0        .0  15701.5       .0    130.2     58.3  1054.20
     1.79      .00      .06      .00      .000      .030      .000      .000  1047.90  2571.73
  .000000     100.     100.     100.         0         0         0       .00  5450.98  8022.70
```

1

PROFILE FOR STREAM THE SPILLWAY DIMENSIONS

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT

BANK,M-LOWER END STA

```
ELEVATION 1047.   1049.   1051.   1053.   1055.   1057.   1059.   1061.   1063.   1065.
  SECNO  CUMDIS

   .00    0. I   E .     .     .L    .     .     .     .     .     .     .
         10. I   WE .     .     .L    .     .     .     .     .     .     .
         20. I   WE .     .     .L    .     .     .     .     .     .     .
         30. I   WE .     .     .L    .     .     .     .     .     .     .
         40. CI  WE .     .     .L    .     .     .     .     .     .     .
         50. CI  E .      .     .L    .     .     .     .     .     .     .
         60. CI  E .      .     .L    .     .     .     .     .     .     .
         70. CI  E .      .     .L    .     .     .     .     .     .     .
         80. CI  WE .     .     .L    .     .     .     .     .     .     .
         90. CI  WE .     .     .L    .     .     .     .     .     .     .
  100.00 100. CI  WE .    .     .L    .     .     .     .     .     .     .
        110. C I  WE .    .     .L    .     .     .     .     .     .     .
        120. C I  E .     .     .L    .     .     .     .     .     .     .
        130. C I  E .     .     .L    .     .     .     .     .     .     .
        140. C I  WE.     .     .L    .     .     .     .     .     .     .
        150. C I  WE.     .     .L    .     .     .     .     .     .     .
        160. C I  WE.     .     .L    .     .     .     .     .     .     .
        170. C I  WE.     .     .L    .     .     .     .     .     .     .
        180. C I  WE.     .     .L    .     .     .     .     .     .     .
        190. C I  E.      .     .L    .     .     .     .     .     .     .
  200.00 200. C I  E.     .     .L    .     .     .     .     .     .     .
        210. C I  WE      .     .L    .     .     .     .     .     .     .
        220. C I  WE      .     .L    .     .     .     .     .     .     .
        230. C I  WE      .     .L    .     .     .     .     .     .     .
        240. C I  WE      .     .L    .     .     .     .     .     .     .
        250. C I  E       .     .L    .     .     .     .     .     .     .
        260. C I  E       .     .L    .     .     .     .     .     .     .
        270. C I  E       .     .L    .     .     .     .     .     .     .
        280. C I  WE      .     .L    .     .     .     .     .     .     .
        290. C I  WE      .     .L    .     .     .     .     .     .     .
  300.00 300. C I  WE     .     .L    .     .     .     .     .     .     .
        310. C I  WE      .     .L    .     .     .     .     .     .     .
        320. C I  .E      .     .L    .     .     .     .     .     .     .
        330. C I  .E      .     .L    .     .     .     .     .     .     .
        340. C I  .WE     .     .L    .     .     .     .     .     .     .
        350. C I  .WE     .     .L    .     .     .     .     .     .     .
        360. C I  .WE     .     .L    .     .     .     .     .     .     .
        370. C I  .WE     .     .L    .     .     .     .     .     .     .
        380. C I  .WE     .     .L    .     .     .     .     .     .     .
        390. C I  .E      .     .L    .     .     .     .     .     .     .
  400.00 400. C I  .E     .     .L    .     .     .     .     .     .     .
        410. C I  .WE     .     .L    .     .     .     .     .     .     .
        420. C I  .WE     .     .L    .     .     .     .     .     .     .
        430. C I  .WE     .     .L    .     .     .     .     .     .     .
        440. C I  .WE     .     .L    .     .     .     .     .     .     .
        450. C I  .E      .     .L    .     .     .     .     .     .     .
        460. C I  .E      .     .L    .     .     .     .     .     .     .
        470. C I  .E      .     .L    .     .     .     .     .     .     .
        480. C I  .WE     .     .L    .     .     .     .     .     .     .
        490. C I  .WE     .     .L    .     .     .     .     .     .     .
  500.00 500. C I  .WE    .     .L    .     .     .     .     .     .     .
        510. C I  .WE     .     .L    .     .     .     .     .     .     .
        520. C I  .E      .     .L    .     .     .     .     .     .     .
        530. C I  .E      .     .L    .     .     .     .     .     .     .
        540. C I  .WE     .     .L    .     .     .     .     .     .     .
        550. C I  .WE     .     .L    .     .     .     .     .     .     .
        560. C I  .WE     .     .L    .     .     .     .     .     .     .
        570. C I  .WE     .     .L    .     .     .     .     .     .     .
        580. C I  .WE     .     .L    .     .     .     .     .     .     .
        590. C I  .E      .     .L    .     .     .     .     .     .     .
  600.00 600. C I  .E     .     .L    .     .     .     .     .     .     .
        610. C I  .WE     .     .L    .     .     .     .     .     .     .
        620. C I  .WE     .     .L    .     .     .     .     .     .     .
        630. C I  .WE     .     .L    .     .     .     .     .     .     .
        640. C I  .WE     .     .L    .     .     .     .     .     .     .
        650. C I  .E      .     .L    .     .     .     .     .     .     .
        660. C I  .E      .     .L    .     .     .     .     .     .     .
        670. C I  .E      .     .L    .     .     .     .     .     .     .
```

	680.	C	I	WE	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
	690.	C	I	WE	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
700.00	700.	C	I	WE	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
	710.	C	.I	WE	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
	720.	C	.I	E	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
	730.	C	.I	E	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
	740.	C	.I	WE	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
750.00	750.	C	.I	WE	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
	760.	C	.I	WE	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
770.00	770.	C	.I	WE	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
780.00	780.	C	.I	E	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
790.00	790.	C	.I	E	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
800.00	800.	C	.I	E	.	.	.	L	.	.	.	.	.	.	.	.	.	.	.
805.00	810.	C	.I	WE	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
810.00	820.	C	.I	WE	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
820.00	830.	C	.I	WE	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
840.00	840.	C	.I	WE	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	850.	C	.I	WE	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	860.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	870.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	880.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	890.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	900.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	910.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	920.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	930.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
940.00	940.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	950.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	960.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	970.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	980.	C	.I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	990.	C	I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	1000.	C	I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	1010.	C	I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	1020.	C	I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
	1030.	C	I	E	.	.	.	L	.	.	.	M	.	.	.	.	.	.	.
1040.00	1040.	C	I	E	.	.	.L	.	.	.M	.	.	.	.	.	.	.	.	.
	1050.	C	I	E	.	.	.L	.	.	.M	.	.	.	.	.	.	.	.	.
	1060.	C	I	E	.	.	.L	.	.	.M	.	.	.	.	.	.	.	.	.
	1070.	C	I	E	.	.	.L	.	.	.M	.	.	.	.	.	.	.	.	.
	1080.	C	I	E	.	.	.L	.	.	.M	.	.	.	.	.	.	.	.	.
	1090.	C	I.	E	.	.	.L	.	.	.M	.	.	.	.	.	.	.	.	.
	1100.	C	I.	E	.	.	.L	.	.	.M	.	.	.	.	.	.	.	.	.
	1110.	C	I.	E	.	.	.L	.	.	.M	.	.	.	.	.	.	.	.	.
	1120.	C	I.	E	.	.	.L	.	.	.M	.	.	.	.	.	.	.	.	.
	1130.	C	I.	E	.	.	.L	.	.	.M	.	.	.	.	.	.	.	.	.
1140.00	1140.	C	I.	E	.	.	L	.	.	M	.	.	.	.	.	.	.	.	.
	1150.	C	I.	E	.	.	L	.	.	M	.	.	.	.	.	.	.	.	.
	1160.	C	I.	E	.	.	L	.	.	M	.	.	.	.	.	.	.	.	.
	1170.	C	I.	E	.	.	L	.	.	M	.	.	.	.	.	.	.	.	.
	1180.	C	I.	E	.	.	L	.	.	M	.	.	.	.	.	.	.	.	.
	1190.	C	I.	E	.	.	L	.	.	M	.	.	.	.	.	.	.	.	.
	1200.	C	I.	E	.	.	L	.	.	M	.	.	.	.	.	.	.	.	.
	1210.	C	I.	E	.	.	L	.	.	M	.	.	.	.	.	.	.	.	.
	1220.	C	I.	E	.	.	L	.	.	M	.	.	.	.	.	.	.	.	.
	1230.	C	I.	E	.	.	L	.	.	M	.	.	.	.	.	.	.	.	.
1240.00	1240.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1250.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1260.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1270.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1280.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1290.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1300.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1310.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1320.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1330.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
1340.00	1340.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1350.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1360.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1370.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1380.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1390.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1400.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1410.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.
	1420.	C	I.	E	.	.	L.	.	.	M.	.	.	.	.	.	.	.	.	.

```
      1430. C   I .    E.    .   L.    .   M.    .    .    .    .
 1440.00 1440. C   I .    E.    .   L.    .   M.    .    .    .    .
      1450. C   I .    E.    .   L.    .   M.    .    .    .    .
      1460. C   I .    E.    .   L.    .   M.    .    .    .    .
      1470. C   I .    E.    .   L.    .   M.    .    .    .    .
      1480. C   I .    E.    .   L.    .   M.    .    .    .    .
      1490. C   I .    E.    .   L.    .   M.    .    .    .    .
      1500. C   I .    E.    .   L.    .   M.    .    .    .    .
      1510. C   I .    E.    .   L.    .   M.    .    .    .    .
      1520. C   I .    E.    .   L.    .   M.    .    .    .    .
      1530. C   I .    E.    .   L.    .   M.    .    .    .    .
 1540.00 1540. C   I .    E.    .   L.    .   M.    .    .    .    .
      1550. C   I .    E.    .   L.    .   M.    .    .    .    .
      1560. C   I .    E.    .   L.    .   M.    .    .    .    .
      1570. C   I .    E.    .   L.    .   M.    .    .    .    .
      1580. C   I .    E.    .   L.    .   M.    .    .    .    .
      1590. C   I .    E.    .   L.    .   M.    .    .    .    .
      1600. C   I .    E.    .   L.    .   M.    .    .    .    .
      1610. C   I .    E.    .   L.    .   M.    .    .    .    .
      1620. C   I .    E.    .   L.    .   M.    .    .    .    .
      1630. C   I .    E.    .   L.    .   M.    .    .    .    .
 1640.00 1640. C   I .    E.    .   L.    .   M.    .    .    .    .
      1650. C   I .    E.    .   L.    .   M.    .    .    .    .
      1660. C   I .    E.    .   L.    .   M.    .    .    .    .
      1670. C   I .    E.    .   L.    .   M.    .    .    .    .
      1680. C   I .    E.    .   L.    .   M.    .    .    .    .
      1690. C   I .    E.    .   L.    .   M.    .    .    .    .
      1700. C   I .    E.    .   L.    .   M.    .    .    .    .
      1710. C   I .    E.    .   L.    .   M.    .    .    .    .
      1720. C   I .    E.    .   L.    .   M.    .    .    .    .
      1730. C   I .    E.    .   L.    .   M.    .    .    .    .
 1740.00 1740. C   I .    E.    .   L.    .   M.    .    .    .    .
1
  21JUN93      14:00:45                                          PAGE  14


T1   Q4 = 2000 CFS, STARTING WSE = 1049.05

J1  ICHECK   INQ    NINV    IDIR    STRT    METRIC   HVINS    Q       WSEL     FQ

     0       4       0       0       0       0        0    1049.05    0

J2  NPROF    IPLOT   PRFVS   XSECV   XSECH   FN       ALLDC    IBW     CHNIM    ITRACE

     3       0       0       0       0       0        0

1
  21JUN93      14:00:45                                          PAGE  15


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


 *PROF 3
0

 CCHV=    .100 CEHV=    .500
 *SECNO  .000
     .000     1.75   1049.05     .00   1049.05   1049.27     .22     .00     .00   1053.60
   2000.0      .0    2000.0      .0      .0      531.4      .0      .0      .0    1053.60
     .00      .00     3.76     .00     .000     .030     .000    .000   1047.30   2056.33
   .003003     0.      0.       0.       0       0        0     .00    325.33   2381.67


 *SECNO 100.000
   100.000    1.75   1049.35     .00     .00   1049.57     .22     .30     .00   1053.90
   2000.0      .0    2000.0      .0      .0      531.5      .0     1.2      .7    1053.90
     .01      .00     3.76     .00     .000     .030     .000    .000   1047.60   2056.33
   .003002    100.    100.     100.       0       0        0     .00    325.34   2381.67


 *SECNO 200.000
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 200.000    1.75  1049.65    .00    .00  1049.87    .22    .30    .00  1054.20
  2000.0     .0   2000.0     .0     .0    531.5     .0    2.4    1.5  1054.20
     .01    .00    3.76    .00   .000     .030   .000   .000  1047.90  2056.33
 .003000    100.    100.    100.      0        0      0    .00   325.34  2381.67


*SECNO 300.000
 300.000    1.75  1049.95    .00    .00  1050.17    .22    .30    .00  1054.50
  2000.0     .0   2000.0     .0     .0    531.5     .0    3.7    2.2  1054.50
     .02    .00    3.76    .00   .000     .030   .000   .000  1048.20  2056.33
 .003000    100.    100.    100.      0        0      0    .00   325.34  2381.67


*SECNO 400.000
 400.000    1.75  1050.25    .00    .00  1050.47    .22    .30    .00  1054.80
  2000.0     .0   2000.0     .0     .0    531.5     .0    4.9    3.0  1054.80
     .03    .00    3.76    .00   .000     .030   .000   .000  1048.50  2056.33
 .003000    100.    100.    100.      0        0      0    .00   325.34  2381.67


*SECNO 500.000
 500.000    1.75  1050.55    .00    .00  1050.77    .22    .30    .00  1055.10
  2000.0     .0   2000.0     .0     .0    531.5     .0    6.1    3.7  1055.10
     .04    .00    3.76    .00   .000     .030   .000   .000  1048.80  2056.33
 .003000    100.    100.    100.      0        0      0    .00   325.34  2381.67


1
  21JUN93     14:00:45                                                    PAGE  16


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 600.000
 600.000    1.75  1050.85    .00    .00  1051.07    .22    .30    .00  1055.40
  2000.0     .0   2000.0     .0     .0    531.5     .0    7.3    4.5  1055.40
     .04    .00    3.76    .00   .000     .030   .000   .000  1049.10  2056.33
 .003000    100.    100.    100.      0        0      0    .00   325.34  2381.67


*SECNO 700.000
 700.000    1.75  1051.15    .00    .00  1051.37    .22    .30    .00  1055.70
  2000.0     .0   2000.0     .0     .0    531.5     .0    8.5    5.2  1055.70
     .05    .00    3.76    .00   .000     .030   .000   .000  1049.40  2056.33
 .003000    100.    100.    100.      0        0      0    .00   325.34  2381.67


*SECNO 750.000
 750.000    1.75  1051.30    .00    .00  1051.52    .22    .15    .00  1055.85
  2000.0     .0   2000.0     .0     .0    531.5     .0    9.2    5.6  1055.85
     .06    .00    3.76    .00   .000     .030   .000   .000  1049.55  2056.33
 .003000     50.     50.     50.      0        0      0    .00   325.34  2381.67


*SECNO 770.000
 770.000    1.75  1051.36    .00    .00  1051.58    .22    .06    .00  1055.91
  2000.0     .0   2000.0     .0     .0    531.5     .0    9.4    5.8  1055.91
     .06    .00    3.76    .00   .000     .030   .000   .000  1049.61  2056.33
 .003000     20.     20.     20.      0        0      0    .00   325.34  2381.67


*SECNO 780.000
 780.000    1.75  1051.39    .00    .00  1051.61    .22    .03    .00  1055.94
  2000.0     .0   2000.0     .0     .0    531.5     .0    9.5    5.8  1055.94
     .06    .00    3.76    .00   .000     .030   .000   .000  1049.64  2056.33
 .003000     10.     10.     10.      0        0      0    .00   325.34  2381.67


*SECNO 790.000
 790.000    1.75  1051.42    .00    .00  1051.64    .22    .03    .00  1055.97
  2000.0     .0   2000.0     .0     .0    531.5     .0    9.6    5.9  1055.97
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   .06      .00     3.76     .00     .000     .030     .000     .000  1049.67  2056.33
 .003000     10.     10.     10.       0        0        0      .00   325.34  2381.67
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 SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
 Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
 TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
 SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 800.000
 800.000    1.75  1051.45     .00      .00  1051.67     .22      .03      .00  1056.00
  2000.0      .0   2000.0      .0       .0    531.5      .0      9.8      6.0  1056.00
     .06     .00     3.76     .00     .000     .030     .000     .000  1049.70  2056.33
 .003000     10.     10.     10.       0        0        0      .00   325.34  2381.67

*SECNO 805.000
 805.000    1.77  1051.47     .00      .00  1051.69     .22      .01      .00  1056.00
  2000.0      .0   2000.0      .0       .0    536.6      .0      9.8      6.0  1056.00
     .06     .00     3.73     .00     .000     .030     .000     .000  1049.70  2056.14
 .002911      5.      5.      5.       0        0        0      .00   325.73  2381.86

*SECNO 810.000
 810.000    1.79  1051.49     .00      .00  1051.70     .21      .01      .00  1056.00
  2000.0      .0   2000.0      .0       .0    542.8      .0      9.9      6.0  1056.00
     .06     .00     3.68     .00     .000     .030     .000     .000  1049.70  2055.90
 .002807      5.      5.      5.       0        0        0      .00   326.20  2382.10

*SECNO 820.000
 820.000    1.83  1051.53     .00      .00  1051.73     .20      .03      .00  1056.00
  2000.0      .0   2000.0      .0       .0    553.8      .0     10.0      6.1  1056.00
     .06     .00     3.61     .00     .000     .030     .000     .000  1049.70  2055.49
 .002636     10.     10.     10.       0        0        0      .00   327.03  2382.51

*SECNO 840.000
 840.000    1.89  1051.59     .00      .00  1051.78     .19      .05      .00  1056.00
  2000.0      .0   2000.0      .0       .0    576.0      .0     10.3      6.3  1056.00
     .06     .00     3.47     .00     .000     .030     .000     .000  1049.70  2054.65
 .002328     20.     20.     20.       1        0        0      .00   328.71  2383.35

*SECNO 940.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.96

 940.000    2.31  1051.81     .00      .00  1051.82     .01      .03      .02  1055.80
  2000.0      .0   2000.0      .0       .0   2516.1      .0     13.8      8.0  1055.80
     .10     .00      .79     .00     .000     .030     .000     .000  1049.50  2172.97
 .000095    100.    100.    100.       2        0        0      .00  1187.55  3360.53
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 SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
 Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
 TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
 SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 1040.000
1040.000    2.53  1051.83     .00      .00  1051.83     .01      .01      .00  1055.60
  2000.0      .0   2000.0      .0       .0   3322.0      .0     20.5     11.0  1055.60
     .14     .00      .60     .00     .000     .030     .000     .000  1049.30  2196.63
 .000049    100.    100.    100.       2        0        0      .00  1446.99  3643.61
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*SECNO 1140.000
 1140.000    2.73  1051.83     .00     .00  1051.83     .00     .00     .00  1055.40
   2000.0      .0   2000.0      .0      .0   4349.2      .0    29.3    14.7  1055.40
      .20     .00     .46     .00    .000     .030    .000    .000  1049.10  2223.03
  .000026     100.    100.    100.       0        0       0     .00  1762.27  3985.30


*SECNO 1240.000
 1240.000    2.93  1051.83     .00     .00  1051.84     .00     .00     .00  1055.20
   2000.0      .0   2000.0      .0      .0   5650.4      .0    40.8    19.2  1055.20
      .28     .00     .35     .00    .000     .030    .000    .000  1048.90  2252.49
  .000014     100.    100.    100.       0        0       0     .00  2145.05  4397.54


*SECNO 1340.000
 1340.000    3.14  1051.84     .00     .00  1051.84     .00     .00     .00  1055.00
   2000.0      .0   2000.0      .0      .0   7302.6      .0    55.7    24.7  1055.00
      .38     .00     .27     .00    .000     .030    .000    .000  1048.70  2284.91
  .000008     100.    100.    100.       0        0       0     .00  2610.26  4895.17


*SECNO 1440.000
 1440.000    3.34  1051.84     .00     .00  1051.84     .00     .00     .00  1054.80
   2000.0      .0   2000.0      .0      .0   9396.8      .0    74.8    31.3  1054.80
      .51     .00     .21     .00    .000     .030    .000    .000  1048.50  2320.25
  .000004     100.    100.    100.       0        0       0     .00  3175.64  5495.89


*SECNO 1540.000
 1540.000    3.54  1051.84     .00     .00  1051.84     .00     .00     .00  1054.60
   2000.0      .0   2000.0      .0      .0  12045.6      .0    99.5    39.4  1054.60
      .68     .00     .17     .00    .000     .030    .000    .000  1048.30  2358.37
  .000002     100.    100.    100.       0        0       0     .00  3862.67  6221.04


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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1640.000
 1640.000    3.74  1051.84     .00     .00  1051.84     .00     .00     .00  1054.40
   2000.0      .0   2000.0      .0      .0  15389.5      .0   130.9    49.2  1054.40
      .90     .00     .13     .00    .000     .030    .000    .000  1048.10  2398.96
  .000001     100.    100.    100.       0        0       0     .00  4697.41  7096.37


*SECNO 1740.000
 1740.000    3.94  1051.84     .00     .00  1051.84     .00     .00     .00  1054.20
   2000.0      .0   2000.0      .0      .0  19604.1      .0   171.1    61.2  1054.20
     1.17     .00     .10     .00    .000     .030    .000    .000  1047.90  2441.45
  .000001     100.    100.    100.       0        0       0     .00  5711.54  8152.99


1
 PROFILE FOR STREAM  THE SPILLWAY DIMENSIONS


 PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT
BANK,M-LOWER END STA


 ELEVATION  1047.    1049.    1051.    1053.    1055.    1057.    1059.    1061.    1063.    1065.
    SECNO   CUMDIS

      .00     0. I      WE      .      .L      .      .      .      .      .      .      .
             10. I      WE      .      . L     .      .      .      .      .      .      .
             20. I      WE      .      . L     .      .      .      .      .      .      .
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       30. I     WE      .     .L    .    .    .    .    .    .    .
       40. CI    WE      .     .L    .    .    .    .    .    .    .
       50. CI    W.E     .     .L    .    .    .    .    .    .    .
       60. CI    WE      .     .L    .    .    .    .    .    .    .
       70. CI    WE      .     . L   .    .    .    .    .    .    .
       80. CI    WE      .     . L   .    .    .    .    .    .    .
       90. CI    WE      .     . L   .    .    .    .    .    .    .
100.00 100. CI    WE      .     . L   .    .    .    .    .    .    .
      110. C I   WE      .     . L   .    .    .    .    .    .    .
      120. C I   .WE     .     . L   .    .    .    .    .    .    .
      130. C I   .WE     .     . L   .    .    .    .    .    .    .
      140. C I   .WE     .     . L   .    .    .    .    .    .    .
      150. C I   .WE     .     . L   .    .    .    .    .    .    .
      160. C I   .WE     .     . L   .    .    .    .    .    .    .
      170. C I   .WE     .     . L   .    .    .    .    .    .    .
      180. C I   .W E    .     . L   .    .    .    .    .    .    .
      190. C I   . WE    .     . L   .    .    .    .    .    .    .
200.00 200. C I   . WE    .     . L   .    .    .    .    .    .    .
      210. C I   . WE    .     . L   .    .    .    .    .    .    .
      220. C I   . WE    .     . L   .    .    .    .    .    .    .
      230. C I   . WE    .     . L   .    .    .    .    .    .    .
      240. C  I  . WE    .     . L   .    .    .    .    .    .    .
      250. C  I  . W E   .     . L   .    .    .    .    .    .    .
      260. C  I  . WE    .     . L   .    .    .    .    .    .    .
      270. C  I  . WE    .     . L   .    .    .    .    .    .    .
      280. C  I  . WE    .     . L   .    .    .    .    .    .    .
      290. C  I  . WE    .     . L   .    .    .    .    .    .    .
300.00 300. C  I  . WE    .     . L   .    .    .    .    .    .    .
      310. C  I  . WE    .     . L   .    .    .    .    .    .    .
      320. C  I  . WE    .     . L   .    .    .    .    .    .    .
      330. C  I  . WE    .     . L   .    .    .    .    .    .    .
      340. C  I  . WE    .     . L   .    .    .    .    .    .    .
      350. C  I  . WE    .     . L   .    .    .    .    .    .    .
      360. C  I  . WE    .     . L   .    .    .    .    .    .    .
      370. C  I  . WE    .     . L   .    .    .    .    .    .    .
      380. C  I  . W E   .     . L   .    .    .    .    .    .    .
      390. C  I  . WE    .     . L   .    .    .    .    .    .    .
400.00 400. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      410. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      420. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      430. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      440. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      450. C  I  . W E   .     . L.   .    .    .    .    .    .    .
      460. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      470. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      480. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      490. C  I  . WE    .     . L.   .    .    .    .    .    .    .
500.00 500. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      510. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      520. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      530. C  I  . WE    .     . L.   .    .    .    .    .    .    .
      540. C  I  . WE    .     . L    .    .    .    .    .    .    .
      550. C  I  . WE    .     . L    .    .    .    .    .    .    .
      560. C  I  . WE    .     . L    .    .    .    .    .    .    .
      570. C  I. WE      .     . L    .    .    .    .    .    .    .
      580. C  I. W E     .     . L    .    .    .    .    .    .    .
      590. C  I. WE      .     . L    .    .    .    .    .    .    .
600.00 600. C  I. WE      .     . L    .    .    .    .    .    .    .
      610. C  I. WE      .     .L     .    .    .    .    .    .    .
      620. C  I. WE      .     .L     .    .    .    .    .    .    .
      630. C  I. WE      .     .L     .    .    .    .    .    .    .
      640. C  I  WE      .     .L     .    .    .    .    .    .    .
      650. C  I  W E     .     .L     .    .    .    .    .    .    .
      660. C  I  WE      .     .L     .    .    .    .    .    .    .
      670. C  I  WE      .     . L    .    .    .    .    .    .    .
      680. C  I  WE      .     . L    .    .    .    .    .    .    .
      690. C  I  WE      .     . L    .    .    .    .    .    .    .
700.00 700. C  I  WE      .     . L    .    .    .    .    .    .    .
      710. C  .I WE      .     . L    .    .    .    .    .    .    .
      720. C  .I WE      .     . L    .    .    .    .    .    .    .
      730. C  .I WE      .     . L    .    .    .    .    .    .    .
      740. C  .I WE      .     . L    .    .    .    .    .    .    .
750.00 750. C  .I WE      .     . L    .    .    .    .    .    .    .
      760. C  .I WE      .     . L    .    .    .    .    .    .    .
770.00 770. C  . I WE     .     . L    .    .    .    .    .    .    .
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780.00  780. C     .I    W E    .     . L    .     .     .     .     .     .
790.00  790. C     .I    .WE    .     . L    .     .     .     .     .     .
800.00  800. C     .I    .WE    .     . L    .     .     .     .     .     .
805.00  810. C     .I    .WE    .     . L    .     . M   .     .     .     .
810.00  820. C     .I    .WE    .     . L    .     . M   .     .     .     .
820.00  830. C     .I    .WE    .     . L    .     . M   .     .     .     .
840.00  840. C     .I    .WE    .     . L    .     . M   .     .     .     .
        850. C     .I    . E    .     . L    .     . M   .     .     .     .
        860. C     .I    . E    .     . L    .     . M   .     .     .     .
        870. C     .I    . E    .     . L    .     . M   .     .     .     .
        880. C     .I    . E    .     . L    .     . M   .     .     .     .
        890. C     .I    . E    .     . L    .     . M   .     .     .     .
        900. C     .I    . WE   .     . L    .     . M   .     .     .     .
        910. C     .I    . WE   .     . L    .     . M   .     .     .     .
        920. C     .I    . WE   .     . L    .     . M   .     .     .     .
        930. C     .I    . WE   .     . L    .     . M   .     .     .     .
940.00  940. C     .I    . E    .     . L    .     . M   .     .     .     .
        950. C     .I    . E    .     .L     .     .M    .     .     .     .
        960. C     .I    . E    .     .L     .     .M    .     .     .     .
        970. C     .I    . E    .     .L     .     .M    .     .     .     .
        980. C     .I    . E    .     .L     .     .M    .     .     .     .
        990. C     I     . E    .     .L     .     .M    .     .     .     .
       1000. C     I     . E    .     .L     .     .M    .     .     .     .
       1010. C     I     . E    .     .L     .     .M    .     .     .     .
       1020. C     I     . E    .     .L     .     .M    .     .     .     .
       1030. C     I     . E    .     .L     .     .M    .     .     .     .
1040.00 1040. C     I     . E    .     .L     .     .M    .     .     .     .
       1050. C     I     . E    .     .L     .     .M    .     .     .     .
       1060. C     I     . E    .     .L     .     .M    .     .     .     .
       1070. C     I     . E    .     .L     .     .M    .     .     .     .
       1080. C     I     . E    .     .L     .     .M    .     .     .     .
       1090. C     I.    . E    .     .L     .     .M    .     .     .     .
       1100. C     I.    . E    .     .L     .     .M    .     .     .     .
       1110. C     I.    . E    .     .L     .     .M    .     .     .     .
       1120. C     I.    . E    .     .L     .     .M    .     .     .     .
       1130. C     I.    . E    .     .L     .     .M    .     .     .     .
1140.00 1140. C     I.    . E    .     L      .     M     .     .     .     .
       1150. C     I.    . E    .     L      .     M     .     .     .     .
       1160. C     I.    . E    .     L      .     M     .     .     .     .
       1170. C     I.    . E    .     L      .     M     .     .     .     .
       1180. C     I.    . E    .     L      .     M     .     .     .     .
       1190. C     I .   . E    .     L      .     M     .     .     .     .
       1200. C     I .   . E    .     L      .     M     .     .     .     .
       1210. C     I .   . E    .     L      .     M     .     .     .     .
       1220. C     I .   . E    .     L      .     M     .     .     .     .
       1230. C     I .   . E    .     L      .     M     .     .     .     .
1240.00 1240. C     I .   . E    .     L.     .     M.    .     .     .     .
       1250. C     I .   . E    .     L.     .     M.    .     .     .     .
       1260. C     I .   . E    .     L.     .     M.    .     .     .     .
       1270. C     I .   . E    .     L.     .     M.    .     .     .     .
       1280. C     I .   . E    .     L.     .     M.    .     .     .     .
       1290. C     I .   . E    .     L.     .     M.    .     .     .     .
       1300. C     I .   . E    .     L.     .     M.    .     .     .     .
       1310. C     I .   . E    .     L.     .     M.    .     .     .     .
       1320. C     I .   . E    .     L.     .     M.    .     .     .     .
       1330. C     I .   . E    .     L.     .     M.    .     .     .     .
1340.00 1340. C     I .   . E    .     L.     .     M.    .     .     .     .
       1350. C     I .   . E    .     L.     .     M.    .     .     .     .
       1360. C     I .   . E    .     L.     .     M.    .     .     .     .
       1370. C     I .   . E    .     L.     .     M.    .     .     .     .
       1380. C     I .   . E    .     L.     .     M.    .     .     .     .
       1390. C     I .   . E    .     L.     .     M.    .     .     .     .
       1400. C     I .   . E    .     L.     .     M.    .     .     .     .
       1410. C     I .   . E    .     L.     .     M.    .     .     .     .
       1420. C     I .   . E    .     L.     .     M.    .     .     .     .
       1430. C     I .   . E    .     L.     .     M.    .     .     .     .
1440.00 1440. C     I .   . E    .     L.     .     M.    .     .     .     .
       1450. C     I .   . E    .     L.     .     M.    .     .     .     .
       1460. C     I .   . E    .     L.     .     M.    .     .     .     .
       1470. C     I .   . E    .     L.     .     M.    .     .     .     .
       1480. C     I .   . E    .     L.     .     M.    .     .     .     .
       1490. C     I .   . E    .     L.     .     M.    .     .     .     .
       1500. C     I .   . E    .     L.     .     M.    .     .     .     .
       1510. C     I .   . E    .     L.     .     M.    .     .     .     .
       1520. C     I .   . E    .     L.     .     M.    .     .     .     .
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      1530. C  I  .     . E   .  L .     .  M .     .     .     .     .
  1540.00 1540. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1550. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1560. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1570. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1580. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1590. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1600. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1610. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1620. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1630. C  I  .     . E   .  L .     .  M .     .     .     .     .
  1640.00 1640. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1650. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1660. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1670. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1680. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1690. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1700. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1710. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1720. C  I  .     . E   .  L .     .  M .     .     .     .     .
      1730. C  I  .     . E   .  L .     .  M .     .     .     .     .
  1740.00 1740. C  I  .     . E   .  L .     .  M .     .     .     .     .
1
  21JUN93     14:00:45                                                    PAGE  20


T1     Q5 = 3000 CFS, STARTING WSE = 1049.51

J1  ICHECK   INQ    NINV    IDIR    STRT    METRIC   HVINS    Q       WSEL    FQ

     0       5       0       0               0       0       0   1049.51     0

J2  NPROF    IPLOT   PRFVS   XSECV   XSECH   FN      ALLDC   IBW     CHNIM   ITRACE

     4       0       0       0       0       0       0

1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*PROF 4
0

CCHV=    .100 CEHV=    .500
*SECNO  .000
    .000     2.21   1049.51     .00   1049.51   1049.81     .30     .00     .00   1053.60
   3000.0      .0    3000.0      .0       .0     683.7      .0      .0      .0   1053.60
     .00      .00      4.39     .00      .000     .030     .000    .000   1047.30   2050.64
  .003054      0.       0.       0.        0        0        0     .00    336.72   2387.36


*SECNO 100.000
   100.000     2.22   1049.82     .00      .00   1050.11     .30     .30     .00   1053.90
   3000.0      .0    3000.0      .0       .0     685.5      .0     1.6      .8   1053.90
     .01      .00      4.38     .00      .000     .030     .000    .000   1047.60   2050.57
  .003029     100.      100.     100.        0        0        0     .00    336.86   2387.43


*SECNO 200.000
   200.000     2.22   1050.12     .00      .00   1050.42     .30     .30     .00   1054.20
   3000.0      .0    3000.0      .0       .0     687.0      .0     3.1     1.5   1054.20
     .01      .00      4.37     .00      .000     .030     .000    .000   1047.90   2050.51
  .003008     100.      100.     100.        0        0        0     .00    336.97   2387.49


*SECNO 300.000
   300.000     2.22   1050.42     .00      .00   1050.72     .30     .30     .00   1054.50
   3000.0      .0    3000.0      .0       .0     687.3      .0     4.7     2.3   1054.50
     .02      .00      4.36     .00      .000     .030     .000    .000   1048.20   2050.50
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 .003004    100.    100.    100.      0      0      0    .00   336.99  2387.50


*SECNO 400.000
 400.000    2.22  1050.72    .00    .00  1051.02    .30    .30    .00  1054.80
  3000.0      .0   3000.0     .0     .0    687.2     .0    6.3    3.1  1054.80
     .03     .00    4.37    .00   .000     .030   .000   .000  1048.50  2050.51
 .003006    100.    100.    100.      0      0      0    .00   336.98  2387.49


*SECNO 500.000
 500.000    2.22  1051.02    .00    .00  1051.32    .30    .30    .00  1055.10
  3000.0      .0   3000.0     .0     .0    687.3     .0    7.9    3.9  1055.10
     .03     .00    4.37    .00   .000     .030   .000   .000  1048.80  2050.51
 .003005    100.    100.    100.      0      0      0    .00   336.99  2387.49


1
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 600.000
 600.000    2.22  1051.32    .00    .00  1051.62    .30    .30    .00  1055.40
  3000.0      .0   3000.0     .0     .0    687.5     .0    9.5    4.6  1055.40
     .04     .00    4.36    .00   .000     .030   .000   .000  1049.10  2050.50
 .003002    100.    100.    100.      0      0      0    .00   337.00  2387.50


*SECNO 700.000
 700.000    2.22  1051.62    .00    .00  1051.92    .30    .30    .00  1055.70
  3000.0      .0   3000.0     .0     .0    687.6     .0   11.0    5.4  1055.70
     .04     .00    4.36    .00   .000     .030   .000   .000  1049.40  2050.49
 .003000    100.    100.    100.      0      0      0    .00   337.01  2387.51


*SECNO 750.000
 750.000    2.22  1051.77    .00    .00  1052.07    .30    .15    .00  1055.85
  3000.0      .0   3000.0     .0     .0    687.5     .0   11.8    5.8  1055.85
     .05     .00    4.36    .00   .000     .030   .000   .000  1049.55  2050.50
 .003001     50.     50.     50.      0      0      0    .00   337.01  2387.50


*SECNO 770.000
 770.000    2.22  1051.83    .00    .00  1052.13    .30    .06    .00  1055.91
  3000.0      .0   3000.0     .0     .0    687.5     .0   12.1    6.0  1055.91
     .05     .00    4.36    .00   .000     .030   .000   .000  1049.61  2050.50
 .003001     20.     20.     20.      0      0      0    .00   337.01  2387.50


*SECNO 780.000
 780.000    2.22  1051.86    .00    .00  1052.16    .30    .03    .00  1055.94
  3000.0      .0   3000.0     .0     .0    687.5     .0   12.3    6.0  1055.94
     .05     .00    4.36    .00   .000     .030   .000   .000  1049.64  2050.50
 .003001     10.     10.     10.      0      0      0    .00   337.01  2387.50


*SECNO 790.000
 790.000    2.22  1051.89    .00    .00  1052.19    .30    .03    .00  1055.97
  3000.0      .0   3000.0     .0     .0    687.5     .0   12.5    6.1  1055.97
     .05     .00    4.36    .00   .000     .030   .000   .000  1049.67  2050.50
 .003001     10.     10.     10.      0      0      0    .00   337.01  2387.50


1
 21JUN93     14:00:45                                                    PAGE  23


  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-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


*SECNO 800.000
  800.000    2.22   1051.92    .00      .00   1052.22    .30      .03      .00   1056.00
  3000.0      .0    3000.0     .0       .0    687.5      .0     12.6      6.2   1056.00
    .05     .00      4.36    .00     .000     .030     .000     .000   1049.70   2050.50
  .003001    10.      10.     10.        0        0        0      .00    337.01   2387.50


*SECNO 805.000
  805.000    2.24   1051.94    .00      .00   1052.23    .29      .01      .00   1056.00
  3000.0      .0    3000.0     .0       .0    692.8      .0     12.7      6.2   1056.00
    .05     .00      4.33    .00     .000     .030     .000     .000   1049.70   2050.30
  .002930     5.       5.      5.        0        0        0      .00    337.39   2387.70


*SECNO 810.000
  810.000    2.26   1051.96    .00      .00   1052.25    .29      .01      .00   1056.00
  3000.0      .0    3000.0     .0       .0    699.4      .0     12.8      6.3   1056.00
    .05     .00      4.29    .00     .000     .030     .000     .000   1049.70   2050.06
  .002844     5.       5.      5.        0        0        0      .00    337.88   2387.94


*SECNO 820.000
  820.000    2.30   1052.00    .00      .00   1052.28    .28      .03      .00   1056.00
  3000.0      .0    3000.0     .0       .0    711.1      .0     12.9      6.3   1056.00
    .05     .00      4.22    .00     .000     .030     .000     .000   1049.70   2049.63
  .002701    10.      10.     10.        0        0        0      .00    338.73   2388.37


*SECNO 840.000
  840.000    2.37   1052.07    .00      .00   1052.33    .26      .05      .00   1056.00
  3000.0      .0    3000.0     .0       .0    735.4      .0     13.3      6.5   1056.00
    .05     .00      4.08    .00     .000     .030     .000     .000   1049.70   2048.75
  .002431    20.      20.     20.        1        0        0      .00    340.50   2389.25


*SECNO 940.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.88

  940.000    2.87   1052.37    .00      .00   1052.38    .01      .03      .02   1055.80
  3000.0      .0    3000.0     .0       .0   3187.7      .0     17.8      8.3   1055.80
    .08     .00       .94    .00     .000     .030     .000     .000   1049.50   2148.95
  .000102   100.     100.    100.        2        0        0      .00   1235.59   3384.55


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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 1040.000
 1040.000    3.08   1052.38    .00      .00   1052.39    .01      .01      .00   1055.60
  3000.0      .0    3000.0     .0       .0   4144.1      .0     26.2     11.5   1055.60
    .12     .00       .72    .00     .000     .030     .000     .000   1049.30   2167.66
  .000055   100.     100.    100.        2        0        0      .00   1504.92   3672.58


*SECNO 1140.000
 1140.000    3.29   1052.39    .00      .00   1052.39    .00      .00      .00   1055.40
  3000.0      .0    3000.0     .0       .0   5350.8      .0     37.1     15.3   1055.40
    .17     .00       .56    .00     .000     .030     .000     .000   1049.10   2188.25
  .000031   100.     100.    100.        0        0        0      .00   1831.83   4020.08


*SECNO 1240.000
 1240.000    3.49   1052.39    .00      .00   1052.40    .00      .00      .00   1055.20
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  3000.0      .0   3000.0      .0      .0   6872.8      .0     51.1     19.9   1055.20
    .23     .00     .44     .00    .000     .030    .000     .000  1048.90   2210.64
 .000017    100.    100.    100.       0        0       0      .00  2228.76   4439.40


*SECNO 1340.000
 1340.000    3.70  1052.40     .00     .00  1052.40     .00      .00      .00   1055.00
  3000.0      .0   3000.0      .0      .0   8792.6      .0     69.1     25.6   1055.00
    .32     .00     .34     .00    .000     .030    .000     .000  1048.70   2234.59
 .000010    100.    100.    100.       0        0       0      .00  2710.91   4945.49


*SECNO 1440.000
 1440.000    3.90  1052.40     .00     .00  1052.40     .00      .00      .00   1054.80
  3000.0      .0   3000.0      .0      .0  11210.4      .0     92.1     32.5   1054.80
    .42     .00     .27     .00    .000     .030    .000     .000  1048.50   2259.82
 .000006    100.    100.    100.       0        0       0      .00  3296.50   5556.32


*SECNO 1540.000
 1540.000    4.10  1052.40     .00     .00  1052.40     .00      .00      .00   1054.60
  3000.0      .0   3000.0      .0      .0  14252.5      .0    121.3     40.9   1054.60
    .55     .00     .21     .00    .000     .030    .000     .000  1048.30   2285.81
 .000003    100.    100.    100.       0        0       0      .00  4007.79   6293.60


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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1640.000
 1640.000    4.30  1052.40     .00     .00  1052.40     .00      .00      .00   1054.40
  3000.0      .0   3000.0      .0      .0  18073.8      .0    158.4     51.1   1054.40
    .72     .00     .17     .00    .000     .030    .000     .000  1048.10   2311.85
 .000002    100.    100.    100.       0        0       0      .00  4871.63   7183.48


*SECNO 1740.000
 1740.000    4.50  1052.40     .00     .00  1052.40     .00      .00      .00   1054.20
  3000.0      .0   3000.0      .0      .0  22866.4      .0    205.4     63.5   1054.20
    .93     .00     .13     .00    .000     .030    .000     .000  1047.90   2336.93
 .000001    100.    100.    100.       0        0       0      .00  5920.56   8257.50


1
PROFILE FOR STREAM  THE SPILLWAY DIMENSIONS


PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT
BANK,M-LOWER END STA


ELEVATION 1047.    1049.    1051.    1053.    1055.    1057.    1059.    1061.    1063.    1065.
   SECNO   CUMDIS

     .00    0. I      .W E    .      .L     .      .      .      .      .      .      .
           10. I      .W E    .      . L    .      .      .      .      .      .      .
           20. I      .W E    .      . L    .      .      .      .      .      .      .
           30. I      . WE    .      . L    .      .      .      .      .      .      .
           40. CI     . WE    .      . L    .      .      .      .      .      .      .
           50. CI     . WE    .      . L    .      .      .      .      .      .      .
           60. CI     . WE    .      . L    .      .      .      .      .      .      .
           70. CI     . W E   .      . L    .      .      .      .      .      .      .
           80. CI     . W E   .      . L    .      .      .      .      .      .      .
           90. CI     . W E   .      . L    .      .      .      .      .      .      .
   100.00 100. CI     . WE    .      . L    .      .      .      .      .      .      .
          110. C I    . WE    .      . L    .      .      .      .      .      .      .
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        120. C I    . WE   .     . L   .     .     .     .     .     .     .
        130. C I    . W E  .     . L   .     .     .     .     .     .     .
        140. C I    . W E  .     . L   .     .     .     .     .     .     .
        150. C I    . W E  .     . L   .     .     .     .     .     .     .
        160. C I    . W E  .     . L   .     .     .     .     .     .     .
        170. C I    . WE   .     . L   .     .     .     .     .     .     .
        180. C I    . WE   .     . L   .     .     .     .     .     .     .
        190. C I    . WE   .     . L   .     .     .     .     .     .     .
200.00  200. C I    . W E  .     . L   .     .     .     .     .     .     .
        210. C I    . W E  .     . L   .     .     .     .     .     .     .
        220. C I    . W E  .     . L   .     .     .     .     .     .     .
        230. C I    . WE   .     . L   .     .     .     .     .     .     .
        240. C I    . WE   .     . L   .     .     .     .     .     .     .
        250. C I    . WE   .     . L   .     .     .     .     .     .     .
        260. C I    . WE   .     . L   .     .     .     .     .     .     .
        270. C I    . W E  .     . L   .     .     .     .     .     .     .
        280. C I    . W E  .     . L   .     .     .     .     .     .     .
        290. C I    . W E  .     . L   .     .     .     .     .     .     .
300.00  300. C I    . WE   .     . L   .     .     .     .     .     .     .
        310. C I    . WE   .     . L   .     .     .     .     .     .     .
        320. C I    . WE   .     . L   .     .     .     .     .     .     .
        330. C I    . W E  .     . L   .     .     .     .     .     .     .
        340. C I    . W E  .     . L   .     .     .     .     .     .     .
        350. C I    . W E  .     . L   .     .     .     .     .     .     .
        360. C I    . W E  .     . L   .     .     .     .     .     .     .
        370. C I    . WE   .     . L   .     .     .     .     .     .     .
        380. C I    . WE   .     . L   .     .     .     .     .     .     .
        390. C I    . WE   .     . L   .     .     .     .     .     .     .
400.00  400. C I    . W E  .     . L   .     .     .     .     .     .     .
        410. C I    . W E  .     . L   .     .     .     .     .     .     .
        420. C I    . W E  .     . L   .     .     .     .     .     .     .
        430. C I    . WE   .     . L   .     .     .     .     .     .     .
        440. C I    . WE   .     . L   .     .     .     .     .     .     .
        450. C I    . WE   .     . L   .     .     .     .     .     .     .
        460. C I    . WE   .     . L   .     .     .     .     .     .     .
        470. C I    . W E  .     . L   .     .     .     .     .     .     .
        480. C I    . W E  .     . L   .     .     .     .     .     .     .
        490. C I    . W E  .     . L   .     .     .     .     .     .     .
500.00  500. C I    . WE   .     . L   .     .     .     .     .     .     .
        510. C I    . WE   .     . L   .     .     .     .     .     .     .
        520. C I    . WE   .     . L   .     .     .     .     .     .     .
        530. C I    . W.E  .     . L   .     .     .     .     .     .     .
        540. C I    . W.E  .     . L   .     .     .     .     .     .     .
        550. C I    . W.E  .     . L   .     .     .     .     .     .     .
        560. C I    . W.E  .     . L   .     .     .     .     .     .     .
        570. C I    . WE   .     . L   .     .     .     .     .     .     .
        580. C I    . WE   .     . L   .     .     .     .     .     .     .
        590. C I    . WE   .     . L   .     .     .     .     .     .     .
600.00  600. C I    . W E  .     . L   .     .     .     .     .     .     .
        610. C I    . W E  .     . L   .     .     .     .     .     .     .
        620. C I    . W E  .     . L   .     .     .     .     .     .     .
        630. C I    . WE   .     . L   .     .     .     .     .     .     .
        640. C I    . WE   .     . L   .     .     .     .     .     .     .
        650. C I    . WE   .     . L   .     .     .     .     .     .     .
        660. C I    . WE   .     . L   .     .     .     .     .     .     .
        670. C I    . W E  .     . L   .     .     .     .     .     .     .
        680. C I    . W E  .     . L   .     .     .     .     .     .     .
        690. C I    . W E  .     . L   .     .     .     .     .     .     .
700.00  700. C I    . WE   .     . L   .     .     .     .     .     .     .
        710. C I    . WE   .     . L   .     .     .     .     .     .     .
        720. C I    . WE   .     . L   .     .     .     .     .     .     .
        730. C I    . W E  .     . L   .     .     .     .     .     .     .
        740. C I    . W E  .     . L   .     .     .     .     .     .     .
750.00  750. C I    . W E  .     . L   .     .     .     .     .     .     .
        760. C I    . W E  .     . L   .     .     .     .     .     .     .
770.00  770. C I    . WE   .     . L   .     .     .     .     .     .     .
780.00  780. C I    . WE   .     . L   .     .     .     .     .     .     .
790.00  790. C I    . WE   .     . L   .     .     .     .     .     .     .
800.00  800. C I    . W E  .     . L   .     .     .     .     .     .     .
805.00  810. C I    . W E  .     . L   .     . M   .     .     .     .     .
810.00  820. C I    . W E  .     . L   .     . M   .     .     .     .     .
820.00  830. C I    . W E  .     . L   .     . M   .     .     .     .     .
840.00  840. C I    . WE   .     . L   .     . M   .     .     .     .     .
        850. C I    . WE   .     . L   .     . M   .     .     .     .     .
        860. C I    . WE   .     . L   .     . M   .     .     .     .     .
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        870. C     .I    . WE  .     . L   .     . M   .     .     .     .
        880. C     .I    . WE  .     . L   .     . M   .     .     .     .
        890. C     .I    . E   .     . L   .     . M   .     .     .     .
        900. C     .I    . E   .     . L   .     . M   .     .     .     .
        910. C     .I    . E   .     . L   .     . M   .     .     .     .
        920. C     .I    . E   .     . L   .     . M   .     .     .     .
        930. C     .I    . E   .     . L   .     . M   .     .     .     .
940.00  940. C     .I    . E   .     . L   .     . M   .     .     .     .
        950. C     .I    . E   .     . L   .     . M   .     .     .     .
        960. C     .I    . E   .     . L   .     . M   .     .     .     .
        970. C     .I    . E   .     . L   .     . M   .     .     .     .
        980. C     .I    . E   .     . L   .     . M   .     .     .     .
        990. C     I     . E   .     . L   .     . M   .     .     .     .
       1000. C     I     . E   .     . L   .     . M   .     .     .     .
       1010. C     I     . E   .     . L   .     . M   .     .     .     .
       1020. C     I     . E   .     . L   .     . M   .     .     .     .
       1030. C     I     . E   .     . L   .     . M   .     .     .     .
1040.00 1040. C     I     . E   .     .L   .     .M    .     .     .     .
       1050. C     I     . E   .     .L   .     .M    .     .     .     .
       1060. C     I     . E   .     .L   .     .M    .     .     .     .
       1070. C     I     . E   .     .L   .     .M    .     .     .     .
       1080. C     I     . E   .     .L   .     .M    .     .     .     .
       1090. C     I.    . E   .     .L   .     .M    .     .     .     .
       1100. C     I.    . E   .     .L   .     .M    .     .     .     .
       1110. C     I.    . E   .     .L   .     .M    .     .     .     .
       1120. C     I.    . E   .     .L   .     .M    .     .     .     .
       1130. C     I.    . E   .     .L   .     .M    .     .     .     .
1140.00 1140. C     I.    . E   .     L    .     M     .     .     .     .
       1150. C     I.    . E   .     L    .     M     .     .     .     .
       1160. C     I.    . E   .     L    .     M     .     .     .     .
       1170. C     I.    . E   .     L    .     M     .     .     .     .
       1180. C     I.    . E   .     L    .     M     .     .     .     .
       1190. C     I.    . E   .     L    .     M     .     .     .     .
       1200. C     I.    . E   .     L    .     M     .     .     .     .
       1210. C     I.    . E   .     L    .     M     .     .     .     .
       1220. C     I.    . E   .     L    .     M     .     .     .     .
       1230. C     I.    . E   .     L    .     M     .     .     .     .
1240.00 1240. C     I.    . E   .     L.   .     M.    .     .     .     .
       1250. C     I.    . E   .     L.   .     M.    .     .     .     .
       1260. C     I.    . E   .     L.   .     M.    .     .     .     .
       1270. C     I.    . E   .     L.   .     M.    .     .     .     .
       1280. C     I.    . E   .     L.   .     M.    .     .     .     .
       1290. C     I.    . E   .     L.   .     M.    .     .     .     .
       1300. C     I.    . E   .     L.   .     M.    .     .     .     .
       1310. C     I.    . E   .     L.   .     M.    .     .     .     .
       1320. C     I.    . E   .     L.   .     M.    .     .     .     .
       1330. C     I.    . E   .     L.   .     M.    .     .     .     .
1340.00 1340. C     I.    . E   .     L.   .     M.    .     .     .     .
       1350. C     I.    . E   .     L.   .     M.    .     .     .     .
       1360. C     I.    . E   .     L.   .     M.    .     .     .     .
       1370. C     I.    . E   .     L.   .     M.    .     .     .     .
       1380. C     I.    . E   .     L.   .     M.    .     .     .     .
       1390. C     I.    . E   .     L.   .     M.    .     .     .     .
       1400. C     I.    . E   .     L.   .     M.    .     .     .     .
       1410. C     I.    . E   .     L.   .     M.    .     .     .     .
       1420. C     I.    . E   .     L.   .     M.    .     .     .     .
       1430. C     I.    . E   .     L.   .     M.    .     .     .     .
1440.00 1440. C     I.    . E   .     L.   .     M.    .     .     .     .
       1450. C     I.    . E   .     L.   .     M.    .     .     .     .
       1460. C     I.    . E   .     L.   .     M.    .     .     .     .
       1470. C     I.    . E   .     L.   .     M.    .     .     .     .
       1480. C     I.    . E   .     L.   .     M.    .     .     .     .
       1490. C     I.    . E   .     L.   .     M.    .     .     .     .
       1500. C     I.    . E   .     L.   .     M.    .     .     .     .
       1510. C     I.    . E   .     L.   .     M.    .     .     .     .
       1520. C     I.    . E   .     L.   .     M.    .     .     .     .
       1530. C     I.    . E   .     L.   .     M.    .     .     .     .
1540.00 1540. C     I.    . E   .     L.   .     M.    .     .     .     .
       1550. C     I.    . E   .     L.   .     M.    .     .     .     .
       1560. C     I.    . E   .     L.   .     M.    .     .     .     .
       1570. C     I.    . E   .     L.   .     M.    .     .     .     .
       1580. C     I.    . E   .     L.   .     M.    .     .     .     .
       1590. C     I.    . E   .     L.   .     M.    .     .     .     .
       1600. C     I.    . E   .     L.   .     M.    .     .     .     .
       1610. C     I.    . E   .     L.   .     M.    .     .     .     .
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      1620. C I   .     . E   . L   .     . M   .     .     .     .     .
      1630. C I   .     . E   . L   .     . M   .     .     .     .     .
 1640.00 1640. C I   .     . E   . L   .     . M   .     .     .     .     .
      1650. C I   .     . E   . L   .     . M   .     .     .     .     .
      1660. C I   .     . E   . L   .     . M   .     .     .     .     .
      1670. C I   .     . E   . L   .     . M   .     .     .     .     .
      1680. C I   .     . E   . L   .     . M   .     .     .     .     .
      1690. C I   .     . E   . L   .     . M   .     .     .     .     .
      1700. C I   .     . E   . L   .     . M   .     .     .     .     .
      1710. C I   .     . E   . L   .     . M   .     .     .     .     .
      1720. C I   .     . E   . L   .     . M   .     .     .     .     .
      1730. C I   .     . E   . L   .     . M   .     .     .     .     .
 1740.00 1740. C I   .     . E   . L   .     . M   .     .     .     .     .
1
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T1     Q6 = 4000 CFS, STARTING WSE = 1049.92

J1  ICHECK   INQ     NINV    IDIR    STRT    METRIC  HVINS   Q       WSEL    FQ

     0       6       0       0               0       0       0  1049.92      0

J2  NPROF    IPLOT   PRFVS   XSECV   XSECH   FN      ALLDC   IBW     CHNIM   ITRACE

     5       0       0       0       0       0       0

1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


 *PROF 5
0

 CCHV=    .100 CEHV=    .500
 *SECNO  .000
     .000     2.62  1049.92     .00  1049.92  1050.29     .37     .00     .00  1053.60
   4000.0       .0   4000.0      .0      .0    823.8      .0      .0      .0  1053.60
     .00      .00     4.86     .00    .000     .030    .000    .000  1047.30  2045.56
  .003035       0.      0.      0.       0        0       0     .00   346.88  2392.44


 *SECNO 100.000
   100.000     2.62  1050.22     .00     .00  1050.59     .37     .30     .00  1053.90
   4000.0       .0   4000.0      .0      .0    825.0      .0     1.9      .8  1053.90
     .01      .00     4.85     .00    .000     .030    .000    .000  1047.60  2045.52
  .003021      100.     100.    100.       0        0       0     .00   346.96  2392.48


 *SECNO 200.000
   200.000     2.63  1050.53     .00     .00  1050.89     .36     .30     .00  1054.20
   4000.0       .0   4000.0      .0      .0    826.1      .0     3.8     1.6  1054.20
     .01      .00     4.84     .00    .000     .030    .000    .000  1047.90  2045.48
  .003009      100.     100.    100.       0        0       0     .00   347.04  2392.52


 *SECNO 300.000
   300.000     2.63  1050.83     .00     .00  1051.19     .36     .30     .00  1054.50
   4000.0       .0   4000.0      .0      .0    826.5      .0     5.7     2.4  1054.50
     .02      .00     4.84     .00    .000     .030    .000    .000  1048.20  2045.46
  .003004      100.     100.    100.       0        0       0     .00   347.07  2392.54


 *SECNO 400.000
   400.000     2.63  1051.13     .00     .00  1051.49     .36     .30     .00  1054.80
   4000.0       .0   4000.0      .0      .0    826.6      .0     7.6     3.2  1054.80
     .02      .00     4.84     .00    .000     .030    .000    .000  1048.50  2045.46
  .003003      100.     100.    100.       0        0       0     .00   347.07  2392.54
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*SECNO 500.000
  500.000    2.63  1051.43    .00    .00  1051.79    .36    .30    .00  1055.10
   4000.0     .0   4000.0     .0     .0    826.6     .0    9.5    4.0  1055.10
      .03     .00    4.84    .00   .000     .030   .000   .000  1048.80  2045.46
  .003003    100.    100.    100.      0       0      0    .00   347.08  2392.54
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 600.000
  600.000    2.63  1051.73    .00    .00  1052.09    .36    .30    .00  1055.40
   4000.0     .0   4000.0     .0     .0    826.7     .0   11.4    4.8  1055.40
      .03     .00    4.84    .00   .000     .030   .000   .000  1049.10  2045.46
  .003002    100.    100.    100.      0       0      0    .00   347.08  2392.54

*SECNO 700.000
  700.000    2.63  1052.03    .00    .00  1052.39    .36    .30    .00  1055.70
   4000.0     .0   4000.0     .0     .0    826.8     .0   13.3    5.6  1055.70
      .04     .00    4.84    .00   .000     .030   .000   .000  1049.40  2045.46
  .003001    100.    100.    100.      0       0      0    .00   347.09  2392.54

*SECNO 750.000
  750.000    2.63  1052.18    .00    .00  1052.54    .36    .15    .00  1055.85
   4000.0     .0   4000.0     .0     .0    826.8     .0   14.2    6.0  1055.85
      .04     .00    4.84    .00   .000     .030   .000   .000  1049.55  2045.45
  .003000     50.     50.     50.      0       0      0    .00   347.09  2392.55

*SECNO 770.000
  770.000    2.63  1052.24    .00    .00  1052.60    .36    .06    .00  1055.91
   4000.0     .0   4000.0     .0     .0    826.8     .0   14.6    6.1  1055.91
      .04     .00    4.84    .00   .000     .030   .000   .000  1049.61  2045.45
  .003000     20.     20.     20.      0       0      0    .00   347.09  2392.55

*SECNO 780.000
  780.000    2.63  1052.27    .00    .00  1052.63    .36    .03    .00  1055.94
   4000.0     .0   4000.0     .0     .0    826.8     .0   14.8    6.2  1055.94
      .04     .00    4.84    .00   .000     .030   .000   .000  1049.64  2045.45
  .003000     10.     10.     10.      0       0      0    .00   347.09  2392.55

*SECNO 790.000
  790.000    2.63  1052.30    .00    .00  1052.66    .36    .03    .00  1055.97
   4000.0     .0   4000.0     .0     .0    826.8     .0   15.0    6.3  1055.97
      .05     .00    4.84    .00   .000     .030   .000   .000  1049.67  2045.45
  .003000     10.     10.     10.      0       0      0    .00   347.09  2392.55
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 800.000
  800.000    2.63  1052.33    .00    .00  1052.69    .36    .03    .00  1056.00
   4000.0     .0   4000.0     .0     .0    826.8     .0   15.2    6.4  1056.00
      .05     .00    4.84    .00   .000     .030   .000   .000  1049.70  2045.45
  .003000     10.     10.     10.      0       0      0    .00   347.09  2392.55
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*SECNO 805.000
  805.000    2.65  1052.35     .00     .00  1052.71     .36     .01     .00  1056.00
   4000.0      .0   4000.0      .0      .0    832.3      .0    15.3     6.4  1056.00
      .05     .00     4.81     .00    .000     .030    .000    .000  1049.70  2045.26
  .002940      5.       5.      5.       0        0       0     .00   347.48  2392.74


*SECNO 810.000
  810.000    2.67  1052.37     .00     .00  1052.72     .35     .01     .00  1056.00
   4000.0      .0   4000.0      .0      .0    839.2      .0    15.4     6.5  1056.00
      .05     .00     4.77     .00    .000     .030    .000    .000  1049.70  2045.01
  .002865      5.       5.      5.       0        0       0     .00   347.97  2392.99


*SECNO 820.000
  820.000    2.71  1052.41     .00     .00  1052.75     .34     .03     .00  1056.00
   4000.0      .0   4000.0      .0      .0    853.3      .0    15.6     6.5  1056.00
      .05     .00     4.69     .00    .000     .030    .000    .000  1049.70  2044.51
  .002721     10.      10.     10.       1        0       0     .00   348.97  2393.49


*SECNO 840.000
  840.000    2.78  1052.48     .00     .00  1052.81     .32     .05     .00  1056.00
   4000.0      .0   4000.0      .0      .0    877.6      .0    16.0     6.7  1056.00
      .05     .00     4.56     .00    .000     .030    .000    .000  1049.70  2043.65
  .002494     20.      20.     20.       1        0       0     .00   350.70  2394.35


*SECNO 940.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.84

  940.000    3.35  1052.85     .00     .00  1052.87     .02     .03     .03  1055.80
   4000.0      .0   4000.0      .0      .0   3790.9      .0    21.3     8.6  1055.80
      .07     .00     1.06     .00    .000     .030    .000    .000  1049.50  2128.15
  .000106    100.     100.    100.       2        0       0     .00  1277.20  3405.35


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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1040.000
 1040.000    3.56  1052.86     .00     .00  1052.87     .01     .01     .00  1055.60
   4000.0      .0   4000.0      .0      .0   4881.8      .0    31.3    11.8  1055.60
      .11     .00      .82     .00    .000     .030    .000    .000  1049.30  2142.59
  .000060    100.     100.    100.       2        0       0     .00  1555.06  3697.65


*SECNO 1140.000
 1140.000    3.77  1052.87     .00     .00  1052.88     .01     .00     .00  1055.40
   4000.0      .0   4000.0      .0      .0   6249.3      .0    44.0    15.8  1055.40
      .15     .00      .64     .00    .000     .030    .000    .000  1049.10  2158.14
  .000034    100.     100.    100.       0        0       0     .00  1892.05  4050.19


*SECNO 1240.000
 1240.000    3.98  1052.88     .00     .00  1052.88     .00     .00     .00  1055.20
   4000.0      .0   4000.0      .0      .0   7967.9      .0    60.4    20.6  1055.20
      .21     .00      .50     .00    .000     .030    .000    .000  1048.90  2174.43
  .000020    100.     100.    100.       0        0       0     .00  2301.17  4475.60


*SECNO 1340.000
 1340.000    4.18  1052.88     .00     .00  1052.88     .00     .00     .00  1055.00
   4000.0      .0   4000.0      .0      .0  10126.5      .0    81.1    26.4  1055.00
      .28     .00      .40     .00    .000     .030    .000    .000  1048.70  2191.07
  .000011    100.     100.    100.       0        0       0     .00  2797.93  4989.01
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*SECNO 1440.000
 1440.000    4.38  1052.88     .00     .00  1052.88     .00     .00     .00  1054.80
   4000.0      .0   4000.0      .0      .0  12834.1      .0   107.5    33.6  1054.80
      .37     .00     .31     .00    .000     .030    .000    .000  1048.50  2207.54
  .000007    100.    100.    100.       0        0       0     .00  3401.06  5608.60


*SECNO 1540.000
 1540.000    4.58  1052.88     .00     .00  1052.89     .00     .00     .00  1054.60
   4000.0      .0   4000.0      .0      .0  16227.1      .0   140.8    42.2  1054.60
      .48     .00     .25     .00    .000     .030    .000    .000  1048.30  2223.04
  .000004    100.    100.    100.       0        0       0     .00  4133.33  6356.37


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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 1640.000
 1640.000    4.78  1052.88     .00     .00  1052.89     .00     .00     .00  1054.40
   4000.0      .0   4000.0      .0      .0  20474.2      .0   183.0    52.7  1054.40
      .62     .00     .20     .00    .000     .030    .000    .000  1048.10  2236.50
  .000002    100.    100.    100.       0        0       0     .00  5022.32  7258.82


*SECNO 1740.000
 1740.000    4.98  1052.89     .00     .00  1052.89     .00     .00     .00  1054.20
   4000.0      .0   4000.0      .0      .0  25785.3      .0   236.1    65.5  1054.20
      .80     .00     .16     .00    .000     .030    .000    .000  1047.90  2246.46
  .000001    100.    100.    100.       0        0       0     .00  6101.52  8347.98


1
 PROFILE FOR STREAM  THE SPILLWAY DIMENSIONS


 PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT
BANK,M-LOWER END STA


 ELEVATION 1047.   1049.   1051.   1053.   1055.   1057.   1059.   1061.   1063.   1065.
   SECNO   CUMDIS

     .00     0. I     . W E  .     .L    .     .     .     .     .     .     .
            10. I     . W E  .     . L   .     .     .     .     .     .     .
            20. I     . W E  .     . L   .     .     .     .     .     .     .
            30. I     .  WE  .     . L   .     .     .     .     .     .     .
            40. CI    .  W E .     . L   .     .     .     .     .     .     .
            50. CI    .  W E .     . L   .     .     .     .     .     .     .
            60. CI    .  W E .     . L   .     .     .     .     .     .     .
            70. CI    .  W E .     . L   .     .     .     .     .     .     .
            80. CI    .  W E .     . L   .     .     .     .     .     .     .
            90. CI    .  W E .     . L   .     .     .     .     .     .     .
    100.00 100. CI    .   WE .     . L   .     .     .     .     .     .     .
           110. C I   .  W E .     . L   .     .     .     .     .     .     .
           120. C I   .  W E .     . L   .     .     .     .     .     .     .
           130. C I   .  W E .     . L   .     .     .     .     .     .     .
           140. C I   .  W E .     . L   .     .     .     .     .     .     .
           150. C I   .  W E .     . L   .     .     .     .     .     .     .
           160. C I   .   WE .     . L   .     .     .     .     .     .     .
           170. C I   .   WE .     . L   .     .     .     .     .     .     .
           180. C I   .  W E.      . L   .     .     .     .     .     .     .
           190. C I   .  W E.      . L   .     .     .     .     .     .     .
    200.00 200. C I   .   W E.     . L   .     .     .     .     .     .     .
           210. C I   .  W E.      . L   .     .     .     .     .     .     .
           220. C I   .  W E.      . L   .     .     .     .     .     .     .
           230. C I   .   WE.      . L   .     .     .     .     .     .     .
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       240. C I   .   W E.     .  L .     .     .     .     .     .     .
       250. C I   .   W E.     .  L .     .     .     .     .     .     .
       260. C I   .   W E.     .  L .     .     .     .     .     .     .
       270. C I   .   W E.     .  L .     .     .     .     .     .     .
       280. C I   .   W E.     .  L .     .     .     .     .     .     .
       290. C I   .   W E.     .  L .     .     .     .     .     .     .
300.00 300. C I   .   WE.     .  L .     .     .     .     .     .     .
       310. C I   .   W E     .  L .     .     .     .     .     .     .
       320. C I   .   W E     .  L .     .     .     .     .     .     .
       330. C I   .   W E     .  L .     .     .     .     .     .     .
       340. C I   .   W E     .  L .     .     .     .     .     .     .
       350. C I   .   W E     .  L .     .     .     .     .     .     .
       360. C I   .   WE      .  L .     .     .     .     .     .     .
       370. C I   .   WE      .  L .     .     .     .     .     .     .
       380. C I   .   W.E     .  L .     .     .     .     .     .     .
       390. C I   .   W.E     .  L .     .     .     .     .     .     .
400.00 400. C I   .   W.E     .  L.     .     .     .     .     .     .
       410. C I   .   W.E     .  L.     .     .     .     .     .     .
       420. C I   .   W.E     .  L.     .     .     .     .     .     .
       430. C I   .   WE      .  L.     .     .     .     .     .     .
       440. C I   .   W E     .  L.     .     .     .     .     .     .
       450. C I   .   W E     .  L.     .     .     .     .     .     .
       460. C I   .   W E     .  L.     .     .     .     .     .     .
       470. C I   .   W E     .  L.     .     .     .     .     .     .
       480. C I   .   W E     .  L.     .     .     .     .     .     .
       490. C I   .   W E     .  L.     .     .     .     .     .     .
500.00 500. C I   .   .WE     .  L.     .     .     .     .     .     .
       510. C I   .   .W E    .  L.     .     .     .     .     .     .
       520. C I   .   .W E    .  L.     .     .     .     .     .     .
       530. C I   .   .W E    .  L.     .     .     .     .     .     .
       540. C I   .   .W E    .  L     .     .     .     .     .     .
       550. C I   .   .W E    .  L     .     .     .     .     .     .
       560. C I   .   . WE    .  L     .     .     .     .     .     .
       570. C I   .   . WE    .  L     .     .     .     .     .     .
       580. C I   .   . W E   .  L     .     .     .     .     .     .
       590. C I   .   . W E   .  L     .     .     .     .     .     .
600.00 600. C I   .   . W E   .  L     .     .     .     .     .     .
       610. C I   .   . W E   .  .L    .     .     .     .     .     .
       620. C I   .   . W E   .  .L    .     .     .     .     .     .
       630. C I   .   . WE    .  .L    .     .     .     .     .     .
       640. C I   .   . W E   .  .L    .     .     .     .     .     .
       650. C I   .   . W E   .  .L    .     .     .     .     .     .
       660. C I   .   . W E   .  .L    .     .     .     .     .     .
       670. C I   .   . W E   .  . L   .     .     .     .     .     .
       680. C I   .   . W E   .  . L   .     .     .     .     .     .
       690. C I   .   . W E   .  . L   .     .     .     .     .     .
700.00 700. C I   .   . WE    .  . L   .     .     .     .     .     .
       710. C .I  .   . W E   .  . L   .     .     .     .     .     .
       720. C .I  .   . W E   .  . L   .     .     .     .     .     .
       730. C .I  .   . W E   .  . L   .     .     .     .     .     .
       740. C .I  .   . W E   .  . L   .     .     .     .     .     .
750.00 750. C .I  .   . W E   .  . L   .     .     .     .     .     .
       760. C .I  .   . WE    .  . L   .     .     .     .     .     .
770.00 770. C . I  .   . WE    .  . L   .     .     .     .     .     .
780.00 780. C . I  .   . W E   .  . L   .     .     .     .     .     .
790.00 790. C . I  .   . W E   .  . L   .     .     .     .     .     .
800.00 800. C . I  .   . W E   .  . L   .     .     .     .     .     .
805.00 810. C . I  .   . W E   .  . L   .     . M   .     .     .     .
810.00 820. C . I  .   . W E   .  . L   .     . M   .     .     .     .
820.00 830. C . I  .   . W E   .  . L   .     . M   .     .     .     .
840.00 840. C . I  .   . W E   .  . L   .     . M   .     .     .     .
       850. C . I  .   . W E   .  . L   .     . M   .     .     .     .
       860. C . I  .   . W E   .  . L   .     . M   .     .     .     .
       870. C . I  .   . W E   .  . L   .     . M   .     .     .     .
       880. C . I  .   . WE    .  . L   .     . M   .     .     .     .
       890. C .I   .   . WE    .  . L   .     . M   .     .     .     .
       900. C .I   .   . WE    .  . L   .     . M   .     .     .     .
       910. C .I   .   . WE    .  . L   .     . M   .     .     .     .
       920. C .I   .   . WE    .  . L   .     . M   .     .     .     .
       930. C .I   .   . E     .  . L   .     . M   .     .     .     .
940.00 940. C .I   .   . E     .  . L   .     . M   .     .     .     .
       950. C .I   .   . E     .  . L   .     . M   .     .     .     .
       960. C .I   .   . E     .  . L   .     . M   .     .     .     .
       970. C .I   .   . E     .  . L   .     . M   .     .     .     .
       980. C .I   .   . E     .  . L   .     . M   .     .     .     .
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990. C I . E. .L . .M . . . .
1000. C I . E. .L . .M . . . .
1010. C I . E. .L . .M . . . .
1020. C I . E. .L . .M . . . .
1030. C I . E. .L . .M . . . .
1040.00 1040. C I . E. .L . .M . . . .
1050. C I . E. .L . .M . . . .
1060. C I . E. .L . .M . . . .
1070. C I . E. .L . .M . . . .
1080. C I . E. .L . .M . . . .
1090. C I. . E. .L . .M . . . .
1100. C I. . E. .L . .M . . . .
1110. C I. . E. .L . .M . . . .
1120. C I. . E. .L . .M . . . .
1130. C I. . E. .L . .M . . . .
1140.00 1140. C I. . E. L . M . . . .
1150. C I. . E. L . M . . . .
1160. C I. . E. L . M . . . .
1170. C I. . E. L . M . . . .
1180. C I. . E. L . M . . . .
1190. C I. . E. L . M . . . .
1200. C I. . E. L . M . . . .
1210. C I. . E. L . M . . . .
1220. C I. . E. L . M . . . .
1230. C I. . E. L . M . . . .
1240.00 1240. C I. . E. L. . M. . . . .
1250. C I. . E. L. . M. . . . .
1260. C I. . E. L. . M. . . . .
1270. C I. . E. L. . M. . . . .
1280. C I. . E. L. . M. . . . .
1290. C I. . E. L. . M. . . . .
1300. C I. . E. L. . M. . . . .
1310. C I. . E. L. . M. . . . .
1320. C I. . E. L. . M. . . . .
1330. C I. . E. L. . M. . . . .
1340.00 1340. C I. . E. L. . M. . . . .
1350. C I. . E. L. . M. . . . .
1360. C I. . E. L. . M. . . . .
1370. C I. . E. L. . M. . . . .
1380. C I. . E. L. . M. . . . .
1390. C I. . E. L. . M. . . . .
1400. C I. . E. L. . M. . . . .
1410. C I. . E. L. . M. . . . .
1420. C I. . E. L. . M. . . . .
1430. C I. . E. L. . M. . . . .
1440.00 1440. C I. . E. L. . M. . . . .
1450. C I. . E. L. . M. . . . .
1460. C I. . E. L. . M. . . . .
1470. C I. . E. L. . M. . . . .
1480. C I. . E. L. . M. . . . .
1490. C I. . E. L. . M. . . . .
1500. C I. . E. L. . M. . . . .
1510. C I. . E. L. . M. . . . .
1520. C I. . E. L. . M. . . . .
1530. C I. . E. L. . M. . . . .
1540.00 1540. C I. . E. L. . M. . . . .
1550. C I. . E. L. . M. . . . .
1560. C I. . E. L. . M. . . . .
1570. C I. . E. L. . M. . . . .
1580. C I. . E. L. . M. . . . .
1590. C I. . E. L. . M. . . . .
1600. C I. . E. L. . M. . . . .
1610. C I. . E. L. . M. . . . .
1620. C I. . E. L. . M. . . . .
1630. C I. . E. L. . M. . . . .
1640.00 1640. C I. . E. L. . M. . . . .
1650. C I. . E. L. . M. . . . .
1660. C I. . E. L. . M. . . . .
1670. C I. . E. L. . M. . . . .
1680. C I. . E. L. . M. . . . .
1690. C I. . E. L. . M. . . . .
1700. C I. . E. L. . M. . . . .
1710. C I. . E. L. . M. . . . .
1720. C I. . E. L. . M. . . . .
1730. C I. . E. L. . M. . . . .

T1 Q7 = 5000 CFS, STARTING WSE = 1050.28

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	7	0	0	0	0	0	1050.28	0	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	6	0	0	0	0	0	0			


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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 6
0

CCHV=    .100 CEHV=    .500
*SECNO  .000
    .000     2.98  1050.28     .00  1050.28  1050.71     .43     .00     .00  1053.60
   5000.0      .0   5000.0      .0      .0    950.3      .0      .0      .0  1053.60
     .00      .00     5.26     .00    .000     .030    .000    .000  1047.30  2041.10
  .003047      0.      0.      0.       0        0       0     .00   355.79  2396.90

*SECNO 100.000
  100.000     2.99  1050.59     .00     .00  1051.01     .43     .30     .00  1053.90
   5000.0      .0   5000.0      .0      .0    952.0      .0     2.2      .8  1053.90
     .01      .00     5.25     .00    .000     .030    .000    .000  1047.60  2041.05
  .003031     100.     100.    100.       0        0       0     .00   355.91  2396.95

*SECNO 200.000
  200.000     2.99  1050.89     .00     .00  1051.32     .43     .30     .00  1054.20
   5000.0      .0   5000.0      .0      .0    953.6      .0     4.4     1.6  1054.20
     .01      .00     5.24     .00    .000     .030    .000    .000  1047.90  2040.99
  .003015     100.     100.    100.       0        0       0     .00   356.02  2397.01

*SECNO 300.000
  300.000     2.99  1051.19     .00     .00  1051.62     .43     .30     .00  1054.50
   5000.0      .0   5000.0      .0      .0    954.4      .0     6.6     2.5  1054.50
     .02      .00     5.24     .00    .000     .030    .000    .000  1048.20  2040.96
  .003007     100.     100.    100.       0        0       0     .00   356.08  2397.04

*SECNO 400.000
  400.000     2.99  1051.49     .00     .00  1051.92     .43     .30     .00  1054.80
   5000.0      .0   5000.0      .0      .0    954.6      .0     8.8     3.3  1054.80
     .02      .00     5.24     .00    .000     .030    .000    .000  1048.50  2040.95
  .003005     100.     100.    100.       0        0       0     .00   356.09  2397.05

*SECNO 500.000
  500.000     2.99  1051.79     .00     .00  1052.22     .43     .30     .00  1055.10
   5000.0      .0   5000.0      .0      .0    954.7      .0    10.9     4.1  1055.10
     .03      .00     5.24     .00    .000     .030    .000    .000  1048.80  2040.95
  .003004     100.     100.    100.       0        0       0     .00   356.10  2397.05
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  SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
  Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
  TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
  SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 600.000
  600.000    2.99   1052.09     .00      .00   1052.52     .43      .30      .00   1055.40
   5000.0     .0    5000.0      .0       .0     954.8      .0     13.1      4.9   1055.40
     .03     .00      5.24     .00     .000      .030    .000     .000   1049.10   2040.95
  .003003    100.     100.     100.       0         0       0      .00    356.11   2397.05


*SECNO 700.000
  700.000    2.99   1052.39     .00      .00   1052.82     .43      .30      .00   1055.70
   5000.0     .0    5000.0      .0       .0     955.0      .0     15.3      5.7   1055.70
     .04     .00      5.24     .00     .000      .030    .000     .000   1049.40   2040.94
  .003002    100.     100.     100.       0         0       0      .00    356.11   2397.06


*SECNO 750.000
  750.000    2.99   1052.54     .00      .00   1052.97     .43      .15      .00   1055.85
   5000.0     .0    5000.0      .0       .0     955.0      .0     16.4      6.1   1055.85
     .04     .00      5.24     .00     .000      .030    .000     .000   1049.55   2040.94
  .003001     50.      50.      50.       0         0       0      .00    356.12   2397.06


*SECNO 770.000
  770.000    2.99   1052.60     .00      .00   1053.03     .43      .06      .00   1055.91
   5000.0     .0    5000.0      .0       .0     955.0      .0     16.9      6.3   1055.91
     .04     .00      5.24     .00     .000      .030    .000     .000   1049.61   2040.94
  .003001     20.      20.      20.       0         0       0      .00    356.12   2397.06


*SECNO 780.000
  780.000    2.99   1052.63     .00      .00   1053.06     .43      .03      .00   1055.94
   5000.0     .0    5000.0      .0       .0     955.0      .0     17.1      6.4   1055.94
     .04     .00      5.24     .00     .000      .030    .000     .000   1049.64   2040.94
  .003001     10.      10.      10.       0         0       0      .00    356.12   2397.06


*SECNO 790.000
  790.000    2.99   1052.66     .00      .00   1053.09     .43      .03      .00   1055.97
   5000.0     .0    5000.0      .0       .0     955.0      .0     17.3      6.5   1055.97
     .04     .00      5.24     .00     .000      .030    .000     .000   1049.67   2040.94
  .003001     10.      10.      10.       0         0       0      .00    356.12   2397.06

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  21JUN93     14:00:45                                                                PAGE  35

  SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
  Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
  TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
  SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 800.000
  800.000    2.99   1052.69     .00      .00   1053.12     .43      .03      .00   1056.00
   5000.0     .0    5000.0      .0       .0     955.0      .0     17.5      6.5   1056.00
     .04     .00      5.24     .00     .000      .030    .000     .000   1049.70   2040.94
  .003001     10.      10.      10.       0         0       0      .00    356.12   2397.06


*SECNO 805.000
  805.000    3.01   1052.71     .00      .00   1053.13     .42      .01      .00   1056.00
   5000.0     .0    5000.0      .0       .0     960.6      .0     17.6      6.6   1056.00
     .04     .00      5.21     .00     .000      .030    .000     .000   1049.70   2040.75
  .002948      5.       5.       5.       0         0       0      .00    356.50   2397.25


*SECNO 810.000
  810.000    3.04   1052.74     .00      .00   1053.15     .41      .01      .00   1056.00
   5000.0     .0    5000.0      .0       .0     967.7      .0     17.7      6.6   1056.00
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   .04      .00     5.17      .00     .000     .030     .000     .000  1049.70  2040.50
 .002881     5.       5.       5.       0        0        0      .00   357.00  2397.50


*SECNO 820.000
 820.000    3.08  1052.78      .00      .00  1053.18      .40      .03      .00  1056.00
  5000.0      .0   5000.0       .0       .0    982.5       .0     18.0      6.7  1056.00
     .04     .00     5.09      .00     .000     .030     .000     .000  1049.70  2039.99
 .002750     10.      10.      10.        1        0        0      .00   358.02  2398.01


*SECNO 840.000
 840.000    3.16  1052.86      .00      .00  1053.23      .38      .05      .00  1056.00
  5000.0      .0   5000.0       .0       .0   1013.2       .0     18.4      6.9  1056.00
     .04     .00     4.93      .00     .000     .030     .000     .000  1049.70  2038.93
 .002501     20.      20.      20.        2        0        0      .00   360.14  2399.07


*SECNO 940.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.78

 940.000    3.78  1053.28      .00      .00  1053.30      .02      .03      .04  1055.80
  5000.0      .0   5000.0       .0       .0   4349.3       .0     24.6      8.8  1055.80
     .07     .00     1.15      .00     .000     .030     .000     .000  1049.50  2109.48
 .000109    100.     100.     100.        2        0        0      .00  1314.55  3424.02


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  21JUN93      14:00:45                                                          PAGE  36


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1040.000
 1040.000    4.00  1053.30      .00      .00  1053.31      .01      .01      .00  1055.60
  5000.0      .0   5000.0       .0       .0   5563.3       .0     36.0     12.1  1055.60
     .10     .00      .90      .00     .000     .030     .000     .000  1049.30  2120.12
 .000062    100.     100.     100.        2        0        0      .00  1599.99  3720.12


*SECNO 1140.000
 1140.000    4.21  1053.31      .00      .00  1053.31      .01      .00      .00  1055.40
  5000.0      .0   5000.0       .0       .0   7079.0       .0     50.5     16.2  1055.40
     .14     .00      .71      .00     .000     .030     .000     .000  1049.10  2131.16
 .000036    100.     100.     100.        0        0        0      .00  1946.01  4077.17


*SECNO 1240.000
 1240.000    4.41  1053.31      .00      .00  1053.32      .00      .00      .00  1055.20
  5000.0      .0   5000.0       .0       .0   8979.8       .0     68.9     21.2  1055.20
     .19     .00      .56      .00     .000     .030     .000     .000  1048.90  2141.96
 .000021    100.     100.     100.        0        0        0      .00  2366.11  4508.07


*SECNO 1340.000
 1340.000    4.62  1053.32      .00      .00  1053.32      .00      .00      .00  1055.00
  5000.0      .0   5000.0       .0       .0  11358.6       .0     92.2     27.2  1055.00
     .25     .00      .44      .00     .000     .030     .000     .000  1048.70  2152.05
 .000013    100.     100.     100.        0        0        0      .00  2875.98  5028.03


*SECNO 1440.000
 1440.000    4.82  1053.32      .00      .00  1053.32      .00      .00      .00  1054.80
  5000.0      .0   5000.0       .0       .0  14332.9       .0    121.7     34.5  1054.80
     .33     .00      .35      .00     .000     .030     .000     .000  1048.50  2160.67
 .000008    100.     100.     100.        0        0        0      .00  3494.80  5655.47


*SECNO 1540.000
 1540.000    5.02  1053.32      .00      .00  1053.32      .00      .00      .00  1054.60
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 5000.0      .0   5000.0      .0      .0  18049.9      .0    158.9     43.4  1054.60
   .43     .00     .28     .00    .000     .030    .000     .000  1048.30  2166.74
.000005    100.    100.    100.       0        0       0      .00  4245.92  6412.66
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SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 1640.000
 1640.000    5.22  1053.32     .00     .00  1053.32     .00     .00     .00  1054.40
  5000.0      .0   5000.0      .0      .0  22689.2      .0    205.7    54.2  1054.40
    .56     .00     .22     .00    .000     .030    .000     .000  1048.10  2168.93
 .000003    100.    100.    100.       0        0       0      .00  5157.46  7326.39

*SECNO 1740.000
 1740.000    5.42  1053.32     .00     .00  1053.32     .00     .00     .00  1054.20
  5000.0      .0   5000.0      .0      .0  28475.9      .0    264.4    67.3  1054.20
    .72     .00     .18     .00    .000     .030    .000     .000  1047.90  2165.37
 .000002    100.    100.    100.       0        0       0      .00  6263.69  8429.06
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1

PROFILE FOR STREAM THE SPILLWAY DIMENSIONS

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION 1047.   1049.   1051.   1053.   1055.   1057.   1059.   1061.   1063.   1065.
  SECNO   CUMDIS

   .00    0. I     . W E .     .L     .     .     .     .     .     .     .
         10. I     . W E .     .L     .     .     .     .     .     .     .
         20. I     . W E .     .L     .     .     .     .     .     .     .
         30. I     . W E .     .L     .     .     .     .     .     .     .
         40. CI    . W E .     .L     .     .     .     .     .     .     .
         50. CI    . W E .     .L     .     .     .     .     .     .     .
         60. CI    . W E .     .L     .     .     .     .     .     .     .
         70. CI    . W E .     .L     .     .     .     .     .     .     .
         80. CI    . W E .     .L     .     .     .     .     .     .     .
         90. CI    . W E .     .L     .     .     .     .     .     .     .
  100.00 100. CI    . W E.     .L     .     .     .     .     .     .     .
        110. C I   . W E.     .L     .     .     .     .     .     .     .
        120. C I   . W E.     .L     .     .     .     .     .     .     .
        130. C I   . W E.     .L     .     .     .     .     .     .     .
        140. C I   . W E.     .L     .     .     .     .     .     .     .
        150. C I   . W E.     .L     .     .     .     .     .     .     .
        160. C I   . W E.     .L     .     .     .     .     .     .     .
        170. C I   . W E      .L     .     .     .     .     .     .     .
        180. C I   . W E      .L     .     .     .     .     .     .     .
        190. C I   . W E      .L     .     .     .     .     .     .     .
  200.00 200. C I   . W E     .L     .     .     .     .     .     .     .
        210. C I   . W E      .L     .     .     .     .     .     .     .
        220. C I   . W E      .L     .     .     .     .     .     .     .
        230. C I   . W .E     .L     .     .     .     .     .     .     .
        240. C I   . W.E      .L     .     .     .     .     .     .     .
        250. C I   . W.E      .L     .     .     .     .     .     .     .
        260. C I   . W.E      .L     .     .     .     .     .     .     .
        270. C I   . W.E      .L     .     .     .     .     .     .     .
        280. C I   . W.E      .L     .     .     .     .     .     .     .
        290. C I   . W.E      .L     .     .     .     .     .     .     .
  300.00 300. C I   . W. E    .L     .     .     .     .     .     .     .
        310. C I   . W E      .L     .     .     .     .     .     .     .
        320. C I   . W E      .L     .     .     .     .     .     .     .
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        330. C  I .    WE   . L .   .   .   .   .   .   .
        340. C  I .    WE   . L .   .   .   .   .   .   .
        350. C  I .    WE   . L .   .   .   .   .   .   .
        360. C  I .    WE   . L .   .   .   .   .   .   .
        370. C  I .    W E  . L .   .   .   .   .   .   .
        380. C  I .    .WE  . L .   .   .   .   .   .   .
        390. C  I .    .WE  . L .   .   .   .   .   .   .
400.00  400. C  I .    .WE  . L.   .   .   .   .   .   .
        410. C  I .    .WE  . L.   .   .   .   .   .   .
        420. C  I .    .WE  . L.   .   .   .   .   .   .
        430. C  I .    .W E . L.   .   .   .   .   .   .
        440. C  I .    .WE  . L.   .   .   .   .   .   .
        450. C  I .    .WE  . L.   .   .   .   .   .   .
        460. C  I .    .WE  . L.   .   .   .   .   .   .
        470. C  I .    .WE  . L.   .   .   .   .   .   .
        480. C  I .    .WE  . L.   .   .   .   .   .   .
        490. C  I .    .WE  . L.   .   .   .   .   .   .
500.00  500. C  I.     .W E . L.   .   .   .   .   .   .
        510. C  I.     .WE  . L.   .   .   .   .   .   .
        520. C  I.     .WE  . L.   .   .   .   .   .   .
        530. C  I.     .WE  . L.   .   .   .   .   .   .
        540. C  I.     .WE  . L    .   .   .   .   .   .
        550. C  I.     .WE  . L    .   .   .   .   .   .
        560. C  I.     .WE  . L    .   .   .   .   .   .
        570. C  I.     .W E . L    .   .   .   .   .   .
        580. C  I.     . WE . L    .   .   .   .   .   .
        590. C  I.     . WE . L    .   .   .   .   .   .
600.00  600. C  I.     . WE . L    .   .   .   .   .   .
        610. C  I.     . WE . .L   .   .   .   .   .   .
        620. C  I.     . WE . .L   .   .   .   .   .   .
        630. C  I.     . W E . .L  .   .   .   .   .   .
        640. C  I      . WE . .L   .   .   .   .   .   .
        650. C  I      . WE . .L   .   .   .   .   .   .
        660. C  I      . WE . .L   .   .   .   .   .   .
        670. C  I      . WE . .L   .   .   .   .   .   .
        680. C  I      . WE . .L   .   .   .   .   .   .
        690. C  I      . WE . .L   .   .   .   .   .   .
700.00  700. C  I      . W E. .L   .   .   .   .   .   .
        710. C  .I     . WE. .L    .   .   .   .   .   .
        720. C  .I     . WE. .L    .   .   .   .   .   .
        730. C  .I     . WE. .L    .   .   .   .   .   .
        740. C  .I     . WE. .L    .   .   .   .   .   .
750.00  750. C  .I     . WE. .L    .   .   .   .   .   .
        760. C  .I     . WE. .L    .   .   .   .   .   .
770.00  770. C  .I     . W E. .L   .   .   .   .   .   .
780.00  780. C  .I     . WE. .L    .   .   .   .   .   .
790.00  790. C  .I     . WE. .L    .   .   .   .   .   .
800.00  800. C  .I     . WE. .L    .   .   .   .   .   .
805.00  810. C  .I     . WE. .L    .   . M   .   .   .
810.00  820. C  .I     . WE. .L    .   . M   .   .   .
820.00  830. C  .I     . WE. .L    .   . M   .   .   .
840.00  840. C  .I     . WE  .L    .   . M   .   .   .
        850. C  .I     . WE  .L    .   . M   .   .   .
        860. C  .I     . WE  .L    .   . M   .   .   .
        870. C  .I     . WE  .L    .   . M   .   .   .
        880. C  .I     . WE  .L    .   . M   .   .   .
        890. C  .I     . WE  .L    .   . M   .   .   .
        900. C  .I     . WE  .L    .   . M   .   .   .
        910. C  .I     . WE  .L    .   . M   .   .   .
        920. C  .I     . WE  .L    .   . M   .   .   .
        930. C  .I     . E   .L    .   . M   .   .   .
940.00  940. C  .I     . E   .L    .   . M   .   .   .
        950. C  .I     . E   .L    .   .M    .   .   .
        960. C  .I     . E   .L    .   .M    .   .   .
        970. C  .I     . E   .L    .   .M    .   .   .
        980. C  .I     . E   .L    .   .M    .   .   .
        990. C  I      . E   .L    .   .M    .   .   .
       1000. C  I      . E   .L    .   .M    .   .   .
       1010. C  I      . E   .L    .   .M    .   .   .
       1020. C  I      . E   .L    .   .M    .   .   .
       1030. C  I      . E   .L    .   .M    .   .   .
1040.00 1040. C  I      . E   .L    .   .M    .   .   .
       1050. C  I      . E   .L    .   .M    .   .   .
       1060. C  I      . E   .L    .   .M    .   .   .
       1070. C  I      . E   .L    .   .M    .   .   .
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        1080. C     I     .     E     .L     .     .M     .     .     .     .
        1090. C     I.    .     E     .L     .     .M     .     .     .     .
        1100. C     I.    .     E     .L     .     .M     .     .     .     .
        1110. C     I.    .     E     .L     .     .M     .     .     .     .
        1120. C     I.    .     E     .L     .     .M     .     .     .     .
        1130. C     I.    .     E     .L     .     .M     .     .     .     .
1140.00 1140. C     I.    .     E     L     .     M     .     .     .     .
        1150. C     I.    .     E     L     .     M     .     .     .     .
        1160. C     I.    .     E     L     .     M     .     .     .     .
        1170. C     I.    .     E     L     .     M     .     .     .     .
        1180. C     I.    .     E     L     .     M     .     .     .     .
        1190. C     I.    .     E     L     .     M     .     .     .     .
        1200. C     I.    .     E     L     .     M     .     .     .     .
        1210. C     I.    .     E     L     .     M     .     .     .     .
        1220. C     I.    .     E     L     .     M     .     .     .     .
        1230. C     I.    .     E     L     .     M     .     .     .     .
1240.00 1240. C     I.    .     E     L.    .     M.    .     .     .     .
        1250. C     I.    .     E     L.    .     M.    .     .     .     .
        1260. C     I.    .     E     L.    .     M.    .     .     .     .
        1270. C     I.    .     E     L.    .     M.    .     .     .     .
        1280. C     I.    .     E     L.    .     M.    .     .     .     .
        1290. C     I.    .     E     L.    .     M.    .     .     .     .
        1300. C     I.    .     E     L.    .     M.    .     .     .     .
        1310. C     I.    .     E     L.    .     M.    .     .     .     .
        1320. C     I.    .     E     L.    .     M.    .     .     .     .
        1330. C     I.    .     E     L.    .     M.    .     .     .     .
1340.00 1340. C     I.    .     E     L.    .     M.    .     .     .     .
        1350. C     I.    .     E     L.    .     M.    .     .     .     .
        1360. C     I.    .     E     L.    .     M.    .     .     .     .
        1370. C     I.    .     E     L.    .     M.    .     .     .     .
        1380. C     I.    .     E     L.    .     M.    .     .     .     .
        1390. C     I.    .     E     L.    .     M.    .     .     .     .
        1400. C     I.    .     E     L.    .     M.    .     .     .     .
        1410. C     I.    .     E     L.    .     M.    .     .     .     .
        1420. C     I.    .     E     L.    .     M.    .     .     .     .
        1430. C     I.    .     E     L.    .     M.    .     .     .     .
1440.00 1440. C     I.    .     E     L.    .     M.    .     .     .     .
        1450. C     I.    .     E     L.    .     M.    .     .     .     .
        1460. C     I.    .     E     L.    .     M.    .     .     .     .
        1470. C     I.    .     E     L.    .     M.    .     .     .     .
        1480. C     I.    .     E     L.    .     M.    .     .     .     .
        1490. C     I.    .     E     L.    .     M.    .     .     .     .
        1500. C     I.    .     E     L.    .     M.    .     .     .     .
        1510. C     I.    .     E     L.    .     M.    .     .     .     .
        1520. C     I.    .     E     L.    .     M.    .     .     .     .
        1530. C     I.    .     E     L.    .     M.    .     .     .     .
1540.00 1540. C     I.    .     E     L.    .     M.    .     .     .     .
        1550. C     I.    .     E     L.    .     M.    .     .     .     .
        1560. C     I.    .     E     L.    .     M.    .     .     .     .
        1570. C     I.    .     E     L.    .     M.    .     .     .     .
        1580. C     I.    .     E     L.    .     M.    .     .     .     .
        1590. C     I.    .     E     L.    .     M.    .     .     .     .
        1600. C     I.    .     E     L.    .     M.    .     .     .     .
        1610. C     I.    .     E     L.    .     M.    .     .     .     .
        1620. C     I.    .     E     L.    .     M.    .     .     .     .
        1630. C     I.    .     E     L.    .     M.    .     .     .     .
1640.00 1640. C     I.    .     E     L.    .     M.    .     .     .     .
        1650. C     I.    .     E     L.    .     M.    .     .     .     .
        1660. C     I.    .     E     L.    .     M.    .     .     .     .
        1670. C     I.    .     E     L.    .     M.    .     .     .     .
        1680. C     I.    .     E     L.    .     M.    .     .     .     .
        1690. C     I.    .     E     L.    .     M.    .     .     .     .
        1700. C     I.    .     E     L.    .     M.    .     .     .     .
        1710. C     I.    .     E     L.    .     M.    .     .     .     .
        1720. C     I.    .     E     L.    .     M.    .     .     .     .
        1730. C     I.    .     E     L.    .     M.    .     .     .     .
1740.00 1740. C     I.    .     E     L.    .     M.    .     .     .     .
1
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T1 Q8 = 6000 CFS, STARTING WSE = 1050.61

J1 ICHECK INQ NINV IDIR STRT METRIC HVINS Q WSEL FQ

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    0      8      0      0              0      0      0  1050.61      0

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN     ALLDC    IBW     CHNIM    ITRACE

    7      0      0      0      0      0      0

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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


 *PROF 7
0

 CCHV=    .100 CEHV=    .500
 *SECNO  .000
     .000     3.31  1050.61     .00  1050.61  1051.10     .49     .00     .00  1053.60
   6000.0       .0   6000.0      .0      .0   1069.0      .0      .0      .0  1053.60
     .00      .00     5.61     .00     .000     .030    .000    .000  1047.30  2037.02
   .003055      0.      0.      0.       0        0       0     .00   363.96  2400.98


 *SECNO 100.000
   100.000     3.32  1050.92     .00     .00  1051.40     .49     .30     .00  1053.90
   6000.0       .0   6000.0      .0      .0   1071.0      .0     2.5      .8  1053.90
     .00      .00     5.60     .00     .000     .030    .000    .000  1047.60  2036.95
   .003038     100.     100.    100.       0        0       0     .00   364.09  2401.05


 *SECNO 200.000
   200.000     3.32  1051.22     .00     .00  1051.71     .49     .30     .00  1054.20
   6000.0       .0   6000.0      .0      .0   1073.1      .0     4.9     1.7  1054.20
     .01      .00     5.59     .00     .000     .030    .000    .000  1047.90  2036.88
   .003020     100.     100.    100.       0        0       0     .00   364.24  2401.12


 *SECNO 300.000
   300.000     3.32  1051.52     .00     .00  1052.01     .48     .30     .00  1054.50
   6000.0       .0   6000.0      .0      .0   1074.2      .0     7.4     2.5  1054.50
     .01      .00     5.59     .00     .000     .030    .000    .000  1048.20  2036.84
   .003010     100.     100.    100.       0        0       0     .00   364.31  2401.16


 *SECNO 400.000
   400.000     3.33  1051.83     .00     .00  1052.31     .48     .30     .00  1054.80
   6000.0       .0   6000.0      .0      .0   1074.6      .0     9.8     3.3  1054.80
     .02      .00     5.58     .00     .000     .030    .000    .000  1048.50  2036.83
   .003006     100.     100.    100.       0        0       0     .00   364.34  2401.17


 *SECNO 500.000
   500.000     3.33  1052.13     .00     .00  1052.61     .48     .30     .00  1055.10
   6000.0       .0   6000.0      .0      .0   1074.8      .0    12.3     4.2  1055.10
     .02      .00     5.58     .00     .000     .030    .000    .000  1048.80  2036.82
   .003005     100.     100.    100.       0        0       0     .00   364.35  2401.18


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  21JUN93     14:00:45                                                          PAGE  40


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


 *SECNO 600.000
   600.000     3.33  1052.43     .00     .00  1052.91     .48     .30     .00  1055.40
   6000.0       .0   6000.0      .0      .0   1075.0      .0    14.8     5.0  1055.40
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   .03      .00     5.58      .00      .000      .030      .000      .000  1049.10  2036.82
 .003004    100.     100.     100.        0         0         0       .00   364.36  2401.18


*SECNO 700.000
 700.000    3.33  1052.73      .00      .00   1053.21       .48       .30       .00  1055.70
  6000.0      .0   6000.0       .0       .0    1075.1        .0      17.3       5.9  1055.70
     .03     .00     5.58      .00     .000      .030      .000      .000  1049.40  2036.81
 .003002    100.     100.     100.        0         0         0       .00   364.37  2401.19


*SECNO 750.000
 750.000    3.33  1052.88      .00      .00   1053.36       .48       .15       .00  1055.85
  6000.0      .0   6000.0       .0       .0    1075.1        .0      18.5       6.3  1055.85
     .04     .00     5.58      .00     .000      .030      .000      .000  1049.55  2036.81
 .003002     50.      50.      50.        0         0         0       .00   364.38  2401.19


*SECNO 770.000
 770.000    3.33  1052.94      .00      .00   1053.42       .48       .06       .00  1055.91
  6000.0      .0   6000.0       .0       .0    1075.1        .0      19.0       6.4  1055.91
     .04     .00     5.58      .00     .000      .030      .000      .000  1049.61  2036.81
 .003002     20.      20.      20.        0         0         0       .00   364.38  2401.19


*SECNO 780.000
 780.000    3.33  1052.97      .00      .00   1053.45       .48       .03       .00  1055.94
  6000.0      .0   6000.0       .0       .0    1075.1        .0      19.2       6.5  1055.94
     .04     .00     5.58      .00     .000      .030      .000      .000  1049.64  2036.81
 .003002     10.      10.      10.        0         0         0       .00   364.38  2401.19


*SECNO 790.000
 790.000    3.33  1053.00      .00      .00   1053.48       .48       .03       .00  1055.97
  6000.0      .0   6000.0       .0       .0    1075.1        .0      19.5       6.6  1055.97
     .04     .00     5.58      .00     .000      .030      .000      .000  1049.67  2036.81
 .003002     10.      10.      10.        0         0         0       .00   364.38  2401.19


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  21JUN93      14:00:45                                                          PAGE   41


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 800.000
 800.000    3.33  1053.03      .00      .00   1053.51       .48       .03       .00  1056.00
  6000.0      .0   6000.0       .0       .0    1075.1        .0      19.7       6.7  1056.00
     .04     .00     5.58      .00     .000      .030      .000      .000  1049.70  2036.81
 .003002     10.      10.      10.        0         0         0       .00   364.38  2401.19


*SECNO 805.000
 805.000    3.35  1053.05      .00      .00   1053.53       .48       .01       .00  1056.00
  6000.0      .0   6000.0       .0       .0    1080.8        .0      19.8       6.7  1056.00
     .04     .00     5.55      .00     .000      .030      .000      .000  1049.70  2036.62
 .002954      5.       5.       5.        0         0         0       .00   364.76  2401.38


*SECNO 810.000
 810.000    3.37  1053.07      .00      .00   1053.54       .47       .01       .00  1056.00
  6000.0      .0   6000.0       .0       .0    1088.3        .0      20.0       6.8  1056.00
     .04     .00     5.51      .00     .000      .030      .000      .000  1049.70  2036.37
 .002892      5.       5.       5.        0         0         0       .00   365.27  2401.63


*SECNO 820.000
 820.000    3.41  1053.11      .00      .00   1053.57       .46       .03       .00  1056.00
  6000.0      .0   6000.0       .0       .0    1103.6        .0      20.2       6.9  1056.00
     .04     .00     5.44      .00     .000      .030      .000      .000  1049.70  2035.85
 .002771     10.      10.      10.        1         0         0       .00   366.30  2402.15
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*SECNO 840.000
  840.000     3.49   1053.19      .00      .00   1053.63      .43      .05      .00   1056.00
   6000.0       .0    6000.0       .0       .0    1136.5       .0     20.7      7.0   1056.00
      .04      .00      5.28      .00     .000      .030     .000     .000   1049.70   2034.74
  .002533      20.       20.      20.        2         0        0      .00    368.52   2403.26


*SECNO 940.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.77

  940.000     4.17   1053.67      .00      .00   1053.70      .02      .03      .04   1055.80
   6000.0       .0    6000.0       .0       .0    4875.3       .0     27.6      9.0   1055.80
      .06      .00      1.23      .00     .000      .030     .000     .000   1049.50   2092.36
  .000111     100.      100.     100.        2         0        0      .00   1348.78   3441.14


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  21JUN93      14:00:45                                                                PAGE   42


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1040.000
 1040.000     4.39   1053.69      .00      .00   1053.71      .01      .01      .00   1055.60
   6000.0       .0    6000.0       .0       .0    6206.3       .0     40.4     12.4   1055.60
      .09      .00       .97      .00     .000      .030     .000     .000   1049.30   2099.49
  .000065     100.      100.     100.        2         0        0      .00   1641.25   3740.75


*SECNO 1140.000
 1140.000     4.60   1053.70      .00      .00   1053.71      .01      .00      .00   1055.40
   6000.0       .0    6000.0       .0       .0    7861.4       .0     56.5     16.6   1055.40
      .13      .00       .76      .00     .000      .030     .000     .000   1049.10   2106.39
  .000038     100.      100.     100.        0         0        0      .00   1995.55   4101.94


*SECNO 1240.000
 1240.000     4.81   1053.71      .00      .00   1053.72      .01      .00      .00   1055.20
   6000.0       .0    6000.0       .0       .0    9932.9       .0     76.9     21.7   1055.20
      .18      .00       .60      .00     .000      .030     .000     .000   1048.90   2112.17
  .000023     100.      100.     100.        0         0        0      .00   2425.68   4537.86


*SECNO 1340.000
 1340.000     5.01   1053.71      .00      .00   1053.72      .00      .00      .00   1055.00
   6000.0       .0    6000.0       .0       .0   12518.4       .0    102.7     27.8   1055.00
      .23      .00       .48      .00     .000      .030     .000     .000   1048.70   2116.26
  .000014     100.      100.     100.        0         0        0      .00   2947.57   5063.82


*SECNO 1440.000
 1440.000     5.22   1053.72      .00      .00   1053.72      .00      .00      .00   1054.80
   6000.0       .0    6000.0       .0       .0   15743.7       .0    135.1     35.3   1054.80
      .31      .00       .38      .00     .000      .030     .000     .000   1048.50   2117.67
  .000008     100.      100.     100.        0         0        0      .00   3580.80   5698.47


*SECNO 1540.000
 1540.000     5.42   1053.72      .00      .00   1053.72      .00      .00      .00   1054.60
   6000.0       .0    6000.0       .0       .0   19764.8       .0    175.9     44.4   1054.60
      .40      .00       .30      .00     .000      .030     .000     .000   1048.30   2115.11
  .000005     100.      100.     100.        0         0        0      .00   4349.18   6464.29


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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
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  Q       QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME    VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE   XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 1640.000
 1640.000    5.62  1053.72     .00     .00  1053.72     .00     .00     .00  1054.40
  6000.0      .0   6000.0      .0      .0  24772.7      .0   227.0    55.5  1054.40
    .51     .00     .24     .00    .000     .030    .000    .000  1048.10  2106.95
 .000003    100.    100.    100.       0        0       0     .00  5281.42  7388.37


*SECNO 1740.000
 1740.000    5.82  1053.72     .00     .00  1053.72     .00     .00     .00  1054.20
  6000.0      .0   6000.0      .0      .0  31007.4      .0   291.0    68.9  1054.20
    .66     .00     .19     .00    .000     .030    .000    .000  1047.90  2090.95
 .000002    100.    100.    100.       0        0       0     .00  6412.53  8503.48


1
PROFILE FOR STREAM  THE SPILLWAY DIMENSIONS


PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT
BANK,M-LOWER END STA


ELEVATION 1047.   1049.   1051.   1053.   1055.   1057.   1059.   1061.   1063.   1065.
  SECNO   CUMDIS

   .00    0. I     .   W E.     .L     .     .     .     .     .     .     .
         10. I     .   W E.     .L     .     .     .     .     .     .     .
         20. I     .   W E.     .L     .     .     .     .     .     .     .
         30. I     .   W E.     .L     .     .     .     .     .     .     .
         40. CI    .   W E     .L     .     .     .     .     .     .     .
         50. CI    .   W E     .L     .     .     .     .     .     .     .
         60. CI    .   W E     .L     .     .     .     .     .     .     .
         70. CI    .   W E     .L     .     .     .     .     .     .     .
         80. CI    .   W E     .L     .     .     .     .     .     .     .
         90. CI    .   W E     .L     .     .     .     .     .     .     .
  100.00 100. CI    .   W E     .L     .     .     .     .     .     .     .
        110. C I   .   W .E    .L     .     .     .     .     .     .     .
        120. C I   .   W .E    .L     .     .     .     .     .     .     .
        130. C I   .   W.E     .L     .     .     .     .     .     .     .
        140. C I   .   W.E     .L     .     .     .     .     .     .     .
        150. C I   .   W.E     .L     .     .     .     .     .     .     .
        160. C I   .   W.E     .L     .     .     .     .     .     .     .
        170. C I   .   W. E    .L     .     .     .     .     .     .     .
        180. C I   .   W. E    .L     .     .     .     .     .     .     .
        190. C I   .   W. E    .L     .     .     .     .     .     .     .
  200.00 200. C I   .   W E     .L     .     .     .     .     .     .     .
        210. C I   .   W E     .L     .     .     .     .     .     .     .
        220. C I   .   W E     .L     .     .     .     .     .     .     .
        230. C I   .   W E     .L     .     .     .     .     .     .     .
        240. C I   .   W E     .L     .     .     .     .     .     .     .
        250. C I   .   W E     .L     .     .     .     .     .     .     .
        260. C I   .   W E     .L     .     .     .     .     .     .     .
        270. C I   .   .W E    .L     .     .     .     .     .     .     .
        280. C I   .   .W E    .L     .     .     .     .     .     .     .
        290. C I   .   .W E    .L     .     .     .     .     .     .     .
  300.00 300. C I   .   .W E    .L     .     .     .     .     .     .     .
        310. C I   .   .W E    .L     .     .     .     .     .     .     .
        320. C I   .   .W E    .L     .     .     .     .     .     .     .
        330. C I   .   .W E    .L     .     .     .     .     .     .     .
        340. C I   .   .W E    .L     .     .     .     .     .     .     .
        350. C I   .   .W E    .L     .     .     .     .     .     .     .
        360. C I   .   .W E    .L     .     .     .     .     .     .     .
        370. C I   .   .W E    .L     .     .     .     .     .     .     .
        380. C I   .   .W E    .L     .     .     .     .     .     .     .
        390. C I   .   .W E    .L     .     .     .     .     .     .     .
  400.00 400. C I   .   .W E    .L     .     .     .     .     .     .     .
        410. C I   .   .W E    .L     .     .     .     .     .     .     .
        420. C I   .   .W E    .L     .     .     .     .     .     .     .
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        430. C   I .     . W E .    L.     .     .     .     .     .
        440. C   I .     . W E .    L.     .     .     .     .     .
        450. C   I .     . W E .    L.     .     .     .     .     .
        460. C   I .     . W E .    L.     .     .     .     .     .
        470. C   I .     . W E .    L.     .     .     .     .     .
        480. C   I .     . W E .    L.     .     .     .     .     .
        490. C   I .     . W E .    L.     .     .     .     .     .
500.00  500. C   I .     . W E .    L.     .     .     .     .     .
        510. C   I .     . W E .    L.     .     .     .     .     .
        520. C   I .     . W E .    L.     .     .     .     .     .
        530. C   I .     . W E .    L.     .     .     .     .     .
        540. C   I .     . W E .    L      .     .     .     .     .
        550. C   I .     . W E .    L      .     .     .     .     .
        560. C   I .     . W E .    L      .     .     .     .     .
        570. C   I.      . W E.     L      .     .     .     .     .
        580. C   I.      . W E.     L      .     .     .     .     .
        590. C   I.      . W E.     L      .     .     .     .     .
600.00  600. C   I.      . WE.      L      .     .     .     .     .
        610. C   I.      . WE.      .L     .     .     .     .     .
        620. C   I.      . WE.      .L     .     .     .     .     .
        630. C   I.      . WE.      .L     .     .     .     .     .
        640. C   I       . W E.     .L     .     .     .     .     .
        650. C   I       . W E.     .L     .     .     .     .     .
        660. C   I       . WE.      .L     .     .     .     .     .
        670. C   I       . WE.      . L    .     .     .     .     .
        680. C   I       . WE.      . L    .     .     .     .     .
        690. C   I       . WE.      . L    .     .     .     .     .
700.00  700. C   I       . W E      .L     .     .     .     .     .
        710. C   .I      . W E      . L    .     .     .     .     .
        720. C   .I      . W E      . L    .     .     .     .     .
        730. C   .I      . WE       . L    .     .     .     .     .
        740. C   .I      . WE       . L    .     .     .     .     .
750.00  750. C   .I      . WE       . L    .     .     .     .     .
        760. C   .I      . WE       . L    .     .     .     .     .
770.00  770. C   . I     . W.E      . L    .     .     .     .     .
780.00  780. C   . I     . W.E      . L    .     .     .     .     .
790.00  790. C   . I     . W.E      . L    .     .     .     .     .
800.00  800. C   . I     . W.E      . L    .     .     .     .     .
805.00  810. C   . I     . W.E      . L    .     . M   .     .     .
810.00  820. C   . I     . W.E      . L    .     . M   .     .     .
820.00  830. C   . I     . W.E      . L    .     . M   .     .     .
840.00  840. C   . I     . W. E     . L    .     . M   .     .     .
        850. C   . I     . WE       . L    .     . M   .     .     .
        860. C   . I     . WE       . L    .     . M   .     .     .
        870. C   . I     . WE       . L    .     . M   .     .     .
        880. C   . I     . WE       . L    .     . M   .     .     .
        890. C   .I      . .WE      . L    .     . M   .     .     .
        900. C   .I      . .WE      . L    .     . M   .     .     .
        910. C   .I      . .WE      . L    .     . M   .     .     .
        920. C   .I      . .WE      . L    .     . M   .     .     .
        930. C   .I      . . E      . L    .     . M   .     .     .
940.00  940. C   .I      . . E      . L    .     . M   .     .     .
        950. C   .I      . . E      . L    .     . M   .     .     .
        960. C   .I      . . E      . L    .     . M   .     .     .
        970. C   .I      . . E      . L    .     . M   .     .     .
        980. C   .I      . . E      . L    .     . M   .     .     .
        990. C   I       . . E      . L    .     . M   .     .     .
       1000. C   I       . . E      . L    .     . M   .     .     .
       1010. C   I       . . E      . L    .     . M   .     .     .
       1020. C   I       . . E      . L    .     . M   .     .     .
       1030. C   I       . . E      . L    .     . M   .     .     .
1040.00 1040. C   I       . . E      .L     .     .M    .     .     .
       1050. C   I       . . E      .L     .     .M    .     .     .
       1060. C   I       . . E      .L     .     .M    .     .     .
       1070. C   I       . . E      .L     .     .M    .     .     .
       1080. C   I       . . E      .L     .     .M    .     .     .
       1090. C   I.      . . E      .L     .     .M    .     .     .
       1100. C   I.      . . E      .L     .     .M    .     .     .
       1110. C   I.      . . E      .L     .     .M    .     .     .
       1120. C   I.      . . E      .L     .     .M    .     .     .
       1130. C   I.      . . E      .L     .     .M    .     .     .
1140.00 1140. C   I.      . . E      L      .     M     .     .     .
       1150. C   I.      . . E      L      .     M     .     .     .
       1160. C   I.      . . E      L      .     M     .     .     .
       1170. C   I.      . . E      L      .     M     .     .     .
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        1180. C     I.     .     .E    L     .     M     .     .     .     .
        1190. C    I .     .     .E    L     .     M     .     .     .     .
        1200. C    I .     .     .E    L     .     M     .     .     .     .
        1210. C    I .     .     .E    L     .     M     .     .     .     .
        1220. C    I .     .     .E    L     .     M     .     .     .     .
        1230. C    I .     .     .E    L     .     M     .     .     .     .
  1240.00 1240. C    I .     .     .E    L.    .     M.    .     .     .     .
        1250. C    I .     .     .E    L.    .     M.    .     .     .     .
        1260. C    I .     .     .E    L.    .     M.    .     .     .     .
        1270. C    I .     .     .E    L.    .     M.    .     .     .     .
        1280. C    I .     .     .E    L.    .     M.    .     .     .     .
        1290. C    I .     .     .E    L.    .     M.    .     .     .     .
        1300. C    I .     .     .E    L.    .     M.    .     .     .     .
        1310. C    I .     .     .E    L.    .     M.    .     .     .     .
        1320. C    I .     .     .E    L.    .     M.    .     .     .     .
        1330. C    I .     .     .E    L.    .     M.    .     .     .     .
  1340.00 1340. C    I .     .     .E    L.    .     M.    .     .     .     .
        1350. C    I .     .     .E    L.    .     M.    .     .     .     .
        1360. C    I .     .     .E    L.    .     M.    .     .     .     .
        1370. C    I .     .     .E    L.    .     M.    .     .     .     .
        1380. C    I .     .     .E    L.    .     M.    .     .     .     .
        1390. C    I .     .     .E    L.    .     M.    .     .     .     .
        1400. C    I .     .     .E    L.    .     M.    .     .     .     .
        1410. C    I .     .     .E    L.    .     M.    .     .     .     .
        1420. C    I .     .     .E    L.    .     M.    .     .     .     .
        1430. C    I .     .     .E    L.    .     M.    .     .     .     .
  1440.00 1440. C    I .     .     .E    L.    .     M.    .     .     .     .
        1450. C    I .     .     .E    L.    .     M.    .     .     .     .
        1460. C    I .     .     .E    L.    .     M.    .     .     .     .
        1470. C    I .     .     .E    L.    .     M.    .     .     .     .
        1480. C    I .     .     .E    L.    .     M.    .     .     .     .
        1490. C    I .     .     .E    L.    .     M.    .     .     .     .
        1500. C    I .     .     .E    L.    .     M.    .     .     .     .
        1510. C    I .     .     .E    L.    .     M.    .     .     .     .
        1520. C    I .     .     .E    L.    .     M.    .     .     .     .
        1530. C    I .     .     .E    L.    .     M.    .     .     .     .
  1540.00 1540. C    I .     .     .E    L.    .     M.    .     .     .     .
        1550. C    I .     .     .E    L.    .     M.    .     .     .     .
        1560. C    I .     .     .E    L.    .     M.    .     .     .     .
        1570. C    I .     .     .E    L.    .     M.    .     .     .     .
        1580. C    I .     .     .E    L.    .     M.    .     .     .     .
        1590. C    I .     .     .E    L.    .     M.    .     .     .     .
        1600. C    I .     .     .E    L.    .     M.    .     .     .     .
        1610. C    I .     .     .E    L.    .     M.    .     .     .     .
        1620. C    I .     .     .E    L.    .     M.    .     .     .     .
        1630. C    I .     .     .E    L.    .     M.    .     .     .     .
  1640.00 1640. C    I .     .     .E    L.    .     M.    .     .     .     .
        1650. C    I .     .     .E    L.    .     M.    .     .     .     .
        1660. C    I .     .     .E    L.    .     M.    .     .     .     .
        1670. C    I .     .     .E    L.    .     M.    .     .     .     .
        1680. C    I .     .     .E    L.    .     M.    .     .     .     .
        1690. C    I .     .     .E    L.    .     M.    .     .     .     .
        1700. C    I .     .     .E    L.    .     M.    .     .     .     .
        1710. C    I .     .     .E    L.    .     M.    .     .     .     .
        1720. C    I .     .     .E    L.    .     M.    .     .     .     .
        1730. C    I .     .     .E    L.    .     M.    .     .     .     .
  1740.00 1740. C    I .     .     .E    L.    .     M.    .     .     .     .
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T1 Q9 = 7000 CFS, STARTING WSE = 1050.92

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	9	0	0	0	0	0	1050.92	0	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	8	0	0	0	0	0	0			

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 *PROF 8
0

 CCHV=    .100 CEHV=    .500
 *SECNO  .000
     .000     3.62  1050.92     .00  1050.92  1051.46     .54     .00     .00  1053.60
   7000.0       .0  7000.0      .0      .0   1183.1      .0      .0      .0   1053.60
     .00      .00     5.92     .00     .000     .030    .000    .000  1047.30  2033.18
   .003050      0.      0.      0.       0        0       0     .00   371.64  2404.82


 *SECNO 100.000
   100.000    3.63  1051.23     .00     .00  1051.77     .54     .30     .00  1053.90
   7000.0       .0  7000.0      .0      .0   1184.9      .0     2.7      .9   1053.90
     .00      .00     5.91     .00     .000     .030    .000    .000  1047.60  2033.12
   .003036    100.     100.    100.       0        0       0     .00   371.76  2404.88


 *SECNO 200.000
   200.000    3.63  1051.53     .00     .00  1052.07     .54     .30     .00  1054.20
   7000.0       .0  7000.0      .0      .0   1186.9      .0     5.4     1.7   1054.20
     .01      .00     5.90     .00     .000     .030    .000    .000  1047.90  2033.06
   .003020    100.     100.    100.       0        0       0     .00   371.89  2404.95


 *SECNO 300.000
   300.000    3.63  1051.83     .00     .00  1052.37     .54     .30     .00  1054.50
   7000.0       .0  7000.0      .0      .0   1188.1      .0     8.2     2.6   1054.50
     .01      .00     5.89     .00     .000     .030    .000    .000  1048.20  2033.01
   .003011    100.     100.    100.       0        0       0     .00   371.97  2404.99


 *SECNO 400.000
   400.000    3.63  1052.14     .00     .00  1052.67     .54     .30     .00  1054.80
   7000.0       .0  7000.0      .0      .0   1188.6      .0    10.9     3.4   1054.80
     .02      .00     5.89     .00     .000     .030    .000    .000  1048.50  2033.00
   .003007    100.     100.    100.       0        0       0     .00   372.01  2405.00


 *SECNO 500.000
   500.000    3.64  1052.44     .00     .00  1052.97     .54     .30     .00  1055.10
   7000.0       .0  7000.0      .0      .0   1188.9      .0    13.6     4.3   1055.10
     .02      .00     5.89     .00     .000     .030    .000    .000  1048.80  2032.99
   .003005    100.     100.    100.       0        0       0     .00   372.03  2405.01


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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 *SECNO 600.000
   600.000    3.64  1052.74     .00     .00  1053.27     .54     .30     .00  1055.40
   7000.0       .0  7000.0      .0      .0   1189.0      .0    16.4     5.1   1055.40
     .03      .00     5.89     .00     .000     .030    .000    .000  1049.10  2032.98
   .003003    100.     100.    100.       0        0       0     .00   372.04  2405.02


 *SECNO 700.000
   700.000    3.64  1053.04     .00     .00  1053.57     .54     .30     .00  1055.70
   7000.0       .0  7000.0      .0      .0   1189.2      .0    19.1     6.0   1055.70
     .03      .00     5.89     .00     .000     .030    .000    .000  1049.40  2032.98
   .003002    100.     100.    100.       0        0       0     .00   372.04  2405.02
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*SECNO 750.000
  750.000    3.64  1053.19    .00    .00  1053.72    .54    .15    .00  1055.85
   7000.0     .0   7000.0     .0     .0   1189.2     .0   20.4    6.4  1055.85
      .04    .00     5.89    .00   .000     .030   .000   .000  1049.55  2032.98
  .003002     50.     50.     50.      0        0      0    .00  372.05  2405.02


*SECNO 770.000
  770.000    3.64  1053.25    .00    .00  1053.79    .54    .06    .00  1055.91
   7000.0     .0   7000.0     .0     .0   1189.3     .0   21.0    6.6  1055.91
      .04    .00     5.89    .00   .000     .030   .000   .000  1049.61  2032.97
  .003002     20.     20.     20.      0        0      0    .00  372.05  2405.03


*SECNO 780.000
  780.000    3.64  1053.28    .00    .00  1053.82    .54    .03    .00  1055.94
   7000.0     .0   7000.0     .0     .0   1189.3     .0   21.3    6.7  1055.94
      .04    .00     5.89    .00   .000     .030   .000   .000  1049.64  2032.97
  .003002     10.     10.     10.      0        0      0    .00  372.05  2405.03


*SECNO 790.000
  790.000    3.64  1053.31    .00    .00  1053.85    .54    .03    .00  1055.97
   7000.0     .0   7000.0     .0     .0   1189.3     .0   21.5    6.7  1055.97
      .04    .00     5.89    .00   .000     .030   .000   .000  1049.67  2032.97
  .003002     10.     10.     10.      0        0      0    .00  372.05  2405.03


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  21JUN93    14:00:45                                                    PAGE  47


   SECNO    DEPTH    CWSEL    CRIWS    WSELK     EG       HV       HL     OLOSS   L-BANK ELEV
   Q       QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA     R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN     ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR   TOPWID   ENDST


*SECNO 800.000
  800.000    3.64  1053.34    .00    .00  1053.88    .54    .03    .00  1056.00
   7000.0     .0   7000.0     .0     .0   1189.3     .0   21.8    6.8  1056.00
      .04    .00     5.89    .00   .000     .030   .000   .000  1049.70  2032.97
  .003002     10.     10.     10.      0        0      0    .00  372.05  2405.03


*SECNO 805.000
  805.000    3.66  1053.36    .00    .00  1053.89    .53    .01    .00  1056.00
   7000.0     .0   7000.0     .0     .0   1195.1     .0   21.9    6.9  1056.00
      .04    .00     5.86    .00   .000     .030   .000   .000  1049.70  2032.78
  .002957      5.      5.      5.      0        0      0    .00  372.44  2405.22


*SECNO 810.000
  810.000    3.68  1053.38    .00    .00  1053.91    .53    .01    .00  1056.00
   7000.0     .0   7000.0     .0     .0   1202.7     .0   22.1    6.9  1056.00
      .04    .00     5.82    .00   .000     .030   .000   .000  1049.70  2032.53
  .002901      5.      5.      5.      0        0      0    .00  372.94  2405.47


*SECNO 820.000
  820.000    3.72  1053.42    .00    .00  1053.94    .51    .03    .00  1056.00
   7000.0     .0   7000.0     .0     .0   1218.5     .0   22.4    7.0  1056.00
      .04    .00     5.74    .00   .000     .030   .000   .000  1049.70  2032.00
  .002787     10.     10.     10.      1        0      0    .00  373.99  2406.00


*SECNO 840.000
  840.000    3.81  1053.51    .00    .00  1053.99    .48    .05    .00  1056.00
   7000.0     .0   7000.0     .0     .0   1253.2     .0   22.9    7.2  1056.00
      .04    .00     5.59    .00   .000     .030   .000   .000  1049.70  2030.86
  .002559     20.     20.     20.      2        0      0    .00  376.28  2407.14


*SECNO 940.000
```

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.76

```
 940.000    4.54  1054.04     .00     .00  1054.07     .03     .03     .05  1055.80
  7000.0     .0   7000.0      .0      .0   5376.9      .0    30.5     9.2  1055.80
     .06    .00     1.30     .00    .000     .030    .000    .000  1049.50  2076.43
 .000113    100.     100.     100.       2       0       0     .00  1380.64  3457.07
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 1040.000
 1040.000    4.76  1054.06     .00     .00  1054.08     .02     .01     .00  1055.60
  7000.0     .0    7000.0      .0      .0   6818.4      .0    44.5    12.7  1055.60
     .09    .00     1.03     .00    .000     .030    .000    .000  1049.30  2080.33
 .000066    100.     100.     100.       2       0       0     .00  1679.59  3759.91

*SECNO 1140.000
 1140.000    4.97  1054.07     .00     .00  1054.08     .01     .01     .00  1055.40
  7000.0     .0    7000.0      .0      .0   8605.8      .0    62.2    17.0  1055.40
     .12    .00      .81     .00    .000     .030    .000    .000  1049.10  2083.38
 .000040    100.     100.     100.       0       0       0     .00  2041.57  4124.95

*SECNO 1240.000
 1240.000    5.18  1054.08     .00     .00  1054.09     .01     .00     .00  1055.20
  7000.0     .0    7000.0      .0      .0  10839.8      .0    84.6    22.2  1055.20
     .17    .00      .65     .00    .000     .030    .000    .000  1048.90  2084.50
 .000024    100.     100.     100.       0       0       0     .00  2481.04  4565.54

*SECNO 1340.000
 1340.000    5.38  1054.08     .00     .00  1054.09     .00     .00     .00  1055.00
  7000.0     .0    7000.0      .0      .0  13622.1      .0   112.6    28.5  1055.00
     .22    .00      .51     .00    .000     .030    .000    .000  1048.70  2082.99
 .000014    100.     100.     100.       0       0       0     .00  3014.10  5097.09

*SECNO 1440.000
 1440.000    5.59  1054.09     .00     .00  1054.09     .00     .00     .00  1054.80
  7000.0     .0    7000.0      .0      .0  17085.6      .0   147.9    36.1  1054.80
     .29    .00      .41     .00    .000     .030    .000    .000  1048.50  2077.71
 .000009    100.     100.     100.       0       0       0     .00  3660.73  5738.43

*SECNO 1540.000
 1540.000    5.79  1054.09     .00     .00  1054.09     .00     .00     .00  1054.60
  7000.0     .0    7000.0      .0      .0  21395.0      .0   192.1    45.4  1054.60
     .37    .00      .33     .00    .000     .030    .000    .000  1048.30  2067.14
 .000005    100.     100.     100.       0       0       0     .00  4445.12  6512.26
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 1640.000
 1640.000    5.99  1054.09     .00     .00  1054.09     .00     .00     .00  1054.40
  7000.0     .0    7000.0      .0      .0  26753.3      .0   247.3    56.7  1054.40
     .48    .00      .26     .00    .000     .030    .000    .000  1048.10  2049.35
 .000003    100.     100.     100.       0       0       0     .00  5396.62  7445.97
```

```
*SECNO 1740.000
 1740.000    6.19  1054.09     .00     .00  1054.09     .00     .00     .00  1054.20
   7000.0      .0   7000.0      .0      .0  33411.9      .0   316.4    70.5  1054.20
      .61     .00      .21     .00    .000     .030    .000    .000 1047.90  2021.83
  .000002     100.     100.    100.       0        0       0     .00 6550.77  8572.60

1
PROFILE FOR STREAM  THE SPILLWAY DIMENSIONS


PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT
BANK,M-LOWER END STA


ELEVATION 1047.   1049.   1051.   1053.   1055.   1057.   1059.   1061.   1063.   1065.
   SECNO   CUMDIS

     .00    0. I     .    W .E    .L    .    .    .    .    .    .    .
           10. I     .    W .E    . L   .    .    .    .    .    .    .
           20. I     .    W .E    . L   .    .    .    .    .    .    .
           30. I     .    W.E     . L   .    .    .    .    .    .    .
           40. CI    .    W.E     . L   .    .    .    .    .    .    .
           50. CI    .    W. E    . L   .    .    .    .    .    .    .
           60. CI    .    W. E    . L   .    .    .    .    .    .    .
           70. CI    .    W. E    . L   .    .    .    .    .    .    .
           80. CI    .    W. E    . L   .    .    .    .    .    .    .
           90. CI    .    W. E    . L   .    .    .    .    .    .    .
  100.00  100. CI    .    W E     . L   .    .    .    .    .    .    .
          110. C I   .    W E     . L   .    .    .    .    .    .    .
          120. C I   .    W  E    . L   .    .    .    .    .    .    .
          130. C I   .    W  E    . L   .    .    .    .    .    .    .
          140. C I   .    W  E    . L   .    .    .    .    .    .    .
          150. C I   .    W  E    . L   .    .    .    .    .    .    .
          160. C I   .    .W E    . L   .    .    .    .    .    .    .
          170. C  I  .    .W E    . L   .    .    .    .    .    .    .
          180. C  I  .    .W  E   . L   .    .    .    .    .    .    .
          190. C  I  .    .W  E   . L   .    .    .    .    .    .    .
  200.00  200. C  I  .    .W  E   . L   .    .    .    .    .    .    .
          210. C  I  .    .W  E   .  L  .    .    .    .    .    .    .
          220. C  I  .    .W  E   .  L  .    .    .    .    .    .    .
          230. C  I  .    . W E   .  L  .    .    .    .    .    .    .
          240. C  I  .    . W E   .  L  .    .    .    .    .    .    .
          250. C  I  .    . W  E  .  L  .    .    .    .    .    .    .
          260. C  I  .    . W  E  .  L  .    .    .    .    .    .    .
          270. C  I  .    . W  E  .  L  .    .    .    .    .    .    .
          280. C  I  .    . W  E  .  L  .    .    .    .    .    .    .
          290. C  I  .    . W  E  .  L  .    .    .    .    .    .    .
  300.00  300. C  I  .    . W E   .  L  .    .    .    .    .    .    .
          310. C  I  .    . W E   .  L  .    .    .    .    .    .    .
          320. C  I  .    . W  E  .  L  .    .    .    .    .    .    .
          330. C  I  .    . W  E  .  L  .    .    .    .    .    .    .
          340. C  I  .    . W  E  .  L  .    .    .    .    .    .    .
          350. C  I  .    . W  E  .  L  .    .    .    .    .    .    .
          360. C  I  .    .  WE  .  L  .    .    .    .    .    .    .
          370. C  I  .    .  WE  .  L  .    .    .    .    .    .    .
          380. C  I  .    .  W E .  L  .    .    .    .    .    .    .
          390. C  I  .    .  W E .  L  .    .    .    .    .    .    .
  400.00  400. C  I  .    .  W E .  L  .    .    .    .    .    .    .
          410. C  I  .    .  W E .  L  .    .    .    .    .    .    .
          420. C  I  .    .  W E .  L  .    .    .    .    .    .    .
          430. C  I  .    .  WE  .  L  .    .    .    .    .    .    .
          440. C  I  .    .  WE  .  L  .    .    .    .    .    .    .
          450. C  I  .    .  W E .  L  .    .    .    .    .    .    .
          460. C  I  .    .  W E .  L  .    .    .    .    .    .    .
          470. C  I  .    .  W E .  L  .    .    .    .    .    .    .
          480. C  I  .    .  W E .  L  .    .    .    .    .    .    .
          490. C  I  .    .  WE  .  L  .    .    .    .    .    .    .
  500.00  500. C  I  .    .  WE  .  L  .    .    .    .    .    .    .
          510. C  I  .    .  WE  .  L  .    .    .    .    .    .    .
          520. C  I  .    .  W E .  L  .    .    .    .    .    .    .
          530. C  I  .    .  W E .  L  .    .    .    .    .    .    .
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FLOOD CONTROL DISTRICT
of
Maricopa County
2801 West Durango Street • Phoenix, Arizona 85009
Telephone (602) 506-1501
Fax (602) 506-4601
TDD (602) 506-5897

Neil S. Erwin, P.E., Chief Engineer and General Manager

BOARD OF DIRECTORS
Betsey Bayless
James D. Bruner
Ed King
Tom Rawles
Mary Rose Garrido Wilcox

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          540. C   I.    .   W E.    L    .    .    .    .    .    .    .
          550. C   I.    .   W E.    L    .    .    .    .    .    .    .
          560. C   I.    .   W E.    L    .    .    .    .    .    .    .
          570. C   I.    .   W E.    L    .    .    .    .    .    .    .
          580. C   I.    .   W E     L    .    .    .    .    .    .    .
          590. C   I.    .   W E     L    .    .    .    .    .    .    .
  600.00  600. C    I.    .   W E     L    .    .    .    .    .    .    .
          610. C   I.    .   W E     L    .    .    .    .    .    .    .
          620. C   I.    .   W E     L    .    .    .    .    .    .    .
          630. C   I.    .   W E     L    .    .    .    .    .    .    .
          640. C   I     .   W E     .L   .    .    .    .    .    .    .
          650. C   I     .   W .E    .L   .    .    .    .    .    .    .
          660. C   I     .   W .E    .L   .    .    .    .    .    .    .
          670. C   I     .   W .E    .L   .    .    .    .    .    .    .
          680. C   I     .   W .E    .L   .    .    .    .    .    .    .
          690. C   I     .   W.E     .L   .    .    .    .    .    .    .
  700.00  700. C    I     .   W.E     .L   .    .    .    .    .    .    .
          710. C   .I    .   W.E     .L   .    .    .    .    .    .    .
          720. C   .I    .   W. E    .L   .    .    .    .    .    .    .
          730. C   .I    .   W. E    .L   .    .    .    .    .    .    .
          740. C   .I    .   W. E    . L  .    .    .    .    .    .    .
  750.00  750. C    .I    .   W. E    . L  .    .    .    .    .    .    .
          760. C   .I    .   W E     . L  .    .    .    .    .    .    .
  770.00  770. C    . I   .   W E     . L  .    .    .    .    .    .    .
  780.00  780. C    . I   .   W  E    . L  .    .    .    .    .    .    .
  790.00  790. C    . I   .   W  E    . L  .    .    .    .    .    .    .
  800.00  800. C    . I   .   W  E    . L  .    .    .    .    .    .    .
  805.00  810. C    . I   .   W  E    . L  .    . M  .    .    .    .    .
  810.00  820. C    . I   .   W  E    . L  .    . M  .    .    .    .    .
  820.00  830. C    . I   .   .W E    . L  .    . M  .    .    .    .    .
  840.00  840. C    . I   .   .W E    . L  .    . M  .    .    .    .    .
          850. C   . I   .   .W E    . L  .    . M  .    .    .    .    .
          860. C   . I   .   . W E   . L  .    . M  .    .    .    .    .
          870. C   . I   .   . W E   . L  .    . M  .    .    .    .    .
          880. C   . I   .   . W E   . L  .    . M  .    .    .    .    .
          890. C   .I    .   . W E   . L  .    . M  .    .    .    .    .
          900. C   .I    .   . WE    . L  .    . M  .    .    .    .    .
          910. C   .I    .   . WE    . L  .    . M  .    .    .    .    .
          920. C   .I    .   . WE    . L  .    . M  .    .    .    .    .
          930. C   .I    .   . WE    . L  .    . M  .    .    .    .    .
  940.00  940. C    .I    .   . E     . L  .    . M  .    .    .    .    .
          950. C   .I    .   . E   . L  .    . M  .    .    .    .    .
          960. C   .I    .   . E   . L  .    . M  .    .    .    .    .
          970. C   .I    .   . E   . L  .    . M  .    .    .    .    .
          980. C   .I    .   . E   . L  .    . M  .    .    .    .    .
          990. C   I     .   . E   . L  .    . M  .    .    .    .    .
         1000. C   I     .   . E   . L  .    . M  .    .    .    .    .
         1010. C   I     .   . E   . L  .    . M  .    .    .    .    .
         1020. C   I     .   . E   . L  .    . M  .    .    .    .    .
         1030. C   I     .   . E   . L  .    . M  .    .    .    .    .
 1040.00 1040. C    I     .   . E   .L   .    .M   .    .    .    .    .
         1050. C   I     .   . E   .L   .    .M   .    .    .    .    .
         1060. C   I     .   . E   .L   .    .M   .    .    .    .    .
         1070. C   I     .   . E   .L   .    .M   .    .    .    .    .
         1080. C   I     .   . E   .L   .    .M   .    .    .    .    .
         1090. C   I.    .   . E   .L   .    .M   .    .    .    .    .
         1100. C   I.    .   . E   .L   .    .M   .    .    .    .    .
         1110. C   I.    .   . E   .L   .    .M   .    .    .    .    .
         1120. C   I.    .   . E   .L   .    .M   .    .    .    .    .
         1130. C   I.    .   . E   .L   .    .M   .    .    .    .    .
 1140.00 1140. C    I.    .   . E   L    .    M    .    .    .    .    .
         1150. C   I.    .   . E   L    .    M    .    .    .    .    .
         1160. C   I.    .   . E   L    .    M    .    .    .    .    .
         1170. C   I.    .   . E   L    .    M    .    .    .    .    .
         1180. C   I.    .   . E   L    .    M    .    .    .    .    .
         1190. C   I .   .   . E   L    .    M    .    .    .    .    .
         1200. C   I .   .   . E   L    .    M    .    .    .    .    .
         1210. C   I .   .   . E   L    .    M    .    .    .    .    .
         1220. C   I .   .   . E   L    .    M    .    .    .    .    .
         1230. C   I .   .   . E   L    .    M    .    .    .    .    .
 1240.00 1240. C    I .   .   . E   L.   .    M.   .    .    .    .    .
         1250. C   I .   .   . E   L.   .    M.   .    .    .    .    .
         1260. C   I .   .   . E   L.   .    M.   .    .    .    .    .
         1270. C   I .   .   . E   L.   .    M.   .    .    .    .    .
         1280. C   I .   .   . E   L.   .    M.   .    .    .    .    .
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FLOOD CONTROL DISTRICT
of
Maricopa County
2801 West Durango Street • Phoenix, Arizona 85009
Telephone (602) 506-1501
FAX (602) 506-4601
TDD (602) 506-5897

Neil S. Erwin, P.E., Chief Engineer and General Manager

BOARD OF DIRECTORS
Betsey Bayless
James D. Bruner
Ed King
Tom Rawles
Mary Rose Garrido Wilcox

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        1290. C   I .     .     . E  L.     .   M.     .     .     .
        1300. C   I .     .     . E  L.     .   M.     .     .     .
        1310. C   I .     .     . E  L.     .   M.     .     .     .
        1320. C   I .     .     . E  L.     .   M.     .     .     .
        1330. C   I .     .     . E  L.     .   M.     .     .     .
1340.00 1340. C   I .     .     . E  L.     .   M.     .     .     .
        1350. C   I .     .     . E  L.     .   M.     .     .     .
        1360. C   I .     .     . E  L.     .   M.     .     .     .
        1370. C   I .     .     . E  L.     .   M.     .     .     .
        1380. C   I .     .     . E  L.     .   M.     .     .     .
        1390. C   I .     .     . E  L.     .   M.     .     .     .
        1400. C   I .     .     . E  L.     .   M.     .     .     .
        1410. C   I .     .     . E  L.     .   M.     .     .     .
        1420. C   I .     .     . E  L.     .   M.     .     .     .
        1430. C   I .     .     . E  L.     .   M.     .     .     .
1440.00 1440. C   I .     .     . E  L.     .   M.     .     .     .
        1450. C   I .     .     . E  L.     .   M.     .     .     .
        1460. C   I .     .     . E  L.     .   M.     .     .     .
        1470. C   I .     .     . E  L.     .   M.     .     .     .
        1480. C   I .     .     . E  L.     .   M.     .     .     .
        1490. C   I .     .     . E  L.     .   M.     .     .     .
        1500. C   I .     .     . E  L.     .   M.     .     .     .
        1510. C   I .     .     . E  L.     .   M.     .     .     .
        1520. C   I .     .     . E  L.     .   M.     .     .     .
        1530. C   I .     .     . E  L.     .   M.     .     .     .
1540.00 1540. C   I .     .     . E  L.     .   M.     .     .     .
        1550. C   I .     .     . E  L.     .   M.     .     .     .
        1560. C   I .     .     . E  L.     .   M.     .     .     .
        1570. C   I .     .     . E  L.     .   M.     .     .     .
        1580. C   I .     .     . E  L.     .   M.     .     .     .
        1590. C   I .     .     . E  L.     .   M.     .     .     .
        1600. C   I .     .     . E  L.     .   M.     .     .     .
        1610. C   I .     .     . E  L.     .   M.     .     .     .
        1620. C   I .     .     . E  L.     .   M.     .     .     .
        1630. C   I .     .     . E  L.     .   M.     .     .     .
1640.00 1640. C   I .     .     . EL.     .   M.     .     .     .
        1650. C   I .     .     . EL.     .   M.     .     .     .
        1660. C   I .     .     . EL.     .   M.     .     .     .
        1670. C   I .     .     . EL.     .   M.     .     .     .
        1680. C   I .     .     . EL.     .   M.     .     .     .
        1690. C   I .     .     . EL.     .   M.     .     .     .
        1700. C   I .     .     . EL.     .   M.     .     .     .
        1710. C   I .     .     . EL.     .   M.     .     .     .
        1720. C   I .     .     . EL.     .   M.     .     .     .
        1730. C   I .     .     . EL.     .   M.     .     .     .
1740.00 1740. C   I .     .     . E .     .   M.     .     .     .
1
  21JUN93     14:00:45                                          PAGE  50


T1     Q10 = 8000 CFS, STARTING WSE = 1051.20

J1  ICHECK   INQ    NINV    IDIR    STRT    METRIC   HVINS    Q      WSEL    FQ

     0       10      0       0       0       0        0     1051.20   0

J2  NPROF   IPLOT   PRFVS   XSECV   XSECH   FN      ALLDC    IBW    CHNIM   ITRACE

     9       0       0       0       0       0       0

1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


 *PROF 9
0

 CCHV=    .100 CEHV=    .500
 *SECNO  .000
```

FLOOD CONTROL DISTRICT
of
Maricopa County
2801 West Durango Street • Phoenix, Arizona 85009
Telephone (602) 506-1501
Fax (602) 506-4601
TDD (602) 506-5897

BOARD OF DIRECTORS
Betsey Bayless
James D. Bruner
Ed King
Tom Rawles
Mary Rose Garrido Wilcox

Neil S. Erwin, P.E., Chief Engineer and General Manager

```
     .000     3.90  1051.20     .00  1051.20  1051.80     .60     .00     .00  1053.60
   8000.0       .0   8000.0      .0       .0   1288.1       .0      .0      .0  1053.60
      .00      .00     6.21     .00     .000     .030     .000    .000  1047.70  2029.31
 .003075       0.       0.       0.       0        0        0     .00   378.57  2408.29

*SECNO 100.000
   100.000     3.91  1051.51     .00     .00  1052.11     .60     .31     .00  1053.90
   8000.0       .0   8000.0      .0       .0   1290.9       .0     3.0      .9  1053.90
      .00      .00     6.20     .00     .000     .030     .000    .000  1047.60  2029.62
 .003055      100.     100.     100.       0        0        0     .00   378.75  2408.38

*SECNO 200.000
   200.000     3.92  1051.82     .00     .00  1052.41     .59     .30     .00  1054.20
   8000.0       .0   8000.0      .0       .0   1294.1       .0     5.9     1.7  1054.20
      .01      .00     6.18     .00     .000     .030     .000    .000  1047.90  2029.52
 .003032      100.     100.     100.       0        0        0     .00   378.96  2408.48

*SECNO 300.000
   300.000     3.92  1052.12     .00     .00  1052.71     .59     .30     .00  1054.50
   8000.0       .0   8000.0      .0       .0   1296.1       .0     8.9     2.6  1054.50
      .01      .00     6.17     .00     .000     .030     .000    .000  1048.20  2029.45
 .003018      100.     100.     100.       0        0        0     .00   379.10  2408.55

*SECNO 400.000
   400.000     3.92  1052.42     .00     .00  1053.01     .59     .30     .00  1054.80
   8000.0       .0   8000.0      .0       .0   1297.1       .0    11.9     3.5  1054.80
      .02      .00     6.17     .00     .000     .030     .000    .000  1048.50  2029.42
 .003010      100.     100.     100.       0        0        0     .00   379.16  2408.58

*SECNO 500.000
   500.000     3.93  1052.73     .00     .00  1053.32     .59     .30     .00  1055.10
   8000.0       .0   8000.0      .0       .0   1297.7       .0    14.9     4.3  1055.10
      .02      .00     6.16     .00     .000     .030     .000    .000  1048.80  2029.40
 .003007      100.     100.     100.       0        0        0     .00   379.20  2408.60

1
  21JUN93      14:00:45                                                    PAGE   52

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*SECNO 600.000
   600.000     3.93  1053.03     .00     .00  1053.62     .59     .30     .00  1055.40
   8000.0       .0   8000.0      .0       .0   1297.9       .0    17.8     5.2  1055.40
      .03      .00     6.16     .00     .000     .030     .000    .000  1049.10  2029.39
 .003005      100.     100.     100.       0        0        0     .00   379.21  2408.61

*SECNO 700.000
   700.000     3.93  1053.33     .00     .00  1053.92     .59     .30     .00  1055.70
   8000.0       .0   8000.0      .0       .0   1298.1       .0    20.8     6.1  1055.70
      .03      .00     6.16     .00     .000     .030     .000    .000  1049.40  2029.39
 .003004      100.     100.     100.       0        0        0     .00   379.23  2408.61

*SECNO 750.000
   750.000     3.93  1053.48     .00     .00  1054.07     .59     .15     .00  1055.85
   8000.0       .0   8000.0      .0       .0   1298.3       .0    22.3     6.5  1055.85
      .03      .00     6.16     .00     .000     .030     .000    .000  1049.55  2029.38
 .003003       50.      50.      50.       0        0        0     .00   379.24  2408.62

*SECNO 770.000
   770.000     3.93  1053.54     .00     .00  1054.13     .59     .06     .00  1055.91
   8000.0       .0   8000.0      .0       .0   1298.3       .0    22.9     6.7  1055.91
```

```
   .03      .00     6.16      .00     .000     .030     .000     .000  1049.61  2029.38
 .003003     20.     20.      20.       0        0        0      .00   379.24  2408.62


*SECNO 780.000
 780.000    3.93  1053.57      .00      .00  1054.16      .59      .03      .00  1055.94
  8000.0      .0   8000.0       .0       .0   1298.3       .0     23.2      6.8  1055.94
     .04     .00     6.16      .00     .000     .030     .000     .000  1049.64  2029.38
 .003003     10.     10.      10.       0        0        0      .00   379.24  2408.62


*SECNO 790.000
 790.000    3.93  1053.60      .00      .00  1054.19      .59      .03      .00  1055.97
  8000.0      .0   8000.0       .0       .0   1298.3       .0     23.5      6.9  1055.97
     .04     .00     6.16      .00     .000     .030     .000     .000  1049.67  2029.38
 .003003     10.     10.      10.       0        0        0      .00   379.24  2408.62


1
 21JUN93     14:00:45                                                          PAGE  53


  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 800.000
 800.000    3.93  1053.63      .00      .00  1054.22      .59      .03      .00  1056.00
  8000.0      .0   8000.0       .0       .0   1298.3       .0     23.8      7.0  1056.00
     .04     .00     6.16      .00     .000     .030     .000     .000  1049.70  2029.38
 .003003     10.     10.      10.       0        0        0      .00   379.24  2408.62


*SECNO 805.000
 805.000    3.95  1053.65      .00      .00  1054.23      .58      .01      .00  1056.00
  8000.0      .0   8000.0       .0       .0   1304.2       .0     23.9      7.0  1056.00
     .04     .00     6.13      .00     .000     .030     .000     .000  1049.70  2029.19
 .002961      5.      5.       5.       0        0        0      .00   379.62  2408.81


*SECNO 810.000
 810.000    3.97  1053.67      .00      .00  1054.25      .58      .01      .00  1056.00
  8000.0      .0   8000.0       .0       .0   1312.1       .0     24.1      7.0  1056.00
     .04     .00     6.10      .00     .000     .030     .000     .000  1049.70  2028.93
 .002908      5.      5.       5.       0        0        0      .00   380.13  2409.07


*SECNO 820.000
 820.000    4.01  1053.71      .00      .00  1054.28      .56      .03      .00  1056.00
  8000.0      .0   8000.0       .0       .0   1328.4       .0     24.4      7.1  1056.00
     .04     .00     6.02      .00     .000     .030     .000     .000  1049.70  2028.40
 .002801     10.     10.      10.       1        0        0      .00   381.20  2409.60


*SECNO 840.000
 840.000    4.10  1053.80      .00      .00  1054.33      .53      .05      .00  1056.00
  8000.0      .0   8000.0       .0       .0   1364.5       .0     25.0      7.3  1056.00
     .04     .00     5.86      .00     .000     .030     .000     .000  1049.70  2027.23
 .002582     20.     20.      20.       2        0        0      .00   383.54  2410.77


*SECNO 940.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.76

 940.000    4.89  1054.39      .00      .00  1054.42      .03      .03      .05  1055.80
  8000.0      .0   8000.0       .0       .0   5858.7       .0     33.3      9.4  1055.80
     .06     .00     1.37      .00     .000     .030     .000     .000  1049.50  2061.47
 .000114    100.    100.     100.       2        0        0      .00  1410.55  3472.03
```

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 1040.000
 1040.000    5.11  1054.41     .00     .00  1054.43     .02     .01     .00  1055.60
  8000.0      .0   8000.0      .0      .0   7405.7      .0    48.5    13.0  1055.60
     .08     .00     1.08     .00    .000     .030    .000    .000  1049.30  2062.34
 .000068     100.     100.    100.       2        0       0     .00  1715.57  3777.90

*SECNO 1140.000
 1140.000    5.32  1054.42     .00     .00  1054.43     .01     .01     .00  1055.40
  8000.0      .0   8000.0      .0      .0   9320.3      .0    67.7    17.3  1055.40
     .12     .00      .86     .00    .000     .030    .000    .000  1049.10  2061.77
 .000041     100.     100.    100.       0        0       0     .00  2084.79  4146.56

*SECNO 1240.000
 1240.000    5.53  1054.43     .00     .00  1054.44     .01     .00     .00  1055.20
  8000.0      .0   8000.0      .0      .0  11709.8      .0    91.9    22.6  1055.20
     .16     .00      .68     .00    .000     .030    .000    .000  1048.90  2058.51
 .000025     100.     100.    100.       0        0       0     .00  2533.01  4591.52

*SECNO 1340.000
 1340.000    5.73  1054.43     .00     .00  1054.44     .00     .00     .00  1055.00
  8000.0      .0   8000.0      .0      .0  14680.8      .0   122.2    29.1  1055.00
     .21     .00      .54     .00    .000     .030    .000    .000  1048.70  2051.75
 .000015     100.     100.    100.       0        0       0     .00  3076.58  5128.33

*SECNO 1440.000
 1440.000    5.94  1054.44     .00     .00  1054.44     .00     .00     .00  1054.80
  8000.0      .0   8000.0      .0      .0  18372.2      .0   160.1    36.9  1054.80
     .27     .00      .44     .00    .000     .030    .000    .000  1048.50  2040.19
 .000009     100.     100.    100.       0        0       0     .00  3735.75  5775.94

*SECNO 1540.000
 1540.000    6.14  1054.44     .00     .00  1054.44     .00     .00     .00  1054.60
  8000.0      .0   8000.0      .0      .0  22958.7      .0   207.5    46.4  1054.60
     .35     .00      .35     .00    .000     .030    .000    .000  1048.30  2022.08
 .000006     100.     100.    100.       0        0       0     .00  4535.25  6557.33
```



```
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 1640.000
 1640.000    6.34  1054.44     .00     .00  1054.44     .00     .00     .00  1054.40
  8000.0      .0   8000.0      .0      .0  28652.7      .0   266.8    57.9  1054.40
     .45     .00      .28     .00    .000     .030    .000    .000  1048.10  2001.14
 .000004     100.     100.    100.       0        0       0     .00  5493.04  7494.18

*SECNO 1740.000
 1740.000    6.54  1054.44     .00     .00  1054.44     .00     .00     .00  1054.20
  8000.0      .0   8000.0      .0      .0  35706.9      .0   340.7    71.8  1054.20
     .57     .00      .22     .00    .000     .030    .000    .000  1047.90  2001.32
 .000002     100.     100.    100.       0        0       0     .00  6591.80  8593.12
```

PROFILE FOR STREAM THE SPILLWAY DIMENSIONS

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION 1047.   1049.   1051.   1053.   1055.   1057.   1059.   1061.   1063.   1065.
  SECNO  CUMDIS

   .00    0. I      .    W. E    .L     .      .      .      .      .      .      .
         10. I      .    W E    . L     .      .      .      .      .      .      .
         20. I      .    W E    . L     .      .      .      .      .      .      .
         30. I      .    W E    . L     .      .      .      .      .      .      .
         40. CI     .    W E    . L     .      .      .      .      .      .      .
         50. CI     .    W E    . L     .      .      .      .      .      .      .
         60. CI     .    W E    . L     .      .      .      .      .      .      .
         70. CI     .    .W E   . L     .      .      .      .      .      .      .
         80. CI     .    .W E   . L     .      .      .      .      .      .      .
         90. CI     .    .W E   . L     .      .      .      .      .      .      .
  100.00 100. CI     .    .W E   . L     .      .      .      .      .      .      .
        110. C I     .   .W E   . L     .      .      .      .      .      .      .
        120. C I     .   .W E   . L     .      .      .      .      .      .      .
        130. C I     .   . WE   . L     .      .      .      .      .      .      .
        140. C I     .   . W E  . L     .      .      .      .      .      .      .
        150. C I     .   . W E  . L     .      .      .      .      .      .      .
        160. C I     .   . W E  . L     .      .      .      .      .      .      .
        170. C I     .   . W E  . L     .      .      .      .      .      .      .
        180. C I     .   . W E  . L     .      .      .      .      .      .      .
        190. C I     .   . W E  . L     .      .      .      .      .      .      .
  200.00 200. C I     .   . W E  . L     .      .      .      .      .      .      .
        210. C I     .   . W E  . L     .      .      .      .      .      .      .
        220. C I     .   . W E  . L     .      .      .      .      .      .      .
        230. C I     .   . W E  . L     .      .      .      .      .      .      .
        240. C  I    .   . W E  . L     .      .      .      .      .      .      .
        250. C  I    .   . W E  . L     .      .      .      .      .      .      .
        260. C  I    .   . W E  . L     .      .      .      .      .      .      .
        270. C  I    .   . W E  . L     .      .      .      .      .      .      .
        280. C  I    .   . W E  . L     .      .      .      .      .      .      .
        290. C  I    .   . W E  . L     .      .      .      .      .      .      .
  300.00 300. C  I    .   . W E  . L     .      .      .      .      .      .      .
        310. C  I    .   . W E  . L     .      .      .      .      .      .      .
        320. C  I    .   . W E  . L     .      .      .      .      .      .      .
        330. C  I    .   . WE   . L     .      .      .      .      .      .      .
        340. C  I    .   . W E  . L     .      .      .      .      .      .      .
        350. C  I    .   . W E  . L     .      .      .      .      .      .      .
        360. C  I    .   . W E  . L     .      .      .      .      .      .      .
        370. C  I    .   . W E  . L     .      .      .      .      .      .      .
        380. C  I    .   . W E  . L     .      .      .      .      .      .      .
        390. C  I    .   . W E  . L     .      .      .      .      .      .      .
  400.00 400. C  I    .   . W E. L       .      .      .      .      .      .      .
        410. C  I    .   . W E. L       .      .      .      .      .      .      .
        420. C  I    .   . W E. L       .      .      .      .      .      .      .
        430. C  I    .   . W E. L       .      .      .      .      .      .      .
        440. C  I    .   . W E. L       .      .      .      .      .      .      .
        450. C  I    .   . W E. L       .      .      .      .      .      .      .
        460. C  I    .   . WE. L        .      .      .      .      .      .      .
        470. C  I    .   . W E  L.      .      .      .      .      .      .      .
        480. C  I    .   . W E  L.      .      .      .      .      .      .      .
        490. C  I    .   . W E  L.      .      .      .      .      .      .      .
  500.00 500. C  I    .   . W E  L.      .      .      .      .      .      .      .
        510. C  I    .   . W E  L.      .      .      .      .      .      .      .
        520. C  I    .   . W E  L.      .      .      .      .      .      .      .
        530. C  I    .   . W.E  L.      .      .      .      .      .      .      .
        540. C  I    .   . W.E  L       .      .      .      .      .      .      .
        550. C  I    .   . W.E  L       .      .      .      .      .      .      .
        560. C  I    .   . W.E  L       .      .      .      .      .      .      .
        570. C  I.   .   . W.E  L       .      .      .      .      .      .      .
        580. C  I.   .   . W.E  L       .      .      .      .      .      .      .
        590. C  I.   .   . W.E  L       .      .      .      .      .      .      .
  600.00 600. C  I.   .   . W. E  L     .      .      .      .      .      .      .
        610. C  I.   .   . W. E  .L     .      .      .      .      .      .      .
```

```
        620. C    I.    .   W. E    .L    .    .    .    .    .    .
        630. C    I.    .   W. E    .L    .    .    .    .    .    .
        640. C    I     .   W. E    .L    .    .    .    .    .    .
        650. C    I     .   W. E    .L    .    .    .    .    .    .
        660. C    I     .   W E     .L    .    .    .    .    .    .
        670. C    I     .   W E     .L    .    .    .    .    .    .
        680. C    I     .   W E     .L    .    .    .    .    .    .
        690. C    I     .   W E     .L    .    .    .    .    .    .
700.00  700. C    I     .   W E     .L    .    .    .    .    .    .
        710. C    .I    .   W E     .L    .    .    .    .    .    .
        720. C    .I    .   W E     .L    .    .    .    .    .    .
        730. C    .I    .   .W E    .L    .    .    .    .    .    .
        740. C    .I    .   .W E    .L    .    .    .    .    .    .
750.00  750. C    .I    .   .W E    .L    .    .    .    .    .    .
        760. C    .I    .   .W E    .L    .    .    .    .    .    .
770.00  770. C    .I    .   .W E    .L    .    .    .    .    .    .
780.00  780. C    .I    .   .W E    .L    .    .    .    .    .    .
790.00  790. C    .I    .   .W E    .L    .    .    .    .    .    .
800.00  800. C    .I    .   .W E    .L    .    .    .    .    .    .
805.00  810. C    .I    .   .W E    .L    .    .M   .    .    .    .
810.00  820. C    .I    .   .W E    .L    .    .M   .    .    .    .
820.00  830. C    .I    .   .W E    .L    .    .M   .    .    .    .
840.00  840. C    .I    .   .WE     .L    .    .M   .    .    .    .
        850. C    .I    .   .WE     .L    .    .M   .    .    .    .
        860. C    .I    .   .WE     .L    .    .M   .    .    .    .
        870. C    .I    .   .WE     .L    .    .M   .    .    .    .
        880. C    .I    .   .WE     .L    .    .M   .    .    .    .
        890. C    .I    .   .WE     .L    .    .M   .    .    .    .
        900. C    .I    .   .WE     .L    .    .M   .    .    .    .
        910. C    .I    .   .E      .L    .    .M   .    .    .    .
        920. C    .I    .   .WE     .L    .    .M   .    .    .    .
        930. C    .I    .   .WE     .L    .    .M   .    .    .    .
940.00  940. C    .I    .   .WE     .L    .    .M   .    .    .    .
        950. C    .I    .   .WE     .L    .    .M   .    .    .    .
        960. C    .I    .   .WE     .L    .    .M   .    .    .    .
        970. C    .I    .   .WE     .L    .    .M   .    .    .    .
        980. C    .I    .   .WE     .L    .    .M   .    .    .    .
        990. C    I     .   .WE     .L    .    .M   .    .    .    .
       1000. C    I     .   .E      .L    .    .M   .    .    .    .
       1010. C    I     .   .E      .L    .    .M   .    .    .    .
       1020. C    I     .   .E      .L    .    .M   .    .    .    .
       1030. C    I     .   .E      .L    .    .M   .    .    .    .
1040.00 1040. C    I     .   .E      .L    .    .M   .    .    .    .
       1050. C    I     .   .E      .L    .    .M   .    .    .    .
       1060. C    I     .   .E      .L    .    .M   .    .    .    .
       1070. C    I     .   .E      .L    .    .M   .    .    .    .
       1080. C    I     .   .E      .L    .    .M   .    .    .    .
       1090. C    I.    .   .E      .L    .    .M   .    .    .    .
       1100. C    I.    .   .E      .L    .    .M   .    .    .    .
       1110. C    I.    .   .E      .L    .    .M   .    .    .    .
       1120. C    I.    .   .E      .L    .    .M   .    .    .    .
       1130. C    I.    .   .E      .L    .    .M   .    .    .    .
1140.00 1140. C    I.    .   .E      L     .    M    .    .    .    .
       1150. C    I.    .   .E      L     .    M    .    .    .    .
       1160. C    I.    .   .E      L     .    M    .    .    .    .
       1170. C    I.    .   .E      L     .    M    .    .    .    .
       1180. C    I.    .   .E      L     .    M    .    .    .    .
       1190. C    I.    .   .E      L     .    M    .    .    .    .
       1200. C    I.    .   .E      L     .    M    .    .    .    .
       1210. C    I.    .   .E      L     .    M    .    .    .    .
       1220. C    I.    .   .E      L     .    M    .    .    .    .
       1230. C    I.    .   .E      L     .    M    .    .    .    .
1240.00 1240. C    I.    .   .E      L.    .    M.   .    .    .    .
       1250. C    I.    .   .E      L.    .    M.   .    .    .    .
       1260. C    I.    .   .E      L.    .    M.   .    .    .    .
       1270. C    I.    .   .E      L.    .    M.   .    .    .    .
       1280. C    I.    .   .E      L.    .    M.   .    .    .    .
       1290. C    I.    .   .E      L.    .    M.   .    .    .    .
       1300. C    I.    .   .E      L.    .    M.   .    .    .    .
       1310. C    I.    .   .E      L.    .    M.   .    .    .    .
       1320. C    I.    .   .E      L.    .    M.   .    .    .    .
       1330. C    I.    .   .E      L.    .    M.   .    .    .    .
1340.00 1340. C    I.    .   .EL.    .    M.   .    .    .    .
       1350. C    I.    .   .EL.    .    M.   .    .    .    .
       1360. C    I.    .   .EL.    .    M.   .    .    .    .
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        1370. C    I .     .     .  EL.     .   M.     .     .     .     .
        1380. C    I .     .     .  EL.     .   M.     .     .     .     .
        1390. C    I .     .     .  EL.     .   M.     .     .     .     .
        1400. C    I .     .     .  EL.     .   M.     .     .     .     .
        1410. C    I .     .     .  EL.     .   M.     .     .     .     .
        1420. C    I .     .     .  EL.     .   M.     .     .     .     .
        1430. C    I .     .     .  EL.     .   M.     .     .     .     .
  1440.00 1440. C    I .     .     .  EL.     .   M.     .     .     .     .
        1450. C    I .     .     .  EL .    .  M .     .     .     .     .
        1460. C    I .     .     .  EL .    .  M .     .     .     .     .
        1470. C    I .     .     .  EL .    .  M .     .     .     .     .
        1480. C    I .     .     .  EL .    .  M .     .     .     .     .
        1490. C    I .     .     .  EL .    .  M .     .     .     .     .
        1500. C    I .     .     .  EL .    .  M .     .     .     .     .
        1510. C    I .     .     .  EL .    .  M .     .     .     .     .
        1520. C    I .     .     .  EL .    .  M .     .     .     .     .
        1530. C    I .     .     .  EL .    .  M .     .     .     .     .
  1540.00 1540. C    I .     .     .  E .    .  M .     .     .     .     .
        1550. C    I .     .     .  E .    .  M .     .     .     .     .
        1560. C    I .     .     .  E .    .  M .     .     .     .     .
        1570. C    I .     .     .  E .    .  M .     .     .     .     .
        1580. C    I .     .     .  E .    .  M .     .     .     .     .
        1590. C    I .     .     .  E .    .  M .     .     .     .     .
        1600. C    I .     .     .  E .    .  M .     .     .     .     .
        1610. C    I .     .     .  E .    .  M .     .     .     .     .
        1620. C    I .     .     .  E .    .  M .     .     .     .     .
        1630. C    I .     .     .  E .    .  M .     .     .     .     .
  1640.00 1640. C    I .     .     .  LE .    .  M .     .     .     .     .
        1650. C    I .     .     .  LE .    .  M .     .     .     .     .
        1660. C    I .     .     .  LE .    .  M .     .     .     .     .
        1670. C    I .     .     .  LE .    .  M .     .     .     .     .
        1680. C    I .     .     .  LE .    .  M .     .     .     .     .
        1690. C    I .     .     .  LE .    .  M .     .     .     .     .
        1700. C    I .     .     .  LE .    .  M .     .     .     .     .
        1710. C    I .     .     .  LE .    .  M .     .     .     .     .
        1720. C    I .     .     .  LE .    .  M .     .     .     .     .
        1730. C    I .     .     .  LE .    .  M .     .     .     .     .
  1740.00 1740. C    I .     .     .  LE .    .  M .     .     .     .     .
1
  21JUN93      14:00:45                                                    PAGE   56


T1      Q11 = 9000 CFS, STARTING WSE = 1051.47

J1  ICHECK   INQ     NINV    IDIR    STRT    METRIC   HVINS    Q       WSEL     FQ

     0       11      0       0               0        0        0   1051.47      0

J2  NPROF    IPLOT   PRFVS   XSECV   XSECH   FN       ALLDC    IBW     CHNIM    ITRACE

    10       0       0       0       0       0        0

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  21JUN93      14:00:45                                                    PAGE   57


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 *PROF10
0

 CCHV=     .100 CEHV=     .500
 *SECNO  .000
     .000      4.17   1051.47      .00   1051.47   1052.12      .65      .00      .00   1053.60
    9000.0       .0    9000.0       .0       .0    1391.2       .0       .0       .0   1053.60
      .00       .00      6.47      .00      .000      .030     .000     .000   1047.30   2026.37
   .003082       0.       0.       0.        0         0        0      .00    385.26   2411.63


 *SECNO 100.000
   100.000      4.18   1051.78      .00      .00   1052.43      .65      .31      .00   1053.90
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  9000.0      .0   9000.0      .0      .0   1394.4      .0     3.2      .9  1053.90
    .00     .00     6.45     .00    .000     .030    .000    .000  1047.60  2026.27
 .003061    100.     100.    100.       0        0       0     .00   385.46  2411.73


*SECNO 200.000
  200.000    4.19  1052.09     .00     .00  1052.73     .64     .30     .00  1054.20
  9000.0      .0   9000.0      .0      .0   1397.9      .0     6.4     1.8  1054.20
    .01     .00     6.44     .00    .000     .030    .000    .000  1047.90  2026.16
 .003038    100.     100.    100.       0        0       0     .00   385.69  2411.84


*SECNO 300.000
  300.000    4.19  1052.39     .00     .00  1053.04     .64     .30     .00  1054.50
  9000.0      .0   9000.0      .0      .0   1400.4      .0     9.6     2.7  1054.50
    .01     .00     6.43     .00    .000     .030    .000    .000  1048.20  2026.08
 .003022    100.     100.    100.       0        0       0     .00   385.85  2411.92


*SECNO 400.000
  400.000    4.20  1052.70     .00     .00  1053.34     .64     .30     .00  1054.80
  9000.0      .0   9000.0      .0      .0   1401.7      .0    12.8     3.5  1054.80
    .02     .00     6.42     .00    .000     .030    .000    .000  1048.50  2026.03
 .003013    100.     100.    100.       0        0       0     .00   385.93  2411.97


*SECNO 500.000
  500.000    4.20  1053.00     .00     .00  1053.64     .64     .30     .00  1055.10
  9000.0      .0   9000.0      .0      .0   1402.4      .0    16.0     4.4  1055.10
    .02     .00     6.42     .00    .000     .030    .000    .000  1048.80  2026.01
 .003008    100.     100.    100.       0        0       0     .00   385.98  2411.99


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  21JUN93      14:00:45                                                    PAGE  58


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 600.000
  600.000    4.20  1053.30     .00     .00  1053.94     .64     .30     .00  1055.40
  9000.0      .0   9000.0      .0      .0   1402.8      .0    19.3     5.3  1055.40
    .03     .00     6.42     .00    .000     .030    .000    .000  1049.10  2026.00
 .003006    100.     100.    100.       0        0       0     .00   386.00  2412.00


*SECNO 700.000
  700.000    4.20  1053.60     .00     .00  1054.24     .64     .30     .00  1055.70
  9000.0      .0   9000.0      .0      .0   1403.1      .0    22.5     6.2  1055.70
    .03     .00     6.41     .00    .000     .030    .000    .000  1049.40  2025.99
 .003004    100.     100.    100.       0        0       0     .00   386.02  2412.01


*SECNO 750.000
  750.000    4.20  1053.75     .00     .00  1054.39     .64     .15     .00  1055.85
  9000.0      .0   9000.0      .0      .0   1403.3      .0    24.1     6.6  1055.85
    .03     .00     6.41     .00    .000     .030    .000    .000  1049.55  2025.98
 .003003     50.      50.     50.       0        0       0     .00   386.03  2412.02


*SECNO 770.000
  770.000    4.20  1053.81     .00     .00  1054.45     .64     .06     .00  1055.91
  9000.0      .0   9000.0      .0      .0   1403.3      .0    24.7     6.8  1055.91
    .03     .00     6.41     .00    .000     .030    .000    .000  1049.61  2025.98
 .003003     20.      20.     20.       0        0       0     .00   386.03  2412.02


*SECNO 780.000
  780.000    4.20  1053.84     .00     .00  1054.48     .64     .03     .00  1055.94
  9000.0      .0   9000.0      .0      .0   1403.3      .0    25.1     6.9  1055.94
    .03     .00     6.41     .00    .000     .030    .000    .000  1049.64  2025.98
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 .003003     10.     10.     10.      0      0      0    .00   386.03   2412.02


*SECNO 790.000
 790.000    4.20  1053.87    .00    .00  1054.51    .64    .03    .00  1055.97
  9000.0      .0   9000.0     .0     .0   1403.3     .0   25.4    7.0  1055.97
     .03     .00    6.41    .00   .000     .030   .000   .000  1049.67  2025.98
 .003003     10.     10.     10.      0      0      0    .00   386.03   2412.02


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 21JUN93     14:00:45                                                          PAGE  59


  SECNO    DEPTH    CWSEL    CRIWS    WSELK     EG       HV       HL     OLOSS   L-BANK ELEV
  Q       QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA     R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN   SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID  ENDST


*SECNO 800.000
 800.000    4.20  1053.90    .00    .00  1054.54    .64    .03    .00  1056.00
  9000.0      .0   9000.0     .0     .0   1403.3     .0   25.7    7.1  1056.00
     .03     .00    6.41    .00   .000     .030   .000   .000  1049.70  2025.98
 .003003     10.     10.     10.      0      0      0    .00   386.03   2412.02


*SECNO 805.000
 805.000    4.22  1053.92    .00    .00  1054.56    .63    .01    .00  1056.00
  9000.0      .0   9000.0     .0     .0   1409.3     .0   25.9    7.1  1056.00
     .03     .00    6.39    .00   .000     .030   .000   .000  1049.70  2025.79
 .002964      5.      5.      5.      0      0      0    .00   386.42   2412.21


*SECNO 810.000
 810.000    4.25  1053.95    .00    .00  1054.57    .63    .01    .00  1056.00
  9000.0      .0   9000.0     .0     .0   1417.4     .0   26.0    7.2  1056.00
     .04     .00    6.35    .00   .000     .030   .000   .000  1049.70  2025.53
 .002913      5.      5.      5.      0      0      0    .00   386.93   2412.47


*SECNO 820.000
 820.000    4.29  1053.99    .00    .00  1054.60    .61    .03    .00  1056.00
  9000.0      .0   9000.0     .0     .0   1434.2     .0   26.4    7.3  1056.00
     .04     .00    6.28    .00   .000     .030   .000   .000  1049.70  2024.99
 .002811     10.     10.     10.      1      0      0    .00   388.01   2413.01


*SECNO 840.000
 840.000    4.38  1054.08    .00    .00  1054.66    .58    .05    .00  1056.00
  9000.0      .0   9000.0     .0     .0   1472.1     .0   27.0    7.4  1056.00
     .04     .00    6.11    .00   .000     .030   .000   .000  1049.70  2023.79
 .002599     20.     20.     20.      2      0      0    .00   390.42   2414.21


*SECNO 940.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.76

 940.000    5.21  1054.71    .00    .00  1054.74    .03    .03    .05  1055.80
  9000.0      .0   9000.0     .0     .0   6323.4     .0   36.0    9.5  1055.80
     .06     .00    1.42    .00   .000     .030   .000   .000  1049.50  2047.34
 .000115    100.    100.    100.      2      0      0    .00  1438.82  3486.16


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 21JUN93     14:00:45                                                          PAGE  60


  SECNO    DEPTH    CWSEL    CRIWS    WSELK     EG       HV       HL     OLOSS   L-BANK ELEV
  Q       QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA     R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN   SSTA
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SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1040.000

1040.000	5.43	1054.73	.00	.00	1054.75	.02	.01	.00	1055.60
9000.0	.0	9000.0	.0	.0	7972.9	.0	52.4	13.2	1055.60
.08	.00	1.13	.00	.000	.030	.000	.000	1049.30	2045.31
.000069	100.	100.	100.	2	0	0	.00	1749.62	3794.93

*SECNO 1140.000

1140.000	5.65	1054.75	.00	.00	1054.76	.01	.01	.00	1055.40
9000.0	.0	9000.0	.0	.0	10009.3	.0	73.0	17.6	1055.40
.11	.00	.90	.00	.000	.030	.000	.000	1049.10	2041.35
.000042	100.	100.	100.	0	0	0	.00	2125.64	4166.98

*SECNO 1240.000

1240.000	5.86	1054.76	.00	.00	1054.76	.01	.00	.00	1055.20
9000.0	.0	9000.0	.0	.0	12548.7	.0	98.9	23.1	1055.20
.15	.00	.72	.00	.000	.030	.000	.000	1048.90	2033.95
.000025	100.	100.	100.	0	0	0	.00	2582.13	4616.08

*SECNO 1340.000

1340.000	6.06	1054.76	.00	.00	1054.77	.01	.00	.00	1055.00
9000.0	.0	9000.0	.0	.0	15701.1	.0	131.3	29.6	1055.00
.20	.00	.57	.00	.000	.030	.000	.000	1048.70	2022.23
.000016	100.	100.	100.	0	0	0	.00	3135.61	5157.85

*SECNO 1440.000

1440.000	6.26	1054.76	.00	.00	1054.77	.00	.00	.00	1054.80
9000.0	.0	9000.0	.0	.0	19612.0	.0	171.9	37.6	1054.80
.26	.00	.46	.00	.000	.030	.000	.000	1048.50	2004.75
.000010	100.	100.	100.	0	0	0	.00	3806.65	5811.39

*SECNO 1540.000

1540.000	6.47	1054.77	.00	.00	1054.77	.00	.00	.00	1054.60
9000.0	.0	9000.0	.0	.0	24460.1	.0	222.5	47.2	1054.60
.33	.00	.37	.00	.000	.030	.000	.000	1048.30	2000.90
.000006	100.	100.	100.	0	0	0	.00	4577.60	6578.50

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1640.000

1640.000	6.67	1054.77	.00	.00	1054.77	.00	.00	.00	1054.40
9000.0	.0	9000.0	.0	.0	30459.1	.0	285.5	58.8	1054.40
.43	.00	.30	.00	.000	.030	.000	.000	1048.10	2001.04
.000004	100.	100.	100.	0	0	0	.00	5493.25	7494.29

*SECNO 1740.000

1740.000	6.87	1054.77	.00	.00	1054.77	.00	.00	.00	1054.20
9000.0	.0	9000.0	.0	.1	37875.4	.1	363.9	72.6	1054.20
.55	.00	.24	.00	.000	.030	.000	.000	1047.90	2001.19
.000002	100.	100.	100.	0	0	0	.00	6592.05	8593.24

1

PROFILE FOR STREAM THE SPILLWAY DIMENSIONS

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT

BANK,M-LOWER END STA

```
ELEVATION 1047.   1049.   1051.   1053.   1055.   1057.   1059.   1061.   1063.   1065.
  SECNO  CUMDIS

   .00    0. I      .     .W E   .L     .      .      .      .      .      .      .
         10. I      .     .W E   .L     .      .      .      .      .      .      .
         20. I      .     .W E   .L     .      .      .      .      .      .      .
         30. I      .     .W  E  .L     .      .      .      .      .      .      .
         40. CI     .     .W  E  .L     .      .      .      .      .      .      .
         50. CI     .     .W E   .L     .      .      .      .      .      .      .
         60. CI     .     .W E   .L     .      .      .      .      .      .      .
         70. CI     .     .W E   . L    .      .      .      .      .      .      .
         80. CI     .     .W E   . L    .      .      .      .      .      .      .
         90. CI     .     .W E   . L    .      .      .      .      .      .      .
  100.00 100. CI     .     .W  E . L     .      .      .      .      .      .      .
        110. C I    .     . W E . L     .      .      .      .      .      .      .
        120. C I    .     . W E . L     .      .      .      .      .      .      .
        130. C I    .     . W E . L     .      .      .      .      .      .      .
        140. C I    .     . W E .  L    .      .      .      .      .      .      .
        150. C I    .     . W E .  L    .      .      .      .      .      .      .
        160. C I    .     . W  E . L    .      .      .      .      .      .      .
        170. C  I   .     . W  E . L    .      .      .      .      .      .      .
        180. C  I   .     . W E . L     .      .      .      .      .      .      .
        190. C  I   .     . W E . L     .      .      .      .      .      .      .
  200.00 200. C I   .     . W E . L     .      .      .      .      .      .      .
        210. C  I   .     . W E .  L    .      .      .      .      .      .      .
        220. C  I   .     . W E .  L    .      .      .      .      .      .      .
        230. C  I   .     . W  E.  L    .      .      .      .      .      .      .
        240. C  I   .     . W E.  L     .      .      .      .      .      .      .
        250. C  I   .     . W E.  L     .      .      .      .      .      .      .
        260. C  I   .     . W E.  L     .      .      .      .      .      .      .
        270. C  I   .     . W E.  L     .      .      .      .      .      .      .
        280. C  I   .     . W E.  L     .      .      .      .      .      .      .
        290. C  I   .     . W  E.  L    .      .      .      .      .      .      .
  300.00 300. C  I  .     . W  E.  L    .      .      .      .      .      .      .
        310. C  I   .     . W E.  L     .      .      .      .      .      .      .
        320. C  I   .     . W E.  L     .      .      .      .      .      .      .
        330. C  I   .     . W E.  L     .      .      .      .      .      .      .
        340. C  I   .     . W E.  L     .      .      .      .      .      .      .
        350. C  I   .     . W E.  L     .      .      .      .      .      .      .
        360. C  I   .     . W  E  L     .      .      .      .      .      .      .
        370. C  I   .     . W E  L     .      .      .      .      .      .      .
        380. C  I   .     . W E  L     .      .      .      .      .      .      .
        390. C  I   .     . W E  L     .      .      .      .      .      .      .
  400.00 400. C  I  .     . W E  L.     .      .      .      .      .      .      .
        410. C  I   .     . W E  L.     .      .      .      .      .      .      .
        420. C  I   .     . W E  L.     .      .      .      .      .      .      .
        430. C  I   .     . W .E L.     .      .      .      .      .      .      .
        440. C  I   .     . W.E L.     .      .      .      .      .      .      .
        450. C  I   .     . W.E L.     .      .      .      .      .      .      .
        460. C  I   .     . W.E L.     .      .      .      .      .      .      .
        470. C  I   .     . W.E L.     .      .      .      .      .      .      .
        480. C  I   .     . W.E L.     .      .      .      .      .      .      .
        490. C  I   .     . W.E L.     .      .      .      .      .      .      .
  500.00 500. C  I.     . W.E L.     .      .      .      .      .      .      .
        510. C  I.     . W.E L.     .      .      .      .      .      .      .
        520. C  I.     . W.E L.     .      .      .      .      .      .      .
        530. C  I.     . W.E L.     .      .      .      .      .      .      .
        540. C  I.     . W.E L      .      .      .      .      .      .      .
        550. C  I.     . W.E L      .      .      .      .      .      .      .
        560. C  I.     . W. E L     .      .      .      .      .      .      .
        570. C  I.     . W E L      .      .      .      .      .      .      .
        580. C  I.     . W E L      .      .      .      .      .      .      .
        590. C  I.     . W E L      .      .      .      .      .      .      .
  600.00 600. C  I.     . W E L     .      .      .      .      .      .      .
        610. C  I.     . W E .L     .      .      .      .      .      .      .
        620. C  I.     . W E .L     .      .      .      .      .      .      .
        630. C  I.     . W E .L     .      .      .      .      .      .      .
        640. C  I      . .W E .L    .      .      .      .      .      .      .
        650. C  I      . .W E .L    .      .      .      .      .      .      .
        660. C  I      . .W E .L    .      .      .      .      .      .      .
        670. C  I      . .W E . L   .      .      .      .      .      .      .
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        680. C     I     .W E  .L
        690. C     I     .W E  .L
700.00  700. C     I     .W E  .L
        710. C     .I    .W E  .L
        720. C     .I    .W E  .L
        730. C     .I    .W E  .L
        740. C     .I    .W E  .L
750.00  750. C     .I    .W E  .L
        760. C     .I    .W E  .L
770.00  770. C     .I    .W E  .L
780.00  780. C     .I    .W E  .L
790.00  790. C     .I    .W E  .L
800.00  800. C     .I    .W E  .L
805.00  810. C     .I    .W E  .L    .M
810.00  820. C     .I    .W E  .L    .M
820.00  830. C     .I    .W E  .L    .M
840.00  840. C     .I    .W E  .L    .M
        850. C     .I    .W E  .L    .M
        860. C     .I    .WE  .L     .M
        870. C     .I    .WE  .L     .M
        880. C     .I    .WE  .L     .M
        890. C     .I    .WE  .L     .M
        900. C     .I    .WE  .L     .M
        910. C     .I    .WE  .L     .M
        920. C     .I    .WE  .L     .M
        930. C     .I    .E  .L      .M
940.00  940. C     .I    .E  .L      .M
        950. C     .I    .E  .L      .M
        960. C     .I    .E  .L      .M
        970. C     .I    .E  .L      .M
        980. C     .I    .E  .L      .M
        990. C     I     .E  .L      .M
       1000. C     I     .E  .L      .M
       1010. C     I     .E  .L      .M
       1020. C     I     .E  .L      .M
       1030. C     I     .E  .L      .M
1040.00 1040. C     I     .E .L       .M
       1050. C     I     .E .L       .M
       1060. C     I     .E .L       .M
       1070. C     I     .E .L       .M
       1080. C     I     .E .L       .M
       1090. C     I.    .E .L       .M
       1100. C     I.    .E .L       .M
       1110. C     I.    .E .L       .M
       1120. C     I.    .E .L       .M
       1130. C     I.    .E .L       .M
1140.00 1140. C     I.    .E L        M
       1150. C     I.    .E L        M
       1160. C     I.    .E L        M
       1170. C     I.    .E L        M
       1180. C     I.    .E L        M
       1190. C     I.    .E L        M
       1200. C     I.    .E L        M
       1210. C     I.    .E L        M
       1220. C     I.    .E L        M
       1230. C     I.    .E L        M
1240.00 1240. C     I.    .EL.        M.
       1250. C     I.    .EL.        M.
       1260. C     I.    .EL.        M.
       1270. C     I.    .EL.        M.
       1280. C     I.    .EL.        M.
       1290. C     I.    .EL.        M.
       1300. C     I.    .EL.        M.
       1310. C     I.    .EL.        M.
       1320. C     I.    .EL.        M.
       1330. C     I.    .EL.        M.
1340.00 1340. C     I.    .EL.        M.
       1350. C     I.    .EL.        M.
       1360. C     I.    .EL.        M.
       1370. C     I.    .EL.        M.
       1380. C     I.    .EL.        M.
       1390. C     I.    .EL.        M.
       1400. C     I.    .EL.        M.
       1410. C     I.    .EL.        M.
       1420. C     I.    .EL.        M.
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      1430. C   I .     .     .   EL .     .   M .     .     .     .     .
 1440.00 1440. C   I .     .     .   EL .     .   M .     .     .     .     .
      1450. C   I .     .     .   E .     .   M .     .     .     .     .
      1460. C   I .     .     .   E .     .   M .     .     .     .     .
      1470. C   I .     .     .   E .     .   M .     .     .     .     .
      1480. C   I .     .     .   E .     .   M .     .     .     .     .
      1490. C   I .     .     .   E .     .   M .     .     .     .     .
      1500. C   I .     .     .   E .     .   M .     .     .     .     .
      1510. C   I .     .     .   E .     .   M .     .     .     .     .
      1520. C   I .     .     .   E .     .   M .     .     .     .     .
      1530. C   I .     .     .   E .     .   M .     .     .     .     .
 1540.00 1540. C   I .     .     .   LE .     .   M .     .     .     .     .
      1550. C   I .     .     .   LE .     .   M .     .     .     .     .
      1560. C   I .     .     .   LE .     .   M .     .     .     .     .
      1570. C   I .     .     .   LE .     .   M .     .     .     .     .
      1580. C   I .     .     .   LE .     .   M .     .     .     .     .
      1590. C   I .     .     .   LE .     .   M .     .     .     .     .
      1600. C   I .     .     .   LE .     .   M .     .     .     .     .
      1610. C   I .     .     .   LE .     .   M .     .     .     .     .
      1620. C   I .     .     .   LE .     .   M .     .     .     .     .
      1630. C   I .     .     .   LE .     .   M .     .     .     .     .
 1640.00 1640. C   I .     .     .   LE .     .   M .     .     .     .     .
      1650. C   I .     .     .   LE .     .   M .     .     .     .     .
      1660. C   I .     .     .   LE .     .   M .     .     .     .     .
      1670. C   I .     .     .   LE .     .   M .     .     .     .     .
      1680. C   I .     .     .   LE .     .   M .     .     .     .     .
      1690. C   I .     .     .   LE .     .   M .     .     .     .     .
      1700. C   I .     .     .   LE .     .   M .     .     .     .     .
      1710. C   I .     .     .   LE .     .   M .     .     .     .     .
      1720. C   I .     .     .   LE .     .   M .     .     .     .     .
      1730. C   I .     .     .   LE .     .   M .     .     .     .     .
 1740.00 1740. C   I .     .     .   LE .     .   M .     .     .     .     .
1
  21JUN93     14:00:45                                                    PAGE  62


T1     Q12= 10,00 CFS, STARTING WSE = 1051.73

J1  ICHECK   INQ     NINV    IDIR    STRT    METRIC   HVINS    Q       WSEL     FQ

     0      12      0       0       0       0        0      1051.73   0

J2  NPROF    IPLOT   PRFVS   XSECV   XSECH   FN       ALLDC    IBW     CHNIM    ITRACE

    11       0       0       0       0       0        0

1
  21JUN93     14:00:45                                                    PAGE  63


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


 *PROF11
0

 CCHV=    .100 CEHV=    .500
 *SECNO  .000
     .000     4.43   1051.73     .00   1051.73   1052.43     .70     .00     .00   1053.60
   10000.0      .0   10000.0      .0      .0    1492.2      .0      .0      .0   1053.60
     .00      .00     6.70     .00     .000     .030    .000    .000   1047.30   2023.15
   .003080     0.      0.       0.       0        0       0     .00    391.69   2414.85


 *SECNO 100.000
   100.000    4.44   1052.04     .00     .00   1052.73     .69     .31     .00   1053.90
   10000.0      .0   10000.0      .0      .0    1495.3      .0     3.4      .9   1053.90
     .00      .00     6.69     .00     .000     .030    .000    .000   1047.60   2023.05
   .003061    100.     100.     100.       0        0       0     .00    391.89   2414.95


 *SECNO 200.000
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 200.000    4.45  1052.35    .00    .00  1053.04    .69    .30    .00  1054.20
 10000.0     .0  10000.0     .0     .0   1498.9     .0    6.9    1.8  1054.20
     .01    .00     6.67    .00   .000     .030   .000   .000  1047.90  2022.94
 .003039    100.     100.    100.      0       0      0    .00   392.12  2415.06


*SECNO 300.000
 300.000    4.45  1052.65    .00    .00  1053.34    .69    .30    .00  1054.50
 10000.0     .0  10000.0     .0     .0   1501.4     .0   10.3    2.7  1054.50
     .01    .00     6.66    .00   .000     .030   .000   .000  1048.20  2022.86
 .003023    100.     100.    100.      0       0      0    .00   392.28  2415.14


*SECNO 400.000
 400.000    4.46  1052.96    .00    .00  1053.65    .69    .30    .00  1054.80
 10000.0     .0  10000.0     .0     .0   1502.9     .0   13.8    3.6  1054.80
     .02    .00     6.65    .00   .000     .030   .000   .000  1048.50  2022.81
 .003014    100.     100.    100.      0       0      0    .00   392.37  2415.19


*SECNO 500.000
 500.000    4.46  1053.26    .00    .00  1053.95    .69    .30    .00  1055.10
 10000.0     .0  10000.0     .0     .0   1503.7     .0   17.2    4.5  1055.10
     .02    .00     6.65    .00   .000     .030   .000   .000  1048.80  2022.79
 .003009    100.     100.    100.      0       0      0    .00   392.42  2415.21


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 21JUN93     14:00:45                                                    PAGE  64


  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 600.000
 600.000    4.46  1053.56    .00    .00  1054.25    .69    .30    .00  1055.40
 10000.0     .0  10000.0     .0     .0   1504.3     .0   20.7    5.4  1055.40
     .03    .00     6.65    .00   .000     .030   .000   .000  1049.10  2022.77
 .003006    100.     100.    100.      0       0      0    .00   392.46  2415.23


*SECNO 700.000
 700.000    4.46  1053.86    .00    .00  1054.55    .69    .30    .00  1055.70
 10000.0     .0  10000.0     .0     .0   1504.6     .0   24.1    6.3  1055.70
     .03    .00     6.65    .00   .000     .030   .000   .000  1049.40  2022.76
 .003004    100.     100.    100.      0       0      0    .00   392.48  2415.24


*SECNO 750.000
 750.000    4.46  1054.01    .00    .00  1054.70    .69    .15    .00  1055.85
 10000.0     .0  10000.0     .0     .0   1504.7     .0   25.8    6.8  1055.85
     .03    .00     6.65    .00   .000     .030   .000   .000  1049.55  2022.76
 .003003     50.      50.     50.      0       0      0    .00   392.48  2415.24


*SECNO 770.000
 770.000    4.46  1054.07    .00    .00  1054.76    .69    .06    .00  1055.91
 10000.0     .0  10000.0     .0     .0   1504.7     .0   26.5    6.9  1055.91
     .03    .00     6.65    .00   .000     .030   .000   .000  1049.61  2022.76
 .003003     20.      20.     20.      0       0      0    .00   392.48  2415.24


*SECNO 780.000
 780.000    4.46  1054.10    .00    .00  1054.79    .69    .03    .00  1055.94
 10000.0     .0  10000.0     .0     .0   1504.7     .0   26.9    7.0  1055.94
     .03    .00     6.65    .00   .000     .030   .000   .000  1049.64  2022.76
 .003003     10.      10.     10.      0       0      0    .00   392.48  2415.24


*SECNO 790.000
 790.000    4.46  1054.13    .00    .00  1054.82    .69    .03    .00  1055.97
 10000.0     .0  10000.0     .0     .0   1504.7     .0   27.2    7.1  1055.97
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   .03      .00     6.65      .00     .000     .030     .000     .000  1049.67  2022.76
 .003003     10.      10.      10.       0        0        0      .00   392.48  2415.24
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 800.000
  800.000    4.46  1054.16      .00      .00  1054.85      .69      .03      .00  1056.00
  10000.0      .0  10000.0      .0       .0   1504.7       .0     27.6      7.2  1056.00
    .03      .00     6.65      .00     .000     .030     .000     .000  1049.70  2022.76
 .003003     10.      10.      10.       0        0        0      .00   392.48  2415.24

*SECNO 805.000
  805.000    4.48  1054.18      .00      .00  1054.86      .68      .01      .00  1056.00
  10000.0      .0  10000.0      .0       .0   1510.8       .0     27.7      7.2  1056.00
    .03      .00     6.62      .00     .000     .030     .000     .000  1049.70  2022.57
 .002967      5.       5.       5.       0        0        0      .00   392.87  2415.43

*SECNO 810.000
  810.000    4.51  1054.21      .00      .00  1054.88      .67      .01      .00  1056.00
  10000.0      .0  10000.0      .0       .0   1519.0       .0     27.9      7.3  1056.00
    .03      .00     6.58      .00     .000     .030     .000     .000  1049.70  2022.31
 .002919      5.       5.       5.       0        0        0      .00   393.39  2415.69

*SECNO 820.000
  820.000    4.55  1054.25      .00      .00  1054.91      .66      .03      .00  1056.00
  10000.0      .0  10000.0      .0       .0   1536.4       .0     28.3      7.4  1056.00
    .03      .00     6.51      .00     .000     .030     .000     .000  1049.70  2021.76
 .002821     10.      10.      10.       1        0        0      .00   394.48  2416.24

*SECNO 840.000
  840.000    4.64  1054.34      .00      .00  1054.97      .63      .05      .00  1056.00
  10000.0      .0  10000.0      .0       .0   1575.7       .0     29.0      7.6  1056.00
    .04      .00     6.35      .00     .000     .030     .000     .000  1049.70  2020.53
 .002615     20.      20.      20.       2        0        0      .00   396.94  2417.47

*SECNO 940.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.76

  940.000    5.52  1055.02      .00      .00  1055.06      .03      .03      .06  1055.80
  10000.0      .0  10000.0      .0       .0   6773.8       .0     38.6      9.7  1055.80
    .05      .00     1.48      .00     .000     .030     .000     .000  1049.50  2033.90
 .000115    100.     100.     100.       2        0        0      .00  1465.70  3499.60
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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

*SECNO 1040.000
 1040.000    5.75  1055.05      .00      .00  1055.07      .02      .01      .00  1055.60
  10000.0      .0  10000.0      .0       .0   8522.6       .0     56.1     13.4  1055.60
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    .08     .00     1.17     .00     .000     .030     .000     .000  1049.30  2029.13
  .000070   100.     100.     100.      2        0        0     .00  1781.99  3811.11


*SECNO 1140.000
 1140.000   5.96  1055.06     .00     .00  1055.07     .01     .01     .00  1055.40
 10000.0     .0  10000.0      .0      .0  10677.2      .0    78.2    18.0  1055.40
    .11     .00     .94     .00    .000     .030    .000    .000  1049.10  2021.91
  .000043   100.     100.     100.      0        0        0     .00  2164.50  4186.41


*SECNO 1240.000
 1240.000   6.17  1055.07     .00     .00  1055.08     .01     .00     .00  1055.20
 10000.0     .0  10000.0      .0      .0  13361.7      .0   105.8    23.5  1055.20
    .14     .00     .75     .00    .000     .030    .000    .000  1048.90  2010.59
  .000026   100.     100.     100.      0        0        0     .00  2628.86  4639.45


*SECNO 1340.000
 1340.000   6.37  1055.07     .00     .00  1055.08     .01     .00     .00  1055.00
 10000.0     .0  10000.0      .0      .0  16688.9      .0   140.2    30.1  1055.00
    .19     .00     .60     .00    .000     .030    .000    .000  1048.70  2000.61
  .000016   100.     100.     100.      0        0        0     .00  3178.86  5179.47


*SECNO 1440.000
 1440.000   6.58  1055.08     .00     .00  1055.08     .00     .00     .00  1054.80
 10000.0     .0  10000.0      .0      .0  20804.8      .0   183.3    38.2  1054.80
    .25     .00     .48     .00    .000     .030    .000    .000  1048.50  2000.71
  .000010   100.     100.     100.      0        0        0     .00  3814.72  5815.43


*SECNO 1540.000
 1540.000   6.78  1055.08     .00     .00  1055.08     .00     .00     .00  1054.60
 10000.0     .0  10000.0      .0      .0  25893.9      .0   236.9    47.8  1054.60
    .32     .00     .39     .00    .000     .030    .000    .000  1048.30  2000.82
  .000006   100.     100.     100.      0        0        0     .00  4577.77  6578.58


1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1640.000
 1640.000   6.98  1055.08     .00     .00  1055.08     .00     .00     .00  1054.40
 10000.0     .0  10000.0      .0      .1  32179.1      .1   303.5    59.4  1054.40
    .41     .00     .31     .00    .000     .030    .000    .000  1048.10  2000.94
  .000004   100.     100.     100.      0        0        0     .00  5493.44  7494.38


*SECNO 1740.000
 1740.000   7.18  1055.08     .00     .00  1055.08     .00     .00     .00  1054.20
 10000.0     .0  10000.0      .0      .1  39940.1      .1   386.3    73.2  1054.20
    .52     .02     .25     .02    .040     .030    .040    .000  1047.90  2001.07
  .000002   100.     100.     100.      0        0        0     .00  6592.29  8593.36


1
PROFILE FOR STREAM  THE SPILLWAY DIMENSIONS


PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT
BANK,M-LOWER END STA


ELEVATION 1047.    1049.    1051.    1053.    1055.    1057.    1059.    1061.    1063.    1065.
   SECNO   CUMDIS
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.00    0. I      .  .W  E  .L   .   .   .   .   .   .   .
      10. I      .  .W  E  .L   .   .   .   .   .   .   .
      20. I      .  .W  E  .L   .   .   .   .   .   .   .
      30. I      .  .W  E  .L   .   .   .   .   .   .   .
      40. CI     .  .W  E  .L   .   .   .   .   .   .   .
      50. CI     .  .W  E  .L   .   .   .   .   .   .   .
      60. CI     .  .W  E  .L   .   .   .   .   .   .   .
      70. CI     .  .W  E  .L   .   .   .   .   .   .   .
      80. CI     .  .W  E  .L   .   .   .   .   .   .   .
      90. CI     .  .W  E  .L   .   .   .   .   .   .   .
  100.00  100. CI    .  .W  E  .L   .   .   .   .   .   .   .
     110. C I    .  .W  E  .L   .   .   .   .   .   .   .
     120. C I    .  .W  E  .L   .   .   .   .   .   .   .
     130. C I    .  .W  E  .L   .   .   .   .   .   .   .
     140. C I    .  .W  E  .L   .   .   .   .   .   .   .
     150. C I    .  .W  E  .L   .   .   .   .   .   .   .
     160. C I    .  .W  E  .L   .   .   .   .   .   .   .
     170. C I    .  .W  E  .L   .   .   .   .   .   .   .
     180. C I    .  .W  E  .L   .   .   .   .   .   .   .
     190. C I    .  .W  E  .L   .   .   .   .   .   .   .
  200.00  200. C I    .  .W  E  .L   .   .   .   .   .   .   .
     210. C I    .  .W  E  .L   .   .   .   .   .   .   .
     220. C I    .  .W  E  .L   .   .   .   .   .   .   .
     230. C I    .  .W  E  .L   .   .   .   .   .   .   .
     240. C I    .  .W  E  .L   .   .   .   .   .   .   .
     250. C I    .  .W  E  .L   .   .   .   .   .   .   .
     260. C I    .  .W  E  L   .   .   .   .   .   .   .
     270. C I    .  .W  E  L   .   .   .   .   .   .   .
     280. C I    .  .W  E  L   .   .   .   .   .   .   .
     290. C I    .  .W  E  L   .   .   .   .   .   .   .
  300.00  300. C I    .  .W  E  L   .   .   .   .   .   .   .
     310. C I    .  .W  E  L   .   .   .   .   .   .   .
     320. C I    .  .W .E  L   .   .   .   .   .   .   .
     330. C I    .  .W .E  L   .   .   .   .   .   .   .
     340. C I    .  .W .E  L   .   .   .   .   .   .   .
     350. C I    .  .W.E  L   .   .   .   .   .   .   .
     360. C I    .  .W.E  L   .   .   .   .   .   .   .
     370. C I    .  .W.E  L   .   .   .   .   .   .   .
     380. C I    .  .W.E  L   .   .   .   .   .   .   .
     390. C I    .  .W.E  L   .   .   .   .   .   .   .
  400.00  400. C I    .  .W.E  L.   .   .   .   .   .   .   .
     410. C I    .  .W.E  L.   .   .   .   .   .   .   .
     420. C I    .  .W.E  L.   .   .   .   .   .   .   .
     430. C I    .  .W.E  L.   .   .   .   .   .   .   .
     440. C I    .  .W.E  L.   .   .   .   .   .   .   .
     450. C I    .  .W.E  L.   .   .   .   .   .   .   .
     460. C I    .  .W. E  L.   .   .   .   .   .   .   .
     470. C I    .  .W. E  L.   .   .   .   .   .   .   .
     480. C I    .  .W. E  L.   .   .   .   .   .   .   .
     490. C I    .  .W E  L.   .   .   .   .   .   .   .
  500.00  500. C I.   .  W E  L.   .   .   .   .   .   .   .
     510. C I.   .  W E  L.   .   .   .   .   .   .   .
     520. C I.   .  W  E  L.   .   .   .   .   .   .   .
     530. C I.   .  W  E  L.   .   .   .   .   .   .   .
     540. C I.   .  W  E  L   .   .   .   .   .   .   .
     550. C I.   .  .W E  L   .   .   .   .   .   .   .
     560. C I.   .  .W E  L   .   .   .   .   .   .   .
     570. C I.   .  .W E  L   .   .   .   .   .   .   .
     580. C I.   .  .W E  L   .   .   .   .   .   .   .
     590. C I.   .  .W  E  L   .   .   .   .   .   .   .
  600.00  600. C I.   .  .W  E  L   .   .   .   .   .   .   .
     610. C I.   .  .W  E  .L   .   .   .   .   .   .   .
     620. C I.   .  .W E  .L   .   .   .   .   .   .   .
     630. C I.   .  .W E  .L   .   .   .   .   .   .   .
     640. C I    .  .W E  .L   .   .   .   .   .   .   .
     650. C I    .  .W E  .L   .   .   .   .   .   .   .
     660. C I    .  .W  E .L   .   .   .   .   .   .   .
     670. C I    .  .W  E .L   .   .   .   .   .   .   .
     680. C I    .  .W  E .L   .   .   .   .   .   .   .
     690. C I    .  .W E .L   .   .   .   .   .   .   .
  700.00  700. C I    .  .W E .L   .   .   .   .   .   .   .
     710. C .I   .  .W E .L   .   .   .   .   .   .   .
     720. C .I   .  .W  E .L   .   .   .   .   .   .   .
     730. C .I   .  .W  E .L   .   .   .   .   .   .   .
     740. C .I   .  .W  E . L   .   .   .   .   .   .   .
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750.00  750. C     .I    .    . W E . L    .    .    .    .    .    .
        760. C     .I    .    . W E . L    .    .    .    .    .    .
770.00  770. C     .I    .    . W E . L    .    .    .    .    .    .
780.00  780. C     .I    .    . W E . L    .    .    .    .    .    .
790.00  790. C     .I    .    . W E . L    .    .    .    .    .    .
800.00  800. C     .I    .    . W E . L    .    .    .    .    .    .
805.00  810. C     .I    .    . W E . L    .    . M    .    .    .    .
810.00  820. C     .I    .    . W E . L    .    . M    .    .    .    .
820.00  830. C     .I    .    . W E . L    .    . M    .    .    .    .
840.00  840. C     .I    .    . W E . L    .    . M    .    .    .    .
        850. C     .I    .    . WE . L    .    . M    .    .    .    .
        860. C     .I    .    . WE . L    .    . M    .    .    .    .
        870. C     .I    .    . WE . L    .    . M    .    .    .    .
        880. C     .I    .    . WE. L    .    . M    .    .    .    .
        890. C     .I    .    . WE. L    .    . M    .    .    .    .
        900. C     .I    .    . WE. L    .    . M    .    .    .    .
        910. C     .I    .    . WE. L    .    . M    .    .    .    .
        920. C     .I    .    . WE. L    .    . M    .    .    .    .
        930. C     .I    .    . WE. L    .    . M    .    .    .    .
940.00  940. C     .I    .    .  E. L    .    . M    .    .    .    .
        950. C     .I    .    .  E. L    .    .M    .    .    .    .
        960. C     .I    .    .  E. L    .    .M    .    .    .    .
        970. C     .I    .    .  E. L    .    .M    .    .    .    .
        980. C     .I    .    .  E. L    .    .M    .    .    .    .
        990. C      I    .    .  E. L    .    .M    .    .    .    .
       1000. C      I    .    .  E. L    .    .M    .    .    .    .
       1010. C      I    .    .  E. L    .    .M    .    .    .    .
       1020. C      I    .    .  E. L    .    .M    .    .    .    .
       1030. C      I    .    .  E. L    .    .M    .    .    .    .
1040.00 1040. C      I    .    .   E.L    .    .M    .    .    .    .
       1050. C      I    .    .   E.L    .    .M    .    .    .    .
       1060. C      I    .    .   E.L    .    .M    .    .    .    .
       1070. C      I    .    .   E.L    .    .M    .    .    .    .
       1080. C      I    .    .   E.L    .    .M    .    .    .    .
       1090. C     I.    .    .   E.L    .    .M    .    .    .    .
       1100. C     I.    .    .   E.L    .    .M    .    .    .    .
       1110. C     I.    .    .   E.L    .    .M    .    .    .    .
       1120. C     I.    .    .   E.L    .    .M    .    .    .    .
       1130. C     I.    .    .   E.L    .    .M    .    .    .    .
1140.00 1140. C     I.    .    .    EL    .    M    .    .    .    .
       1150. C     I.    .    .    EL    .    M    .    .    .    .
       1160. C     I.    .    .    EL    .    M    .    .    .    .
       1170. C     I.    .    .    EL    .    M    .    .    .    .
       1180. C     I.    .    .    EL    .    M    .    .    .    .
       1190. C    I .    .    .    EL    .    M    .    .    .    .
       1200. C    I .    .    .    EL    .    M    .    .    .    .
       1210. C    I .    .    .    EL    .    M    .    .    .    .
       1220. C    I .    .    .    EL    .    M    .    .    .    .
       1230. C    I .    .    .    EL    .    M    .    .    .    .
1240.00 1240. C    I .    .    .    E.    .    M.    .    .    .    .
       1250. C    I .    .    .    E.    .    M.    .    .    .    .
       1260. C    I .    .    .    E.    .    M.    .    .    .    .
       1270. C    I .    .    .    E.    .    M.    .    .    .    .
       1280. C    I .    .    .    E.    .    M.    .    .    .    .
       1290. C    I .    .    .    E.    .    M.    .    .    .    .
       1300. C    I .    .    .    E.    .    M.    .    .    .    .
       1310. C    I .    .    .    E.    .    M.    .    .    .    .
       1320. C    I .    .    .    E.    .    M.    .    .    .    .
       1330. C    I .    .    .    E.    .    M.    .    .    .    .
1340.00 1340. C    I .    .    .   LE.    .    M .    .    .    .    .
       1350. C    I .    .    .   LE.    .    M .    .    .    .    .
       1360. C    I .    .    .   LE.    .    M .    .    .    .    .
       1370. C    I .    .    .   LE.    .    M .    .    .    .    .
       1380. C    I .    .    .   LE.    .    M .    .    .    .    .
       1390. C   I  .    .    .   LE.    .    M .    .    .    .    .
       1400. C   I  .    .    .   LE.    .    M .    .    .    .    .
       1410. C   I  .    .    .   LE.    .    M .    .    .    .    .
       1420. C   I  .    .    .   LE.    .    M .    .    .    .    .
       1430. C   I  .    .    .   LE.    .    M .    .    .    .    .
1440.00 1440. C   I  .    .    .   LE.    .    M .    .    .    .    .
       1450. C   I  .    .    .  L E.    .   M  .    .    .    .    .
       1460. C   I  .    .    .  L E.    .   M  .    .    .    .    .
       1470. C   I  .    .    .  L E.    .   M  .    .    .    .    .
       1480. C   I  .    .    .  L E.    .   M  .    .    .    .    .
       1490. C  I   .    .    .  L E.    .   M  .    .    .    .    .
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      1500. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1510. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1520. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1530. C  I  .    .    .   L E.    .   M .    .    .    .    .
 1540.00 1540. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1550. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1560. C  I  .    .    .   L E.    .   M .    .    .    .    .
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      1580. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1590. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1600. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1610. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1620. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1630. C  I  .    .    .   L E.    .   M .    .    .    .    .
 1640.00 1640. C  I  .    .    .   L E.    .   M .    .    .    .    .
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      1660. C  I  .    .    .   L E.    .   M .    .    .    .    .
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      1680. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1690. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1700. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1710. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1720. C  I  .    .    .   L E.    .   M .    .    .    .    .
      1730. C  I  .    .    .   L E.    .   M .    .    .    .    .
 1740.00 1740. C  I  .    .    .   L E.    .   M .    .    .    .    .
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T1     Q13 = 11,000 CFS, STARTING WSE = 1051.98

J1  ICHECK   INQ     NINV    IDIR    STRT    METRIC   HVINS    Q       WSEL     FQ

     0       13      0       0               0        0        0   1051.98      0

J2  NPROF    IPLOT   PRFVS   XSECV   XSECH   FN       ALLDC    IBW     CHNIM    ITRACE

    12       0       0       0       0       0        0

1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


 *PROF12
0

 CCHV=    .100 CEHV=    .500
 *SECNO  .000
     .000     4.68   1051.98     .00   1051.98   1052.72     .74     .00     .00   1053.60
   11000.0      .0   11000.0      .0      .0    1590.9      .0      .0      .0    1053.60
     .00      .00     6.91     .00     .000     .030     .000    .000   1047.30   2020.06
   .003074     0.      0.       0.       0        0        0     .00    397.89   2417.94


 *SECNO 100.000
   100.000    4.69   1052.29     .00     .00   1053.03     .74     .31     .00   1053.90
   11000.0      .0   11000.0      .0      .0    1593.8      .0     3.7      .9   1053.90
     .00      .00     6.90     .00     .000     .030     .000    .000   1047.60   2019.97
   .003057    100.     100.     100.       0        0        0     .00    398.07   2418.03


 *SECNO 200.000
   200.000    4.70   1052.60     .00     .00   1053.33     .74     .30     .00   1054.20
   11000.0      .0   11000.0      .0      .0    1597.2      .0     7.3     1.8    1054.20
     .01      .00     6.89     .00     .000     .030     .000    .000   1047.90   2019.86
   .003038    100.     100.     100.       0        0        0     .00    398.28   2418.14


 *SECNO 300.000
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 300.000    4.70  1052.90     .00     .00  1053.64     .73     .30     .00  1054.50
 11000.0     .0  11000.0      .0      .0   1599.8      .0    11.0     2.7  1054.50
     .01    .00     6.88     .00    .000     .030    .000    .000  1048.20  2019.78
 .003023    100.     100.    100.       0        0       0     .00   398.44  2418.22


*SECNO 400.000
 400.000    4.71  1053.21     .00     .00  1053.94     .73     .30     .00  1054.80
 11000.0     .0  11000.0      .0      .0   1601.3      .0    14.7     3.7  1054.80
     .02    .00     6.87     .00    .000     .030    .000    .000  1048.50  2019.74
 .003015    100.     100.    100.       0        0       0     .00   398.53  2418.26


*SECNO 500.000
 500.000    4.71  1053.51     .00     .00  1054.24     .73     .30     .00  1055.10
 11000.0     .0  11000.0      .0      .0   1602.1      .0    18.3     4.6  1055.10
     .02    .00     6.87     .00    .000     .030    .000    .000  1048.80  2019.71
 .003010    100.     100.    100.       0        0       0     .00   398.58  2418.29
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 SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
 Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
 TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
 SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 600.000
 600.000    4.71  1053.81     .00     .00  1054.54     .73     .30     .00  1055.40
 11000.0     .0  11000.0      .0      .0   1602.7      .0    22.0     5.5  1055.40
     .02    .00     6.86     .00    .000     .030    .000    .000  1049.10  2019.69
 .003007    100.     100.    100.       0        0       0     .00   398.62  2418.31


*SECNO 700.000
 700.000    4.71  1054.11     .00     .00  1054.84     .73     .30     .00  1055.70
 11000.0     .0  11000.0      .0      .0   1603.1      .0    25.7     6.4  1055.70
     .03    .00     6.86     .00    .000     .030    .000    .000  1049.40  2019.68
 .003005    100.     100.    100.       0        0       0     .00   398.64  2418.32


*SECNO 750.000
 750.000    4.71  1054.26     .00     .00  1054.99     .73     .15     .00  1055.85
 11000.0     .0  11000.0      .0      .0   1603.2      .0    27.5     6.9  1055.85
     .03    .00     6.86     .00    .000     .030    .000    .000  1049.55  2019.67
 .003004     50.      50.     50.       0        0       0     .00   398.65  2418.32


*SECNO 770.000
 770.000    4.71  1054.32     .00     .00  1055.05     .73     .06     .00  1055.91
 11000.0     .0  11000.0      .0      .0   1603.3      .0    28.3     7.0  1055.91
     .03    .00     6.86     .00    .000     .030    .000    .000  1049.61  2019.67
 .003003     20.      20.     20.       0        0       0     .00   398.65  2418.33


*SECNO 780.000
 780.000    4.71  1054.35     .00     .00  1055.08     .73     .03     .00  1055.94
 11000.0     .0  11000.0      .0      .0   1603.3      .0    28.6     7.1  1055.94
     .03    .00     6.86     .00    .000     .030    .000    .000  1049.64  2019.67
 .003003     10.      10.     10.       0        0       0     .00   398.65  2418.33


*SECNO 790.000
 790.000    4.71  1054.38     .00     .00  1055.11     .73     .03     .00  1055.97
 11000.0     .0  11000.0      .0      .0   1603.3      .0    29.0     7.2  1055.97
     .03    .00     6.86     .00    .000     .030    .000    .000  1049.67  2019.67
 .003003     10.      10.     10.       0        0       0     .00   398.65  2418.33
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  SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
  Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
  TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
  SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 800.000
  800.000     4.71   1054.41      .00      .00   1055.14      .73      .03      .00   1056.00
  11000.0       .0   11000.0       .0       .0    1603.3       .0     29.4      7.3   1056.00
     .03      .00      6.86      .00     .000      .030     .000     .000   1049.70   2019.67
  .003003      10.       10.      10.        0         0        0      .00    398.65   2418.33


*SECNO 805.000
  805.000     4.73   1054.43      .00      .00   1055.16      .73      .01      .00   1056.00
  11000.0       .0   11000.0       .0       .0    1609.5       .0     29.6      7.4   1056.00
     .03      .00      6.83      .00     .000      .030     .000     .000   1049.70   2019.48
  .002969       5.        5.       5.        0         0        0      .00    399.04   2418.52


*SECNO 810.000
  810.000     4.76   1054.46      .00      .00   1055.17      .72      .01      .00   1056.00
  11000.0       .0   11000.0       .0       .0    1617.9       .0     29.7      7.4   1056.00
     .03      .00      6.80      .00     .000      .030     .000     .000   1049.70   2019.22
  .002923       5.        5.       5.        0         0        0      .00    399.56   2418.78


*SECNO 820.000
  820.000     4.80   1054.50      .00      .00   1055.20      .70      .03      .00   1056.00
  11000.0       .0   11000.0       .0       .0    1635.6       .0     30.1      7.5   1056.00
     .03      .00      6.73      .00     .000      .030     .000     .000   1049.70   2018.67
  .002829      10.       10.      10.        1         0        0      .00    400.66   2419.33


*SECNO 840.000
  840.000     4.89   1054.59      .00      .00   1055.26      .67      .05      .00   1056.00
  11000.0       .0   11000.0       .0       .0    1676.4       .0     30.9      7.7   1056.00
     .03      .00      6.56      .00     .000      .030     .000     .000   1049.70   2017.42
  .002628      20.       20.      20.        2         0        0      .00    403.17   2420.58


*SECNO 940.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.76

  940.000     5.82   1055.32      .00      .00   1055.36      .04      .03      .06   1055.80
  11000.0       .0   11000.0       .0       .0    7212.6       .0     41.1      9.9   1055.80
     .05      .00      1.53      .00     .000      .030     .000     .000   1049.50   2021.04
  .000116     100.      100.     100.        2         0        0      .00   1491.42   3512.46


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  SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
  Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
  TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
  SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1040.000
 1040.000     6.04   1055.34      .00      .00   1055.37      .02      .01      .00   1055.60
  11000.0       .0   11000.0       .0       .0    9058.0       .0     59.8     13.7   1055.60
     .08      .00      1.21      .00     .000      .030     .000     .000   1049.30   2013.64
  .000070     100.      100.     100.        2         0        0      .00   1812.97   3826.60


*SECNO 1140.000
 1140.000     6.26   1055.36      .00      .00   1055.37      .01      .01      .00   1055.40
  11000.0       .0   11000.0       .0       .0   11327.2       .0     83.2     18.3   1055.40
     .10      .00       .97      .00     .000      .030     .000     .000   1049.10   2003.34
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 .000043    100.    100.    100.      0      0      0     .00  2201.66  4204.99


*SECNO 1240.000
 1240.000   6.47  1055.37    .00    .00  1055.38    .01    .00    .00  1055.20
 11000.0     .0  11000.0     .0     .0  14151.3     .0   112.4   23.8  1055.20
    .14    .00     .78    .00   .000     .030   .000   .000  1048.90  2000.48
 .000026    100.    100.    100.      0      0      0     .00  2649.07  4649.55


*SECNO 1340.000
 1340.000   6.67  1055.37    .00    .00  1055.38    .01    .00    .00  1055.00
 11000.0     .0  11000.0     .0     .0  17639.2     .0   148.9   30.5  1055.00
    .18    .00     .62    .00   .000     .030   .000   .000  1048.70  2000.56
 .000016    100.    100.    100.      0      0      0     .00  3178.96  5179.52


*SECNO 1440.000
 1440.000   6.88  1055.38    .00    .00  1055.38    .00    .00    .00  1054.80
 11000.0     .0  11000.0     .0     .0  21946.1     .0   194.3   38.5  1054.80
    .24    .00     .50    .00   .000     .030   .000   .000  1048.50  2000.65
 .000010    100.    100.    100.      0      0      0     .00  3814.85  5815.49


*SECNO 1540.000
 1540.000   7.08  1055.38    .00    .00  1055.38    .00    .00    .00  1054.60
 11000.0     .0  11000.0     .0     .1  27263.5     .1   250.8   48.2  1054.60
    .31    .00     .40    .00   .000     .030   .000   .000  1048.30  2000.74
 .000006    100.    100.    100.      0      0      0     .00  4577.92  6578.66


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  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 1640.000
 1640.000   7.28  1055.38    .00    .00  1055.38    .00    .00    .00  1054.40
 11000.0     .0  11000.0     .0     .2  33823.9     .2   320.9   59.7  1054.40
    .39    .02     .33    .02   .040     .030   .040   .000  1048.10  2000.85
 .000004    100.    100.    100.      0      0      0     .00  5493.63  7494.48


*SECNO 1740.000
 1740.000   7.48  1055.38    .00    .00  1055.38    .00    .00    .00  1054.20
 11000.0     .0  11000.0     .0     .3  41914.7     .3   407.9   73.6  1054.20
    .50    .02     .26    .02   .040     .030   .040   .000  1047.90  2000.96
 .000002    100.    100.    100.      0      0      0     .00  6592.51  8593.47


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PROFILE FOR STREAM  THE SPILLWAY DIMENSIONS


PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT
BANK,M-LOWER END STA


ELEVATION 1047.   1049.   1051.   1053.   1055.   1057.   1059.   1061.   1063.   1065.
  SECNO  CUMDIS

    .00    0. I     .     . W  E .L    .     .     .     .     .     .     .
          10. I     .     . W  E .L    .     .     .     .     .     .     .
          20. I     .     . W  E .L    .     .     .     .     .     .     .
          30. I     .     . W  E .L    .     .     .     .     .     .     .
          40. CI    .     . W  E .L    .     .     .     .     .     .     .
          50. CI    .     . W  E .L    .     .     .     .     .     .     .
          60. CI    .     . W  E .L    .     .     .     .     .     .     .
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        70. CI     .     . W  E . L   .     .     .     .     .     .     .
        80. CI     .     . W  E . L   .     .     .     .     .     .     .
        90. CI     .     . W  E . L   .     .     .     .     .     .     .
100.00 100. CI     .     . W  E. L    .     .     .     .     .     .     .
       110. C I    .     . W  E. L    .     .     .     .     .     .     .
       120. C I    .     . W  E. L    .     .     .     .     .     .     .
       130. C I    .     . W  E. L    .     .     .     .     .     .     .
       140. C I    .     . W E. L     .     .     .     .     .     .     .
       150. C I    .     . W E. L     .     .     .     .     .     .     .
       160. C I    .     . W  E L     .     .     .     .     .     .     .
       170. C  I   .     . W  E L     .     .     .     .     .     .     .
       180. C  I   .     . W  E L     .     .     .     .     .     .     .
       190. C  I   .     . W  E L     .     .     .     .     .     .     .
200.00 200. C I    .     . W  E L     .     .     .     .     .     .     .
       210. C  I   .     . W E  L     .     .     .     .     .     .     .
       220. C  I   .     . W E  L     .     .     .     .     .     .     .
       230. C  I   .     . W .E L     .     .     .     .     .     .     .
       240. C  I   .     . W .E L     .     .     .     .     .     .     .
       250. C  I   .     . W .E L     .     .     .     .     .     .     .
       260. C  I   .     . W .E L     .     .     .     .     .     .     .
       270. C  I   .     . W.E  L     .     .     .     .     .     .     .
       280. C  I   .     . W.E  L     .     .     .     .     .     .     .
       290. C  I   .     . W.E L      .     .     .     .     .     .     .
300.00 300. C  I   .     . W.E L      .     .     .     .     .     .     .
       310. C  I   .     . W.E L      .     .     .     .     .     .     .
       320. C  I   .     . W.E L      .     .     .     .     .     .     .
       330. C  I   .     . W.E L      .     .     .     .     .     .     .
       340. C  I   .     . W.E  L     .     .     .     .     .     .     .
       350. C  I   .     . W.E  L     .     .     .     .     .     .     .
       360. C  I   .     . W. E L     .     .     .     .     .     .     .
       370. C  I   .     . W. E L     .     .     .     .     .     .     .
       380. C  I   .     . W. E L     .     .     .     .     .     .     .
       390. C  I   .     . W. E L     .     .     .     .     .     .     .
400.00 400. C  I   .     .  W E  L.   .     .     .     .     .     .     .
       410. C  I   .     .  W E  L.   .     .     .     .     .     .     .
       420. C  I   .     .  W E  L.   .     .     .     .     .     .     .
       430. C  I   .     .  W  E L.   .     .     .     .     .     .     .
       440. C  I   .     .  W  E L.   .     .     .     .     .     .     .
       450. C  I   .     .  W  E L.   .     .     .     .     .     .     .
       460. C  I   .     .  W  E L.   .     .     .     .     .     .     .
       470. C  I   .     . .W E  L.   .     .     .     .     .     .     .
       480. C  I   .     . .W E  L.   .     .     .     .     .     .     .
       490. C  I   .     . .W  E L.   .     .     .     .     .     .     .
500.00 500. C   I.    .   .W  E L.   .     .     .     .     .     .     .
       510. C   I.    .   .W  E L.   .     .     .     .     .     .     .
       520. C   I.    .   .W  E L.   .     .     .     .     .     .     .
       530. C   I.    .   .W  E L.   .     .     .     .     .     .     .
       540. C   I.    .   .W E  L    .     .     .     .     .     .     .
       550. C   I.    .   .W E  L    .     .     .     .     .     .     .
       560. C   I.    .   .W  E L    .     .     .     .     .     .     .
       570. C   I.    .   .W  E L    .     .     .     .     .     .     .
       580. C   I.    .   .W  E L    .     .     .     .     .     .     .
       590. C   I.    .   .W  E L    .     .     .     .     .     .     .
600.00 600. C   I.    .   . W E L   .     .     .     .     .     .     .
       610. C   I.    .   . W E .L   .     .     .     .     .     .     .
       620. C   I.    .   . W E .L   .     .     .     .     .     .     .
       630. C   I.    .   . W  E .L  .     .     .     .     .     .     .
       640. C   I     .   . W  E .L  .     .     .     .     .     .     .
       650. C   I     .   . W  E .L  .     .     .     .     .     .     .
       660. C   I     .   . W  E .L  .     .     .     .     .     .     .
       670. C   I     .   . W E .L   .     .     .     .     .     .     .
       680. C   I     .   . W E .L   .     .     .     .     .     .     .
       690. C   I     .   . W  E.L   .     .     .     .     .     .     .
700.00 700. C   I     .   . W  E.L   .     .     .     .     .     .     .
       710. C  .I     .   . W  E.L   .     .     .     .     .     .     .
       720. C  .I     .   . W  E.L   .     .     .     .     .     .     .
       730. C  .I     .   . W  E.L   .     .     .     .     .     .     .
       740. C  .I     .   . W E. L   .     .     .     .     .     .     .
750.00 750. C  .I     .   . W E. L   .     .     .     .     .     .     .
       760. C  .I     .   . W  E. L  .     .     .     .     .     .     .
770.00 770. C  . I    .   . W  E. L  .     .     .     .     .     .     .
780.00 780. C  . I    .   . W  E. L  .     .     .     .     .     .     .
790.00 790. C  . I    .   . W  E. L  .     .     .     .     .     .     .
800.00 800. C  . I    .   . W  E. L  .     .     .     .     .     .     .
805.00 810. C  . I    .   . W  E. L  .     . M   .     .     .     .     .
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810.00  820. C     .I   .   .  W E. L   .   . M   .   .   .   .
820.00  830. C     .I   .   .  W E. L   .   . M   .   .   .   .
840.00  840. C     .I   .   .  W E L     .   . M   .   .   .   .
        850. C     .I   .   .  W E L     .   . M   .   .   .   .
        860. C     .I   .   .  W E L     .   . M   .   .   .   .
        870. C     .I   .   .  W E L     .   . M   .   .   .   .
        880. C     .I   .   .  W E L     .   . M   .   .   .   .
        890. C     .I   .   .  W E L     .   . M   .   .   .   .
        900. C     .I   .   .  WE L      .   . M   .   .   .   .
        910. C     .I   .   .  WE L      .   . M   .   .   .   .
        920. C     .I   .   .  WE L      .   . M   .   .   .   .
        930. C     .I   .   .  E L       .   . M   .   .   .   .
940.00  940. C     .I   .   .  E L       .   . M   .   .   .   .
        950. C     .I   .   .  E L       .   . M   .   .   .   .
        960. C     .I   .   .  E L       .   . M   .   .   .   .
        970. C     .I   .   .  E L       .   . M   .   .   .   .
        980. C     .I   .   .  E L       .   . M   .   .   .   .
        990. C     I    .   .  E L       .   . M   .   .   .   .
       1000. C     I    .   .  E L       .   . M   .   .   .   .
       1010. C     I    .   .  E L       .   . M   .   .   .   .
       1020. C     I    .   .  E L       .   . M   .   .   .   .
       1030. C     I    .   .  E L       .   . M   .   .   .   .
1040.00 1040. C     I    .   .  EL        .   .M   .   .   .   .
       1050. C     I    .   .  EL        .   .M   .   .   .   .
       1060. C     I    .   .  EL        .   .M   .   .   .   .
       1070. C     I    .   .  EL        .   .M   .   .   .   .
       1080. C     I    .   .  EL        .   .M   .   .   .   .
       1090. C     I.   .   .  EL        .   .M   .   .   .   .
       1100. C     I.   .   .  EL        .   .M   .   .   .   .
       1110. C     I.   .   .  EL        .   .M   .   .   .   .
       1120. C     I.   .   .  EL        .   .M   .   .   .   .
       1130. C     I.   .   .  EL        .   .M   .   .   .   .
1140.00 1140. C     I.   .   .  E         .   M   .   .   .   .
       1150. C     I.   .   .  E         .   M   .   .   .   .
       1160. C     I.   .   .  E         .   M   .   .   .   .
       1170. C     I.   .   .  E         .   M   .   .   .   .
       1180. C     I.   .   .  E         .   M   .   .   .   .
       1190. C     I.   .   .  E         .   M   .   .   .   .
       1200. C     I.   .   .  E         .   M   .   .   .   .
       1210. C     I.   .   .  E         .   M   .   .   .   .
       1220. C     I.   .   .  E         .   M   .   .   .   .
       1230. C     I.   .   .  E         .   M   .   .   .   .
1240.00 1240. C     I.   .   .  LE        .   M.  .   .   .   .
       1250. C     I.   .   .  LE        .   M.  .   .   .   .
       1260. C     I.   .   .  LE        .   M.  .   .   .   .
       1270. C     I.   .   .  LE        .   M.  .   .   .   .
       1280. C     I.   .   .  LE        .   M.  .   .   .   .
       1290. C     I.   .   .  LE        .   M.  .   .   .   .
       1300. C     I.   .   .  LE        .   M.  .   .   .   .
       1310. C     I.   .   .  LE        .   M.  .   .   .   .
       1320. C     I.   .   .  LE        .   M.  .   .   .   .
       1330. C     I.   .   .  LE        .   M.  .   .   .   .
1340.00 1340. C     I.   .   .  LE        .   M.  .   .   .   .
       1350. C     I.   .   .  LE        .   M.  .   .   .   .
       1360. C     I.   .   .  LE        .   M.  .   .   .   .
       1370. C     I.   .   .  LE        .   M.  .   .   .   .
       1380. C     I.   .   .  LE        .   M.  .   .   .   .
       1390. C     I.   .   .  LE        .   M.  .   .   .   .
       1400. C     I.   .   .  LE        .   M.  .   .   .   .
       1410. C     I.   .   .  LE        .   M.  .   .   .   .
       1420. C     I.   .   .  LE        .   M.  .   .   .   .
       1430. C     I.   .   .  LE        .   M.  .   .   .   .
1440.00 1440. C     I.   .   .  LE        .   M.  .   .   .   .
       1450. C     I.   .   .  LE        .   M.  .   .   .   .
       1460. C     I.   .   .  LE        .   M.  .   .   .   .
       1470. C     I.   .   .  LE        .   M.  .   .   .   .
       1480. C     I.   .   .  LE        .   M.  .   .   .   .
       1490. C     I.   .   .  LE        .   M.  .   .   .   .
       1500. C     I.   .   .  LE        .   M.  .   .   .   .
       1510. C     I.   .   .  LE        .   M.  .   .   .   .
       1520. C     I.   .   .  LE        .   M.  .   .   .   .
       1530. C     I.   .   .  LE        .   M.  .   .   .   .
1540.00 1540. C     I.   .   .  LE        .   M.  .   .   .   .
       1550. C     I.   .   .  LE        .   M.  .   .   .   .
       1560. C     I.   .   .  LE        .   M.  .   .   .   .
```

```
        1570. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1580. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1590. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1600. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1610. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1620. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1630. C  I  .    .    .  L  E    .  M  .    .    .    .    .
  1640.00 1640. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1650. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1660. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1670. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1680. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1690. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1700. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1710. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1720. C  I  .    .    .  L  E    .  M  .    .    .    .    .
        1730. C  I  .    .    .  L  E    .  M  .    .    .    .    .
  1740.00 1740. C  I  .    .    .  L  E    .  M  .    .    .    .    .
1
  21JUN93     14:00:45                                                    PAGE  74


T1     Q14 = 12,000 CFS, STARTING WSE = 1052.21

J1  ICHECK   INQ     NINV    IDIR    STRT    METRIC  HVINS   Q       WSEL    FQ

     0      14      0       0               0       0       0  1052.21      0

J2  NPROF    IPLOT   PRFVS   XSECV   XSECH   FN      ALLDC   IBW     CHNIM   ITRACE

    13       0       0       0       0       0       0

1
  21JUN93     14:00:45                                                    PAGE  75


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


 *PROF13
0

 CCHV=    .100 CEHV=    .500
 *SECNO  .000
     .000     4.91  1052.21     .00  1052.21  1053.00     .79     .00     .00  1053.60
   12000.0      .0  12000.0      .0      .0   1683.1      .0      .0      .0  1053.60
     .00      .00     7.13     .00    .000     .030    .000    .000  1047.30  2017.21
   .003090     0.      0.       0.       0       0       0     .00   403.58  2420.79


 *SECNO 100.000
   100.000    4.92  1052.52     .00     .00  1053.31     .79     .31     .00  1053.90
   12000.0      .0  12000.0      .0      .0   1686.7      .0     3.9      .9  1053.90
     .00      .00     7.11     .00    .000     .030    .000    .000  1047.60  2017.10
   .003071    100.    100.     100.       0       0       0     .00   403.80  2420.90


 *SECNO 200.000
   200.000    4.93  1052.83     .00     .00  1053.61     .78     .31     .00  1054.20
   12000.0      .0  12000.0      .0      .0   1691.0      .0     7.7     1.9  1054.20
     .01      .00     7.10     .00    .000     .030    .000    .000  1047.90  2016.97
   .003047    100.    100.     100.       0       0       0     .00   404.06  2421.03


 *SECNO 300.000
   300.000    4.94  1053.14     .00     .00  1053.92     .78     .30     .00  1054.50
   12000.0      .0  12000.0      .0      .0   1694.3      .0    11.6     2.8  1054.50
     .01      .00     7.08     .00    .000     .030    .000    .000  1048.20  2016.87
   .003030    100.    100.     100.       0       0       0     .00   404.27  2421.13


 *SECNO 400.000
```

```
 400.000    4.94  1053.44    .00    .00  1054.22    .78    .30    .00  1054.80
 12000.0     .0  12000.0     .0     .0   1696.3     .0   15.5    3.7  1054.80
    .02     .00     7.07    .00   .000    .030   .000   .000  1048.50  2016.80
 .003019    100.    100.    100.      0       0      0    .00   404.39  2421.20


*SECNO 500.000
 500.000    4.95  1053.75    .00    .00  1054.52    .78    .30    .00  1055.10
 12000.0     .0  12000.0     .0     .0   1697.5     .0   19.4    4.6  1055.10
    .02     .00     7.07    .00   .000    .030   .000   .000  1048.80  2016.77
 .003012    100.    100.    100.      0       0      0    .00   404.47  2421.23


1
 21JUN93     14:00:45                                                    PAGE  76

  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 600.000
 600.000    4.95  1054.05    .00    .00  1054.82    .78    .30    .00  1055.40
 12000.0     .0  12000.0     .0     .0   1698.3     .0   23.3    5.6  1055.40
    .02     .00     7.07    .00   .000    .030   .000   .000  1049.10  2016.74
 .003008    100.    100.    100.      0       0      0    .00   404.51  2421.26


*SECNO 700.000
 700.000    4.95  1054.35    .00    .00  1055.12    .77    .30    .00  1055.70
 12000.0     .0  12000.0     .0     .0   1698.8     .0   27.2    6.5  1055.70
    .03     .00     7.06    .00   .000    .030   .000   .000  1049.40  2016.73
 .003005    100.    100.    100.      0       0      0    .00   404.54  2421.27


*SECNO 750.000
 750.000    4.95  1054.50    .00    .00  1055.27    .77    .15    .00  1055.85
 12000.0     .0  12000.0     .0     .0   1699.0     .0   29.2    7.0  1055.85
    .03     .00     7.06    .00   .000    .030   .000   .000  1049.55  2016.72
 .003004     50.     50.     50.      0       0      0    .00   404.56  2421.28


*SECNO 770.000
 770.000    4.95  1054.56    .00    .00  1055.33    .77    .06    .00  1055.91
 12000.0     .0  12000.0     .0     .0   1699.1     .0   29.9    7.1  1055.91
    .03     .00     7.06    .00   .000    .030   .000   .000  1049.61  2016.72
 .003004     20.     20.     20.      0       0      0    .00   404.56  2421.28


*SECNO 780.000
 780.000    4.95  1054.59    .00    .00  1055.36    .77    .03    .00  1055.94
 12000.0     .0  12000.0     .0     .0   1699.1     .0   30.3    7.2  1055.94
    .03     .00     7.06    .00   .000    .030   .000   .000  1049.64  2016.72
 .003004     10.     10.     10.      0       0      0    .00   404.56  2421.28


*SECNO 790.000
 790.000    4.95  1054.62    .00    .00  1055.39    .77    .03    .00  1055.97
 12000.0     .0  12000.0     .0     .0   1699.1     .0   30.7    7.3  1055.97
    .03     .00     7.06    .00   .000    .030   .000   .000  1049.67  2016.72
 .003004     10.     10.     10.      0       0      0    .00   404.56  2421.28


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 21JUN93     14:00:45                                                    PAGE  77

  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST
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*SECNO 800.000
  800.000     4.95  1054.65     .00     .00  1055.42     .77     .03     .00  1056.00
  12000.0      .0  12000.0      .0      .0   1699.1      .0    31.1     7.4  1056.00
     .03     .00     7.06     .00    .000     .030    .000    .000  1049.70  2016.72
  .003004     10.      10.     10.       0        0       0     .00   404.56  2421.28


*SECNO 805.000
  805.000     4.97  1054.67     .00     .00  1055.44     .77     .01     .00  1056.00
  12000.0      .0  12000.0      .0      .0   1705.4      .0    31.3     7.5  1056.00
     .03     .00     7.04     .00    .000     .030    .000    .000  1049.70  2016.53
  .002971      5.       5.      5.       0        0       0     .00   404.95  2421.47


*SECNO 810.000
  810.000     4.99  1054.69     .00     .00  1055.46     .76     .01     .00  1056.00
  12000.0      .0  12000.0      .0      .0   1714.0      .0    31.5     7.5  1056.00
     .03     .00     7.00     .00    .000     .030    .000    .000  1049.70  2016.27
  .002927      5.       5.      5.       0        0       0     .00   405.47  2421.74


*SECNO 820.000
  820.000     5.04  1054.74     .00     .00  1055.49     .75     .03     .00  1056.00
  12000.0      .0  12000.0      .0      .0   1732.2      .0    31.9     7.6  1056.00
     .03     .00     6.93     .00    .000     .030    .000    .000  1049.70  2015.71
  .002835     10.      10.     10.       1        0       0     .00   406.58  2422.29


*SECNO 840.000
  840.000     5.13  1054.83     .00     .00  1055.54     .71     .05     .00  1056.00
  12000.0      .0  12000.0      .0      .0   1774.1      .0    32.7     7.8  1056.00
     .03     .00     6.76     .00    .000     .030    .000    .000  1049.70  2014.44
  .002640     20.      20.     20.       2        0       0     .00   409.13  2423.56


*SECNO 940.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.76

  940.000     6.10  1055.60     .00     .00  1055.64     .04     .03     .07  1055.80
  12000.0      .0  12000.0      .0      .0   7640.5      .0    43.5    10.0  1055.80
     .05     .00     1.57     .00    .000     .030    .000    .000  1049.50  2008.71
  .000116    100.     100.    100.       2        0       0     .00  1516.08  3524.79


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  21JUN93     14:00:45                                                          PAGE  78


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1040.000
 1040.000     6.33  1055.63     .00     .00  1055.65     .02     .01     .00  1055.60
  12000.0      .0  12000.0      .0      .0   9579.6      .0    63.3    13.9  1055.60
     .07     .00     1.25     .00    .000     .030    .000    .000  1049.30  2000.32
  .000071    100.     100.    100.       2        0       0     .00  1839.61  3839.92


*SECNO 1140.000
 1140.000     6.54  1055.64     .00     .00  1055.66     .02     .01     .00  1055.40
  12000.0      .0  12000.0      .0      .0  11957.4      .0    88.0    18.5  1055.40
     .10     .00     1.00     .00    .000     .030    .000    .000  1049.10  2000.37
  .000043    100.     100.    100.       0        0       0     .00  2207.58  4207.95


*SECNO 1240.000
 1240.000     6.75  1055.65     .00     .00  1055.66     .01     .00     .00  1055.20
  12000.0      .0  12000.0      .0      .0  14908.9      .0   118.8    24.1  1055.20
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   .14     .00     .80     .00    .000    .030    .000    .000  1048.90  2000.44
 .000026   100.    100.    100.      0       0       0     .00  2649.16  4649.60


*SECNO 1340.000
 1340.000   6.96  1055.66    .00    .00  1055.67    .01    .00    .00  1055.00
 12000.0     .0  12000.0     .0     .0  18549.2     .0   157.2   30.8  1055.00
   .18     .00     .65     .00    .000    .030    .000    .000  1048.70  2000.51
 .000016   100.    100.    100.      0       0       0     .00  3179.07  5179.57


*SECNO 1440.000
 1440.000   7.16  1055.66    .00    .00  1055.67    .00    .00    .00  1054.80
 12000.0     .0  12000.0     .0     .1  23039.5     .1   205.0   38.8  1054.80
   .23     .00     .52     .00    .000    .030    .000    .000  1048.50  2000.58
 .000010   100.    100.    100.      0       0       0     .00  3814.97  5815.55


*SECNO 1540.000
 1540.000   7.37  1055.67    .00    .00  1055.67    .00    .00    .00  1054.60
 12000.0     .0  12000.0     .0     .1  28576.0     .1   264.2   48.4  1054.60
   .30     .02     .42     .02    .040    .030    .040    .000  1048.30  2000.67
 .000006   100.    100.    100.      0       0       0     .00  4578.07  6578.74


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  21JUN93      14:00:45                                                    PAGE  79


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 1640.000
 1640.000   7.57  1055.67    .00    .00  1055.67    .00    .00    .00  1054.40
 12000.0     .0  12000.0     .0     .3  35401.0     .3   337.7   60.0  1054.40
   .38     .02     .34     .02    .040    .030    .040    .000  1048.10  2000.76
 .000004   100.    100.    100.      0       0       0     .00  5493.81  7494.57


*SECNO 1740.000
 1740.000   7.77  1055.67    .00    .00  1055.67    .00    .00    .00  1054.20
 12000.0     .0  12000.0     .0     .4  43806.4     .4   428.6   73.9  1054.20
   .48     .02     .27     .02    .040    .030    .040    .000  1047.90  2000.85
 .000002   100.    100.    100.      0       0       0     .00  6592.73  8593.58


1
PROFILE FOR STREAM  THE SPILLWAY DIMENSIONS


PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT
BANK,M-LOWER END STA


ELEVATION 1047.   1049.   1051.   1053.   1055.   1057.   1059.   1061.   1063.   1065.
   SECNO   CUMDIS

    .00     0. I     .     .  W E .L    .     .     .     .     .     .     .
           10. I     .     .  W  E. L   .     .     .     .     .     .     .
           20. I     .     .  W  E. L   .     .     .     .     .     .     .
           30. I     .     .  W  E. L   .     .     .     .     .     .     .
           40. CI    .     .  W  E. L   .     .     .     .     .     .     .
           50. CI    .     .  W  E. L   .     .     .     .     .     .     .
           60. CI    .     .  W  E. L   .     .     .     .     .     .     .
           70. CI    .     .   W  E L   .     .     .     .     .     .     .
           80. CI    .     .   W  E L   .     .     .     .     .     .     .
           90. CI    .     .   W  E L   .     .     .     .     .     .     .
   100.00 100. CI    .     .    W  E L  .     .     .     .     .     .     .
          110. C I   .     .   W  E L   .     .     .     .     .     .     .
          120. C I   .     .   W  E L   .     .     .     .     .     .     .
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        130. C I   .   .  W E L  .   .   .   .   .   .   .
        140. C I   .   .  W .E L  .   .   .   .   .   .   .
        150. C I   .   .  W .E L  .   .   .   .   .   .   .
        160. C I   .   .  W .E L  .   .   .   .   .   .   .
        170. C I   .   .  W .E L  .   .   .   .   .   .   .
        180. C I   .   .  W .E L  .   .   .   .   .   .   .
        190. C I   .   .  W .E L  .   .   .   .   .   .   .
200.00  200. C I   .   .  W.EL  .   .   .   .   .   .   .
        210. C I   .   .  W.E L  .   .   .   .   .   .   .
        220. C I   .   .  W.E L  .   .   .   .   .   .   .
        230. C I   .   .  W.E L  .   .   .   .   .   .   .
        240. C I   .   .  W.E L  .   .   .   .   .   .   .
        250. C I   .   .  W.E L  .   .   .   .   .   .   .
        260. C I   .   .  W.E L  .   .   .   .   .   .   .
        270. C I   .   .  W. E L .   .   .   .   .   .   .
        280. C I   .   .  W. E L .   .   .   .   .   .   .
        290. C I   .   .  W. E L .   .   .   .   .   .   .
300.00  300. C I   .   .  W. E L .   .   .   .   .   .   .
        310. C I   .   .  W. E L .   .   .   .   .   .   .
        320. C I   .   .  W. E L .   .   .   .   .   .   .
        330. C I   .   .  W EL .   .   .   .   .   .   .
        340. C I   .   .  W E L.   .   .   .   .   .   .
        350. C I   .   .  W E L.   .   .   .   .   .   .
        360. C I   .   .  W E L.   .   .   .   .   .   .
        370. C I   .   .  W E L.   .   .   .   .   .   .
        380. C I   .   .  W E L.   .   .   .   .   .   .
        390. C I   .   .  .W E L.  .   .   .   .   .   .
400.00  400. C I   .   .  .W E L.  .   .   .   .   .   .
        410. C I   .   .  .W E L.  .   .   .   .   .   .
        420. C I   .   .  .W E L.  .   .   .   .   .   .
        430. C I   .   .  .W E L.  .   .   .   .   .   .
        440. C I   .   .  .W E L.  .   .   .   .   .   .
        450. C I   .   .  .W E L.  .   .   .   .   .   .
        460. C I   .   .  .W E L.  .   .   .   .   .   .
        470. C I   .   .  .W E L.  .   .   .   .   .   .
        480. C I   .   .  .W E L.  .   .   .   .   .   .
        490. C I   .   .  .W E L.  .   .   .   .   .   .
500.00  500. C I   .   .  .W E L.  .   .   .   .   .   .
        510. C I   .   .  .W E L.  .   .   .   .   .   .
        520. C I   .   .  .W E L.  .   .   .   .   .   .
        530. C I   .   .  .W EL.   .   .   .   .   .   .
        540. C I   .   .  .W E L   .   .   .   .   .   .
        550. C I   .   .  .W E L   .   .   .   .   .   .
        560. C I   .   .  .W E L   .   .   .   .   .   .
        570. C I   .   .  .W E L   .   .   .   .   .   .
        580. C I   .   .  .W E L   .   .   .   .   .   .
        590. C I   .   .  .W E L   .   .   .   .   .   .
600.00  600. C I   .   .  .W EL  .   .   .   .   .   .
        610. C I   .   .  .W E.L   .   .   .   .   .   .
        620. C I   .   .  .W E.L   .   .   .   .   .   .
        630. C I   .   .  .W E.L   .   .   .   .   .   .
        640. C I   .   .  .W E.L   .   .   .   .   .   .
        650. C I   .   .  .W E.L   .   .   .   .   .   .
        660. C I   .   .  .W E.L   .   .   .   .   .   .
        670. C I   .   .  .W E.L   .   .   .   .   .   .
        680. C I   .   .  .W E.L   .   .   .   .   .   .
        690. C I   .   .  .W E.L   .   .   .   .   .   .
700.00  700. C I   .   .  .W E.L   .   .   .   .   .   .
        710. C .I  .   .  .W E.L   .   .   .   .   .   .
        720. C .I  .   .  .W E.L   .   .   .   .   .   .
        730. C .I  .   .  .W EL    .   .   .   .   .   .
        740. C .I  .   .  .W E L   .   .   .   .   .   .
750.00  750. C .I  .   .  .W E L   .   .   .   .   .   .
        760. C .I  .   .  .W E L   .   .   .   .   .   .
770.00  770. C .I  .   .  .W E L   .   .   .   .   .   .
780.00  780. C .I  .   .  .W E L   .   .   .   .   .   .
790.00  790. C .I  .   .  .W E L   .   .   .   .   .   .
800.00  800. C .I  .   .  .W .EL   .   .   .   .   .   .
805.00  810. C .I  .   .  .W .EL   .   .M  .   .   .   .
810.00  820. C .I  .   .  .W .EL   .   .M  .   .   .   .
820.00  830. C .I  .   .  .W .EL   .   .M  .   .   .   .
840.00  840. C .I  .   .  .W.EL    .   .M  .   .   .   .
        850. C .I  .   .  .W.EL    .   .M  .   .   .   .
        860. C .I  .   .  .W.EL    .   .M  .   .   .   .
        870. C .I  .   .  .W.EL    .   .M  .   .   .   .
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880. C  .I  .  .  W.E L  .  . M  .  .  .  .
890. C  .I  .  .  WE L  .  . M  .  .  .  .
900. C  .I  .  .  WE L  .  . M  .  .  .  .
910. C  .I  .  .  W EL  .  . M  .  .  .  .
920. C  .I  .  .  .WEL  .  . M  .  .  .  .
930. C  .I  .  .  .WEL  .  . M  .  .  .  .
940.00 940. C  .I  .  .  .WEL  .  . M  .  .  .  .
950. C  .I  .  .  . E  .  .M  .  .  .  .
960. C  .I  .  .  . E  .  .M  .  .  .  .
970. C  .I  .  .  . E  .  .M  .  .  .  .
980. C  .I  .  .  . E  .  .M  .  .  .  .
990. C  I  .  .  . E  .  .M  .  .  .  .
1000. C  I  .  .  . E  .  .M  .  .  .  .
1010. C  I  .  .  . E  .  .M  .  .  .  .
1020. C  I  .  .  . E  .  .M  .  .  .  .
1030. C  I  .  .  . E  .  .M  .  .  .  .
1040.00 1040. C  I  .  .  .LE  .  .M  .  .  .  .
1050. C  I  .  .  .LE  .  .M  .  .  .  .
1060. C  I  .  .  .LE  .  .M  .  .  .  .
1070. C  I  .  .  .LE  .  .M  .  .  .  .
1080. C  I  .  .  .LE  .  .M  .  .  .  .
1090. C  I.  .  .  .LE  .  .M  .  .  .  .
1100. C  I.  .  .  .LE  .  .M  .  .  .  .
1110. C  I.  .  .  .LE  .  .M  .  .  .  .
1120. C  I.  .  .  .LE  .  .M  .  .  .  .
1130. C  I.  .  .  .LE  .  .M  .  .  .  .
1140.00 1140. C  I.  .  .  L E  .  M  .  .  .  .
1150. C  I.  .  .  L E  .  M  .  .  .  .
1160. C  I.  .  .  L E  .  M  .  .  .  .
1170. C  I.  .  .  L E  .  M  .  .  .  .
1180. C  I.  .  .  L E  .  M  .  .  .  .
1190. C  I.  .  .  L E  .  M  .  .  .  .
1200. C  I.  .  .  L E  .  M  .  .  .  .
1210. C  I.  .  .  L E  .  M  .  .  .  .
1220. C  I.  .  .  L E  .  M  .  .  .  .
1230. C  I.  .  .  L E  .  M  .  .  .  .
1240.00 1240. C  I.  .  .  L. E  .  M.  .  .  .  .
1250. C  I.  .  .  L. E  .  M.  .  .  .  .
1260. C  I.  .  .  L. E  .  M.  .  .  .  .
1270. C  I.  .  .  L. E  .  M.  .  .  .  .
1280. C  I.  .  .  L. E  .  M.  .  .  .  .
1290. C  I.  .  .  L. E  .  M.  .  .  .  .
1300. C  I.  .  .  L. E  .  M.  .  .  .  .
1310. C  I.  .  .  L. E  .  M.  .  .  .  .
1320. C  I.  .  .  L. E  .  M.  .  .  .  .
1330. C  I.  .  .  L. E  .  M.  .  .  .  .
1340.00 1340. C  I.  .  .  L.E  .  M.  .  .  .  .
1350. C  I.  .  .  L.E  .  M.  .  .  .  .
1360. C  I.  .  .  L.E  .  M.  .  .  .  .
1370. C  I.  .  .  L.E  .  M.  .  .  .  .
1380. C  I.  .  .  L.E  .  M.  .  .  .  .
1390. C  I.  .  .  L.E  .  M.  .  .  .  .
1400. C  I.  .  .  L.E  .  M.  .  .  .  .
1410. C  I.  .  .  L.E  .  M.  .  .  .  .
1420. C  I.  .  .  L.E  .  M.  .  .  .  .
1430. C  I.  .  .  L.E  .  M.  .  .  .  .
1440.00 1440. C  I.  .  .  L.E  .  M.  .  .  .  .
1450. C  I.  .  .  L.E  .  M.  .  .  .  .
1460. C  I.  .  .  L.E  .  M.  .  .  .  .
1470. C  I.  .  .  L.E  .  M.  .  .  .  .
1480. C  I.  .  .  L.E  .  M.  .  .  .  .
1490. C  I.  .  .  L.E  .  M.  .  .  .  .
1500. C  I.  .  .  L.E  .  M.  .  .  .  .
1510. C  I.  .  .  L.E  .  M.  .  .  .  .
1520. C  I.  .  .  L.E  .  M.  .  .  .  .
1530. C  I.  .  .  L.E  .  M.  .  .  .  .
1540.00 1540. C  I.  .  .  L.E  .  M.  .  .  .  .
1550. C  I.  .  .  L.E  .  M.  .  .  .  .
1560. C  I.  .  .  L.E  .  M.  .  .  .  .
1570. C  I.  .  .  L.E  .  M.  .  .  .  .
1580. C  I.  .  .  L.E  .  M.  .  .  .  .
1590. C  I.  .  .  L.E  .  M.  .  .  .  .
1600. C  I.  .  .  L.E  .  M.  .  .  .  .
1610. C  I.  .  .  L.E  .  M.  .  .  .  .
1620. C  I.  .  .  L.E  .  M.  .  .  .  .
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      1630. C I   .     .     . L  .E    .  M .     .     .     .
 1640.00 1640. C I   .     .     . L  .E    .  M .     .     .     .
      1650. C I   .     .     . L  .E    .  M .     .     .     .
      1660. C I   .     .     . L  .E    .  M .     .     .     .
      1670. C I   .     .     . L  .E    .  M .     .     .     .
      1680. C I   .     .     . L  .E    .  M .     .     .     .
      1690. C I   .     .     . L  .E    .  M .     .     .     .
      1700. C I   .     .     . L  .E    .  M .     .     .     .
      1710. C I   .     .     . L  .E    .  M .     .     .     .
      1720. C I   .     .     . L  .E    .  M .     .     .     .
      1730. C I   .     .     . L  .E    .  M .     .     .     .
 1740.00 1740. C I   .     .     . L  .E    .  M .     .     .     .
1
  21JUN93     14:00:45                                                    PAGE  80


T1     Q15 = 13,000 CFS, STARTING WSE = 1052.44

J1  ICHECK   INQ     NINV    IDIR    STRT    METRIC   HVINS    Q       WSEL     FQ

     0       15      0       0       0       0        0     1052.44   0

J2  NPROF    IPLOT   PRFVS   XSECV   XSECH   FN       ALLDC    IBW     CHNIM    ITRACE

    14       0       0       0       0       0        0

1
  21JUN93     14:00:45                                                    PAGE  81


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*PROF14
0

CCHV=    .100 CEHV=    .500
*SECNO  .000
    .000     5.14  1052.44     .00  1052.44  1053.27     .83     .00     .00  1053.60
  13000.0      .0  13000.0      .0     .0    1776.5      .0      .0      .0  1053.60
    .00      .00     7.32     .00    .000    .030    .000    .000  1047.30  2014.36
  .003086     0.      0.       0.      0       0       0     .00   409.27  2423.64


*SECNO 100.000
  100.000    5.15  1052.75     .00     .00  1053.58     .83     .31     .00  1053.90
  13000.0      .0  13000.0      .0     .0    1780.0      .0     4.1      .9  1053.90
    .00      .00     7.30     .00    .000    .030    .000    .000  1047.60  2014.26
  .003068    100.    100.     100.      0       0       0     .00   409.49  2423.74


*SECNO 200.000
  200.000    5.16  1053.06     .00     .00  1053.89     .82     .31     .00  1054.20
  13000.0      .0  13000.0      .0     .0    1784.2      .0     8.2     1.9  1054.20
    .01      .00     7.29     .00    .000    .030    .000    .000  1047.90  2014.13
  .003047    100.    100.     100.      0       0       0     .00   409.74  2423.87


*SECNO 300.000
  300.000    5.17  1053.37     .00     .00  1054.19     .82     .30     .00  1054.50
  13000.0      .0  13000.0      .0     .0    1787.5      .0    12.3     2.8  1054.50
    .01      .00     7.27     .00    .000    .030    .000    .000  1048.20  2014.03
  .003030    100.    100.     100.      0       0       0     .00   409.94  2423.97


*SECNO 400.000
  400.000    5.17  1053.67     .00     .00  1054.49     .82     .30     .00  1054.80
  13000.0      .0  13000.0      .0     .0    1789.7      .0    16.4     3.8  1054.80
    .02      .00     7.26     .00    .000    .030    .000    .000  1048.50  2013.96
  .003019    100.    100.     100.      0       0       0     .00   410.07  2424.03
```

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*SECNO 500.000
  500.000     5.18   1053.98     .00     .00   1054.79     .82     .30     .00   1055.10
  13000.0      .0   13000.0      .0      .0    1790.9      .0    20.5     4.7   1055.10
     .02      .00      7.26     .00    .000      .030    .000    .000   1048.80   2013.93
  .003013     100.     100.     100.       0         0       0     .00    410.15   2424.07
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  SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
  Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
  TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
  SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*SECNO 600.000
  600.000     5.18   1054.28     .00     .00   1055.10     .82     .30     .00   1055.40
  13000.0      .0   13000.0      .0      .0    1791.7      .0    24.6     5.6   1055.40
     .02      .00      7.26     .00    .000      .030    .000    .000   1049.10   2013.90
  .003009     100.     100.     100.       0         0       0     .00    410.19   2424.10

*SECNO 700.000
  700.000     5.18   1054.58     .00     .00   1055.40     .82     .30     .00   1055.70
  13000.0      .0   13000.0      .0      .0    1792.3      .0    28.7     6.6   1055.70
     .03      .00      7.25     .00    .000      .030    .000    .000   1049.40   2013.89
  .003006     100.     100.     100.       0         0       0     .00    410.23   2424.11

*SECNO 750.000
  750.000     5.18   1054.73     .00     .00   1055.55     .82     .15     .00   1055.85
  13000.0      .0   13000.0      .0      .0    1792.5      .0    30.8     7.1   1055.85
     .03      .00      7.25     .00    .000      .030    .000    .000   1049.55   2013.88
  .003005      50.      50.      50.       0         0       0     .00    410.24   2424.12

*SECNO 770.000
  770.000     5.18   1054.79     .00     .00   1055.61     .82     .06     .00   1055.91
  13000.0      .0   13000.0      .0      .0    1792.6      .0    31.6     7.2   1055.91
     .03      .00      7.25     .00    .000      .030    .000    .000   1049.61   2013.88
  .003004      20.      20.      20.       0         0       0     .00    410.25   2424.12

*SECNO 780.000
  780.000     5.18   1054.82     .00     .00   1055.64     .82     .03     .00   1055.94
  13000.0      .0   13000.0      .0      .0    1792.6      .0    32.0     7.3   1055.94
     .03      .00      7.25     .00    .000      .030    .000    .000   1049.64   2013.88
  .003004      10.      10.      10.       0         0       0     .00    410.25   2424.12

*SECNO 790.000
  790.000     5.18   1054.85     .00     .00   1055.67     .82     .03     .00   1055.97
  13000.0      .0   13000.0      .0      .0    1792.6      .0    32.4     7.4   1055.97
     .03      .00      7.25     .00    .000      .030    .000    .000   1049.67   2013.88
  .003004      10.      10.      10.       0         0       0     .00    410.25   2424.12
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  SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
  Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
  TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
  SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*SECNO 800.000
  800.000     5.18   1054.88     .00     .00   1055.70     .82     .03     .00   1056.00
  13000.0      .0   13000.0      .0      .0    1792.6      .0    32.8     7.5   1056.00
     .03      .00      7.25     .00    .000      .030    .000    .000   1049.70   2013.88
  .003004      10.      10.      10.       0         0       0     .00    410.25   2424.12
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*SECNO 805.000
  805.000     5.20  1054.90     .00     .00  1055.71     .81     .01     .00  1056.00
  13000.0      .0  13000.0      .0      .0   1799.0      .0    33.0     7.6  1056.00
      .03     .00     7.23     .00    .000     .030    .000    .000  1049.70  2013.69
  .002973      5.       5.      5.       0        0       0     .00   410.63  2424.31


*SECNO 810.000
  810.000     5.22  1054.92     .00     .00  1055.73     .80     .01     .00  1056.00
  13000.0      .0  13000.0      .0      .0   1807.7      .0    33.2     7.6  1056.00
      .03     .00     7.19     .00    .000     .030    .000    .000  1049.70  2013.42
  .002930      5.       5.      5.       0        0       0     .00   411.16  2424.58


*SECNO 820.000
  820.000     5.28  1054.98     .00     .00  1055.76     .78     .03     .00  1056.00
  13000.0      .0  13000.0      .0      .0   1833.1      .0    33.7     7.7  1056.00
      .03     .00     7.09     .00    .000     .030    .000    .000  1049.70  2012.66
  .002811     10.      10.     10.       2        0       0     .00   412.68  2425.34


*SECNO 840.000
  840.000     5.36  1055.06     .00     .00  1055.82     .75     .05     .00  1056.00
  13000.0      .0  13000.0      .0      .0   1869.1      .0    34.5     7.9  1056.00
      .03     .00     6.96     .00    .000     .030    .000    .000  1049.70  2011.58
  .002653     20.      20.     20.       2        0       0     .00   414.84  2426.42


*SECNO 940.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.78

  940.000     6.38  1055.88     .00     .00  1055.92     .04     .03     .07  1055.80
  13000.0      .0  13000.0      .0      .0   8057.8      .0    45.9    10.1  1055.80
      .05     .00     1.61     .00    .000     .030    .000    .000  1049.50  2000.24
  .000116    100.     100.    100.       2        0       0     .00  1533.01  3533.26


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  21JUN93      14:00:45                                                          PAGE   84


   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1040.000
 1040.000     6.60  1055.90     .00     .00  1055.93     .03     .01     .00  1055.60
  13000.0      .0  13000.0      .0      .0  10083.3      .0    66.7    14.0  1055.60
      .07     .00     1.29     .00    .000     .030    .000    .000  1049.30  2000.29
  .000070    100.     100.    100.       2        0       0     .00  1839.66  3839.95


*SECNO 1140.000
 1140.000     6.82  1055.92     .00     .00  1055.94     .02     .01     .00  1055.40
  13000.0      .0  13000.0      .0      .0  12561.8      .0    92.7    18.7  1055.40
      .10     .00     1.03     .00    .000     .030    .000    .000  1049.10  2000.34
  .000043    100.     100.    100.       0        0       0     .00  2207.65  4207.99


*SECNO 1240.000
 1240.000     7.03  1055.93     .00     .00  1055.94     .01     .00     .00  1055.20
  13000.0      .0  13000.0      .0      .0  15635.2      .0   125.1    24.2  1055.20
      .13     .00      .83     .00    .000     .030    .000    .000  1048.90  2000.40
  .000026    100.     100.    100.       0        0       0     .00  2649.24  4649.64


*SECNO 1340.000
 1340.000     7.23  1055.93     .00     .00  1055.94     .01     .00     .00  1055.00
  13000.0      .0  13000.0      .0      .1  19421.9      .1   165.3    30.9  1055.00
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   .17     .00     .67     .00    .040    .030    .040    .000  1048.70  2000.46
 .000016   100.    100.    100.      0       0       0     .00  3179.17  5179.62


*SECNO 1440.000
 1440.000   7.44  1055.94     .00     .00  1055.94     .00     .00     .00  1054.80
 13000.0     .0  13000.0      .0      .1  24088.1      .1   215.3    39.0  1054.80
   .22     .03     .54     .03    .040    .030    .040    .000  1048.50  2000.52
 .000010   100.    100.    100.      0       0       0     .00  3815.09  5815.61


*SECNO 1540.000
 1540.000   7.64  1055.94     .00     .00  1055.94     .00     .00     .00  1054.60
 13000.0     .0  13000.0      .0      .2  29835.0      .2   277.2    48.6  1054.60
   .29     .03     .44     .03    .040    .030    .040    .000  1048.30  2000.60
 .000006   100.    100.    100.      0       0       0     .00  4578.22  6578.81


1
  21JUN93     14:00:45                                                    PAGE  85


   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*SECNO 1640.000
 1640.000   7.84  1055.94     .00     .00  1055.94     .00     .00     .00  1054.40
 13000.0     .0  13000.0      .0      .4  36911.7      .4   353.8    60.1  1054.40
   .37     .03     .35     .03    .040    .030    .040    .000  1048.10  2000.67
 .000004   100.    100.    100.      0       0       0     .00  5493.98  7494.66


*SECNO 1740.000
 1740.000   8.04  1055.94     .00     .00  1055.95     .00     .00     .00  1054.20
 13000.0     .0  13000.0      .0      .6  45620.1      .6   448.5    74.0  1054.20
   .46     .03     .28     .03    .040    .030    .040    .000  1047.90  2000.75
 .000003   100.    100.    100.      0       0       0     .00  6592.93  8593.68


1
PROFILE FOR STREAM  THE SPILLWAY DIMENSIONS


PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT
BANK,M-LOWER END STA


ELEVATION 1047.    1049.    1051.    1053.    1055.    1057.    1059.    1061.    1063.    1065.
   SECNO   CUMDIS

    .00     0. I      .      .      W  EL     .      .      .      .      .      .      .
           10. I      .      .      W  E L    .      .      .      .      .      .      .
           20. I      .      .      W  E L    .      .      .      .      .      .      .
           30. I      .      .      W  E L    .      .      .      .      .      .      .
           40. CI     .      .      W  E L    .      .      .      .      .      .      .
           50. CI     .      .      W  .EL    .      .      .      .      .      .      .
           60. CI     .      .      W  .EL    .      .      .      .      .      .      .
           70. CI     .      .      W  .E L   .      .      .      .      .      .      .
           80. CI     .      .      W  .E L   .      .      .      .      .      .      .
           90. CI     .      .      W  .E L   .      .      .      .      .      .      .
   100.00 100. CI     .      .      W  .E L   .      .      .      .      .      .      .
          110. C I    .      .      W  . EL   .      .      .      .      .      .      .
          120. C I    .      .      W  . EL   .      .      .      .      .      .      .
          130. C I    .      .      W  . EL   .      .      .      .      .      .      .
          140. C I    .      .      W  . E L  .      .      .      .      .      .      .
          150. C I    .      .      W  . E L  .      .      .      .      .      .      .
          160. C I    .      .      W  . E L  .      .      .      .      .      .      .
          170. C  I   .      .      W  . E L  .      .      .      .      .      .      .
          180. C  I   .      .      W  .  EL  .      .      .      .      .      .      .
          190. C  I   .      .      W.  EL    .      .      .      .      .      .      .
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200.00  200. C I   .   .   W. EL  .   .   .   .   .   .   .
        210. C I   .   .   W. E L .   .   .   .   .   .   .
        220. C I   .   .   W. E L .   .   .   .   .   .   .
        230. C I   .   .   W. E L .   .   .   .   .   .   .
        240. C  I  .   .   W.  EL .   .   .   .   .   .   .
        250. C  I  .   .   W  EL  .   .   .   .   .   .   .
        260. C  I  .   .   W  EL  .   .   .   .   .   .   .
        270. C  I  .   .   W  E L .   .   .   .   .   .   .
        280. C  I  .   .   W  E L .   .   .   .   .   .   .
        290. C  I  .   .   W  E L .   .   .   .   .   .   .
300.00  300. C  I  .   .   W  E L .   .   .   .   .   .   .
        310. C  I  .   .   W  EL  .   .   .   .   .   .   .
        320. C  I  .   .   .W  EL .   .   .   .   .   .   .
        330. C  I  .   .   .W  EL .   .   .   .   .   .   .
        340. C  I  .   .   .W  E L .   .   .   .   .   .   .
        350. C  I  .   .   .W  E L .   .   .   .   .   .   .
        360. C  I  .   .   .W  E L .   .   .   .   .   .   .
        370. C   I .   .   .W  E L .   .   .   .   .   .   .
        380. C   I .   .   .W  EL  .   .   .   .   .   .   .
        390. C   I .   .   .W  EL  .   .   .   .   .   .   .
400.00  400. C   I .   .   .W  E L.   .   .   .   .   .   .
        410. C   I .   .   .W  E L.   .   .   .   .   .   .
        420. C   I .   .   .W  E L.   .   .   .   .   .   .
        430. C   I .   .   .W  E L.   .   .   .   .   .   .
        440. C    I .  .   .W  EL.   .   .   .   .   .   .
        450. C    I .  .   . W  EL.   .   .   .   .   .   .
        460. C    I .  .   . W  EL.   .   .   .   .   .   .
        470. C    I .  .   . W  E L.  .   .   .   .   .   .
        480. C    I .  .   . W  E L.  .   .   .   .   .   .
        490. C    I .  .   . W  E L.  .   .   .   .   .   .
500.00  500. C    I.   .   . W  E L.   .   .   .   .   .   .
        510. C    I.   .   . W  EL.   .   .   .   .   .   .
        520. C    I.   .   . W  EL.   .   .   .   .   .   .
        530. C    I.   .   . W  EL.   .   .   .   .   .   .
        540. C    I.   .   . W  E L   .   .   .   .   .   .
        550. C    I.   .   . W  E L   .   .   .   .   .   .
        560. C    I.   .   . W  E L   .   .   .   .   .   .
        570. C    I.   .   . W  EL    .   .   .   .   .   .
        580. C    I.   .   . W  EL    .   .   .   .   .   .
        590. C    I.   .   . W  EL    .   .   .   .   .   .
600.00  600. C    I.   .   . W  EL    .   .   .   .   .   .
        610. C    I.   .   . W  E.L   .   .   .   .   .   .
        620. C    I.   .   . W  E.L   .   .   .   .   .   .
        630. C    I.   .   . W  E.L   .   .   .   .   .   .
        640. C    I    .   . W  EL    .   .   .   .   .   .
        650. C    I    .   . W  EL    .   .   .   .   .   .
        660. C    I    .   . W  EL    .   .   .   .   .   .
        670. C    I    .   . W  E L   .   .   .   .   .   .
        680. C    I    .   . W  E L   .   .   .   .   .   .
        690. C    I    .   . W  E L   .   .   .   .   .   .
700.00  700. C    I    .   . W  E L   .   .   .   .   .   .
        710. C    .I   .   . W .EL   .   .   .   .   .   .
        720. C    .I   .   . W .EL   .   .   .   .   .   .
        730. C    .I   .   . W .EL   .   .   .   .   .   .
        740. C    .I   .   . W .E L  .   .   .   .   .   .
750.00  750. C    .I   .   . W .E L  .   .   .   .   .   .
        760. C    .I   .   . W .E L  .   .   .   .   .   .
770.00  770. C    . I  .   . W . EL  .   .   .   .   .   .
780.00  780. C    . I  .   . W . EL  .   .   .   .   .   .
790.00  790. C    . I  .   . W . EL  .   .   .   .   .   .
800.00  800. C    . I  .   . W . EL  .   .   .   .   .   .
805.00  810. C    . I  .   . W . EL  .   . M   .   .   .
810.00  820. C    . I  .   . W . EL  .   . M   .   .   .
820.00  830. C    . I  .   . W . EL  .   . M   .   .   .
840.00  840. C    . I  .   . W. E    .   . M   .   .   .
        850. C    . I  .   . W. E    .   . M   .   .   .
        860. C    . I  .   . W E     .   . M   .   .   .
        870. C    . I  .   . W E     .   . M   .   .   .
        880. C    . I  .   . W E     .   . M   .   .   .
        890. C    .I   .   . .W E    .   . M   .   .   .
        900. C    .I   .   . .W E    .   . M   .   .   .
        910. C    .I   .   . . WE    .   . M   .   .   .
        920. C    .I   .   . . WE    .   . M   .   .   .
        930. C    .I   .   . . WE    .   . M   .   .   .
940.00  940. C    .I   .   .  . E    .   . M   .   .   .
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        950. C     .I    .    .    .LE    .    .M    .    .    .    .
        960. C     .I    .    .    .LE    .    .M    .    .    .    .
        970. C     .I    .    .    .LE    .    .M    .    .    .    .
        980. C     .I    .    .    .LE    .    .M    .    .    .    .
        990. C     I     .    .    .LE    .    .M    .    .    .    .
       1000. C     I     .    .    .LE    .    .M    .    .    .    .
       1010. C     I     .    .    .LE    .    .M    .    .    .    .
       1020. C     I     .    .    .LE    .    .M    .    .    .    .
       1030. C     I     .    .    .LE    .    .M    .    .    .    .
1040.00 1040. C     I     .    .    .LE    .    .M    .    .    .    .
       1050. C     I     .    .    .LE    .    .M    .    .    .    .
       1060. C     I     .    .    .LE    .    .M    .    .    .    .
       1070. C     I     .    .    .LE    .    .M    .    .    .    .
       1080. C     I     .    .    .LE    .    .M    .    .    .    .
       1090. C     I.    .    .    .LE    .    .M    .    .    .    .
       1100. C     I.    .    .    .LE    .    .M    .    .    .    .
       1110. C     I.    .    .    .LE    .    .M    .    .    .    .
       1120. C     I.    .    .    .LE    .    .M    .    .    .    .
       1130. C     I.    .    .    .LE    .    .M    .    .    .    .
1140.00 1140. C     I.    .    .    .LE    .    .M    .    .    .    .
       1150. C     I.    .    .    .LE    .    .M    .    .    .    .
       1160. C     I.    .    .    .LE    .    .M    .    .    .    .
       1170. C     I.    .    .    .LE    .    .M    .    .    .    .
       1180. C     I.    .    .    .LE    .    .M    .    .    .    .
       1190. C     I.    .    .    .LE    .    .M    .    .    .    .
       1200. C     I.    .    .    .LE    .    .M    .    .    .    .
       1210. C     I.    .    .    .LE    .    .M    .    .    .    .
       1220. C     I.    .    .    .LE    .    .M    .    .    .    .
       1230. C     I.    .    .    .LE    .    .M    .    .    .    .
1240.00 1240. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1250. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1260. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1270. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1280. C     I.    .    .    .LE    .    .M.   .    .    .    .
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       1350. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1360. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1370. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1380. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1390. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1400. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1410. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1420. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1430. C     I.    .    .    .LE    .    .M.   .    .    .    .
1440.00 1440. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1450. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1460. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1470. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1480. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1490. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1500. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1510. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1520. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1530. C     I.    .    .    .LE    .    .M.   .    .    .    .
1540.00 1540. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1550. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1560. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1570. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1580. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1590. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1600. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1610. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1620. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1630. C     I.    .    .    .LE    .    .M.   .    .    .    .
1640.00 1640. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1650. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1660. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1670. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1680. C     I.    .    .    .LE    .    .M.   .    .    .    .
       1690. C     I.    .    .    .LE    .    .M.   .    .    .    .
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VLOB	VROB	VCH	HV	ALPHA	TIME	CASE	10*KS	KRATIO	SHEAR	FRCH	POWER	CWSEL
.000	.00	2.23	.08	1.00	.02	.00	30.02	1.00	.14	.46	.31	1048.67
.000	.00	2.90	.13	1.00	.02	.00	29.99	1.00	.21	.49	.60	1049.06
.000	.00	3.76	.22	1.00	.01	.00	30.00	1.00	.31	.52	1.15	1049.65
.000	.00	4.37	.30	1.00	.01	.00	30.08	1.00	.38	.54	1.67	1050.12
.000	.00	4.84	.36	1.00	.01	.00	30.09	1.00	.45	.55	2.16	1050.53
.000	.00	5.24	.43	1.00	.01	.00	30.15	1.00	.50	.56	2.64	1050.89
.000	.00	5.59	.49	1.00	.01	.00	30.20	1.00	.56	.57	3.10	1051.22
.000	.00	5.90	.54	1.00	.01	.00	30.20	1.00	.60	.58	3.55	1051.53
.000	.00	6.18	.59	1.00	.01	.00	30.32	1.00	.65	.59	3.99	1051.82
.000	.00	6.44	.64	1.00	.01	.00	30.38	1.00	.69	.60	4.42	1052.09
.000	.00	6.67	.69	1.00	.01	.00	30.39	1.00	.72	.60	4.84	1052.35
.000	.00	6.89	.74	1.00	.01	.00	30.38	1.00	.76	.61	5.24	1052.60
.000	.00	7.10	.78	1.00	.01	.00	30.47	1.00	.80	.61	5.65	1052.83
.000	.00	7.29	.82	1.00	.01	.00	30.47	1.00	.83	.62	6.03	1053.06
.000	.00	2.23	.08	1.00	.04	.00	29.93	1.00	.14	.45	.31	1048.97
.000	.00	2.91	.13	1.00	.03	.00	30.05	1.00	.21	.49	.60	1049.36
.000	.00	3.76	.22	1.00	.02	.00	30.00	1.00	.31	.52	1.15	1049.95
.000	.00	4.36	.30	1.00	.02	.00	30.04	1.00	.38	.54	1.67	1050.42
.000	.00	4.84	.36	1.00	.02	.00	30.04	1.00	.45	.55	2.16	1050.83
.000	.00	5.24	.43	1.00	.02	.00	30.07	1.00	.50	.56	2.63	1051.19
.000	.00	5.59	.48	1.00	.01	.00	30.10	1.00	.55	.57	3.09	1051.52
.000	.00	5.89	.54	1.00	.01	.00	30.11	1.00	.60	.58	3.54	1051.83
.000	.00	6.17	.59	1.00	.01	.00	30.18	1.00	.64	.59	3.97	1052.12
.000	.00	6.43	.64	1.00	.01	.00	30.22	1.00	.68	.59	4.40	1052.39
.000	.00	6.66	.69	1.00	.01	.00	30.23	1.00	.72	.60	4.81	1052.65
.000	.00	6.88	.73	1.00	.01	.00	30.23	1.00	.76	.60	5.21	1052.90
.000	.00	7.08	.78	1.00	.01	.00	30.30	1.00	.79	.61	5.61	1053.14
.000	.00	7.27	.82	1.00	.01	.00	30.30	1.00	.82	.61	6.00	1053.37
.000	.00	2.23	.08	1.00	.05	.00	30.01	1.00	.14	.46	.31	1049.27
.000	.00	2.91	.13	1.00	.04	.00	30.03	1.00	.21	.49	.60	1049.66
.000	.00	3.76	.22	1.00	.03	.00	30.00	1.00	.31	.52	1.15	1050.25
.000	.00	4.37	.30	1.00	.03	.00	30.06	1.00	.38	.54	1.67	1050.72
.000	.00	4.84	.36	1.00	.02	.00	30.03	1.00	.45	.55	2.16	1051.13
.000	.00	5.24	.43	1.00	.02	.00	30.05	1.00	.50	.56	2.63	1051.49
.000	.00	5.58	.48	1.00	.02	.00	30.06	1.00	.55	.57	3.09	1051.83
.000	.00	5.89	.54	1.00	.02	.00	30.07	1.00	.60	.58	3.53	1052.14
.000	.00	6.17	.59	1.00	.02	.00	30.10	1.00	.64	.59	3.96	1052.42
.000	.00	6.42	.64	1.00	.02	.00	30.13	1.00	.68	.59	4.38	1052.70
.000	.00	6.65	.69	1.00	.02	.00	30.14	1.00	.72	.60	4.79	1052.96
.000	.00	6.87	.73	1.00	.02	.00	30.15	1.00	.76	.60	5.19	1053.21
.000	.00	7.07	.78	1.00	.02	.00	30.19	1.00	.79	.61	5.59	1053.44
.000	.00	7.26	.82	1.00	.02	.00	30.19	1.00	.82	.61	5.97	1053.67

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VLOB	VROB	VCH	HV	ALPHA	TIME	CASE	10*KS	KRATIO	SHEAR	FRCH	POWER	CWSEL
.000	.00	2.23	.08	1.00	.06	.00	30.06	1.00	.14	.46	.31	1049.57
.000	.00	2.90	.13	1.00	.05	.00	29.98	1.00	.21	.49	.60	1049.96
.000	.00	3.76	.22	1.00	.04	.00	30.00	1.00	.31	.52	1.15	1050.55
.000	.00	4.37	.30	1.00	.03	.00	30.05	1.00	.38	.54	1.67	1051.02
.000	.00	4.84	.36	1.00	.03	.00	30.03	1.00	.45	.55	2.16	1051.43
.000	.00	5.24	.43	1.00	.03	.00	30.04	1.00	.50	.56	2.63	1051.79
.000	.00	5.58	.48	1.00	.02	.00	30.05	1.00	.55	.57	3.09	1052.13
.000	.00	5.89	.54	1.00	.02	.00	30.05	1.00	.60	.58	3.53	1052.44
.000	.00	6.16	.59	1.00	.02	.00	30.07	1.00	.64	.59	3.96	1052.73
.000	.00	6.42	.64	1.00	.02	.00	30.08	1.00	.68	.59	4.38	1053.00
.000	.00	6.65	.69	1.00	.02	.00	30.09	1.00	.72	.60	4.79	1053.26
.000	.00	6.87	.73	1.00	.02	.00	30.10	1.00	.75	.60	5.18	1053.51
.000	.00	7.07	.78	1.00	.02	.00	30.12	1.00	.79	.61	5.58	1053.75
.000	.00	7.26	.82	1.00	.02	.00	30.13	1.00	.82	.61	5.96	1053.98
.000	.00	2.23	.08	1.00	.07	.00	29.94	1.00	.14	.45	.31	1049.87
.000	.00	2.90	.13	1.00	.06	.00	29.99	1.00	.21	.49	.60	1050.26
.000	.00	3.76	.22	1.00	.04	.00	30.00	1.00	.31	.52	1.15	1050.85
.000	.00	4.36	.30	1.00	.04	.00	30.02	1.00	.38	.54	1.67	1051.32

.000	.00	4.84	.36	1.00	.03	.00	30.02	1.00	.45	.55	2.16	1051.73
.000	.00	5.24	.43	1.00	.03	.00	30.03	1.00	.50	.56	2.63	1052.09
.000	.00	5.58	.48	1.00	.03	.00	30.04	1.00	.55	.57	3.09	1052.43
.000	.00	5.89	.54	1.00	.03	.00	30.03	1.00	.60	.58	3.53	1052.74
.000	.00	6.16	.59	1.00	.03	.00	30.05	1.00	.64	.59	3.96	1053.03
.000	.00	6.42	.64	1.00	.03	.00	30.06	1.00	.68	.59	4.37	1053.30
.000	.00	6.65	.69	1.00	.03	.00	30.06	1.00	.72	.60	4.78	1053.56
.000	.00	6.86	.73	1.00	.02	.00	30.07	1.00	.75	.60	5.18	1053.81
.000	.00	7.07	.78	1.00	.02	.00	30.08	1.00	.79	.61	5.57	1054.05
.000	.00	7.26	.82	1.00	.02	.00	30.09	1.00	.82	.61	5.95	1054.28
.000	.00	2.23	.08	1.00	.09	.00	29.96	1.00	.14	.45	.31	1050.17
.000	.00	2.91	.13	1.00	.07	.00	30.04	1.00	.21	.49	.60	1050.56
.000	.00	3.76	.22	1.00	.05	.00	30.00	1.00	.31	.52	1.15	1051.15
.000	.00	4.36	.30	1.00	.04	.00	30.00	1.00	.38	.54	1.67	1051.62
.000	.00	4.84	.36	1.00	.04	.00	30.01	1.00	.45	.55	2.16	1052.03
.000	.00	5.24	.43	1.00	.04	.00	30.02	1.00	.50	.56	2.63	1052.39
.000	.00	5.58	.48	1.00	.03	.00	30.02	1.00	.55	.57	3.09	1052.73
.000	.00	5.89	.54	1.00	.03	.00	30.02	1.00	.60	.58	3.53	1053.04
.000	.00	6.16	.59	1.00	.03	.00	30.04	1.00	.64	.59	3.95	1053.33
.000	.00	6.41	.64	1.00	.03	.00	30.04	1.00	.68	.59	4.37	1053.60
.000	.00	6.65	.69	1.00	.03	.00	30.04	1.00	.72	.60	4.78	1053.86
.000	.00	6.86	.73	1.00	.03	.00	30.05	1.00	.75	.60	5.17	1054.11
.000	.00	7.06	.77	1.00	.03	.00	30.05	1.00	.79	.61	5.56	1054.35
.000	.00	7.25	.82	1.00	.03	.00	30.06	1.00	.82	.61	5.94	1054.58

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VLOB	VROB	VCH	HV	ALPHA	TIME	CASE	10*KS	KRATIO	SHEAR	FRCH	POWER	CWSEL
.000	.00	2.23	.08	1.00	.09	.00	30.06	1.00	.14	.46	.31	1050.32
.000	.00	2.90	.13	1.00	.07	.00	30.02	1.00	.21	.49	.60	1050.71
.000	.00	3.76	.22	1.00	.06	.00	30.00	1.00	.31	.52	1.15	1051.30
.000	.00	4.36	.30	1.00	.05	.00	30.01	1.00	.38	.54	1.67	1051.77
.000	.00	4.84	.36	1.00	.04	.00	30.00	1.00	.45	.55	2.16	1052.18
.000	.00	5.24	.43	1.00	.04	.00	30.01	1.00	.50	.56	2.63	1052.54
.000	.00	5.58	.48	1.00	.04	.00	30.02	1.00	.55	.57	3.08	1052.88
.000	.00	5.89	.54	1.00	.04	.00	30.02	1.00	.60	.58	3.52	1053.19
.000	.00	6.16	.59	1.00	.03	.00	30.03	1.00	.64	.59	3.95	1053.48
.000	.00	6.41	.64	1.00	.03	.00	30.03	1.00	.68	.59	4.37	1053.75
.000	.00	6.65	.69	1.00	.03	.00	30.03	1.00	.72	.60	4.78	1054.01
.000	.00	6.86	.73	1.00	.03	.00	30.04	1.00	.75	.60	5.17	1054.26
.000	.00	7.06	.77	1.00	.03	.00	30.04	1.00	.79	.61	5.56	1054.50
.000	.00	7.25	.82	1.00	.03	.00	30.05	1.00	.82	.61	5.94	1054.73
.000	.00	2.23	.08	1.00	.10	.00	30.02	1.00	.14	.46	.31	1050.38
.000	.00	2.90	.13	1.00	.07	.00	30.00	1.00	.21	.49	.60	1050.77
.000	.00	3.76	.22	1.00	.06	.00	30.00	1.00	.31	.52	1.15	1051.36
.000	.00	4.36	.30	1.00	.05	.00	30.01	1.00	.38	.54	1.67	1051.83
.000	.00	4.84	.36	1.00	.04	.00	30.00	1.00	.45	.55	2.16	1052.24
.000	.00	5.24	.43	1.00	.04	.00	30.01	1.00	.50	.56	2.63	1052.60
.000	.00	5.58	.48	1.00	.04	.00	30.02	1.00	.55	.57	3.08	1052.94
.000	.00	5.89	.54	1.00	.04	.00	30.02	1.00	.60	.58	3.52	1053.25
.000	.00	6.16	.59	1.00	.03	.00	30.03	1.00	.64	.59	3.95	1053.54
.000	.00	6.41	.64	1.00	.03	.00	30.03	1.00	.68	.59	4.37	1053.81
.000	.00	6.65	.69	1.00	.03	.00	30.03	1.00	.72	.60	4.78	1054.07
.000	.00	6.86	.73	1.00	.03	.00	30.03	1.00	.75	.60	5.17	1054.32
.000	.00	7.06	.77	1.00	.03	.00	30.04	1.00	.79	.61	5.56	1054.56
.000	.00	7.25	.82	1.00	.03	.00	30.04	1.00	.82	.61	5.94	1054.79
.000	.00	2.23	.08	1.00	.10	.00	30.01	1.00	.14	.46	.31	1050.41
.000	.00	2.90	.13	1.00	.07	.00	30.00	1.00	.21	.49	.60	1050.80
.000	.00	3.76	.22	1.00	.06	.00	30.00	1.00	.31	.52	1.15	1051.39
.000	.00	4.36	.30	1.00	.05	.00	30.01	1.00	.38	.54	1.67	1051.86
.000	.00	4.84	.36	1.00	.04	.00	30.00	1.00	.45	.55	2.16	1052.27
.000	.00	5.24	.43	1.00	.04	.00	30.01	1.00	.50	.56	2.63	1052.63
.000	.00	5.58	.48	1.00	.04	.00	30.02	1.00	.55	.57	3.08	1052.97
.000	.00	5.89	.54	1.00	.04	.00	30.02	1.00	.60	.58	3.52	1053.28
.000	.00	6.16	.59	1.00	.04	.00	30.03	1.00	.64	.59	3.95	1053.57
.000	.00	6.41	.64	1.00	.03	.00	30.03	1.00	.68	.59	4.37	1053.84
.000	.00	6.65	.69	1.00	.03	.00	30.03	1.00	.72	.60	4.78	1054.10
.000	.00	6.86	.73	1.00	.03	.00	30.03	1.00	.75	.60	5.17	1054.35

.000	.00	7.06	.77	1.00	.03	.00	30.04	1.00	.79	.61	5.56	1054.59
.000	.00	7.25	.82	1.00	.03	.00	30.04	1.00	.82	.61	5.94	1054.82

VLOB	VROB	VCH	HV	ALPHA	TIME	CASE	10*KS	KRATIO	SHEAR	FRCH	POWER	CWSEL
.000	.00	2.23	.08	1.00	.10	.00	30.01	1.00	.14	.46	.31	1050.44
.000	.00	2.90	.13	1.00	.08	.00	30.00	1.00	.21	.49	.60	1050.83
.000	.00	3.76	.22	1.00	.06	.00	30.00	1.00	.31	.52	1.15	1051.42
.000	.00	4.36	.30	1.00	.05	.00	30.01	1.00	.38	.54	1.67	1051.89
.000	.00	4.84	.36	1.00	.05	.00	30.00	1.00	.45	.55	2.16	1052.30
.000	.00	5.24	.43	1.00	.04	.00	30.01	1.00	.50	.56	2.63	1052.66
.000	.00	5.58	.48	1.00	.04	.00	30.02	1.00	.55	.57	3.08	1053.00
.000	.00	5.89	.54	1.00	.04	.00	30.02	1.00	.60	.58	3.52	1053.31
.000	.00	6.16	.59	1.00	.04	.00	30.03	1.00	.64	.59	3.95	1053.60
.000	.00	6.41	.64	1.00	.03	.00	30.03	1.00	.68	.59	4.37	1053.87
.000	.00	6.65	.69	1.00	.03	.00	30.03	1.00	.72	.60	4.78	1054.13
.000	.00	6.86	.73	1.00	.03	.00	30.03	1.00	.75	.60	5.17	1054.38
.000	.00	7.06	.77	1.00	.03	.00	30.04	1.00	.79	.61	5.56	1054.62
.000	.00	7.25	.82	1.00	.03	.00	30.04	1.00	.82	.61	5.94	1054.85
.000	.00	2.23	.08	1.00	.10	.00	30.01	1.00	.14	.46	.31	1050.47
.000	.00	2.90	.13	1.00	.08	.00	30.00	1.00	.21	.49	.60	1050.86
.000	.00	3.76	.22	1.00	.06	.00	30.00	1.00	.31	.52	1.15	1051.45
.000	.00	4.36	.30	1.00	.05	.00	30.01	1.00	.38	.54	1.67	1051.92
.000	.00	4.84	.36	1.00	.05	.00	30.00	1.00	.45	.55	2.16	1052.33
.000	.00	5.24	.43	1.00	.04	.00	30.01	1.00	.50	.56	2.63	1052.69
.000	.00	5.58	.48	1.00	.04	.00	30.02	1.00	.55	.57	3.08	1053.03
.000	.00	5.89	.54	1.00	.04	.00	30.02	1.00	.60	.58	3.52	1053.34
.000	.00	6.16	.59	1.00	.04	.00	30.03	1.00	.64	.59	3.95	1053.63
.000	.00	6.41	.64	1.00	.03	.00	30.03	1.00	.68	.59	4.37	1053.90
.000	.00	6.65	.69	1.00	.03	.00	30.03	1.00	.72	.60	4.78	1054.16
.000	.00	6.86	.73	1.00	.03	.00	30.03	1.00	.75	.60	5.17	1054.41
.000	.00	7.06	.77	1.00	.03	.00	30.04	1.00	.79	.61	5.56	1054.65
.000	.00	7.25	.82	1.00	.03	.00	30.04	1.00	.82	.61	5.94	1054.88
.000	.00	2.18	.07	1.00	.10	.00	28.05	1.03	.13	.44	.29	1050.49
.000	.00	2.86	.13	1.00	.08	.00	28.68	1.02	.20	.48	.58	1050.88
.000	.00	3.73	.22	1.00	.06	.00	29.11	1.02	.30	.51	1.12	1051.47
.000	.00	4.33	.29	1.00	.05	.00	29.30	1.01	.38	.53	1.63	1051.94
.000	.00	4.81	.36	1.00	.05	.00	29.40	1.01	.44	.55	2.11	1052.35
.000	.00	5.21	.42	1.00	.04	.00	29.48	1.01	.50	.56	2.58	1052.71
.000	.00	5.55	.48	1.00	.04	.00	29.54	1.01	.55	.57	3.03	1053.05
.000	.00	5.86	.53	1.00	.04	.00	29.57	1.01	.59	.58	3.47	1053.36
.000	.00	6.13	.58	1.00	.04	.00	29.61	1.01	.63	.58	3.89	1053.65
.000	.00	6.39	.63	1.00	.03	.00	29.64	1.01	.67	.59	4.31	1053.92
.000	.00	6.62	.68	1.00	.03	.00	29.67	1.01	.71	.59	4.71	1054.18
.000	.00	6.83	.73	1.00	.03	.00	29.69	1.01	.75	.60	5.11	1054.43
.000	.00	7.04	.77	1.00	.03	.00	29.71	1.01	.78	.60	5.49	1054.67
.000	.00	7.23	.81	1.00	.03	.00	29.73	1.01	.81	.61	5.87	1054.90

VLOB	VROB	VCH	HV	ALPHA	TIME	CASE	10*KS	KRATIO	SHEAR	FRCH	POWER	CWSEL
.000	.00	2.13	.07	1.00	.10	.00	26.07	1.04	.13	.43	.27	1050.50
.000	.00	2.82	.12	1.00	.08	.00	27.22	1.03	.19	.47	.55	1050.90
.000	.00	3.68	.21	1.00	.06	.00	28.07	1.02	.29	.50	1.07	1051.49
.000	.00	4.29	.29	1.00	.05	.00	28.44	1.01	.37	.53	1.58	1051.96
.000	.00	4.77	.35	1.00	.05	.00	28.65	1.01	.43	.54	2.06	1052.37
.000	.00	5.17	.41	1.00	.04	.00	28.81	1.01	.49	.55	2.52	1052.74
.000	.00	5.51	.47	1.00	.04	.00	28.92	1.01	.54	.56	2.96	1053.07
.000	.00	5.82	.53	1.00	.04	.00	29.01	1.01	.58	.57	3.40	1053.38
.000	.00	6.10	.58	1.00	.04	.00	29.08	1.01	.63	.58	3.82	1053.67
.000	.00	6.35	.63	1.00	.04	.00	29.13	1.01	.67	.58	4.23	1053.95
.000	.00	6.58	.67	1.00	.03	.00	29.19	1.01	.70	.59	4.63	1054.21
.000	.00	6.80	.72	1.00	.03	.00	29.23	1.01	.74	.60	5.02	1054.46
.000	.00	7.00	.76	1.00	.03	.00	29.27	1.01	.77	.60	5.40	1054.69

```
      1700. C I   .   .   . L . E   . M   .   .   .   .   .
      1710. C I   .   .   . L . E   . M   .   .   .   .   .
      1720. C I   .   .   . L . E   . M   .   .   .   .   .
      1730. C I   .   .   . L . E   . M   .   .   .   .   .
  1740.00 1740. C I   .   .   . L   . E   . M   .   .   .   .   .
1
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T1 Q16 = 14,000 CFS, STARTING WSE = 1052.65

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	16	0	0	0	0	0	1052.65	0	

1221 NUMBER PROFILES TOO LARGE

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1
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THIS RUN EXECUTED 21JUN93 14:01:29

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HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

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

THE SPILLWAY DIMENSIONS

SUMMARY PRINTOUT

VLOB	VROB	VCH	HV	ALPHA	TIME	CASE	10*KS	KRATIO	SHEAR	FRCH	POWER	CWSEL
.000	.00	2.23	.08	1.00	.00	.00	29.93	.00	.14	.45	.31	1048.07
.000	.00	2.91	.13	1.00	.00	.00	30.16	.00	.21	.49	.61	1048.46
.000	.00	3.76	.22	1.00	.00	.00	30.03	.00	.31	.52	1.15	1049.05
.000	.00	4.39	.30	1.00	.00	.00	30.54	.00	.39	.54	1.70	1049.51
.000	.00	4.86	.37	1.00	.00	.00	30.35	.00	.45	.56	2.18	1049.92
.000	.00	5.26	.43	1.00	.00	.00	30.47	.00	.51	.57	2.67	1050.28
.000	.00	5.61	.49	1.00	.00	.00	30.55	.00	.56	.58	3.14	1050.61
.000	.00	5.92	.54	1.00	.00	.00	30.50	.00	.61	.58	3.58	1050.92
.000	.00	6.21	.60	1.00	.00	.00	30.75	.00	.65	.59	4.06	1051.20
.000	.00	6.47	.65	1.00	.00	.00	30.82	.00	.69	.60	4.49	1051.47
.000	.00	6.70	.70	1.00	.00	.00	30.80	.00	.73	.61	4.91	1051.73
.000	.00	6.91	.74	1.00	.00	.00	30.74	.00	.77	.61	5.30	1051.98
.000	.00	7.13	.79	1.00	.00	.00	30.90	.00	.80	.62	5.73	1052.21
.000	.00	7.32	.83	1.00	.00	.00	30.86	.00	.84	.62	6.12	1052.44
.000	.00	2.23	.08	1.00	.01	.00	30.02	1.00	.14	.46	.31	1048.37
.000	.00	2.91	.13	1.00	.01	.00	30.03	1.00	.21	.49	.60	1048.76
.000	.00	3.76	.22	1.00	.01	.00	30.02	1.00	.31	.52	1.15	1049.35
.000	.00	4.38	.30	1.00	.01	.00	30.29	1.00	.38	.54	1.68	1049.82
.000	.00	4.85	.37	1.00	.01	.00	30.21	1.00	.45	.55	2.17	1050.22
.000	.00	5.25	.43	1.00	.01	.00	30.31	1.00	.51	.57	2.66	1050.59
.000	.00	5.60	.49	1.00	.00	.00	30.38	1.00	.56	.58	3.12	1050.92
.000	.00	5.91	.54	1.00	.00	.00	30.36	1.00	.60	.58	3.57	1051.23
.000	.00	6.20	.60	1.00	.00	.00	30.55	1.00	.65	.59	4.03	1051.51
.000	.00	6.45	.65	1.00	.00	.00	30.61	1.00	.69	.60	4.46	1051.78
.000	.00	6.69	.69	1.00	.00	.00	30.61	1.00	.73	.60	4.87	1052.04
.000	.00	6.90	.74	1.00	.00	.00	30.57	1.00	.76	.61	5.27	1052.29
.000	.00	7.11	.79	1.00	.00	.00	30.71	1.00	.80	.61	5.69	1052.52
.000	.00	7.30	.83	1.00	.00	.00	30.68	1.00	.83	.62	6.08	1052.75

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  21JUN93     14:00:45                                                    PAGE  88
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.000	.00	7.19	.80	1.00	.03	.00	29.30	1.01	.80	.60	5.78	1054.92
.000	.00	2.06	.07	1.00	.10	.00	23.07	1.06	.12	.40	.24	1050.53
.000	.00	2.74	.12	1.00	.08	.00	24.92	1.05	.18	.45	.50	1050.93
.000	.00	3.61	.20	1.00	.06	.00	26.36	1.03	.28	.49	1.01	1051.53
.000	.00	4.22	.28	1.00	.05	.00	27.01	1.03	.35	.51	1.49	1052.00
.000	.00	4.69	.34	1.00	.05	.00	27.21	1.03	.42	.53	1.95	1052.41
.000	.00	5.09	.40	1.00	.04	.00	27.50	1.02	.47	.54	2.40	1052.78
.000	.00	5.44	.46	1.00	.04	.00	27.71	1.02	.52	.55	2.83	1053.11
.000	.00	5.74	.51	1.00	.04	.00	27.87	1.02	.57	.56	3.26	1053.42
.000	.00	6.02	.56	1.00	.04	.00	28.01	1.02	.61	.57	3.67	1053.71
.000	.00	6.28	.61	1.00	.04	.00	28.11	1.02	.65	.58	4.07	1053.99
.000	.00	6.51	.66	1.00	.03	.00	28.21	1.02	.69	.58	4.46	1054.25
.000	.00	6.73	.70	1.00	.03	.00	28.29	1.02	.72	.59	4.85	1054.50
.000	.00	6.93	.75	1.00	.03	.00	28.35	1.02	.75	.59	5.22	1054.74
.000	.00	7.09	.78	1.00	.03	.00	28.11	1.02	.78	.59	5.53	1054.98
.000	.00	1.93	.06	1.00	.11	.00	18.81	1.11	.10	.37	.19	1050.59
.000	.00	2.61	.11	1.00	.08	.00	21.35	1.08	.16	.42	.42	1050.99
.000	.00	3.47	.19	1.00	.06	.00	23.28	1.06	.25	.46	.88	1051.59
.000	.00	4.08	.26	1.00	.05	.00	24.31	1.05	.33	.49	1.34	1052.07
.000	.00	4.56	.32	1.00	.05	.00	24.94	1.04	.39	.51	1.77	1052.48
.000	.00	4.93	.38	1.00	.04	.00	25.01	1.05	.44	.52	2.17	1052.86
.000	.00	5.28	.43	1.00	.04	.00	25.33	1.05	.49	.53	2.57	1053.19
.000	.00	5.59	.48	1.00	.04	.00	25.59	1.04	.53	.54	2.97	1053.51
.000	.00	5.86	.53	1.00	.04	.00	25.82	1.04	.57	.55	3.36	1053.80
.000	.00	6.11	.58	1.00	.04	.00	25.99	1.04	.61	.55	3.74	1054.08
.000	.00	6.35	.63	1.00	.04	.00	26.15	1.04	.65	.56	4.11	1054.34
.000	.00	6.56	.67	1.00	.03	.00	26.28	1.04	.68	.57	4.47	1054.59
.000	.00	6.76	.71	1.00	.03	.00	26.40	1.04	.71	.57	4.83	1054.83
.000	.00	6.96	.75	1.00	.03	.00	26.53	1.03	.75	.58	5.19	1055.06

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	VLOB	VROB	VCH	HV	ALPHA	TIME	CASE	10*KS	KRATIO	SHEAR	FRCH	POWER	CWSEL
*	.000	.00	.41	.00	1.00	.17	16384.00	.61	5.55	.00	.07	.00	1050.66
*	.000	.00	.58	.01	1.00	.13	16384.00	.79	5.20	.01	.08	.00	1051.12
*	.000	.00	.79	.01	1.00	.10	16384.00	.95	4.96	.01	.10	.01	1051.81
*	.000	.00	.94	.01	1.00	.08	16384.00	1.02	4.88	.02	.10	.02	1052.37
*	.000	.00	1.06	.02	1.00	.07	16384.00	1.06	4.84	.02	.11	.02	1052.85
*	.000	.00	1.15	.02	1.00	.07	16384.00	1.09	4.78	.02	.11	.03	1053.28
*	.000	.00	1.23	.02	1.00	.06	16384.00	1.11	4.77	.03	.11	.03	1053.67
*	.000	.00	1.30	.03	1.00	.06	16384.00	1.13	4.76	.03	.12	.04	1054.04
*	.000	.00	1.37	.03	1.00	.06	16384.00	1.14	4.76	.03	.12	.04	1054.39
*	.000	.00	1.42	.03	1.00	.06	16384.00	1.15	4.76	.03	.12	.04	1054.71
*	.000	.00	1.48	.03	1.00	.05	16384.00	1.15	4.76	.03	.12	.05	1055.02
*	.000	.00	1.53	.04	1.00	.05	16384.00	1.16	4.76	.03	.12	.05	1055.32
*	.000	.00	1.57	.04	1.00	.05	16384.00	1.16	4.76	.04	.12	.06	1055.60
*	.000	.00	1.61	.04	1.00	.05	16384.00	1.16	4.78	.04	.12	.06	1055.88
*	.000	.00	.29	.00	1.00	.27	16384.00	.24	1.58	.00	.05	.00	1050.67
*	.000	.00	.43	.00	1.00	.19	16384.00	.36	1.47	.00	.06	.00	1051.13
	.000	.00	.60	.01	1.00	.14	.00	.49	1.39	.01	.07	.00	1051.83
	.000	.00	.72	.01	1.00	.12	.00	.55	1.36	.01	.08	.01	1052.38
	.000	.00	.82	.01	1.00	.11	.00	.60	1.34	.01	.08	.01	1052.86
	.000	.00	.90	.01	1.00	.10	.00	.62	1.32	.01	.08	.01	1053.30
	.000	.00	.97	.01	1.00	.09	.00	.65	1.31	.02	.09	.01	1053.69
	.000	.00	1.03	.02	1.00	.09	.00	.66	1.30	.02	.09	.02	1054.06
	.000	.00	1.08	.02	1.00	.08	.00	.68	1.30	.02	.09	.02	1054.41
	.000	.00	1.13	.02	1.00	.08	.00	.69	1.29	.02	.09	.02	1054.73
	.000	.00	1.17	.02	1.00	.08	.00	.70	1.29	.02	.09	.02	1055.05
	.000	.00	1.21	.02	1.00	.08	.00	.70	1.28	.02	.10	.03	1055.34
	.000	.00	1.25	.02	1.00	.07	.00	.71	1.28	.02	.10	.03	1055.63
	.003	.00	1.29	.03	1.00	.07	.00	.70	1.29	.02	.10	.03	1055.90
*	.000	.00	.21	.00	1.00	.40	16384.00	.11	1.52	.00	.03	.00	1050.67
*	.000	.00	.32	.00	1.00	.28	16384.00	.18	1.44	.00	.04	.00	1051.14
	.000	.00	.46	.00	1.00	.20	.00	.26	1.37	.00	.05	.00	1051.83
	.000	.00	.56	.00	1.00	.17	.00	.31	1.34	.01	.06	.00	1052.39
	.000	.00	.64	.01	1.00	.15	.00	.34	1.32	.01	.06	.00	1052.87
	.000	.00	.71	.01	1.00	.14	.00	.36	1.31	.01	.07	.01	1053.31

.000	.00	.76	.01	1.00	.13	.00	.38	1.30	.01	.07	.01	1053.70
.000	.00	.81	.01	1.00	.12	.00	.40	1.29	.01	.07	.01	1054.07
.000	.00	.86	.01	1.00	.12	.00	.41	1.29	.01	.07	.01	1054.42
.000	.00	.90	.01	1.00	.11	.00	.42	1.28	.01	.07	.01	1054.75
.000	.00	.94	.01	1.00	.11	.00	.43	1.28	.01	.07	.01	1055.06
.000	.00	.97	.01	1.00	.10	.00	.43	1.28	.01	.08	.01	1055.36
.002	.00	1.00	.02	1.00	.10	.00	.43	1.28	.01	.08	.01	1055.64
.002	.00	1.03	.02	1.00	.10	.00	.43	1.28	.02	.08	.02	1055.92

	VLOB	VROB	VCH	HV	ALPHA	TIME	CASE	10*KS	KRATIO	SHEAR	FRCH	POWER	CWSEL
*	.000	.00	.15	.00	1.00	.58	16384.00	.05	1.47	.00	.02	.00	1050.67
*	.000	.00	.24	.00	1.00	.40	16384.00	.09	1.41	.00	.03	.00	1051.14
	.000	.00	.35	.00	1.00	.28	.00	.14	1.36	.00	.04	.00	1051.83
	.000	.00	.44	.00	1.00	.23	.00	.17	1.33	.00	.04	.00	1052.39
	.000	.00	.50	.00	1.00	.21	.00	.20	1.32	.00	.05	.00	1052.88
	.000	.00	.56	.00	1.00	.19	.00	.21	1.30	.01	.05	.00	1053.31
	.000	.00	.60	.01	1.00	.18	.00	.23	1.30	.01	.05	.00	1053.71
	.000	.00	.65	.01	1.00	.17	.00	.24	1.29	.01	.05	.00	1054.08
	.000	.00	.68	.01	1.00	.16	.00	.25	1.28	.01	.06	.00	1054.43
	.000	.00	.72	.01	1.00	.15	.00	.25	1.28	.01	.06	.01	1054.76
	.000	.00	.75	.01	1.00	.14	.00	.26	1.28	.01	.06	.01	1055.07
	.002	.00	.78	.01	1.00	.14	.00	.26	1.28	.01	.06	.01	1055.37
	.002	.00	.80	.01	1.00	.14	.00	.26	1.28	.01	.06	.01	1055.65
	.002	.00	.83	.01	1.00	.13	.00	.26	1.28	.01	.06	.01	1055.93
*	.000	.00	.11	.00	1.00	.83	16384.00	.02	1.44	.00	.01	.00	1050.67
	.000	.00	.18	.00	1.00	.55	.00	.05	1.39	.00	.02	.00	1051.14
	.000	.00	.27	.00	1.00	.38	.00	.08	1.35	.00	.03	.00	1051.84
	.000	.00	.34	.00	1.00	.32	.00	.10	1.32	.00	.03	.00	1052.40
	.000	.00	.40	.00	1.00	.28	.00	.11	1.31	.00	.04	.00	1052.88
	.000	.00	.44	.00	1.00	.25	.00	.13	1.30	.00	.04	.00	1053.32
	.000	.00	.48	.00	1.00	.23	.00	.14	1.29	.00	.04	.00	1053.71
	.000	.00	.51	.00	1.00	.22	.00	.14	1.29	.00	.04	.00	1054.08
	.000	.00	.54	.00	1.00	.21	.00	.15	1.28	.00	.04	.00	1054.43
	.000	.00	.57	.01	1.00	.20	.00	.16	1.28	.00	.05	.00	1054.76
	.000	.00	.60	.01	1.00	.19	.00	.16	1.28	.01	.05	.00	1055.07
	.001	.00	.62	.01	1.00	.18	.00	.16	1.28	.01	.05	.00	1055.37
	.001	.00	.65	.01	1.00	.18	.00	.16	1.27	.01	.05	.00	1055.66
	.002	.00	.67	.01	1.00	.17	.00	.16	1.27	.01	.05	.00	1055.93
*	.000	.00	.09	.00	1.00	1.15	16384.00	.01	1.41	.00	.01	.00	1050.67
	.000	.00	.14	.00	1.00	.75	.00	.02	1.37	.00	.02	.00	1051.14
	.000	.00	.21	.00	1.00	.51	.00	.04	1.34	.00	.02	.00	1051.84
	.000	.00	.27	.00	1.00	.42	.00	.06	1.32	.00	.03	.00	1052.40
	.000	.00	.31	.00	1.00	.37	.00	.07	1.30	.00	.03	.00	1052.88
	.000	.00	.35	.00	1.00	.33	.00	.08	1.29	.00	.03	.00	1053.32
	.000	.00	.38	.00	1.00	.31	.00	.08	1.29	.00	.03	.00	1053.72
	.000	.00	.41	.00	1.00	.29	.00	.09	1.28	.00	.03	.00	1054.09
	.000	.00	.44	.00	1.00	.27	.00	.09	1.28	.00	.03	.00	1054.44
	.000	.00	.46	.00	1.00	.26	.00	.10	1.27	.00	.04	.00	1054.76
	.001	.00	.48	.00	1.00	.25	.00	.10	1.28	.00	.04	.00	1055.08
	.001	.00	.50	.00	1.00	.24	.00	.10	1.27	.00	.04	.00	1055.38
	.001	.00	.52	.00	1.00	.23	.00	.10	1.27	.00	.04	.00	1055.66
	.029	.03	.54	.00	1.00	.22	.00	.10	1.27	.00	.04	.00	1055.94

VLOB	VROB	VCH	HV	ALPHA	TIME	CASE	10*KS	KRATIO	SHEAR	FRCH	POWER	CWSEL
.000	.00	.06	.00	1.00	1.58	.00	.01	1.39	.00	.01	.00	1050.67
.000	.00	.11	.00	1.00	1.01	.00	.01	1.36	.00	.01	.00	1051.14
.000	.00	.17	.00	1.00	.68	.00	.02	1.33	.00	.02	.00	1051.84
.000	.00	.21	.00	1.00	.55	.00	.03	1.31	.00	.02	.00	1052.40
.000	.00	.25	.00	1.00	.48	.00	.04	1.30	.00	.02	.00	1052.88
.000	.00	.28	.00	1.00	.43	.00	.05	1.29	.00	.02	.00	1053.32
.000	.00	.30	.00	1.00	.40	.00	.05	1.28	.00	.03	.00	1053.72

.000	.00	.33	.00	1.00	.37	.00	.05	1.28	.00	.03	.00	1054.09
.000	.00	.35	.00	1.00	.35	.00	.06	1.27	.00	.03	.00	1054.44
.001	.00	.37	.00	1.00	.33	.00	.06	1.28	.00	.03	.00	1054.77
.001	.00	.39	.00	1.00	.32	.00	.06	1.28	.00	.03	.00	1055.08
.001	.00	.40	.00	1.00	.31	.00	.06	1.27	.00	.03	.00	1055.38
.024	.02	.42	.00	1.00	.30	.00	.06	1.27	.00	.03	.00	1055.67
.029	.03	.44	.00	1.00	.29	.00	.06	1.26	.00	.03	.00	1055.94
.000	.00	.05	.00	1.00	2.14	.00	.00	1.38	.00	.01	.00	1050.67
.000	.00	.08	.00	1.00	1.35	.00	.01	1.35	.00	.01	.00	1051.14
.000	.00	.13	.00	1.00	.90	.00	.01	1.32	.00	.01	.00	1051.84
.000	.00	.17	.00	1.00	.72	.00	.02	1.30	.00	.02	.00	1052.40
.000	.00	.20	.00	1.00	.62	.00	.02	1.29	.00	.02	.00	1052.88
.000	.00	.22	.00	1.00	.56	.00	.03	1.29	.00	.02	.00	1053.32
.000	.00	.24	.00	1.00	.51	.00	.03	1.28	.00	.02	.00	1053.72
.000	.00	.26	.00	1.00	.48	.00	.03	1.28	.00	.02	.00	1054.09
.000	.00	.28	.00	1.00	.45	.00	.04	1.27	.00	.02	.00	1054.44
.001	.00	.30	.00	1.00	.43	.00	.04	1.28	.00	.02	.00	1054.77
.001	.00	.31	.00	1.00	.41	.00	.04	1.27	.00	.02	.00	1055.08
.020	.02	.33	.00	1.00	.39	.00	.04	1.27	.00	.02	.00	1055.38
.024	.02	.34	.00	1.00	.38	.00	.04	1.27	.00	.02	.00	1055.67
.028	.03	.35	.00	1.00	.37	.00	.04	1.26	.00	.02	.00	1055.94
.000	.00	.04	.00	1.00	2.87	.00	.00	1.36	.00	.00	.00	1050.67
.000	.00	.06	.00	1.00	1.79	.00	.00	1.34	.00	.01	.00	1051.14
.000	.00	.10	.00	1.00	1.17	.00	.01	1.31	.00	.01	.00	1051.84
.000	.00	.13	.00	1.00	.93	.00	.01	1.30	.00	.01	.00	1052.40
.000	.00	.16	.00	1.00	.80	.00	.01	1.29	.00	.01	.00	1052.89
.000	.00	.18	.00	1.00	.72	.00	.02	1.28	.00	.01	.00	1053.32
.000	.00	.19	.00	1.00	.66	.00	.02	1.28	.00	.02	.00	1053.72
.000	.00	.21	.00	1.00	.61	.00	.02	1.27	.00	.02	.00	1054.09
.001	.00	.22	.00	1.00	.57	.00	.02	1.28	.00	.02	.00	1054.44
.001	.00	.24	.00	1.00	.55	.00	.02	1.27	.00	.02	.00	1054.77
.016	.02	.25	.00	1.00	.52	.00	.02	1.27	.00	.02	.00	1055.08
.020	.02	.26	.00	1.00	.50	.00	.02	1.27	.00	.02	.00	1055.38
.024	.02	.27	.00	1.00	.48	.00	.02	1.26	.00	.02	.00	1055.67
.027	.03	.28	.00	1.00	.46	.00	.03	1.26	.00	.02	.00	1055.94

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THE SPILLWAY DIMENSIONS

SUMMARY PRINTOUT

CRIWS	WSELK	EG	HL	OLOSS	IHLEQ
.000	1048.07	1048.15	.00	.00	.00
.000	1048.46	1048.59	.00	.00	.00
.000	1049.05	1049.27	.00	.00	.00
.000	1049.51	1049.81	.00	.00	.00
.000	1049.92	1050.29	.00	.00	.00
.000	1050.28	1050.71	.00	.00	.00
.000	1050.61	1051.10	.00	.00	.00
.000	1050.92	1051.46	.00	.00	.00
.000	1051.20	1051.80	.00	.00	.00
.000	1051.47	1052.12	.00	.00	.00
.000	1051.73	1052.43	.00	.00	.00
.000	1051.98	1052.72	.00	.00	.00
.000	1052.21	1053.00	.00	.00	.00
.000	1052.44	1053.27	.00	.00	.00
.000	.00	1048.45	.30	.00	.00
.000	.00	1048.89	.30	.00	.00
.000	.00	1049.57	.30	.00	.00
.000	.00	1050.11	.30	.00	.00
.000	.00	1050.59	.30	.00	.00
.000	.00	1051.01	.30	.00	.00
.000	.00	1051.40	.30	.00	.00
.000	.00	1051.77	.30	.00	.00
.000	.00	1052.11	.31	.00	.00
.000	.00	1052.43	.31	.00	.00
.000	.00	1052.73	.31	.00	.00

.000	.00	1053.03	.31	.00	.00
.000	.00	1053.31	.31	.00	.00
.000	.00	1053.58	.31	.00	.00
.000	.00	1048.75	.30	.00	.00
.000	.00	1049.19	.30	.00	.00
.000	.00	1049.87	.30	.00	.00
.000	.00	1050.42	.30	.00	.00
.000	.00	1050.89	.30	.00	.00
.000	.00	1051.32	.30	.00	.00
.000	.00	1051.71	.30	.00	.00
.000	.00	1052.07	.30	.00	.00
.000	.00	1052.41	.30	.00	.00
.000	.00	1052.73	.30	.00	.00
.000	.00	1053.04	.30	.00	.00
.000	.00	1053.33	.30	.00	.00
.000	.00	1053.61	.31	.00	.00
.000	.00	1053.89	.31	.00	.00

1

CRIWS	WSELK	EG	HL	OLOSS	IHLEQ
.000	.00	1049.05	.30	.00	.00
.000	.00	1049.49	.30	.00	.00
.000	.00	1050.17	.30	.00	.00
.000	.00	1050.72	.30	.00	.00
.000	.00	1051.19	.30	.00	.00
.000	.00	1051.62	.30	.00	.00
.000	.00	1052.01	.30	.00	.00
.000	.00	1052.37	.30	.00	.00
.000	.00	1052.71	.30	.00	.00
.000	.00	1053.04	.30	.00	.00
.000	.00	1053.34	.30	.00	.00
.000	.00	1053.64	.30	.00	.00
.000	.00	1053.92	.30	.00	.00
.000	.00	1054.19	.30	.00	.00
.000	.00	1049.35	.30	.00	.00
.000	.00	1049.79	.30	.00	.00
.000	.00	1050.47	.30	.00	.00
.000	.00	1051.02	.30	.00	.00
.000	.00	1051.49	.30	.00	.00
.000	.00	1051.92	.30	.00	.00
.000	.00	1052.31	.30	.00	.00
.000	.00	1052.67	.30	.00	.00
.000	.00	1053.01	.30	.00	.00
.000	.00	1053.34	.30	.00	.00
.000	.00	1053.65	.30	.00	.00
.000	.00	1053.94	.30	.00	.00
.000	.00	1054.22	.30	.00	.00
.000	.00	1054.49	.30	.00	.00
.000	.00	1049.65	.30	.00	.00
.000	.00	1050.09	.30	.00	.00
.000	.00	1050.77	.30	.00	.00
.000	.00	1051.32	.30	.00	.00
.000	.00	1051.79	.30	.00	.00
.000	.00	1052.22	.30	.00	.00
.000	.00	1052.61	.30	.00	.00
.000	.00	1052.97	.30	.00	.00
.000	.00	1053.32	.30	.00	.00
.000	.00	1053.64	.30	.00	.00
.000	.00	1053.95	.30	.00	.00
.000	.00	1054.24	.30	.00	.00
.000	.00	1054.52	.30	.00	.00
.000	.00	1054.79	.30	.00	.00

1

CRIWS WSELK EG HL OLOSS IHLEQ

.000	.00	1049.95	.30	.00	.00
.000	.00	1050.39	.30	.00	.00
.000	.00	1051.07	.30	.00	.00
.000	.00	1051.62	.30	.00	.00
.000	.00	1052.09	.30	.00	.00
.000	.00	1052.52	.30	.00	.00
.000	.00	1052.91	.30	.00	.00
.000	.00	1053.27	.30	.00	.00
.000	.00	1053.62	.30	.00	.00
.000	.00	1053.94	.30	.00	.00
.000	.00	1054.25	.30	.00	.00
.000	.00	1054.54	.30	.00	.00
.000	.00	1054.82	.30	.00	.00
.000	.00	1055.10	.30	.00	.00
.000	.00	1050.25	.30	.00	.00
.000	.00	1050.69	.30	.00	.00
.000	.00	1051.37	.30	.00	.00
.000	.00	1051.92	.30	.00	.00
.000	.00	1052.39	.30	.00	.00
.000	.00	1052.82	.30	.00	.00
.000	.00	1053.21	.30	.00	.00
.000	.00	1053.57	.30	.00	.00
.000	.00	1053.92	.30	.00	.00
.000	.00	1054.24	.30	.00	.00
.000	.00	1054.55	.30	.00	.00
.000	.00	1054.84	.30	.00	.00
.000	.00	1055.12	.30	.00	.00
.000	.00	1055.40	.30	.00	.00
.000	.00	1050.40	.15	.00	.00
.000	.00	1050.84	.15	.00	.00
.000	.00	1051.52	.15	.00	.00
.000	.00	1052.07	.15	.00	.00
.000	.00	1052.54	.15	.00	.00
.000	.00	1052.97	.15	.00	.00
.000	.00	1053.36	.15	.00	.00
.000	.00	1053.72	.15	.00	.00
.000	.00	1054.07	.15	.00	.00
.000	.00	1054.39	.15	.00	.00
.000	.00	1054.70	.15	.00	.00
.000	.00	1054.99	.15	.00	.00
.000	.00	1055.27	.15	.00	.00
.000	.00	1055.55	.15	.00	.00

1

CRIWS	WSELK	EG	HL	OLOSS	IHLEQ
.000	.00	1050.46	.06	.00	.00
.000	.00	1050.90	.06	.00	.00
.000	.00	1051.58	.06	.00	.00
.000	.00	1052.13	.06	.00	.00
.000	.00	1052.60	.06	.00	.00
.000	.00	1053.03	.06	.00	.00
.000	.00	1053.42	.06	.00	.00
.000	.00	1053.79	.06	.00	.00
.000	.00	1054.13	.06	.00	.00
.000	.00	1054.45	.06	.00	.00
.000	.00	1054.76	.06	.00	.00
.000	.00	1055.05	.06	.00	.00
.000	.00	1055.33	.06	.00	.00
.000	.00	1055.61	.06	.00	.00
.000	.00	1050.49	.03	.00	.00
.000	.00	1050.93	.03	.00	.00
.000	.00	1051.61	.03	.00	.00
.000	.00	1052.16	.03	.00	.00
.000	.00	1052.63	.03	.00	.00
.000	.00	1053.06	.03	.00	.00
.000	.00	1053.45	.03	.00	.00
.000	.00	1053.82	.03	.00	.00

.000	.00	1054.16	.03	.00	.00
.000	.00	1054.48	.03	.00	.00
.000	.00	1054.79	.03	.00	.00
.000	.00	1055.08	.03	.00	.00
.000	.00	1055.36	.03	.00	.00
.000	.00	1055.64	.03	.00	.00
.000	.00	1050.52	.03	.00	.00
.000	.00	1050.96	.03	.00	.00
.000	.00	1051.64	.03	.00	.00
.000	.00	1052.19	.03	.00	.00
.000	.00	1052.66	.03	.00	.00
.000	.00	1053.09	.03	.00	.00
.000	.00	1053.48	.03	.00	.00
.000	.00	1053.85	.03	.00	.00
.000	.00	1054.19	.03	.00	.00
.000	.00	1054.51	.03	.00	.00
.000	.00	1054.82	.03	.00	.00
.000	.00	1055.11	.03	.00	.00
.000	.00	1055.39	.03	.00	.00
.000	.00	1055.67	.03	.00	.00

1

CRIWS	WSELK	EG	HL	OLOSS	IHLEQ
.000	.00	1050.55	.03	.00	.00
.000	.00	1050.99	.03	.00	.00
.000	.00	1051.67	.03	.00	.00
.000	.00	1052.22	.03	.00	.00
.000	.00	1052.69	.03	.00	.00
.000	.00	1053.12	.03	.00	.00
.000	.00	1053.51	.03	.00	.00
.000	.00	1053.88	.03	.00	.00
.000	.00	1054.22	.03	.00	.00
.000	.00	1054.54	.03	.00	.00
.000	.00	1054.85	.03	.00	.00
.000	.00	1055.14	.03	.00	.00
.000	.00	1055.42	.03	.00	.00
.000	.00	1055.70	.03	.00	.00
.000	.00	1050.56	.01	.00	.00
.000	.00	1051.01	.01	.00	.00
.000	.00	1051.69	.01	.00	.00
.000	.00	1052.23	.01	.00	.00
.000	.00	1052.71	.01	.00	.00
.000	.00	1053.13	.01	.00	.00
.000	.00	1053.53	.01	.00	.00
.000	.00	1053.89	.01	.00	.00
.000	.00	1054.23	.01	.00	.00
.000	.00	1054.56	.01	.00	.00
.000	.00	1054.86	.01	.00	.00
.000	.00	1055.16	.01	.00	.00
.000	.00	1055.44	.01	.00	.00
.000	.00	1055.71	.01	.00	.00
.000	.00	1050.58	.01	.00	.00
.000	.00	1051.02	.01	.00	.00
.000	.00	1051.70	.01	.00	.00
.000	.00	1052.25	.01	.00	.00
.000	.00	1052.72	.01	.00	.00
.000	.00	1053.15	.01	.00	.00
.000	.00	1053.54	.01	.00	.00
.000	.00	1053.91	.01	.00	.00
.000	.00	1054.25	.01	.00	.00
.000	.00	1054.57	.01	.00	.00
.000	.00	1054.88	.01	.00	.00
.000	.00	1055.17	.01	.00	.00
.000	.00	1055.46	.01	.00	.00
.000	.00	1055.73	.01	.00	.00

1

	CRIWS	WSELK	EG	HL	OLOSS	IHLEQ
	.000	.00	1050.60	.02	.00	.00
	.000	.00	1051.05	.03	.00	.00
	.000	.00	1051.73	.03	.00	.00
	.000	.00	1052.28	.03	.00	.00
	.000	.00	1052.75	.03	.00	.00
	.000	.00	1053.18	.03	.00	.00
	.000	.00	1053.57	.03	.00	.00
	.000	.00	1053.94	.03	.00	.00
	.000	.00	1054.28	.03	.00	.00
	.000	.00	1054.60	.03	.00	.00
	.000	.00	1054.91	.03	.00	.00
	.000	.00	1055.20	.03	.00	.00
	.000	.00	1055.49	.03	.00	.00
	.000	.00	1055.76	.03	.00	.00
	.000	.00	1050.64	.04	.00	.00
	.000	.00	1051.10	.05	.00	.00
	.000	.00	1051.78	.05	.00	.00
	.000	.00	1052.33	.05	.00	.00
	.000	.00	1052.81	.05	.00	.00
	.000	.00	1053.23	.05	.00	.00
	.000	.00	1053.63	.05	.00	.00
	.000	.00	1053.99	.05	.00	.00
	.000	.00	1054.33	.05	.00	.00
	.000	.00	1054.66	.05	.00	.00
	.000	.00	1054.97	.05	.00	.00
	.000	.00	1055.26	.05	.00	.00
	.000	.00	1055.54	.05	.00	.00
	.000	.00	1055.82	.05	.00	.00
*	.000	.00	1050.67	.02	.01	.00
*	.000	.00	1051.13	.02	.01	.00
*	.000	.00	1051.82	.03	.02	.00
*	.000	.00	1052.38	.03	.02	.00
*	.000	.00	1052.87	.03	.03	.00
*	.000	.00	1053.30	.03	.04	.00
*	.000	.00	1053.70	.03	.04	.00
*	.000	.00	1054.07	.03	.05	.00
*	.000	.00	1054.42	.03	.05	.00
*	.000	.00	1054.74	.03	.05	.00
*	.000	.00	1055.06	.03	.06	.00
*	.000	.00	1055.36	.03	.06	.00
*	.000	.00	1055.64	.03	.07	.00
*	.000	.00	1055.92	.03	.07	.00

1

	CRIWS	WSELK	EG	HL	OLOSS	IHLEQ
*	.000	.00	1050.67	.00	.00	.00
*	.000	.00	1051.13	.01	.00	.00
	.000	.00	1051.83	.01	.00	.00
	.000	.00	1052.39	.01	.00	.00
	.000	.00	1052.87	.01	.00	.00
	.000	.00	1053.31	.01	.00	.00
	.000	.00	1053.71	.01	.00	.00
	.000	.00	1054.08	.01	.00	.00
	.000	.00	1054.43	.01	.00	.00
	.000	.00	1054.75	.01	.00	.00
	.000	.00	1055.07	.01	.00	.00
	.000	.00	1055.37	.01	.00	.00
	.000	.00	1055.65	.01	.00	.00
	.000	.00	1055.93	.01	.00	.00
*	.000	.00	1050.67	.00	.00	.00
*	.000	.00	1051.14	.00	.00	.00
	.000	.00	1051.83	.00	.00	.00
	.000	.00	1052.39	.00	.00	.00
	.000	.00	1052.88	.00	.00	.00
	.000	.00	1053.31	.00	.00	.00

	.000	.00	1053.71	.00	.00	.00
	.000	.00	1054.08	.01	.00	.00
	.000	.00	1054.43	.01	.00	.00
	.000	.00	1054.76	.01	.00	.00
	.000	.00	1055.07	.01	.00	.00
	.000	.00	1055.37	.01	.00	.00
	.000	.00	1055.66	.01	.00	.00
	.000	.00	1055.94	.01	.00	.00
*	.000	.00	1050.67	.00	.00	.00
*	.000	.00	1051.14	.00	.00	.00
	.000	.00	1051.84	.00	.00	.00
	.000	.00	1052.40	.00	.00	.00
	.000	.00	1052.88	.00	.00	.00
	.000	.00	1053.32	.00	.00	.00
	.000	.00	1053.72	.00	.00	.00
	.000	.00	1054.09	.00	.00	.00
	.000	.00	1054.44	.00	.00	.00
	.000	.00	1054.76	.00	.00	.00
	.000	.00	1055.08	.00	.00	.00
	.000	.00	1055.38	.00	.00	.00
	.000	.00	1055.66	.00	.00	.00
	.000	.00	1055.94	.00	.00	.00

	CRIWS	WSELK	EG	HL	OLOSS	IHLEQ
*	.000	.00	1050.67	.00	.00	.00
	.000	.00	1051.14	.00	.00	.00
	.000	.00	1051.84	.00	.00	.00
	.000	.00	1052.40	.00	.00	.00
	.000	.00	1052.88	.00	.00	.00
	.000	.00	1053.32	.00	.00	.00
	.000	.00	1053.72	.00	.00	.00
	.000	.00	1054.09	.00	.00	.00
	.000	.00	1054.44	.00	.00	.00
	.000	.00	1054.77	.00	.00	.00
	.000	.00	1055.08	.00	.00	.00
	.000	.00	1055.38	.00	.00	.00
	.000	.00	1055.67	.00	.00	.00
	.000	.00	1055.94	.00	.00	.00
*	.000	.00	1050.67	.00	.00	.00
	.000	.00	1051.14	.00	.00	.00
	.000	.00	1051.84	.00	.00	.00
	.000	.00	1052.40	.00	.00	.00
	.000	.00	1052.88	.00	.00	.00
	.000	.00	1053.32	.00	.00	.00
	.000	.00	1053.72	.00	.00	.00
	.000	.00	1054.09	.00	.00	.00
	.000	.00	1054.44	.00	.00	.00
	.000	.00	1054.77	.00	.00	.00
	.000	.00	1055.08	.00	.00	.00
	.000	.00	1055.38	.00	.00	.00
	.000	.00	1055.67	.00	.00	.00
	.000	.00	1055.94	.00	.00	.00
	.000	.00	1050.67	.00	.00	.00
	.000	.00	1051.14	.00	.00	.00
	.000	.00	1051.84	.00	.00	.00
	.000	.00	1052.40	.00	.00	.00
	.000	.00	1052.89	.00	.00	.00
	.000	.00	1053.32	.00	.00	.00
	.000	.00	1053.72	.00	.00	.00
	.000	.00	1054.09	.00	.00	.00
	.000	.00	1054.44	.00	.00	.00
	.000	.00	1054.77	.00	.00	.00
	.000	.00	1055.08	.00	.00	.00
	.000	.00	1055.38	.00	.00	.00
	.000	.00	1055.67	.00	.00	.00
	.000	.00	1055.94	.00	.00	.00

CRIWS	WSELK	EG	HL	OLOSS	IHLEQ
.000	.00	1050.67	.00	.00	.00
.000	.00	1051.14	.00	.00	.00
.000	.00	1051.84	.00	.00	.00
.000	.00	1052.40	.00	.00	.00
.000	.00	1052.89	.00	.00	.00
.000	.00	1053.32	.00	.00	.00
.000	.00	1053.72	.00	.00	.00
.000	.00	1054.09	.00	.00	.00
.000	.00	1054.44	.00	.00	.00
.000	.00	1054.77	.00	.00	.00
.000	.00	1055.08	.00	.00	.00
.000	.00	1055.38	.00	.00	.00
.000	.00	1055.67	.00	.00	.00
.000	.00	1055.94	.00	.00	.00
.000	.00	1050.67	.00	.00	.00
.000	.00	1051.14	.00	.00	.00
.000	.00	1051.84	.00	.00	.00
.000	.00	1052.40	.00	.00	.00
.000	.00	1052.89	.00	.00	.00
.000	.00	1053.32	.00	.00	.00
.000	.00	1053.72	.00	.00	.00
.000	.00	1054.09	.00	.00	.00
.000	.00	1054.44	.00	.00	.00
.000	.00	1054.77	.00	.00	.00
.000	.00	1055.08	.00	.00	.00
.000	.00	1055.38	.00	.00	.00
.000	.00	1055.67	.00	.00	.00
.000	.00	1055.95	.00	.00	.00

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= .000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 3 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 4 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 5 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 6 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 7 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 8 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 9 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 10 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 11 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 12 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 13 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 14 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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WARNING SECNO=     .000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     .000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     .000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     .000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     .000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     .000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     .000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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HEC-1 Model of Watershed with Routing of IDF to Produce Spillway Design Hydrograph (SDH) with 1/2 PMF

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INPUT DATA FILE:
ID
ID
ID   HYDROLOGY RUN FOR WHITE TANKS ADMS --- WATERSHED CONTRIBUTING TO WT#4
ID
ID      1/2 PMF FLOWS BREAKOUT IS COMPUTED ALONG JACKRABBIT TRAIL
ID
ID      RAINFALL OF PMP 6-HOUR LOCAL STORM AS PER HYDRO-49 PROCEDURE
ID
*NOLIST
*DIAGRAM
IT    5                    100
IO    5
IN   15
JR  FLOW     0.5    0.55     0.6    0.65
KK   18      THE FIRST SUBBASIN IN THIS MODEL IS 18
KM      PMP = 12.3 INCHES IN 6 HOURS
PB  12.3
PC    0    .01     .2     .3     .4   .575    .75   .924     1.1     6.5
PC  8.1    8.9    9.6   10.0   10.4   10.8   11.2   11.3   11.55   11.72
PC 11.9   12.0   12.1   12.2   12.3
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 18.
BA  .81
LG  .20    .34   3.25   1.12   9.50
UI 213.   719.  1128.  1731.  1159.   722.   301.   171.    49.    47.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK  R18
KM      ROUTE FLOW FROM CP18 TO CP19.
RS    2            -1      0
RC  .08    .05    .08   7800  .0615   1527
RX 1000   1030   1080   1097   1120   1140   1205   1218
RY 1520   1518   1514   1510   1510   1512   1518   1520
KK   19
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 19.
BA  .79
LG  .19    .33   3.31   1.07   8.70
UI  84.   195.   385.   496.   632.   936.   940.   708.   553.   427.
UI 278.   147.   120.    84.    32.    26.    26.    26.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK  CP19
KM      ADD HYDROGRAPHS AT CP19.
HC    2
KK   R19
KM      ROUTE COMBINED HYDROGRPAH AT CP19 TO CP21.
RS    2            -1      0
RC  .06    .04    .06   5772  .0246   1473
RX 1000   1010   1025   1040   1055   1069   1080   1100
RY 1466   1464   1460   1458   1458   1460   1466   1467
KK   21
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 21.
BA  .79
LG  .19    .31   3.81    .78   4.70
UI  84.   191.   380.   491.   623.   915.   948.   711.   558.   430.
UI 291.   149.   124.    84.    37.    26.    26.    26.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKI1CP21
KM      ADD HYDROGRAPHS AT CP21.
HC    2
KK   20
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 20.
BA 1.07
LG  .19    .33   3.33   1.05   8.40
UI 119.   294.   560.   721.   938.  1414.  1211.   931.   714.   535.
UI 286.   200.   132.    83.    36.    36.    36.    36.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK  SR20
KM      STORAGE ROUTE THROUGH RETENTION BASIN AT CP20.
RS    1   STOR      0      0
SV    0   1.05   9.43  26.91  54.31  92.89 138.67 176.47 190.08 219.05
SV249.57
SQ    0      0      0      0      0      0      0      0    265   1377
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SQ 2963
SE 1443   1446   1450   1454   1458   1462   1466   1469   1470   1472
SE 1474
KK  R20
KM     ROUTE REMAINDER OF FLOW AT CP20  TO CP21
RS   4            -1      0
RC  .06   .045    .06   6240  .0208   1429
RX 1000   1012   1025   1032   1050   1057   1070   1092
RY 1424   1422   1420   1418   1418   1420   1422   1424
KK CP21
KM     ADD HYDROGRAPHS AT CP21.
HC   2
KK SR21
KM      STORAGE ROUTE THROUGH RETENTION BASIN AT CP21
RS   1   STOR      0      0
SV   0    .68  20.68  57.58  95.91 102.34 117.65    130   164.3   280.0
SQ   0      0      0      0      0    265   1377   2000   3729  11500
SE 1319   1320   1330   1340   1347   1348   1350   1351   1354 1357.4
KK  R21
KM     ROUTE REMAINDER OF FLOW AT CP21 TO CP23
RS   1            -1      0
RC  .03    .03    .05   2340  .0196   1315
RX 1000   1030   1050   1070   1145   1212   1225   1250
RY 1310   1306   1304   1302   1302   1304   1306   1310
KK   23
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 23.
BA  .16
LG  .18    .32   4.04    .65  10.60
UI 111.   327.   471.   228.    68.    20.     0.     0.     0.     0.
UI  0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK CP23
KM     ADD HYDROGRAPHS AT CP23
HC   2
KK SR23
KM     STORAGE ROUTE THROUGH RETENTION BASIN AT CP23.
RS   1   STOR      0      0
SV   0   6.04  20.38  53.82 120.38 216.24 325.98 455.42  606.1 645.49
SV685.61  767.98
SQ   0      0      0      0      0      0      0      0      0      0
SQ  928   8950
SE 1272   1276   1280   1284   1288   1292   1296   1300   1304   1305
SE 1306   1308
KK  R23
KM     ROUTE REMAINDER OF FLOW AT CP23 TO CP22A
RS   4            -1      0
RC  .05    .03    .05   4992   .005   1405
RX  930    975   1000   1010   1030   1040   1041   1042
RY 1397  1396.5   1396   1394   1394   1396 1396.5   1397
KK   22
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 22
BA  .57
LG  .19    .33   3.38   1.03   7.40
UI  77.   258.   418.   563.   888.   745.   546.   395.   215.   129.
UI  79.    34.    24.    24.     0.     0.     0.     0.     0.     0.
UI  0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK  R22
KM     ROUTE FLOW FROM CP22 TO CP22A
RS   3            -1      0
RC  .05    .03    .05   6230   .025   1300
RX 1000   1030   1060   1070   1100   1115   1125   1150
RY 1294   1292   1290   1288   1288   1290   1292   1294
KK  22A
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 22A
BA  .50
LG  .15    .29   3.74    .29   1.00
UI  74.   286.   436.   640.   862.   603.   424.   253.   126.    79.
UI  30.    23.    23.     0.     0.     0.     0.     0.     0.     0.
UI  0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKI1C22A
KM     ADD HYDROGRAPHS AT CP22A
HC   2
KK CP22A
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KM     ADD HYDROGRAPHS AT CP22A
HC     2
KK  R22A
KM     ROUTE COMBINED HYDROGRAPHS AT CP22A TO CP25
RS     4            -1      0
RC   .03     .03     .05    7022   .0079    1262
RX  1000    1030    1040    1047    1070    1097    1120    1200
RY  1255    1254    1250    1248    1250    1252    1254    1255
KK    25
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 25
BA   .46
LG   .15     .31    4.27     .49     .00
UI   53.    137.    254.    327.    437.    640.    505.    389.    295.    207.
UI  106.     80.     53.     22.     16.     16.     16.      0.      0.      0.
UI    0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
KKI1CP25
KM     ADD HYDROGRAPHS AT CP25
HC     2
KK    24
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 24
BA   .14
LG   .35     .31    3.77     .31     .00
UI   21.     85.    128.    193.    241.    165.    115.     61.     34.     20.
UI    7.      7.      7.      0.      0.      0.      0.      0.      0.      0.
UI    0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
KK  SR24
KM     STORAGE ROUTE THROUGH RETENTION BASIN AT CP24
RS     1   STOR       0       0
SV     0     .46    2.96    16.6      86  221.55  282.99  306.59  357.02
SQ     0       0       0       0       0       0       0      50    2598
SE  1210    1214    1216    1220    1230    1240    1243    1244    1246
KK   R24
KM     ROUTE REMAINDER OF FLOW AT CP24 TO CP25
RS     1            -1      0
RC   .05     .03     .05    1326    .021    1240
RX  1000    1040    1070    1100    1200    1220    1245    1265
RY  1234    1232    1230    1228    1228    1230    1232    1234
KK  CP25
KM     COMBINE HYDROGRAPHS AT CP25
HC     2
KK  SR25
KM     STORAGE ROUTE THROUGH RETENTION BASIN AT CP25
RS     1   STOR       0       0
SV     0    5.61   10.27   13.15   16.62   26.62   36.62   46.62
SQ     0       0       0       0     125    2273    6072   11155
SE  1204    1210    1212    1213    1214    1216    1218    1220
KK    26
KM     RUNOFF FROM SUB-BASIN 26
BA  1.16
LG   .17     .30    3.97     .68    3.10
UI  103.    163.    401.    532.    639.    787.   1092.   1251.    956.    788.
UI  637.    510.    359.    200.    171.    117.     99.     32.     32.     32.
UI   32.     32.      0.      0.      0.      0.      0.      0.      0.      0.
UI    0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
KK   R26
KM     ROUTE FLOW FROM CP26 TO CP27
RS     4            -1      0
RC   .05     .03     .05    7020   .0157    1255
RX  1000    1012    1025    1040    1090    1105    1112    1120
RY  1250    1248    1245    1242    1242    1244    1247    1250
KK    27
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 27
BA  1.00
LG   .15     .31    4.27     .48     .30
UI  101.    206.    438.    567.    705.    970.   1225.    936.    750.    587.
UI  450.    256.    172.    129.     99.     31.     31.     31.     31.      0.
UI    0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
UI    0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
KKI1CP27
KM     ADD HYDROGRAPHS AT CP27
HC     2
KK  SR27
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KM      STORAGE ROUTE THROUGH RETENTION BASIN AT CP27
RS    1    STOR      0      0
SV    0    .13    5.77    9.37   11.42   13.71   19.21    25.7    29.0
SQ    0      0       0       0       0     550    4546   11312   13500
SE 1203   1204    1210    1212    1213    1214    1216    1218  1218.5
KK  CP27
KM      ADD REMAINING FLOW OF CP25 & CP27 AT CP27
HC    2
KK   R27
KM      ROUTE COMBINED REMAINDER FLOW AT CP27 TO CP39
RS    3             -1      0
RC  .03    .03    .05    5928  .0084    1213
RX 1000   1010   1020    1025    1055    1085    1175    1250
RY 1210   1210   1210    1202    1202    1204    1206    1208
KK   34
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 34
BA  .36
LG  .20    .34    3.21    1.14   10.00
UI  57.   229.   343.   530.   615.   416.   284.   139.    81.    43.
UI  17.    17.     0.     0.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK   33
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 33
BA  .65
LG  .20    .34    3.21    1.14   10.00
UI  99.   392.   591.   888.  1120.   769.   535.   290.   159.    93.
UI  30.    30.    30.     0.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK  CP33
KM      ADD HYDROGRAPHS AT CP33
HC    2
KK   R33
KM      ROUTE COMBINED HYDROGRAPHS AT CP33 TO CP35
RS    2             -1      0
RC  .08    .05    .08    4680  .0427    1805
RX 1000   1015   1022    1035    1050    1068    1092    1100
RY 1800   1760   1720    1680    1680    1720    1760    1800
KK   35
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 35
BA  .39
LG  .20    .34    3.21    1.14   10.00
UI  72.   272.   410.   672.   631.   428.   270.   119.    74.    28.
UI  20.    20.     0.     0.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKI1CP35
KM      ADD HYDROGRAPHS AT CP35
HC    2
KK   32
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 32
BA 1.29
LG  .20    .34    3.21    1.14   10.00
UI 130.   270.   570.   738.   919.  1268.  1585.  1202.   963.   753.
UI 575.   317.   221.   161.   121.    40.    40.    40.    40.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK  CP35
KM      ADD HYDROGRAPHS AT CP35
HC    2
KK   R35
KM      ROUTE COMBINED HYDROGRAPHS AT CP35 TO CP36
RS    2             -1      0
RC  .06   .035    .06    5070  .0355    1439
RX 1000   1012   1023    1034    1045    1056    1067    1079
RY 1429   1428   1426    1424    1424    1426    1428    1429
KK   36
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 36
BA  .24
LG  .16    .34    2.38    1.41    1.10
UI  34.   127.   197.   278.   409.   297.   212.   140.    65.    43.
UI  22.    11.    11.     0.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKI1CP36
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KM      ADD HYDROGRAPHS AT CP36
HC    2
KK   37
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 37
BA   .95
LG   .19    .34   3.24   1.08   8.40
UI   90.   167.   373.   488.   598.   764.  1104.   941.   747.   598.
UI  475.   344.   190.   151.   103.    81.    28.    28.    28.    28.
UI   28.     0.     0.     0.     0.     0.     0.     0.     0.     0.
UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK  CP36
KM      ADD HYDROGRAPHS AT CP 36
HC    2
KK   R36
KM      ROUTE COMBINED HYDROGRAPHS AT CP36 TO CP38
RS    2            -1      0
RC   .05    .03    .05   4836  .0198   1354
RX  1000   1008   1020   1032   1050   1112   1135   1183
RY  1344   1342   1340   1338   1338   1340   1342   1344
KK   38
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 38
BA   .76
LG   .17    .34   3.21    .97   4.50
UI  103.   354.   568.   770.  1209.   983.   720.   513.   270.   168.
UI  103.    36.    32.    32.     0.     0.     0.     0.     0.     0.
UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK  CP38
KM      ADD HYDROGRAPHS AT CP38
HC    2
KK  SR38
KM      STORAGE ROUTE THROUGH RETENTION BASIN AT CP38
RS    1   STOR      0      0
SV    0   1.83   15.38   39.25   41.76   47.45   60.58   87.78  112.98  126.08
SQ    0      0      0      0      44    2223    6550   14093   23346   28523
SE 1275   1280   1290  1297.5   1298   1300   1301   1303   1305   1306
KK   R38
KM      ROUTE REMAINDER OF FLOW AT CP38 TO CP39
RS    3            -1      0
RC   .05    .03    .05   5438  .0167   1222
RX  1000   1005   1010   1025   1055   1085   1175   1250
RY  1212   1211   1210   1202   1202   1204   1206   1208
KK   39
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 39
BA   .77
LG   .15    .34   3.81    .63    .20
UI   64.    82.   232.   313.   372.   450.   565.   791.   683.   550.
UI  460.   376.   308.   213.   122.   106.    77.    64.    29.    20.
UI   20.    20.    20.    20.     0.     0.     0.     0.     0.     0.
UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKI1CP39
KM      ADD HYDROGRAPHS AT CP39
HC    2
KK  CP39
KM      ADD HYDROGRAPHS AT CP39
HC    2
KK   R39
KM      ROUTE COMBINED HYDROGRAPH AT CP39 TO CP42
RS    2            -1      0
RC   .03    .03    .05   4836  .0141   1153
RX  1000   1005   1015   1025   1055   1070   1087   1130
RY  1143   1142   1140   1132   1132   1136   1140   1142
KK   40
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 40
BA   .52
LG   .18    .34   3.54    .89   7.00
UI   73.   258.   407.   562.   862.   658.   478.   331.   158.   104.
UI   61.    22.    22.    22.     0.     0.     0.     0.     0.     0.
UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK   R40
KM      ROUTE FLOW FROM CP40 TO CP42
RS    4            -1      0
RC   .05    .03    .05   6396  .0086   1123
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RX  1000   1010   1065   1095   1135   1155   1215   1220
RY  1115   1114   1112   1110   1110   1112   1113   1113
KK   42
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 42
BA  1.18
LG  .21    .32    4.21   .45    .10
UI  98.    128.   359.   483.   575.   696.   878.   1223.  1042.  840.
UI  701.   573.   467.   322.   182.   163.   115.   98.    39.    30.
UI  30.    30.    30.    30.    0.     0.     0.     0.     0.     0.
UI  0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKI1CP42
KM      ADD HYDROGRAPHS AT CP42
HC    2
KK  CP42
KM      ADD HYDROGRAPHS AT CP42
HC    2
KK  SR42
KM      STORAGE ROUTE THROUGH RETENTION BASIN AT CP42
RS    1    STOR     0      0
SV    0    .11   10.43   41.63    69.9   77.34    94.2  113.66   134.7  160.78
SV 239.0   304.2   369.4
SQ    0      0      0      0      0    163    844   2096   4630  13500
SQ 29047   44721   62498
SE1071.5   1072   1080   1090   1095   1096   1098   1100   1102   1104
SE1110.0  1115.0  1120.0
KK   R42
KM      ROUTE REMAINDER OF HYDROGRAPH AT CP42 TO CP43
RS    1            -1      0
RC  .03    .03    .05    858  .0151   1104
RX  900    950   1000   1030   1060   1075   1080   1090
RY  1094   1088   1086   1084   1084   1086   1088   1094
KK  41A1
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 41A1.
BA  .02
LG  .35    .31    3.70   .31    .00
UI  35.    87.    28.    4.     0.     0.     0.     0.     0.     0.
UI  0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKSR41A1
KM      STORAGE ROUTE THROUGH 30" CMP AT STA 6255+85 ON I-10.
RS    1    STOR     0      0
SV    0    .43    .53    .63    .74   1.24   1.65   3.40   6.20
SQ    0     10     14     18     23     29     33    869   6050
SE1133.4 1134.91 1135.23 1135.58 1135.97 1137.62  1139.0  1140.3 1143.85
KKCP41A1
KM      DIVERT FLOW FROM CP41A1 TO CP303
DT 1D303
DI    0     14     23     33    869   6050
DQ    0     14     23     33     35     42
KK R41A1
KM      ROUTE REMAINDER FROM CP41A1 TO CP41A2.
RS    1            -1      0
RC  .06    .03    .04    580  .0093   1155
RX  600    800    900    965   1000   1020   1030   1040
RY  1147   1143   1142   1141   1141   1143   1145   1145
KK  41A2
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 41A2.
BA  .03
LG  .35    .34    3.91   .57    .00
UI  46.    124.   51.    9.     0.     0.     0.     0.     0.     0.
UI  0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKCP41A2
KM      ADD HYDROGRAPHS AT CP41A2.
HC    2    .05
KKSR41A2
KM      STORAGE ROUTE THROUGH 30" CMP AT STA 6261+65 ON I-10.
RS    1    STOR     0      0
SV    0    .10    .24    .31    .62   1.72
SQ    0      8     19     24    624   2104
SE1132.7 1134.07 1134.98 1135.56 1137.34 1139.65
KKCP41A2
KM      DIVERT FLOW FROM CP41A2 TO CP303
DT 2D303
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DI    0     8    19    24   624  2104
DQ    0     8    19    24    30    36
KK R41A2
KM     ROUTE REMAINDER FROM CP41A2 TO CP41A3.
RS    1          -1     0
RC  .06    .03   .04   595  .0093  1150
RX  600   800   900   965  1000  1020  1030  1040
RY 1140  1136  1135  1134  1134  1136  1138  1140
KK  41A3
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 41A3.
BA  .03
LG  .35   .31  3.64   .30   .00
UI  38.  112.   64.   14.    4.    0.    0.    0.    0.    0.
UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
KKCP41A3
KM     ADD HYDROGRAPHS AT CP41A3.
HC    2   .08
KKSR41A3
KM     STORAGE ROUTE THROUGH 30" CMP AT STA 6267+60 ON I-10
RS    1  STOR     0     0
SV    0   .86  1.05  1.25  1.48  2.51  2.84  4.15  5.46  8.08
SQ    0    10    14    18    23    29    32   254   654   896
SE1128.6 1130.13 1130.45 1130.80 1131.19 1132.94 1133.5 1134.0 1134.5 1135.57
KKCP41A3
KM     DIVERT FLOW FROM CP41A3 TO CP303
DT 3D303
DI    0    10    14    18    23    29    32   254   659  1896
DQ    0    10    14    18    23    29    32    33    34    35
KK R41A3
KM     ROUTE REMAINDER FROM CP41A3 TO CP41A.
RS    1          -1     0
RC  .06    .03   .04   628  .0093  1143
RX  600   800   900   965  1000  1020  1030  1040
RY 1135  1131  1130  1129  1129  1131  1133  1133
KK  41A
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 41A.
BA  .05
LG  .35   .34  4.01   .53   .00
UI  44.  136.  137.   51.   14.    5.    0.    0.    0.    0.
UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
KK CP41A
KM     ADD HYDROGRAPHS AT CP41A.
HC    2   .13
KK SR41A
KM     STORAGE ROUTE THROUGH 36" CMP AT STA 6273+88 ON I-10
RS    1  STOR     0     0
SV    0  1.22  2.65  3.07  3.20  4.78  6.37  7.96  9.57
SQ    0    10    36    44    45   312   799  1429  2047
SE1124.4 1125.75 1127.38 1127.86 1128.0 1128.5 1129.0 1129.5 1129.92
KK CP41A
KM     DIVERT FLOW FROM CP41A TO CP303
DT 4D303
DI    0    10    36    44    45   312   799  1429  2047
DQ    0    10    36    44    45    47    49    51    52
KK  R41A
KM     ROUTE REMAINDER FROM CP41A TO CP41-1.
RS    1          -1     0
RC  .06    .03   .04  1437  .0093  1130
RX  600   800   900   965  1000  1020  1030  1040
RY 1122  1118  1117  1116  1116  1118  1120  1120
KK  41-1
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 41-1
BA  .15
LG  .35   .35  3.78   .62   .00
UI  45.  148.  244.  325.  203.  111.   46.   21.    9.    9.
UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
KKCP41-1
KM     ADD HYDROGRAPHS AT CP41-1
HC    2   .28
KKSR41-1
KM     STORAGE ROUTE THROUGH 2-36" CMP AT STA 6288+25 ON I-10.
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RS    1    STOR      0      0
SV    0    .73    3.47    3.94    4.53    5.12    5.71    5.72
SQ    0     10      36      44     489    1300    2348    2358
SE1112.7 1114.08 1115.71    1116  1116.5    1117  1117.5 1117.51
KKCP41-1
KM      DIVERT FLOW FROM CP41-1 TO CP303
DT 5D303
DI    0     10      36      44     489    1300    2348
DQ    0     10      36      44      47      50      52
KK R41-1
KM      ROUTE REMAINDER FROM CP41-1 TO CP41-2.
RS    1            -1      0
RC  .06    .03     .04    1697   .0075    1115
RX  600    800     900     965    1000    1020    1030    1040
RY 1104   1102    1101    1100    1100    1102    1104    1105
KK  41-2
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 41-2
BA  .10
LG  .35    .35    3.87     .58     .30
UI  31.   101.    169.    216.    133.     69.     30.     13.      6.      0.
UI   0.     0.      0.      0.      0.      0.      0.      0.      0.      0.
UI   0.     0.      0.      0.      0.      0.      0.      0.      0.      0.
KKCP41-2
KM      ADD HYDROGRAPHS AT CP41-2
HC    2    .38
KKSR41-2
KM      STORAGE ROUTE THROUGH 2-42" CMP AT STA 6305+22 ON I-10.
RS    1    STOR      0      0
SV    0    .84    1.23    1.78    2.46    3.31    4.34    5.61    7.63   11.57
SV 13.47   15.30   19.63   23.76   49.14
SQ    0     10      14      18      23      29      35      42      50      56
SQ  201    419     469    1836    2268
SE1099.2 1100.45 1100.70 1100.96 1101.23 1101.52 1101.83 1102.17 1102.83  1103.5
SE1103.8    1104  1104.5 1104.95 1107.97
KKCP41-2
KM      DIVERT FLOW FROM CP41-2 TO CP303
DT 6D303
DI    0     10      14      18      23      29      35      42      50      56
DI  201    419     469    1836
DQ    0     10      14      18      23      29      35      42      50      56
DQ   59     61      64      68
KK R41-2
KM      ROUTE REMAINDER FROM CP41-2 TO CP41.
RS    1            -1      0
RC  .06    .03     .04     978   .0053    1111
RX  650    800     850     965    1000    1020    1030    1040
RY 1100   1099    1098    1096    1096    1098    1100    1101
KK   41
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 41
BA  .58
LG  .21    .34    4.24     .44     .30
UI  56.    108.    237.    308.    380.    493.    696.    562.    450.    357.
UI 282.    193.    103.     90.     56.     38.     17.     17.     17.     17.
UI   0.     0.      0.      0.      0.      0.      0.      0.      0.      0.
UI   0.     0.      0.      0.      0.      0.      0.      0.      0.      0.
KK  CP41
KM      ADD HYDROGRAPHS AT CP41
HC    2    .68
KK  SR41
KM      STORAGE ROUTE THROUGH 2-36" CMP AT STA 6315+00 ON I-10.
RS    1    STOR      0      0
SV    0    .09     .37     .86    2.15    2.99    4.92    5.83    7.92   11.06
SV 15.07   17.07   17.17
SQ    0      8      11      15      24      30      36      42      43     400
SQ 1219    2305    2389
SE1094.6 1095.91 1096.15 1096.42 1096.99 1097.30 1097.91 1099.12  1099.5  1100.0
SE1100.6 1100.94 1100.97
KK  CP41
KM      DIVERT FLOW FROM CP41 TO CP303
DT 7D303
DI    0      8      11      15      24      30      36      42      43     400
DI 1219
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DQ    0     8    11    15    24    30    36    42    43    46
DQ   50
KK   R41
KM      ROUTE REMAINDER FROM CP41 TO CP43-1.
RS    1          -1     0
RC  .06    .03    .04   700  .0053   1109
RX  650    800    850   965   1000   1020   1030   1040
RY 1098   1097   1096  1094   1094   1096   1098   1099
KK  43-1
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 43-1
BA  .04
LG  .35    .35   4.29   .40   .90
UI  25.    74.   117.   63.   21.    7.    3.    0.    0.    0.
UI   0.     0.     0.    0.    0.    0.    0.    0.    0.    0.
KKCP43-1
KM      ADD HYDROGRAPHS AT CP43-1
HC    2    1.0
KKSR43-1
KM      STORAGE ROUTE THROUGH 5-48" CMP FROM STA 6319+32 TO STA 6324+32 ON I-10.
RS    1   STOR     0     0
SV    0    .37    .80   1.58   2.71   4.54   5.86   7.60  12.33  14.79
SV 21.44  23.44  25.91
SQ    0     32     60   102    120    220    260    301    357    501
SQ 1057   1944   2492
SE1091.781097.15 1093.25 1093.72 1094.21 1094.77 1095.08 1095.43 1096.19  1096.5
SE1097.0  1098.0  1098.6
KKCP43-1
KM      DIVERT FLOW FROM CP43-1 TO CP303A
DT1D303A
DI    0     32     60   102    120    220    260    301    357    501
DI 1057
DQ    0     32     60   102    120    220    260    301    357    378
DQ  417
KK R43-1
KM      ROUTE REMAINDER FROM CP43-1 TO CP43-2.
RS    1          -1     0
RC  .06    .03    .04   500   .005   1113
RX  600    725    800   965   1000   1020   1030   1040
RY 1095   1094  1093.5  1093   1093   1094   1096   1097
KK  43-2
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 43-2
BA  .01
LG  .35    .35   4.25   .42   1.30
UI   9.    28.    27.   10.    2.    1.    0.    0.    0.    0.
UI   0.     0.     0.    0.    0.    0.    0.    0.    0.    0.
KKCP43-2
KM      ADD HYDROGRAPHS AT CP43-2
HC    2   1.01
KKSR43-2
KM      STORAGE ROUTE THROUGH 36" CMP AT STA 6326+40 ON I-10.
RS    1   STOR     0     0
SV    0    .12    .38    .71   1.11   1.61   3.12   3.95   5.19   6.02
SV 15.86  16.02
SQ    0     8     12    15    20    24    36    38   128   222
SQ 1337   1487
SE1092.0 1093.28 1093.52 1093.78 1094.05 1094.35 1095.13  1095.5  1096.0  1096.3
SE1099.8  1100.0
KKCP43-2
KM      DIVERT FLOW FROM CP43-2 TO CP303A
DT2D303A
DI    0     8     12    15    20    24    36    38   128   222
DQ    0     8     12    15    20    24    36    38    40    43
KK R43-2
KM      ROUTE REMAINDER FROM CP43-2 TO CP43-3.
RS    1          -1     0
RC  .06    .03    .04  1000  .003   1110
RX  750    800    900   965   1000   1020   1030   1040
RY1096.5   1096   1094  1093   1093   1094   1096   1097
KK  43-3
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 43-3
BA  .05
LG  .35    .35   4.30   .40   .90
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UI   68.    195.    98.    20.     0.     0.     0.     0.     0.     0.
UI    0.      0.     0.     0.     0.     0.     0.     0.     0.     0.
KKCP43-3
KM      ADD HYDROGRAPHS AT CP43-3.
HC     2    1.06
KKSR43-3
KM      STORAGE ROUTE THROUGH 3-36" CMPS FROM STA 6330+50 TO STA 6340+10 ON I-10
RS     1    STOR       0       0
SV     0    2.47    3.51    4.85    6.37    8.27   10.69   13.89   18.76   30.99
SQ     0      27      36      48      63      78      93     165     364     951
SE1092.8 1094.12 1094.37 1094.65 1094.93 1095.24 1095.59    1096 1096.56 1097.79
KKCP43-3
KM      DIVERT FLOW FROM CP43-3 TO CP303A
DT3D303A
DI     0      27      36      48      63      78      93     165     364     951
DQ     0      27      36      48      63      78      93     102     114     135
KK R43-3
KM      ROUTE REMAINDER FROM CP43-3 TO CP43-4.
RS     1              -1       0
RC   .06     .03     .04     800    .018    1110
RX   800     850     930     965    1000    1020    1030    1040
RY1096.5    1096    1094    1093    1093    1096    1097  1097.5
KK  43-4
KM      RUNOFF HYDROGRAP FROM SUB-BASIN 43-4
BA   .03
LG   .35     .35    4.28     .41     .80
UI   43.    121.     54.     10.      0.      0.      0.      0.      0.      0.
UI    0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
KKCP43-4
KM      ADD HYDROGRAPHS AT CP43-4
HC     2    1.09
KKSR43-4
KM      STORAGE ROUTE THROUGH 2-36" CMPS FROM STA 6343+25 TO STA 6345+65 ON I10
RS     1    STOR       0       0
SV     0     .89    1.27     1.8    2.43    3.24    3.31    4.75    7.05   12.83
SQ     0      18      24      32      42      52      62     131     326     906
SE1092.8 1094.12 1094.37 1094.65 1094.93 1095.24 1095.59    1096 1096.56 1097.79
KKCP43-4
KM      DIVERT FLOW AT STA 6345+65
DTDI43-4
DI     0      18      24      32      42      52      62     131     326     906
DQ     0      18      24      32      42      52      62      68      76      90
KK R43-4
KM      ROUTE REMAINDER FROM CP43-4 TO CP43-5
RS     1              -1       0
RC   .06     .03     .04     500    .018    1110
RX   800     850     930     965    1000    1020    1030    1040
RY1096.5    1096    1094    1093    1093    1096    1097  1097.5
KK  43-5
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 43-5
BA   .02
LG   .35     .35    4.25     .39     .00
UI   27.     79.     39.      8.      0.      0.      0.      0.      0.      0.
UI    0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
KKCP43-5
KM      ADD HYDROGRAPHS AT CP43-5
HC     2    1.11
KKSR43-5
KM      STORAGE ROUTE THROUGH 36" CMP AT STA 6349+45 ON I-10
RS     1    STOR       0       0
SV     0     .09     .24     .44     .69     1.0    1.42    2.14    2.76    3.73
SV  4.84    5.94    8.65
SQ     0       9      13      17      22      27      34      40      42      44
SQ   134     276     626
SE1089.8 1091.09 1091.35 1091.64 1091.94 1092.26 1092.62 1093.13  1093.5    1094
SE1094.5 1094.94 1096.02
KKCP43-5
KM      DIVERT FLOW AT STA 6349+45.
DTDI43-5
DI     0       9      13      17      22      27      34      40      42      44
DI   134     276
DQ     0       9      13      17      22      27      34      40      42      44
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DQ   46     48
KK R43-5
KM     ROUTE REMAINDER FROM CP43-5 TO CP43-6
RS    1            -1      0
RC  .06    .03    .04    455  .0068   1110
RX  800    850    930    965   1000   1020   1030   1040
RY 1096   1094   1093   1092   1092   1094   1096 1097.5
KK  43-6
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 43-6
BA  .02
LG  .35    .35   4.17    .38    .00
UI  36.    87.    27.     4.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKCP43-6
KM     ADD HYDROGRAPHS AT CP43-6
HC    2   1.13
KKSR43-6
KM     STORAGE ROUTE THROUGH 36" CMP AT STA 6354+00 ON I-10
RS    1   STOR      0      0
SV    0   1.59   2.29   3.18   4.29   5.62   7.39   9.53  14.20  30.25
SV 32.52   38.0  43.84  49.83  55.96  59.96
SQ    0      9     13     17     22     27     33     39     47     55
SQ   56    141    325    811   1440   2714
SE1089.3 1090.58 1090.84 1091.12 1091.42 1091.73 1092.09 1092.47 1093.23 1095.27
SE1095.5  1096.0  1096.5  1097.0  1097.5 1097.82
KKCP43-6
KM     DIVERT FLOW AT STA 6354+00.
DTDI43-6
DI    0      9     13     17     22     27     33     39     47     55
DI   56    141    325    811   1440   2714
DQ    0      9     13     17     22     27     33     39     47     55
DQ   56     58     60     61     62     64
KK R43-6
KM     ROUTE REMAINDER FROM CP43-6 TO CP43-7
RS    1            -1      0
RC  .06    .03    .04    300  .0162   1110
RX  750    800    930    965   1000   1020   1030   1040
RY 1096   1094   1092   1090   1090   1092   1096 1097.5
KK  43-7
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 43-7
BA  .02
LG  .35    .35   4.25    .39    .00
UI  49.    90.    14.     0.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKCP43-7
KM     ADD HYDROGRAPHS AT CP43-7
HC    2   1.15
KKSR43-7
KM     STORAGE ROUTE THROUGH 36" CMP AT STA 6357+00 ON I-10
RS    1   STOR      0      0
SV    0    .27    .39    .55    .74    .98   1.30   1.78   2.23   5.12
SQ    0     10     13     18     23     29     35     38    101    892
SE1087.6 1088.93 1089.20 1089.49 1089.80 1090.13 1090.51  1091.0 1091.39 1093.26
KKCP43-7
KM     DIVERT FLOW AT STA 6357+00.
DTDI43-7
DI    0     10     13     18     23     29     35     38    101    892
DQ    0     10     13     18     23     29     35     38     40     42
KK R43-7
KM     ROUTE REMAINDER FROM CP43-7 TO CP43-8
RS    1            -1      0
RC  .06    .03    .04    385   .018   1110
RX  700    800    850    965   1000   1020   1030   1040
RY 1094   1093   1092   1090   1090   1092   1096 1097.5
KK  43-8
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 43-8
BA  .01
LG  .35    .35   4.25    .39    .00
UI  36.    37.     4.     0.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKCP43-8
KM     ADD HYDROGRAPHS AT CP43-8
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HC     2    1.16
KKSR43-8
KM      STORAGE ROUTE THROUGH 36" CMP AT STA 6360+85 ON I-10
RS     1    STOR      0      0
SV     0    .22    .32    .46    .63    .89    1.74    3.41    4.93    6.3
SV  6.87
SQ     0      8     12     15     20     24     30     36     39    129
SQ   186
SE1085.1 1086.38 1086.62 1086.88 1087.15 1087.48 1088.28 1089.33  1090.0  1090.5
SE1090.7
KKCP43-8
KM      DIVERT FLOW AT STA 6360+85.
DTDI43-8
DI     0      8     12     15     20     24     30     36     39    129
DI   186
DQ     0      8     12     15     20     24     30     36     39     41
DQ    43
KK R43-8
KM      ROUTE REMAINDER FROM CP43-8 TO CP43.
RS     1            -1      0
RC   .06    .03    .04    600   .008   1110
RX   800    850    930    965   1000   1020   1030   1040
RY  1096   1092   1090   1088   1088   1090   1096  1097.5
KK    43
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 43
BA   .01
LG   .35    .35   4.29    .41    .60
UI   25.    45.     7.     0.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKI1CP43
KM      ADD HYDROGRAPHS AT CP43
HC     2    1.17
KK  CP43     .03
KM      ADD HYDROGRAPHS AT CP43.
HC     2   13.90
KK  CP43
KM      DIVERT FLOW AT STA 6366+86 ON I-10 (TUTHILL DIKE).
KM  REVISED TO HANDLE 1/2 PMF
DT  DI43
DI     0   3600   4015   4609   5416   7314  10491  13465  23602  29925
DI 36796
DQ     0      0    221    625   1243   2793   5691   8293  18117  24129
DQ 30690
KK  SR43
KM      STORAGE ROUTE THROUGH 4-10X8 BC'S AT STA 6366+85 ON I-10.
KM      THIS REACH IS THE AREA ON THE EAST SIDE OF TUTHILL DIKE
RS     1    STOR      0      0
SV     0   .052   4.33  16.22  24.89  28.79  33.09  37.88  51.24  65.35
SV 95.72  125.72  155.72  185.72
SQ     0   1020   1965   3065   3600   3794   3984   4173   4521   4800
SQ  5172   5485   5796   6106
SE1081.2 1085.18 1087.60 1090.19  1091.5  1092.0  1092.5  1093.0  1094.0 1094.81
SE1096.0  1097.0  1098.0  1099.0
KK  RD43
KM      ROUTE REMAINDER FROM FROM CP43 TO CPWT4.
RS     2            -1      0
RC   .05    .03    .05   4000  .0083   1085
RX   800    900    965   1000   1050   1100   1200   1300
RY  1076   1075   1075   1064   1064   1071   1071   1075
KKCP43-4
KM      RETURN DIVERT AT CP43-4
DRDI43-4
KKRD43-4
KM      ROUTE DIVERTED FLOW FROM CP43-4 TO CPWT4
RS     2            -1      0
RC  .045    .03   .045   4200  .0067   1072
RX   910    940    970    990   1000   1020   1060   1100
RY  1064   1063   1062   1060   1060   1062   1063   1064
KKCP43-5
KM      RETURN DIVERT AT CP43-5
DRDI43-5
KKRD43-5
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KM      ROUTE DIVERTED FLOW FROM CP43-5 TO CPWT4
RS    2            -1      0
RC  .045    .03   .045   4100  .0067   1072
RX   910    940    970    990   1000   1020   1060   1100
RY  1064   1063   1062   1060   1060   1062   1063   1064
KKI1CWT4
KM      ADD HYDROGRAPHS AT CPWT4
HC    2    .05
KKCP43-6
KM      RETURN DIVERT AT CP43-6
DRDI43-6
KKRD43-6
KM      ROUTE DIVERTED FLOW FROM CP43-6 TO CPWT4
RS    2            -1      0
RC  .045    .03   .045   4000  .0067   1072
RX   910    940    970    990   1000   1020   1060   1100
RY  1064   1063   1062   1060   1060   1062   1063   1064
KKI2CWT4
KM      ADD HYDROGRAPHS AT CPWT4
HC    2    .07
KKCP43-7
KM      RETURN DIVERT AT CP43-7
DRDI43-7
KKRD43-7
KM      ROUTE DIVERTED FLOW FROM CP43-7 TO CPWT4
RS    2            -1      0
RC  .045    .03   .045   4000  .0067   1072
RX   910    940    970    990   1000   1020   1060   1100
RY  1064   1063   1062   1060   1060   1062   1063   1064
KKI3CWT4
KM      ADD HYDROGRAPHS AT CPWT4
HC    2    .09
KKCP43-8
KM      RETURN DIVERT AT CP43-8
DRDI43-8
KKRD43-8
KM      ROUTE DIVERTED FLOW FROM CP43-8 TO CPWT4
RS    2            -1      0
RC  .045    .03   .045   4000  .0067   1072
RX   910    940    970    990   1000   1020   1060   1100
RY  1064   1063   1062   1060   1060   1062   1063   1064
KKI4CWT4
KM      ADD HYDROGRAPHS AT CPWT4
HC    2    .10
KK    44
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 44
BA   .22
LG   .35    .35   4.14    .37    .00
UI   33.   133.   200.   301.   379.   260.   181.    98.    54.    31.
UI   10.    10.    10.     0.     0.     0.     0.     0.     0.     0.
UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKI5CWT4
KM      ADD HYDROGRAPHS AT CPWT4
HC    2    .32
KKI6CWT4
KM      ADD HYDROGRAPHS AT CPWT4.
HC    2   14.12
KK   45-1
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 45-1
BA   .08
LG   .21    .34   4.19    .38    .60
UI   33.   102.   189.   155.    86.    31.    13.     6.     0.     0.
UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK   CP43
KM      RETURN DIVERT AT CP43
DR   DI43
KKCP45-1
KM      ADD HYDROGRAPHS AT CP45-1
HC    2    .08
KKSR45-1
KM      STORAGE ROUTE THROUGH 1-12X12 BC, 2-42" CMP AND 3-36" CMP FROM STA. 6368
KM      +00 TO STA. 6375+20 ON I-10 (100' TO 800' EAST OF TUTHILL RD.).
```

```
RS    1   STOR      0      0
SV    0    .85    2.23    5.73   11.22   14.61   19.71   31.09   46.07   64.75
SV 66.22
SQ    0     51     156    1200    3130    4161    5509    9658   13812   26304
SQ 26991
SE1083.1 1084.78  1086.0  1087.4  1089.0  1089.5  1090.0  1092.0  1094.0  1096.0
SE1096.3
KKCP45-1
KM      DIVERT FLOW AT STA 6375+20
DTDI45-1
DI    0     51     156    1200    3130    4161    5509    9858   13812   26304
DQ    0     51     156     305     480     543     610     894    1212    1560
KK R45-1
KM      ROUTE REMAINDER FROM CP45-1 TO CP45
RS    1            -1      0
RC  .04    .03     .04    1200   .0042    1097
RX  850    900     930     965    1000    1020    1030    1040
RY 1086   1085    1084    1083    1083    1086    1090    1091
KK   45
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 45
BA  .38
LG  .17    .33    3.94     .34     .20
UI  36.    64.    145.    190.    232.    293.    427.    384.    301.    244.
UI 194.   148.     82.     60.     45.     36.     13.     11.     11.     11.
UI  11.     0.      0.      0.      0.      0.      0.      0.      0.      0.
UI   0.     0.      0.      0.      0.      0.      0.      0.      0.      0.
KK  CP45
KM      ADD HYDROGRAPHS AT CP45
HC    2    .46
KK  SR45
KM      STORAGE ROUTE THROUGH 9-36" CMP'S FROM STA 6379+84 TO STA 6390+50 ON
KM      I-10.  ALSO INCLUDES SPILL OVER I-10 INTO WT4 DURING 0.5 PMF
RS    1   STOR      0      0
SV    0   1.84    5.95   18.55   23.27   29.04   41.95   61.66   83.65  110.95
SQ    0     41     132     317    1462    3517    6272   10048   24658   44086
SE1081.1 1082.74  1084.0  1086.0  1086.5  1087.0   1088.   1090.   1092.   1094.
KK  CP45
KM      DIVERT FLOW AT STA 6390+50.
DT  DI45
DI    0     41     132     317    1462    3517    6272   10048   24658   44086
DQ    0     41     132     317     362     392     450     567     676     784
KK45-I10     DIVERT OVERTOPPING OF I-10 FROM SUBBASIN 45
KM          THE OVERTOPPING OCCURS WHEN WSE EXCEEDS 1089.0 FT
DTD45I10
DI    0    110    3125    5822    9481   23982   43302
DQ    0      0       0       0     152    2572    9428
KK   R45
KM      ROUTE REMAINDER FROM CP45 TO CP46-1.
RS    1            -1      0
RC  .04    .03     .04    1500   .0031    1092
RX  850    900     930     965    1000    1020    1030    1040
RY 1083   1082    1081    1080    1080    1082    1083    1084
KK  46-1
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 46-1
BA  .15
LG  .19    .35    4.23     .39     .60
UI  19.    60.    101.    133.    203.    208.    151.    111.     75.     37.
UI  26.    16.      6.      6.      6.      0.      0.      0.      0.      0.
UI   0.     0.      0.      0.      0.      0.      0.      0.      0.      0.
KKCP46-1
KM      ADD HYDROGRAPHS AT CP46-1
HC    2    .61
KKSR46-1
KM      STORAGE ROUTE THROUGH 5-36 CMP'S FROM STA 6395+75 TO STA 6400+60 ON
KM      I-10.
RS    1   STOR      0      0
SV    0   1.07    6.90   18.65   28.26   33.51
SQ    0     39    7095   20603   29818   42308
SE1078.4  1080.0  1082.0  1084.0  1085.0  1086.0
KKCP46-1     DIVERSION THRU 5-36" CULVERTS UNDER I-10
KM      DIVERT FLOW AT STA 6400+60.
DTDI46-1
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DI    0     39   7095  20603  29818  42308
DQ    0     39    156    225    264    283
KKD46-10    DIVERSION FOR OVERTOPPING OF I-10 AT LOW POINT (ELEV=1082.5)
KM
DTD46-1A
DI    0      0   6939  20378  29554  42025
DQ    0      0      0    665   4686   7299
KK R46-1
KM     ROUTE REMAINDER FROM CP46-1 TO CP46.
RS    1            -1      0
RC  .04    .03    .04   2355  .0057   1092
RX  700    900    930    965   1000   1020   1030   1040
RY 1076 1075.5   1075   1074   1074   1078   1080   1082
KK   46
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 46
BA  .85
LG  .19    .34   4.25    .45    .40
UI  61.    61.   184.   265.   322.   373.   441.   539.   741.   706.
UI 567.   488.   409.   345.   291.   208.   129.   104.    94.    61.
UI  61.    19.    19.    19.    19.    19.    19.    19.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKI1CP46
KM     ADD HYDROGRAPHS AT CP46
HC    2   1.46
KK   28
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 28
BA  .86
LG  .15    .35   4.02    .52    .10
UI  76.   119.   295.   392.   470.   578.   798.   929.   711.   587.
UI 473.   381.   272.   153.   127.    89.    76.    24.    23.    23.
UI  23.    23.     0.     0.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK   R28
KM     ROUTE FLOW FROM CP28 TO CP30
RS    2            -1
RC  .03    .03    .05   2400   .027   1177
RX 1000   1001   1035   1050   1065   1075   1085   1095
RY 1165   1165   1164   1162   1162   1164   1166   1168
KK   30
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 30
BA  .28
LG  .15    .35   3.27    .97    .20
UI  36.   116.   193.   257.   400.   380.   277.   203.   132.    63.
UI  45.    26.    11.    11.    11.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKI1CP30
KM     ADD HYDROGRAPHS AT CP30
HC    2
KK   29
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN 29
BA  .22
LG  .15    .35   3.52    .78    .00
UI  31.   113.   176.   245.   370.   276.   199.   135.    64.    42.
UI  23.    10.    10.    10.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK  SR29
KM     STORAGE ROUTE THROUGH RETENTION BASIN AT CP29
RS    1   STOR      0      0
SV    0   0.99  12.73  23.45  36.25  50.68  54.76  59.33  83.20
SQ    0      0      0      0      0      0      0     88   6226
SE1164.5   1166   1170   1172   1174   1176 1177.5   1178   1180
KK   R29
KM     ROUTE REMAINDER OF FLOW AT CP29 TO CP30
RS    1            -1      0
RC  .05    .03    .05   1200  .0021   1182
RX 1000   1042   1052   1060   1082   1090   1140   1170
RY 1171   1170   1168   1166   1166   1168   1170   1172
KK  CP30
KM     ADD HYDROGRAPHS AT CP30
HC    2
KKDIV-30    DIVERSION OF FLOWS IN EXCESS OF 2000 CFS ACROSS JACKRABBIT TRAIL
DTD-EAST
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DI    0   2000   2001   30000
DQ    0      0      1   28000
KK   R30
KM      ROUTE COMBINED HYDROGRAPHS AT CP30 TO CP31
RS    4            -1      0
RC  .03    .03    .05   6770  .0069   1165
RX 1000   1025   1045   1070   1095   1110   1200   1550
RY 1157   1156   1154   1152   1152   1154   1156   1158
KK   31
KM      RUNOFF HYDROGRAPH FROM SUB-BASIN 31
BA  .71
LG  .19    .35   3.76    .68    .20
UI  60.    83.   224.   299.   358.   434.   565.   752.   613.   500.
UI 413.   336.   268.   171.   105.    98.    60.    52.    18.    18.
UI  18.    18.    18.     0.     0.     0.     0.     0.     0.     0.
UI   0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KK  CP31
KM      ADD HYDROGRAPHS AT CP31
HC    2
KK  D-31   DIVERSION OF ALL BUT 2206 CFS
KM     INLET CHANNEL TO WT4 DESIGNED FOR 100-YR Q=2206 CFS
KM     ALL FLOWS IN EXCESS OF THIS AMOUT REACHING CP31 ARE ASSUMED TO
KM     OVERTOP JACKRABBIT TRAIL AND PROCEED IN A SOUTHEASTERLY DIRECTION
DTD-31-0
DI    0   2000   2200   2206   2207   20000
DQ    0      0      0      0      1   17994
KK   R31
KM      ROUTE COMBINED HYDROGRAPH AT CP31 TO CP46
RS    5            -1      0
RC  .03    .03    .05   5800  .0082   1102
RX 1000   1012   1024   1035   1045   1053   1065   1098
RY 1093   1092   1090   1088   1088   1090   1092   1094
KK  CP46
KM      ADD HYDROGRAPHS AT CP46.
HC    2   4.24
KK  SR46
KM      STORAGE ROUTE THROUGH 5-10'X4' BC'S AT STA 6419+30 ON I-10.
KM      RATING EXTENDED TO INCLUDE FLOW THROUGH I-10 UNDERPASS FOR 0.5 PMF
RS    1   STOR      0      0
SV    0   0.54   2.31   5.75   7.99  13.49
SE1067.0  1071.0  1072.0  1074.0  1076.0  1078.0
SQ    0   2206   3700   8575  20416  36945
KKD-I-10     WEIR FLOW ACROSS JACKRABBIT TRAIL
KM          FLOW GOES EAST ALONG NORTH SIDE OF INTERSTATE 10
DTD-EAST
DI    0   3700   8575  20416  36945
DQ    0      0   1175   6168  14301
KK   R46
KM      ROUTE REMAINDER OF FLOW AT CP46 TO CPWT4
RS    1            -1      0
RC  .03    .03    .05    800  .0067   1072
RX  910    930    940    950   1000   1020   1200   1400
RY 1065   1064   1064   1060   1060   1064   1064   1065
KK D-46E   DIVERSION ACROSS JACKRABBIT TRAIL
KM    THE SPLIT FLOW RATING WAS PERFORMED FOR A SEMI-CIRCULAR
KM    CROSS-SECTION 300 FT SOUTH OF THE I-10 EASTBOUND OFF-RAMP
DTD-EAST
DI    0   2700   4325   8045  14681  21200  29992
DQ    0      0   1112   2902   5781   8900  13836
KK  R46A   CONTINUATION OF ROUTING WT4 INLET CHANNEL
KM
RS    2            -1      0
RC  .03    .03    .05   6000  .0067   1072
RX  910    930    940    950   1000   1020   1200   1400
RY 1065   1064   1064   1060   1060   1064   1064   1065
KKCP45-1
KM      RETURN DIVERT AT  CP45-1  (FLOW THRU 9 CULVERTS)
DRDI45-1
KKCP451A
KM   RETURN DIVERT OF SPILL OVER I-10
DRD45I10
KKCP45I0  COMBINE  TWO RETRIEVED DIVERSIONS
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KM   COMBINATION OF THE I-10 SPILL WITH THE FLOW THRU CULVERTS FROM SUBBASIN 45
HC    2
KKRD45-1
KM     ROUTE DIVERTED FLOW FROM CP45-1 TO CPWT4
RS    2            -1      0
RC  .045    .03   .045   4100  .0067   1072
RX   910    940    970    990   1000   1020   1060   1100
RY  1064   1063   1062   1060   1060   1062   1063   1064
KK  CP45
KM     RETURN DIVERT AT CP45
DR  DI45
KK  RD45
KM     ROUTE DIVERTED FLOW FROM  CP45  TO CPWT4.
RS    2            -1      0
RC  .045    .03   .045   4200  .0067   1072
RX   910    940    970    990   1000   1020   1060   1100
RY  1064   1063   1062   1060   1060   1062   1063   1064
KKI7CWT4
KM     ADD HYDROGRAPHS AT CPWT4
HC    2    .46
KKCP46-1
KM     RETURN DIVERT AT CP46-1
DRDI46-1
KKDI46A1
KM   RETRIEVE THE DIVERSION OVERTOPPING OF I-10
DRD46-1A
KKCP-46A
KM   COMBINE THE FLOW FROM 5 CULVERTS WITH THE FLOW OVERTOPPING I-10
HC    2
KKRD46-1
KM     ROUTE DIVERTED FLOW FROM CP46-1 TO CPWT4
RS    3            -1      0
RC  .045    .03   .045   4900  .0067   1072
RX   910    940    970    990   1000   1020   1060   1100
RY  1064   1063   1062   1060   1060   1062   1063   1064
KKI8CWT4
KM     ADD HYDROGRAPHS AT CPWT4
HC    2    .61
KK   WT4
KM     RUNOFF HYDROGRAPH FROM SUB-BASIN WT4
BA   .77
LG   .35    .35   4.17    .38    .40
UI  108.   384.   604.   835.  1279.   973.   707.   488.   232.   153.
UI   90.    33.    33.    33.     0.     0.     0.     0.     0.     0.
UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
KKI9CWT4
KM     ADD HYDROGRAPHS AT CPWT4
HC    2   1.38
KKI10WT4
KM     ADD HYDROGRAPHS AT CPWT4
HC    2   5.62
KK CPWT4
KM     ADD ENTIRE FLOW TOGETHER THAT GETS TO WHITE TANKS STRUCTURE NO 4.
KO    1      2
HC    2  19.28
KK  RS47   WHITE TANKS No. 4 FLOOD RETARDING STRUCTURE
KO    1      2
KM     STORAGE ROUTE THROUGH WHITE TANKS STRUCTURE NO. 4.
KM     THE STORAGE OUTFLOW TABLE IS DEVELOPED FROM HEC-2 ANALYSIS OF SPILLWAY
KM     200 AF OF STORAGE ARE ASSUMED NON-EFFECTIVE DUE TO PRIOR STORAGE
KM     AND/OR SILTATION IN THE BORROW PIT AREA
RS    1   STOR    200      0
SV    0   2.81     51    148    277    543   1269   1396   1494   1564
SV 1666   1761   1848   1924   1995   2063   2200   2266   2414   2481
SQ    0      0      0      0      0      0      0   92.5    500   1000
SQ 2000   3000   4000   5000   6000   7000   9000  10000  12000  13000
SE  997   1000   1010   1020   1030   1040   1049   1050 1050.67 1051.14
SE1051.8  1052.4 1052.89 1053.32 1053.72 1054.09 1054.77 1055.08 1055.67 1055.94
ZZ
```

OUTPUT DATA FILE:

```
1****************************************                    ****************************************
*                                      *                    *                                      *
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)    *                    *  U.S. ARMY CORPS OF ENGINEERS        *
*        SEPTEMBER 1990                *                    *  HYDROLOGIC ENGINEERING CENTER       *
*         VERSION 4.0                  *                    *        609 SECOND STREET             *
*                                      *                    *     DAVIS, CALIFORNIA 95616          *
* RUN DATE 07/06/1993  TIME  16:34:42  *                    *          (916) 756-1104              *
*                                      *                    *                                      *
****************************************                    ****************************************


                    X   X XXXXXXX  XXXXX       X
                    X   X X     X   X      XX
                    X   X X     X          X
                    XXXXXXX XXXX   X     XXXXX  X
                    X   X X     X          X
                    X   X X     X   X      X
                    X   X XXXXXXX  XXXXX      XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.

THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION

NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,

DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION

KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
1                                    HEC-1 INPUT                                    PAGE  1

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

        1         ID
        2         ID
        3         ID     HYDROLOGY RUN FOR WHITE TANKS ADMS --- WATERSHED CONTRIBUTING TO WT#4
        4         ID
        5         ID       1/2 PMF FLOWS BREAKOUT IS COMPUTED ALONG JACKRABBIT TRAIL
        6         ID
        7         ID        RAINFALL OF PMP 6-HOUR LOCAL STORM AS PER HYDRO-49 PROCEDURE
        8         ID
*** NOLIST ***
1
            SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

  13        18
            V
            V
  25       R18
            .
            .
  31         .        19
             .        .
             .        .
  38       CP19............
            V
            V
  41       R19
            .
```

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        .
47      .       21
        .       .
        .       .
54   I1CP21............
        .
        .
57      .       20
        .       V
        .       V
64      .      SR20
        .       V
        .       V
73      .      R20
        .       .
        .       .
79    CP21............
       V
       V
82    SR21
       V
       V
88    R21
        .
        .
94      .       23
        .       .
        .       .
100   CP23............
       V
       V
103   SR23
       V
       V
112   R23
        .
        .
118     .       22
        .       V
        .       V
125     .       R22
        .       .
        .       .
131     .       .       22A
        .       .       .
        .       .       .
138     .     I1C22A............
        .       .
        .       .
141   CP22A............
       V
       V
144   R22A
        .
        .
150     .       25
        .       .
        .       .
157  I1CP25............
        .
        .
160     .       24
        .       V
        .       V
167     .      SR24
        .       V
        .       V
173     .       R24
        .       .
        .       .
179   CP25............
       V
```

```
        V
182     SR25
        .
        .
188     .       26
        .       V
        .       V
196     .       R26
        .       .
        .       .
202     .       .       27
        .       .       .
        .       .       .
210     .       I1CP27.............
        .       V
        .       V
213     .       SR27
        .       .
        .       .
219     CP27.............
        V
        V
222     R27
        .
        .
228     .       34
        .       .
        .       .
235     .       .       33
        .       .       .
        .       .       .
242     .       CP33.............
        .       V
        .       V
245     .       R33
        .       .
        .       .
251     .       .       35
        .       .       .
        .       .       .
258     .       I1CP35.............
        .       .
        .       .
261     .       .       32
        .       .       .
        .       .       .
269     .       CP35.............
        .       V
        .       V
272     .       R35
        .       .
        .       .
278     .       .       36
        .       .       .
        .       .       .
285     .       I1CP36.............
        .       .
        .       .
288     .       .       37
        .       .       .
        .       .       .
296     .       CP36.............
        .       V
        .       V
299     .       R36
        .       .
        .       .
305     .       .       38
        .       .       .
        .       .       .
312     .       CP38.............
        .       V
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```
          .        V
315       .       SR38
          .        V
          .        V
321       .        R38
          .        .
          .        .
327       .        .        39
          .        .        .
          .        .        .
335       .      I1CP39.............
          .        .
          .        .
338     CP39.............
         V
         V
341     R39
         .
         .
347       .        40
          .        V
          .        V
354       .        R40
          .        .
          .        .
360       .        .        42
          .        .        .
          .        .        .
368       .      I1CP42.............
          .        .
          .        .
371     CP42.............
         V
         V
374     SR42
         V
         V
383     R42
         .
         .
389       .       41A1
          .        V
          .        V
395       .      SR41A1
          .        .
          .        .
403       .        .-------->   1D303
401       .      CP41A1
          .        V
          .        V
406       .       R41A1
          .        .
          .        .
412       .        .       41A2
          .        .        .
          .        .        .
418       .      CP41A2.............
          .        V
          .        V
421       .      SR41A2
          .        .
          .        .
429       .        .-------->   2D303
427       .      CP41A2
          .        V
          .        V
432       .       R41A2
          .        .
          .        .
438       .        .       41A3
          .        .        .
          .        .        .
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444      .    CP41A3............
         .      V
         .      V
447      .    SR41A3
         .      .
         .      .
455      .      .-------> 3D303
453      .    CP41A3
         .      V
         .      V
458      .    R41A3
         .      .
         .      .
464      .      .      41A
         .      .       .
         .      .       .
470      .    CP41A............
         .      V
         .      V
473      .    SR41A
         .      .
         .      .
481      .      .-------> 4D303
479      .    CP41A
         .      V
         .      V
484      .    R41A
         .      .
         .      .
490      .      .      41-1
         .      .       .
         .      .       .
497      .    CP41-1............
         .      V
         .      V
500      .    SR41-1
         .      .
         .      .
508      .      .-------> 5D303
506      .    CP41-1
         .      V
         .      V
511      .    R41-1
         .      .
         .      .
517      .      .      41-2
         .      .       .
         .      .       .
524      .    CP41-2............
         .      V
         .      V
527      .    SR41-2
         .      .
         .      .
538      .      .-------> 6D303
536      .    CP41-2
         .      V
         .      V
543      .    R41-2
         .      .
         .      .
549      .      .      41
         .      .       .
         .      .       .
557      .    CP41............
         .      V
         .      V
560      .    SR41
         .      .
         .      .
571      .      .-------> 7D303
569      .    CP41
```

```
          .      V
          .      V
576       .     R41
          .      .
          .      .
582       .      .      43-1
          .      .       .
          .      .       .
588       .   CP43-1............
          .      V
          .      V
591       .   SR43-1
          .      .
          .      .
602       .      .-------> 1D303A
600       .   CP43-1
          .      V
          .      V
607       .   R43-1
          .      .
          .      .
613       .      .      43-2
          .      .       .
          .      .       .
619       .   CP43-2............
          .      V
          .      V
622       .   SR43-2
          .      .
          .      .
633       .      .-------> 2D303A
631       .   CP43-2
          .      V
          .      V
636       .   R43-2
          .      .
          .      .
642       .      .      43-3
          .      .       .
          .      .       .
648       .   CP43-3............
          .      V
          .      V
651       .   SR43-3
          .      .
          .      .
659       .      .-------> 3D303A
657       .   CP43-3
          .      V
          .      V
662       .   R43-3
          .      .
          .      .
668       .      .      43-4
          .      .       .
          .      .       .
674       .   CP43-4............
          .      V
          .      V
677       .   SR43-4
          .      .
          .      .
685       .      .-------> DI43-4
683       .   CP43-4
          .      V
          .      V
688       .   R43-4
          .      .
          .      .
694       .      .      43-5
          .      .       .
          .      .       .
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700      .    CP43-5............
         .      V
         .      V
703      .    SR43-5
         .      .
         .      .
714      .      .-------> DI43-5
712      .    CP43-5
         .      V
         .      V
719      .    R43-5
         .      .
         .      .
725      .      .      43-6
         .      .       .
         .      .       .
731      .    CP43-6............
         .      V
         .      V
734      .    SR43-6
         .      .
         .      .
745      .      .-------> DI43-6
743      .    CP43-6
         .      V
         .      V
750      .    R43-6
         .      .
         .      .
756      .      .      43-7
         .      .       .
         .      .       .
762      .    CP43-7............
         .      V
         .      V
765      .    SR43-7
         .      .
         .      .
773      .      .-------> DI43-7
771      .    CP43-7
         .      V
         .      V
776      .    R43-7
         .      .
         .      .
782      .      .      43-8
         .      .       .
         .      .       .
788      .    CP43-8............
         .      V
         .      V
791      .    SR43-8
         .      .
         .      .
802      .      .-------> DI43-8
800      .    CP43-8
         .      V
         .      V
807      .    R43-8
         .      .
         .      .
813      .      .      43
         .      .       .
         .      .       .
819      .    I1CP43............
         .      .
         .      .
822    CP43............
         .
         .
828      .-------> DI43
825    CP43
```

```
          V
          V
833      SR43
          V
          V
843      RD43
          .
          .
851       .        .<------- DI43-4
849       .     CP43-4
          .        V
          .        V
852       .     RD43-4
          .        .
          .        .
860       .        .        .<------- DI43-5
858       .        .     CP43-5
          .        .        V
          .        .        V
861       .        .     RD43-5
          .        .        .
          .        .        .
867       .     I1CWT4............
          .        .
          .        .
872       .        .        .<------- DI43-6
870       .        .     CP43-6
          .        .        V
          .        .        V
873       .        .     RD43-6
          .        .        .
          .        .        .
879       .     I2CWT4............
          .        .
          .        .
884       .        .        .<------- DI43-7
882       .        .     CP43-7
          .        .        V
          .        .        V
885       .        .     RD43-7
          .        .        .
          .        .        .
891       .     I3CWT4............
          .        .
          .        .
896       .        .        .<------- DI43-8
894       .        .     CP43-8
          .        .        V
          .        .        V
897       .        .     RD43-8
          .        .        .
          .        .        .
903       .     I4CWT4............
          .        .
          .        .
906       .        .        44
          .        .        .
          .        .        .
913       .     I5CWT4............
          .        .
          .        .
916      I6CWT4............
          .
          .
919       .      45-1
          .        .
          .        .
927       .        .        .<------- DI43
925       .        .     CP43
          .        .        .
          .        .        .
928       .     CP45-1............
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          .      V
          .      V
931       .   SR45-1
          .      .
          .      .
943       .      .-------> DI45-1
941       .   CP45-1
          .      V
          .      V
946       .   R45-1
          .      .
          .      .
952       .      .      45
          .      .      .
          .      .      .
960       .   CP45............
          .      V
          .      V
963       .   SR45
          .      .
          .      .
972       .      .------->   DI45
970       .   CP45
          .      .
          .      .
977       .      .-------> D45I10
975       .   45-I10
          .      V
          .      V
980       .   R45
          .      .
          .      .
986       .      .      46-1
          .      .      .
          .      .      .
993       .   CP46-1............
          .      V
          .      V
996       .   SR46-1
          .      .
          .      .
1005      .      .-------> DI46-1
1003      .   CP46-1
          .      .
          .      .
1010      .      .-------> D46-1A
1008      .   D46-10
          .      V
          .      V
1013      .   R46-1
          .      .
          .      .
1019      .      .      46
          .      .      .
          .      .      .
1027      .   I1CP46............
          .      .
          .      .
1030      .      .      28
          .      .      V
          .      .      V
1038      .      .      R28
          .      .      .
          .      .      .
1044      .      .      .      30
          .      .      .      .
          .      .      .      .
1051      .      .   I1CP30............
          .      .      .
          .      .      .
1054      .      .      .      29
          .      .      .      V
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          .     .     .     V
1061      .     .     .    SR29
          .     .     .     V
          .     .     .     V
1067      .     .     .    R29
          .     .     .     .
          .     .     .     .
1073      .     .   CP30............
          .     .     .
          .     .     .
1077      .     .     .-------> D-EAST
1076      .     .   DIV-30
          .     .     V
          .     .     V
1080      .     .    R30
          .     .     .
          .     .     .
1086      .     .     .     31
          .     .     .     .
          .     .     .     .
1094      .     .   CP31............
          .     .     .
          .     .     .
1101      .     .     .-------> D-31-0
1097      .     .   D-31
          .     .     V
          .     .     V
1104      .     .    R31
          .     .     .
          .     .     .
1110      .   CP46............
          .     V
          .     V
1113      .   SR46
          .     .
          .     .
1122      .     .-------> D-EAST
1120      .  D-I-10
          .     V
          .     V
1125      .    R46
          .     .
          .     .
1134      .     .-------> D-EAST
1131      .  D-46E
          .     V
          .     V
1137      .   R46A
          .     .
          .     .
1145      .     .     .<------- DI45-1
1143      .     .   CP45-1
          .     .     .
          .     .     .
1148      .     .     .     .<------- D45I10
1146      .     .     .   CP451A
          .     .     .     .
          .     .     .     .
1149      .     .   CP45I0............
          .     .     V
          .     .     V
1152      .     .   RD45-1
          .     .     .
          .     .     .
1160      .     .     .     .<------- DI45
1158      .     .     .   CP45
          .     .     .     V
          .     .     .     V
1161      .     .     .   RD45
          .     .     .     .
          .     .     .     .
1167      .     .   I7CWT4............
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          .       .       .
          .       .       .
1172      .       .       .        .<------- DI46-1
1170      .       .       .    CP46-1
          .       .       .       .
          .       .       .       .
1175      .       .       .       .        .<------- D46-1A
1173      .       .       .       .    DI46A1
          .       .       .       .       .
          .       .       .       .       .
1176      .       .       .    CP-46A............
          .       .       .       V
          .       .       .       V
1179      .       .       .    RD46-1
          .       .       .       .
          .       .       .       .
1185      .       .    I8CWT4............
          .       .       .
          .       .       .
1188      .       .       .       WT4
          .       .       .       .
          .       .       .       .
1195      .       .    I9CWT4............
          .       .       .
          .       .       .
1198      .    I10WT4............
          .       .
          .       .
1201    CPWT4............
          V
          V
1205    RS47
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************                    *****************************************
*                                         *                    *                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)      *                    *      U.S. ARMY CORPS OF ENGINEERS     *
*        SEPTEMBER 1990                   *                    *   HYDROLOGIC ENGINEERING CENTER       *
*         VERSION 4.0                     *                    *        609 SECOND STREET              *
*                                         *                    *    DAVIS, CALIFORNIA 95616            *
* RUN DATE  07/06/1993  TIME  16:34:42    *                    *          (916) 756-1104               *
*                                         *                    *                                       *
*****************************************                    *****************************************
```

HYDROLOGY RUN FOR WHITE TANKS ADMS --- WATERSHED CONTRIBUTING TO WT#4

1/2 PMF FLOWS BREAKOUT IS COMPUTED ALONG JACKRABBIT TRAIL

RAINFALL OF PMP 6-HOUR LOCAL STORM AS PER HYDRO-49 PROCEDURE

```
10 IO        OUTPUT CONTROL VARIABLES
               IPRNT        5  PRINT CONTROL
               IPLOT        0  PLOT CONTROL
               QSCAL        0.  HYDROGRAPH PLOT SCALE

  IT         HYDROGRAPH TIME DATA
               NMIN         5  MINUTES IN COMPUTATION INTERVAL
               IDATE     1  0  STARTING DATE
               ITIME     0000  STARTING TIME
                 NQ      100  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE     1  0  ENDING DATE
              NDTIME     0815  ENDING TIME
              ICENT      19  CENTURY MARK

            COMPUTATION INTERVAL    .08 HOURS
```

TOTAL TIME BASE 8.25 HOURS

ENGLISH UNITS
DRAINAGE AREA SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW CUBIC FEET PER SECOND
STORAGE VOLUME ACRE-FEET
SURFACE AREA ACRES
TEMPERATURE DEGREES FAHRENHEIT

JP MULTI-PLAN OPTION
NPLAN 1 NUMBER OF PLANS

JR MULTI-RATIO OPTION
RATIOS OF RUNOFF
.50 .55 .60 .65

*** ***

****
* *
1201 KK * CPWT4 *
* *
****

1203 KO OUTPUT CONTROL VARIABLES
IPRNT 1 PRINT CONTROL
IPLOT 2 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE

1204 HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

***

****

HYDROGRAPH AT STATION CPWT4
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .50

****

DA	MON HRMN	ORD	FLOW	*	DA	MON HRMN	ORD	FLOW	*	DA	MON HRMN	ORD	FLOW	*	DA	MON HRMN	ORD	FLOW
1	0000	1	0.	*	1	0205	26	125.	*	1	0410	51	9729.	*	1	0615	76	586.
1	0005	2	0.	*	1	0210	27	579.	*	1	0415	52	9101.	*	1	0620	77	536.
1	0010	3	0.	*	1	0215	28	1300.	*	1	0420	53	8372.	*	1	0625	78	491.
1	0015	4	0.	*	1	0220	29	2246.	*	1	0425	54	7470.	*	1	0630	79	456.
1	0020	5	0.	*	1	0225	30	3466.	*	1	0430	55	6472.	*	1	0635	80	429.
1	0025	6	0.	*	1	0230	31	4334.	*	1	0435	56	5278.	*	1	0640	81	402.
1	0030	7	0.	*	1	0235	32	5014.	*	1	0440	57	4474.	*	1	0645	82	376.
1	0035	8	0.	*	1	0240	33	5442.	*	1	0445	58	3894.	*	1	0650	83	350.
1	0040	9	0.	*	1	0245	34	6789.	*	1	0450	59	3456.	*	1	0655	84	325.
1	0045	10	1.	*	1	0250	35	8442.	*	1	0455	60	3073.	*	1	0700	85	302.
1	0050	11	1.	*	1	0255	36	9727.	*	1	0500	61	2739.	*	1	0705	86	282.
1	0055	12	1.	*	1	0300	37	11412.	*	1	0505	62	2434.	*	1	0710	87	264.
1	0100	13	1.	*	1	0305	38	13622.	*	1	0510	63	2176.	*	1	0715	88	248.
1	0105	14	1.	*	1	0310	39	15795.	*	1	0515	64	1947.	*	1	0720	89	234.
1	0110	15	1.	*	1	0315	40	17263.	*	1	0520	65	1716.	*	1	0725	90	220.
1	0115	16	1.	*	1	0320	41	17738.	*	1	0525	66	1519.	*	1	0730	91	208.
1	0120	17	1.	*	1	0325	42	17325.	*	1	0530	67	1385.	*	1	0735	92	197.

1	0125	18	1.	*	1	0330	43	16511.	*	1	0535	68	1260.	*	1	0740	93	186.
1	0130	19	1.	*	1	0335	44	15459.	*	1	0540	69	1145.	*	1	0745	94	176.
1	0135	20	1.	*	1	0340	45	14426.	*	1	0545	70	1041.	*	1	0750	95	167.
1	0140	21	1.	*	1	0345	46	13485.	*	1	0550	71	944.	*	1	0755	96	158.
1	0145	22	1.	*	1	0350	47	12683.	*	1	0555	72	855.	*	1	0800	97	150.
1	0150	23	2.	*	1	0355	48	11885.	*	1	0600	73	775.	*	1	0805	98	142.
1	0155	24	2.	*	1	0400	49	11088.	*	1	0605	74	703.	*	1	0810	99	135.
1	0200	25	2.	*	1	0405	50	10338.	*	1	0610	75	640.	*	1	0815	100	128.
			*					*				*						

****
****

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	8.25-HR
+ (CFS)	(HR)				
		(CFS)			
+ 17738.	3.33	4664.	3396.	3396.	3396.
	(INCHES)	2.142	2.144	2.144	2.144
	(AC-FT)	2313.	2315.	2315.	2315.

CUMULATIVE AREA = 20.25 SQ MI

1 STATION CPWT4

(O) OUTFLOW

```
        0.    2000.    4000.    6000.    8000.   10000.   12000.   14000.   16000.   18000.      0.      0.      0.
DAHRMN PER
 10000  1O---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
 10005  2O       .        .        .        .        .        .        .        .        .        .        .        .
 10010  3O       .        .        .        .        .        .        .        .        .        .        .        .
 10015  4O       .        .        .        .        .        .        .        .        .        .        .        .
 10020  5O       .        .        .        .        .        .        .        .        .        .        .        .
 10025  6O       .        .        .        .        .        .        .        .        .        .        .        .
 10030  7O       .        .        .        .        .        .        .        .        .        .        .        .
 10035  8O       .        .        .        .        .        .        .        .        .        .        .        .
 10040  9O       .        .        .        .        .        .        .        .        .        .        .        .
 10045  10O      .        .        .        .        .        .        .        .        .        .        .        .
 10050  11O.......................................................................
 10055  12O      .        .        .        .        .        .        .        .        .        .        .        .
 10100  13O      .        .        .        .        .        .        .        .        .        .        .        .
 10105  14O      .        .        .        .        .        .        .        .        .        .        .        .
 10110  15O      .        .        .        .        .        .        .        .        .        .        .        .
 10115  16O      .        .        .        .        .        .        .        .        .        .        .        .
 10120  17O      .        .        .        .        .        .        .        .        .        .        .        .
 10125  18O      .        .        .        .        .        .        .        .        .        .        .        .
 10130  19O      .        .        .        .        .        .        .        .        .        .        .        .
 10135  20O      .        .        .        .        .        .        .        .        .        .        .        .
 10140  21O.......................................................................
 10145  22O      .        .        .        .        .        .        .        .        .        .        .        .
 10150  23O      .        .        .        .        .        .        .        .        .        .        .        .
 10155  24O      .        .        .        .        .        .        .        .        .        .        .        .
 10200  25O      .        .        .        .        .        .        .        .        .        .        .        .
 10205  26.O     .        .        .        .        .        .        .        .        .        .        .        .
 10210  27. O    .        .        .        .        .        .        .        .        .        .        .        .
 10215  28.   O  .        .        .        .        .        .        .        .        .        .        .        .
 10220  29.     .O       .        .        .        .        .        .        .        .        .        .        .
 10225  30.     .   O    .        .        .        .        .        .        .        .        .        .        .
 10230  31.............O.......................................................
 10235  32.     .     .  O       .        .        .        .        .        .        .        .        .        .
 10240  33.     .     .   O      .        .        .        .        .        .        .        .        .        .
 10245  34.     .     .     .    O        .        .        .        .        .        .        .        .        .
 10250  35.     .     .     .      .      O        .        .        .        .        .        .        .        .
 10255  36.     .     .     .      .        .      O.       .        .        .        .        .        .        .
 10300  37.     .     .     .      .        .        .      O        .        .        .        .        .        .
 10305  38.     .     .     .      .        .        .        .      O.       .        .        .        .        .
 10310  39.     .     .     .      .        .        .        .        .      O.       .        .        .        .
 10315  40.     .     .     .      .        .        .        .        .        .   O    .        .        .        .
 10320  41.......................................................O................
 10325  42.     .     .     .      .        .        .        .        .        .     O  .        .        .        .
 10330  43.     .     .     .      .        .        .        .        .        .      O .        .        .        .
 10335  44.     .     .     .      .        .        .        .        .      O .        .        .        .        .
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10340 45.      .     .     .     .     .     .     .O    .     .     .     .     .
10345 46.      .     .     .     .     .     .    O .    .     .     .     .     .
10350 47.      .     .     .     .     .     . O   .     .     .     .     .     .
10355 48.      .     .     .     .     .    O.     .     .     .     .     .     .
10400 49.      .     .     .     .     . O   .     .     .     .     .     .     .
10405 50.      .     .     .     .     .O    .     .     .     .     .     .     .
10410 51.......................O.......................................
10415 52.      .     .     .     .    O .    .     .     .     .     .     .     .
10420 53.      .     .     .    .O    .     .     .     .     .     .     .     .
10425 54.      .     .     .   O .    .     .     .     .     .     .     .     .
10430 55.      .     .    .O    .     .     .     .     .     .     .     .     .
10435 56.      .     .  O .     .     .     .     .     .     .     .     .     .
10440 57.      .    .O    .     .     .     .     .     .     .     .     .     .
10445 58.      .   O.     .     .     .     .     .     .     .     .     .     .
10450 59.      .  O .     .     .     .     .     .     .     .     .     .     .
10455 60.      . O  .     .     .     .     .     .     .     .     .     .     .
10500 61......O.......................................................
10505 62.     .O     .     .     .     .     .     .     .     .     .     .     .
10510 63.     .O     .     .     .     .     .     .     .     .     .     .     .
10515 64.     O      .     .     .     .     .     .     .     .     .     .     .
10520 65.    O.      .     .     .     .     .     .     .     .     .     .     .
10525 66.   O .      .     .     .     .     .     .     .     .     .     .     .
10530 67.  O  .      .     .     .     .     .     .     .     .     .     .     .
10535 68. O   .      .     .     .     .     .     .     .     .     .     .     .
10540 69. O   .      .     .     .     .     .     .     .     .     .     .     .
10545 70. O   .      .     .     .     .     .     .     .     .     .     .     .
10550 71..O.......................................................
10555 72. O   .      .     .     .     .     .     .     .     .     .     .     .
10600 73. O   .      .     .     .     .     .     .     .     .     .     .     .
10605 74. O   .      .     .     .     .     .     .     .     .     .     .     .
10610 75. O   .      .     .     .     .     .     .     .     .     .     .     .
10615 76. O   .      .     .     .     .     .     .     .     .     .     .     .
10620 77. O   .      .     .     .     .     .     .     .     .     .     .     .
10625 78. O   .      .     .     .     .     .     .     .     .     .     .     .
10630 79. O   .      .     .     .     .     .     .     .     .     .     .     .
10635 80. O   .      .     .     .     .     .     .     .     .     .     .     .
10640 81. O.......................................................
10645 82. O   .      .     .     .     .     .     .     .     .     .     .     .
10650 83. O   .      .     .     .     .     .     .     .     .     .     .     .
10655 84. O   .      .     .     .     .     .     .     .     .     .     .     .
10700 85. O   .      .     .     .     .     .     .     .     .     .     .     .
10705 86.O    .      .     .     .     .     .     .     .     .     .     .     .
10710 87.O    .      .     .     .     .     .     .     .     .     .     .     .
10715 88.O    .      .     .     .     .     .     .     .     .     .     .     .
10720 89.O    .      .     .     .     .     .     .     .     .     .     .     .
10725 90.O    .      .     .     .     .     .     .     .     .     .     .     .
10730 91.O.......................................................
10735 92.O    .      .     .     .     .     .     .     .     .     .     .     .
10740 93.O    .      .     .     .     .     .     .     .     .     .     .     .
10745 94.O    .      .     .     .     .     .     .     .     .     .     .     .
10750 95.O    .      .     .     .     .     .     .     .     .     .     .     .
10755 96.O    .      .     .     .     .     .     .     .     .     .     .     .
10800 97.O    .      .     .     .     .     .     .     .     .     .     .     .
10805 98.O    .      .     .     .     .     .     .     .     .     .     .     .
10810 99.O    .      .     .     .     .     .     .     .     .     .     .     .
10815 100.O--------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
1
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HYDROGRAPH AT STATION CPWT4
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .55

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                    *                    *                    *
  DA MON HRMN  ORD     FLOW  *  DA MON HRMN  ORD     FLOW  *  DA MON HRMN  ORD     FLOW  *  DA MON
HRMN  ORD     FLOW
```

			*					*					*						
1	0000	1	0.	*	1	0205	26	137.	*	1	0410	51	10103.	*	1	0615	76	654.
1	0005	2	0.	*	1	0210	27	637.	*	1	0415	52	9490.	*	1	0620	77	597.
1	0010	3	0.	*	1	0215	28	1430.	*	1	0420	53	8827.	*	1	0625	78	545.
1	0015	4	0.	*	1	0220	29	2471.	*	1	0425	54	8051.	*	1	0630	79	500.
1	0020	5	0.	*	1	0225	30	3817.	*	1	0430	55	7125.	*	1	0635	80	466.
1	0025	6	0.	*	1	0230	31	4809.	*	1	0435	56	6076.	*	1	0640	81	437.
1	0030	7	0.	*	1	0235	32	5584.	*	1	0440	57	5049.	*	1	0645	82	408.
1	0035	8	0.	*	1	0240	33	6090.	*	1	0445	58	4363.	*	1	0650	83	380.
1	0040	9	0.	*	1	0245	34	7450.	*	1	0450	59	3835.	*	1	0655	84	352.
1	0045	10	1.	*	1	0250	35	9099.	*	1	0455	60	3413.	*	1	0700	85	326.
1	0050	11	1.	*	1	0255	36	10519.	*	1	0500	61	3046.	*	1	0705	86	303.
1	0055	12	1.	*	1	0300	37	12735.	*	1	0505	62	2720.	*	1	0710	87	283.
1	0100	13	1.	*	1	0305	38	15630.	*	1	0510	63	2419.	*	1	0715	88	265.
1	0105	14	1.	*	1	0310	39	17968.	*	1	0515	64	2165.	*	1	0720	89	248.
1	0110	15	1.	*	1	0315	40	19270.	*	1	0520	65	1929.	*	1	0725	90	234.
1	0115	16	1.	*	1	0320	41	19318.	*	1	0525	66	1699.	*	1	0730	91	220.
1	0120	17	1.	*	1	0325	42	18590.	*	1	0530	67	1526.	*	1	0735	92	208.
1	0125	18	1.	*	1	0330	43	17541.	*	1	0535	68	1393.	*	1	0740	93	196.
1	0130	19	1.	*	1	0335	44	16340.	*	1	0540	69	1269.	*	1	0745	94	186.
1	0135	20	1.	*	1	0340	45	15158.	*	1	0545	70	1155.	*	1	0750	95	176.
1	0140	21	1.	*	1	0345	46	14089.	*	1	0550	71	1050.	*	1	0755	96	166.
1	0145	22	2.	*	1	0350	47	13191.	*	1	0555	72	954.	*	1	0800	97	157.
1	0150	23	2.	*	1	0355	48	12374.	*	1	0600	73	866.	*	1	0805	98	149.
1	0155	24	2.	*	1	0400	49	11560.	*	1	0605	74	787.	*	1	0810	99	142.
1	0200	25	2.	*	1	0405	50	10778.	*	1	0610	75	715.	*	1	0815	100	134.
			*					*					*					

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PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	8.25-HR
+ (CFS)	(HR)				
	(CFS)				
+ 19318.	3.33	5054.	3680.	3680.	3680.
	(INCHES)	2.321	2.323	2.323	2.323
	(AC-FT)	2506.	2509.	2509.	2509.

CUMULATIVE AREA = 20.25 SQ MI

1 STATION CPWT4

(O) OUTFLOW

```
      0.    2000.    4000.    6000.    8000.   10000.   12000.   14000.   16000.   18000.   20000.       0.       0.
DAHRMN PER
 10000  1O---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
 10005  2O         .         .         .         .         .         .         .         .         .         .         .
 10010  3O         .         .         .         .         .         .         .         .         .         .         .
 10015  4O         .         .         .         .         .         .         .         .         .         .         .
 10020  5O         .         .         .         .         .         .         .         .         .         .         .
 10025  6O         .         .         .         .         .         .         .         .         .         .         .
 10030  7O         .         .         .         .         .         .         .         .         .         .         .
 10035  8O         .         .         .         .         .         .         .         .         .         .         .
 10040  9O         .         .         .         .         .         .         .         .         .         .         .
 10045 10O         .         .         .         .         .         .         .         .         .         .         .
 10050 11O .......................................................................
 10055 12O         .         .         .         .         .         .         .         .         .         .         .
 10100 13O         .         .         .         .         .         .         .         .         .         .         .
 10105 14O         .         .         .         .         .         .         .         .         .         .         .
 10110 15O         .         .         .         .         .         .         .         .         .         .         .
 10115 16O         .         .         .         .         .         .         .         .         .         .         .
 10120 17O         .         .         .         .         .         .         .         .         .         .         .
 10125 18O         .         .         .         .         .         .         .         .         .         .         .
 10130 19O         .         .         .         .         .         .         .         .         .         .         .
 10135 20O         .         .         .         .         .         .         .         .         .         .         .
 10140 21O .......................................................................
 10145 22O         .         .         .         .         .         .         .         .         .         .         .
 10150 23O         .         .         .         .         .         .         .         .         .         .         .
 10155 24O         .         .         .         .         .         .         .         .         .         .         .
 10200 25O         .         .         .         .         .         .         .         .         .         .         .
 10205 26.O        .         .         .         .         .         .         .         .         .         .         .
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10210 27. O
10215 28.  O
10220 29.   O
10225 30.    O
10230 31.     O
10235 32.      O
10240 33.      O
10245 34.       O
10250 35.        O
10255 36.         O
10300 37.          O
10305 38.           O
10310 39.            O
10315 40.             O
10320 41.              O
10325 42.             O
10330 43.            O
10335 44.           O
10340 45.          O
10345 46.         O
10350 47.        O
10355 48.       O
10400 49.      O
10405 50.     O
10410 51.    O
10415 52.   O
10420 53.  O
10425 54. O
10430 55. O
10435 56.  O
10440 57.   O
10445 58.    O
10450 59.     O
10455 60.      O
10500 61.       O
10505 62.      O
10510 63.     O
10515 64.    O
10520 65.   O
10525 66.  O
10530 67.  O
10535 68.  O
10540 69.  O
10545 70.  O
10550 71.  O
10555 72.  O
10600 73.  O
10605 74.  O
10610 75.  O
10615 76. O
10620 77. O
10625 78. O
10630 79. O
10635 80. O
10640 81. O
10645 82. O
10650 83. O
10655 84. O
10700 85. O
10705 86. O
10710 87.O
10715 88.O
10720 89.O
10725 90.O
10730 91.O
10735 92.O
10740 93.O
10745 94.O
10750 95.O
10755 96.O
10800 97.O
10805 98.O
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 10810 99.O     .         .         .         .         .         .         .         .         .         .         .         .
 10815 100.O---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
1
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HYDROGRAPH AT STATION CPWT4
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .60

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DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW
1 0000	1	0.	*	1 0205	26	149.	*	1 0410	51	10473.	*	1 0615	76	701.				
1 0005	2	0.	*	1 0210	27	695.	*	1 0415	52	9870.	*	1 0620	77	643.				
1 0010	3	0.	*	1 0215	28	1560.	*	1 0420	53	9261.	*	1 0625	78	590.				
1 0015	4	0.	*	1 0220	29	2697.	*	1 0425	54	8580.	*	1 0630	79	541.				
1 0020	5	0.	*	1 0225	30	4176.	*	1 0430	55	7807.	*	1 0635	80	500.				
1 0025	6	0.	*	1 0230	31	5286.	*	1 0435	56	6938.	*	1 0640	81	472.				
1 0030	7	0.	*	1 0235	32	6169.	*	1 0440	57	5863.	*	1 0645	82	443.				
1 0035	8	0.	*	1 0240	33	6814.	*	1 0445	58	5045.	*	1 0650	83	415.				
1 0040	9	1.	*	1 0245	34	8138.	*	1 0450	59	4429.	*	1 0655	84	387.				
1 0045	10	1.	*	1 0250	35	9747.	*	1 0455	60	3888.	*	1 0700	85	360.				
1 0050	11	1.	*	1 0255	36	11557.	*	1 0500	61	3448.	*	1 0705	86	335.				
1 0055	12	1.	*	1 0300	37	14649.	*	1 0505	62	3057.	*	1 0710	87	312.				
1 0100	13	1.	*	1 0305	38	18123.	*	1 0510	63	2690.	*	1 0715	88	291.				
1 0105	14	1.	*	1 0310	39	20448.	*	1 0515	64	2358.	*	1 0720	89	272.				
1 0110	15	1.	*	1 0315	40	21333.	*	1 0520	65	2086.	*	1 0725	90	255.				
1 0115	16	1.	*	1 0320	41	20858.	*	1 0525	66	1830.	*	1 0730	91	239.				
1 0120	17	1.	*	1 0325	42	19820.	*	1 0530	67	1615.	*	1 0735	92	225.				
1 0125	18	1.	*	1 0330	43	18498.	*	1 0535	68	1472.	*	1 0740	93	211.				
1 0130	19	1.	*	1 0335	44	17177.	*	1 0540	69	1344.	*	1 0745	94	199.				
1 0135	20	1.	*	1 0340	45	15854.	*	1 0545	70	1226.	*	1 0750	95	187.				
1 0140	21	2.	*	1 0345	46	14682.	*	1 0550	71	1117.	*	1 0755	96	177.				
1 0145	22	2.	*	1 0350	47	13661.	*	1 0555	72	1016.	*	1 0800	97	167.				
1 0150	23	2.	*	1 0355	48	12821.	*	1 0600	73	923.	*	1 0805	98	157.				
1 0155	24	2.	*	1 0400	49	12005.	*	1 0605	74	841.	*	1 0810	99	149.				
1 0200	25	2.	*	1 0405	50	11209.	*	1 0610	75	766.	*	1 0815	100	141.				

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PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	8.25-HR
+ 21333.	3.25	5472.	3984.	3984.	3984.
	(INCHES)	2.512	2.515	2.515	2.515
	(AC-FT)	2713.	2716.	2716.	2716.

CUMULATIVE AREA = 20.25 SQ MI

1 STATION CPWT4

```
                    (O) OUTFLOW
        0.    2000.    4000.    6000.    8000.   10000.   12000.   14000.   16000.   18000.   20000.   22000.       0.
DAHRMN PER
 10000  1O---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
 10005  2O         .         .         .         .         .         .         .         .         .         .         .
 10010  3O         .         .         .         .         .         .         .         .         .         .         .
 10015  4O         .         .         .         .         .         .         .         .         .         .         .
 10020  5O         .         .         .         .         .         .         .         .         .         .         .
 10025  6O         .         .         .         .         .         .         .         .         .         .         .
 10030  7O         .         .         .         .         .         .         .         .         .         .         .
 10035  8O         .         .         .         .         .         .         .         .         .         .         .
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10040  9O
10045 10O
10050 11O
10055 12O
10100 13O
10105 14O
10110 15O
10115 16O
10120 17O
10125 18O
10130 19O
10135 20O
10140 21O
10145 22O
10150 23O
10155 24O
10200 25O
10205 26.O
10210 27. O
10215 28.    O
10220 29.     O
10225 30.      O
10230 31.       O
10235 32.        O
10240 33.         O
10245 34.          O
10250 35.           O
10255 36.            O
10300 37.             O
10305 38.              O
10310 39.               O
10315 40.                O
10320 41.                 O
10325 42.                  O
10330 43.                   O
10335 44.                    O
10340 45.                     O
10345 46.                      O
10350 47.                       O
10355 48.                        O
10400 49.                         O
10405 50.                          O
10410 51.                           O
10415 52.                            O
10420 53.                             O
10425 54.                              O
10430 55.                               O
10435 56.                                O
10440 57.                                 O
10445 58.                                  O
10450 59.                                   O
10455 60.                                    O
10500 61.                                     O
10505 62.                                      O
10510 63.                                       O
10515 64.                                        O
10520 65.                                         O
10525 66.                                          O
10530 67.                                           O
10535 68.                                            O
10540 69.                                             O
10545 70.                                              O
10550 71.                                               O
10555 72.                                                O
10600 73.                                                 O
10605 74.                                                  O
10610 75.                                                   O
10615 76.                                                    O
10620 77.                                                     O
10625 78.                                                      O
10630 79.                                                       O
10635 80.                                                        O
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10640 81. O .....................................................
10645 82. O .  .  .  .  .  .  .  .  .  .  .  .
10650 83. O .  .  .  .  .  .  .  .  .  .  .  .
10655 84. O .  .  .  .  .  .  .  .  .  .  .  .
10700 85. O .  .  .  .  .  .  .  .  .  .  .  .
10705 86. O .  .  .  .  .  .  .  .  .  .  .  .
10710 87. O .  .  .  .  .  .  .  .  .  .  .  .
10715 88.O  .  .  .  .  .  .  .  .  .  .  .  .
10720 89.O  .  .  .  .  .  .  .  .  .  .  .  .
10725 90.O  .  .  .  .  .  .  .  .  .  .  .  .
10730 91.O. .....................................................
10735 92.O  .  .  .  .  .  .  .  .  .  .  .  .
10740 93.O  .  .  .  .  .  .  .  .  .  .  .  .
10745 94.O  .  .  .  .  .  .  .  .  .  .  .  .
10750 95.O  .  .  .  .  .  .  .  .  .  .  .  .
10755 96.O  .  .  .  .  .  .  .  .  .  .  .  .
10800 97.O  .  .  .  .  .  .  .  .  .  .  .  .
10805 98.O  .  .  .  .  .  .  .  .  .  .  .  .
10810 99.O  .  .  .  .  .  .  .  .  .  .  .  .
10815 100.O--------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
1
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HYDROGRAPH AT STATION CPWT4
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .65

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DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW
1 0000	1	0.	*	1 0205	26	162.	*	1 0410	51	10879.	*	1 0615	76	743.				
1 0005	2	0.	*	1 0210	27	753.	*	1 0415	52	10261.	*	1 0620	77	680.				
1 0010	3	0.	*	1 0215	28	1690.	*	1 0420	53	9682.	*	1 0625	78	624.				
1 0015	4	0.	*	1 0220	29	2923.	*	1 0425	54	9071.	*	1 0630	79	573.				
1 0020	5	0.	*	1 0225	30	4541.	*	1 0430	55	8435.	*	1 0635	80	528.				
1 0025	6	0.	*	1 0230	31	5764.	*	1 0435	56	7694.	*	1 0640	81	493.				
1 0030	7	0.	*	1 0235	32	6760.	*	1 0440	57	6885.	*	1 0645	82	465.				
1 0035	8	0.	*	1 0240	33	7502.	*	1 0445	58	5796.	*	1 0650	83	437.				
1 0040	9	1.	*	1 0245	34	8827.	*	1 0450	59	5035.	*	1 0655	84	410.				
1 0045	10	1.	*	1 0250	35	10434.	*	1 0455	60	4406.	*	1 0700	85	385.				
1 0050	11	1.	*	1 0255	36	12744.	*	1 0500	61	3847.	*	1 0705	86	361.				
1 0055	12	1.	*	1 0300	37	16893.	*	1 0505	62	3379.	*	1 0710	87	340.				
1 0100	13	1.	*	1 0305	38	20937.	*	1 0510	63	2970.	*	1 0715	88	320.				
1 0105	14	1.	*	1 0310	39	23329.	*	1 0515	64	2599.	*	1 0720	89	303.				
1 0110	15	1.	*	1 0315	40	23556.	*	1 0520	65	2268.	*	1 0725	90	288.				
1 0115	16	1.	*	1 0320	41	22473.	*	1 0525	66	1992.	*	1 0730	91	276.				
1 0120	17	1.	*	1 0325	42	20943.	*	1 0530	67	1743.	*	1 0735	92	266.				
1 0125	18	1.	*	1 0330	43	19412.	*	1 0535	68	1560.	*	1 0740	93	257.				
1 0130	19	1.	*	1 0335	44	17935.	*	1 0540	69	1428.	*	1 0745	94	250.				
1 0135	20	2.	*	1 0340	45	16522.	*	1 0545	70	1305.	*	1 0750	95	243.				
1 0140	21	2.	*	1 0345	46	15262.	*	1 0550	71	1190.	*	1 0755	96	238.				
1 0145	22	2.	*	1 0350	47	14152.	*	1 0555	72	1082.	*	1 0800	97	233.				
1 0150	23	2.	*	1 0355	48	13255.	*	1 0600	73	984.	*	1 0805	98	228.				
1 0155	24	2.	*	1 0400	49	12436.	*	1 0605	74	895.	*	1 0810	99	224.				
1 0200	25	2.	*	1 0405	50	11632.	*	1 0610	75	814.	*	1 0815	100	220.				

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PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR (CFS)	24-HR	72-HR	8.25-HR
+ 23556.	3.25	5914.	4306.	4306.	4306.

(INCHES)	2.715	2.719	2.719	2.719
(AC-FT)	2932.	2936.	2936.	2936.

CUMULATIVE AREA = 20.25 SQ MI

1 STATION CPWT4

(O) OUTFLOW

```
        0.   4000.   8000.  12000.  16000.  20000.  24000.     0.     0.     0.     0.     0.     0.
DAHRMN PER
 10000  1O---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
 10005  2O        .        .        .        .        .        .        .        .        .        .        .
 10010  3O        .        .        .        .        .        .        .        .        .        .        .
 10015  4O        .        .        .        .        .        .        .        .        .        .        .
 10020  5O        .        .        .        .        .        .        .        .        .        .        .
 10025  6O        .        .        .        .        .        .        .        .        .        .        .
 10030  7O        .        .        .        .        .        .        .        .        .        .        .
 10035  8O        .        .        .        .        .        .        .        .        .        .        .
 10040  9O        .        .        .        .        .        .        .        .        .        .        .
 10045 10O        .        .        .        .        .        .        .        .        .        .        .
 10050 11O.........................................................................
 10055 12O        .        .        .        .        .        .        .        .        .        .        .
 10100 13O        .        .        .        .        .        .        .        .        .        .        .
 10105 14O        .        .        .        .        .        .        .        .        .        .        .
 10110 15O        .        .        .        .        .        .        .        .        .        .        .
 10115 16O        .        .        .        .        .        .        .        .        .        .        .
 10120 17O        .        .        .        .        .        .        .        .        .        .        .
 10125 18O        .        .        .        .        .        .        .        .        .        .        .
 10130 19O        .        .        .        .        .        .        .        .        .        .        .
 10135 20O        .        .        .        .        .        .        .        .        .        .        .
 10140 21O.........................................................................
 10145 22O        .        .        .        .        .        .        .        .        .        .        .
 10150 23O        .        .        .        .        .        .        .        .        .        .        .
 10155 24O        .        .        .        .        .        .        .        .        .        .        .
 10200 25O        .        .        .        .        .        .        .        .        .        .        .
 10205 26O        .        .        .        .        .        .        .        .        .        .        .
 10210 27. O      .        .        .        .        .        .        .        .        .        .        .
 10215 28.   O    .        .        .        .        .        .        .        .        .        .        .
 10220 29.     O .        .        .        .        .        .        .        .        .        .        .
 10225 30.       .O        .        .        .        .        .        .        .        .        .        .
 10230 31.......O.........................................................................
 10235 32.        .     O .        .        .        .        .        .        .        .        .        .
 10240 33.        .     O.        .        .        .        .        .        .        .        .        .
 10245 34.        .      .O        .        .        .        .        .        .        .        .        .
 10250 35.        .       .  O .        .        .        .        .        .        .        .        .
 10255 36.        .       .     .O        .        .        .        .        .        .        .        .
 10300 37.        .       .     .      .O        .        .        .        .        .        .        .
 10305 38.        .       .     .        .      .O        .        .        .        .        .        .
 10310 39.        .       .     .        .        .     O .        .        .        .        .        .
 10315 40.        .       .     .        .        .     O.        .        .        .        .        .
 10320 41.........................O.........................................................
 10325 42.        .       .     .        .      .O        .        .        .        .        .        .
 10330 43.        .       .     .        .     O.        .        .        .        .        .        .
 10335 44.        .       .     .        .   O .        .        .        .        .        .        .
 10340 45.        .       .     .       .O        .        .        .        .        .        .        .
 10345 46.        .       .     .      O .        .        .        .        .        .        .        .
 10350 47.        .       .     .    O .        .        .        .        .        .        .        .
 10355 48.        .       .     .   O .        .        .        .        .        .        .        .
 10400 49.        .       .     .  O .        .        .        .        .        .        .        .
 10405 50.        .       .     . O.        .        .        .        .        .        .        .
 10410 51.............O.........................................................................
 10415 52.        .       .  O .        .        .        .        .        .        .        .        .
 10420 53.        .       . O .        .        .        .        .        .        .        .        .
 10425 54.        .       . O .        .        .        .        .        .        .        .        .
 10430 55.        .       .O        .        .        .        .        .        .        .        .
 10435 56.        .     O.        .        .        .        .        .        .        .        .        .
 10440 57.        .    O .        .        .        .        .        .        .        .        .        .
 10445 58.        . O        .        .        .        .        .        .        .        .        .        .
 10450 59.        . O        .        .        .        .        .        .        .        .        .        .
 10455 60.        .O        .        .        .        .        .        .        .        .        .        .
 10500 61.....O.........................................................................
 10505 62.      O .        .        .        .        .        .        .        .        .        .        .
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 10510  63.      O .        .        .        .        .        .        .        .        .        .        .        .
 10515  64.     O  .        .        .        .        .        .        .        .        .        .        .        .
 10520  65.     O  .        .        .        .        .        .        .        .        .        .        .        .
 10525  66.    O   .        .        .        .        .        .        .        .        .        .        .        .
 10530  67.   O    .        .        .        .        .        .        .        .        .        .        .        .
 10535  68.   O    .        .        .        .        .        .        .        .        .        .        .        .
 10540  69.   O    .        .        .        .        .        .        .        .        .        .        .        .
 10545  70.  O     .        .        .        .        .        .        .        .        .        .        .        .
 10550  71. .O......................................................................................................
 10555  72.  O     .        .        .        .        .        .        .        .        .        .        .        .
 10600  73. O      .        .        .        .        .        .        .        .        .        .        .        .
 10605  74. O      .        .        .        .        .        .        .        .        .        .        .        .
 10610  75. O      .        .        .        .        .        .        .        .        .        .        .        .
 10615  76. O      .        .        .        .        .        .        .        .        .        .        .        .
 10620  77. O      .        .        .        .        .        .        .        .        .        .        .        .
 10625  78. O      .        .        .        .        .        .        .        .        .        .        .        .
 10630  79.O       .        .        .        .        .        .        .        .        .        .        .        .
 10635  80.O       .        .        .        .        .        .        .        .        .        .        .        .
 10640  81.O.......................................................................................................
 10645  82.O       .        .        .        .        .        .        .        .        .        .        .        .
 10650  83.O       .        .        .        .        .        .        .        .        .        .        .        .
 10655  84.O       .        .        .        .        .        .        .        .        .        .        .        .
 10700  85.O       .        .        .        .        .        .        .        .        .        .        .        .
 10705  86.O       .        .        .        .        .        .        .        .        .        .        .        .
 10710  87.O       .        .        .        .        .        .        .        .        .        .        .        .
 10715  88.O       .        .        .        .        .        .        .        .        .        .        .        .
 10720  89.O       .        .        .        .        .        .        .        .        .        .        .        .
 10725  90.O       .        .        .        .        .        .        .        .        .        .        .        .
 10730  91.O.......................................................................................................
 10735  92.O       .        .        .        .        .        .        .        .        .        .        .        .
 10740  93.O       .        .        .        .        .        .        .        .        .        .        .        .
 10745  94.O       .        .        .        .        .        .        .        .        .        .        .        .
 10750  95.O       .        .        .        .        .        .        .        .        .        .        .        .
 10755  96.O       .        .        .        .        .        .        .        .        .        .        .        .
 10800  97.O       .        .        .        .        .        .        .        .        .        .        .        .
 10805  98.O       .        .        .        .        .        .        .        .        .        .        .        .
 10810  99.O       .        .        .        .        .        .        .        .        .        .        .        .
 10815 100.O--------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
1


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         *             *
1205 KK  *    RS47     *     WHITE TANKS No. 4 FLOOD RETARDING STRUCTURE
         *             *
         ***************

1206 KO        OUTPUT CONTROL VARIABLES
                 IPRNT          1  PRINT CONTROL
                 IPLOT          2  PLOT CONTROL
                 QSCAL          0.  HYDROGRAPH PLOT SCALE
                        STORAGE ROUTE THROUGH WHITE TANKS STRUCTURE NO. 4.
                        THE STORAGE OUTFLOW TABLE IS DEVELOPED FROM HEC-2 ANALYSIS OF SPILLWAY
                        200 AF OF STORAGE ARE ASSUMED NON-EFFECTIVE DUE TO PRIOR STORAGE
                        AND/OR SILTATION IN THE BORROW PIT AREA

          HYDROGRAPH ROUTING DATA

1211 RS        STORAGE ROUTING
                 NSTPS          1  NUMBER OF SUBREACHES
                 ITYP        STOR  TYPE OF INITIAL CONDITION
                 RSVRIC    200.00  INITIAL CONDITION
                 X            .00  WORKING R AND D COEFFICIENT

1212 SV        STORAGE          .0       2.8      51.0     148.0     277.0     543.0    1269.0    1396.0    1494.0    1564.0
                            1666.0    1761.0    1848.0    1924.0    1995.0    2063.0    2200.0    2266.0    2414.0    2481.0
```

```
1214 SQ        DISCHARGE      0.      0.      0.      0.      0.      0.      0.     93.    500.   1000.
                           2000.   3000.   4000.   5000.   6000.   7000.   9000.  10000.  12000.  13000.

1216 SE        ELEVATION    997.00  1000.00  1010.00  1020.00  1030.00  1040.00  1049.00  1050.00  1050.67  1051.14
                          1051.80  1052.40  1052.89  1053.32  1053.72  1054.09  1054.77  1055.08  1055.67  1055.94

                                                  ***

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                                  HYDROGRAPH AT STATION     RS47
                                    PLAN 1,   RATIO =  .50

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***********
                                  *                                  *
 DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE * DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE * DA MON HRMN
ORD  OUTFLOW  STORAGE   STAGE
                                  *                                  *
  1   0000  1     0.   200.0  1024.0 * 1   0250  35     0.   430.9  1035.8 * 1   0540  69   3241.  1782.0  1052.5
  1   0005  2     0.   200.0  1024.0 * 1   0255  36     0.   493.5  1038.1 * 1   0545  70   3078.  1767.8  1052.4
  1   0010  3     0.   200.0  1024.0 * 1   0300  37     0.   566.3  1040.3 * 1   0550  71   2925.  1753.9  1052.4
  1   0015  4     0.   200.0  1024.0 * 1   0305  38     0.   652.5  1041.4 * 1   0555  72   2784.  1740.5  1052.3
  1   0020  5     0.   200.0  1024.0 * 1   0310  39     0.   753.8  1042.6 * 1   0600  73   2646.  1727.4  1052.2
  1   0025  6     0.   200.0  1024.0 * 1   0315  40     0.   867.6  1044.0 * 1   0605  74   2513.  1714.7  1052.1
  1   0030  7     0.   200.0  1024.0 * 1   0320  41     0.   988.2  1045.5 * 1   0610  75   2384.  1702.5  1052.0
  1   0035  8     0.   200.0  1024.0 * 1   0325  42     0.  1108.9  1047.0 * 1   0615  76   2260.  1690.7  1052.0
  1   0040  9     0.   200.0  1024.0 * 1   0330  43     0.  1225.4  1048.5 * 1   0620  77   2141.  1679.4  1051.9
  1   0045  10    0.   200.0  1024.0 * 1   0335  44    48.  1335.3  1049.5 * 1   0625  78   2027.  1668.6  1051.8
  1   0050  11    0.   200.0  1024.0 * 1   0340  45   264.  1437.2  1050.3 * 1   0630  79   1924.  1658.2  1051.7
  1   0055  12    0.   200.0  1024.0 * 1   0345  46   756.  1529.8  1050.9 * 1   0635  80   1827.  1648.4  1051.7
  1   0100  13    0.   200.0  1024.0 * 1   0350  47  1473.  1612.2  1051.5 * 1   0640  81   1735.  1639.0  1051.6
  1   0105  14    0.   200.0  1024.0 * 1   0355  48  2192.  1684.2  1051.9 * 1   0645  82   1647.  1630.0  1051.6
  1   0110  15    0.   200.0  1024.0 * 1   0400  49  2842.  1746.0  1052.3 * 1   0650  83   1563.  1621.4  1051.5
  1   0115  16    0.   200.0  1024.0 * 1   0405  50  3427.  1798.2  1052.6 * 1   0655  84   1483.  1613.3  1051.5
  1   0120  17    0.   200.0  1024.0 * 1   0410  51  3930.  1841.9  1052.9 * 1   0700  85   1407.  1605.5  1051.4
  1   0125  18    0.   200.0  1024.0 * 1   0415  52  4396.  1878.1  1053.1 * 1   0705  86   1334.  1598.1  1051.4
  1   0130  19    0.   200.1  1024.0 * 1   0420  53  4772.  1906.7  1053.2 * 1   0710  87   1265.  1591.0  1051.3
  1   0135  20    0.   200.1  1024.0 * 1   0425  54  5048.  1927.4  1053.3 * 1   0715  88   1199.  1584.3  1051.3
  1   0140  21    0.   200.1  1024.0 * 1   0430  55  5226.  1940.1  1053.4 * 1   0720  89   1136.  1577.9  1051.2
  1   0145  22    0.   200.1  1024.0 * 1   0435  56  5286.  1944.3  1053.4 * 1   0725  90   1077.  1571.8  1051.2
  1   0150  23    0.   200.1  1024.0 * 1   0440  57  5248.  1941.6  1053.4 * 1   0730  91   1020.  1566.1  1051.2
  1   0155  24    0.   200.1  1024.0 * 1   0445  58  5150.  1934.6  1053.4 * 1   0735  92    976.  1560.6  1051.1
  1   0200  25    0.   200.1  1024.0 * 1   0450  59  5014.  1925.0  1053.3 * 1   0740  93    938.  1555.3  1051.1
  1   0205  26    0.   200.5  1024.1 * 1   0455  60  4861.  1913.4  1053.3 * 1   0745  94    902.  1550.2  1051.0
  1   0210  27    0.   203.0  1024.3 * 1   0500  61  4692.  1900.6  1053.2 * 1   0750  95    867.  1545.3  1051.0
  1   0215  28    0.   209.4  1024.8 * 1   0505  62  4509.  1886.7  1053.1 * 1   0755  96    833.  1540.6  1051.0
  1   0220  29    0.   221.6  1025.7 * 1   0510  63  4318.  1872.2  1053.0 * 1   0800  97    800.  1536.0  1051.0
  1   0225  30    0.   241.3  1027.2 * 1   0515  64  4122.  1857.3  1052.9 * 1   0805  98    769.  1531.6  1050.9
  1   0230  31    0.   268.2  1029.3 * 1   0520  65  3933.  1842.2  1052.9 * 1   0810  99    738.  1527.4  1050.9
  1   0235  32    0.   300.4  1030.9 * 1   0525  66  3757.  1826.8  1052.8 * 1   0815 100    709.  1523.3  1050.9
  1   0240  33    0.   336.4  1032.2 * 1   0530  67  3581.  1811.6  1052.7 *
  1   0245  34    0.   378.5  1033.8 * 1   0535  68  3409.  1796.6  1052.6 *
                                  *                                  *

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 PEAK FLOW     TIME                    MAXIMUM AVERAGE FLOW
                              6-HR       24-HR       72-HR       8.25-HR
+  (CFS)       (HR)
                   (CFS)
+   5286.      4.58            2001.       1455.       1455.       1455.
                 (INCHES)      .919        .919        .919        .919
                 (AC-FT)       992.        992.        992.        992.

 PEAK STORAGE  TIME                    MAXIMUM AVERAGE STORAGE
                              6-HR       24-HR       72-HR       8.25-HR
+  (AC-FT)     (HR)
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1944.	4.58	1462.	1118.	1118.	1118.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	8.25-HR
+ (FEET)	(HR)				
1053.43	4.58	1048.79	1042.05	1042.05	1042.05

CUMULATIVE AREA = 20.25 SQ MI

1 STATION RS47

(I) INFLOW, (O) OUTFLOW

0. 2000. 4000. 6000. 8000. 10000. 12000. 14000. 16000. 18000. 0. 0. 0.

(S) STORAGE

0. 0. 0. 0. 0. 0. 0. 500. 1000. 1500. 2000. 0. 0.

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DAHRMN PER
 10000  1I---------.---------.---------.---------.---------.---------.---S-----.---------.---------.---------.---------.---------.
 10005  2I         .         .         .         .         .         . S       .         .         .         .         .         .
 10010  3I         .         .         .         .         .         . S       .         .         .         .         .         .
 10015  4I         .         .         .         .         .         . S       .         .         .         .         .         .
 10020  5I         .         .         .         .         .         . S       .         .         .         .         .         .
 10025  6I         .         .         .         .         .         . S       .         .         .         .         .         .
 10030  7I         .         .         .         .         .         . S       .         .         .         .         .         .
 10035  8I         .         .         .         .         .         . S       .         .         .         .         .         .
 10040  9I         .         .         .         .         .         . S       .         .         .         .         .         .
 10045 10I         .         .         .         .         .         . S       .         .         .         .         .         .
 10050 11I .........................................S.........................
 10055 12I         .         .         .         .         .         . S       .         .         .         .         .         .
 10100 13I         .         .         .         .         .         . S       .         .         .         .         .         .
 10105 14I         .         .         .         .         .         . S       .         .         .         .         .         .
 10110 15I         .         .         .         .         .         . S       .         .         .         .         .         .
 10115 16I         .         .         .         .         .         . S       .         .         .         .         .         .
 10120 17I         .         .         .         .         .         . S       .         .         .         .         .         .
 10125 18I         .         .         .         .         .         . S       .         .         .         .         .         .
 10130 19I         .         .         .         .         .         . S       .         .         .         .         .         .
 10135 20I         .         .         .         .         .         . S       .         .         .         .         .         .
 10140 21I .........................................S.........................
 10145 22I         .         .         .         .         .         . S       .         .         .         .         .         .
 10150 23I         .         .         .         .         .         . S       .         .         .         .         .         .
 10155 24I         .         .         .         .         .         . S       .         .         .         .         .         .
 10200 25I         .         .         .         .         .         . S       .         .         .         .         .         .
 10205 26OI        .         .         .         .         .         . S       .         .         .         .         .         .
 10210 27O I       .         .         .         .         .         . S       .         .         .         .         .         .
 10215 28O   I     .         .         .         .         .         . S       .         .         .         .         .         .
 10220 29O     .I  .         .         .         .         .         . S       .         .         .         .         .         .
 10225 30O     .   I         .         .         .         .         . S       .         .         .         .         .         .
 10230 31O .........I.........................S.........................
 10235 32O     .   .   I     .         .         .         .         . S       .         .         .         .         .         .
 10240 33O     .   .     I   .         .         .         .         . S       .         .         .         .         .         .
 10245 34O     .   .       . I         .         .         .         . S       .         .         .         .         .         .
 10250 35O     .   .       .   .I      .         .         .         . S       .         .         .         .         .         .
 10255 36O     .   .       .   .     I.          .         .         . S       .         .         .         .         .         .
 10300 37O     .   .       .   .       .         I         .         .S        .         .         .         .         .         .
 10305 38O     .   .       .   .       .         .         .         I . S     .         .         .         .         .         .
 10310 39O     .   .       .   .       .         .         .         .   S I.  .         .         .         .         .         .
 10315 40O     .   .       .   .       .         .         .         .     S . I       .         .         .         .         .
 10320 41O .......................................S....I...............
 10325 42O     .   .       .   .       .         .         .         .       .S  I     .         .         .         .         .
 10330 43O     .   .       .   .       .         .         .         .       . I S     .         .         .         .         .
 10335 44O     .   .       .   .       .         .         .         .         I .     S         .         .         .         .
 10340 45.O    .   .       .   .       .         .         .         .       .I      .S.         .         .         .         .
 10345 46. O   .   .       .   .       .         .         .         I .       .       .S        .         .         .         .
 10350 47.   O .   .       .   .       .         .         . I       .       .       . S       .         .         .         .
 10355 48.     .O  .       .   .       .         .         I.        .       .       .  S      .         .         .         .
 10400 49.     .  O .       .   .       .         .       I .         .       .       .   S     .         .         .         .
 10405 50.     .   O .       .   .       .         .     I   .         .       .       .    S    .         .         .         .
 10410 51.........O.............I.......................S...........
 10415 52.     .     .O      .   .       .       I .         .       .       .       .     S.  .         .         .         .
 10420 53.     .     . O     .   .       .     I   .         .       .       .       .     S.  .         .         .         .
 10425 54.     .     .  O    .   .     I .       .         .       .       .       .      S. .         .         .         .
 10430 55.     .     .   O   .  I.       .         .         .       .       .       .      S. .         .         .         .
 10435 56.     .     .   I   .   .       .         .         .       .       .       .      S. .         .         .         .
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10440 57.      .      .I  O .      .      .      .      .      .      .      S.     .      .
10445 58.      .     I.   O .      .      .      .      .      .      .      S.     .      .
10450 59.      .    I .   O .      .      .      .      .      .      .      S .    .      .
10455 60.      .   I  .   O .      .      .      .      .      .      .      S .    .      .
10500 61.......I....O.......................................S...........
10505 62.      .I     .  O .      .      .      .      .      .      .      S .    .      .
10510 63.      .I     .  O .      .      .      .      .      .      .      S .    .      .
10515 64.      I      .O   .      .      .      .      .      .      .      S .    .      .
10520 65.     I.      O    .      .      .      .      .      .      .      S .    .      .
10525 66.    I .      O.   .      .      .      .      .      .      .      S .    .      .
10530 67.   I  .      O .  .      .      .      .      .      .      .      S .    .      .
10535 68.  I   .      O  . .      .      .      .      .      .      .      S .    .      .
10540 69.  I   .     O   . .      .      .      .      .      .      .      S .    .      .
10545 70. I    .    O    . .      .      .      .      .      .      .      S .    .      .
10550 71..I.....O.......................................S.............
10555 72. I    .  O .      .      .      .      .      .      .      .      S .    .      .
10600 73. I    . O  .      .      .      .      .      .      .      .      S .    .      .
10605 74. I    . O  .      .      .      .      .      .      .      .      S .    .      .
10610 75. I    .O   .      .      .      .      .      .      .      .      S .    .      .
10615 76. I    .O   .      .      .      .      .      .      .      .      S .    .      .
10620 77. I    .O   .      .      .      .      .      .      .      .      S .    .      .
10625 78. I    O    .      .      .      .      .      .      .      .      S .    .      .
10630 79. I    O    .      .      .      .      .      .      .      .      S .    .      .
10635 80. I    O.   .      .      .      .      .      .      .      .      S .    .      .
10640 81. I...O.......................................S..............
10645 82. I    O .  .      .      .      .      .      .      .      .      S .    .      .
10650 83. I    O .  .      .      .      .      .      .      .      .      S .    .      .
10655 84. I    O .  .      .      .      .      .      .      .      .      S .    .      .
10700 85. I    O .  .      .      .      .      .      .      .      .      S .    .      .
10705 86.I     O .  .      .      .      .      .      .      .      .      S .    .      .
10710 87.I     O .  .      .      .      .      .      .      .      .      S .    .      .
10715 88.I     O .  .      .      .      .      .      .      .      .      S .    .      .
10720 89.I     O .  .      .      .      .      .      .      .      .      S .    .      .
10725 90.I     O  .      .      .      .      .      .      .      .      S      .      .
10730 91.I. .O.......................................S..............
10735 92.I     O  .      .      .      .      .      .      .      .      S      .      .
10740 93.I     O  .      .      .      .      .      .      .      .      S      .      .
10745 94.I     O  .      .      .      .      .      .      .      .      S      .      .
10750 95.I     O  .      .      .      .      .      .      .      .      S      .      .
10755 96.I     O  .      .      .      .      .      .      .      .      S      .      .
10800 97.I     O  .      .      .      .      .      .      .      .      S      .      .
10805 98.I     O  .      .      .      .      .      .      .      .      S      .      .
10810 99.I     O  .      .      .      .      .      .      .      .      S      .      .
10815 100.I--O-----.---------.---------.---------.---------.---------.---------.---------S---------.---------.---------.
1
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HYDROGRAPH AT STATION RS47
PLAN 1, RATIO = .55

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	200.0	1024.0	*	1		0250	35	0.	454.8	1036.7	*	1		0540	69	3651.	1817.7	1052.7
1		0005	2	0.	200.0	1024.0	*	1		0255	36	0.	522.3	1039.2	*	1		0545	70	3466.	1801.5	1052.6
1		0010	3	0.	200.0	1024.0	*	1		0300	37	0.	602.4	1040.7	*	1		0550	71	3286.	1785.9	1052.5
1		0015	4	0.	200.0	1024.0	*	1		0305	38	0.	700.1	1041.9	*	1		0555	72	3112.	1770.7	1052.5
1		0020	5	0.	200.0	1024.0	*	1		0310	39	0.	815.8	1043.4	*	1		0600	73	2949.	1756.1	1052.4
1		0025	6	0.	200.0	1024.0	*	1		0315	40	0.	944.0	1045.0	*	1		0605	74	2800.	1742.0	1052.3
1		0030	7	0.	200.0	1024.0	*	1		0320	41	0.	1076.9	1046.6	*	1		0610	75	2657.	1728.4	1052.2
1		0035	8	0.	200.0	1024.0	*	1		0325	42	0.	1207.4	1048.2	*	1		0615	76	2519.	1715.3	1052.1
1		0040	9	0.	200.0	1024.0	*	1		0330	43	46.	1331.7	1049.5	*	1		0620	77	2386.	1702.7	1052.0
1		0045	10	0.	200.0	1024.0	*	1		0335	44	305.	1447.1	1050.3	*	1		0625	78	2259.	1690.6	1052.0
1		0050	11	0.	200.0	1024.0	*	1		0340	45	910.	1551.4	1051.1	*	1		0630	79	2138.	1679.1	1051.9
1		0055	12	0.	200.0	1024.0	*	1		0345	46	1773.	1642.9	1051.7	*	1		0635	80	2022.	1668.1	1051.8

1	0100	13	0.	200.0	1024.0	*	1	0350	47	2588.	1721.8	1052.2	*	1	0640	81	1918.	1657.6	1051.7
1	0105	14	0.	200.0	1024.0	*	1	0355	48	3327.	1789.5	1052.6	*	1	0645	82	1820.	1647.7	1051.7
1	0110	15	0.	200.0	1024.0	*	1	0400	49	3985.	1846.7	1052.9	*	1	0650	83	1727.	1638.2	1051.6
1	0115	16	0.	200.0	1024.0	*	1	0405	50	4606.	1894.1	1053.2	*	1	0655	84	1638.	1629.1	1051.6
1	0120	17	0.	200.0	1024.0	*	1	0410	51	5119.	1932.5	1053.4	*	1	0700	85	1553.	1620.4	1051.5
1	0125	18	0.	200.1	1024.0	*	1	0415	52	5552.	1963.2	1053.5	*	1	0705	86	1473.	1612.2	1051.5
1	0130	19	0.	200.1	1024.0	*	1	0420	53	5886.	1986.9	1053.7	*	1	0710	87	1395.	1604.3	1051.4
1	0135	20	0.	200.1	1024.0	*	1	0425	54	6127.	2003.6	1053.8	*	1	0715	88	1322.	1596.9	1051.4
1	0140	21	0.	200.1	1024.0	*	1	0430	55	6268.	2013.2	1053.8	*	1	0720	89	1253.	1589.8	1051.3
1	0145	22	0.	200.1	1024.0	*	1	0435	56	6300.	2015.4	1053.8	*	1	0725	90	1187.	1583.0	1051.3
1	0150	23	0.	200.1	1024.0	*	1	0440	57	6229.	2010.6	1053.8	*	1	0730	91	1124.	1576.6	1051.2
1	0155	24	0.	200.1	1024.0	*	1	0445	58	6082.	2000.6	1053.8	*	1	0735	92	1064.	1570.6	1051.2
1	0200	25	0.	200.1	1024.0	*	1	0450	59	5895.	1987.6	1053.7	*	1	0740	93	1008.	1564.8	1051.1
1	0205	26	0.	200.6	1024.1	*	1	0455	60	5685.	1972.6	1053.6	*	1	0745	94	967.	1559.3	1051.1
1	0210	27	0.	203.3	1024.3	*	1	0500	61	5458.	1956.5	1053.5	*	1	0750	95	929.	1554.1	1051.1
1	0215	28	0.	210.4	1024.8	*	1	0505	62	5220.	1939.6	1053.4	*	1	0755	96	893.	1549.0	1051.0
1	0220	29	0.	223.8	1025.9	*	1	0510	63	4976.	1922.2	1053.3	*	1	0800	97	858.	1544.1	1051.0
1	0225	30	0.	245.5	1027.6	*	1	0515	64	4744.	1904.5	1053.2	*	1	0805	98	824.	1539.3	1051.0
1	0230	31	0.	275.2	1029.9	*	1	0520	65	4510.	1886.7	1053.1	*	1	0810	99	791.	1534.8	1050.9
1	0235	32	0.	311.0	1031.3	*	1	0525	66	4276.	1869.0	1053.0	*	1	0815	100	760.	1530.4	1050.9
1	0240	33	0.	351.2	1032.8	*	1	0530	67	4045.	1851.4	1052.9	*						
1	0245	34	0.	397.8	1034.5	*	1	0535	68	3843.	1834.3	1052.8	*						
					*						*								

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PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	8.25-HR
+ (CFS)	(HR)				
		(CFS)			
+ 6300.	4.58	2377.	1729.	1729.	1729.
		(INCHES) 1.091	1.091	1.091	1.091
		(AC-FT) 1179.	1179.	1179.	1179.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	8.25-HR
+ (AC-FT)	(HR)				
2015.	4.58	1504.	1149.	1149.	1149.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	8.25-HR
+ (FEET)	(HR)				
1053.83	4.58	1049.15	1042.30	1042.30	1042.30

CUMULATIVE AREA = 20.25 SQ MI

1 STATION RS47

(I) INFLOW, (O) OUTFLOW

0. 4000. 8000. 12000. 16000. 20000. 0. 0. 0. 0. 0. 0. 0.

(S) STORAGE

0. 0. 0. 0. 0. 0. 0. 500. 1000. 1500. 2000. 2500. 0.

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DAHRMN PER
 10000  1I---------.---------.---------.---------.---------.---------.---S-----.---------.---------.---------.---------.---------.
 10005  2I         .         .         .         .         .         . S       .         .         .         .         .         .
 10010  3I         .         .         .         .         .         . S       .         .         .         .         .         .
 10015  4I         .         .         .         .         .         . S       .         .         .         .         .         .
 10020  5I         .         .         .         .         .         . S       .         .         .         .         .         .
 10025  6I         .         .         .         .         .         . S       .         .         .         .         .         .
 10030  7I         .         .         .         .         .         . S       .         .         .         .         .         .
 10035  8I         .         .         .         .         .         . S       .         .         .         .         .         .
 10040  9I         .         .         .         .         .         . S       .         .         .         .         .         .
 10045 10I         .         .         .         .         .         . S       .         .         .         .         .         .
 10050 11I.........................................S.........................
 10055 12I         .         .         .         .         .         . S       .         .         .         .         .         .
 10100 13I         .         .         .         .         .         . S       .         .         .         .         .         .
 10105 14I         .         .         .         .         .         . S       .         .         .         .         .         .
 10110 15I         .         .         .         .         .         . S       .         .         .         .         .         .
 10115 16I         .         .         .         .         .         . S       .         .         .         .         .         .
 10120 17I         .         .         .         .         .         . S       .         .         .         .         .         .
 10125 18I         .         .         .         .         .         . S       .         .         .         .         .         .
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10130 19I      .     .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10135 20I      .     .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10140 21I.....................................S.............................
10145 22I      .     .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10150 23I      .     .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10155 24I      .     .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10200 25I      .     .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10205 26I      .     .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10210 27O I    .     .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10215 28O  I   .     .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10220 29O   I  .     .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10225 30O      I     .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10230 31O.....I.......................................S.............................
10235 32O      .  I  .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10240 33O      .  I  .     .     .     .     .     .     .     S     .     .     .     .     .     .     .
10245 34O      .     I.    .     .     .     .     .     .     S     .     .     .     .     .     .     .
10250 35O      .     . I   .     .     .     .     .     .     S.    .     .     .     .     .     .     .
10255 36O      .     .  I  .     .     .     .     .     .     S     .     .     .     .     .     .     .
10300 37O      .     .     .I    .     .     .     .     .     .S    .     .     .     .     .     .     .
10305 38O      .     .     .     I.    .     .     .     .     . S   .     .     .     .     .     .     .
10310 39O      .     .     .     .  I  .     .     .     .     .  S  .     .     .     .     .     .     .
10315 40O      .     .     .     .     I.    .     .     .     .   S.    .     .     .     .     .     .
10320 41O.......................I.................S....................
10325 42O      .     .     .     .     I     .     .     .     .     .S    .     .     .     .     .     .
10330 43O      .     .     .     .     I     .     .     .     .     . S   .     .     .     .     .     .
10335 44.O     .     .     .     .I    .     .     .     .     .     .  S.    .     .     .     .     .
10340 45. O    .     .     .     I.    .     .     .     .     .     .   .S    .     .     .     .     .
10345 46.  O   .     .     .     I     .     .     .     .     .     .   . S   .     .     .     .     .
10350 47.   O  .     .     .     I     .     .     .     .     .     .   .  S  .     .     .     .     .
10355 48.    O .     .     .     .I    .     .     .     .     .     .   .   S .     .     .     .     .
10400 49.     O      .     .     I.    .     .     .     .     .     .   .    S.     .     .     .     .
10405 50.     . O    .     .     I     .     .     .     .     .     .   .    S.     .     .     .     .
10410 51.......O.....I.......................................S...........
10415 52.     .  O   .     I     .     .     .     .     .     .     .   .     S.    .     .     .     .
10420 53.     .  O   .I    .     .     .     .     .     .     .     .   .     S     .     .     .     .
10425 54.     .  O   I     .     .     .     .     .     .     .     .   .     S     .     .     .     .
10430 55.     .   O I.     .     .     .     .     .     .     .     .   .     S     .     .     .     .
10435 56.     .   IO .     .     .     .     .     .     .     .     .   .     S     .     .     .     .
10440 57.     .  I O .     .     .     .     .     .     .     .     .   .     S     .     .     .     .
10445 58.     .I  O  .     .     .     .     .     .     .     .     .   .     S     .     .     .     .
10450 59.     I   O  .     .     .     .     .     .     .     .     .   .     S     .     .     .     .
10455 60.     I.  O  .     .     .     .     .     .     .     .     .   .     S.    .     .     .     .
10500 61....I..O.......................................S...........
10505 62.    I . O   .     .     .     .     .     .     .     .     .   .     S.    .     .     .     .
10510 63.   I  . O   .     .     .     .     .     .     .     .     .   .     S.    .     .     .     .
10515 64.  I   . O   .     .     .     .     .     .     .     .     .   .     S.    .     .     .     .
10520 65.  I   .O    .     .     .     .     .     .     .     .     .   .     S.    .     .     .     .
10525 66.  I   .O    .     .     .     .     .     .     .     .     .   .     S.    .     .     .     .
10530 67.  I   O     .     .     .     .     .     .     .     .     .   .     S.    .     .     .     .
10535 68. I    O     .     .     .     .     .     .     .     .     .   .     S.    .     .     .     .
10540 69. I    O.    .     .     .     .     .     .     .     .     .   .     S.    .     .     .     .
10545 70. I    O.    .     .     .     .     .     .     .     .     .   .     S.    .     .     .     .
10550 71. .I.. O.......................................S...........
10555 72. I    O .   .     .     .     .     .     .     .     .     .   .     S     .     .     .     .
10600 73. I   O  .   .     .     .     .     .     .     .     .     .   .     S     .     .     .     .
10605 74. I   O  .   .     .     .     .     .     .     .     .     .   .     S     .     .     .     .
10610 75. I   O  .   .     .     .     .     .     .     .     .     .   .     S     .     .     .     .
10615 76. I   O  .   .     .     .     .     .     .     .     .     .   .    S      .     .     .     .
10620 77.I    O  .   .     .     .     .     .     .     .     .     .   .    S      .     .     .     .
10625 78.I    O  .   .     .     .     .     .     .     .     .     .   .    S      .     .     .     .
10630 79.I   O   .   .     .     .     .     .     .     .     .     .   .    S      .     .     .     .
10635 80.I   O   .   .     .     .     .     .     .     .     .     .   . S    .     .     .     .
10640 81.I. .O.......................................S.............
10645 82.I   O   .   .     .     .     .     .     .     .     .     .   . S    .     .     .     .
10650 83.I   O   .   .     .     .     .     .     .     .     .     .   . S    .     .     .     .
10655 84.I   O   .   .     .     .     .     .     .     .     .     .   . S    .     .     .     .
10700 85.I   O   .   .     .     .     .     .     .     .     .     .   .S     .     .     .     .
10705 86.I   O   .   .     .     .     .     .     .     .     .     .   .S     .     .     .     .
10710 87.I O     .   .     .     .     .     .     .     .     .     .   .S     .     .     .     .
10715 88.I O     .   .     .     .     .     .     .     .     .     .   .S     .     .     .     .
10720 89.I O     .   .     .     .     .     .     .     .     .     .   .S     .     .     .     .
10725 90.I O     .   .     .     .     .     .     .     .     .     .   .S     .     .     .     .
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10730 91.I.O.......................................S..............
10735 92.I O  .  .  .  .  .  .  .  .  .  .  .  .  .S  .  .  .
10740 93I  O  .  .  .  .  .  .  .  .  .  .  .  .  .S  .  .  .
10745 94I O   .  .  .  .  .  .  .  .  .  .  .  .  .S  .  .  .
10750 95I O   .  .  .  .  .  .  .  .  .  .  .  .  .S  .  .  .
10755 96I O   .  .  .  .  .  .  .  .  .  .  .  .  .S  .  .  .
10800 97I O   .  .  .  .  .  .  .  .  .  .  .  .  .S  .  .  .
10805 98I O   .  .  .  .  .  .  .  .  .  .  .  .  .S  .  .  .
10810 99I O   .  .  .  .  .  .  .  .  .  .  .  .  .S  .  .  .
10815 100I-O--------.---------.---------.---------.---------.---------.---------.---------.---------.S--------.---------.---------.
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HYDROGRAPH AT STATION RS47
PLAN 1, RATIO = .60

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE *	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE *	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE *
1	0000	1	0.	200.0	1024.0 *	1	0250	35	0.	479.5	1037.6 *	1	0540	69	4050.	1851.8	1052.9			
1	0005	2	0.	200.0	1024.0 *	1	0255	36	0.	552.8	1040.1 *	1	0545	70	3833.	1833.5	1052.8			
1	0010	3	0.	200.0	1024.0 *	1	0300	37	0.	643.1	1041.2 *	1	0550	71	3631.	1815.9	1052.7			
1	0015	4	0.	200.0	1024.0 *	1	0305	38	0.	755.9	1042.6 *	1	0555	72	3435.	1798.9	1052.6			
1	0020	5	0.	200.0	1024.0 *	1	0310	39	0.	888.7	1044.3 *	1	0600	73	3248.	1782.5	1052.5			
1	0025	6	0.	200.0	1024.0 *	1	0315	40	0.	1032.6	1046.1 *	1	0605	74	3068.	1766.9	1052.4			
1	0030	7	0.	200.0	1024.0 *	1	0320	41	0.	1177.9	1047.9 *	1	0610	75	2904.	1751.8	1052.3			
1	0035	8	0.	200.0	1024.0 *	1	0325	42	36.	1317.8	1049.4 *	1	0615	76	2752.	1737.4	1052.3			
1	0040	9	0.	200.0	1024.0 *	1	0330	43	311.	1448.6	1050.4 *	1	0620	77	2606.	1723.6	1052.2			
1	0045	10	0.	200.0	1024.0 *	1	0335	44	1028.	1566.8	1051.2 *	1	0625	78	2467.	1710.4	1052.1			
1	0050	11	0.	200.0	1024.0 *	1	0340	45	2042.	1670.0	1051.8 *	1	0630	79	2334.	1697.7	1052.0			
1	0055	12	0.	200.0	1024.0 *	1	0345	46	2967.	1757.9	1052.4 *	1	0635	80	2207.	1685.7	1051.9			
1	0100	13	0.	200.0	1024.0 *	1	0350	47	3818.	1832.1	1052.8 *	1	0640	81	2087.	1674.3	1051.9			
1	0105	14	0.	200.0	1024.0 *	1	0355	48	4609.	1894.3	1053.2 *	1	0645	82	1975.	1663.4	1051.8			
1	0110	15	0.	200.0	1024.0 *	1	0400	49	5305.	1945.6	1053.4 *	1	0650	83	1874.	1653.1	1051.7			
1	0115	16	0.	200.0	1024.0 *	1	0405	50	5888.	1987.0	1053.7 *	1	0655	84	1777.	1643.3	1051.7			
1	0120	17	0.	200.0	1024.0 *	1	0410	51	6361.	2019.5	1053.9 *	1	0700	85	1686.	1633.9	1051.6			
1	0125	18	0.	200.1	1024.0 *	1	0415	52	6728.	2044.5	1054.0 *	1	0705	86	1598.	1625.0	1051.5			
1	0130	19	0.	200.1	1024.0 *	1	0420	53	7002.	2063.1	1054.1 *	1	0710	87	1515.	1616.5	1051.5			
1	0135	20	0.	200.1	1024.0 *	1	0425	54	7185.	2075.7	1054.2 *	1	0715	88	1436.	1608.4	1051.4			
1	0140	21	0.	200.1	1024.0 *	1	0430	55	7282.	2082.3	1054.2 *	1	0720	89	1360.	1600.8	1051.4			
1	0145	22	0.	200.1	1024.0 *	1	0435	56	7291.	2082.9	1054.2 *	1	0725	90	1289.	1593.5	1051.3			
1	0150	23	0.	200.1	1024.0 *	1	0440	57	7205.	2077.1	1054.2 *	1	0730	91	1221.	1586.5	1051.3			
1	0155	24	0.	200.1	1024.0 *	1	0445	58	7038.	2065.6	1054.1 *	1	0735	92	1156.	1579.9	1051.2			
1	0200	25	0.	200.1	1024.0 *	1	0450	59	6816.	2050.5	1054.0 *	1	0740	93	1095.	1573.7	1051.2			
1	0205	26	0.	200.7	1024.1 *	1	0455	60	6560.	2033.1	1053.9 *	1	0745	94	1037.	1567.8	1051.2			
1	0210	27	0.	203.6	1024.3 *	1	0500	61	6281.	2014.1	1053.8 *	1	0750	95	987.	1562.1	1051.1			
1	0215	28	0.	211.3	1024.9 *	1	0505	62	5990.	1994.3	1053.7 *	1	0755	96	948.	1556.7	1051.1			
1	0220	29	0.	226.0	1026.0 *	1	0510	63	5701.	1973.8	1053.6 *	1	0800	97	911.	1551.5	1051.1			
1	0225	30	0.	249.7	1027.9 *	1	0515	64	5408.	1952.9	1053.5 *	1	0805	98	875.	1546.5	1051.0			
1	0230	31	0.	282.2	1030.2 *	1	0520	65	5113.	1932.0	1053.4 *	1	0810	99	840.	1541.6	1051.0			
1	0235	32	0.	321.7	1031.7 *	1	0525	66	4832.	1911.3	1053.2 *	1	0815	100	807.	1536.9	1051.0			
1	0240	33	0.	366.4	1033.4 *	1	0530	67	4563.	1890.8	1053.1 *									
1	0245	34	0.	417.9	1035.3 *	1	0535	68	4301.	1870.9	1053.0 *									

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PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	8.25-HR
+ (CFS)	(HR)				
		(CFS)			
+ 7291.	4.58	2781.	2023.	2023.	2023.
		(INCHES) 1.277	1.277	1.277	1.277
		(AC-FT) 1379.	1379.	1379.	1379.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	8.25-HR
+ 2083.	4.58	1547.	1179.	1179.	1179.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	8.25-HR
+ 1054.19	4.58	1049.49	1042.55	1042.55	1042.55

CUMULATIVE AREA = 20.25 SQ MI

1 STATION RS47

(I) INFLOW, (O) OUTFLOW

0. 4000. 8000. 12000. 16000. 20000. 24000. 0. 0. 0. 0. 0. 0.

(S) STORAGE

0. 0. 0. 0. 0. 0. 0. 500. 1000. 1500. 2000. 2500. 0.

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DAHRMN PER
 10000  1I---------.---------.---------.---------.---------.---------.---S-----.---------.---------.---------.---------.---------.
 10005  2I        .         .         .         .         .         . S       .         .         .         .         .         .
 10010  3I        .         .         .         .         .         . S       .         .         .         .         .         .
 10015  4I        .         .         .         .         .         . S       .         .         .         .         .         .
 10020  5I        .         .         .         .         .         . S       .         .         .         .         .         .
 10025  6I        .         .         .         .         .         . S       .         .         .         .         .         .
 10030  7I        .         .         .         .         .         . S       .         .         .         .         .         .
 10035  8I        .         .         .         .         .         . S       .         .         .         .         .         .
 10040  9I        .         .         .         .         .         . S       .         .         .         .         .         .
 10045 10I        .         .         .         .         .         . S       .         .         .         .         .         .
 10050 11I.........................................S.........................
 10055 12I        .         .         .         .         .         . S       .         .         .         .         .         .
 10100 13I        .         .         .         .         .         . S       .         .         .         .         .         .
 10105 14I        .         .         .         .         .         . S       .         .         .         .         .         .
 10110 15I        .         .         .         .         .         . S       .         .         .         .         .         .
 10115 16I        .         .         .         .         .         . S       .         .         .         .         .         .
 10120 17I        .         .         .         .         .         . S       .         .         .         .         .         .
 10125 18I        .         .         .         .         .         . S       .         .         .         .         .         .
 10130 19I        .         .         .         .         .         . S       .         .         .         .         .         .
 10135 20I        .         .         .         .         .         . S       .         .         .         .         .         .
 10140 21I.........................................S.........................
 10145 22I        .         .         .         .         .         . S       .         .         .         .         .         .
 10150 23I        .         .         .         .         .         . S       .         .         .         .         .         .
 10155 24I        .         .         .         .         .         . S       .         .         .         .         .         .
 10200 25I        .         .         .         .         .         . S       .         .         .         .         .         .
 10205 26I        .         .         .         .         .         . S       .         .         .         .         .         .
 10210 27O I      .         .         .         .         .         . S       .         .         .         .         .         .
 10215 28O  I     .         .         .         .         .         . S       .         .         .         .         .         .
 10220 29O    I   .         .         .         .         .         . S       .         .         .         .         .         .
 10225 30O      I .         .         .         .         .         . S       .         .         .         .         .         .
 10230 31O......I..........................................S.........................
 10235 32O       . I       .         .         .         .         . S       .         .         .         .         .         .
 10240 33O       .   I     .         .         .         .         . S       .         .         .         .         .         .
 10245 34O       .     I   .         .         .         .         . S       .         .         .         .         .         .
 10250 35O       .       . I         .         .         .         .   S     .         .         .         .         .         .
 10255 36O       .       .   I       .         .         .         .   .S    .         .         .         .         .         .
 10300 37O       .       .     .     I         .         .         .   . S   .         .         .         .         .         .
 10305 38O       .       .     .     .         I         .         .   .   S .         .         .         .         .         .
 10310 39O       .       .     .     .         .         I         .   .     S         .         .         .         .         .
 10315 40O       .       .     .     .         .         . I       .   .     .S        .         .         .         .         .
 10320 41O.......................................I...............S..................
 10325 42O       .       .     .     .         .         I         .   .     .         S         .         .         .         .
 10330 43.O      .       .     .     .         .         .  I      .   .     .         .S        .         .         .         .
 10335 44. O     .       .     .     .         .         .   I     .   .     .         .  S      .         .         .         .
 10340 45.  O    .       .     .     .         .         .    I    .   .     .         .   S     .         .         .         .
 10345 46.   O   .       .     .     .         I         .     .   .   .     .         .    S    .         .         .         .
 10350 47.    O  .       .     .     I         .         .     .   .   .     .         .     S   .         .         .         .
 10355 48.     . O       .     .     I         .         .     .   .   .     .         .     S   .         .         .         .
 10400 49.     . O       .     .     I         .         .     .   .   .     .         .     S.  .         .         .         .
 10405 50.     .  O      .     .  I  .         .         .     .   .   .     .         .     S   .         .         .         .
 10410 51.......O....I.....................................S..........
 10415 52.     .   O     .     I     .         .         .     .   .   .     .         .     .S  .         .         .         .
 10420 53.     .    O    .     I     .         .         .     .   .   .     .         .     .S  .         .         .         .
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10425 54.      .    O .I   .   .   .   .   .   .   .   .S   .   .
10430 55.      .    O I    .   .   .   .   .   .   .   .S   .   .
10435 56.      .   IO .    .   .   .   .   .   .   .   .S   .   .
10440 57.      . I O .     .   .   .   .   .   .   .   .S   .   .
10445 58.      . I   O .   .   .   .   .   .   .   .   .S   .   .
10450 59.      .I    O .   .   .   .   .   .   .   .   .S   .   .
10455 60.      I    O .    .   .   .   .   .   .   .   .S   .   .
10500 61.....I...O.......................................S..........
10505 62.     I .   O .   .   .   .   .   .   .   .   S   .   .
10510 63.    I . O    .   .   .   .   .   .   .   .   S.  .   .
10515 64.   I . O     .   .   .   .   .   .   .   .   S.  .   .
10520 65.  I  . O     .   .   .   .   .   .   .   .   S.  .   .
10525 66.  I  .O      .   .   .   .   .   .   .   .  S .  .   .
10530 67. I   .O      .   .   .   .   .   .   .   .  S .  .   .
10535 68. I   .O      .   .   .   .   .   .   .   . S  .  .   .
10540 69. I   O       .   .   .   .   .   .   .   . S  .  .   .
10545 70. I   O       .   .   .   .   .   .   .   . S  .  .   .
10550 71. .I...O.......................................S............
10555 72. I   O.      .   .   .   .   .   .   .   .  S .  .   .
10600 73. I   O .     .   .   .   .   .   .   .   .  S .  .   .
10605 74. I   O .     .   .   .   .   .   .   .   . S  .  .   .
10610 75. I   O .     .   .   .   .   .   .   .   . S  .  .   .
10615 76. I   O .     .   .   .   .   .   .   .   . S  .  .   .
10620 77. I   O .     .   .   .   .   .   .   .   .S   .  .   .
10625 78.I    O .     .   .   .   .   .   .   .   .S   .  .   .
10630 79.I    O .     .   .   .   .   .   .   .   .S   .  .   .
10635 80.I    O .     .   .   .   .   .   .   .   .S   .  .   .
10640 81.I. .O.......................................S..............
10645 82.I   O .      .   .   .   .   .   .   .   .S   .  .   .
10650 83.I   O .      .   .   .   .   .   .   .   .S   .  .   .
10655 84.I  O  .      .   .   .   .   .   .   .   .S   .  .   .
10700 85.I  O  .      .   .   .   .   .   .   .   .S   .  .   .
10705 86.I  O  .      .   .   .   .   .   .   .   .S   .  .   .
10710 87.I  O  .      .   .   .   .   .   .   .   .S   .  .   .
10715 88.I  O  .      .   .   .   .   .   .   .   .S   .  .   .
10720 89.I O   .      .   .   .   .   .   .   .   .S   .  .   .
10725 90.I O   .      .   .   .   .   .   .   .   .S   .  .   .
10730 91.I.O.......................................S..............
10735 92.I O   .      .   .   .   .   .   .   .   .S   .  .   .
10740 93.I O   .      .   .   .   .   .   .   .   .S   .  .   .
10745 941  O   .      .   .   .   .   .   .   .   .S   .  .   .
10750 951 O    .      .   .   .   .   .   .   .   .S   .  .   .
10755 961 O    .      .   .   .   .   .   .   .   .S   .  .   .
10800 971 O    .      .   .   .   .   .   .   .   .S   .  .   .
10805 981 O    .      .   .   .   .   .   .   .   .S   .  .   .
10810 991 O    .      .   .   .   .   .   .   .   .S   .  .   .
10815 100I-O-------.---------.---------.---------.---------.---------.---------.---------.---------.S-------.---------.---------.
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HYDROGRAPH AT STATION RS47
PLAN 1, RATIO = .65

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE *	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE *	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE *
1	0000	1	0.	200.0	1024.0 *	1	0250	35	0.	504.1	1038.5 *	1	0540	69	4492.	1885.4	1053.1			
1	0005	2	0.	200.0	1024.0 *	1	0255	36	0.	583.9	1040.5 *	1	0545	70	4221.	1864.8	1053.0			
1	0010	3	0.	200.0	1024.0 *	1	0300	37	0.	686.0	1041.8 *	1	0550	71	3968.	1845.2	1052.9			
1	0015	4	0.	200.0	1024.0 *	1	0305	38	0.	816.3	1043.4 *	1	0555	72	3752.	1826.4	1052.8			
1	0020	5	0.	200.0	1024.0 *	1	0310	39	0.	968.7	1045.3 *	1	0600	73	3545.	1808.4	1052.7			
1	0025	6	0.	200.0	1024.0 *	1	0315	40	0.	1130.2	1047.3 *	1	0605	74	3347.	1791.1	1052.6			
1	0030	7	0.	200.0	1024.0 *	1	0320	41	14.	1288.6	1049.2 *	1	0610	75	3157.	1774.6	1052.5			
1	0035	8	0.	200.0	1024.0 *	1	0325	42	264.	1437.2	1050.3 *	1	0615	76	2978.	1758.9	1052.4			
1	0040	9	0.	200.0	1024.0 *	1	0330	43	1074.	1571.5	1051.2 *	1	0620	77	2819.	1743.8	1052.3			

1	0045	10	0.	200.0	1024.0	*	1	0335	44	2239.	1688.7	1051.9	*	1	0625	78	2667.	1729.4	1052.2
1	0050	11	0.	200.0	1024.0	*	1	0340	45	3313.	1788.2	1052.6	*	1	0630	79	2523.	1715.7	1052.1
1	0055	12	0.	200.0	1024.0	*	1	0345	46	4308.	1871.4	1053.0	*	1	0635	80	2385.	1702.6	1052.0
1	0100	13	0.	200.0	1024.0	*	1	0350	47	5224.	1939.9	1053.4	*	1	0640	81	2254.	1690.1	1052.0
1	0105	14	0.	200.0	1024.0	*	1	0355	48	6009.	1995.6	1053.7	*	1	0645	82	2130.	1678.3	1051.9
1	0110	15	0.	200.0	1024.0	*	1	0400	49	6668.	2040.4	1054.0	*	1	0650	83	2012.	1667.1	1051.8
1	0115	16	0.	200.0	1024.0	*	1	0405	50	7184.	2075.6	1054.2	*	1	0655	84	1908.	1656.6	1051.7
1	0120	17	0.	200.1	1024.0	*	1	0410	51	7574.	2102.3	1054.3	*	1	0700	85	1809.	1646.5	1051.7
1	0125	18	0.	200.1	1024.0	*	1	0415	52	7861.	2122.0	1054.4	*	1	0705	86	1715.	1636.9	1051.6
1	0130	19	0.	200.1	1024.0	*	1	0420	53	8063.	2135.8	1054.5	*	1	0710	87	1626.	1627.9	1051.6
1	0135	20	0.	200.1	1024.0	*	1	0425	54	8188.	2144.4	1054.5	*	1	0715	88	1541.	1619.2	1051.5
1	0140	21	0.	200.1	1024.0	*	1	0430	55	8243.	2148.1	1054.5	*	1	0720	89	1461.	1611.0	1051.4
1	0145	22	0.	200.1	1024.0	*	1	0435	56	8226.	2146.9	1054.5	*	1	0725	90	1385.	1603.3	1051.4
1	0150	23	0.	200.1	1024.0	*	1	0440	57	8136.	2140.8	1054.5	*	1	0730	91	1313.	1595.9	1051.3
1	0155	24	0.	200.1	1024.0	*	1	0445	58	7964.	2129.0	1054.4	*	1	0735	92	1245.	1589.0	1051.3
1	0200	25	0.	200.1	1024.0	*	1	0450	59	7720.	2112.3	1054.3	*	1	0740	93	1181.	1582.4	1051.3
1	0205	26	0.	200.7	1024.1	*	1	0455	60	7433.	2092.7	1054.2	*	1	0745	94	1120.	1576.2	1051.2
1	0210	27	0.	203.9	1024.3	*	1	0500	61	7116.	2071.0	1054.1	*	1	0750	95	1063.	1570.4	1051.2
1	0215	28	0.	212.3	1025.0	*	1	0505	62	6779.	2048.0	1054.0	*	1	0755	96	1009.	1564.9	1051.1
1	0220	29	0.	228.2	1026.2	*	1	0510	63	6432.	2024.4	1053.9	*	1	0800	97	970.	1559.8	1051.1
1	0225	30	0.	253.9	1028.2	*	1	0515	64	6080.	2000.5	1053.7	*	1	0805	98	934.	1554.8	1051.1
1	0230	31	0.	289.3	1030.5	*	1	0520	65	5740.	1976.5	1053.6	*	1	0810	99	900.	1550.0	1051.0
1	0235	32	0.	332.5	1032.1	*	1	0525	66	5406.	1952.8	1053.5	*	1	0815	100	868.	1545.5	1051.0
1	0240	33	0.	381.6	1033.9	*	1	0530	67	5078.	1929.6	1053.4	*						
1	0245	34	0.	437.8	1036.0	*	1	0535	68	4776.	1907.0	1053.2	*						
					*						*								

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	8.25-HR
+ (CFS)	(HR)					
		(CFS)				
+ 8243.	4.50		3208.	2333.	2333.	2333.
		(INCHES)	1.473	1.473	1.473	1.473
		(AC-FT)	1591.	1591.	1591.	1591.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	8.25-HR
+ (AC-FT)	(HR)				
2148.	4.50	1589.	1210.	1210.	1210.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	8.25-HR
+ (FEET)	(HR)				
1054.51	4.50	1049.81	1042.79	1042.79	1042.79

CUMULATIVE AREA = 20.25 SQ MI

1 STATION RS47

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                    (I) INFLOW,   (O) OUTFLOW
      0.    4000.    8000.   12000.   16000.   20000.   24000.      0.      0.      0.      0.      0.      0.
                                                                  (S) STORAGE
      0.      0.       0.       0.       0.       0.       0.    500.   1000.   1500.   2000.   2500.      0.
DAHRMN PER
 10000  1I---------.---------.---------.---------.---------.---------.---S-----.---------.---------.---------.---------.---------.
 10005  2I       .         .         .         .         .         . S       .         .         .         .         .         .
 10010  3I       .         .         .         .         .         . S       .         .         .         .         .         .
 10015  4I       .         .         .         .         .         . S       .         .         .         .         .         .
 10020  5I       .         .         .         .         .         . S       .         .         .         .         .         .
 10025  6I       .         .         .         .         .         . S       .         .         .         .         .         .
 10030  7I       .         .         .         .         .         . S       .         .         .         .         .         .
 10035  8I       .         .         .         .         .         . S       .         .         .         .         .         .
 10040  9I       .         .         .         .         .         . S       .         .         .         .         .         .
 10045 10I       .         .         .         .         .         . S       .         .         .         .         .         .
 10050 11I . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10055 12I       .         .         .         .         .         . S       .         .         .         .         .         .
 10100 13I       .         .         .         .         .         . S       .         .         .         .         .         .
 10105 14I       .         .         .         .         .         . S       .         .         .         .         .         .
 10110 15I       .         .         .         .         .         . S       .         .         .         .         .         .
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10115 16I      .       .       .       .       .       .       S       .       .       .       .       .       .       .
10120 17I      .       .       .       .       .       .       S       .       .       .       .       .       .       .
10125 18I      .       .       .       .       .       .       S       .       .       .       .       .       .       .
10130 19I      .       .       .       .       .       .       S       .       .       .       .       .       .       .
10135 20I      .       .       .       .       .       .       S       .       .       .       .       .       .       .
10140 21I.......................................S...............................
10145 22I      .       .       .       .       .       .       S       .       .       .       .       .       .       .
10150 23I      .       .       .       .       .       .       S       .       .       .       .       .       .       .
10155 24I      .       .       .       .       .       .       S       .       .       .       .       .       .       .
10200 25I      .       .       .       .       .       .       S       .       .       .       .       .       .       .
10205 26I      .       .       .       .       .       .       S       .       .       .       .       .       .       .
10210 27O I    .       .       .       .       .       .       S       .       .       .       .       .       .       .
10215 28O  I   .       .       .       .       .       .       S       .       .       .       .       .       .       .
10220 29O    I .       .       .       .       .       .       S       .       .       .       .       .       .       .
10225 30O      .I      .       .       .       .       .       S       .       .       .       .       .       .       .
10230 31O......I........................S...............................
10235 32O      .       I .     .       .       .       .       S       .       .       .       .       .       .       .
10240 33O      .       I.      .       .       .       .       S.      .       .       .       .       .       .       .
10245 34O      .       .I      .       .       .       .       S.      .       .       .       .       .       .       .
10250 35O      .       .       I       .       .       .       S       .       .       .       .       .       .       .
10255 36O      .       .       .I      .       .       .       .S      .       .       .       .       .       .       .
10300 37O      .       .       .       .I      .       .       .       S       .       .       .       .       .       .
10305 38O      .       .       .       .       .I      .       .       .       S       .       .       .       .       .
10310 39O      .       .       .       .       .       .       I.      .       .       S.      .       .       .       .
10315 40O      .       .       .       .       .       .       I.      .       .       .       S       .       .       .
10320 41O.......................I...............S..................
10325 42.O     .       .       .       .       .       I       .       .       .       .       S.      .       .       .
10330 43. O    .       .       .       .       .       I.      .       .       .       .       .S      .       .       .
10335 44.    O .       .       .       .       .       .       I       .       .       .       .       .       S       .
10340 45.      O.      .       .       .       .       .I      .       .       .       .       .       .       S       .
10345 46.      .O      .       .       .       I       .       .       .       .       .       .       .       S       .
10350 47.      . O     .       .       .       I       .       .       .       .       .       .       .       S.      .
10355 48.      .  O    .       .       .       I       .       .       .       .       .       .       .       S       .
10400 49.      .   O   .       .       .       .I      .       .       .       .       .       .       .       .S      .
10405 50.      .   O   .       .       .       I.      .       .       .       .       .       .       .       . S     .
10410 51.......O.....I.......................................S.........
10415 52.      .       O       I       .       .       .       .       .       .       .       .       .       . S     .
10420 53.      .       O       I       .       .       .       .       .       .       .       .       .       . S     .
10425 54.      .       O       I       .       .       .       .       .       .       .       .       .       . S     .
10430 55.      .       .I      .       .       .       .       .       .       .       .       .       .       . S     .
10435 56.      .       I.O     .       .       .       .       .       .       .       .       .       .       . S     .
10440 57.      .       I O     .       .       .       .       .       .       .       .       .       .       . S     .
10445 58.      .  I    O       .       .       .       .       .       .       .       .       .       .       . S     .
10450 59.      . I     O.      .       .       .       .       .       .       .       .       .       .       . S     .
10455 60.      .I      O.      .       .       .       .       .       .       .       .       .       .       . S     .
10500 61.....I...O.......................................S..........
10505 62.      I .     O       .       .       .       .       .       .       .       .       .       .       .S      .
10510 63.      I .     O       .       .       .       .       .       .       .       .       .       .       S       .
10515 64.      I .     O       .       .       .       .       .       .       .       .       .       .       S       .
10520 65.      I .     O       .       .       .       .       .       .       .       .       .       .       S       .
10525 66.      I .     O       .       .       .       .       .       .       .       .       .       .       S.      .
10530 67.      I .     O       .       .       .       .       .       .       .       .       .       .       S.      .
10535 68.      I .     O       .       .       .       .       .       .       .       .       .       .       S.      .
10540 69.      I .     O       .       .       .       .       .       .       .       .       .       .       S.      .
10545 70.      I .     O       .       .       .       .       .       .       .       .       .       .       S.      .
10550 71.      .I...O...........................................S............
10555 72.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10600 73.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10605 74.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10610 75.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10615 76.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10620 77.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10625 78.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10630 79.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10635 80.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10640 81.      I..O.....................................S.............
10645 82.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10650 83.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10655 84.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10700 85.      I       O.      .       .       .       .       .       .       .       .       .       .       S.      .
10705 86.      I       O       .       .       .       .       .       .       .       .       .       .       S.      .
10710 87.      I       O       .       .       .       .       .       .       .       .       .       .       S.      .
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10715  88.I  O   .   .   .   .   .   .   .   .   .  .S   .   .   .
10720  89.I  O   .   .   .   .   .   .   .   .   .  .S   .   .   .
10725  90.I O    .   .   .   .   .   .   .   .   .  .S   .   .   .
10730  91.I.O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S . . . . . . . . . . . . . .
10735  92.I O    .   .   .   .   .   .   .   .   .  .S   .   .   .
10740  93.I O    .   .   .   .   .   .   .   .   .  .S   .   .   .
10745  94.I O    .   .   .   .   .   .   .   .   .  .S   .   .   .
10750  95.I O    .   .   .   .   .   .   .   .   .  .S   .   .   .
10755  96.I O    .   .   .   .   .   .   .   .   .  .S   .   .   .
10800  97.IO     .   .   .   .   .   .   .   .   .  .S   .   .   .
10805  98.IO     .   .   .   .   .   .   .   .   .  .S   .   .   .
10810  99.IO     .   .   .   .   .   .   .   .   .  .S   .   .   .
10815 100.IO-------.---------.---------.---------.---------.---------.---------.---------.---------.S--------.---------.---------.
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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO FLOWS RATIO 1 .50	RATIO 2 .55	RATIO 3 .60	RATIO 4 .65
HYDROGRAPH AT								
+	18	.81	1	FLOW	3470.	3817.	4164.	4511.
				TIME	2.42	2.42	2.42	2.42
ROUTED TO								
+	R18	.81	1	FLOW	3161.	3483.	3803.	4124.
				TIME	2.58	2.58	2.58	2.58
			** PEAK STAGES IN FEET **					
			1	STAGE	1514.05	1514.24	1514.44	1514.60
				TIME	2.58	2.58	2.58	2.58
HYDROGRAPH AT								
+	19	.79	1	FLOW	2447.	2692.	2937.	3181.
				TIME	2.67	2.67	2.67	2.67
2 COMBINED AT								
+	CP19	1.60	1	FLOW	5444.	5994.	6542.	7092.
				TIME	2.58	2.58	2.58	2.58
ROUTED TO								
+	R19	1.60	1	FLOW	5307.	5849.	6387.	6928.
				TIME	2.67	2.67	2.67	2.67
			** PEAK STAGES IN FEET **					
			1	STAGE	1464.55	1464.88	1465.20	1465.49
				TIME	2.67	2.67	2.67	2.67
HYDROGRAPH AT								
+	21	.79	1	FLOW	2492.	2741.	2991.	3240.
				TIME	2.67	2.67	2.67	2.67
2 COMBINED AT								
+	I1CP21	2.39	1	FLOW	7799.	8590.	9378.	10168.
				TIME	2.67	2.67	2.67	2.67
HYDROGRAPH AT								
+	20	1.07	1	FLOW	3402.	3742.	4082.	4422.
				TIME	2.67	2.67	2.67	2.67
ROUTED TO								
+	SR20	1.07	1	FLOW	283.	569.	844.	1124.
				TIME	3.67	3.42	3.33	3.25
			** PEAK STAGES IN FEET **					
			1	STAGE	1470.03	1470.55	1471.04	1471.54
				TIME	3.67	3.42	3.33	3.25

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ROUTED TO
+              R20     1.07    1  FLOW       275.    555.    825.   1097.
                                TIME       3.83    3.58    3.50    3.42

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1419.83 1420.60 1421.15 1421.62
                                TIME       3.83    3.58    3.50    3.42

2 COMBINED AT
+              CP21    3.46    1  FLOW      7799.   8590.   9378.  10168.
                                TIME       2.67    2.67    2.67    2.67

ROUTED TO
+              SR21    3.46    1  FLOW      5431.   6092.   6761.   7419.
                                TIME       2.92    2.92    2.92    2.92

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1354.74 1355.03 1355.33 1355.61
                                TIME       2.92    2.92    2.92    2.92

ROUTED TO
+              R21     3.46    1  FLOW      5384.   6066.   6770.   7462.
                                TIME       2.92    2.92    2.92    2.92

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1305.07 1305.26 1305.45 1305.61
                                TIME       2.92    2.92    2.92    2.92

HYDROGRAPH AT
+              23      .16     1  FLOW       894.    984.   1073.   1162.
                                TIME       2.33    2.33    2.33    2.33

2 COMBINED AT
+              CP23    3.62    1  FLOW      5492.   6185.   6900.   7602.
                                TIME       2.92    2.92    2.92    2.92

ROUTED TO
+              SR23    3.62    1  FLOW         0.      0.      0.    137.
                                TIME       .08     .08     .08    6.17

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1299.85 1301.79 1303.71 1305.15
                                TIME       8.25    8.25    8.25    6.17

ROUTED TO
+              R23     3.62    1  FLOW         0.      0.      0.    135.
                                TIME       .08     .08     .08    6.42

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1394.00 1394.00 1394.00 1395.34
                                TIME       .00     .00     .00    6.42

HYDROGRAPH AT
+              22      .57     1  FLOW      2047.   2251.   2456.   2661.
                                TIME       2.58    2.58    2.58    2.58

ROUTED TO
+              R22     .57     1  FLOW      1980.   2178.   2378.   2579.
                                TIME       2.67    2.67    2.67    2.67

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1290.92 1291.07 1291.20 1291.33
                                TIME       2.67    2.67    2.67    2.67

HYDROGRAPH AT
+              22A     .50     1  FLOW      2038.   2242.   2446.   2650.
                                TIME       2.50    2.50    2.50    2.50

2 COMBINED AT
+              I1C22A  1.07    1  FLOW      3867.   4255.   4643.   5034.
                                TIME       2.58    2.58    2.58    2.58
```

```
 2 COMBINED AT
+            CP22A     4.69    1  FLOW       3867.   4255.   4643.   5034.
                            TIME        2.58    2.58    2.58    2.58

ROUTED TO
+            R22A      4.69    1  FLOW       3500.   3839.   4186.   4536.
                            TIME        2.75    2.83    2.83    2.83

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1254.59 1254.79 1254.98 1255.17
                            TIME        2.75    2.83    2.83    2.83

HYDROGRAPH AT
+            25        .46    1  FLOW       1560.   1716.   1872.   2027.
                            TIME        2.67    2.67    2.67    2.67

 2 COMBINED AT
+            I1CP25    5.15    1  FLOW       4876.   5338.   5805.   6286.
                            TIME        2.75    2.75    2.75    2.75

HYDROGRAPH AT
+            24        .14    1  FLOW        576.    634.    692.    749.
                            TIME        2.50    2.50    2.50    2.50

ROUTED TO
+            SR24      .14    1  FLOW          0.      0.      0.      0.
                            TIME         .08     .08     .08     .08

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1222.54 1223.03 1223.52 1224.02
                            TIME        6.08    6.00    6.00    6.00

ROUTED TO
+            R24       .14    1  FLOW          0.      0.      0.      0.
                            TIME         .08     .08     .08     .08

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1228.00 1228.00 1228.00 1228.00
                            TIME         .00     .00     .00     .00

 2 COMBINED AT
+            CP25      5.29    1  FLOW       4876.   5338.   5805.   6286.
                            TIME        2.75    2.75    2.75    2.75

ROUTED TO
+            SR25      5.29    1  FLOW       4840.   5295.   5751.   6237.
                            TIME        2.75    2.75    2.75    2.75

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1217.35 1217.59 1217.83 1218.07
                            TIME        2.75    2.75    2.75    2.75

HYDROGRAPH AT
+            26        1.16    1  FLOW       3265.   3592.   3918.   4245.
                            TIME        2.75    2.75    2.75    2.75

ROUTED TO
+            R26       1.16    1  FLOW       3181.   3526.   3851.   4169.
                            TIME        2.83    2.83    2.83    2.83

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1245.51 1245.69 1245.87 1246.04
                            TIME        2.83    2.83    2.83    2.83

HYDROGRAPH AT
+            27        1.00    1  FLOW       3097.   3406.   3716.   4026.
                            TIME        2.67    2.67    2.67    2.67

 2 COMBINED AT
+            I1CP27    2.16    1  FLOW       5909.   6527.   7125.   7715.
                            TIME        2.83    2.83    2.83    2.83
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ROUTED TO
+            SR27    2.16   1  FLOW      5935.   6567.   7166.   7758.
                            TIME       2.83    2.83    2.83    2.83

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1216.41 1216.60 1216.77 1216.95
                            TIME       2.83    2.83    2.83    2.83

2 COMBINED AT
+            CP27    7.45   1  FLOW     10707.  11805.  12871.  13930.
                            TIME       2.83    2.83    2.83    2.83

ROUTED TO
+            R27     7.45   1  FLOW     10526.  11616.  12671.  13750.
                            TIME       2.92    2.92    2.92    2.92

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1209.47 1209.78 1210.08 1210.36
                            TIME       2.92    2.92    2.92    2.92

HYDROGRAPH AT
+            34      .36   1  FLOW      1401.   1541.   1681.   1821.
                            TIME       2.50    2.50    2.50    2.50

HYDROGRAPH AT
+            33      .65   1  FLOW      2485.   2733.   2982.   3230.
                            TIME       2.50    2.50    2.50    2.50

2 COMBINED AT
+            CP33    1.01   1  FLOW      3886.   4274.   4663.   5051.
                            TIME       2.50    2.50    2.50    2.50

ROUTED TO
+            R33     1.01   1  FLOW      3807.   4192.   4577.   4960.
                            TIME       2.58    2.58    2.58    2.58

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1690.22 1690.91 1691.60 1692.29
                            TIME       2.58    2.58    2.58    2.58

HYDROGRAPH AT
+            35      .39   1  FLOW      1565.   1721.   1878.   2034.
                            TIME       2.50    2.50    2.50    2.50

2 COMBINED AT
+            I1CP35  1.40   1  FLOW      5232.   5737.   6246.   6762.
                            TIME       2.50    2.50    2.50    2.50

HYDROGRAPH AT
+            32      1.29   1  FLOW      3787.   4166.   4544.   4923.
                            TIME       2.67    2.67    2.67    2.67

2 COMBINED AT
+            CP35    2.69   1  FLOW      8574.   9436.  10297.  11157.
                            TIME       2.58    2.58    2.58    2.58

ROUTED TO
+            R35     2.69   1  FLOW      8454.   9284.  10140.  10984.
                            TIME       2.67    2.67    2.67    2.67

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1431.52 1431.86 1432.19 1432.50
                            TIME       2.67    2.67    2.67    2.67

HYDROGRAPH AT
+            36      .24   1  FLOW       855.    941.   1026.   1112.
                            TIME       2.50    2.50    2.50    2.50

2 COMBINED AT
+            I1CP36  2.93   1  FLOW      9145.  10045.  10970.  11882.
                            TIME       2.67    2.67    2.67    2.67
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HYDROGRAPH AT
+              37     .95    1  FLOW      2705.   2976.   3247.   3517.
                             TIME       2.75    2.75    2.75    2.75

 2 COMBINED AT
+            CP36    3.88    1  FLOW     11760.  12921.  14107.  15282.
                             TIME       2.67    2.67    2.67    2.67

ROUTED TO
+             R36    3.88    1  FLOW     11535.  12662.  13793.  14991.
                             TIME       2.75    2.75    2.75    2.67

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1344.11 1344.37 1344.63 1344.89
                             TIME       2.75    2.75    2.75    2.67

HYDROGRAPH AT
+              38     .76    1  FLOW      2754.   3030.   3305.   3580.
                             TIME       2.58    2.58    2.58    2.58

 2 COMBINED AT
+            CP38    4.64    1  FLOW     13752.  15214.  16620.  18081.
                             TIME       2.67    2.67    2.67    2.67

ROUTED TO
+            SR38    4.64    1  FLOW     13588.  15050.  16385.  17758.
                             TIME       2.75    2.75    2.75    2.75

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1302.87 1303.21 1303.50 1303.79
                             TIME       2.75    2.75    2.75    2.75

ROUTED TO
+             R38    4.64    1  FLOW     13364.  14758.  16179.  17537.
                             TIME       2.83    2.83    2.83    2.83

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1209.01 1209.32 1209.60 1209.85
                             TIME       2.83    2.83    2.83    2.83

HYDROGRAPH AT
+              39     .77    1  FLOW      2068.   2274.   2481.   2688.
                             TIME       2.83    2.83    2.83    2.83

 2 COMBINED AT
+           I1CP39    5.41    1  FLOW     15432.  17032.  18660.  20225.
                             TIME       2.83    2.83    2.83    2.83

 2 COMBINED AT
+            CP39   12.86    1  FLOW     25337.  28133.  30884.  33543.
                             TIME       2.83    2.83    2.83    2.83

ROUTED TO
+             R39   12.86    1  FLOW     25416.  28016.  30495.  33027.
                             TIME       2.92    2.92    2.92    2.83

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1145.69 1146.29 1146.83 1147.37
                             TIME       2.92    2.92    2.92    2.83

HYDROGRAPH AT
+              40     .52    1  FLOW      1917.   2109.   2301.   2492.
                             TIME       2.58    2.58    2.58    2.58

ROUTED TO
+             R40     .52    1  FLOW      1728.   1900.   2072.   2245.
                             TIME       2.75    2.75    2.75    2.75

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1112.85 1112.96 1113.08 1113.19
                             TIME       2.75    2.75    2.75    2.75
```

```
HYDROGRAPH AT
+              42    1.18    1  FLOW      3252.   3578.   3903.   4228.
                             TIME       2.83    2.83    2.83    2.83

 2 COMBINED AT
+           I1CP42   1.70    1  FLOW      4900.   5391.   5881.   6371.
                             TIME       2.83    2.83    2.83    2.83

 2 COMBINED AT
+            CP42   14.56    1  FLOW     29845.  32892.  36041.  39398.
                             TIME       2.92    2.92    2.83    2.83

ROUTED TO
+            SR42   14.56    1  FLOW     28859.  32180.  35538.  38737.
                             TIME       3.00    2.92    2.92    2.92

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1109.93 1111.00 1112.07 1113.09
                             TIME       3.00    2.92    2.92    2.92

ROUTED TO
+             R42   14.56    1  FLOW     29130.  32167.  35958.  39337.
                             TIME       3.00    2.92    2.92    2.92

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1094.05 1094.53 1095.05 1095.51
                             TIME       3.00    2.92    2.92    2.92

HYDROGRAPH AT
+            41A1     .02    1  FLOW       130.    143.    157.    170.
                             TIME       2.25    2.25    2.25    2.25

ROUTED TO
+          SR41A1     .02    1  FLOW        90.     97.    133.    169.
                             TIME       2.42    2.33    2.33    2.33

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1139.09 1139.10 1139.16 1139.21
                             TIME       2.42    2.33    2.33    2.33

DIVERSION TO
+           1D303     .02    1  FLOW        33.     33.     33.     33.
                             TIME       2.42    2.33    2.33    2.33

HYDROGRAPH AT
+           CP41A1    .02    1  FLOW        57.     64.    100.    136.
                             TIME       2.42    2.33    2.33    2.33

ROUTED TO
+           R41A1     .02    1  FLOW        39.     57.     76.     94.
                             TIME       2.42    2.42    2.42    2.42

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1141.20 1141.30 1141.40 1141.49
                             TIME       2.42    2.42    2.42    2.42

HYDROGRAPH AT
+            41A2     .03    1  FLOW       186.    205.    223.    242.
                             TIME       2.25    2.25    2.25    2.25

 2 COMBINED AT
+           CP41A2    .05    1  FLOW       186.    210.    243.    275.
                             TIME       2.25    2.33    2.33    2.33

ROUTED TO
+           SR41A2    .05    1  FLOW       211.    226.    242.    259.
                             TIME       2.25    2.25    2.25    2.33

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1136.11 1136.16 1136.21 1136.26
                             TIME       2.25    2.25    2.25    2.33
```

```
DIVERSION TO
+          2D303     .05   1  FLOW       26.    26.    26.    26.
                           TIME       2.25   2.25   2.25   2.33

HYDROGRAPH AT
+          CP41A2    .05   1  FLOW      185.   200.   216.   233.
                           TIME       2.25   2.25   2.25   2.33

ROUTED TO
+          R41A2     .05   1  FLOW      157.   180.   209.   239.
                           TIME       2.33   2.33   2.33   2.33

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1134.71 1134.82 1134.87 1134.91
                           TIME       2.33   2.33   2.33   2.33

HYDROGRAPH AT
+          41A3      .03   1  FLOW      186.   205.   224.   242.
                           TIME       2.25   2.25   2.25   2.25

 2 COMBINED AT
+          CP41A3    .08   1  FLOW      331.   372.   418.   466.
                           TIME       2.33   2.33   2.33   2.33

ROUTED TO
+          SR41A3    .08   1  FLOW      260.   322.   367.   411.
                           TIME       2.42   2.42   2.42   2.42

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1134.01 1134.08 1134.14 1134.20
                           TIME       2.42   2.42   2.42   2.42

DIVERSION TO
+          3D303     .08   1  FLOW       33.    33.    33.    33.
                           TIME       2.42   2.42   2.42   2.42

HYDROGRAPH AT
+          CP41A3    .08   1  FLOW      227.   288.   334.   377.
                           TIME       2.42   2.42   2.42   2.42

ROUTED TO
+          R41A3     .08   1  FLOW      207.   252.   326.   386.
                           TIME       2.50   2.42   2.42   2.42

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1129.83 1129.90 1130.00 1130.09
                           TIME       2.50   2.42   2.42   2.42

HYDROGRAPH AT
+          41A       .05   1  FLOW      284.   312.   340.   369.
                           TIME       2.33   2.33   2.33   2.33

 2 COMBINED AT
+          CP41A     .13   1  FLOW      390.   483.   579.   660.
                           TIME       2.42   2.42   2.42   2.42

ROUTED TO
+          SR41A     .13   1  FLOW      361.   436.   504.   593.
                           TIME       2.50   2.50   2.50   2.42

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1128.55 1128.63 1128.70 1128.79
                           TIME       2.50   2.50   2.50   2.42

DIVERSION TO
+          4D303     .13   1  FLOW       47.    48.    48.    48.
                           TIME       2.50   2.50   2.50   2.42

HYDROGRAPH AT
+          CP41A     .13   1  FLOW      314.   389.   456.   545.
                           TIME       2.50   2.50   2.50   2.42
```

```
ROUTED TO
+          R41A     .13   1  FLOW      261.   324.   383.   461.
                          TIME      2.58   2.58   2.58   2.50

                     ** PEAK STAGES IN FEET **
                     1  STAGE   1116.91 1117.00 1117.09 1117.20
                          TIME      2.58   2.58   2.50   2.50

HYDROGRAPH AT
+          41-1     .15   1  FLOW      688.   757.   825.   894.
                          TIME      2.42   2.42   2.42   2.42

2 COMBINED AT
+          CP41-1   .28   1  FLOW      839.   993.  1138.  1280.
                          TIME      2.50   2.50   2.50   2.50

ROUTED TO
+          SR41-1   .28   1  FLOW      890.   965.  1105.  1285.
                          TIME      2.42   2.42   2.50   2.50

                     ** PEAK STAGES IN FEET **
                     1  STAGE   1116.75 1116.79 1116.88 1116.99
                          TIME      2.42   2.42   2.50   2.50

DIVERSION TO
+          5D303    .28   1  FLOW       48.    49.    49.    50.
                          TIME      2.42   2.42   2.50   2.50

HYDROGRAPH AT
+          CP41-1   .28   1  FLOW      842.   916.  1055.  1235.
                          TIME      2.42   2.42   2.50   2.50

ROUTED TO
+          R41-1    .28   1  FLOW      688.   824.   956.  1087.
                          TIME      2.58   2.58   2.58   2.58

                     ** PEAK STAGES IN FEET **
                     1  STAGE   1101.58 1101.69 1101.79 1101.89
                          TIME      2.58   2.58   2.58   2.58

HYDROGRAPH AT
+          41-2     .10   1  FLOW      464.   510.   557.   603.
                          TIME      2.42   2.42   2.42   2.42

2 COMBINED AT
+          CP41-2   .38   1  FLOW     1037.  1193.  1361.  1531.
                          TIME      2.50   2.50   2.50   2.50

ROUTED TO
+          SR41-2   .38   1  FLOW      769.  1104.  1223.  1560.
                          TIME      2.75   2.67   2.67   2.58

                     ** PEAK STAGES IN FEET **
                     1  STAGE   1104.60 1104.71 1104.75 1104.86
                          TIME      2.75   2.67   2.67   2.58

DIVERSION TO
+          6D303    .38   1  FLOW       65.    66.    66.    67.
                          TIME      2.75   2.67   2.67   2.58

HYDROGRAPH AT
+          CP41-2   .38   1  FLOW      705.  1038.  1157.  1493.
                          TIME      2.75   2.67   2.67   2.58

ROUTED TO
+          R41-2    .38   1  FLOW      689.   910.  1067.  1375.
                          TIME      2.75   2.75   2.67   2.67

                     ** PEAK STAGES IN FEET **
                     1  STAGE   1097.76 1097.98 1098.13 1098.41
                          TIME      2.75   2.75   2.67   2.67
```

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HYDROGRAPH AT
+              41      .58    1  FLOW      1770.   1947.   2124.   2301.
                                TIME       2.75    2.75    2.75    2.75

 2 COMBINED AT
+             CP41      .96    1  FLOW      2459.   2858.   3151.   3617.
                                TIME       2.75    2.75    2.75    2.67

ROUTED TO
+             SR41      .96    1  FLOW      2400.   2847.   3186.   3559.
                                TIME       2.75    2.75    2.75    2.67

                             ** PEAK STAGES IN FEET **
                             1  STAGE    1100.97 1101.13 1101.25 1101.39
                                TIME       2.75    2.75    2.75    2.67

DIVERSION TO
+            7D303      .96    1  FLOW        56.     58.     60.     61.
                                TIME       2.75    2.75    2.75    2.67

HYDROGRAPH AT
+             CP41      .96    1  FLOW      2345.   2789.   3126.   3497.
                                TIME       2.75    2.75    2.75    2.67

ROUTED TO
+              R41      .96    1  FLOW      2304.   2724.   3138.   3537.
                                TIME       2.75    2.75    2.75    2.75

                             ** PEAK STAGES IN FEET **
                             1  STAGE    1096.97 1097.20 1097.39 1097.57
                                TIME       2.75    2.75    2.75    2.75

HYDROGRAPH AT
+             43-1      .04    1  FLOW       223.    245.    268.    290.
                                TIME       2.33    2.33    2.33    2.33

 2 COMBINED AT
+            CP43-1    1.00    1  FLOW      2349.   2773.   3192.   3595.
                                TIME       2.75    2.75    2.75    2.75

ROUTED TO
+            SR43-1    1.00    1  FLOW      2338.   2675.   3045.   3373.
                                TIME       2.83    2.83    2.83    2.83

                             ** PEAK STAGES IN FEET **
                             1  STAGE   70834.14 75326.23 80410.13 74049.47
                                TIME       5.25    2.17    5.33    2.17

DIVERSION TO
+           1D303A    1.00    1  FLOW       507.    530.    556.    579.
                                TIME       2.83    2.83    2.83    2.83

HYDROGRAPH AT
+            CP43-1    1.00    1  FLOW      1831.   2144.   2488.   2794.
                                TIME       2.83    2.83    2.83    2.83

ROUTED TO
+             R43-1    1.00    1  FLOW      1798.   2154.   2562.   2849.
                                TIME       2.92    2.83    2.83    2.83

                             ** PEAK STAGES IN FEET **
                             1  STAGE    1094.73 1094.92 1095.13 1095.22
                                TIME       2.92    2.83    2.83    2.83

HYDROGRAPH AT
+             43-2      .01    1  FLOW        58.     63.     69.     75.
                                TIME       2.33    2.33    2.33    2.33

 2 COMBINED AT
+            CP43-2    1.01    1  FLOW      1806.   2162.   2571.   2859.
                                TIME       2.92    2.83    2.83    2.83
```

```
ROUTED TO
+          SR43-2     1.01    1  FLOW      1747.   2170.   2827.   2817.
                              TIME      3.00    2.92    2.92    2.83

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1100.35 1100.91 1101.79 1101.77
                              TIME      3.00    2.92    2.92    2.83

DIVERSION TO
+          2D303A     1.01    1  FLOW        92.    105.    126.    126.
                              TIME      3.00    2.92    2.92    2.83

HYDROGRAPH AT
+          CP43-2     1.01    1  FLOW      1655.   2065.   2701.   2691.
                              TIME      3.00    2.92    2.92    2.83

ROUTED TO
+          R43-2      1.01    1  FLOW      1418.   1804.   2170.   2475.
                              TIME      3.08    3.00    3.00    2.92

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1095.67 1095.97 1096.25 1096.48
                              TIME      3.08    3.00    3.00    2.92

HYDROGRAPH AT
+          43-3       .05    1  FLOW       309.    340.    370.    401.
                              TIME      2.25    2.25    2.25    2.25

 2 COMBINED AT
+          CP43-3     1.06    1  FLOW      1447.   1839.   2209.   2519.
                              TIME      3.08    3.00    3.00    2.92

ROUTED TO
+          SR43-3     1.06    1  FLOW       908.   1114.   1345.   1580.
                              TIME      3.33    3.25    3.25    3.17

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1097.70 1098.13 1098.62 1099.11
                              TIME      3.33    3.25    3.25    3.17

DIVERSION TO
+          3D303A     1.06    1  FLOW       133.    141.    149.    158.
                              TIME      3.33    3.25    3.25    3.17

HYDROGRAPH AT
+          CP43-3     1.06    1  FLOW       775.    973.   1196.   1423.
                              TIME      3.33    3.25    3.25    3.17

ROUTED TO
+          R43-3      1.06    1  FLOW       769.    973.   1198.   1413.
                              TIME      3.33    3.33    3.25    3.25

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1094.49 1094.72 1094.90 1095.05
                              TIME      3.33    3.33    3.25    3.25

HYDROGRAPH AT
+          43-4       .03    1  FLOW       186.    205.    223.    242.
                              TIME      2.25    2.25    2.25    2.25

 2 COMBINED AT
+          CP43-4     1.09    1  FLOW       777.    982.   1208.   1425.
                              TIME      3.33    3.33    3.25    3.17

ROUTED TO
+          SR43-4     1.09    1  FLOW       720.    909.   1115.   1320.
                              TIME      3.50    3.50    3.42    3.33

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1097.40 1097.80 1098.23 1098.67
                              TIME      3.50    3.50    3.42    3.33
```

```
DIVERSION TO
+          DI43-4    1.09   1  FLOW       86.    90.    95.   100.
                            TIME       3.50   3.50   3.42   3.33

HYDROGRAPH AT
+          CP43-4    1.09   1  FLOW      635.   819.  1020.  1220.
                            TIME       3.50   3.50   3.42   3.33

ROUTED TO
+          R43-4     1.09   1  FLOW      635.   820.  1019.  1215.
                            TIME       3.50   3.50   3.42   3.33

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1094.34 1094.55 1094.78 1094.91
                            TIME       3.50   3.50   3.42   3.33

HYDROGRAPH AT
+          43-5      .02   1  FLOW      124.   137.   149.   161.
                            TIME       2.25   2.25   2.25   2.25

 2 COMBINED AT
+          CP43-5    1.11   1  FLOW      641.   826.  1026.  1223.
                            TIME       3.50   3.50   3.42   3.33

ROUTED TO
+          SR43-5    1.11   1  FLOW      609.   794.   982.  1180.
                            TIME       3.67   3.58   3.50   3.50

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1095.97 1096.54 1097.12 1097.73
                            TIME       3.67   3.58   3.50   3.50

DIVERSION TO
+          DI43-5    1.11   1  FLOW       53.    55.    58.    61.
                            TIME       3.67   3.58   3.50   3.50

HYDROGRAPH AT
+          CP43-5    1.11   1  FLOW      556.   739.   924.  1119.
                            TIME       3.67   3.58   3.50   3.50

ROUTED TO
+          R43-5     1.11   1  FLOW      555.   735.   923.  1119.
                            TIME       3.67   3.58   3.58   3.50

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1093.58 1093.87 1094.04 1094.20
                            TIME       3.67   3.58   3.58   3.50

HYDROGRAPH AT
+          43-6      .02   1  FLOW      129.   142.   154.   167.
                            TIME       2.25   2.25   2.25   2.25

 2 COMBINED AT
+          CP43-6    1.13   1  FLOW      561.   742.   930.  1127.
                            TIME       3.67   3.58   3.58   3.50

ROUTED TO
+          SR43-6    1.13   1  FLOW       55.   219.   489.   735.
                            TIME       4.50   4.25   4.08   3.92

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1095.32 1096.21 1096.67 1096.92
                            TIME       4.50   4.25   4.08   3.92

DIVERSION TO
+          DI43-6    1.13   1  FLOW       55.    59.    60.    61.
                            TIME       4.50   4.25   4.08   3.92

HYDROGRAPH AT
+          CP43-6    1.13   1  FLOW        0.   160.   428.   674.
                            TIME        .08   4.25   4.08   3.92
```

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ROUTED TO
+          R43-6    1.13   1  FLOW        0.    159.    431.    670.
                           TIME        .08    4.25    4.08    3.92

                     ** PEAK STAGES IN FEET **
                     1  STAGE    1090.00 1090.58 1091.24 1091.54
                        TIME        .00    4.25    4.08    3.92

HYDROGRAPH AT
+          43-7     .02   1  FLOW      131.    144.    157.    170.
                           TIME       2.25    2.25    2.25    2.25

2 COMBINED AT
+          CP43-7   1.15   1  FLOW      131.    159.    436.    677.
                           TIME       2.25    4.25    4.08    3.92

ROUTED TO
+          SR43-7   1.15   1  FLOW       62.    154.    419.    673.
                           TIME       2.42    4.33    4.17    4.00

                     ** PEAK STAGES IN FEET **
                     1  STAGE    1091.15 1091.52 1092.14 1092.74
                        TIME       2.42    4.33    4.17    4.00

DIVERSION TO
+          DI43-7   1.15   1  FLOW       39.     40.     41.     41.
                           TIME       2.42    4.33    4.17    4.00

HYDROGRAPH AT
+          CP43-7   1.15   1  FLOW       23.    114.    378.    632.
                           TIME       2.42    4.33    4.17    4.00

ROUTED TO
+          R43-7    1.15   1  FLOW       17.    118.    379.    629.
                           TIME       2.42    4.42    4.17    3.92

                     ** PEAK STAGES IN FEET **
                     1  STAGE    1090.05 1090.32 1091.02 1091.23
                        TIME       2.42    4.42    4.17    3.92

HYDROGRAPH AT
+          43-8     .01   1  FLOW       66.     73.     79.     86.
                           TIME       2.25    2.25    2.25    2.25

2 COMBINED AT
+          CP43-8   1.16   1  FLOW       66.    119.    379.    633.
                           TIME       2.25    4.42    4.17    3.92

ROUTED TO
+          SR43-8   1.16   1  FLOW       25.     34.    262.    531.
                           TIME       2.50    4.83    4.42    4.17

                     ** PEAK STAGES IN FEET **
                     1  STAGE    1087.68 1088.90 1090.97 1091.91
                        TIME       2.50    4.83    4.42    4.17

DIVERSION TO
+          DI43-8   1.16   1  FLOW       25.     34.     46.     55.
                           TIME       2.50    4.83    4.42    4.17

HYDROGRAPH AT
+          CP43-8   1.16   1  FLOW        0.      0.    216.    476.
                           TIME        .08     .08    4.42    4.17

ROUTED TO
+          R43-8    1.16   1  FLOW        0.      0.    215.    469.
                           TIME        .08     .08    4.42    4.17

                     ** PEAK STAGES IN FEET **
                     1  STAGE    1088.00 1088.00 1089.03 1089.52
                        TIME        .00     .00    4.42    4.17
```

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HYDROGRAPH AT
+              43     .01    1  FLOW        66.     72.     79.     86.
                             TIME        2.25    2.25    2.25    2.25

 2 COMBINED AT
+           I1CP43    1.17    1  FLOW        66.     72.    216.    470.
                             TIME        2.25    2.25    4.42    4.17

 2 COMBINED AT
+            CP43    15.73    1  FLOW     29136.  32174.  35965.  39346.
                             TIME        3.00    2.92    2.92    2.92

DIVERSION TO
+            DI43    15.73    1  FLOW     23379.  26277.  29897.  33124.
                             TIME        3.00    2.92    2.92    2.92

HYDROGRAPH AT
+            CP43    15.73    1  FLOW      5757.   5897.   6069.   6221.
                             TIME        3.00    2.92    2.92    2.92

ROUTED TO
+            SR43    15.73    1  FLOW      4945.   5003.   5055.   5112.
                             TIME        3.50    3.58    3.58    3.58

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1095.28 1095.46 1095.63 1095.81
                             TIME        3.50    3.58    3.58    3.58

ROUTED TO
+            RD43    15.73    1  FLOW      4942.   4998.   5051.   5109.
                             TIME        3.58    3.58    3.67    3.67

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1069.52 1069.55 1069.58 1069.61
                             TIME        3.58    3.58    3.67    3.67

HYDROGRAPH AT
+            CP43-4    .00    1  FLOW        86.     90.     95.    100.
                             TIME        3.50    3.50    3.42    3.33

ROUTED TO
+            RD43-4    .00    1  FLOW        82.     87.     91.     96.
                             TIME        3.83    3.83    3.75    3.67

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1061.11 1061.15 1061.18 1061.22
                             TIME        3.83    3.83    3.75    3.67

HYDROGRAPH AT
+            CP43-5    .00    1  FLOW        53.     55.     58.     61.
                             TIME        3.67    3.58    3.50    3.50

ROUTED TO
+            RD43-5    .00    1  FLOW        51.     54.     56.     59.
                             TIME        4.00    3.92    3.83    3.83

                          ** PEAK STAGES IN FEET **
                          1  STAGE    1060.85 1060.87 1060.89 1060.91
                             TIME        4.00    3.92    3.83    3.83

 2 COMBINED AT
+           I1CWT4    .00    1  FLOW       133.    140.    147.    154.
                             TIME        3.92    3.83    3.75    3.75

HYDROGRAPH AT
+            CP43-6    .00    1  FLOW        55.     59.     60.     61.
                             TIME        4.50    4.25    4.08    3.92

ROUTED TO
+            RD43-6    .00    1  FLOW        55.     58.     60.     60.
                             TIME        4.83    4.67    4.50    4.42
```

```
                    ** PEAK STAGES IN FEET **
                    1  STAGE    1060.88  1060.91  1060.92  1060.93
                       TIME       4.83     4.67     4.50     4.42

 2 COMBINED AT
+          I2CWT4     .00   1  FLOW       178.     189.     199.     207.
                       TIME       4.17     4.08     4.00     3.92

 HYDROGRAPH AT
+          CP43-7     .00   1  FLOW        39.      40.      41.      41.
                       TIME       2.42     4.33     4.17     4.00

 ROUTED TO
+          RD43-7     .00   1  FLOW        35.      39.      40.      41.
                       TIME       3.00     4.92     4.75     4.50

                    ** PEAK STAGES IN FEET **
                    1  STAGE    1060.71  1060.75  1060.76  1060.76
                       TIME       3.00     4.92     4.75     4.50

 2 COMBINED AT
+          I3CWT4     .00   1  FLOW       191.     212.     229.     241.
                       TIME       4.08     4.58     4.25     4.00

 HYDROGRAPH AT
+          CP43-8     .00   1  FLOW        25.      34.      46.      55.
                       TIME       2.50     4.83     4.42     4.17

 ROUTED TO
+          RD43-8     .00   1  FLOW        21.      32.      43.      51.
                       TIME       3.08     5.25     4.75     4.50

                    ** PEAK STAGES IN FEET **
                    1  STAGE    1060.53  1060.69  1060.78  1060.85
                       TIME       3.08     5.25     4.75     4.50

 2 COMBINED AT
+          I4CWT4     .00   1  FLOW       199.     228.     261.     282.
                       TIME       4.08     4.75     4.50     4.33

 HYDROGRAPH AT
+             44      .22   1  FLOW       892.     981.    1070.    1159.
                       TIME       2.50     2.50     2.50     2.50

 2 COMBINED AT
+          I5CWT4     .22   1  FLOW       953.    1048.    1140.    1234.
                       TIME       2.50     2.50     2.50     2.50

 2 COMBINED AT
+          I6CWT4   15.95   1  FLOW      5194.    5284.    5367.    5450.
                       TIME       3.58     3.67     3.67     3.67

 HYDROGRAPH AT
+           45-1      .08   1  FLOW       402.     442.     483.     523.
                       TIME       2.42     2.42     2.42     2.42

 HYDROGRAPH AT
+            CP43     .00   1  FLOW     23379.   26277.   29897.   33124.
                       TIME       3.00     2.92     2.92     2.92

 2 COMBINED AT
+          CP45-1     .08   1  FLOW     23439.   26351.   29977.   33212.
                       TIME       3.00     2.92     2.92     2.92

 ROUTED TO
+          SR45-1     .08   1  FLOW     23185.   26472.   29458.   32295.
                       TIME       3.00     3.00     3.00     3.00

                    ** PEAK STAGES IN FEET **
                    1  STAGE    1095.50  1096.07  1097.38  1098.62
                       TIME       3.00     3.00     3.00     3.00
```

```
DIVERSION TO
+          DI45-1     .08   1  FLOW      1473.   1565.   1648.   1727.
                            TIME       3.00    3.00    3.00    3.00

HYDROGRAPH AT
+          CP45-1     .08   1  FLOW     21712.  24907.  27810.  30568.
                            TIME       3.00    3.00    3.00    3.00

ROUTED TO
+          R45-1      .08   1  FLOW     21769.  24873.  27456.  30333.
                            TIME       3.00    3.00    3.00    3.00

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1093.81 1094.60 1095.22 1095.88
                            TIME       3.00    3.00    3.00    3.00

HYDROGRAPH AT
+          45         .38   1  FLOW      1161.   1277.   1393.   1509.
                            TIME       2.75    2.75    2.75    2.75

 2 COMBINED AT
+          CP45       .46   1  FLOW     22640.  25831.  28501.  31464.
                            TIME       3.00    3.00    3.00    3.00

ROUTED TO
+          SR45       .46   1  FLOW     22736.  25284.  28210.  31324.
                            TIME       3.00    3.00    3.00    3.00

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1091.74 1092.06 1092.37 1092.69
                            TIME       3.00    3.00    3.00    3.00

DIVERSION TO
+          DI45       .46   1  FLOW       662.    679.    696.    713.
                            TIME       3.00    3.00    3.00    3.00

HYDROGRAPH AT
+          CP45       .46   1  FLOW     22074.  24605.  27514.  30611.
                            TIME       3.00    3.00    3.00    3.00

DIVERSION TO
+          D45I10     .46   1  FLOW      2254.   2793.   3825.   4924.
                            TIME       3.00    3.00    3.00    3.00

HYDROGRAPH AT
+          45-I10     .46   1  FLOW     19821.  21812.  23689.  25686.
                            TIME       3.00    3.00    3.00    3.00

ROUTED TO
+          R45        .46   1  FLOW     20047.  22848.  24422.  25916.
                            TIME       3.00    3.00    3.00    3.00

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1090.92 1091.71 1092.15 1092.56
                            TIME       3.00    3.00    3.00    3.00

HYDROGRAPH AT
+          46-1       .15   1  FLOW       554.    609.    664.    720.
                            TIME       2.58    2.58    2.58    2.58

 2 COMBINED AT
+          CP46-1     .61   1  FLOW     20263.  23086.  24682.  26197.
                            TIME       3.00    3.00    3.00    3.00

ROUTED TO
+          SR46-1     .61   1  FLOW     19904.  22956.  24746.  26579.
                            TIME       3.08    3.00    3.00    3.00

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1083.90 1084.26 1084.45 1084.65
                            TIME       3.08    3.00    3.00    3.00
```

```
DIVERSION TO
+          DI46-1     .61    1  FLOW      221.    235.    243.    250.
                             TIME      3.08    3.00    3.00    3.00

HYDROGRAPH AT
+          CP46-1     .61    1  FLOW    19682.  22721.  24503.  26329.
                             TIME      3.08    3.00    3.00    3.00

DIVERSION TO
+          D46-1A     .61    1  FLOW      631.   1692.   2473.   3273.
                             TIME      3.08    3.00    3.00    3.00

HYDROGRAPH AT
+          D46-10     .61    1  FLOW    19052.  21029.  22031.  23056.
                             TIME      3.08    3.00    3.00    3.00

ROUTED TO
+          R46-1      .61    1  FLOW    18978.  20777.  21773.  22728.
                             TIME      3.08    3.08    3.08    3.08

                         ** PEAK STAGES IN FEET **
                         1  STAGE   1081.19 1081.52 1081.70 1081.86
                             TIME      3.08    3.08    3.08    3.08

HYDROGRAPH AT
+          46         .85    1  FLOW     2115.   2327.   2538.   2750.
                             TIME      2.92    2.92    2.92    2.92

 2 COMBINED AT
+          I1CP46    1.46    1  FLOW    20836.  22821.  24003.  25143.
                             TIME      3.08    3.08    3.08    3.08

HYDROGRAPH AT
+          28         .86    1  FLOW     2440.   2684.   2928.   3172.
                             TIME      2.75    2.75    2.75    2.75

ROUTED TO
+          R28        .86    1  FLOW     2426.   2672.   2916.   3159.
                             TIME      2.83    2.83    2.83    2.83

                         ** PEAK STAGES IN FEET **
                         1  STAGE   1165.62 1165.77 1165.92 1166.04
                             TIME      2.83    2.83    2.83    2.83

HYDROGRAPH AT
+          30         .28    1  FLOW      982.   1080.   1179.   1277.
                             TIME      2.58    2.58    2.58    2.58

 2 COMBINED AT
+          I1CP30    1.14    1  FLOW     3121.   3426.   3737.   4062.
                             TIME      2.75    2.75    2.75    2.75

HYDROGRAPH AT
+          29         .22    1  FLOW      817.    899.    981.   1063.
                             TIME      2.58    2.58    2.58    2.58

ROUTED TO
+          SR29       .22    1  FLOW        0.      0.      0.     30.
                             TIME       .08     .08     .08    4.33

                         ** PEAK STAGES IN FEET **
                         1  STAGE   1175.16 1175.77 1177.04 1177.67
                             TIME      5.17    5.17    5.17    4.33

ROUTED TO
+          R29        .22    1  FLOW        0.      0.      0.     28.
                             TIME       .08     .08     .08    4.50

                         ** PEAK STAGES IN FEET **
                         1  STAGE   1166.00 1166.00 1166.00 1166.60
                             TIME       .00     .00     .00    4.50
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```
 2 COMBINED AT
+            CP30     1.36    1  FLOW      3121.   3426.   3737.   4062.
                             TIME       2.75    2.75    2.75    2.75

DIVERSION TO
+            D-EAST    1.36    1  FLOW      1121.   1426.   1737.   2062.
                             TIME       2.75    2.75    2.75    2.75

HYDROGRAPH AT
+            DIV-30    1.36    1  FLOW      2000.   2000.   2000.   2000.
                             TIME       2.50    2.50    2.50    2.42

ROUTED TO
+             R30      1.36    1  FLOW      1997.   1998.   2000.   2000.
                             TIME       3.08    3.08    3.17    3.17

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1155.72 1155.72 1155.73 1155.73
                             TIME       3.08    3.08    3.17    3.17

HYDROGRAPH AT
+             31       .71    1  FLOW      1906.   2097.   2287.   2478.
                             TIME       2.83    2.83    2.83    2.83

 2 COMBINED AT
+            CP31      2.07    1  FLOW      3811.   4020.   4228.   4431.
                             TIME       2.83    2.83    2.83    2.83

DIVERSION TO
+            D-31-0    2.07    1  FLOW      1623.   1834.   2045.   2250.
                             TIME       2.83    2.83    2.83    2.83

HYDROGRAPH AT
+            D-31      2.07    1  FLOW      2205.   2203.   2205.   2203.
                             TIME       3.42    3.42    3.50    3.50

ROUTED TO
+             R31      2.07    1  FLOW      2228.   2222.   2213.   2204.
                             TIME       2.83    2.83    2.83    2.83

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1093.49 1093.48 1093.47 1093.46
                             TIME       2.83    2.83    2.83    2.83

 2 COMBINED AT
+            CP46      3.53    1  FLOW     23027.  25009.  26189.  27327.
                             TIME       3.08    3.08    3.08    3.08

ROUTED TO
+            SR46      3.53    1  FLOW     22701.  24941.  26501.  27711.
                             TIME       3.08    3.08    3.08    3.08

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1076.28 1076.55 1076.74 1076.88
                             TIME       3.08    3.08    3.08    3.08

DIVERSION TO
+            D-EAST    3.53    1  FLOW      7292.   8394.   9162.   9757.
                             TIME       3.08    3.08    3.08    3.08

HYDROGRAPH AT
+            D-I-10    3.53    1  FLOW     15409.  16546.  17339.  17954.
                             TIME       3.08    3.08    3.08    3.08

ROUTED TO
+             R46      3.53    1  FLOW     15407.  16545.  17336.  17921.
                             TIME       3.17    3.08    3.08    3.08

                         ** PEAK STAGES IN FEET **
                         1  STAGE    1067.54 1067.73 1067.86 1067.96
                             TIME       3.17    3.08    3.08    3.08
```

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DIVERSION TO
+          D-EAST    3.53   1  FLOW      6128.   6673.   7051.   7331.
                           TIME      3.17    3.08    3.08    3.08

HYDROGRAPH AT
+          D-46E     3.53   1  FLOW      9279.   9872.  10285.  10590.
                           TIME      3.17    3.08    3.08    3.08

ROUTED TO
+          R46A      3.53   1  FLOW      8158.   8749.   9213.   9686.
                           TIME      3.42    3.42    3.42    3.33

                        ** PEAK STAGES IN FEET **
                        1  STAGE   1066.09 1066.23 1066.34 1066.44
                           TIME      3.42    3.42    3.42    3.33

HYDROGRAPH AT
+          CP45-1     .00   1  FLOW      1473.   1565.   1648.   1727.
                           TIME      3.00    3.00    3.00    3.00

HYDROGRAPH AT
+          CP451A     .00   1  FLOW      2254.   2793.   3825.   4924.
                           TIME      3.00    3.00    3.00    3.00

 2 COMBINED AT
+          CP45I0     .00   1  FLOW      3727.   4358.   5473.   6651.
                           TIME      3.00    3.00    3.00    3.00

ROUTED TO
+          RD45-1     .00   1  FLOW      3373.   4045.   5127.   6366.
                           TIME      3.17    3.17    3.08    3.08

                        ** PEAK STAGES IN FEET **
                        1  STAGE   1064.97 1065.31 1065.82 1066.35
                           TIME      3.17    3.17    3.08    3.08

HYDROGRAPH AT
+          CP45       .00   1  FLOW       662.    679.    696.    713.
                           TIME      3.00    3.00    3.00    3.00

ROUTED TO
+          RD45       .00   1  FLOW       629.    651.    668.    684.
                           TIME      3.25    3.25    3.25    3.25

                        ** PEAK STAGES IN FEET **
                        1  STAGE   1062.70 1062.73 1062.76 1062.78
                           TIME      3.25    3.25    3.25    3.25

 2 COMBINED AT
+          I7CWT4     .00   1  FLOW      3986.   4684.   5751.   7012.
                           TIME      3.17    3.17    3.08    3.08

HYDROGRAPH AT
+          CP46-1     .00   1  FLOW       221.    235.    243.    250.
                           TIME      3.08    3.00    3.00    3.00

HYDROGRAPH AT
+          DI46A1     .00   1  FLOW       631.   1692.   2473.   3273.
                           TIME      3.08    3.00    3.00    3.00

 2 COMBINED AT
+          CP-46A     .00   1  FLOW       852.   1926.   2715.   3523.
                           TIME      3.08    3.00    3.00    3.00

ROUTED TO
+          RD46-1     .00   1  FLOW       716.   1184.   1819.   2632.
                           TIME      3.33    3.25    3.25    3.25

                        ** PEAK STAGES IN FEET **
                        1  STAGE   1062.83 1063.42 1063.99 1064.55
                           TIME      3.33    3.25    3.25    3.25
```

```
 2 COMBINED AT
+            I8CWT4     .00    1  FLOW      4546.   5724.   7204.   9210.
                             TIME       3.17    3.17    3.17    3.17

HYDROGRAPH AT
+             WT4       .77    1  FLOW      2970.   3267.   3564.   3861.
                             TIME       2.58    2.58    2.58    2.58

 2 COMBINED AT
+            I9CWT4     .77    1  FLOW      5208.   6453.   7999.  10072.
                             TIME       3.17    3.17    3.17    3.17

 2 COMBINED AT
+            I10WT4    4.30    1  FLOW     12599.  14094.  16062.  18200.
                             TIME       3.33    3.33    3.25    3.25

 2 COMBINED AT
+            CPWT4    20.25    1  FLOW     17738.  19318.  21333.  23556.
                             TIME       3.33    3.33    3.25    3.25

ROUTED TO
+             RS47    20.25    1  FLOW      5286.   6300.   7291.   8243.
                             TIME       4.58    4.58    4.58    4.50

                        ** PEAK STAGES IN FEET **
                        1  STAGE    1053.43 1053.83 1054.19 1054.51
                           TIME       4.58    4.58    4.58    4.50
                                       ↑       ↑       ↑       ↑
*** NORMAL END OF HEC-1 ***            0.5PMF  0.55    0.60    0.65
                                       |       |       |       |
                        Free Board     1.57' - 1.17' - 0.81' - 0.49'
```